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MANILA CENTRAL OBSERVATORY

MONTHLY BULLETIN

1907

PREPARED UNDER THE DIRECTION OF

REV. JOSÉ ALGUÉ, S. J.

DIRECTOR OF THE WEATHER BUREAU

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INTRODUCTION.

With a view toward an earlier publication of the results of the observations which are being made at our meteorological stations, it has been decided to add to the MONTHLY BULLETIN the tabulated observations of the third and fourth class stations and also to give a more comprehensive form than hitherto to the data for first and second class stations. Thus it will be brought about, not only that our readers are more promptly made acquainted with the climatological conditions which during a given month prevailed in the various sections of the Archipelago, but also that the bulk of that part of our annual report which deals with the observations of the secondary stations can be greatly reduced and thus made more handy.

May we be permitted to repeat here that, although the observations made at the secondary stations are carefully revised at the Central Observatory, still the Director and employees of the latter can evidently not assume the entire responsibility for the same. There is no meteorologist who is not fully aware of the fact that in work of this kind much must be left to the conscientiousness of the observers themselves. The list of the observers in charge of the various stations of the Weather Bureau is given in the introduction to Part III of the Annual Report for 1904.

To facilitate the understanding of the tables of observations published in this BULLETIN we beg to remark that the hours of observation are, for first and second class stations, 2 a. m., 6 a. m., 10 a. m., 2 p. m., 6 p. m., and 10 p. m.; those for third and fourth class stations, 6 a. m. and 2 p. m. Of the latter, however, we publish only the observation made at 2 p. m. because the inclusion of both observations would increase the bulk of the BULLETIN beyond due limits without enabling the reader to obtain the true daily means. The time used by the observers is that of the one hundred and twentieth meridian east of Greenwich. The barometer readings are corrected for capillarity and temperature and reduced to sea level, but *not* to standard gravity. The correction which is to be applied to the reading as given, whenever it is desired to have it reduced to standard gravity, is given at the head of each meteorological table.

The signs and symbols employed in this BULLETIN are the following:

Symbol.	Equal to—	Symbol.	Equal to—
Ci.	Cirrus.	q.	Squally weather.
Ci.-S.	Cirro-stratus.	u.	Ugly or threatening weather.
Ci.-Cu.	Cirro-cumulus.	v.	Visibility of distant objects.
A.-Cu.	Alto-cumulus.	w.	Wet, or heavy dew.
A.-S.	Alto-stratus.	●	Rain.
S.-Cu.	Strato-cumulus.	≡	Fog or mist.
N.	Nimbus.	⍊	Dew.
Cu.	Cumulus.	⊕	Solar corona.
Cu.-N.	Cumulo-nimbus.	⊕	Lunar corona.
S.	Stratus.	⋃	Lunar halo.
Fr.-Cu.	Fracto-cumulus.	○	Solar halo.
Fr.-N.	Fracto-nimbus.	≺	Heat lightning.
Fr.-S.	Fracto-stratus.	⊼	Thunderstorm.
S.-cf.	Stratus cumuliformis.	T	Thunder without lightning.
N.-cf.	Nimbus cumuliformis.	↗	Strong wind.
M.-Cu.	Mammato-cumulus.	⌒	Rainbow.
b.	Bright, clear sky.	∞	Dry mist.
c.	Cloudy weather.	S.	Smooth sea.
d.	Drizzling, light rain.	L.	Long rolling sea.
g.	Gloomy or stormy looking weather.	T.	Tide rips.
		M.	Moderate sea or swell.
o.	Overcast.	H.	Heavy sea.
p.	Passing showers of rain.	R.	Rough sea.

NOTE.—A small zero ($^{\circ}$) or 2(^{2}) used as an exponent to the above symbols indicate respectively that the intensity of the meteor denoted by the symbols thus affected is very small or very great.

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INTRODUCCIÓN.

Con el fin de publicar con oportunidad el resultado de las observaciones que se vienen haciendo en nuestras estaciones meteorológicas, hemos resuelto añadir á nuestro Boletín mensual los cuadros de observaciones de las estaciones de tercera y cuarta clase y dar una forma más completa á los que se venían publicando los años anteriores, de las estaciones de primera y segunda clase. Con esto lograremos por una parte que nuestros lectores se informen pronto de las condiciones climatológicas que han predominado en las diferentes regiones de nuestro Archipiélago, y por otra nos será fácil hacer más reducido y manual el tamaño de la parte de nuestro Report Anual destinado á las observaciones de estaciones secundarias.

No será de más repetir aquí que aun cuando en esta Central se examinan cuidadosamente todas las observaciones verificadas en las estaciones secundarias, todavía es evidente que no pueden los directores y empleados en dicha Central tomar toda la responsabilidad de las mismas. No hay meteorologista que no sepa que en esta clase de trabajos mucho debe dejarse al escrupuloso cuidado de los mismos observadores. La lista de los observadores que están al frente de nuestras estaciones la encontrará el lector en la introducción de la parte arriba mencionada del Report Anual de esta Oficina Meteorológica.

Para mejor inteligencia de los cuadros de observaciones que publicamos en el Boletín Meteorológico, hacemos constar que las horas de observación para estaciones de primera y segunda clase son 2 a. m., 6 a. m., 10 a. m., 2 p. m., 6 p. m. y 10 p. m.; y en las de tercera y cuarta clase, 6 a. m. y 2 p. m. Sin embargo, de estas últimas sólo publicamos la de 2 p. m.; pues dos observaciones diarias no son suficientes para dar valores medios de cada día, y el incluir ambas observaciones nos haría extender demasiado este Boletín. El tiempo seguido por nuestros observadores es el del meridiano 120 Este de Greenwich. Las lecturas barométricas se dan corregidas de capilaridad y temratura y reducidas al nivel del mar, pero *no* á la gravedad normal. La corrección que por gravedad debe aplicarse, la damos al principio de cada cuadro meteorológico.

Los signos y símbolos usados en este Boletín son los siguientes:

Símbolos.	Significado.	Símbolos.	Significado.
Ci.	Cirrus.	q.	Achubascado.
Ci.-S.	Cirro-stratus.	u.	Tiempo feo ó amenazador.
Ci.-Cu.	Cirro-cumulus.	v.	Trasparencia del aire.
A.-Cu.	Alto-cumulus.	w.	Húmedo ó gran rocío.
A.-S.	Alto-stratus.	●	Lluvia.
S.-Cu.	Strato-cumulus.	≡	Niebla ó neblina.
N.	Nimbus.	⍊	Rocío.
Cu.	Cumulus.	⊕	Corona solar.
Cu.-N.	Cumulo-nimbus.	⊕	Corona lunar.
S.	Stratus.	⋃	Halo lunar.
Fr.-Cu.	Fracto-cumulus.	○	Halo solar.
Fr.-N.	Fracto-nimbus.	<	Relámpago sin trueno.
Fr.-S.	Fracto-stratus.	⊼	Tempestad de trueno.
S.-cf.	Stratus-cumuliformis.	T	Trueno sin relámpago.
N.-cf.	Nimbus-cumuliformis.	↙	Viento duro.
M.-Cu.	Mammato-cumulus.	⌒	Arco iris.
b.	Despejado.	∞	Niebla seca.
c.	Nublado.	S.	Mar lisa ó llana.
d.	Llovizna ó lluvia ligera.	L.	Mar tendida.
g.	Mal cariz; tiempo cerrado, fosco.	T.	Mar rizada.
		M.	Mar moderada.
o.	Cubierto.	H.	Mar gruesa.
p.	Lluvia pasajera.	R.	Mar alborotada.

NOTA.—Un ° ó un ², puestos como exponentes de los signos, indican respectivamente una muy débil ó una muy fuerte intensidad en el meteoro que representan.

BULLETIN FOR JANUARY, 1907.

METEOROLOGICAL BULLETIN FOR JANUARY, 1907.

By Rev. JOSÉ CORONAS, S. J.,
Assistant Director of the Weather Bureau.

GENERAL WEATHER NOTES.

Pressure and temperature.—Owing, no doubt, to the period of low pressure during the first decade of the month, the monthly barometric mean results everywhere lower than the corresponding one of last year. The greatest departures are 1.53 millimeters at Ormoc and 1.57 millimeters at Tacloban, which two stations are nearest to the track of the typhoon of January 10, to be discussed further on. The highest means were, in general, observed during the third decade, the lowest during the first. At Manila, as may be seen in the corresponding table, the mean atmospheric pressure of the month differed from the normal by —0.59 millimeter.

The temperature was likewise slightly lower throughout the Archipelago than in the preceding year, the greatest differences being 1.3° C. for Tacloban and 1.6° C. for Olongapo. The highest temperatures—34.7° C. and 35° C.—were observed at San Isidro and Dagupan on the 30th and 26th, respectively. The 8th and 9th were remarkable for their low temperature at Manila and neighboring stations of central and western Luzon. The temperature minima of these days were 15° C. and 15.5° C. at Manila, 13.2° C. and 14.2° C. at San Isidro, 14.7° C. and 16.3° C. at Olongapo, 14.3° C. and 14.6° C. at Dagupan. The absolute minimum for the month at Manila was 15° C., observed on the 8th. This is the lowest on record at this Observatory since 1880.

A more extensive idea of the conditions of pressure and temperature during the month is presented in the following table:

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS, JANUARY, 1907.

Station.	Pressure.						Temperature.					
	Mean.	Departure from January, 1906.	Mean maximum.	Day.	Mean minimum.	Day.	Mean.	Departure from January, 1906.	Highest.	Day.	Lowest.	Day.
	mm.	*mm.*	*mm.*		*mm.*		°C.	°C.	°C.		°C.	
Tagbilaran	758.59	—1.22	760.49	20	755.31	10	25.6	—0.7	32.8	31	19.4	21
Surigao	58.91	—1.05	60.83	20	54.52	10	25.6	— .7	32.5	11	18.8	20
Cebu	59.11	—1.16	60.97	20	54.71	10	25.9	— .5	30.6	11	20.4	23
Iloilo	58.86	— .91	60.59	20	56.25	10	25.1	— .6	31.4	13	20.7	21, 22
Capilz	59.61	— .90	61.28	21	56.46	10	25.4	— .6	29.7	27	18.6	29
Ormoc	58.41	—1.53	60.38	21	51.84	10	24.9	— .7	32.2	26	17.2	20
Tacloban	59.18	—1.57	61.47	21	50.59	10	25.3	—1.3				
Legaspi	60.19	—1.13	62.01	24	55.95	10	25.4	— .4	31	28, 31		
Atimonan	60.76	— .88	62.25	15	58.51	9	24.8	—1	30.9	24, 26	19	21
Olongapo	60.20	— .78	61.58	20	58.60	7	25	—1.6	33.4	12	13.7	8
San Isidro	61	— .83	62.34	15	59.19	9	24.5	— .8	34.7	30	13.2	8
Dagupan	60.31	—1.09	61.73	24	58.70	10	25	— .8	35	26	14.3	8
Vigan	60.97	— .56	62.36	23	59.68	9	25.2	—1	31.5	3	19.1	9, 10
Aparri	62.86	— .21	64.73	15	60.45	29	23.1	— .5	30.1	26	17.5	20
Santo Domingo	63.22	— .65	65.30	3	60.31	29	22.4	— .3	28.8	29	17.7	2, 3

Precipitation.—The subjoined table of precipitation shows at a glance how scarce rain has been in the central portion and on the western coast of Luzon, and, on the contrary, how abundant in the eastern regions of Luzon, Visayas, and Mindanao. The greatest excess of rain over that of January of the preceding year has generally been observed at the stations which are nearest to the path of the cyclonic vortex of the 10th. January 3, 4, and 5 were days of high pressure over the Archipelago and to this circumstance are certainly due the heavy rains which fell in the stations in the SE of Luzon on the 4th. On this single day 177.5 millimeters of rainwater were collected at Legaspi, 125.2 millimeters at Nueva Caceres, and 104.4 at Atimonan.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF JANUARY, 1907.

District.	Station.	Total.	Departure from January, 1906.	Rainy days.	Departure from January, 1906.	Greatest rainfall in a single day.	Day.
		mm.	mm.			mm.	
I	Yap	131.8	− 10.9	21	− 3	43.9	4
I	Caraga	140.2	−225.8	13	− 7	63.5	1
I	Balingasag	95.5	+ 51.5	10	+ 6	33.5	6
I	Tagbilaran	40.5	− 38.1	14	+ 3	9.2	10
I	Surigao	413.9	+119.3	18	− 6	131.8	5
I	Cebu	101.4	+ 41.9	11	− 1	38.1	10
I	Tuburan	240.2	+108.7	14	+10	154.9	10
I	Ormoc	361.3	+302.1	16	+ 6	213.1	10
I	Tacloban	340.8	+218.2	22	+ 6	154.4	10
I	Borongan	524.7	+228	28	+ 6	76.2	10
II	Isabela, Basilan	70.9	+ 46.4	6	+ 2	48.3	1
II	Zamboanga	68.3	+ 66.2	8	+ 7	47.8	1
II	Dapitan	61.5	+ 34.2	12	0	30.5	15
II	Bacolod	255.7	+188.3	11	+ 3	102.9	10
II	Iloilo	197.8	+122.8	11	+ 1	63.2	11
II	S. Jose Buenavista	132.4	+114.6	7	+ 4	78.2	11
II	Cuyo	83.6	+ 74.9	5	+ 3	78.7	11
II	Capiz	194.7	− 60.8	13	− 2	58.6	11
III	Sumay, Guam	36.4	+ 4.9	14	+ 3	7.6	5
III	Calbayog	215.4	+114.8	23	+ 5	50.3	9
III	Legaspi	626.6	+101.4	23	− 1	177.5	4
III	Nueva Caceres	307.7	+246.9	9	+ 2	125.2	4

District.	Station.	Total.	Departure from January, 1906.	Rainy days.	Departure from January, 1906.	Greatest rainfall in a single day.	Day.
		mm.	mm.			mm.	
IV	Atimonan	274.5	+101.7	15	−2	104.4	2
IV	Silang	41.9	− 38	4	−3	27.9	13
IV	S. Antonio, Laguna	269.5	+ 50.9	15	−6	57.1	12
IV	Corregidor	34.5	+ 14.2	2	0	22.6	13
IV	Manila	21.4	+ 8.7	3	−2	16	13
IV	Balanga	28.5	− 11	4	0	21.1	13
IV	Olongapo	14.7	+ 11.7	1	0	14.7	13
IV	Porac	8.6	− 1.9	1	−3	8.6	13
IV	Arayat	3.8	− 17.3	1	0	3.8	13
IV	San Isidro	0	− 23.7	0	−3	------	------
IV	Tarlac	3	− 3.1	1	−2	3	17
IV	Dagupan	4.2	+ .9	4	+3	1.3	18, 31
IV	Baguio	10.7	− 3.5	3	−1	5.1	13
IV	S. Fernando, Union	.8	− 8.9	1	0	.8	4
IV	Candon	2.8	+ 1.3	2	+1	1.8	4
IV	Vigan	0	− 3.8	0	−1	------	------
IV	Tuguegarao	12.2	− 14.1	4	−3	4.6	16
IV	Aparri	83.1	− 57	13	−3	21.3	31
IV	Santo Domingo	201.1	−126.5	17	−9	69	25

DEPRESSIONS AND TYPHOONS.

It is well known how seldom true typhoons present themselves in the Philippine Archipelago during the month of January. A still rarer occurrence it is that a January storm enters the Islands above the tenth parallel north. The first month of the present year, 1907, brought us one of these phenomena, and a very striking one, owing to the violence with which the tempest raged in the Visayas on the 9th, 10th, and 11th. Southern Samar and northern Leyte are the regions most severely dealt with and both are lamenting enormous material losses. The rest of the Visayan Islands, though they did not escape considerable damage, were, as a whole, more fortunate, thanks to the deformation which the storm underwent within the Archipelago and which robbed it of a great part of its energy and intensity and possibly caused it to break up into several centers having each but little importance.

The place of origin of this typhoon is easily located by means of the observations made at Guam, Marianas Islands, and Yap, western Carolines.

METEOROLOGICAL OBSERVATIONS FOR JANUARY 2–6, 1907.

Sumay, Guam, Ladrones Islands.

Day.	Hour.	Corrected barometric readings.	Winds: Direction.	Winds: Velocity, 0–12.	Rainfall.	Remarks.
		mm.			mm.	
3	6 a. m.	756.01	NE	2	------	Slight swell.
	2 p. m.	54.72	SE	5	2.5	Frequent heavy squalls.
4	6 a. m.	55.89	NE	2	------	
	2 p. m.	55.22	NE	4	1.3	
5	6 a. m.	56.14	NE	4	------	
	2 p. m.	55.02	NE	5	7.6	
6	6 a. m.	56.94	NE	3	------	
	2 p. m.	55.47	E	2	3.8	Slight swell.

Yap, Western Carolines.

Day.	Hour.	Corrected barometric readings.	Winds: Direction.	Winds: Velocity, 0–12.	Rainfall.	Remarks.
		mm.			mm.	
2	6 a. m.	756.31	NNE	2	------	
	2 p. m.	54.84	NNE	2	9.1	
3	6 a. m.	55.48	NE	2	------	At 11 a. m. barometer began to fall, strong winds of gradually increasing intensity.
	2 p. m.	54.86	NE	3	15.2	
4	6 a. m.	55	NNE	2	------	
	2 p. m.	52.20	NNE	7	43.9	
5	3 a. m.	51.70	NE	10	------	
	6 a. m.	52.37	E	8	------	Moderate swell.
	2 p. m.	52.49	SE	4	1.8	Do.
6	6 a. m.	54.74	SSE	3	------	
	2 p. m.	52.95	E	3	10.2	

To judge from these observations, the typhoon was forming south of Guam and southeast of Yap on January 3 and 4. In the morning of the 5th it had already passed south of Yap, moving in a W by N direction. Remarkable are the low barometers which persisted at the two stations on the 6th, 7th, and 8th. Since on these same days low pressures were likewise recorded in the southern part of our Archipelago, it is only reasonable to conclude that in the exterior portion of this typhoon existed a widespread area of low pressure which simultaneously covered the whole extent of the Pacific between the Philippines and the western Carolines, enveloping also the said Carolines and a considerable portion of our Archipelago.

That there was a real connection between the low-pressure area which covered the Visayas and Mindanao between the 6th and 9th, and the cyclonic center which appeared east of the Visayas on the 10th, is evidently supposed in the following weather note given out by the Weather Bureau at 11 a. m. of the latter date:

> Barometers falling. Within the extensive area of low pressure, covering during several days the eastern Visayas and the Pacific, has formed a cyclonic center, which lies at present near Samar and tends to cross the Visayas along the twelfth parallel. Weather corresponding to the second signal in the southern Visayas and in Mindanao, or in districts I and II; third signal in districts III and IV. Observers in southeast Luzon and the Visayas must watch the movements of the barometer and the changes of the wind in order to hoist the proper signal in case no warning reaches them from the Observatory. Navigation dangerous to the south and in districts I and II.

The circumstance that the barometers in the south of the Philippines had remained rather low for almost three days is in part responsible for the fact that the appearance of the typhoon east of the Visayas was to a certain degree unexpected, leaving hardly time to take the necessary precautions. Nevertheless, as early as 4 p. m. of the 9th the Observatory had been able to dispatch the following warning to the stations in the southeast of the Archipelago, which were threatened most:

> Barometers continue to fall owing to a depression in the east-southeast. Winds variable on the western coasts, and northerly in the east and southeast of Luzon, with rains on the eastern coasts and in the southern Islands. Weather unsettled toward the southeast of Manila, in the eastern Visayas and the north of Mindanao; changeable in the west of the Archipelago.

As may be seen in the diagrams of barometric curves given on Plate I,[1] the cyclonic vortex penetrated into the Archipelago at noon of January 10 south of, and very close to, Borongan, where the barometer fell to 739.24 millimeters. This minimum was registered at 12.15 p. m., with hurricane winds from N by E which after a relative calm of about five minutes—during which the sky cleared somewhat—sprang over to SE.

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[1] Following the method employed in some bulletins of last year, we give in these diagrams, besides the barometric curves, also the direction and force of the winds in the usual form—that is, by means of small arrows whose direction indicates the direction of the wind (top of the page being north)—while the number of barbs shows its force according to Beaufort's scale (0–12). Rain is indicated by small, black circles, and its amount for each station during the passage of the typhoon is written below the end of the barometer curve corresponding to the station. The letter *M* denotes the minimum of the curve in question.

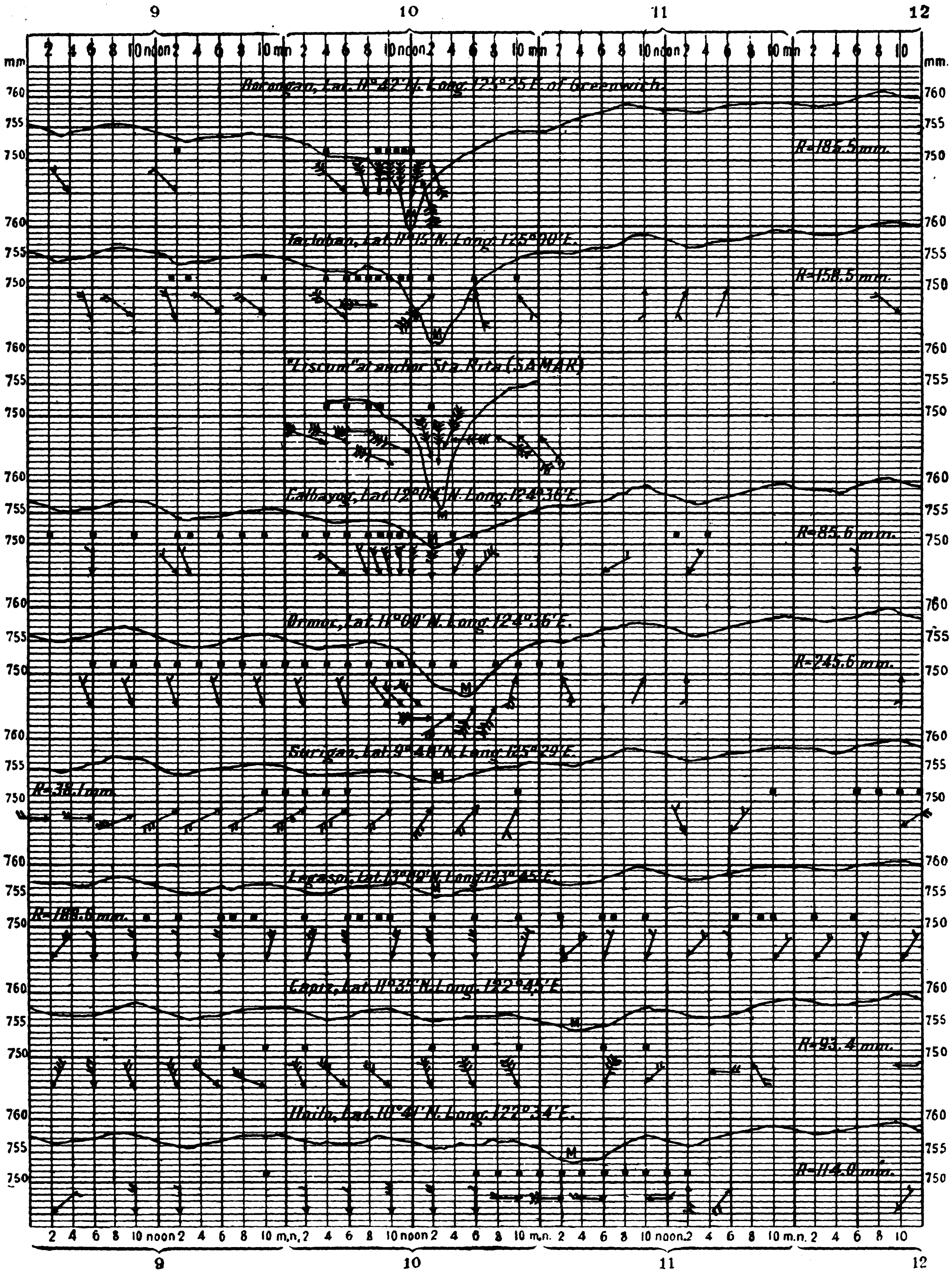


PLATE I. TYPHOON OF JANUARY 10, 1907.

The following observations were made at the meteorological station at Borongan (IV Class) by Rev. Cesáreo Montes:

METEOROLOGICAL OBSERVATIONS FOR JANUARY 9–10, 1907, BORONGAN, SAMAR ISLAND.

Day.	Hour.	Corrected barometric readings.	Winds. Direction.	Winds. Velocity.	Rainfall.	Remarks.
		mm.		*0–12.*	*mm.*	
9	6 a. m	754.79	NW	1		Rough sea; overcast; strong winds from NNW.
	2 p. m	53.21	NW	1	30.5	Rainy; rough sea; at 9 p. m. thunderstorm northeastward.
10	6 a. m	50.07	NW	5		Rainy; overcast; strong winds from N; thunders NE.
	8 a. m	50.01	NNW	6		Gusty winds at intervals.
	9 a. m	47.93	N	8		Squally; winds increasing; rough sea.
	10 a. m	47.58	N	8		Squally; rough sea.
	10.30 a. m	45.55	N	8		Overcast; squalls; winds increasing; rough sea.
	11 a. m	44.80	N	9		Overcast; squalls; rough sea.
	11.15 a. m	41.93	N	9		Overcast; squalls; hurricane winds; rough sea.
	11.30 a. m	40.43	N	9		Heavy rain; squalls; rough sea.
	11.45 a. m	39.88	N	9		Heavy rain; squalls; winds increasing; rough sea.
	12 midnight	39.44	N	9		Heavy rain; squalls; hurricane winds; rough sea.
	12.15 p. m	39.24	N by E	10		Calm during 5 minutes; then wind jumped to SE with great force.
	12.30 p. m	39.57	SE	11	56.9	Rough sea.
	2 p. m	46.25	SSE	6		Do.

Still lower was the barometric minimum observed on board the *Liscum* which weathered the storm anchored at Santa Rita. For these important observations we are indebted to Capt. M. Harrison, the master of said vessel.

U. S. A. T. "LISCUM," JANUARY 10, 1907.

Time.	Barometer.	Wind. Direction.	Wind. Velocity, 0–12.	Remarks.
4 a. m	752.3	WNW	5	Moderate to fresh breeze; overcast and rainy.
6 a. m	52.6	WNW	6	Wind increasing; heavy rain.
8 a. m	52.1	W	7	Blowing moderate gale; thunder, lightning, and rain.
9 a. m	51.3	W	7	Wind and rain the same. No thunder or lightning.
10 a. m	49.8	WNW	8	Received pilot on board and proceeded through straits. At 10.30 passed Santa Rita Island. Wind increasing in violence. Deemed it advisable to moor ship and make everything snug for typhoon. At 10.55 anchored—75 fathoms port chain, 15 fathoms starboard. *Santa Rita town bore* N. 36 E. Town distant 1.6 miles.
11 a. m	49	WNW	8	
Noon	47.2	WNW	8	
1 p. m	45.7	WNW	9	
1.30 p. m	40.1	WNW	10	Wind blows with unabated force; rain and *hail* falling in torrents.
2 p. m	38.9	NW	10	
2.20 p. m	37.3	NW	11	Ship steaming to her anchors at speed varying with the strength of the gale.
2.30 p. m	36.3	NNW	11	
2.35 p. m	35.8	NNW	12	After 1 p. m. wind gradually hauled to northward. Veered on starboard chain as the wind hauled. Paid out to 90 fathoms.
2.40 p. m	35.8	N	12	
3 p. m	35.6	NNE	12	
3.10 p. m	37.1	ENE		At 3.10 a lull. Hove up port anchor and steamed to eastward. Letting go port anchor again to windward to assist starboard anchor.
3.20 p. m	40.1	E	10	At 3.20 p. m. the wind increased again from ENE.
3.35 p. m	41.4	E	10	
4 p. m	43.9	E	9	At 4 p. m. wind gradually abates.
5 p. m	47.8	E	9	
6 p. m	49	E	8	At 6 p. m. hove up port anchor; hove in to 60 fathoms on starboard.
7 p. m	51.6	E by S	8	
8 p. m	52.3	E by S	7	
9 p. m	54.1	ESE	6	
10 p. m	54.4	ESE	5	Wind and weather moderating.
11 p. m	54.6	ESE	4	Set anchor watch.
Midnight	55.4	ESE	3	

NOTE.—Special attention is called to the mention of hail in the above report.

If we compare the observations made at Borongan with those recorded on board the *Liscum* the following points are easily established: (1) Before the cyclonic vortex passed over Borongan its direction was not due westward, but slightly inclined toward north, that is W by N. Only thus can it be explained why for fully three hours before the barometric minimum the winds maintained their north direction without backing to northwest. (2) While crossing Borongan, and even for some time afterwards, the typhoon retained its westerly direction and had not yet inclined its path toward

SW; because in the supposition that it had already then a WSW course, it is well-nigh impossible to explain why the wind jumped to SE and SSE after the calm. (3) After being well within the Island of Samar, the storm inclined somewhat toward southwest; otherwise it had to pass north of Santa Rita, instead of south, as it did pass. The west-northwest winds which blew at the latter place with such violence and persistency during several hours while the barometer was falling rapidly, show that the typhoon was at that time east-northeast of the place; on the other hand, the change of the wind to east-northeast and east about the time of the minimum leaves no doubt that the storm passed south of Santa Rita.

After having passed Santa Rita, the typhoon resumed its westerly direction, as is proved by the fact that it passed Ormoc at a much greater distance than it did Tacloban. This is clearly indicated by the barometric curves reproduced on Plate I.

Mr. J. Foster, master of the cutter *Palawan*, has kindly sent to the Director of the Weather Bureau the following information:

COAST GUARD CUTTER "PALAWAN,"
Port Bello, Ormoc Bay, P. I., January 11, 1907.

TO DIRECTOR OF WEATHER BUREAU, *Manila, P. I.*
(Through Marine Superintendent, Bureau of Navigation.)

SIR: The following observations were taken on board cutter *Palawan* (in Port Bello, westward coast of Ormoc Bay) during the typhoon of January 10, 1907: January 8 and 9 weather on west coast of Leyte continuous drizzling rain; wind from north to west-northwest, fresh to strong; frequent squalls from west-northwest. During afternoon and evening of 9th, barometer 756 mm. to 754 mm. January 10 at 8 a. m., barometer 755 mm.; wind west-northwest, force 6 to 7. Unable to anchor off Baybay on account of heavy sea. Proceeded to Port Bello, where I arrived at 11.30 a. m. Noon, barometer 751.6 mm.; wind west, force, 7 to 8; heavy squalls; continuous heavy rain with flying scud from west-northwest.

2 p. m. Barometer, 748 mm.; wind west, force 7 to 9; fierce squalls.
4 p. m. Barometer, 745.6 mm.; wind west, force 7 to 9; fierce squalls.
5 p. m. Barometer, 745 mm.; wind west, force 7 to 10; fierce squalls. Wind during heaviest squalls estimated from 60 to 70 miles per hour.
6 p. m. Wind backing west-southwest, force 8 to 9; squalls less severe; barometer, 745.
8 p. m. Barometer, 748 mm.; wind southwest, force 8; very heavy rain. Squalls moderating.
10 p. m. Barometer 753 mm.; wind south-southwest, force 6 to 7.
Midnight. Barometer 755 mm.; wind south, force 5 to 6.

Weather clearing, squalls less frequent, swell making in from south-southeast. At daylight of 11th fine weather with light, variable breezes. Found Port Bello good holding ground, soft mud bottom. Coast and Geodetic Survey cutter *Marinduque* in same harbor.

Very respectfully,

J. FOSTER,
Master, Cutter Palawan.

P. S.—Error of barometer not known exactly, but very small.

J. F.

According to the observations made by the meteorological observers at Tuburan (west coast of Cebu) and Bacolod (west coast of Negros), the typhoon passed north of both stations, reaching its least distance from the former town at 8 or 9 p. m. of the 10th, and from the latter in the early morning hours of the 11th.

It is difficult to follow the course of the typhoon from the north of Negros to the Jolo Sea, and still more so, from the latter to the China Sea. For this reason Plate II shows this part of its path by means of a dotted line, in order to indicate that it is only the probable path. This same plate also clearly exhibits the great deformation which the storm had undergone up to 6 a. m. of the 11th, which deformation was augmented considerably by 2 p. m. of the same day, as is shown by the isobars corresponding to this hour. We have no information indicating that the winds attained hurricane force in any part of the Island of Panay. Nevertheless, it is not probable that the typhoon filled up within the Archipelago, but rather that it penetrated into the China Sea, because our observer at Culion remarks in his observations of the 12th that the weather had been unsettled during the whole day, with somewhat fresh winds from east-northeast in the forenoon, and from east-southeast in the afternoon. On the whole, we are inclined to the belief that, after passing north of Negros, the disturbance did not regain the form of a real typhoon, but pursued its course in the shape of a depression of no great importance.

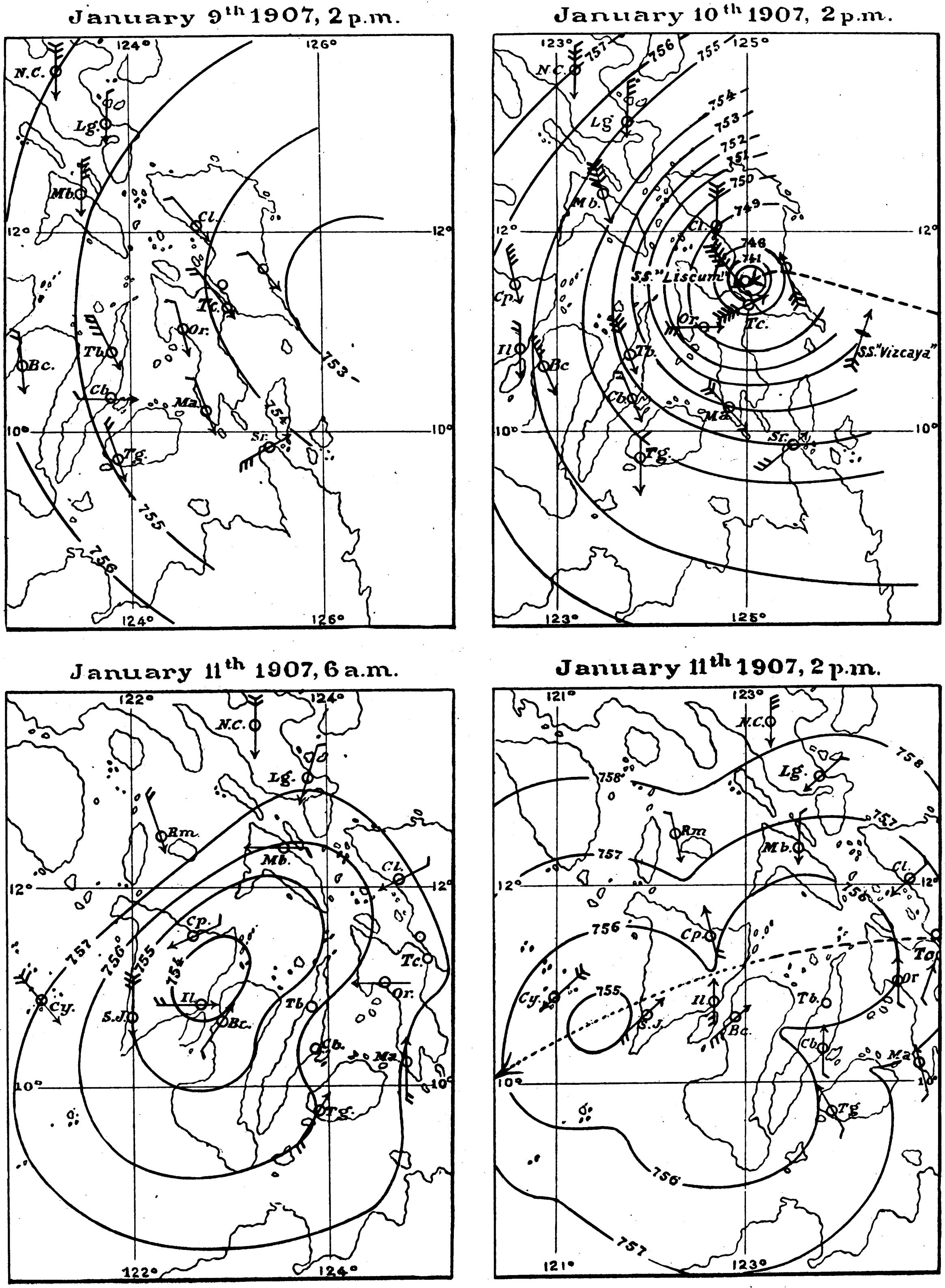


PLATE II. ISOBARS OF JANUARY 9 TO 11, 1907.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[ϕ=14° 34′ 41″ N; λ=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

Date.	Pressure (mean).	Temperature. Open air.[2] Mean.	Temperature. Open air.[2] Maximum.	Temperature. Open air.[2] Minimum.	Underground. 0.25 meter. 8 a. m.	Underground. 0.25 meter. 2 p. m.	Underground. 0.50 meter. 8 a. m.	Underground. 0.50 meter. 2 p. m.	Underground. 1.50 meters. 8 a. m.	Underground. 2.50 meters. 8 a. m.	Relative humidity (mean)	Vapor pressure (mean)	Evaporation. Free exposure (total).	Evaporation. Shelter (total).
	mm.	°*C.*	°*C.*	°*C.*	°*C.*	°*C.*	°*C.*	°*C.*	°*C.*	°*C.*	*Per ct.*	*mm.*	*mm.*	*mm.*
1	760.09	24.4	29.2	19.1	25.2	26.7	26.2	26.7	27.2	28	79.4	18	5.6	2.5
2	59.76	24.2	27.6	21.1	26	26.7	26.5	26.7	27.4	28.1	82.1	18.3	5.2	2.3
3	60.17	24.8	29.8	20.7	25.8	26.9	26.5	26.7	27.7	28	77.7	17.9	6.6	3
4	61.03	24.5	28.1	21.7	26	26.3	26.6	26.6	27.3	28.1	81.6	18.5	6	3
5	61.30	24	30	19.7	25.7	26.9	26.4	26.7	27.2	28.1	76.6	16.7	5.6	2.6
6	59.88	23.2	29.7	18	25.1	26.9	26.2	26.7	27.3	28	74.8	15.6	7.5	3.3
7	58.96	22.4	29.4	17	25	27.1	26.1	26.5	27.2	28.1	74.2	14.4	8.7	3.9
8	58.83	21.9	29.2	15	24.6	26.4	25.9	26.2	27.1	28	70.8	13.6	8.6	3.8
9	58.73	23.1	30.6	15.5	24.5	25.9	25.7	26	27.3	28	71.7	14.8	8.3	3.8
10	58.78	24.9	29.5	20.5	25	26.3	25.9	26	27.2	28.1	66	15.3	11.1	4.6
11	59.21	24.9	28.5	21.9	25.3	25.9	26	25.9	27.2	28	69.8	16.3	15.1	5.6
12	59.87	25.2	30.4	20.6	25	26	25.9	26	27.2	28.1	78.5	18.6	8.1	3.5
13	60.11	23.9	25.2	22.4	25.3	25.7	25.9	26	27.2	28	95.5	21	.9	.7
14	60.76	24.6	28.6	20.6	25.6	26.2	26	26.2	27.2	28	86.3	19.8	3.1	1
15	62.05	23.2	28.7	18.5	25	26	26	26.1	27.1	28	82.1	17.2	6	2.4
16	61.73	23.8	28.5	19.7	24.8	25.9	25.9	26.1	27.1	28	81.9	17.8	3.6	2
17	61.36	23.3	28	18.8	25	26.1	25.9	25.9	27.1	27.9	79	16.6	5	2.4
18	60.93	22.2	26	19.4	25	25.3	25.9	25.6	27.1	28	88.8	17.7	2.7	1.7
19	61.49	23	29.1	19.2	24.9	26	25.8	26	27	28	83	17.3	3.5	1.7
20	61.86	22.6	28.4	18	24.8	25.9	25.7	25.8	27	28	83.7	17.9	4.3	2.2
21	61.81	23.7	29.2	18.4	24.8	25.8	25.8	26	26.9	28	83.1	18	5.6	2.4
22	61.55	24.1	28.9	19.7	25	26.6	25.8	26	26.9	27.9	80.9	17.8	4.7	2.5
23	61.44	23.9	30.4	17.9	24.9	27.1	25.9	26.3	26.9	27.9	80.2	17.5	5.4	2.6
24	61.94	24.4	30.3	19	25.5	26.8	26	26.2	26.9	27.9	84.2	19.1	4.4	2.6
25	61.72	24.4	29.9	20.3	25.8	26.9	26.1	26.3	27	27.9	84.9	19.2	4.7	3.1
26	60.86	24.2	31.8	18.7	25.2	27.3	26	26.5	27	27.9	76.3	16.8	5.8	3
27	60.37	23.2	30.6	16.8	24.7	27	25.9	26.7	26.9	27.7	76.7	16	6.6	3.2
28	60.32	23.5	30.1	16.9	25	27	25.9	26.3	26.9	27.9	76.7	16.3	7.2	4
29	59.85	24.3	31.1	16.9	24.9	27.2	25.9	26.2	26.9	27.9	80.1	18	6	2.8
30	59.46	26	31.2	22.5	26	26.4	26.1	26.9	27	28	80.5	20	7.5	3.5
31	60.21	25.3	31	20.3	26	27	26.3	26.8	26.9	27.9	86	20.6	5.1	2.3
Mean	760.53	23.9	29.3	19.2	25.2	26.5	26	26.3	27.1	28	79.8	17.5	6.1	2.8
Total													188.5	
Departure from normal	—0.59	—1.1	—0.6	—1.3							+2.1	—0.7	+10.3	

Date.	Wind. Prevailing direction.	Wind. Total movement.	Wind. Maximum hourly velocity.	Wind. Direction at the time of the maximum velocity.	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Sunshine.		Rainfall.	Miscellaneous.
		Km.	*Km.*		*0–10.*					*h.*	*m.*	*mm.*	
1	NNE	228	27.5	NNE	9.3	Ci.-S.	ESE	S.-Cu.	E by N	0	50		
2	NE	108	15	NE	9.5	Ci.-S.		S.-Cu.	E by N	0	20		d p.
3	NE	133	20.5	N	7.8	A.-Cu.	NE by E	Cu.	NE by E	5	50		⌒ p.
4	N–WNW	42.5	10.5	ENE	9.8	A.-Cu.	SE	N.-cf.	ENE	0	05	1.5	d p.
5	N, ENE	97	12.5	NE	6.1	Ci.-S.		Cu.	NE	7	50		
6	N–NE	162.5	26	NNE	6.2	Ci.	S	Cu.	E by S	8	05		↙° p.
7	NE–NNW	126	15	NE	7.6	Ci.-S.	S by E	Cu.	NE	6	35		○ a.
8	NNE	178	13.5	NNE	5.3	Ci.-S.	SE	S.-Cu.	NE	8	40		
9	NNE	207	23	NNW	8.5	Ci.-S.	S	N.-cf.	NE	4	15		○° a.
10	N	468	33	NE	8.8	A.-Cu.	E	Cu.	NE	3	30		
11	N by E	485.5	36.5	N	8.5	Ci.-S.	S by W	N.-cf.	E by N	2	50		
12	NNE	208	21.5	N	8.2	A.-Cu.	ENE	Cu.-N.	ENE	3	05		d p.
13	WNW	66	8	NW	10	Ci.-S.		N.	NW	0	00	16	●° a. & p.
14	WNW, ESE	96	10.5	WNW	6.6	Ci.	S by W	N.-cf.	ENE	6	30		f. a. d ⌒° p.
15	E, SE	112	14	E	6	A.-Cu.	N	Cu.	ENE	6	40		
16	SE, WNW	139.5	16	NNW	5.8	A.-Cu.	ENE	S.-Cu.	E	6	50		d.° p.
17	NE, E	156	14	E	7.2	A.-Cu.	NE by E	Cu.	NE	3	50		d.° p.
18	NNE	85.5	11.5	NNE	9.2	Ci.		S.-Cu.	E by N	2	05	3.9	●° a. d p.
19	SE	186.5	19.5	SE	6.6	Ci.		Cu.	NE by E	7	10		d.° p.
20	SE	167.5	19.5	SE	7.7	Ci.-S.	SSE	Cu.	E	4	55		○° a.
21	SE	113	14	WNW	6.8	A.-Cu.	NE	Cu.	ENE	5	50		
22	NE	113	14.5	W	6.7	A.-Cu.	E by N	Cu.	ENE	6	10		⊕ p.
23	NNE, W	120.5	13.5	W	5.4	Ci.	S	Cu.	NE	9	05		
24	NW	71.5	10.5	NW	7.3	A.-Cu.	ESE	Cu.	E by N	7	35		●° p.
25	WNW, ENE	87.5	15	E	6.6	A.-Cu.	E by S	Cu.	E	5	55		⌒ p.
26	SE	173	23.5	SE	2.2			Cu.	E	9	55		
27	ESE	191.5	22	SE	3.8	A.-Cu.	E	Cu.	E	9	30		
28	SE	160.5	17.5	SSE	4.6	Ci.	WSW	Cu.	NE by E	9	45		
29	Variable	139.5	12	WSW	1.8	Ci.		Cu.		10	00		
30	NNW	294.5	26	NNW	6.3	A.-Cu.	NNE	Cu.		5	55		
31	NNE	209.5	17.5	N	6.1	Ci.-S.		Cu.	NE by N	7	40		
Mean		165.4	17.9		6.8					5	43		
Total										177	15	21.4	
Departure from normal		—5.1			+1.7					—17	08	—6.4	

[1] All the mean values given in this table are deduced from hourly observations.
[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

TAGBILARAN.

[φ=9° 38′ N; λ=123° 53′ E; barometer above sea, 21.8 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	757.21	25.8	29.1	23.2	86.3	NE	1.3	10	A.-S.	N. E	9.1	
2	57.11	26.2	29.5	23.3	83.2	NNE	1.2	8	A.-Cu. SE	Cu.-N. E	------	
3	57.97	25.1	28.1	22.7	85.2	NNE	1	9	A.-S.	N. E	2.8	
4	58.14	25.6	30.4	22.6	85.3	NNE, N	1	6.5	Ci.-S.	Cu.-N. E	.2	
5	58.74	25.2	27.3	22.9	86.5	NNE	1.2	10	A.-S.	N. E	3.8	
6	57.30	25	29.2	22.5	82.8	NNE	.8	10	A.-S.	N. NE	3	
7	56.21	25.8	29.1	23.2	79.8	N	1.8	8.7	Ci.-S.	Cu.-N. NE	.6	
8	56.35	25.8	30	22.1	77.2	N	1.3	5.7	Ci.-S.	Cu.-N. N	.2	
9	56.16	26.1	30.7	22.7	78.9	NNE, NNW	2	9.5	Ci.-S.	Cu. N	------	d° p.
10	55.31	25.2	26	23.4	87.8	N	.7	10	A.-S.	N. N, NW	9.2	
11	56.81	26.8	28.6	24.4	80.8	SSW, SE	1.2	6.2	Ci.-S.	Cu. S	------	
12	58.35	26.4	29.2	23.4	84.5	NNE	.8	7.2	Ci.-S.	S.-Cu. E, NE	3.8	
13	58.02	26.2	31	23	85.2	NNE	1.2	6.5	Ci.-S.	Cu.-N. E	1.3	⊤ p.
14	59.08	26.3	31.8	23.4	83.4	NNE	1.7	6.7	Ci.-S.	Cu.-N. E	------	
15	60.35	26.3	31.1	23.2	75.4	NNE	1.2	7.7	Ci.-S.	Cu.-N. E	.2	☇ p.
16	60.06	25.2	30.4	21.1	70.1	NNE	1	5.2	Ci.-S.	Cu. E, NE	------	∞° p.
17	59.50	24.4	28	20.4	78.2	NNE, N	1	8.3	Ci.-S.	Cu.-N. NE	.8	
18	59.18	25	31.3	21.6	75.1	NNE	1	6.2	Ci.-S.	Cu. NE	------	
19	60.21	24	31	19.7	78.6	NNE	1.2	7.7	Ci.-S. E	Cu. E	.7	
20	60.49	24.2	30.3	20	74.7	NNE	1.2	7.3	Ci.-S.	S.-Cu. NE	------	
21	60.25	24.7	29.1	19.4	78	N	.7	6.8	Ci.-S.	N. E	------	
22	59.82	25.2	30.4	21	72.7	N	1.3	4.5	A.-Cu. E	Cu. E	------	
23	59.71	26.2	30.1	21.8	77.1	N	1.3	7.2	Ci.-S. ESE	Cu. E	------	∞° ⊍ p.
24	60.08	25.8	30.1	22.2	79.2	N	1	8.7	Ci.-S.	N. E	5.3	⌒ ↙ ●² a. ⊍°
25	60.13	26	30.5	22.2	77.8	NNE	1.2	5	Ci.-S.	Cu.-N. E	------	d° a. and p.
26	59.65	25.8	30.4	21	75.5	N	1.3	3.5	Ci.-S.	Cu. E	------	⊍ p.
27	59.11	25.7	30.5	20.7	71.5	SE	1	2.8	------	Cu. E	------	
28	58.99	26	30	21.6	74	NNE, N	1	4.3	Ci.-S.	Cu. E	------	
29	58.88	25.5	31.7	21.2	80.2	NNE	1	8.5	Ci.-S.	S.-Cu. ESE	------	
30	58.54	25.9	30.4	22.2	80	Variable	1	7.8	Ci.-S.	Cu.-N. E, N	------	
31	58.54	26.6	32.8	22	73	N	1.5	2.7	Ci.-S.	Cu. N, NE	------	
Mean	758.59	25.6	29.9	22.1	79.3	------	1.2	7	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	40.5	

SURIGAO.

[φ=9° 48′ N; λ=125° 29′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.	Clouds. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	758.15	24.2	26	22.5	96.3	NE, SE	0.5	10	------	N.	51.8	
2	57.84	25.9	30.4	22	91.7	ENE	.8	7.7	Ci.-S.	Cu.	5.6	
3	58.42	24.4	28	22	95.8	ENE	.8	9.3	A.-Cu.	Fr.-N.	17.8	
4	58.73	25.8	29.7	22.2	88.8	NNE–E	.7	8.5	Ci.-S.	N.-cf. E	28.7	
5	59.12	23.6	25	20.6	96.5	N	1.8	10	------	N.	131.8	
6	57.49	24.2	29.1	20	95.8	N	1.3	10	------	Fr.-N.	80.5	
7	56.31	25.8	29.5	22.8	90	NW	2	7.8	Ci.	Cu.	------	
8	55.88	25.9	29.6	23.5	89.2	NW	1.2	7.2	A.-Cu. NW	S.-Cu. SW	------	d° p.
9	55.45	25.8	28	24	89.2	WSW	2.3	9	A.-Cu. N	Fr.-N.	5.1	
10	54.52	25.4	27	23.2	92	WSW	2.3	8.5	------	Fr.-N. W	25.1	
11	57.22	27	32.5	22	90.3	NNW, NE	.3	4.8	A.-Cu. SE	Cu.	2	
12	58.90	26.5	30.6	21.5	92.5	ENE	.5	6.7	A.-Cu.	Cu. E	5.8	⌒
13	58.67	26.8	30.5	22.5	91.5	N	.7	6.3	A.-Cu.	Cu.	------	≡ a. d p.
14	59.30	26.4	31.9	22.5	91.8	ENE	.8	6	Ci.	Cu. E	12.2	
15	60.67	26.5	29	23.2	81.8	NE	1.3	4.7	Ci. SE	Cu. NE	------	d° p.
16	60.50	25.7	29.2	21	82.3	ENE	1.2	4.2	Ci.	Cu. NE	------	d° a.
17	59.89	25.6	29.2	21	87.2	ENE	.5	6.3	Ci.	Cu.	1.8	
18	59.59	26.1	30.7	21.5	82.8	N–NE	.7	4.8	Ci. SE	Cu. NE	------	d° a.
19	60.74	24.2	28.5	19.9	88.8	N	1.3	7.8	Ci.	Cu.	5.3	
20	60.83	25	32	18.8	81.7	N	.7	3.2	Ci.	Cu.	------	
21	60.77	24.5	28.5	20	83.2	NE	1	6.2	Ci.	S.-Cu.	------	Ω ≡ a.
22	60.09	26.2	31	22.8	86	N	1.2	3.7	A.-Cu. E	Cu.	------	
23	60.24	25.8	29.9	21.4	88.3	ENE	.8	4.5	Ci. S	Cu. E	------	Ω ≡
24	60.38	26.1	30	23	90.3	N–NE	.8	4.3	Ci.	Cu.	9.1	↙ ●° p.
25	60.52	26.3	29.7	22.6	86.7	NE	1.2	5.2	Ci.	Cu.	5.6	
26	60.16	26.7	29.6	23.4	80.7	NE	1	5.7	Ci.	Cu.	------	
27	59.60	25.9	30.4	19.5	82	E–NE	.8	3.5	A.-Cu.	Cu.	2.8	
28	59.41	25.2	31	20.2	85.3	NE	.8	1.8	A.-Cu.	Cu. ENE	2.8	Ω² ≡ a.
29	59.30	23.6	27.6	21.6	97.9	NW	.5	8.5	Ci.-S.	N.	20.1	
30	58.86	25.5	30.2	21	89.7	NNW–NE	.5	5.5	A.-Cu.	Cu.	------	Ω ≡ a.
31	58.74	26.5	32	22.3	87.5	N	1.3	5.5	Ci.-S.	Cu.	------	d p.
Mean	758.91	25.6	29.6	21.8	88.8	------	1	6.4	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	413.9	

[1] All the mean values given in these tables are deduced from six-daily observations.

METEOROLOGICAL DATA, ETC.—Continued.

CEBU.

[ϕ=10° 18′ N; λ=123° 54′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.					mm.	
1	758.34	25.7	27.5	23.9	88.5	NE	0.5	8.7	Ci.-S.		Cu.-N.	NE	24.9	ψ
2	57.87	26.5	29.5	22.9	83.8	E–NNE	.8	5.7	Ci.-S.		Cu.	E, ENE	6.1	≡ a.
3	58.44	26.3	28.5	23.4	80.7	NE	.7	7	Ci.-S.		Cu.-N.	ENE	4.6	≡ a.
4	58.68	26.9	29.3	23.2	80.5	E	.3	4.7	Ci.-S.		Cu.	ENE, E	.2	⌓ ≡ a. ∞ p.
5	59.26	26.1	28	23.9	81.7	NE–N	.5	7.3	Ci.-S.		N.-cf.	ENE	------	⌓² d. ○° a.
6	57.71	26.2	29	24.2	81.8	NNE	.5	7.2	Ci.-S.		N.-cf.	N	------	⌓ ≡ a. ○ p.
7	56.73	26.2	29	24	79.5	N–NE	.8	5.5	Ci.		Cu.	NNE, N	------	⌓ ≡ a.
8	56.61	26.2	28.9	24.2	79.7	N	.5	5.8	Ci.		Cu.-N.	N, NNW	------	⌓ ≡ a. ∞ p.
9	56.22	26	28.7	23.4	81	W	.5	8.8	Ci.		Cu.-N.	NW	1.5	ψ ⌓ ≡ a.
10	54.71	24.6	25.5	23.4	85.8	NW–SW	2.2	9.8	------		N.	NW	38.1	≡ ↙ ● a. & p.
11	57.12	26.8	30.6	21.2	80.7	Variable	.5	6.7	Ci.-S.		Cu.	S	2.8	↙ ●° a.
12	59.03	27	29.1	23.2	82.5	NE, ENE	.3	5.8	Ci.		S.-Cu.	ENE, NE	.8	
13	58.57	26.8	30.1	22	82.7	E	.5	5.2	Ci.		Cu.	ENE	------	
14	59.90	25.4	29.1	24.4	86	ENE	.7	7.2	Ci.-S.		Cu.	E	5.1	≡ a.
15	60.94	25.6	29.1	21.5	82.5	NE–E	1.2	5.3	Ci.		Cu.	NE	------	⌓ a. d p.
16	60.69	25.5	28.2	22.4	76.8	ENE, E	.7	3.2	Ci.		Cu.	ENE	------	⌓² ≡ a. ∞ d p.
17	60.17	25.1	28.4	22.2	80	ENE	.7	5.8	Ci.		S.-Cu.	ENE	------	⌓² ≡ a. ∞ p.
18	59.75	24.9	30	21.3	79.2	E	.8	4.3	Ci.		Cu.	NE	------	⌓² ≡ a. ∞ p.
19	60.81	24.1	28	21.8	82.5	ENE	.5	5	Ci.		Cu.	NE	------	⌓² ≡ a. d p.
20	60.97	25	27.5	20.5	79	ENE	.4	5	Ci.-S.		Cu.	NE	------	≡ ○ ψ
21	60.95	25.1	28.4	20.5	80.2	ENE	.7	5.8	Ci.		Cu.	ENE	------	⌓² ≡ ○ a. ∞ d p.
22	60.35	25.3	28.6	21.5	80.5	ENE	.7	3.3	Ci.		Cu.	NE	------	⌓² ≡ a. ∞ p.
23	60.29	26	29	20.4	79.5	ENE	.8	4.2	Ci.		Cu.	ENE	------	⌓ ≡ a.
24	60.62	26.5	29.1	22.5	82.2	ENE	.6	5.8	Ci.		Fr.-Cu.	E	1.5	≡ a.
25	60.73	26.6	29.5	23.1	79.7	ENE, NE	.3	2.8	Ci.		Cu.	E	------	⌓ ≡ a. ∞ p.
26	60.37	26.1	29.5	21.3	80.3	E	.3	2.7	Ci.		Cu.	ENE	------	⌓² ≡ a. ∞ p.
27	59.82	25.9	28.7	21.4	76.2	ENE, E	.3	2.3	Ci.		Cu.	E	------	⌓² a. ∞ ψ p.
28	59.47	25.7	28.2	23	80.3	ENE, E	.7	2.8	Ci.		Cu.	ENE	------	⌓² d ≡ a. ∞ p.
29	59.18	25.9	29	20.7	85.5	ENE	.3	6.7	Ci.-S.		Cu.-N.	ENE	------	⌓² ≡ a. d p.
30	59.14	25.8	29.5	22.4	85	E	.2	6	Ci.-S.		Cu.	ENE	15.8	≡ a.
31	58.83	26.3	29.7	21.9	76.8	ENE–N	.7	3.2	Ci.		Cu.	NNE	------	⌓² ≡ a. ∞ p.
Mean	759.11	25.9	28.8	22.4	81.3	------	.6	5.5	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		101.4	

ILOILO.

[ϕ=10° 41′ N; λ=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.		Clouds. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.					mm.	
1	757.42	25	28	23.5	92.7	NNE	1.5	9.8	A.-Cu.		N.	NE	22.1	
2	57.38	26.5	30.5	24	84.5	NE	1.7	6.5	A.-Cu.		S.-Cu.	NE	25.4	
3	58.30	24.6	27.3	23	91.3	N–NE	1.7	9	A.-Cu.		S.-Cu.	NE	16.5	⌒ a.
4	58.49	25.6	30	22.9	87.2	N–NE	2	5.7	Ci.		S.-Cu.	NE	3.3	
5	59.14	25.1	29.1	23.2	86.7	N–NE	2.2	7	A.-Cu.		S.-Cu.	NE	------	d° a. and p.
6	57.70	24.8	28.8	22.2	87.8	NE	2.2	5.8	Ci.-S.		S.-Cu.	NE	------	
7	56.80	24.9	29.2	22.6	88.2	NE	2.5	3.8	Ci.-S.		S.-Cu.	NE	------	
8	57.04	24.9	29.8	22.7	85.8	NE	2.2	5.2	Ci.-S.		S.-Cu.	NE	------	
9	56.94	24.8	28.1	21.7	86	N	.8	8	A.-Cu.		S.-Cu.	NE	1.3	
10	56.25	24.2	26.8	21.1	90.3	N	1.7	9.3	A.-Cu.		S.-Cu.	NE	49.5	⊤ p.
11	56.29	24.1	27.3	22	93.2	W	1.8	8.3	A.-Cu.		N.		63.2	
12	58.52	26.1	30	23.1	87.1	NE	.7	6.2	A.-Cu.	E	S.-Cu.	NE	------	↯ p.
13	58.28	26.6	31.4	23.9	83.7	N, NE	1.7	6	Ci.-S.		S.-Cu.	NE	------	
14	59.15	26.1	30.3	24	85.5	N, NE	1.7	8	A.-Cu.		S.-Cu.	NE	5.3	
15	60.51	25.1	28.2	23.1	85.2	NE	2	5.2	A.-Cu.	E	S.-Cu.	NE	1.5	
16	60.42	24.7	28.8	22.1	83.5	NE	2	4	Ci.		S.-Cu.	NE	------	
17	59.71	24.4	29.1	21.5	84	N, NE	1.8	5.5	Ci.		S.-Cu.	NE	------	
18	59.46	24.5	29	21.5	80.6	N, NE	1.7	4.5	Ci.-S.		S.-Cu.		------	
19	60.58	23.5	28.1	21.1	85.7	N	1.7	5.7	Ci.-S.		S.-Cu.	NE	------	Φ
20	60.59	24.1	28.8	20.9	82	N–NE	1.5	4	Ci.-S.		S.-Cu.	NE	------	
21	60.48	24.5	29.1	20.7	81	N, NE	1.5	7	Ci.-S.		S.-Cu.	NE, E	------	
22	60.31	24.4	29.9	20.7	81.7	N	1.8	2.7	A.-Cu.	E	S.-Cu.	NE	------	Φ
23	59.82	25.3	30.6	21.9	84	NE	2.2	4.2	Ci.-S.		S.-Cu.	NE	------	ΦΦ
24	60.24	25	28.5	22.5	85	NE	1.5	7.7	Ci.-S.		S.-Cu.		2.3	ΦΦ
25	60.20	26.2	30.7	22.9	80.7	N, NE	1.8	2.8	Ci.-S.		S.-Cu.	NE	------	
26	59.75	25.8	30.2	22.8	80.3	N, NE	2	2.8	Ci.		S.-Cu.	NE	------	
27	59.32	25.6	30.6	22	79.5	NE	1.5	1.8	Ci.		Cu.		------	
28	59.24	25.3	30	22.7	82.4	NE	1.8	3.3	Ci.		S.-Cu.	NE	------	d a. Φ
29	58.87	25.4	30.6	21.1	78.5	NE	1.3	4.7	Ci.		S.-Cu.		------	Φ
30	58.62	25.5	30.8	23	82.2	NE	.5	8.2	A.-Cu.		Cu.	N	7.4	Φ ⊤ p.
31	58.80	25.7	29.5	23.1	80.7	NE	1.3	5.2	A.-Cu.		S.-Cu.	NE	------	Φ
Mean	758.86	25.1	29.3	22.4	84.7	------	1.7	5.7	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		197.8	

METEOROLOGICAL DATA, ETC.—Continued.

ORMOC.

[ϕ=11° 00′ N; λ=124° 36′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Prevailing form and its direction. Lower.		
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	757.68	25.2	28.6	23.2	90.2	Variable	0.2	9.8	Ci.-S. SE	Cu. E	34.8	⊤ p.
2	57.30	25.5	30.9	21.8	84.7	Variable	.5	7.8	Ci. SSE, ENE	Cu. E	2.8	○ a.
3	57.99	25.3	30.7	23	85.8	NNW	.3	9.2	Ci.-S.	Cu. ENE	10.7	
4	58.34	25.8	31.2	22.4	81.8	Variable	.7	8.2	Ci.-S. SE	Cu. ENE	4.8	
5	58.63	25.1	28.2	23.2	83	NNW	.3	9.7	Ci.-S.	Cu. ENE	------	d p.
6	56.89	24.4	27.8	22.8	90.2	NNW	1	9.7	Ci.-S.	Cu. NNE	3.3	
7	55.80	24.7	28.7	22.4	87.2	NNW	1.2	7.5	Ci.	Cu. N, NNE	.8	
8	55.85	24.9	28.4	22.4	83.3	NNW	1.3	9.3	Ci.-S.	Cu. N-NW	1.5	○ p.
9	55.33	23.8	24.6	22.5	96	NNW	.8	10	Ci.-S.	Cu.-N.	32.5	
10	51.84	23.8	24.4	23.2	97	SW	3	10	------	N. WNW	213.1	↙ ● ϟ p.
11	56.71	25.5	29.6	22	90.5	Variable	.3	5.3	Ci.	Cu. SE by E	------	ϟ p.
12	58.31	25.3	30.2	22.1	86.8	S	.2	5.8	Ci.	Cu. ESE, E	------	ϟ p.
13	57.93	25.8	30.2	22.4	89.6	NNW	.7	8	Ci.	Cu. ENE	22.1	⊓ϟ p.
14	59.03	24.9	28.5	23.2	91.2	WSW-NNW	.5	9	Ci.-S.	Cu. ENE	7.1	
15	60.25	24.8	29.8	21.2	83.2	NW	.0	5.5	Ci.	Cu. NE	2	Ω a.
16	60.08	25.4	30.8	20.9	70.5	NE	.7	4.7	Ci. SE	Cu. ENE, NE	------	
17	59.26	25	28.9	21.6	76.4	SSW, N by W	.3	7.3	Ci.-S.	Cu. NE	------	d p.
18	59.21	24.8	29.2	18.8	71.8	NE	.5	5.7	Ci.-S.	Cu. NE, E	------	d p.
19	60.22	23.4	29	17.7	81.7	Variable	.3	6.5	Ci. ESE	Cu. NE	------	Ω a. d.
20	60.33	23.1	29	17.2	83.9	NNW	.8	4.7	Ci. ESE	Cu. NE, NNE	1.5	Ω a.
21	60.38	24.4	29.4	19.2	79.6	NE, WSW	.3	6	Ci.-S.	Cu. E	------	Ω a. d. p.
22	59.91	23.6	30.5	18.2	85.8	NNW	.5	4.2	Ci.-S.	Cu. ENE	19	
23	59.84	25	29.2	21.2	85.3	SSW	.3	5	Ci.	Cu. ENE	------	d p.
24	60.05	26	32	21.8	79.5	N-NE	.7	6.5	Ci. SE	Cu. ENE, NE	------	
25	60.31	26.4	31.8	21.8	73	E	.5	4.2	A.-Cu. E.	Cu. ENE	------	d p.
26	59.67	26	32.2	20.2	70.2	E	.8	3	Ci. SE	Cu. NE	------	≡° a.
27	59.09	25.2	30.8	20.3	77.7	SSW	.7	3.2	Ci.-S.	Cu. NE	------	
28	59.10	25.1	29.7	21.5	83.1	NNW	.5	3.3	Ci.-S.	Cu. NE, ENE	2.5	
29	58.65	23.8	28.2	20.4	89.2	N	.3	5.5	Ci.-S.	Cu. NE	2.8	ϖ
30	58.38	24	30.1	19.4	86.3	WSW, S	.3	4.7	Ci.	Cu. N	------	Ω ○ a.
31	58.33	24.5	31.2	18.8	80.5	N	.7	3.2	Ci.	Cu. NE	------	Ω a. d ⌒ p.
Mean	758.41	24.9	29.5	21.2	83.7	------	.6	6.5	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	361.3	

TACLOBAN.

[ϕ=11° 15′ N; λ=125° 00′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	758.50	25.2	28.5	23.5	94.3	Variable	0.6	8.4	Ci.-S.	N.	51.3	
2	58.15	26.2	31	23	86.1	Variable	.6	9	Ci.-S.	Cu.	2.3	
3	58.77	25.2	29.6	23	87	NNE	.8	9.8	A.-S.	Fr.-N.	27.2	
4	59.03	25.2	28.5	23.7	89.2	NW	1	8.2	A.-Cu. ESE	Fr.-N.	30.7	
5	59.35	25.3	27.6	24	85.6	NNW	1.8	10	A.-S.	Fr.-N. NE	.8	⊕ a.
6	57.29	24.8	26.4	24	89.2	NNW	2.4	10	A.-S.	N.	27.4	
7	56.17	25.2	28	24	85	N-NW	2.4	10	A.-S.	Fr.-N.	.5	
8	55.87	25.7	27	24	84	NW	3.6	10	A.-S.	Fr.-N.	------	⊕ a.
9	55.04	24.9	25.9	24	88.8	WNW	2.4	10	------	Fr.-N. N	4.1	
10	50.59	24	25.7	23	------	Variable	5	10	------	N.	154.4	↙ a.
11	57.38	26.2	------	------	------	SSW	.4	8.8	Ci.-S.	Fr.-N.	------	d a. and p.
12	59.28	26.5	------	------	------	NW	.4	7.8	A.-Cu.	S.-Cu.	------	d p.
13	59.09	25.4	------	------	------	NW-NE	1.2	9.4	A.-S.	Fr.-N.	8.6	
14	60.10	25.5	------	------	------	S, NW	.8	8.8	Ci.-S.	Fr.-N.	4.8	
15	61.38	25.3	------	------	------	NW, ENE	1	7.6	Ci.-S.	Fr.-N. NE	1.8	
16	61.21	25	------	------	------	NW, NE	1	4.2	Ci.-S.	S.-Cu. NE	1.5	
17	60.64	24.7	------	------	------	NW	.6	9	Ci.-S.	S.-Cu.	------	d p.
18	60.26	24	------	------	------	NW	.6	7.6	A.-Cu.	S.-Cu.	5.3	
19	61.24	23.6	------	------	------	NW	.8	9.6	Ci.	Fr.-N. NNE	.2	
20	61.35	24.8	------	------	------	NW, ENE	.4	7.8	Ci.-S.	Cu.	------	d p.
21	61.47	24.8	------	------	------	Variable	.6	8	Ci.-S.	S.-Cu. NE	------	d a.
22	60.75	25.1	------	------	------	NW	1	5.2	A.-Cu.	Fr.-N.	1.5	
23	60.76	25.4	30.4	22.5	82.8	N	1	6.8	A.-Cu. NE by E	S.-Cu. ENE	------	d p.
24	61.23	25.9	31.5	22	80.2	N	1	5.2	Ci. SSE	Fr.-N. ENE	1.3	
25	61.32	25.9	31.1	23	78.7	NW	1.2	2.6	------	S.-Cu. E	1.3	
26	60.81	26.1	31.5	23.1	74.4	WNW	1	2.4	Ci.	Fr.-Cu. E	------	
27	60.07	25.8	31.9	22.1	76	SE	1	3.6	Ci.	Cu.	10.4	
28	59.93	25.8	31.1	23	76.7	N	.8	3.2	A.-Cu.	Cu.	------	d p.
29	59.54	24.7	28	23.1	86	Variable	.8	.8	A.-S.	Fr.-N.	1.8	
30	59.13	25.6	32.5	22.5	83.6	NW	1	7.8	Ci.-S.	Fr.-N. NW by N	2.8	≡² Ω² ⊕ a. ϖ
31	59.02	25.2	30.5	22.9	85.6	NNW	1.4	4.4	Ci.	N. N	.8	Ω ≡ a. d p.
Mean	759.18	25.3	29.3	23.2	84.1	------	1.2	7.5	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	340.8	

METEOROLOGICAL DATA, ETC.—Continued.

CAPIZ.

[ϕ=11° 35′ N; λ=122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Prevailing form and its direction. Lower.		
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	758.77	25.9	27.9	22.6	92.2	NNE	2.3	10	Ci.-S. NE	N. NE	10.7	
2	58.34	26.6	29.4	22.9	87.3	NE	2	8.5	Ci.	N. NE	5.3	
3	59.54	25.1	26.8	22	90	N, NNE	2	10	------	N. NE	30.3	
4	59.87	25.1	28.2	22	90.3	NNE	2.8	9.7	Ci.-S. NE	N.	5.3	⌒° a.
5	60.56	25.8	28.2	22.2	89.7	NNE	3	9.2	Ci.-S. NE	Cu.-N. NE	4.1	
6	59.24	25.6	27.5	22.6	85.7	NNE	3.8	9.8	Ci.-S. NE	Cu.-N. NE	------	d° a. and p.
7	58.20	25.3	27.4	23	84.5	NE, N	3.2	10	Ci.-S. NE	Cu.-N. NE	------	d° a. and p.
8	57.68	25.7	27.9	22.6	80.8	NNE	2.3	6.5	Ci.-S. NE	Cu.-N. NE	------	
9	57.08	25	26.4	22.2	87.3	NNW	2.7	10	Ci.-S. NE	Cu.-N. NW	17	
10	56.46	24.4	26	21.4	95.5	NNW	4.5	10	------	N. N, NW	17.8	
11	56.43	25.7	28.2	21.3	92	Variable	2.2	7.8	Ci.-S. NE	Cu.-N. NE	58.6	
12	58.84	26.1	29.4	22.2	89.7	E, NNE	.8	6.3	Ci. NE	Cu.-N. E, NE	------	≡ Ω² a. ⩽ p.
13	58.88	25.7	28.4	21.3	92	NNE–E	1.2	9.3	Ci. E	N.	40.9	
14	59.94	25.9	28.7	22.3	92.7	NE, SSE	1.5	7.8	Ci.-S. NE, E	Cu.-N. NE	------	d° a.
15	61.25	25.9	28.4	22.2	87	NE	1.7	5	Ci. E, NE	Cu. NE	------	Ω° a.
16	61.11	24.9	27.5	21.2	87.2	SE, ESE	1.3	6.8	Ci.-S. NE	S.-Cu. NE	.8	
17	60.52	25	27.3	21.4	85	SE, NE	1.3	7	Ci.-S.	S.-Cu. NE	2.3	
18	60.21	24.7	27.5	19.9	82.5	E–NE	1	4.7	Ci.-S. NE	S.-Cu.	------	Ω² ≡ a. d° p.
19	61.09	24.2	27.2	20	91.8	E	1.2	9.3	Ci.-S.	N.	------	
20	61.27	24	27.3	18.9	86.3	ENE	.7	7.3	Ci.-S.	S.-Cu. NE	------	Ω² a.
21	61.28	24.3	27.1	18.9	85.2	Variable	.8	7.5	Ci.-S. NE	S.-Cu. NE	------	Ω² a. d p.
22	61.01	24.2	26.9	18.8	85.5	Variable	1.3	9.2	Ci.-S. NE	N. NE	------	Ω° a. d p.
23	60.51	25.3	28	21.3	86.5	NE	1.3	8.3	Ci.-S. NE	Cu.-N. NE	------	d a. and p.
24	60.69	26.1	29.5	21.9	84.7	NE	1.2	5.3	Ci. NE	S.-Cu. NE	------	d° a.
25	60.85	26.4	29.1	21.4	81.8	ENE	.7	5	Ci. NE	S.-Cu. NE	------	Ω° a. d p.
26	60.50	25.9	29.1	21.6	82.2	ENE	1	2.2	Ci.	Cu. NE	------	Ω° a.
27	60.12	25.3	29.7	19.8	81.7	NE–E	.7	1.5	Ci. NE	Cu. NE	------	Ω° a.
28	60.02	25.5	28.2	21.5	80.5	ENE	1	4.7	Ci.	N. NE	.8	⌒² a.
29	59.55	25	27.7	18.6	84	NE	.7	5	Ci.-S. NE	Cu.-N. NE	------	Ω² a. d° p.
30	58.95	25.8	28.6	20.4	83.5	NE	.7	5.3	Ci. N	Cu. NE	------	Ω² ≡ a.
31	59.21	26	28	22	84.8	Variable	1	5	Ci.	Cu. NE	.8	⌒ a.
Mean	759.61	25.4	28	21.3	86.8	------	1.7	7.2	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	194.7	

LEGASPI.

[ϕ=13° 09′ N; λ=123° 45′ E; barometer above sea, 4.3 meters; gravity correction not applied, —1.77 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.	Clouds. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	759.54	25	26.5	------	93	NE	1.7	9.2	Ci.	Cu.-N. ENE	123.7	
2	59.22	25.8	28.2	------	85	NNE	1.2	8.3	Ci.-S.	Cu.-N. ENE	16.3	
3	59.93	26	28.5	------	82.8	NNE–ENE	1.7	8.7	Ci.-S.	Cu.-N. NE	4.2	
4	60.54	24	25	------	92.5	NE	1.5	10	------	N.	177.5	
5	60.52	25.8	28.5	------	77.8	NE	2.2	4.5	Ci. S	Cu. NNE	5.1	≡ a.
6	58.72	25.4	28.4	------	77.2	ENE–N	2.2	8	Ci.	Cu.-N. NNE	1.4	
7	57.91	24.3	27.5	------	80.9	NNE	2.2	9	Ci.-S. S	Cu.-N. N	12.6	
8	57.58	25.2	28.5	------	72.3	NNE	2	7.5	Ci. S	Cu.-N. N	.8	
9	56.56	24.8	26.5	------	84.2	N	1.7	10	Ci.-S.	N. N	13.5	
10	55.95	24.1	25.2	------	92.7	N, NNE	3	10	------	Fr.-N. N	36.1	
11	58.15	25.2	28.2	------	91.5	NE–N	1.2	9.5	------	Fr.-N. NE	36.1	
12	59.84	26.2	29.5	------	86.5	NE	1	4.2	Ci.	Cu.-N. ENE	102.9	
13	59.76	25.7	28	------	91.2	E	1	8.5	------	Cu.-N. E	54.6	
14	60.77	26.2	29.1	------	82.4	E–NE	1	4	A.-Cu. SE	Cu. ENE	4.6	
15	61.97	26.3	29.7	------	72.5	N–ENE	1	1.2	Ci.	Cu.	------	≡ a.
16	61.77	25.2	29.1	------	74.7	E–NNE	1	6	A.-Cu. ESE, NE	Cu. NE	1.1	
17	61.23	25.2	30.2	------	71.3	NE–E	1	3.8	Ci.	Cu.	5.3	
18	60.86	23.7	28	------	79.7	ENE	1	8	------	Cu.-N. NE	4.6	
19	61.76	25.1	29	------	68	NE	1	1.8	A.-Cu. NNE	Cu.	------	
20	61.94	25.3	29.4	------	65.5	NE	1	4.5	Ci. S	Cu. NE	------	
21	61.92	24.8	29.7	------	71.8	NE	1	3.3	Ci.	Cu. NE	------	≡ a.
22	61.50	24.6	28.7	------	79.2	NNE	.8	7.3	A.-Cu. E	Cu.-N. NE	4.4	
23	61.49	26	29.2	------	79.1	NNE–E	1	5	Ci.	Cu. NE	4.3	
24	62.01	25.6	29.5	------	83.3	ENE	1.2	7.8	Ci. S	Fr.-N. ENE	8.6	
25	61.86	25.8	28.4	------	81.2	ENE	1	6.2	------	Cu.-N. ENE	3.4	
26	61.49	26.4	30	------	72	NE	1	1.2	------	Cu.	------	≡ a.
27	60.78	26.5	29.8	------	73	ENE	1	.8	------	Cu. NE	------	≡ a.
28	60.64	26.4	31	------	69.2	NE	.8	1.2	A.-Cu.	Cu. NE	------	≡ a.
29	60.06	24.3	27.3	------	84.5	N	.7	9	Ci.-S.	Cu. E	5.3	⊕ p.
30	59.76	25.4	30.2	------	82	NE	.7	3	A.-Cu.	Cu.	.2	Ω ≡ a.
31	59.93	26.2	31	------	74.9	NE	.8	2.5	A.-Cu.	Cu. NE	------	≡ a.
Mean	760.19	25.4	28.6	------	79.7	------	1.3	5.9	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	626.6	

METEOROLOGICAL DATA, ETC.—Continued.

ATIMONAN.

[ϕ=14° 00'.5 N; λ=121° 55' E; barometer above sea, 7.8 meters; gravity correction not applied, —1.74 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.		Clouds. Lower.		Rain-fall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.					mm.	
1	760.14	24.8	26	23	90.2	NNE	3.4	10	Ci.-S.		N.	NE	25.6	ϟ ●° a. and p.
2	60.01	23.4	24.9	22.5	95.5	NE	3.6	10	Ci.-S.		N.	NE	104.4	ϟ ●° a. and p.
3	60.69	24.6	27.3	22.5	87.5	NE	4.6	8.5	Ci.		N.	NE	25.4	
4	61.22	25.3	27.4	23.1	82.8	NE	5.2	10	Ci.-S.		S.-Cu.	NE	2.5	
5	61.68	25.5	28.8	23	80.5	NNE	4.3	8.2	Ci.		Cu.	NE	------	d a. and p.
6	60.15	25.1	26.8	23.3	78.7	NNE	4.8	8.7	Ci.	NE	S.-Cu.	NE	------	
7	59.50	24.5	26.5	23.4	76.1	N	4.6	9.5	Ci.-S.		S.-Cu.	NE	------	
8	59.02	24.9	28.4	22.8	72.8	N	3.6	6.2	Ci.		S.-Cu.	NE	------	ϖ° d p.
9	58.51	24.6	25.2	23	78.4	N	4	10	Ci.-S.		S.-Cu.	NNE	2.8	
10	58.87	24	25.1	22.1	85.5	N	5.5	10	Ci.-S.		N.	NNE	3.6	
11	59.93	23.3	23.8	22.4	94.5	NNE	5	10	Ci.-S.		N.	NE	23.9	ϟ ● a.
12	60.34	23.6	24.4	22.4	95.8	NNE	3.3	10	Ci.-S.		N.	NE	39.1	
13	59.98	24.5	25.5	23.1	95.8	NNE	1.2	10	Ci.-S.		Fr.-N.	NE	15.8	
14	60.98	25.7	29.4	23.5	87	NE	2.5	5.8	Ci.-S.		S.-Cu.	NE	------	d° a.
15	62.25	25.4	29.5	23.1	83.5	NNE	3.2	6.3	Ci.		Cu.	NE	8.6	ϟ ●° p.
16	61.88	25.2	29.4	22.6	81.9	NE	2.6	7.5	Ci.		S.-Cu.	NE	------	
17	61.51	25.2	29.9	22.1	78.9	NE	2.8	.7	Ci.		Cu.	NE	------	
18	60.92	24.3	26.9	22.1	82.2	NE–E	2.3	6.7	Ci.		S.-Cu.	NE	4.6	ϟ ●' ϖ² p.
19	61.84	24.4	30	22	80.5	NNE	2	5.5	Ci.		S.-Cu.	NE	------	
20	62.09	22.8	26.4	20.7	88.8	Variable	.9	9.5	Ci.-S.		S.-Cu.	NE	4.8	ϖ ∪
21	61.95	23.7	28.8	19	85.2	N, ENE	1.5	6.8	Ci.		Cu.	NE	------	Ω a. ϖ°
22	61.95	24.6	28.8	20	81.5	N	2.2	3.5	Ci.		Cu.	NNE	------	Ω a. ϖ°
23	61.48	25.6	29.5	23	85.8	N	1.9	7.3	Ci.		S.-Cu.	NE	------	d a. ϖ
24	62.06	25.7	30.9	22.3	87.7	N–ENE	2	9.3	Ci.-S.		Fr.-N.	NE	4.8	⌒° a.
25	61.94	25.5	27.8	23.5	87.2	NE	1.9	8.8	Ci.-S.		S.-Cu.	NE	6.1	ϖ°
26	61.27	26.1	30.9	23.5	82.5	NE	1.8	4.5	A.-Cu.	ENE	Cu.	ENE	------	ϖ°
27	60.51	25.4	29.9	21.3	85.7	NE	1.5	2.8	A.-Cu.	NE	Cu.	NE	------	
28	60.70	26.1	30.7	23.4	80.2	ENE–N	2.4	2.3	Ci.	NE	Cu.	NE	------	
29	60.05	24.6	28.5	21	88.8	N	1.8	7.3	A.-Cu.	NNE, S	S.-Cu.	N	------	
30	59.64	25.4	29.5	22.5	87.5	N	1.4	7.8	A.-Cu.	Variable	S.-Cu.	N	------	d a. ⌒ ϖ° p.
31	60.35	25.4	29.1	24	86.2	NNE	2.6	6.7	A.-Cu.	NE	S.-Cu.	N	2.5	ϖ°
Mean	760.76	24.8	27.9	22.5	84.8	------------	2.9	7.4	------------		------------		------	
Total	--------	------	------	------	------	------------	------	------	------------		------------		274.5	

OLONGAPO.

[ϕ=14° 49' N; λ=120° 15' E; barometer above sea, 3.5 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.		Clouds. Lower.		Rain-fall.	Miscellaneous.
	mm.	°C.	°C.	°C. [1]	P. ct.		0–12.	0–10.					mm.	
1	759.80	25.3	31.9	19.3	78.7	NE	0.9	9.8	Ci.-S.	S	Cu.		------	≡ ○° a.
2	59.23	25.5	31.6	21.6	79.8	NE	1.1	10	Ci.-S.		Cu.-N.	ENE	------	≡ d° a.
3	59.88	26.	32.2	20.6	79.5	NE	2.5	6.5	Ci.-S.		Cu.	NE	------	≡ ○° a.
4	60.43	25.3	31	22.2	83.3	NE	3.6	7.8	Ci.-S.	E	Cu.		------	d p.
5	60.99	25.7	32.2	20.3	80.8	NE	1.1	7.5	Ci.-S.	S	Cu.	NE	------	≡ ○° a.
6	59.63	25.3	32.8	18.5	81.2	NE	1.2	7.3	Ci.-S.		Cu.		------	∪ ○° a.
7	58.60	23.6	30.5	18.7	80.7	NNE	1	8	Ci.-S.	S	Cu.		------	≡ ○² a. ∞² p.
8	58.70	22.7	31.7	13.7	83.8	NNE	1	8	Ci.-S.		Cu.		------	≡² ○² a. and p.
9	58.68	22.5	28.5	15.3	86	N, NNW	.8	8.7	Ci.-S	S	Cu.	NE	------	≡ ○² a. ∞ p.
10	58.64	25.1	31.9	18.	82.5	NNW	.9	8.8	A.-Cu.	NE	Cu.	NE	------	≡² ○° a. ∞ p.
11	58.82	25.6	30.8	21.7	78.1	NE	1.2	9.5	A.-Cu.		Cu.-N.	NE	------	≡a. ∞ p.
12	59.50	26.9	33.4	21.6	76.5	NNE	1.2	7.5	A.-Cu.	SSE	Cu.-N.	SE	------	∞ p.
13	59.86	24.2	29.7	21.5	93.2	NNE	.3	9.3	Ci.-S.		N.		14.7	≡ ⌒ a.
14	60.40	25.8	32	21.3	89.6	ENE–NNE	.4	7.8	A.-Cu.		Cu.	NE	------	≡ a. ∞ ⪕ p.
15	61.56	25.7	31.4	21.1	85.8	NNE	.7	6.7	A.-Cu.	N	Cu.		------	Ω ≡ a. ∞ p.
16	61.41	25	31.3	19	85.8	NNE	.7	4.5	Ci.-S.		Cu.-N	NE	------	≡ a. d° p.
17	60.87	25.5	30.8	20.6	84.2	NE	.8	5.3	A.-Cu.		Cu.	NE	------	
18	60.65	24.4	29.7	19.5	84.3	NNE	.5	7.8	Ci.-S.		Cu.-N.	NE	------	
19	61.05	24.1	30.9	17.8	88.2	NNE	.7	5.7	Ci.-S.		Cu.		------	≡ a. ∞ p.
20	61.58	23.9	30.2	18	86.8	NE	.2	8.7	Ci.-S.	SSW	Cu.-N.	N	------	≡ a.
21	61.56	25.3	32.2	19.2	86.2	NNE	.5	7.8	Ci.-S.	W	Cu.		------	≡ a. ∞ p.
22	61.17	24.9	31.6	18.7	88.2	NNE	.5	6.7	A.-Cu.	E	Cu.		------	≡ a. ∞ p.
23	60.95	25.1	32.8	17.8	89	NNE	.6	5.8	Ci.-S.		Cu.		------	≡ Ω² a. ∞ p.
24	61.55	25.6	32.4	19.3	88.8	NNE	.7	5.5	A.-Cu.	E	Cu.		------	
25	61.28	26.4	32.2	20.6	85.5	NNE, ENE	.7	7.5	A.-Cu.	E	Cu.-N.		------	≡ a.
26	60.37	25.9	32	20.6	86.1	NNE	.8	2.2	Ci.-S.		Cu.		------	≡ a. ∞ p.
27	60.06	24.7	31.8	17.5	84	NNE	.6	1.8	A.-Cu.		Cu.		------	Ω² ≡ a. ∞ p.
28	60.07	24.9	31.9	19.5	90.1	NNE	.7	6.2	Ci.-S.	SW	Cu.		------	Ω² a. ○² p.
29	59.61	23.7	31.2	17.5	90	N	.5	4.2	Ci.-S.		Cu.	NE	------	Ω² ≡ a.
30	59.33	24.9	29.4	20.5	90.8	W	.5	6.7	A.-Cu.		Cu.		------	≡ a. ∞ p.
31	59.91	24.4	29.9	19.5	90.7	WNW	.5	5.8	A.-Cu.		Cu.		------	≡² a. ∞ p.
Mean	760.20	25	31.4	19.4	85.1	------------	.9	6.9	------------		------------		------	
Total	--------	------	------	------	------	------------	------	------	------------		------------		14.7	

[1] The readings of this thermometer have been found to be 1.0 °C. too low.

METEOROLOGICAL DATA, ETC.—Continued.

SAN ISIDRO.

[ϕ=15° 22′ N; λ=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force. (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		01-2	0-10.			mm.	
1	760.58	24	31.5	17.5	80.2	N	0.2	7.8	Ci.	Cu.-N. NNE	------	Ω^{2} a.
2	59.92	24.6	30.7	20	79.2	NNE	.3	6.7	A.-Cu.	Cu.	------	Ω^{2} p.
3	60.66	25.4	32.8	18.8	70.9	NNE	.3	5.7	A.-Cu. N, E	Cu.-N. NE	------	Ω^{2} p.
4	61.50	24.1	29.6	18.5	73.7	NNE	.8	7.5	A.-Cu. E	Cu.-N. E	------	≡ a. d° Ω^{2} p.
5	62	23.7	31.8	18.5	74.5	N–E	.5	5.7	Ci.	S.-Cu. SE	------	≡ a.
6	60.61	23.7	31.7	16.2	74.5	N	.3	6.5	Ci.	S.-Cu.	------	≡ a.
7	59.80	22.8	31	16.7	71.8	NNE	.2	6.7	Ci.	Cu.-N. SE	------	≡ a. Ω^{2} p.
8	59.52	21.8	31	13.2	73.2	NNE	.3	6.5	Ci.	Cu.-N.	------	≡ a. Ω^{2} p.
9	59.19	22.6	31.4	14.2	73.2	N	.3	7.5	Ci.-Cu.	Cu.-N. NE	------	≡ a.
10	59.22	24.5	32	18	72.2	NNE	.5	8.2	A.-Cu. NE	Cu.-N. NE	------	d a. Ω^{2} p.
11	59.60	25.5	31.6	19.2	72.1	N, NNE	1.3	7.7	A.-Cu. NE	Cu.-N. NE	------	Ω^{2} p.
12	60.27	25.2	33.2	17.8	71.7	NNE	.5	8	A.-Cu. NE	Cu. NE	------	
13	60.39	25.4	31.7	21.9	78.3	NNE	.3	9.5	------------	Cu.-N. E, ENE	------	d a. and p.
14	61.20	25.8	32.5	20.4	77	NE–ESE	.5	6.7	A.-Cu. E	Cu.-N. ENE, ESE	------	d a. Ω^{2} p.
15	62.34	25.8	33.3	20.1	69.7	ENE	.2	6.3	A.-Cu. E	Cu.-N. NE	------	
16	62.14	23.6	31.3	17.2	74.2	ESE–NNE	.7	7	Ci.	Cu.-N. E	------	≡ a. d p.
17	61.98	24.9	31	19.6	73.2	E	.7	7.3	A.-Cu. E	Cu. E	------	Ω^{2} p.
18	61.31	23.4	30.2	17.5	74	E	.7	7.5	A.-Cu. E	Cu.-N. E	------	
19	61.85	23	31.8	15.9	72.2	E	.5	6	Ci.	S.-Cu.	------	d ≡ a.
20	62.06	24.2	32.9	16.5	70.2	E	.5	7	Ci.-Cu. E	Fr.-Cu. ESE	------	Ψ
21	62.17	25.3	31	19.6	70.3	E, SE	.5	7.3	A.-Cu. E	Cu. E	------	Ω^{2} ≡ a. Ψ
22	62.09	23.8	31.2	17.7	72.5	E	.5	7.2	A.-Cu. E	Cu. E	------	Ψ
23	61.87	24	33.8	16.5	73.9	E	.3	5.8	A.-Cu. E	Cu. E	------	≡ a. Ω^{2} p. Ψ
24	62.24	25.2	33.2	18.5	72.7	E	.7	6.3	A.-Cu. E	Cu.-N. E	------	Ω^{2} ≡ d a. Ψ
25	62.27	25.8	33.1	20.1	69	ENE, E	.5	6.8	A.-Cu. E	Cu.-N. E, ESE	------	
26	61.53	25	33.2	19	69.2	NNE, ENE	.3	5	Ci.	Cu. E	------	Ω^{2} ≡ a.
27	60.92	24	32.6	15.7	70.4	E	.5	6.8	A.-Cu. E	Fr.-Cu. E	------	≡ a. Ψ
28	60.91	25.2	32	17.5	66.8	E	.5	7.8	A.-Cu. E	Cu. E	------	Ω^{2} ≡ a. Ψ
29	60.36	24.8	33.8	16	70.2	WNW, ENE	.3	6.8	A.-Cu. E	Cu.	------	≡ a.
30	59.83	25.9	34.7	19.3	68.7	NE, WNW	.2	6.2	A.-Cu. Var.	Fr.-Cu. WNW	------	≡ a.
31	60.70	26	33.1	19.9	69.2	WNW	.7	6.8	A.-Cu. NNE–E	Cu.-N. E, NNE	------	Ω^{2} ≡ a. d p.
Mean	761	24.5	32.1	18	72.5	------------	.5	6.9	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	------	

DAGUPAN.

[ϕ=16° 03′ N; λ=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force. (mean).	Clouds. Amount (mean).	Clouds. Upper.	Clouds. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.				
1	760.44	24.2	28.9	18.9	73.8	E, NW	1.2	8.5	Ci.-S. S	Cu.	------	Φ Ψ ∞^{2} a. and p.
2	59.18	25.9	32.4	20.7	71.2	SE, S	1	8.2	Ci. SSE	S.-Cu. ESE, E	------	Ω a. ∞° p.
3	59.97	25.8	33.5	21.5	66.3	S	1.2	4	Ci.	S.-Cu. ENE	------	∞ Ω p.
4	60.68	25.2	31.9	21	69	S	1.5	5	Ci.	Cu.	------	Ω Φ a. d ∞ p.
5	61.17	25.2	32.3	21	66.2	S	1.2	6.2	Ci.	S.-Cu. NE	------	∞^{2} p.
6	59.71	24.6	30	21.1	66.5	S, N	.8	3.7	Ci. W, S	Cu.	------	Φ Ψ ∞^{2} p.
7	58.93	23.3	30.6	18.9	53.5	SE	1.2	2.3	Ci.	Cu.	------	Φ ∞^{2} p.
8	59.19	21.9	28.4	14.3	61.3	S, N	1	2.7	Ci.	Cu.	------	Φ ≡^{2} Ω^{2} a ∞^{2} p.
9	59.15	21.8	28.2	14.6	73.5	NW	.8	4.2	Ci. S	Cu.	------	Ω Φ ⊕ ◯ ∞^{2}
10	58.70	23.4	30.3	18	75.5	Variable	.2	3.8	Ci. SSE	Cu.	------	Ω ≡° Φ ∞
11	59.03	24.8	29.8	20.4	66.3	Variable	.7	4.2	Ci.-S. SE	Cu.	------	∞^{2} Ω p.
12	59.56	25.8	32	21	65.2	Variable	.8	3.7	Ci.-S. SE	Cu.	------	∞ p.
13	59.77	26.1	33.5	21.5	77.8	Variable	.3	6	------------	S.-Cu. ESE	------	∞^{2} a., p. d.
14	60.27	26.6	32.6	22.9	75	Variable	1.3	4.7	Ci. SSW	S.-Cu. E	------	∞ d p.
15	61.41	26.2	34	22	66.7	SE	1.5	6.2	Ci.-S. NW by W	S.-Cu. NNE	.8	∞° a.
16	61.28	25.5	31.7	21	68.7	SE, N	1	3	A.-S.	S.-Cu. E	.8	∞ p.
17	60.84	25.7	33.6	21.7	65.5	S	1.5	4.8	A.-S.	S.-Cu. SSE	------	∞^{2} d p.
18	60.34	25	32.4	20.7	66.2	S	1.5	2.5	A.-Cu. N	Cu.	1.3	∞ a. and p.
19	60.98	25.8	33.6	20.7	63.2	S	1.5	6.2	Ci.	S.-Cu. SE	------	∞$_{2}$ d p.
20	61.44	25.3	31.5	20	68.5	SE, NW	1	6.5	Ci. W by S	Cu.	------	∞^{2} a and p.
21	61.49	25	32	20.5	70.2	S	1.2	3	Ci. W by N	Cu.	------	∞ p.
22	61.13	25.2	33.6	18.5	69.2	Variable	.8	1	Ci.	Cu.	------	≡° Ω ∞
23	61.54	23.9	29.2	18.3	77.8	NW	1	1	Ci. SW	Cu.	------	≡ Ω^{2} ∞^{2}
24	61.73	24.6	33.4	19.2	76.8	Variable	1	1.7	A.-S.	Cu. SE by E	------	≡^{2} Ω^{2} ∞^{2}
25	61.41	26.4	34.6	20.2	66.5	S	1.2	2.2	A.-S.	Cu. ENE	------	Ω ≡ a. ∞^{2} p.
26	60.48	26.3	35	20	66.8	S	1.5	2.2	A.-S.	Cu.	------	Φ^{2} a. ∞^{2} p.
27	60.01	24.8	34.5	17.2	67.8	SE	.8	2.8	A.-S.	S.-Cu. ESE	------	Ω ≡ ∞^{2}
28	59.86	25.1	32.2	19	73.3	SE, N	1	3.5	Ci. SSW	Cu.	------	Ω ≡ ∞^{2}
29	59.83	24.4	30.7	18.7	73.2	SE, NW	1.7	1.5	A.-S.	Cu.	------	Ω ≡ ∞^{2}
30	59.66	26	30.4	23.5	73.7	NW	2.3	3.8	A.-S.	Cu.	------	Φ° ∞^{2}
31	60.57	25.4	29.2	21.6	76.8	NW	2.2	4	Ci.	S.-Cu. NW	1.3	Φ° ∞
Mean	760.31	25	31.8	20	69.4	------------	1.2	4.1	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	4.2	

METEOROLOGICAL DATA, ETC.—Continued.

VIGAN.

[ϕ=17° 34′ N ; λ=120° 23′ E ; barometer above sea, 24 meters ; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	761.03	25	29.2	21.5	94.5	N	0.3	5.3	Ci.-S.	S.-Cu. ESE	------	
2	60.16	25.2	30	21.1	88.4	NW-NE	.7	4.7	Ci.-S.	S.-Cu.	------	Φ Ω° ⊕ a.
3	60.67	27.3	31.5	24.3	74.2	NE	1	5.3	Ci.	S.-Cu. SSE	------	
4	61.17	27.1	29.9	23.5	74.5	Variable	.5	3.3	A.-Cu.	Cu.	------	
5	61.94	26.4	29.2	24.2	61.5	NW	.5	6	A.-Cu. SW	S.-Cu.	------	d° ⌒ a.
6	61.09	25.9	30.9	22	50	ENE	.8	1.5	Ci.	S.-Cu.	------	
7	60.20	24.8	28.7	22.5	43.2	NE	1.5	2.8	Ci. SE	------	------	
8	59.97	23	27.8	20.5	57.9	NNW	.5	1.3	Ci.	Cu. NE	------	
9	59.68	23	27.1	19.1	64.4	NNW	1.2	2.2	Ci. SE by S	Cu.	------	
10	60.01	24.7	28.8	19.1	59.2	N-NE	2	2	Ci. S	Cu.	------	
11	59.77	26.4	29	24.6	48.4	NE-E	3.3	3.7	Ci. S	S.-Cu.	------	
12	59.92	27.2	29.2	24.8	52.9	NE	.3	2.8	A.-Cu. SW by S	Cu.	------	≡° a.
13	60	27	29	24.5	70.2	ESE,SSW	.3	4	A.-Cu. SSW	Cu.	------	≡° a.
14	60.96	26.7	28.6	24.8	78.3	NW	.2	5.2	A.-Cu. S by W	Cu. N by E	------	≡ a.
15	61.90	26.4	28	24.6	69.2	NNE	.7	1.5	A.-Cu. SSW	Cu.	------	∞ p.
16	61.60	26.4	29	24.7	63	NNW	.2	1	A.-Cu.	Cu. NW by N	------	≡ a ∞ p.
17	61.20	25.9	27.5	24.5	61	Variable	.7	2.8	A.-Cu.	S.-Cu.	------	≡° a. ∞ p.
18	60.75	24.9	27.2	22.6	62.7	W by N.	.2	.2	Ci.	Cu.	------	≡ a.
19	61.46	24.3	27	21.2	68.3	ESE,WSW.	.3	.5	Ci.	Cu. W by N	------	≡² a.
20	61.95	24.7	27.1	22.5	72.6	ESE,WSW.	.3	.7	Ci. S by W	Cu.	------	≡ a.
21	61.90	24.5	26.9	21.3	75	SE by E, W	.3	.3	Ci.	Cu.	------	≡ a.
22	61.59	24.6	27.4	22	69.5	SE by E, S	.3	.2	A.-Cu.	Cu.	------	≡ a.
23	62.36	23.7	26.8	20.2	76.8	NNE	.8	.3	Ci.	Cu.	------	Ω ≡ a ∞ p.
24	62.13	24.6	28	20.7	74.2	NNW	.2	0	------	Cu.	------	Ω ≡² a.
25	61.94	25.5	27.6	23	77.5	WNW	.2	.7	Ci.-Cu.	Cu. N	------	Ω ≡ a. Φ
26	61.15	25.2	27.5	23.7	75.7	SSW, W by N	.3	.5	A.-Cu.	Cu. SW by W	------	Ω ≡ a.
27	60.69	24.4	27	21.4	76.8	E	.2	.7	A.-Cu.	Cu. SW by S	------	Ω° ≡ a.
28	60.77	25	27.1	22.7	73.4	Variable	.7	.7	Ci.	Cu. SSW	------	Ω° ≡ a. ∞ p.
29	60.60	24.4	27.2	21.5	75.8	W, N	.5	1	A.-Cu. NE by N	Cu. NNE	------	≡ a.
30	60.26	24.3	27.2	22	76.5	N-NE	1.2	.2	A.-Cu.	Cu.	------	≡² a.
31	61.28	23.3	25.4	21.9	71.8	NNE	3.2	.5	A.-Cu. SSW	Cu.	------	
Mean	760.97	25.2	28.1	22.5	69	------	.8	2	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	------	

APARRI.

[ϕ=18° 22′ N ; λ=121° 34′ E ; barometer above sea, 5 meters ; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.	Clouds. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	763.07	22.8	26.5	19.5	87.3	SW	0.2	10	------	S.-Cu. E	------	
2	63.37	22.6	24.2	20.5	83.2	NE	2	9.5	Ci. SW	N. NE	8.6	⌒ p.
3	64.27	22	22.8	19.8	84.5	NE	2.3	10	------	N. NE	3.8	
4	64.32	22.9	26	19.6	82.5	E	1.2	9.5	------	S.-Cu. NE, E	1.5	
5	64.58	22.1	26.4	20	86	E	.8	8.8	------	S.-Cu. E	8.1	
6	63.78	23.4	25.8	20	74.8	NE	2	5.5	A.-Cu. SE	Cu.-N. NE	------	d p.
7	62.66	23.2	26	21	68.5	E	1	2.7	Ci.	S.-Cu.	6.1	
8	61.86	22.5	24.5	18	70.3	NE	1.3	10	------	S.-Cu. E	1.8	
9	61.92	23	26.4	18	77	NE	2	9.2	A.-Cu. E	S.-Cu. E	2.3	
10	63.17	22.7	25.2	19.6	78.8	NE	2.5	9.5	------	S.-Cu. ENE	3.3	
11	64.50	20.8	22.4	19.1	85.2	ENE	2.5	10	------	Cu.-N. E	4	
12	63.83	21.8	24.2	19.4	89	ENE	2	9.2	Ci.	N. ENE	4.6	
13	62.03	23.4	26.1	21	90.2	E	.8	8.3	A.-Cu. SE	S.-Cu. SSE	------	
14	62.33	23.8	27	21.5	87.5	SSW, NE	1	8.5	A.-Cu. S	S.-Cu.	------	
15	64.73	23.6	24.5	21.4	81.5	NE	1.7	10	------	S.-Cu. NE	------	
16	63.68	22.7	27	20.5	86.7	NE-SE	1.2	10	------	S.-Cu. ENE	------	
17	63.40	22.9	26.1	20	83.2	E	.7	7	A.-Cu. E	S.-Cu. ENE	------	
18	62.92	22.9	26.3	19.5	83.2	E	.7	9.3	A.-Cu. E	S.-Cu.	3.6	
19	62.95	22.6	26.6	19.5	84.6	SE, NE	.8	5.3	A.-Cu. N	Cu.-N E	------	
20	62.38	23.3	28.1	17.5	86.2	SE-SW	.8	3.2	Ci. S	Cu.	------	Ω∞
21	63.08	23	26.9	18.4	84.9	Variable	1	1.7	A.-Cu.	S.-Cu.	------	Ω ≡ a.
22	62.70	23.5	28.6	19.6	84.8	Variable	1.2	.2	------	Cu.-N.	------	Ω ≡ a.
23	62.72	24	28.7	19	80.2	Variable	1	.3	------	Cu.-N.	------	Ω ≡ a.
24	63.96	23.3	26.6	20.4	89	SW	.5	5.7	------	S.-Cu. ENE	------	
25	62.63	24.2	29.4	20.1	84.1	S	1.3	.2	------	S.-Cu.	------	Ω ≡ a.
26	61.22	24.6	30.1	21	77.7	S	1.5	0	------	------	------	Ω ≡ a.
27	60.79	23.8	29.5	20.4	82.5	S	1.5	0	------	------	------	Ω ≡ a.
28	61.07	23.9	29	20.4	79.8	Variable	1.2	0	------	------	------	Ω ≡ a.
29	60.45	24.1	29	18.6	77	Variable	1.2	2.2	------	S.-Cu.	------	Ω ≡ a.
30	61.14	24.4	27.2	21	81.3	NE	2.2	10	------	S.-Cu. E	14.1	
31	63.26	21.3	22.8	19.4	87.2	NE	2.2	10	------	N. NE	21.3	
Mean	762.86	23.1	26.4	19.8	82.5	------	1.4	6.3	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	83.1	

METEOROLOGICAL DATA, ETC.—Continued.

SANTO DOMINGO.

[ϕ=20° 28′ N; λ=121° 59′ E; barometer above sea, 18.7 meters; gravity correction not applied, —1.51 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction.			
									Upper.	Lower.		
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	763.50	22.4	26	19.5	84	N	1.2	5.2	Ci.	Cu.-N. ENE	33.9	Ω ≡ a. ↙ ●° p.
2	64.31	19.4	22	17.7	80.8	N-NE	5.2	10	------	N.	27.9	
3	65.30	20.2	22.1	17.7	73.9	N	3.6	10	A.-Cu.	Cu.-N. NNE	8	
4	65.26	21.4	23.4	18	73.6	N	1.4	10	A.-Cu.	N. NE by E	1.6	
5	65.04	22.4	25.2	20.6	72	NNE	1.6	3.6	A.-Cu. SW by W	Cu. NE	------	
6	64.15	22.2	24.8	20.8	64.5	N-NE	2.6	2.2	Ci.	S.-Cu.	------	
7	62.74	21.7	23.7	20.6	65.7	NE	2.6	7.8	------	Cu.-N. NE	2	
8	62.10	21.8	24.9	19.5	64.8	N	2.2	8.8	------	Cu.-N. NE	------	
9	62.39	22.6	25.3	21	69.4	N-NE	2.6	2.6	Ci. W	Cu.-N. NE	------	
10	64.02	20.9	23.2	18.8	76.8	NE	5	9.6	------	Cu.-N. NE	2	
11	65.25	19.8	21.6	18.3	73.8	NE	3.6	10	Ci.-S.	N.	4.4	
12	64.40	21.5	25.6	19	77	NNE	2.2	9.8	Ci.-S.	N.	1.1	
13	62.63	23.3	26	21.7	78.2	E	2.6	4.8	------	Cu.-N. ESE	------	d° p.
14	62.98	22.7	26.6	20.1	82.8	E,NNE	2	8	A.-Cu. W	Cu.-N. NNE	6.7	
15	65.10	21.6	23.1	20	73.3	NNE	2.4	6.4	A.-Cu. W	Cu.-N. E	.2	
16	64.24	22.5	25.4	20.5	75.8	E,ENE	2	7.4	A.-Cu. SW	N.	------	d° p.
17	63.56	23.1	26.5	20.6	73.5	E	1.2	7	A.-Cu.	S.	------	
18	63.27	21.8	23.6	20.5	73.5	NNE	2.6	5.8	A.-Cu.	Cu.-N. E	------	d° p.
19	62.98	21.6	24.7	20.3	81.2	E	1.2	4	------	Cu.-N. E	1.4	
20	62.25	22.2	24.8	20.5	87.7	E	1.2	9.4	A.-Cu. W	Cu.-N. S	15.2	
21	63.56	21.3	22.5	19.9	89.5	NE	2.4	10	------	N. NE	19.5	
22	62.68	22	24.1	20	86	ENE	2	9.6	------	N. NE by E, SE	6.8	
23	62.38	24.7	28.1	21.7	80.7	Variable	2	4.4	A.-Cu.	Cu. W	------	d p.
24	64.21	23.6	26.6	21.2	79.3	NE	2.2	6.4	A.-Cu.	Cu.-N. NE	.4	
25	62.71	24	26.6	22	83.7	E	2.4	8	------	N. S	69	
26	61.29	25.6	28.4	23.5	75.8	E-SE	2.6	3.4	------	Cu. SE	------	
27	60.83	25.9	28.7	24.4	77.7	SSE,E	2.2	3.4	------	Cu.-N. SSE, SE	------	↯ ∞
28	61.28	25.3	28.2	21.6	71.7	E	2	1	------	Cu. SE	------	
29	60.31	24.3	28.8	20.3	80.9	SE-NE	1	3.6	A.-Cu.	Cu. S	------	
30	61.60	21.2	24	19	81	NNE	3.4	7.8	A.-Cu.	Cu.-N. NNE	------	d p.
31	63.59	20.3	24	18.8	78.8	N,NE	2.6	5.6	------	Cu.-N. NE	1	
Mean	763.22	22.4	25.1	20.3	77	------	2.4	6.6	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	201.1	

METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

ISABELA, BASILAN.

[ϕ=6° 43′ N; λ=121° 57′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	26.5	22.6	88	W		48.3	
2	30.3	22.5	75	W		.5	Ω a.
3	31.5	22.4	71	NE			Ω a.
4	31.5	22.3	83	W		3.6	Ω a.
5	29.5	21.9	79	NE			Ω a.
6	29.7	22	81	W			Ω a.
7	30	22.5	79	NW			Ω ≡ a.
8	30	22.3	74	NW			Ω ≡ a.
9	29.5	21.5	76	NW			Ω ≡ a.
10	28.2	21.4	86	NW			Ω a.
11	29	24	79	NW			Ω ≡ a.
12	30	22	76	W			Ω ≡ a.
13	29.5	22.5	81	NE			Ω a.
14	32	23.4	83	NE		15.7	
15	33	22.6	66	NE			≡ a.
16	32.2	23	70	Calm			Ω a.
17	32	20.4	60	SW			Ω a.
18	32.5	20	67	NE			Ω ≡ a.
19	31	20	70	NE			Ω ≡ a.
20	30.2	19.2	79	NE			Ω a.
21	32.5	19	63	NE			≡ a.
22	30.6	19.9	74	NE			≡ a.
23	32.5	19.4	64	NE			Ω a.
24	31	21	71	NE		2	Ω a.
25	33.5	20.9	65	NE			≡ a.
26	32.6	20.8	71	NE		.8	≡ a.
27	33.4	21.5	73	NE			Ω a.
28	33	21.6	71	NE			Ω a.
29	30	21.5	67	W			Ω a.
30	30.2	22	73	W			Ω a.
31	31	20.5	66	NE			Ω a.
Mean	30.9	21.5	73.6				
Total						70.9	

ZAMBOANGA.

[ϕ=6° 54′ N; λ=122° 05′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	27.5	22.5	88	W	2	47.8	
2	30	23.2	76	Calm			
3	30	23	74	WSW	1		
4	30.1	23	80	SSE	2	.8	
5	28.5	22.5	72	S	1		
6	30.4	22.1	67	Calm			
7	31.6	22.4	74	W	1		≡° a.
8	30.6	21.5	71	SE	2		
9	31.5	20.5	85	Calm			
10	29.9	21.5	80	W	1		d a.
11	29.1	22.9	79	S	1	1.8	
12	29.2	22	79	W	2		
13	30.5	23	85	W	2		
14	31.1	23.5	70	E	2	5.8	
15	31.9	23	65	W	2		
16	31.5	23	69	W	3		
17	31.5	20.5	71	SE	2		
18	31	20.5	59	E	2		
19	28.8	21.4	70	S	1		≡ p.
20	29.5	19.8	70	SSW	1		
21	30.4	21.2	83	ESE	2		
22	30	20.5	68	SW	1		
23	30.9	20	68	SE	2		
24	29.1	22	78	W	1	2.5	
25	31.1	22.5	56	SE	1	2	
26	30.5	23	63	E	2	1.8	
27	31	22.1	76	WSW	1		
28	31.1	20.3	72	W	2		
29	29.4	21	73	W	3		
30	31.5	21	63	W	2		
31	30	21.8	72	SSE	1	5.8	
Mean	30.3	21.8	72.8		1.5		
Total						68.3	

DAVAO.

[ϕ=7° 01′ N; λ=125° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32.8	22.1	65	Calm		19.3	▽
2	32.2	23.1	62	Calm		23.4	
3	32.1	21.9	62	NE	6		
4	32.9	22.4	60	Calm			
5	32.6	23.2	53	Calm			↯ p.
6	31.6	23	60	ENE	2		
7	32.2	22.4	62	NE	6		
8	31.9	22.6	56	Calm			⊤ p.
9	32.3	22.4	59	SE	2		
10	32.6	23	58	Calm			
11	32.3	23.5	54	NE	1		⊤ p.
12	33.3	22	56	Calm			
13	33	23	58	NE	4		
14	32.2	23.8	64	NE	3		d. p.
15	33.7	22.2	56	NE	4		
16	30.2	21.3	64	NE	1		
17	29.8	21.2	69	ENE	2	24.9	
18	30.5	21.1	65	WNW	2		↯ p.
19	30.9	20.3	64	Calm			
20	32	21.8	66	SE	3	15.7	⊤ p.
21	31.5	22.4	66	NE	6		
22	31 7	23.1	70	Calm			
23	31.9	22	57	N	2		
24	32.1	22.7	60	NE	4	27.9	
25	32.8	23	55	Calm			
26	33.4	22.6	57	Calm			
27	32.7	23.2	58	Calm			
28	33.7	23	56	SE	1		↯ p.
29	32.5	23	66	SW	1		
30	33.7	24	58	NE	2		
31	32.3	23.3	62	Calm			
Mean	32.2	22.5	60.6		1.7		
Total						111.2	

CARAGA.

[ϕ=7° 30′ N; λ=126° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	28.1	22.2	95	Calm		63.5	Γ↯ a. and p.
2	28.2	22.3	77	Calm		4.3	∞ p.
3	28.9	22.6	92	Calm		7.6	≡ p.
4	31.4	21.5	67	NE		.5	∞ p.
5	29.2	21.4	77	Calm		.3	≡ p.
6	32.6	22.1	71	SE			∞ a. and p.
7	32.7	22.3	73	SE			≡ p.
8	31.5	21.9	77	E			∞ p.
9	32.5	21.8	65	Calm			∞ a.
10	30.9	21.6	73	Calin			↯ p.
11	32	22.4	77	Calm			↯ d p.
12	31.2	23	71	NE			
13	31	22.6	72	NE		1	∞ p.
14	32.2	23	69	Calm			d a. ∞ p.
15	31.2	22.7	65	N		.8	
16	30.4	23.8	57	N			
17	29.9	20.6	67	NE			▽ d p.
18	30.7	22.2	62	NE		2.8	∞ ▽ p.
19	30.2	20.4	75	NE			∞ ⩛ p.
20	31	21.1	66	NE			∞ ⩛ p.
21	30.6	20.8	68	NNW		7.1	∞ p.
22	29.5	22.1	68	NE		1.5	⌒ a. ⩛ p.
23	31.2	20.7	65	NE			∞ ⩛ p.
24	31.6	22.2	72	Calm		9.4	⩛ ⊤ p.
25	29.4	22.6	89	Calm		32.5	⊤°
26	27.1	21.6	82	NE		8.9	⊤°
27	29.3	22.3	67	NE			d a. ∞ p.
28	30.3	19.9	73	NE			∞ p.
29	30.2	20.4	71	NE			
30	31.4	21	73	NE			∞ p.
31	31.4	21.4	75	N			d°
Mean	30.6	21.8	72.6				
Total						140.2	

METEOROLOGICAL DATA, ETC.—Continued.

DAPITAN.
[ϕ=8° 38′ N; λ=123° 23′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	------	21	70	E	1	4.3	
2	------	22.4	75	E	2	1.5	↯ p.
3	------	24.2	72	E	3	3.3	
4	------	24.8	71	E	3	1.8	↯ p.
5	------	23.4	82	Calm	------	2.8	
6	------	22.5	74	NE	2	1.3	↯ p.
7	------	22.3	75	NE	2	------	d ↯ p.
8	------	22.8	69	E	2	------	Ω ↯ p.
9	------	22.9	73	NW	3	------	↯ p.
10	------	25	79	NW	3	------	↯ p.
11	------	23.6	73	NW	3	------	
12	------	23	72	NW	2	------	
13	------	23.5	68	E	2	------	
14	------	23	72	E	2	8.6	↯
15	------	23.8	73	E	2	30.5	
16	------	23.6	77	E	3	2	⌒ a.
17	------	23.1	65	E	3	------	↯ p.
18	------	22.1	66	E	3	------	
19	------	22.4	69	E	3	------	
20	------	23.2	67	E	2	------	⊕ p.
21	------	21	68	E	2	------	d° p.
22	------	24.6	67	E	2	2.8	
23	------	21	71	E	2	------	⊕ d.
24	------	24.7	65.5	E	3	------	d a. and p.
25	------	24.8	73	E	3	------	
26	------	25.2	68	E	2	1.3	
27	------	24.5	67	E	3	------	⊍ p.
28	------	22.2	65	E	2	------	Ω a.
29	------	22.4	70	E	2	------	Ω a.
30	------	21.6	66	W	2	1.3	
31	------	22.9	68	E	2	------	
Mean	------	23.1	70.7	------------	2.3	------	
Total	------	------	------	------------	------	61.5	

BALINGASAG.
[ϕ=8° 45′ N; λ=124° 44′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.4	20.9	86	Calm	------	4.1	
2	31.9	20.7	77	Calm	------	2.8	
3	30.8	19.7	67	W	1	------	
4	32.2	19	67.5	SW	1	1.5	
5	25.7	20.5	90	Calm	------	23.9	
6	29.5	20.2	77	W	2	33.5	
7	31.4	21.1	75.5	W	2	8.4	
8	32.5	20.9	66	W by S	1	9.7	
9	30.7	21.2	71	W	1	1.5	
10	27.8	21.6	86	SSW	1	9.1	
11	32.5	20.5	70	W	1	1	
12	33	21.8	71	W	2	------	
13	34.8	21	70	WSW	1	------	
14	34	21	65	W by S	1	------	d p.
15	35.6	20.2	61	W by S	1	------	
16	33.8	17.9	57	W by S	1	------	
17	31.2	16.7	61	W by S	1	------	
18	34.8	20.6	50	W	1	------	
19	33.4	16.9	51	WSW	1	------	
20	33	19.4	54	W by S	1	------	
21	34.2	16.6	61	WSW	1	------	
22	34.5	18.6	55	W by S	1	------	
23	32.5	17.8	70	W by S	1	------	
24	31.4	19.6	75	W by S	1	------	d ⌒ p.
25	32.7	19.5	68	WSW	1	------	
26	33	18.7	64	WSW	1	------	
27	35.8	19.2	58	WSW	1	------	
28	33.5	17.8	71	WSW	1	------	
29	30.5	18.1	75	W	1	------	d p.
30	32.9	20.2	69	W	1	------	
31	32.9	19.5	72	W	2	------	
Mean	32.4	19.6	68.1	------------	1	------	
Total	------	------	------	------------	------	95.5	

BUTUAN.
[ϕ=8° 55′ N; λ=125° 31′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	25.6	22.1	------	N	1	16.3	∞ a. and p.
2	26.6	22.1	------	SE	1	.2	
3	26.8	21.6	------	SW	1	4.3	≡ Ω a.
4	28.5	20.9	------	NE	1	3.9	≡ Ω a. ⊤ p.
5	28.8	22.1	------	W	2	113.8	≡ a.
6	26.9	21.9	------	NW	3	23.1	
7	26.6	22.5	------	NW	2	77.5	⌒ a.
8	27.7	23.5	------	NW	4	1	
9	28	23.5	------	N	3	.5	
10	27.8	23.5	------	N	1	2.6	
11	29.9	23.1	------	NNW	1	.2	Ω a. ⊤ p.
12	29.5	22.9	------	NW	1	2.3	Ω ≡ a.
13	29.8	23.2	------	NW	1	------	Ω ≡ a. ⊤ p.
14	30.6	23	------	SW	1	9.1	Ω a.
15	31	22	------	WNW	2	------	Ω ≡ a. ⌒ p.
16	29	20	------	NNW	2	------	Ω ≡ a.
17	27.7	18.5	------	NE	1	------	≡ d a.
18	27.8	20.5	------	NNW	1	------	Ω ≡ a.
19	27.5	19.6	------	NW	2	------	Ω ≡ a.
20	28	20.7	------	NW	2	------	Ω ≡ a.
21	28	19	------	NNW	1	------	Ω ≡ a. ⌒ p.
22	28.1	20.6	------	WNW	1	------	Ω ≡ a.
23	29.6	20.5	------	NNW	1	------	Ω ≡ a. d p.
24	29.5	22.3	------	W	1	4.8	Ω ≡ a.
25	28.5	20	------	Calm	------	3.8	Ω ≡ a.
26	28.6	20.7	------	NNW	1	------	Ω ≡ a.
27	29.1	19	------	WSW	1	------	Ω ≡ a.
28	29.4	19	------	WNW	1	------	Ω ≡ a.
29	28.4	19	------	SSW	1	------	Ω ≡ ⊕ a. d p.
30	28.5	20.5	------	NW	2	2	Ω a.
31	28.6	22	------	NW	2	------	Ω a.
Mean	28.4	21.3		------------	1.5	------	
Total	------	------	------	------------	------	265.4	

YAP (Western Carolines).
[ϕ=9° 29′ N; λ=138° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.2	23.9	90	NE	4	4.3	
2	31	22.7	90	NNE	2	9.1	
3	30.8	23.7	94	NE	3	15.2	
4	26.4	22.1	96	NNE	7	43.9	
5	29.6	21.9	89	SE	4	1.8	
6	31	24.9	88	E	3	10.2	
7	30.5	24.7	83	S	2	1	
8	31.4	24.3	92	E	1	9.9	
9	30.6	24.2	85	SW	2	2.5	
10	31.5	23.2	92	NE	2	18.8	
11	31.8	23.4	95	NE	1	.5	
12	31.9	21.5	87	NE	3	------	
13	31.8	21.9	91	NE	1	.3	
14	30.7	21.8	92	N	2	.3	
15	32.7	21.7	75	E	4	------	
16	31.4	21.3	86	NE	3	------	
17	33.1	22.7	70	N	4	3.8	
18	31.4	20.9	74	NE	3	------	
19	31.6	20.4	77	NNE	3	------	
20	31.2	20.2	71	NE	3	.5	
21	31	21.3	84	NE	4	------	
22	31.2	21.3	73	NE	4	------	
23	31.5	22.4	73	NE	3	.3	
24	31.4	22.8	79	NE	3	1.3	
25	31.5	23.8	89	NE	5	------	
26	31.5	23.4	75	NE	4	1.3	
27	32.7	21.7	75	NE	4	.8	
28	30.2	22.8	84	NE	5	5.8	
29	31.5	22.5	72	NE	5	------	
30	30.7	23.4	75	NE	4	.2	
31	32	23.7	72	NE	3	------	
Mean	31.2	22.6	82.8	------------	3.3	------	
Total	------	------	------	------------	------	131.8	

METEOROLOGICAL DATA, ETC.—Continued.

MAASIN.

[φ=10° 08′ N; λ=124° 50′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	------	------	------	------	------	------	
2	------	------	------	------	------	------	
3	------	------	------	------	------	------	
4	------	------	------	------	------	------	
5	26.1	19.8	88	N	1	14.5	
6	28	23.3	83	NNW	1	57.4	
7	28	23.7	86	NNW	1	------	d ⌒ p.
8	28	24	73	NW	3	------	d a.
9	25.9	23.5	88	NW	1	27.1	u p.
10	26.6	23.6	91.5	NW	4	72.9	u p.
11	28.9	24.8	70	SSE	1	------	d a.
12	28.6	23.4	83	SW	1	------	↯ p.
13	30	22.5	77	SW	1	------	
14	30	23.5	66	E	1	2.5	
15	29.2	21.7	60	E	1	------	
16	29.8	20.5	52	E	1	------	
17	26.5	20.3	84	SE	1	------	d p.
18	29	20.5	57	SW	2	------	
19	27.5	20.4	72	SSW	1	------	d ⌣ p.
20	28.5	20.6	63	WSW	1	------	
21	29.1	20.4	63	NE	1	------	
22	29.5	21	72	SW	1	------	d° p.
23	29.9	21.5	60	E	2	------	
24	29	22	71.5	E	1	7.3	⛈ p.
25	29.7	22.3	60	E	4	------	≡ a.
26	30.5	21.9	64	W	1	------	
27	30.5	22.1	53	E	2	------	
28	29.5	22.6	66.5	SW	1	------	
29	28	22	79	SW	1	4.6	
30	30	21.7	75	SSW	1	------	∞ p.
31	29.6	22.2	63	SW	1	------	
Mean	28.7	22.1	71.1	------	1.4	------	
Total	------	------	------	------	------	------	

BACOLOD.

[φ=10° 41′ N; λ=122° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	27.3	24.5	89	NNE	4	7.6	
2	29.8	23.7	79	NNE	6	20.1	≡ a.
3	27.5	22.9	89	NE	6	29	
4	28.8	23.3	80	NNE	5	------	⌒ d a.
5	27.6	23	79	NE	5	6.6	
6	28	22.1	80	N	5	------	○ d² p.
7	27.4	23.5	81	N	6	.8	
8	28	22.9	68	N	4	.8	○° a.
9	26.5	22.2	88	N by E	2	6.6	
10	25.7	23.7	94	NNW	4	102.9	⛈ p.
11	28	22	82	SW	3	71.1	○° a. ↯ p.
12	29.4	22	84	WNW	3	------	⛈ p.
13	28.9	23.6	78	N	4	------	
14	29.2	24.3	88	NE	5	8.4	⊤ p.
15	28.2	22.5	78	NNE	5	1.8	≡ ⌒° a.
16	28.9	22.5	66	N by E	5	------	
17	28.4	22	65.5	NE	5	------	○° p.
18	28	21	64	N by E	5	------	○° ≡
19	27.1	21.3	77	NNE	4	------	⌒° d.
20	28	20.3	68	NNE	4	------	○° ⌣
21	28.5	19.6	76	NNE	5	------	
22	28	20.3	68	N by E	4	------	d p.
23	28.6	22.4	77	NNE	5	------	
24	29.4	22.9	65	NE	2	------	⌒ a. ●° ⊕ p.
25	30.2	22.8	74	N	6	------	
26	30	22.2	69	NNE	6	------	○° ≡ a.
27	28.6	21	72	N	5	------	≡° a.
28	29	22.8	69	NNE	5	------	≡° a.
29	29.4	20.2	66	N by E	4	------	≡° a. d p.
30	29	22.8	80	NNW	3	------	⌣
31	29.8	21.5	57	NNE	5	------	⌒ a.
Mean	28.4	22.3	75.8	------	4.5	------	
Total	------	------	------	------	------	255.7	

SAN JOSE BUENAVISTA.

[φ=10° 44′ N; λ=121° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p m. Direction.	Wind, 2 p m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32.5	21.4	73	Calm	------	2.3	
2	31.9	22	67	WNW	2	6.4	
3	32.5	21.4	70	N	2	------	
4	32.4	22.4	71	W	2	------	d p.
5	31	22.3	64	WNW	3	------	
6	30	18.5	68	N	5	------	
7	30	19.2	67	WNW	6	------	Ω a.
8	29.2	19	62	N	6	------	Ω a.
9	28.7	18.9	70	N	6	------	Ω a. d p.
10	28.5	23.2	79	N	6	27.4	⛈ p.
11	29.4	22.4	83	SW	2	78.2	↯ p.
12	29.9	22	86	Calm	------	.3	Ω ↯ p.
13	29.3	21.4	86	N	1	------	Ω a. d p.
14	31.9	23.2	80	N	3	5.1	Ω ⌒ a.
15	30.8	21.6	58	WNW	3	------	Ω ≡ a.
16	30.3	19.4	62.5	WNW	1	------	Ω a.
17	31.6	17.7	61	N	5	------	Ω a.
18	30.5	19.3	53	WNW	2	------	Ω a.
19	30.5	18	53.5	N	1	------	Ω d a. ⊕ p.
20	30.4	17.	62	SW	1	------	Ω a. ⊕ p.
21	30.7	18.4	60	NNW	1	------	Ω a.
22	30.6	20.5	63	NNW	2	------	
23	30.8	18.4	64	NW	1	------	Ω a. ⊕ p.
24	31.3	21	69	SW	1	------	Ω° a.
25	31.7	19	61	W	1	------	Ω a.
26	31.4	19.4	62	WSW	1	------	Ω a.
27	31.1	18	66	W	1	------	Ω a.
28	31.4	18.5	67	WSW	1	------	Ω a.
29	30.6	18.9	63.5	N	1	------	
30	30.1	22.8	71	NNW	1	12.7	⛈ p.
31	32.9	20.9	66	N	5	------	
Mean	30.8	20.2	67.4	------	2.4	------	
Total	------	------	------	------	------	132.4	

TUBURAN.

[φ=10° 44′ N; λ=123° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	27.8	23.6	94	Calm	------	9.9	○² ↯² ⌣² p.
2	30.8	22.4	61	NNE	2	9.9	○² a. ↯² p.
3	28.9	23.5	85	N	3	6.9	↙ ●² p.
4	29	23.1	82	N	2	------	d a. and p.
5	27.6	22.6	81	N	3	------	d° p.
6	26.4	22.7	86	N	4	12.4	↙ ●° a. and p.
7	26.5	23.4	82	NNW	4	2.3	↙ ●² a. and p.
8	27	24.6	76	NW	4	------	
9	26.2	24.5	82	NW	4	9.1	↙ ●² a.
10	25.4	24.1	96	NNW	6	154.9	↙ ● ⛈ a. and p.
11	29.3	22.1	80	Calm	------	2.8	⌒² ○² a. ↯² p.
12	28.4	23	82	Calm	------	1.3	↯² p.
13	28.8	22.6	78	Calm	------	------	⌒ a. d ↯° p.
14	28.8	23.5	84	N	4	4.8	
15	29	21.2	76	N	3	------	≡ a. d° p.
16	30	20	48	N	1	------	≡ a. ∞² p.
17	27.8	21.9	72	N	2	1.5	≡° a.
18	28.1	19.4	64	N	2	------	Ω² ≡ a.
19	28.8	19.5	70	N	3	------	Ω² a.
20	27.8	18.5	71	N	1	------	Ω² ≡ ○² a.
21	28.3	19.9	65	N	1	------	≡° a.
22	28	18.9	75	N	1	------	≡° a. d p.
23	31.1	21.4	77	N	3	------	Ω° a. ⊕² p.
24	30.1	21.5	77	N	2	------	d a. ⊕² p.
25	31.1	20.4	71	NNW	2	------	Ω° ≡ a. ∞ p.
26	30.5	20.4	74	N	2	------	Ω² ≡° a. ∞² p.
27	29.1	18.8	78	N by W	1	------	Ω² ≡ a. ∞² p.
28	28.6	22.1	71	N	2	10.4	⌒ a. ∞² p.
29	28.6	21.3	80.5	N	2	------	≡° d a.
30	28.7	22.7	78	N	1	4.1	○² p.
31	28.6	20.9	77	N	2	9.9	≡ a. ∞² p.
Mean	28.6	21.8	76.6	------	2.2	------	
Total	------	------	------	------	------	240.2	

METEOROLOGICAL DATA, ETC.—Continued.

BORONGAN.

[ϕ=11° 42′ N; λ=125° 25′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	29.9	19.4	78	ENE	5	13	↙ ● a. and p.
2	30.1	18.7	75	ENE	4	17.8	↙ ● a. and p.
3	28.1	17.6	84	NNE	4	36.3	↙ ● a. and p.
4	29.4	18.7	78	NE	4	52.6	↙ ● a. and p.
5	27.2	18.9	89	N	3	20.3	↙ ●° a. and p.
6	26.4	17.7	90	NNW	3	35.3	↙ ●° a.
7	28.5	19	81	N	3	1.8	⊖ a. ○ p.
8	29	19.1	75	NW	3	------	d. p.
9	26	19.4	90	NW	1	30.5	↙ ● a. and p.
10	------	14.3	90	SSE	6	76.2	↙ ●² a. and p.
11	------	18.5	81	Calm	------	30.5	↙ ● p.
12	------	19.4	78	Calm	------	48.3	↙ ● a. and p.
13	------	19.3	87	NE	4	31.7	↙ ● a. and p.
14	------	18.7	78	NNE	4	27.9	↙ ● a.
15	------	17.3	75	NE	2	3.6	
16	------	17	70	NNE	3	8.9	
17	------	16.9	72	NNE	4	.8	
18	------	16	67	NNE	2	5.3	
19	------	15.7	69	NE	4	.8	
20	------	14.5	68	NE	2	2.8	Ω a.
21	------	16.8	73	NNE	4	6.4	↙ ●° p.
22	------	15.3	76	ENE	2	22.6	↙ ● p.
23	------	16.7	72	NE	3	5.1	Ω a. ↙ ●⌒ p.
24	------	17.9	76	NE	3	16	↙ ● a. and p.
25	------	18.5	69	ENE	3	1.8	↙ ●° p.
26	------	18.5	63	NE	3	.5	d.
27	------	17.4	70	NE	4	6.6	↙ ●° a. and p.
28	------	16.9	66	NE	4	------	Ω a.
29	------	17.3	83	SE	2	19.8	
30	------	16.3	69	NE	2	------	Ω a.
31	------	15.7	73	NNE	3	1.5	↙ ●° a. ⌒ p.
Mean	------	17.5	76.3	------------	3	------	
Total	------	------	------	------------	------	524.7	

CALBAYOG.

[ϕ=12° 04′ N; λ=124° 36′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	29.3	22.5	94	N	1	10.4	
2	30.5	21	80	NE	1	1	
3	28	22	80	NE	1	17.5	⌒° a.
4	28	21.7	88	NE	1	4.6	
5	29	21	68	N	3	1.5	
6	27.5	20.5	86	NNE	3	12.4	
7	28.5	22	90	NNE	1	11.4	
8	27.7	21.8	72	N	3	.5	
9	26.5	22.5	97	NW	1	50.3	↙ ● a. and p.
10	26.8	23	93	N	5	31.5	↙ ● a. and p.
11	31	22.9	83	NE	1	3.8	
12	30.5	21.5	77	S	1	7.6	↙ ● a. and p.
13	27.5	21	90	NE	1	33	↯ ⌒² a. ⊤ p.
14	29.5	22.9	73	NE	1	11.2	⌒² p.
15	28	20	68	NE	1	2.3	⌒° p.
16	28.7	19	68	NE	1	------	d. ⌒ p.
17	28.5	19.5	64	NE	1	------	⌒° a.
18	29	18	73	S	1	.7	
19	29.5	17.8	57	NE	1	------	
20	28.5	17	75	N	1	3	
21	28.5	18.1	61	NE	1	------	
22	30	18	73	S	1	.5	≡ a.
23	30	21	84	NE	1	.8	
24	30.5	21.5	73	S	1	------	d. a.
25	30	21.5	71	NE	1	1.3	
26	30	19.5	57	NE	1	------	
27	30.5	19.5	63	NE	1	.5	
28	30	20.5	63	NE	1	------	
29	27.8	20	82	NE	1	7.1	
30	30	20	76	NW	1	------	
31	29.5	17.9	94	N	1	2.5	↙ ● p.
Mean	29	20.5	76.5	------------	1.3	215.4	
Total	------	------	------	------------	------	------	

ROMBLON.

[ϕ=12° 35′ N; λ=122° 16′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	26.5	23	92	NNW	1	26.7	
2	29	22.8	78	NW	1	------	
3	28.4	23	71	NW	2	1.5	
4	26.1	22.8	85	NW	2	16.3	
5	28.2	22	66	N	2	------	
6	28.1	21.6	72	N	3	------	d p.
7	28.1	21.4	70	N	3	------	d p.
8	27.1	22	69	N	2	------	
9	26	22.6	80	NW	3	------	
10	26	22.4	77	NW	5	------	
11	26.1	22.3	85	NNW	1	8.9	
12	28.1	23	79	NW	2	1.5	
13	27	23.6	86	NNE	1	5.1	
14	28.5	23.4	80	Calm	------	3.8	
15	28.8	22.4	70	N	2	------	
16	------	22.4	------	------------	------	------	
17	29	22.3	66	NNE	2	------	
18	28.4	22.6	64	NE	1	5.1	
19	28.5	22.8	63	N	1	------	
20	27.4	21.6	60	NE	1	------	
21	27.5	21.5	61	NE	1	------	
22	27.4	21.6	70	N	2	------	d p.
23	28.5	22.5	70	NE	1	------	d a.
24	29	23.2	74	N	1	------	
25	29	23.4	71	NE	2	------	d p.
26	29.8	22.4	68	E	2	------	
27	29	22	68	NE	1	------	
28	29.6	22.1	63	NE	1	------	
29	28.7	21	65	NE	1	------	
30	30.3	22.9	77	N	2	12.7	
31	27.6	22	75	NE	1	------	
Mean	28.1	22.4	72.5	------------	1.7	------	
Total	------	------	------	------------	------	81.6	

GUBAT.

[ϕ=12° 55′ N; λ=124° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	27.2	21.3	89	NE	4	88.9	↙ ● a.
2	29.5	22.3	84	NE	4	5.1	
3	29.7	21	77	NE	6	76.2	
4	27	20.7	94	NE	6	104.1	
5	28.5	20.3	77	NE	4	25.4	↙ ● a.
6	29.9	20.4	73	NE	4	------	
7	30	21	77	NE	3	------	
8	29	20.5	76	N	4	3.8	
9	25.8	21.2	95	N	3	20.8	
10	26.9	22	94	N	7	41.1	
11	29.7	21.5	85	NE	4	64	
12	29	22.1	80	NE	3	5.1	
13	28.3	22	89	NE	4	53.3	↙ ● a.
14	29.8	21.8	81	NE	4	8.1	
15	27.6	20.8	71	NE	4	2.5	
16	31.5	20	69	NE	3	------	
17	29.5	20	73	NE	3	------	
18	28.4	19.9	71	N	3	2.5	
19	29.5	20.2	61	N	4	------	
20	26.8	20	73	N	3	------	
21	29.5	18.9	69	N	4	------	
22	29.6	19.5	84	N	3	8.1	
23	29.5	20.1	77	N	3	18.5	
24	32.5	21.6	85	N	4	------	
25	29.7	21.9	79	N	4	------	
26	30	23	69	N	3	------	
27	29	21	73	N	3	------	
28	30	20.8	73	NE	2	------	
29	27.8	21	84	NE	2	3	⊤ p.
30	30.6	19.4	74	NE	3	10.2	
31	30.5	18.9	74	NE	2	2.5	
Mean	29.1	20.8	78.4	------------	3.6	------	
Total	------	------	------	------------	------	543.2	

METEOROLOGICAL DATA, ETC.—Continued.

SUMAY, GUAM (Ladrones Islands).

[ϕ=13° 22′ N; λ=144° 45′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2. p. m. Direction.	Wind, 2. p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	29	23.8	68	E	5	1.3	
2	27.6	23.8	90	E	5	3.8	
3	28	24	81	SE	5	2.5	↙ ●
4	28	23.6	84	NE	4	1.3	
5	28	23.8	80	NE	5	7.6	
6	28.4	23.6	75	E	2	3.8	
7	28.6	23.6	79	NE	3	2.5	
8	28.6	23	77	NE	3	3.8	
9	29	23.2	71	E	3	1.3	
10	29.6	23.8	81	E	4	-----	
11	29.2	24	63	SE	4	-----	
12	28.4	23.8	77	NE	3	-----	
13	29.6	24	64	E	3	-----	
14	26.4	22	89	NE	1	-----	
15	28.6	21.8	80	NE	1	-----	
16	28.4	22	72	N	5	1.3	
17	27.6	22.8	60	NNE	3	-----	
18	-----	-----	63	N	2	-----	
19	28.4	21.2	68	NW	2	-----	
20	27.4	21	64	NE	2	-----	
21	26.4	18	72	NE	4	1.3	
22	27.8	21	67	NE	5	-----	
23	28	21.4	68	E	4	-----	
24	28.6	21.6	71	E	4	-----	
25	27.8	21.2	71	NE	4	-----	
26	27.8	20.4	71	NE	4	-----	
27	28.4	19	67	E	4	-----	
28	28	18.6	75	E	5	1.3	↙ ●
29	28	19.4	68	E	4	3.8	
30	29.6	19.2	62	NE	3	.8	
31	28	19.2	71	E	3	-----	
Mean	28.2	21.9	72.5	-----	3.5	-----	
Total	-----	-----	-----	-----	-----	36.4	

NUEVA CACERES.

[ϕ=13° 38′ N; λ=123° 12′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2. p. m. Direction.	Wind, 2. p. m. Force.	Rainfall.	Miscellaneous.
	°C	°C.	P. ct.		0-12.	mm.	
1	30	21.5	92	N	1	26.7	
2	26.5	22	95	N	1	12.2	
3	27.4	22.4	71	N	4	6.9	
4	25	22	93	N	4	125.2	
5	29.5	21.5	72	N	4	-----	
6	29.5	21	73	N	4	5.6	
7	28.6	21.7	75	N	4	-----	
8	28.6	21.6	70	N	5	-----	
9	26.8	21.8	95	N	5	30.2	
10	27	21	95	N	5	64.8	
11	26.8	21	85	N	3	23.4	
12	27.5	21.4	84	NNW	2	12.7	
13	28.5	21.5	77	NNW	3	-----	d° a. d p.
14	30	21	69	NNW	3	-----	
15	28.8	22	57	NW	3	-----	
16	29	20.6	61	NW	2	-----	
17	29.5	18.4	60	NNW	3	-----	
18	29	17.5	62	NNW	3	-----	
19	29.5	20.4	75	NW	3	-----	
20	29	16	59	NW	3	-----	
21	30	15.5	65	NW	2	-----	
22	31	17	65	NW	2	-----	
23	31.5	18.5	66	NW	3	-----	
24	30.5	21	69	NW	3	-----	
25	31	21	71	NW	3	-----	
26	32	17.8	41	E	2	-----	
27	31.5	17.4	43	NW	2	-----	
28	32	16	64	NW	4	-----	
29	31	17	72	NW	2	-----	
30	31.5	15.5	65	N	3	-----	
31	31.5	19.5	67	NNW	4	-----	
Mean	29.4	19.8	71.2	-----	3.1	-----	
Total	-----	-----	-----	-----	-----	307.7	

BATANGAS.

[ϕ=13° 45′ N; λ=121° 03′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	-----	-----	-----	-----	-----	-----	
2	-----	-----	-----	-----	-----	-----	
3	-----	-----	-----	-----	-----	-----	
4	28.8	22.7	72	Calm	-----	0.3	
5	32	18.8	83	NNE	1	.8	
6	28.6	17.3	71	SW	1	-----	
7	31.8	16.2	63	SSW	1	-----	
8	31.8	15.5	53	SSW	1	-----	
9	28.9	15.9	57	NNE	1	-----	≡° a d° p.
10	30	21.3	67	NNE	2	-----	↙ ●° p.
11	28.9	22.2	72	E	3	-----	↙ ●°
12	28.1	22	92	E	1	.3	
13	29.2	22.2	90	NE	1	2.3	
14	30.5	21.6	76	E	2	2	
15	30.2	18.4	72	E	1	-----	d° a.
16	31.2	19.2	68	E	1	-----	d° p.
17	30.8	17.7	61	NE	1	-----	
18	28.8	18.1	71	E	1	-----	d° a. and p.
19	30.1	18.7	57	E	1	-----	
20	29.8	17.7	57	E	1	-----	
21	30	15.9	63	E	1	-----	
22	32.8	19	64	E	1	.3	
23	31.8	19	73	NE	1	-----	
24	31.5	18.4	63	NE	2	-----	d a.
25	32.3	21.8	68	NE	2	-----	
26	32.7	20.3	64	E	2	-----	
27	32.6	19.2	67	ESE	1	-----	
28	32.6	19.1	63	E	2	-----	
29	34.9	17	68	SW	1	-----	
30	35.4	22.5	72	SW	1	-----	
31	33.1	20.3	66	SW	1	2	
Mean	31	19.2	68	-----	1.2	-----	
Total	-----	-----	-----	-----	-----	-----	

SAN ANTONIO.

[ϕ=14° 23′ N; λ=121° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	25	20.2	87	E	5	22.4	⌒ a.
2	25	20.4	95	E	1	40.6	
3	23	18.8	88	E	2	16.8	⌒ p.
4	24.5	20	79	NE	6	1.3	⌒ a.
5	23.8	20	87	NE	5	-----	
6	25	20	63	NE	6	-----	
7	25	19.2	61	NE	7	-----	
8	24.6	15	83	NE	2	-----	
9	25.4	15.2	86	NE	2	-----	
10	24.5	19.9	96	NE	3	11.4	⌒ a.
11	23.5	19.5	80	NE	9	35	
12	23	17.2	95	NE	9	57.1	
13	22.5	18	92	NE	5	34.8	⌒ a.
14	26.2	20	75	NE	3	8.9	⌒ p.
15	27	18.8	80	NE	5	2.8	⌒ a.
16	26	19	73	NE	5	6.4	⌒ a.
17	26.2	17.5	83	NE	4	-----	
18	25	17.6	82	NE	3	11.4	⌒ a.
19	25.5	17.4	76	NE	3	-----	
20	25.2	15.8	79	E	2	-----	⌒ p.
21	24	15.2	95	E	3	-----	⌒ p.
22	26.5	15	69	NE	5	-----	
23	25.5	19.5	73	NE	2	-----	⌒ p.
24	27.2	19.4	68	NE	5	11.4	⌒ p.
25	26.8	20.6	91	NE	5	6.9	⌒ a.
26	26.5	19.8	66	E	5	-----	
27	26.8	19.6	72	E	4	-----	
28	27.6	19.1	67	NE	2	-----	
29	27.3	17.4	77	NE	5	-----	
30	27.2	19.5	68	E	2	-----	
31	28.2	19.4	71	NE	2	2.3	⌒ a.
Mean	25.5	18.5	79.3	-----	4.1	-----	
Total	-----	-----	-----	-----	-----	269.5	

METEOROLOGICAL DATA, ETC.—Continued.

SILANG.

[ϕ=14° 14′ N; λ=120° 58′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30	19.6	75	E	2	------	d a.
2	30	20	75	E	3	8.9	Ω a.
3	28.8	19.9	71	E	2	------	Ω ≡ a.
4	27.8	19.2	73	E	2	------	≡ a.
5	26.5	19	78	E	4	------	≡ d a.
6	27.8	15.2	79	NE	4	------	
7	28	16.4	76	E	4	------	
8	27.4	16.6	71	E	3	------	Ω a.
9	28	16	70	E	3	------	
10	28.2	16.2	71	E	3	------	
11	28.8	16.8	71	NE	5	------	Ω
12	29	19	75	E	4	------	Ω ≡ d a.
13	30	20.1	77	NE	5	27.9	
14	28	20	71	E	3	------	
15	28	20	78	E	3	------	d a.
16	28.2	18.7	73	E	2	------	Ω d a.
17	28	18.8	72	E	3	------	d a.
18	27.8	17.4	73	E	3	------	Ω d a.
19	27.8	17.2	73	E	3	------	
20	28.7	15.8	77	E	3	------	
21	28.6	16	70	E	3	3.8	
22	29	15.9	67	E	4	------	
23	29.3	16.7	68	E	3	------	Ω a.
24	29	18.5	71	E	1	1.3	
25	29.2	18.2	71	E	3	------	d a.
26	29.3	18.5	72	E	2	------	≡ a.
27	29.6	18.2	75	E	2	------	
28	29	18	75	E	3	------	
29	29.2	18.2	75	E	2	------	
30	30	18.1	76	E	3	------	Ω a.
31	29.2	18.3	71	E	2	------	
Mean	28.7	18	73.2	------------	3	------	
Total	------	------	------	------------	------	41.9	

CORREGIDOR.

[ϕ=14° 23′ N; λ=120° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	27.6	22.4	72	NE	4	------	
2	28	21.5	78	E	1	11.9	
3	28.4	21.5	66	NE	4	------	
4	27	21	67	NE	4	------	
5	29.2	21.5	57	NE	2	------	
6	28.4	21.3	54	NE	4	------	
7	27.3	19.2	55	NE	4	------	
8	28.7	19.8	51	NE	4	------	
9	29	19.3	56	NE	3	------	
10	29.3	20.1	70	NE	2	------	
11	28	21.2	67	NE	5	------	
12	29	22.6	70	NE	4	------	
13	25.2	21.1	93	N	2	22.6	
14	29.4	21.6	76	N	2	------	
15	29.2	21.5	76	NE	4	------	
16	28.8	21.5	70	NE	2	------	
17	28	21.4	63	NE	2	------	
18	27.3	20.5	73	E	3	------	
19	27	20.5	73	NE	1	------	
20	27.8	18.8	74	NE	1	------	
21	28.8	19.6	70	NE	1	------	
22	28.8	20.3	65	NE	2	------	
23	29.2	21.2	70	NE	1	------	
24	28	21.5	66	E	2	------	
25	29.3	22.4	62	NE	3	------	
26	30.8	19.9	56	NE	1	------	
27	29.4	20.2	60	NE	1	------	
28	29.3	21.2	62	NE	2	------	
29	29.9	20	57	NE	2	------	
30	30.7	22.4	56	S	1	------	
31	30.7	21.7	66	NE	1	------	
Mean	28.6	20.9	66.2	------------	2.4	------	
Total	------	------	------	------------	------	34.5	

BALANGA.

[ϕ=14° 52′ N; λ=120° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	29.7	20.7	69	NE	1	------	
2	29.8	22	69	NE	3	------	
3	31	20.1	57	NE	3	------	ϖ a.
4	27.8	21.5	68	NNW	2	------	d p.
5	31.2	20.1	58	E	1	------	ϖ² Ω a.
6	30.2	18.5	54	E	2	------	
7	29.4	17.9	48	NNW	3	------	
8	30.7	16	46	N	3	------	ϖ a.
9	30.8	15.2	50	N	2	------	
10	31	19	56	NNW	3	------	
11	30.7	20.5	57	NE	4	------	
12	32.2	21	63	ENE	2	------	
13	25.7	23	93	Calm	------	21.1	
14	30.2	21.6	75	Calm	------	------	
15	29.5	21	68	SE	1	------	
16	30.7	18.5	68	NE	1	5.8	Ω² a.
17	27.8	20.1	72	SE	1	------	d p.
18	26.5	20.3	79	Calm	------	------	●° p.
19	29.5	18.6	67	SE	1	------	⊕ p.
20	29	18.4	64	SE	2	------	
21	29.9	20	64	N	1	.3	
22	30.2	20.1	61	Calm	------	------	
23	31.8	17.5	60	N	1	------	Ω² a. ϖ p.
24	30	19.3	75	E	1	1.3	ϖ p.
25	30.1	20.5	75	NNW	1	------	ϖ² p.
26	31.5	19.8	61	NE	1	------	Ω² a.
27	30.6	17.2	61	NE	1	------	Ω² a.
28	30.9	18	53	SE	1	------	Ω² ϖ p.
29	31.7	17.2	49	SE	1	------	Ω² a.
30	32.6	20	51	Calm	------	------	Ω a.
31	32.5	20	54	NE	1	------	d p.
Mean	30.2	19.5	62.8	------------	1.4	------	
Total	------	------	------	------------	------	28.5	

MALOLOS.

[ϕ=14° 41′ N; λ=120° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	29.8	18.4	62	NNE	2	------	d p.
2	29.5	20.7	65	ENE	4	0.5	
3	30.9	18.8	59	NE	4	------	
4	28.9	19.7	58	NE	3	------	
5	29.8	18.4	50	NE	4	------	
6	30.6	16.6	46	NE	3	------	
7	29.6	15.5	42	ENE	2	------	
8	30.8	13.9	34	N	3	------	ϖ° a.
9	30.9	13.8	42	N	1	------	ϖ² a ○° p.
10	31.2	18.4	58	NE	1	------	
11	28.3	19.5	55	NE	6	------	d a. ⌐ϟ p.
12	31.2	18.4	59	NE	2	------	≡ a.
13	27.2	20.8	92	W	1	42.4	
14	30.3	20	64	NE	2	------	≡ a.
15	30	18.7	59	NE	1	------	
16	30.8	16.7	55	NE	2	------	
17	28.8	20.3	59	ENE	3	------	
18	28.8	16.7	65	ENE	1	------	≡ a.
19	28.8	16.8	66	SE	2	------	
20	28.7	16.7	71	SSE	1	------	
21	30.8	18.6	57	NNE	4	------	
22	30	17.7	55	NE	3	------	≡° a ϖ² p.
23	31.8	16.6	54	E	1	------	
24	30.8	19.3	60	NE	1	------	ϖ p.
25	30.8	19.6	55	E	2	------	ϖ p.
26	32.3	19.1	52	SE	1	------	≡ a.
27	30.9	15.5	64	SE	1	------	≡ a.
28	31.4	18.8	59	E	1	------	
29	31.8	16.3	60	SSW	1	------	
30	33.1	19.8	51	N	1	------	
31	32.8	20	48	N	1	------	
Mean	30.4	18.1	57.3	------------	2.1	------	
Total	------	------	------	------------	------	42.9	

METEOROLOGICAL DATA, ETC.—Continued.

PORAC.

[ϕ=15° 05′ N; λ=120° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.9	21	76	NE	1		
2	29.8	22.1	78	NE	2		
3	31.9	21	75	E	2		
4	28.5	20.5	80	E	1		d p.
5	31.6	20.6	73	NE	2		
6	30.6	19.8	73	N by E	3		
7	29.3	18.3	69	NE	2		
8	30.7	17.2	70	N by W	0		
9	31.4	17.5	73	NE by E	1		
10	30.9	20.6	70	NE	3		
11	31.4	21.6	75	ENE	3		
12	33	21.4	74	NNW	2		
13	28.6	23.4	85	NE	2	8.6	
14	29.8	22.1	83	Calm			
15	31.6	20.9	79	NE	1		
16	30.8	19	79	NE	0		
17	28.9	20.5	81	E	1		
18	27.4	18.8	66	Calm			
19	31.4	17.6	52	Calm			
20	31	18	51	Calm			
21	29.6	19.5	56	ESE	2		
22	31.4	18.5	48	Calm			
23	33.4	18.3	42	NE by E	0		
24	31.6	20.8	51	E	3		
25	30.4	21	55	Calm			
26	33.7	21.1	43	Calm			
27	32.5	18	51	ESE	1		
28	31.5	19.3	52	Calm			
29	34.4	17.1	42	Calm			
30	33.4	20.7	48	Calm			
31	32.9	19.9	50	NE	2		
Mean	31.1	19.9	64.5		1.1		
Total						8.6	

ARAYAT.

[ϕ=15° 08′ N; λ=120° 46′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.4	21.5	56	NW	2		
2	28	22.2	60	NE	1		
3	30.4	19.6	52	E	2		
4	27.5	21.6	60	ESE	3		d p.
5	30.5	20.5	48	NE	2		
6	30.9	19.3	43	NW	1		
7	29.5	18.6	42	NW	2		
8	29.9	19.1	38	N	3		
9	29.6	17.5	51	NW	1		
10	30.9	20.5	44	NNW	3		
11	30.4	22.1	51	N	2		
12	30.4	21.2	56	ESE	2		d p.
13	27.9	23.1	77	NNW	1	3.8	
14	31.4	22.6	59	ESE	2		d a.
15	31.1	21.5	50	S	1		
16	30.6	18	53	E	2		
17	28.4	21.1	54	ENE	2		
18	27.6	19	60	NNE	2		
19	30.6	16.3	47	E	1		
20	31.6	17	51	ENE	1		
21	30.4	20.5	55	ESE	1		
22	31	17.8	48	SSW	1		
23	32.1	17.3	48	NW	1		
24	31.4	20	53	ENE	1		d p.
25	30.4	22.5	54	S	1		
26	31.9	20.2	48	S	1		
27	31.1	17	61	S	1		
28	30.6	18.6	55	NW	1		
29	33.1	16	50	W	1		
30	32.4	20	51	N	2		◯ p.
31	32.5	21.1	47	NW	2		d p.
Mean	30.5	19.8	52.3		1.6		
Total						3.8	

TARLAC.

[ϕ=15° 31′ N; λ=120° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.8	18.1	48	N	1		Ω a.
2	30.6	19.4	52	ESE	2		Ω° a.
3	31.6	20.1	50	E	2		Ω a.
4	29.3	19.8	56	E	3		Ω a. d° p.
5	31.4	19.4	51	ESE	1		Ω a.
6	30.6	17.6	44	ESE	2		Ω² ≡
7	28.3	15.4	44	ENE	2		Ω ◯² a. ∞² ⊕ p.
8	29.7	12.4	34	NW	1		Ω a. ∞ p.
9	30.3	13.9	43	NNW	1		Ω² ≡ a.
10	31.3	17	42	NE	1		Ω a.
11	31	19	47	E	3		
12	32.7	18.5	46	ENE	1		Ω ≡° a. ∞ p.
13	30.4	20.5	61	ESE	1		
14	32.9	22.2	58	ESE	1		Ω° a.
15	32.5	20.2	45	E	1		Ω° a. ∞° p.
16	32.3	18	59	ESE	1		Ω ≡ a.
17	31.4	19.2	52	ESE	1	3	
18	30.2	18.8	50	E by S	1		Ω a.
19	31.6	17.1	44	SE	1		Ω ≡°
20	32.1	18.3	46	ESE	1		Ω a. ⊕ p.
21	32.9	20.3	42	ESE	1		Ω ≡° a.
22	32.3	17.5	38	SE	1		Ω ≡° ∞² p.
23	32.2	16.3	44	E	1		Ω ≡ ∞ p.
24	33.2	17.5	49	S	1		Ω a.
25	32.6	18.7	51	SSE	1		Ω ≡ a.
26	33.9	19.7	46	ESE	1		Ω ≡° a. ∞ p.
27	32.7	16.4	50	ESE	1		Ω ≡° a.
28	33.4	17.7	51	ESE	1		Ω ≡° a. ⊍ p.
29	33.8	15.8	46	ESE	1		Ω² ≡ a. ⊍ p.
30	33.2	21.3	47	NE	1		∞ p.
31	32	19.6	52	NNW	2		Ω ≡ a. ∞ p.
Mean	31.7	18.2	48		1.3		
Total						3	

BALER.

[ϕ=15° 47′ N; λ=121° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	29	19.5		E	1		
2	27.5	20.4		NE	2		
3	29.5	21		NE	3		
4	25	19.5		NE	3	1.6	
5	26	19		E	1		
6	27.5	20.6		NE	2		
7	28	18.5		NE	2		
8	27.6	16.7		NE	1		
9	28	17		NE	1		
10	28.8	21		NE	2		
11	26.5	24		NE	2		
12	28	23.6		NE	2		
13	24.5	23		Variable		2.7	
14	26	22.8		E	1	1	
15	25.6	21		NE	2		
16	27.5	20.5		NE	2	1.6	
17	25.5	20		E	2	2.4	
18	24.5	19.5		NE	2		
19	26.7	20		NE	1		
20	27	20		E	1		
21	27	19.8		E	1		
22	28	20		E	1		
23	28.5	19.6		E	1		
24	25.5	22.8		E	1	2	
25	26	21.4		E	1		
26	27.5	22		E	1		
27	26.8	19		NE	2		
28	28	18.5		E	1		
29	29.5	20		NE	2		
30	28.8	22		NE	1	1.7	
31	30.6	21		NE	1		
Mean	27.3	20.4			1.5		
Total						13	

METEOROLOGICAL DATA, ETC.—Continued.

BAGUIO.

[ϕ=16° 35′ N; λ=120° 43′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	21.5	9.3	65	SSE	0	------	
2	21.8	12.2	69	S	0	------	
3	20.7	12	65	SSW	1	------	
4	20.1	11.4	81	SSW	0	2	
5	16.2	11.5	77	S	0	------	
6	18.5	10.2	82	Calm	------	------	
7	18.2	6.5	61	Calm	------	------	
8	19.6	3	62	S	0	------	
9	20.6	4.5	69	SSW	0	------	
10	20.3	8	74	SW	0	------	
11	19.2	11.3	62	SSW	1	------	
12	23.6	12.2	64	SSW	1	------	
13	17.7	12.8	98	WSW	0	5.1	
14	21.2	13.6	81	SW	0	3.6	
15	18.2	12.5	88	Calm	------	------	
16	18	10	85	WSW	0	------	
17	17.3	11.2	84	WSW	0	------	≡ a.
18	17.8	10.2	81	WSW	0	------	
19	17.3	10	78	Calm	------	------	
20	19.1	10.1	76	SW	0	------	
21	19.2	9	75	SW	0	------	
22	19.9	7	74	WSW	1	------	≡ a.
23	20	7.6	76	WSW	0	------	
24	19.5	10.1	81	WSW	0	------	
25	21.1	10.2	77	WSW	0	------	
26	20	10.2	76	WSW	1	------	
27	23.4	8	48	S	0	------	
28	20	9	76	WSW	0	------	
29	21.3	8	68	SW	1	------	
30	21.3	10	74	WSW	0	------	≡ a.
31	19	8.3	81	WSW	0	------	≡ a.
Mean	19.7	9.7	74.5	------------	.2	------	
Total	------	------	------	------------	------	10.7	

SAN FERNANDO UNION.

[ϕ=16° 37′ N; λ=120° 18′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	28	19.8	87	E	2	------	
2	28	19.9	80	E	2	------	
3	28.4	21.3	63	SE	2	------	
4	28.5	19.8	70	NE	3	0.8	
5	28.6	22	57	W	3	------	
6	27.5	20	67	SW	2	------	
7	27.6	15.7	59	SW	3	------	
8	26.8	14.8	70	N	4	------	
9	27.6	15	81	N	3	------	
10	28.4	16	55	S	3	------	
11	27.4	19.8	70	W	3	------	
12	28	20.2	66	SW	3	------	
13	29.4	20.2	62	SW	2	------	
14	28.8	22.2	77	SW	3	------	
15	27.6	20	63	SW	3	------	
16	27.4	20.2	70	SW	3	------	
17	28.4	19.2	70	SW	2	------	
18	27	21.2	69	N	3	------	
19	28.4	18.6	60	W	3	------	
20	27	18.8	69	W	3	------	
21	27.4	18.9	61	W	3	------	
22	27.4	18.7	70	W	3	------	
23	27.4	18.3	72	N	3	------	
24	28	19	73	W	3	------	
25	28.8	19.4	63	W	3	------	
26	28.4	19.6	65	N	3	------	
27	27.6	16.8	62	NNW	3	------	
28	28.2	18.9	67	N	2	------	
29	28	19	71	NW	4	------	
30	27.5	20.2	61	NW	4	------	
31	26.6	18.8	74	NW	4	------	
Mean	27.9	19.1	67.9	------------	2.9	------	
Total	------	------	------	------------	------	.8	

CANDON.

[ϕ=17° 12′ N; λ=120° 26′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	27.8	19.1	64	W	1	------	
2	29.2	20.6	61	WSW	2	------	
3	30.5	23.5	64	S	2	------	
4	29	21.4	64	WSW	1	1.8	
5	29.5	22.1	59	NW	4	1	⌒^{2} a.
6	28.8	20.5	48	NNE	4	------	
7	28.9	18.8	43	S	1	------	
8	27.3	15.9	52	NW	4	------	∞ p.
9	28	16.2	59	W	1	------	⌓ a.
10	29.9	19.6	42	N	5	------	
11	30.5	21.6	54	S	2	------	
12	30.2	23.1	64	WSW	1	------	
13	29.9	21.9	65	SW	1	------	⌓$^\circ$ a.
14	29.2	24.8	72	WNW	1	------	d a.
15	29.7	23.6	65	WNW	1	------	
16	28.5	21.8	61	W	1	------	⌓ a.
17	29.2	21.7	62	NW	4	------	
18	28	21.2	63	WSW	1	------	
19	28.4	21.2	66	WSW	1	------	
20	28.4	20.4	68	WSW	1	------	⌓^{2} a.
21	27.5	19.7	64	WSW	2	------	⌓^{2} a.
22	28.5	20	65	SW	2	------	⌓^{2} a.
23	27.5	19.5	64	NW	4	------	⌓^{2} a.
24	28.5	19.9	63	NW	1	------	⌓^{2} a.
25	29	20.4	70	W	1	------	⌓^{2} a.
26	28.6	21.6	70	NW	3	------	⌓^{2} ≡ a.
27	28.5	19.2	68	W	1	------	⌓^{2} ≡ a.
28	28.6	20.2	63	NW	1	------	⌓^{2} ≡ a.
29	28	21.5	63	NW	2	------	
30	28	20.6	67	NW	4	------	⌓ a.
31	27.5	19.8	62	NNW	5	------	⌓^{2} ≡ a.
Mean	28.7	20.7	61.8	------------	2.1	------	
Total	------	------	------	------------	------	2.8	

TUGUEGARAO.

[ϕ=17° 35′ N; λ=121° 39′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	28.4	17	77	Calm	------	------	d p.
2	29.5	17.5	79	N	2	------	
3	26.3	16.8	78	NNW	2	------	
4	28.6	16.7	88	NE	1	------	⌓ a.
5	28.4	16.8	78	N	2	------	⌓ a.
6	27.7	16.3	79	N	1	1.8	
7	29.5	14.2	65	NE	1	------	
8	25.5	12.7	79	N	3	------	⌓ a.
9	28.3	15.9	69	N	3	------	⌓ a.
10	26	15.5	87	NE	3	------	
11	26.4	16.4	83	NE	4	------	
12	29.8	16.3	81	NE	1	------	⌓ a.
13	30.5	17.6	78	N	1	------	⌓ ≡ a.
14	28.3	18.5	87	NW	1	2.8	
15	27.8	18	74	NNE	1	------	⌓ ≡$^\circ$
16	25.5	15.3	94	NNW	1	4.6	
17	29.9	16.4	79	NE	1	------	d a.
18	27.1	16	75	Calm	------	3	⌓ ≡ a.
19	31.5	15.7	60	WNW	1	------	⌓ a.
20	32.4	13.2	52	NE	1	------	⌓ a.
21	33.2	15.4	52	NE	1	------	⌓ a.
22	33	14.8	48	NW	1	------	⌓ a.
23	34.6	14.4	47	Calm	------	------	⌓^{2} a.
24	30	16	65	NE	1	------	⌓^{2} a.
25	32.7	17.2	50	ESE	1	------	
26	32.6	14.7	42	NE	1	------	⌓ a.
27	34	13.7	39	SE	1	------	⌓^{2} ≡ a.
28	34.3	13.8	49	Calm	------	------	⌓ ≡ a.
29	33.4	13.4	48	ESE	1	------	⌓^{2} ≡ a.
30	32	18.5	56	NW	1	------	
31	30.4	16.8	58	NW	2	------	
Mean	29.9	15.9	67.6	------------	1.3	------	
Total	------	------	------	------------	------	12.2	

NOTAS GENERALES DEL TIEMPO.

En el texto inglés damos en un cuadro un resumen de las observaciones de presión atmosférica y temperatura hechas en las estaciones de primera y segunda clase de nuestro Archipiélago. Por él podrán nuestros lectores formarse una idea bastante aproximada del estado de estos dos elementos meteorológicos durante el próximo pasado Enero de 1907.

Presión y temperatura.—Debido sin duda al período de baja presión de la primera década del mes, la media barométrica mensual resulta en todas partes inferior á la del año pasado: la diferencia máxima es de 1.57 mm. y 1.53 mm. y corresponde á Tacloban y Ormoc, estaciones que se hallaron más próximas al baguio del día 10 de que hablaremos luego. Las medias máximas se observaron generalmente en la 3.ª década y las mínimas en la 1.ª. En Manila, según puede verse en el cuadro correspondiente, la presión atmosférica media de todo el mes se diferencia de la normal en —0.59 mm.

La temperatura también resulta algo menor en todo el Archipiélago que la del año pasado: las máximas diferencias 1.3 °C y 1.6 °C. las dan las estaciones de Tacloban y Olongapó. Las máximas temperaturas 34.7 °C. y 35.0 °C. se observaron en San Isidro y Dagupan los días 30 y 26 respectivamente. Fueron notables los días 8 y 9 por su baja temperatura en Manila y otras estaciones próximas del centro y Oeste de Luzón: las mínimas absolutas en dichos días fueron 15.0 °C. y 15.5 °C. en Manila, 13.2 °C. y 14.2 °C. en San Isidro, 14.7 °C. y 16.3 °C. en Olongapó y 14.3 °C. y 14.6 °C. en Dagupan. La mínima absoluta mensual 15.0 °C., observada en Manila el día 8, es la más baja de cuantas tenemos registradas en este Observatorio desde 1880.

Precipitación acuosa.—Cuanto á la precipitación acuosa, se echa de ver desde luego en el cuadro-resumen que va con el texto inglés cuán escasa fué en el centro y costa occidental de Luzón y cuán abundante por el contrario en la región oriental de Luzón, Visayas y Mindanao. Los mayores excesos de lluvia sobre Enero del año pasado, se han observado en general en las estaciones que se hallaron más próximas al vórtice del baguio del 10. Los días 3, 4 y 5 fueron días de altas presiones en el Archipiélago y á esto se deben seguramente las abundantes lluvias caídas el día 4 en las estaciones del SE de Luzón: sólo en dicho día se recogieron 177.5 mm. de agua en Legaspi, 125.2 mm. en Nueva Cáceres y 104.4 mm. en Atimonan.

DEPRESIONES Y TIFONES.

Sabido es cuán raras veces se presentan en nuestro Archipiélago verdaderos tifones durante el mes de Enero: pero es todavía más raro que penetren en las Islas por arriba del paralelo 10° Norte. Sin embargo, este año de 1907 nos ofrece un caso de estos, y por cierto bien notable por la intensidad con que desfogó el meteoro en las islas Visayas los días 9, 10 y 11. El Sur de Sámar y Norte de Leyte fueron las regiones más castigadas teniendo que lamentar incalculables pérdidas materiales. Las otras islas Visayas, aunque no dejaron de sufrir bastante, fueron, con todo, más afortunadas debido á la deformación que sufrió el tifón una vez dentro del Archipiélago, perdiendo gran parte de la energía é intensidad y aún dividiéndose tal vez en varios centros de poca importancia.

El origen de este tifón se echará fácilmente de ver por las observaciones de Guam, Islas Marianas, y Yap, Carolinas Occidentales, las cuales pueden verse en el texto inglés. Á juzgar por dichas observaciones el tifón se estaba formando al Sur de Guam y SE de Yap los días 3 y 4 de este mes, y el 5 por la mañana había ya pasado por el Sur de Yap, moviéndose al N$\frac{1}{4}$NW Es notable los bajos que se conservaron los barómetros de dichas dos estaciones los días 6, 7 y 8. Como en la región meridional de nuestro Archipiélago se observaron también bajas presiones estos mismos días, parece razonable suponer, que existía en la parte exterior de este tifón un área dilatada de baja presión que cubría á un tiempo la extensión del Pacífico entre Filipinas y las Carolinas Occidentales, incluyendo dichas Carolinas y buena porción de nuestro Archipiélago.

Que en realidad había alguna conexión entre el área de baja presión que se extendía por Visayas y Mindanao del 6 al 9 y el centro ciclónico que se presentó por el Este de las Visayas el 10, lo suponía el Observatorio en la siguiente nota del tiempo dada á 11 a. m. del 10:

Barómetros bajando: en el área extensa de baja presión que durante varios días se extendía por Visayas y hacia el Pacífico, se ha formado un centro que se halla actualmente cerca de Sámar y tiende á cruzar las islas Visayas por el paralelo 12°. Tiempo correspondiente á la segunda señal en el Sur de Visayas y en Mindanao, ó sea en los distritos I y II; tercera señal en los distritos III y IV. Atiendan los observadores del SE de Luzón y Visayas al movimiento del barómetro y role de los vientos para cambiar las señales correspondientes en caso de no recibir aviso del Observatorio. Navegación peligrosa al Sur y en los distritos I y II.

El hecho de haber permanecido algo bajos los barómetros del Sur de Filipinas por espacio de unos tres días contribuyó á que el tifón se presentase al Este de las Visayas de un modo algo inesperado, dando apenas tiempo para tomar las debidas precauciones. Con todo, á 4 p. m. del 9 pudo ya el Observatorio enviar el siguiente aviso á las estaciones más amenazadas del SE del Archipiélago:

Continúan bajando los barómetros por efecto de una depresión que se presenta hacia el ESE. Vientos variables en las costas occidentales y de la parte del Norte en el Este y Sudeste de Luzón, con lluvias en las costas orientales é islas del Sur. Tiempo sospechoso hacia el Sudeste de Manila, en Visayas Orientales y Norte de Mindanao. Tiempo variable en el Oeste del Archipiélago.

Según pueden verse en el diagrama de curvas barográficas[1] que acompaña el texto inglés, el vórtice ciclónico penetró en el Archipiélago á mediodía del 10 por el Sur y muy cerca de Borongan, en donde bajó el barómetro hasta 739.24 mm., mínima registrada á 12:15 p. m., con vientos huracanados del N¼NE, los cuales saltaron luego al SE después de unos cinco minutos de calma relativa y cielo algo claro.

En el texto inglés pueden verse las observaciones hechas en dicha estación por su observador el P. Cesáreo Montes.

Algo más baja fué la mínima barométrica observada á bordo del vapor "Liscum" anclado en Santa Rita, cuyas observaciones agradecemos á su capitán, Mr. M. Harrison. (Véase el texto inglés.) El barómetro bajó hasta 735.6 mm. á 3 p. m. con viento huracanado del NNE. Á 3:10 p. m. hubo calma y duró diez minutos, después de la cual soplaron vientos huracanados del E. aunque su violencia y duración fué mucho menor que la de los vientos que precedieron al paso del vórtice.

Comparando ahora las observaciones hechas en la estación de Borongan y á bordo del vapor "Liscum" se echa de ver: 1) que antes de pasar el vórtice sobre Borongan se dirigía éste no enteramente al Oeste sino algo inclinado al Norte, es decir, al W¼NW; sólo así se explica que fuesen tan constantes los vientos del Norte sin inclinarse al NW por espacio de tres horas antes de la mínima barométrica: 2) que el baguio no se había inclinado aún al SW sino que se movía hacia el Oeste, al cruzar sobre Borongan y aún por algún tiempo después; de lo contrario, si se hubiese dirigido ya entonces al WSW sería difícil de explicar cómo el viento saltó después de la calma al SE y SSE: 3) el baguio se inclinó algo al SW una vez dentro de la Isla de Sámar: á no ser así hubiera pasado por el Norte y no por el Sur de Santa Rita. Los mismos vientos del WNW que soplaron allí con tanta fuerza y constancia y por varias horas consecutivas durante la bajada rápida del barómetro, indican que el tifón demoraba hacia el ENE: por otra parte el role observado en los alrededores de la mínima al ENE y E no deja lugar á duda que el vórtice pasó por el Sur de Santa Rita.

Después de haber cruzado el vórtice por el Sur de Santa Rita, se inclinó de nuevo al Oeste,

[1] Siguiendo el mismo método que en algunos boletines del año pasado, en estos diagramas además de dar la curva barográfica, representamos la dirección y fuerza del viento en la forma común de pequeñas flechas y número de barbas, y la existencia de lluvia por medio de círculos negros. La cantidad de lluvia recogida en cada estación durante el paso del baguio, la damos en números al fin y debajo de la curva barográfica. La letra M. corresponde á la mínima lectura de dicha curva.

como lo prueba el hecho de haber pasado mucho más lejos de Ormoc que de Tacloban, como indican las curvas barográficas que pueden verse en la lámina I. (Plate I, texto inglés.)

Según las observaciones hechas en Tuburan, costa occidental de Cebú, y en Bacolod, costa occidental de Negros, las cuales nos fueron remitidas á su debido tiempo por los respectivos observadores de aquellas estaciones, el baguio pasó por el Norte de Tuburan y á su menor distancia á eso de las 8 ó 9 p. m. del 10, y por el Norte, y á la menor distancia también de Bacolod, en las primeras horas de la madrugada del 11.

Difícil nos es seguir con precisión el curso ulterior de este tifón desde el Norte de Negros hasta el mar de Joló, y más aún desde el mar de Joló hasta el mar de China. Por esta causa en la lámina II representamos con una línea de puntos dicha parte de trayectoria que damos sólo como probable. En la misma lámina se echa de ver claramente la gran deformación que había sufrido el tifón á 6 a. m. del 11; deformación que había aumentado notablemente á 2 p. m. del mismo día, como lo muestran las isobaras correspondientes. En la Isla de Panay no sabemos que los vientos llegasen á ser huracanados en ninguna parte. Con todo, parece ser que el tifón no se deshizo dentro del Archipiélago sino que penetró en el mar de China, pues el observador de Culión hace notar en sus observaciones del día 12 que el tiempo estuvo revuelto dicho día, con vientos fresquitos del ENE por la mañana y del ESE por la tarde. De todos modos, creemos que desde que pasó por el Norte de Negros, no volvió á adquirir la forma de verdadero tifón, sino que siguió adelante su curso en forma de una depresión de poca importancia.

En el texto inglés reproducimos una comunicación que dirigió al Director de esta Oficina Meteorológica el capitán del buque guardacostas "Palawan," que se hallaba en la bahía de Ormoc durante este tifón del 10 de Enero.

SEISMOLOGICAL BULLETIN FOR JANUARY, 1907.

By Rev. MIGUEL SADERRA MASÓ, S. J.,
Assistant Director of the Weather Bureau.

EARTHQUAKES FELT IN THE PHILIPPINES.

12, 4^h 45^m, **Aparri** (NE of Luzon). Oscillatory shocks of intensity III. Direction, N–S; duration about 10^s.

13, 2^h 00^m, **Maasin** (S of Leyte). Oscillatory shock; intensity II; duration, 12^s.

13, 23^h 00^m, **Zamboanga** (W of Mindanao). Oscillatory earthquake of intensity II.

14, 0^h 39^m 56^s,* **Samar, Leyte, and NE of Mindanao.** Earthquake of intensity V. According to information received from Borongan, Tacloban, Surigao, and Butuan, the phenomenon was of greatest intensity at the two last named places, being accompanied by subterranean rumblings, noisy rattling of doors and windows, falling of objects, and ringing of bells. In both places the principal shocks came from a direction between north and northeast. Duration at Surigao, about 45^s.

18, 13^h 56^m, **Ormoc** (W of Leyte. Oscillatory earthquake of intensity III.

18, 20^h 12^m, **Surigao** (NE of Mindanao). Oscillatory shocks. Intensity III; duration 5^s.

19, 3^h 48^m, **Surigao** (NE of Mindanao). Oscillatory shocks. Direction NW–SE; intensity III.

20, 1^h 17^m, **Santo Domingo** (Batanes Islands). Oscillatory shocks. Intensity II; direction ENE–WSW

21, 8^h 35^m, **Zamboanga** (W of Mindanao). Oscillatory earthquake of intensity II.

23, 10^h 40^m,* **Romblon.** Oscillatory earthquake of intensity II, with a repetition at 10^h 59^m.

24, 0^h 49^m,* **Romblon.** From this time until 2^h 57^m no less than seven distinct earthquakes with intensities varying between II and III were felt on Romblon and neighboring islands. Some of the stronger shocks were felt also in the northern part of the Island of Panay.

25, 17^h 55^m, **Caraga** (SE of Mindanao). Oscillatory earthquake; intensity II.

27, 3^h 28^m, **Aparri** (NE of Luzon). Oscillatory earthquake. Intensity II; direction N–S

NOTE.—In the preceding list of earthquakes and in all which henceforth will be published in the MONTHLY BULLETIN, the intensity of the phenomenon is given in the notation known as the scale of De Rossi and Forel. As regards the time, we invariably give that indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. In this case an asterisk (*) calls attention to the fact. Otherwise we simply copy the time given by the observers who sent the notice, which—as has been stated on other occasions—must be considered as only approximately correct. All time indications are given in the official time of the Philippine Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

RECORDS OF THE SEISMOGRAPHS.

[Time of the one hundred and twentieth meridian east of Greenwich. Midnight = 0^h.

No.	Date.	Component.	Beginning.			Maximum range of motion.			End.	Instrument.	Remarks.
			First preliminary tremors.	Second preliminary tremors.	Principal portion.	Hour.	Amplitude (*2 a.*)	Period.			
			h. m. s.	*h. m. s.*	*h. m. s.*	*h. m. s.*	*mm.*	*s.*	*h. m. s.*		
1	2	NNW-SSE	20 08 04	20 12 04	20 17 12	20 18 44	0.02	6	20 54 50	V. M.	Earthquake in Tonga Island.
		WSW-ENE	20 07 09	20 12 12	20 17 39	20 19 43	.32	8	21 07 51	H. P.	
2	4	WSW-ENE	13 25 24	13 31 15	13 34 24	13 40 18	.10	11.2	----------	V. M.	First shock. Earthquake in Nias Island (West of Sumatra).
		NNW-SSE	13 25 34	13 31 42	13 34 35	13 40 44	.12	11.6	----------	V. M.	
		WSW-ENE	13 25 30	13 31 06	13 37 10	13 49 03	2.11	9.6	----------	H. P.	
3	4	WSW-ENE	----------	14 24 31	14 31 35	14 33 27	.06	10.4	15 01 00	V. M.	Second shock.
		WSW-ENE	----------	14 23 03	14 29 09	14 33 25	.88	10.2	15 32 14	H. P.	
4	7	WSW-ENE	16 32 37	----------	----------	16 32 43	.10	2.4	16 36 58	V. M.	Vertical component; amplitude, 0.07 mm.
		NNW-SSE	16 32 38	----------	----------	16 33 56	.08	2.2	16 36 30	V. M	
		WSW-ENE	16 33 02	----------	----------	----------	------	------	16 35 10	H. P.	
		NNW-SSE	16 33 07	----------	----------	----------	------	------	16 34 58	H. P.	
5	8	WSW-ENE	8 00 30	----------	8 01 18	8 01 19	.06	2.4	8 05 33	V. M.	Vertical component; amplitude, 0.11 mm.
		NNW-SSE	8 00 36	----------	----------	8 01 25	.12	2.2	8 05 35	V. M.	
6	12	WSW-ENE	5 44 27	----------	----------	5 45 26	.03	1.6	5 47 00	V. M.	
7	13	WSW-ENE	19 37 43	----------	19 38 10	19 38 34	.14	2.2	19 42 58	V. M.	Vertical component; amplitude, 0.06 mm.
		WSW-ENE	19 37 45	----------	----------	----------	.11	------	19 44 09	H. P.	
8	14	WSW-ENE	1 39 56	----------	1 40 23	1 41 28	.08	2.2	1 55 47	V. M.	Earthquake in Samar, and NE of Mindanao; force V.
9	17	WSW-ENE	13 42 47	----------	13 43 09	13 43 46	.44	2.2	13 47 04	V. M.	Vertical component; amplitude, 0.64 mm.
		NNW-SSE	13 42 47	----------	13 43 01	13 43 01	.23	1	13 48 06	V. M.	
		WSW-ENE	13 42 50	----------	13 43 01	13 43 17	.12	------	13 50 06	H. P.	
10	23	WSW-ENE	2 23 00	----------	2 23 24	2 23 28	.68	2	2 36 04	V. M.	Vertical component; amplitude, 0.49 mm. Earthquake, force II, in Romblon Island.
		WSW-ENE	2 23 04	----------	2 24 21	2 24 37	.75	7.6	2 33 12	H. P.	
11	23	NNW-SSE	10 39 32	----------	10 40 10	10 40 22	.61	2.4	10 46 26	V. M.	Vertical component; amplitude, 0.07 mm. Earthquake, force II, in Romblon Island.
		WSW-ENE	10 39 20	----------	10 40 05	10 40 08	.09	------	10 51 22	H. P.	
12	23	WSW-ENE	18 06 17	----------	18 06 43	18 07 05	.11	2.2	18 12 53	V. M.	
		NNW-SSE	18 06 17	----------	18 06 55	18 07 14	.23	2	18 12 30	V. M.	
		WSW-ENE	18 19 40	----------	18 20 01	18 20 18	.06	2.2	18 26 29	V. M.	Vertical component; amplitude, 0.06 mm.
13	24	NNW-SSE	0 49 08	----------	0 49 22	0 50 32	1.06	2	1 14 44	V. M.	Vertical component; amplitude, 0.51 mm. Many earthquake shocks, force II, III, in Romblon Island and northern Panay.
		WSW-ENE	0 49 04	----------	0 49 39	0 51 43	1.69	8	1 10 30	H. P.	
14	24	NNW-SSE	2 57 00	----------	2 57 33	2 57 36	.04	2	2 58 58	V. M.	
15	25	WSW-ENE	6 27 20	----------	6 28 06	6 28 20	.05	2.2	6 31 57	V. M.	
16	30	WSW-ENE	----------	----------	9 45 04	9 47 00	.04	2.4	9 56 26	V. M.	

Instrumental constants.—Vicentini microseismograph (V. M.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record: NNW–SSE component, 50 times; WSW–ENE component, 50 times.

Horizontal Pendulums (H. P.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation, NNW–SSE pendulum, T=7 seconds; WSW–ENE pendulum, T=6.4 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

Foundation and location.—The instruments are mounted against a solid cut-stone pier measuring 5×5 meters at its base and 3.30×3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above the sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above the sea level.

Geological structure.—The geological formation of the ground is alluvium and beach sand to a deepth of some 14 meters which extends many kilometers toward north and south and only four to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

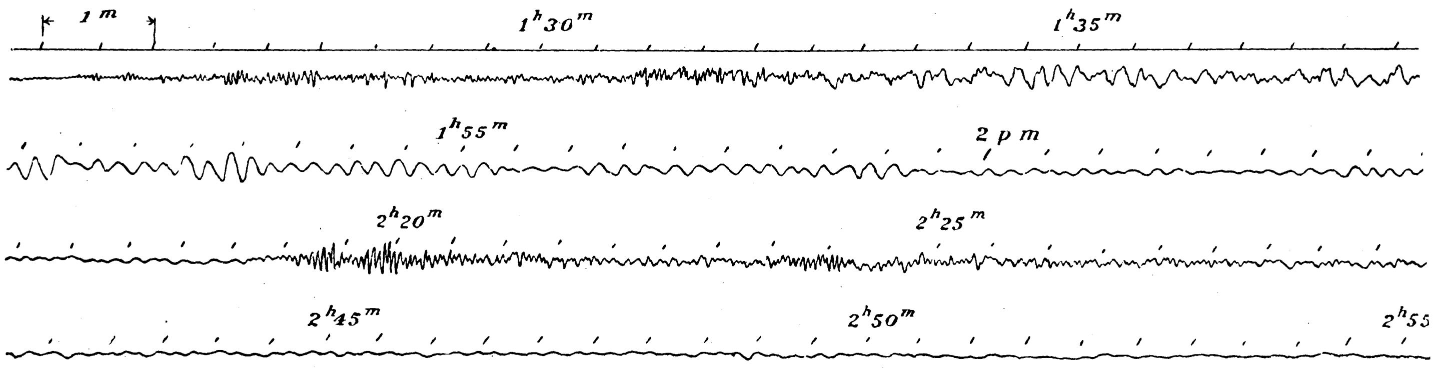
MICROSEISMIC DISTURBANCE OF JANUARY 4.

We publish two seismograms relating to the same phenomenon, the one traced by the Vicentini microseismograph, the other by the horizontal pendulum, which we deem to be of special interest. According to some, not very definite, reports, the earthquake responsible for the disturbance occurred to the southwest of Sumatra. In the Vicentini seismogram two distinct earthquakes are easily recognized, the second of which must have taken place about fifty minutes after the first. Both may have proceeded from one and the same center, though it is not possible to make out the beginning of the preliminary tremors of the second shock, owing to the interference of the slow waves due to the first. It is very strange, that while our Vicentini clearly marked two distinct earthquakes, no such distinction appears on the records received from Europe, nor even on those of Zikawei (Shanghai).

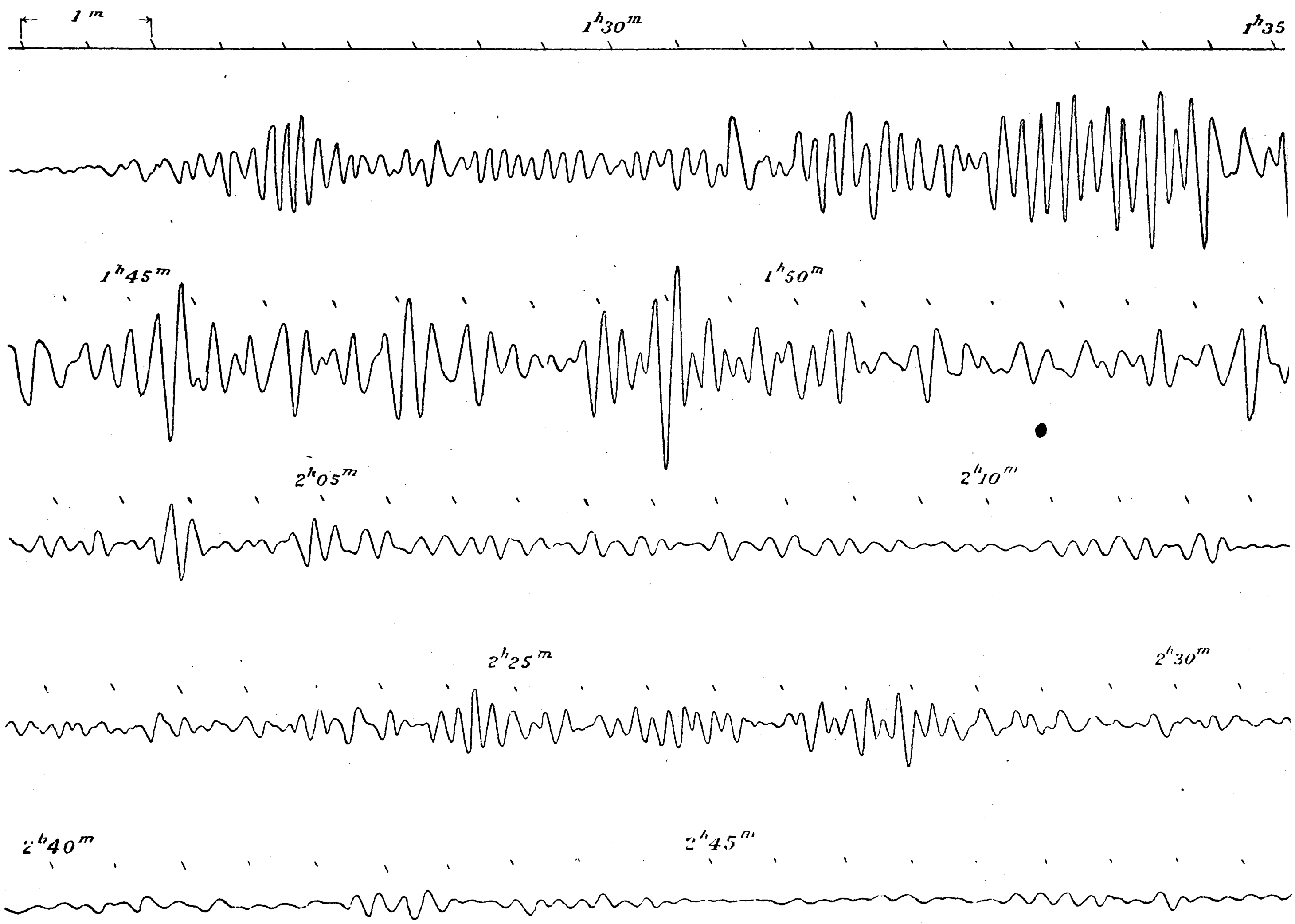
MANILA OB

January

VICENTINI MICROSEISMOGRAPH–MULTIPLICATION= 50 NNW-SSE Component.

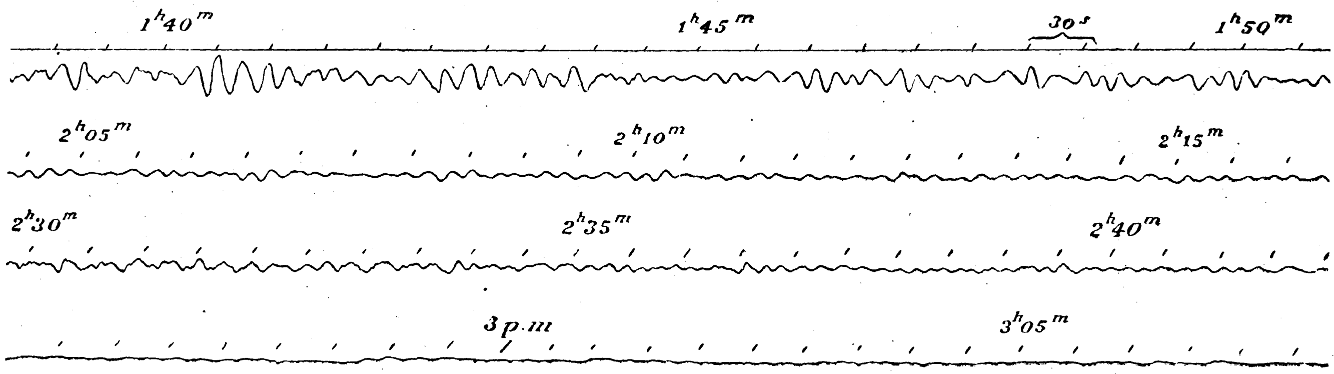


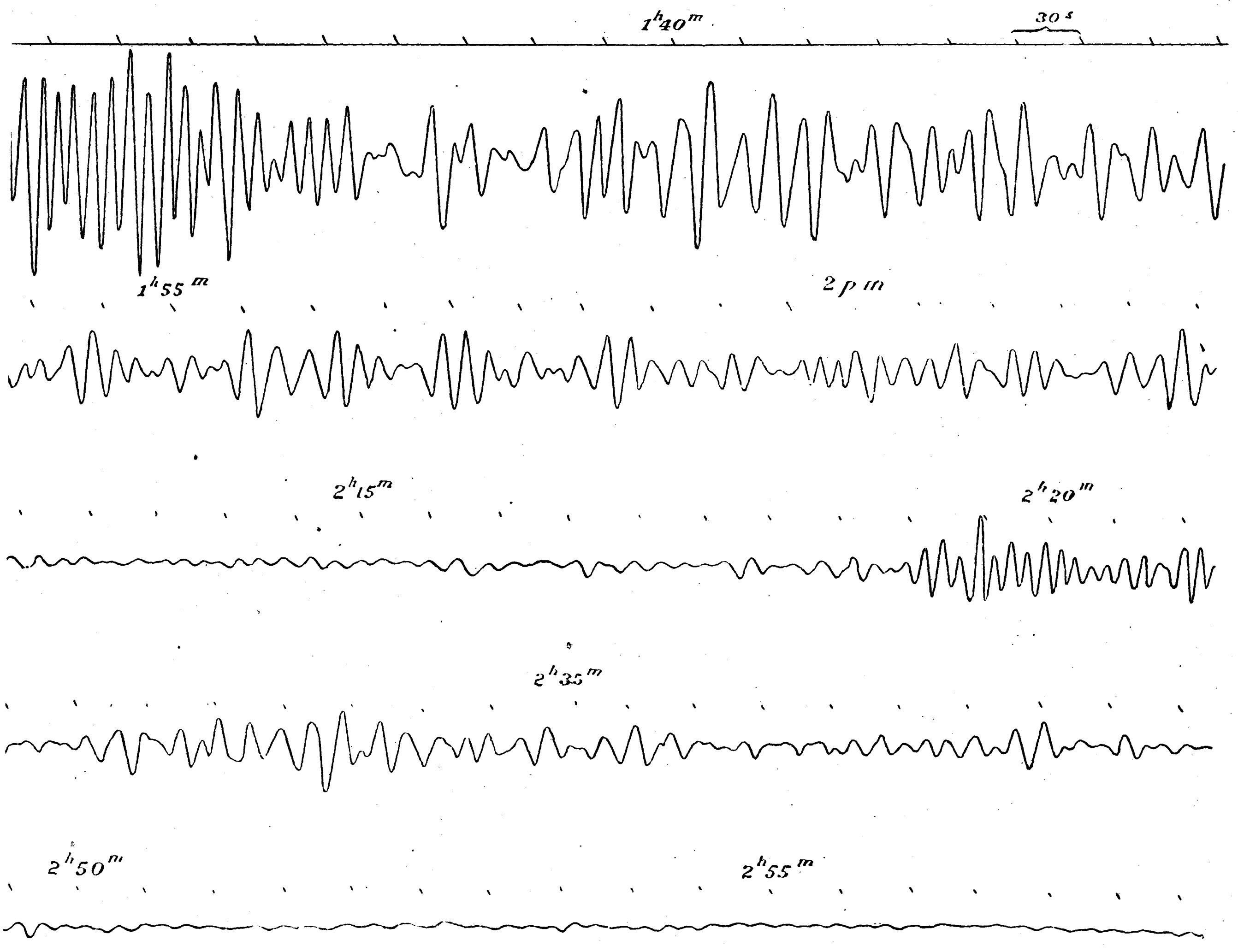
HORIZONTAL PENDULUM.–MULTIPLICATION=15. ENE-WSW. Component.



ERVATORY

, 1907.





TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.

12, 4^h 45^m, **Aparri** (NE de Luzón). Temblor oscilatorio, intensidad III, dirección N–S, duración unos 10^s.

13, 2^h 00^m, **Maasin** (S de Leyte). Temblor oscilatorio, intensidad II, duración 12^s.

13, 23^h 00^m, **Zamboanga** (W de Mindanao). Temblor oscilatorio, intensidad II.

14, 0^h 39^m 56^s,* **Islas de Sámar y Leyte y NE de Mindanao.** Temblor de intensidad V. Según las notas recibidas de Borongan, Tacloban, Surigao y Butuan, tuvo su mayor intensidad en estas dos estaciones, con ruidos subterráneos, grande craqueteo de puertas y ventanas, caída de objetos y toque de campanas. Las principales oscilaciones en ambos puntos procedían de entre N. y NE La duración fué en Surigao de unos 45^s.

18, 13^h 56^m, **Ormoc** (W de Leyte). Temblor oscilatorio de intensidad III.

18, 20^h 12^m, **Surigao** (NE de Mindanao). Temblor oscilatorio, intensidad III, duración 5^s.

19, 3^h 48^m, **Surigao** (NE de Mindanao). Temblor oscilatorio, dirección NW–SE, intensidad III.

20, 1^h 17^m, **Santo Domingo** (Islas Batanes). Temblor oscilatorio, dirección ENE–WSW, intensidad II.

21, 8^h 35^m, **Zamboanga** (W de Mindanao). Temblor oscilatorio, intensidad II.

23, 10^h 40^m,* **Romblón.** Temblor oscilatorio, intensidad II. Repitió á 10^h 59^m.

24, 0^h 49^m,* **Romblón.** Desde esta hora hasta 2^h 57^m se sintieron en la isla de Romblón y en las otras vecinas siete diferentes sacudidas de intensidad II y III. Agunas más fuertes fueron también perceptibles en la parte N de la Isla de Panay.

25, 17^h 55^m, **Caraga** (SE de Mindanao). Temblor oscilatorio, intensidad II.

27, 3^h 28^m, **Aparri** (NE de Luzón). Temblor oscilatorio, intensidad II, dirección N–S.

Nota.—En la precedente lista de temblores de tierra y en las que se publiquen en adelante en el "Monthly Bulletin" la intensidad del fenómeno se indica conforme á la conocida escala de De Rossi y Forel. Respecto de la hora adoptamos la señalada por los seismómetros del Observatorio siempre que alguno de ellos lo registre, distinguiéndola por medio de un asterisco; en caso negativo copiamos la apuntada por los observadores que nos envían las notas, la cual, según se ha advertido ya otras veces, tan solo se debe considerar como aproximada á la oficial de todo el Archipiélago Filipino que es la correspondiente al meridiano 120 E de Greenwich.

REGISTROS DE NUESTROS MICROSEISMOGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

PERTURBACIÓN MICROSÉISMICA DEL DÍA 4.

Reproducimos un seismograma del microseismómetro Vicentini y otro del péndulo horizontal por parecernos muy interesantes. El terremoto lejano que dió lugar á esta perturbación ocurrió, según noticias algo vagas, al SW de Sumatra. En el seismograma del Vicentini aparecen distintamente dos diferentes terremotos; el segundo debió tener lugar unos 50 minutos después que el primero. Ambos pueden referirse al mismo centro, si bien en los seismogramas es imposible distinguir el principio de los movimientos preliminares del segundo por coincidir y combinarse con las ondas lentas del primer terremoto. No deja de llamarnos la atención el que apareciendo en el seismograma de nuestro Vicentini con tanta distinción dos terremotos no haya sucedido lo mismo en los seismogramas de Europa y ni aún en el de Zikawei (Shanghai).

CROP BULLETIN FOR JANUARY, 1907.

By Rev. Miguel Saderra Masó, S. J.,
Assistant Director of the Weather Bureau.

GENERAL NOTES.

In central and western Luzon and in the Visayas the rice is at present being thrashed and the sugar cane crushed in those districts in which the latter has been raised. At the same time new cane and vegetables are being planted. In southeast Luzon, the eastern Visayas, and in Mindanao the rice which has been planted recently is growing; in the eastern part of Mindanao its planting has been delayed by the lack of sufficiently copious rains. The Provinces of Cagayan and Isabela, which suffered so severely from floods during the preceding months, are making every possible effort to replace the tobacco plantations. Unfortunately the supply of seeds available does not meet the demand, hence many people plant corn instead of tobacco.

From the southeast of Luzon still come complaints about the little fruit of the coco trees and the consequent scarcity of copra. The cyclonic center which crossed the Visayas, January 10 to 11, did considerable damage to the hemp plantations and coco groves, especially in Samar and Leyte.

It is a pitiful sight to see in many regions tracts of the richest agricultural land lying fallow, merely for the lack of draft animals. This is the only reason why in many places the crop will not cover local needs, though it has been a very good one. Epizoötia continues to decimate carabaos and other cattle, especially in Leyte and the south of Luzon.

Throughout the southern part of the Archipelago hemp plantations are growing in extent almost daily; in Bohol the planting of maguey or sisal hemp has been begun.

SPECIAL NOTES.

DISTRICT I.

Borongan.—The crops gathered during this month here, on the eastern coast of Samar, are rather poor. This has been brought about by two principal causes—the destruction wrought in the coco and hemp plantations by the typhoon of the 10th, and the scarcity of laborers. Some hope of betterment is inspired by the extent of the new rice plantations and the vigorous growth they show thus far. The condition of the other crops, such as palauan, sweet potatoes, gabe, etc., is likewise by no means bad.

Tacloban.—The typhoon of the 10th of this month has destroyed more than thirty structures, including the municipal building and two churches. Considerable damage has likewise been done to the hemp and banana plantations, the losses being estimated at about ₱13,000. The rice crop has been middling, and the price of said cereal has not fallen as it usually did in other years. This is due in part to the fact that the total production is insufficient, since one-fourth of the area destined to be planted in rice could not be planted, as there were no carabaos with which to plow these tracts. From Naval, Palo, Carigara, and Babatugon comes the information that the cyclone of the 10th created havoc in the hemp and banana plantations, the coco groves, and in the rice and sweet potato fields; several houses suffered likewise from the fury of the storm. The drought has not injured the crops during this month, but the sowing is in many places retarded to a considerable extent by the scarcity of carabaos. At Polo the crops have suffered by the ravages of a species of birds, commonly called *hanaos*, and of a worm known here under the name of *tayangao*. The losses caused by epizoötia at Carigara are estimated to reach ₱500. At Palo the typhoon of January 10 caused the loss of almost half of the crops of rice, bananas, and hemp. Twenty-five houses have been destroyed, all of light materials. On the 11th of the same month we had an inundation within this municipality, especially at Luntad, where the flood stood one meter deep; no accidents happened to man or beast. The bridge of San Joaquin was destroyed by the force of the currents. At Alangalang people were occupied in harvesting the mountain rice which promised a good crop, when they saw themselves deprived of a large part thereof by the violent storm of the 10th. The rice which had already been planted in many of the irrigated fields was swept away by the water. Within the whole jurisdiction of this municipality 385 houses, some of them built of strong materials, have been ruined by the violence of the winds and the torrential rains. In the barrios of San Miguel, San Francisco, Lourdes, and Santiago the creeks rose 3.5 meters, the flood lasting about three hours. On this occasion were lost 150 hogs, 20 goats, and 10 carabaos. The hemp plantations are ruined. The loss will be in the neighborhood of ₱60,000.

Ormoc.—Mr. Francisco Galos reports that the crops of corn, gabe, sweet potatoes, etc., are fair. The winds and rains of these storm experienced on the 10th of the month have damaged the hemp, cocoanut trees, bananas, sugar cane, corn, etc. The locusts have disappeared, but in their stead worms have injured the rice. Epizoötia continues; it has carried off 5 per cent of the carabaos.

Tuburan.—The observer stationed at this place reports bad crops of corn, rice, and sugar, owing partly to the ravages of the locusts. The storm of January 10 and the excessive rains have caused considerable loss in the hemp plantations and in the tobacco and sugar-cane fields. The farmers are at present busy repairing the damages as best they may. A contagious disease among the hogs and poultry has spread considerably.

Cebu.—The agricultural products gathered during this month are in the main the same as those of the preceding. The crop of sugar cane has been fair, which, no doubt, has been the cause of lowering the price of this commodity to some extent. The winds of the last typhoon did not do much damage in the fields of this locality.

Surigao.—One of the operations proper to this month—that is, the transplanting of the rice—has been somewhat retarded by the scarcity of rain. Some hemp has been stripped and some copra made, but not on a large scale. The yield of tubers, ube, gabe, apale, and especially of sweet potatoes, has been fairly good. The latter are the principal, if not the only, resources of the poor people in the country. Rice sells at present for ₱6.25 per cavan, while palay costs ₱3 to ₱4.

Tagbilaran.—During the month of January a small crop of ube (white and red), has been gathered in Tagbilaran, Dauis, Panglao, Valencia, García, Inabanga and Ubay. The corn crop has been very abundant and of good quality at Balilihan and Antequera; fair at Ubay, Jagna, Valencia, Dimiao, García, Hernandez, and Cortes; while in the rest of the towns it has been bad. Fairly good in quantity and quality has been the rice crop at Dimiao, Valencia, Guindulman, Loboc, Bilar, and Ubay, aside from that which is still in the fields, having not yet been harvested. Centers of hemp production are Sevilla, Bilar, Carmen, Batuan, Guindulman, Calape, and Tubigon; of the timber industry, Anda and Candijay. From the two towns just mentioned a large quantity of wood is being exported to Cebu to serve for the construction of the railway line which is being built there. The municipal president of Tagbilaran is authority for the statement that in this locality alone the number of maguey plants set out thus far reaches 200,000; they grow vigorously, above all those taken from the sisal plants of Hawaii. At Ubay surra has carried off about 96 per cent of the horses; at Talibong, Inabanga, and Antequera epizoötia is responsible for the loss of many hogs and a few carabaos. The locusts have damaged some rice plantations, coco groves, and fields of sugar cane at Antequera and Balilihan. At Inabanga they have ruined nearly everything except sweet potatoes and tapioca; although they did not appear at Ubay during the present month of January, they did much harm there during the last months of 1906.

Butuan.—During this month people have been occupied in harvesting the rice crop, which had suffered somewhat from the strong winds of the typhoon which passed over this region on the 8th. At Talacogon sweet potatoes, gabe, and a few other tubers are being planted. In the neighborhood of said town the flood caused by the storm destroyed part of the rice crop. At Cabarbaran hemp is being stripped and sweet potatoes, ube, and gabe are planted. Swarms of locusts have been seen hovering about on the upper Agusan River.

Balingasag.—During this month the rice harvest has been finished. The yield is less than last year. The same is true of sweet potatoes, corn, and vegetables. Unhulled rice (palay) sells here at present for ₱2 per cavan. Small quantities of hemp and copra are being prepared, the current prices in this town being ₱16.50 per pico of the former and ₱8 per pico of the latter. During January 14 carabaos and one cow have died of sickness.

Caraga.—Rain has been scarce during the month, and the drought has retarded the sowing of rice; in some places the plants which had already sprouted withered. The yield of hemp is fair, that of copra less good. No injurious insects have infested the fields, nor has there been any contagious disease among the stock.

Davao.—During the second half year of 1906 the following articles have been exported:

Months.	Hemp.	Almaciga.	Biao.	Balate.	Wax.	Copra.	Leather.
	Picos.	*Picos.*	*Picos.*	*Picos.*	*Quintales.*	*Picos.*	*Picos.*
July	2,033	541	162	9	15	44	----------
August	2,886	526	302	10	7.5	86	6
September	2,277	524	205	41	2.5	72	3
October	2,590	547	510	5	18	29	1
November	1,140	----------	201	3	6	----------	7
December	3,114	628	138	----------	1	8	----------

DISTRICT II.

Capiz.—Mr. Alvaro Alcantara told me during a conversation that this year the sugar cane holds out great promises. On the estate of Cabuc-cabuc alone they will be able to produce between 6,000 and 7,000 picos of sugar, and about the same amount on the estate of Carmen. Other farms will produce 500 to 1,000 picos. On the contrary, rice has been very scarce in the whole locality this year. Mr. Florencio Melocoton, municipal president of Nuevo Washington, informs us that the rice crop of 1906 will not cover local consumption. This is due, not so much to a bad crop, but to the limited extent of the fields, owing to the lack of work animals. Hemp brings at present ₱18 to ₱20 per pico, and copra ₱5 to ₱6.

San Jose de Buenavista.—During the month of January the following were the occupations of the people living on the coast: The fishermen prepared reeds for the construction of their fishing corrals; of the farmers some were busy crushing their sugar cane and planting a new crop of the same, others planted corn or vegetables and tubers, such as tomatoes, radishes, mustard, gabe, ube, and sweet potatoes. Besides sugar cane, there has been harvested a small quantity of corn, tomatoes, gabe, and ube. Sitao, tobacco, garden balsamine, patola, and white squash are growing in the fields. They are doing well. There has been no sickness among the domestic animals.

Iloilo.—From Janiuay comes the information that the weather was fine from January 6 until the end of the month. This enabled people to till their fields and prepare them for the planting of various crops, such as sweet potatoes, bananas, corn, tomatoes, and tobacco. The yield of the variety of rice called *macan* has been very poor, on account of the ravages of the locusts, their grubs, rats, and the worms popularly called *tomasoc.* Epizoötia continues in the barrios of this municipality, decimating the few animals which are still to be found. Barotac Nuevo experienced a rather severe storm during the night of January 11, which caused the loss of a large quantity of rice that had been cut, but not yet brought in by the owners. In many fields the flood reached a depth of half a meter and more. Afterwards followed fair weather which greatly facilitated the planting of sugar cane and of other crops. Cabatuan reports that corn, tobacco, and sugar cane have prospered little during the month of January, owing to the excessive rains. The scarcity of draft animals and bad health of the few which are still alive explain why so many fields are lying fallow. From Sara comes the complaint that the rain, which was well-nigh continuous from the first to the last day of the month, has interfered with the crushing of the sugar cane. From 8 p. m. of the 10th until 2 a. m. of the following day raged a violent storm which has destroyed various plantations.

Bacolod.—In consequence of the rains which fell during the first half of the month, the crushing of the sugar cane came almost to a standstill on several estates; on the other hand, these rains have greatly benefited all the crops still growing, especially the sugar cane. The fields lying between here and Murcia are still strongly infested by grubs. The banana plants have suffered severely from the storm of January 10 to 11. In the northern towns the damage is enormous, and besides many persons and cattle have perished in the floods.

Dapitan.—During the first half of the month the farmers prepared their fields for the planting of corn, which took place during the second half. There is great activity in collecting the agricultural implements and products which are to be exhibited at the Zamboanga Exposition to take place on the 12th.

Isabela de Basilan.—During this month the sugar cane is being harvested and about 7 picos of hemp have been stripped, which quantity will be greatly exceeded during February. The fruit of the rubber tree is likewise being gathered. Thanks to the rains which fell during the preceding months, all kinds of plants are in a flourishing state, especially the hemp and the rubber trees. The enthusiasm for planting hemp, rubber, and corn continues. During the first half of the month three horses died of surra, but luckily no further cases have occurred up to date.

DISTRICT III.

Atimonan.—Owing to the strong monsoon which prevailed and the continual rains which fell during the last days of December and the first days of January, the second crop of rice and other weak plants have suffered to some extent. The rice had been transplanted recently and could not take root, but floated on the water, at least the greater part of it. The trade in copra is nearly dead. The coco groves bear hardly any fruit or blossoms. Hemp is about in the same condition as before, though its price is to-day a little higher. It is quoted at 18 to 19 pesos per pico. A great abundance of gabe of great size and of tamarinds is being gathered. Nothing is heard of sickness among the work animals, nor of insects injurious to the fields. We subjoin here the following communication received from Mr. Pina, of Calauag:

"DEAR SIR: The crop of rice grown on the woodland clearings, as well as that raised on flooded fields, has been very abundant and of excellent quality, the grain being of good size. The aspect of the rice sown on ground with perennial irrigation and which is to be harvested in April, is at present very satisfactory and promises good returns, unless something untoward happens. There is a great demand for rosins and pitch, ₱2.50 to ₱2.70 being paid per arroba (11.5 kilos); prices never before commanded by these articles. The price of copra is likewise high, being ₱7.50 to ₱8 per pico (63.25 kilos), but there is very little of it to sell. In spite of the copious rains the trees do not bear much fruit. I attribute this failure to the frequent northers during the past months and to the storms, which, though not very violent, damaged the blossoms and tore off the still small fruits. The activity in felling timber continues. A short time ago the schooner *Matilde* arrived here to load various kinds of wood for the Manila market. There is no sickness among the animals, nor are there locusts or other insects injurious to the crops."

Legaspi.—Hemp stripping is gradually assuming greater proportions in the various towns of this province and plats of ground which during the preceding year had been abandoned on account of lack of resources for their cultivation are being worked again. The rain has been beneficial to the various plants under cultivation. Epizoötia continues to create havoc among the cattle imported from China. In Libog the yield of the products peculiar to this month has been small. About 50 hogs have succumbed to sickness. At Polangi continues the harvest of rice and it is maintained that the crop will be much superior to that of last year. Two months ago a Chinese merchant arrived to buy up the waste incidental to the stripping of hemp. It is said that he intends to export it to the United States, where it is to be used for making paper.

Gubat.—Deaths from sickness continue among the few animals that are still left; that is to say, among horses, carabaos, and hogs. The epidemic among the poultry has likewise assumed new virulence during the month of January. This to such an extent that even in the middle of the streets dead chickens may be found. Nor do the fighting cocks escape, notwithstanding the exquisite care which is being bestowed upon them (!). The excessive rains which fell December 31 to January 2 have flooded the fields and much of the rice has been swept away by the water. Not a few farmers had to plant their fields anew. Thanks be to God, at present the rice is growing well.

Romblon.—The municipal president of Cajidiocan reports that the principal products of his municipality are tobacco, sweet potatoes, and gabe, all of which are still growing in the fields. The rice crop has been good. The excessive rains have slightly damaged the tobacco plantations. There are no harmful insects, nor is there any noteworthy sickness among the stock. The landowner Mr. Lucas Carralero, of Santa Fé, informs me that in his vicinity tobacco and sweet potatoes are being raised at present. The yield of sweet potatoes and that part of the tobacco which had been planted on high ground is fair. The rains during this month have had a beneficial effect; but the strong winds which blew during the first half have done some damage to the tobacco plants. Neither injurious insects nor any sickness worthy of note have appeared.

DISTRICT IV.

Santo Domingo.—About the middle of the month began the planting of ube, ducay, and sweet potatoes. The sweet potatoes planted last September and October are doing well and are almost ready to be dug up. Corn has likewise been planted during this month; the yield of that planted in September and October has been almost zero. Garlic and onions are growing well. There is no sickness among the cattle.

Aparri.—At Santa Cruz, Abulug, Pamplona, and Claveria the rice harvest has been in progress since the beginning of the month, likewise in the hamlets (*ranchos*) of Paruddun and Tallungan, which are in this neighborhood. The crop is very bad, owing to the typhoons and inundations which visited this locality during the past year. Vegetables continue to be scarce, in fact they are to be seen only on the arrival of steamers which bring them from Ilocos. There is, generally speaking, no sickness among the stock nor are injurious insects prevailing.

Tuguegarao.—The effects of the floods which desolated this province are still apparent in the prevailing misery. One can not say that the tobacco fields are planted, since the seed which was available amounted to hardly one-fifth of the amount required. This in spite of the fact that the Tabacalera Company and other firms furnished all the seed which they possibly could. Very few bananas and tubers are to be found here and the small supply is excessively dear. Not a single tomato is to be seen, wherefore people have to use the canned article. Very little corn is for sale; because, in the absence of tobacco seeds, it has been used for planting some of the fields. Cases of theft of draft animals are plentiful, notwithstanding the activity displayed by the guardians of public safety in pursuing the thieves. There is no sickness among the larger domestic animals.

Vigan.—According to the municipal president the products harvested in January are rice, sugar cane, corn, and maguey. The yield is middling, almost good. Onions and cotton are still growing in the fields. All crops, except cotton, white squash, and onions, have to some extent suffered on account of the lack of rain; the drought has, however, not impeded the sowing of any of the crops. No injurious insects of any class have appeared. Epizoötia seems to be disappearing, because during this month it has caused a loss of only 1 to 5 per cent.

Candon.—The products of this month consist in sugar cane, sweet potatoes, a few cocoanuts and tomatoes. The cocoanuts are very scarce at present; their price is ₱5.75 per hundred. Rice sells for ₱3.50 per cavan (75 liters). The price of sugar is not yet known. The drought made itself felt in the fields, especially the vegetables being affected. There are no injurious insects. Not a single case of sickness among cattle or poultry has occurred.

San Fernando, Unión.—Rice, corn, sugar cane, and all kinds of garden produce are being harvested in this locality. The tobacco plantations are beginning to feel the scarcity of water. There are no harmful insects. Many animals are being attacked by a sickness of unknown name. It consists in a kind of diarrhea which lasts three or four days, but rarely results in the death of the animal afflicted. The death of two head of cattle at San Fernando and of a few more in towns south of here seems to have been due more to lack of proper care than to sickness.

Baguio.—All the irrigated lands have been prepared for the planting of rice. Potatoes, cabbage, tomatoes, sweet potatoes, etc., yielded fair crops. There is no sickness among the stock, nor are there insects injurious to the crops.

Tarlac.—Most of the inhabitants of this place have commenced thrashing their rice, especially those who have great quantities of this cereal. At the same time they are planting a new crop of sugar cane, while the crushing of last year's crop is still continuing. The mango trees and other fruit trees are already flowering. There is an abundance of vegetables. The lack of rain is making itself felt. The insects called *tatag* and *alibangao* are numerous in the irrigated fields. Cases of death among work animals and hogs continue to occur.

San Isidro.—Last month I stated that the crops then planted were growing weakly; unfortunately it must be said that they continue in the same condition and promise, as a rule, very little yield. The tobacco alone is flourishing, thanks to the abundant dews, and gives good hope.

Arayat.—The greater number of the farmers of this municipality are occupied in thrashing rice, some having already finished with it. Since the middle of the month the crushing of the sugar cane is in progress. Corn is not developing well, owing to the lack of water; a great part of the vegetables planted has perished from the same cause. Nothing has been heard of sickness among the cattle. Mr. Pio Lansangan, landowner at Santa Ana, reports that there the rice crop is about 25 per cent inferior to that of last year; the sugar cane is very poor. The corn is there likewise suffering from the dearth of water, so are the tubers. There is no sickness among the stock.

Pórac (Dolores.)—We are at present in the season of least activity as regards farm work. The prices of the sugar of this year's crop and of indigo are as follows: Tipaquin (dry compact sugar), ₱5 per pilon; corriente (moist, granular sugar), ₱3.50 per pilon; tintaron (indigo), ₱4 per jar. There is no sickness, epidemic or other, among the animals.

Olongapó.—According to the information gained from the few farmers living in this vicinity, the principal products are rice, corn, bananas, tomatoes, and sitao. Although a great part of the rice has been cut by field mice, a good crop is expected. Leguminous plants and garden products in general are being attacked by an insect pest consisting of small worms, which cause considerable trouble. There is no lack of rain at present. The strong winds which blew during this month have done damage in the mango groves, since they stripped the trees of many blossoms. There is no sickness among the domestic animals.

Malolos.—Here people are at present occupied in crushing the sugar cane and thrashing the rice. The products of this month are corn and vegetables. The mango groves are in splendid condition and the abundance of blossoms gives good hope for a plentiful supply of the fruit during the months of April and May. The animals in this vicinity are free from sickness; nor are there any injurious insects. Similar reports concerning their municipalities come from the presidents of Santa Maria, Bulacan, Calumpit, and Baliuag.

Balanga.—According to information received from the municipal president of Abucay the yield of sugar cane, sweet potatoes, corn, and gabe is less than the average in said locality. The drought prevailing during the month has impeded further planting. At Balanga continues the crushing of sugar cane and the planting of a second crop. Sweet potatoes, sandía, condol, corn, and various kinds of vegetables are plentiful. Between January 13 and 31 have been registered 22 cases of carabaos being attacked by epizoötia, of which 16 proved fatal. The municipal president of Orión, Mr. Francisco Urquiza, reports a fair crop of corn in said locality. Epidemic sickness among the stock has caused the loss of 50 per cent of the animals.

Silang.—In this region are being raised hemp, bananas, squashes, nanca, sweet potatoes, and cacao. Those who planted corn during the first days of last November are now harvesting it; hemp, bananas, and cacao are likewise being gathered in small quantities. There are no injurious insects, nor is there any notable sickness among the animals.

Batangas.—During the month of January the farmers of this province have begun to crush their sugar cane. The yield is expected to surpass that of the preceding year, unless the dearth of draft animals makes it necessary to leave either the whole or at least part of the cane grown on some of the estates standing in the fields. The mortality among the cattle caused by epizoötia during the last months of the past year amounted to 3 per cent; of the horses, surra carried off 6 per cent. It is feared that the corn crop will be poor, since the very strong winds and insects commonly called *dapulac* and *alipod* have damaged it. The coffee crop is likewise poor, and that of hemp only middling. On the other hand there is a great abundance of small oranges, bananas, tubers, and garden products. Cacao has also born a fair quantity of fruit. Thanks to the good rice crop of last year, the inhabitants of this province have not yet been forced to import rice from other localities.

ESTADO GENERAL DE LAS COSECHAS.

En la parte central y occidental de Luzón y Visayas actualmente se trilla el palay y se muele la caña-dulce, donde la hay, mientras se planta nueva caña y hortalizas. En las regiones del SE de Luzón y del E de Visayas y Mindanao está creciendo el palay recien plantado: en el E de Mindanao la falta de lluvias copiosas ha retardado su siembra. Las provincias de Cagayán y de la Isabela, inundadas en meses precedentes, están haciendo todos los esfuerzos posibles para reponer los sembrados de tabaco; por desgracia la cantidad de semilla existente no corresponde á la demanda, y así muchos en lugar de tabaco siembran maíz.

Del SE de Luzón se quejan todavía del poco fruto que dan los cocos y de la consiguiente escasez de coprax. El centro ciclónico que del 10 al 11 cruzó las Visayas, causó bastante daño en los abacales y cocales principalmente de Sámar y Leyte.

Da pena el ver que en muchas regiones quedan sin cultivo, por la falta de animales de labor, terrenos feracísimos; siendo esta la única causa de que en muchas partes las cosechas con ser muy buenas, no sean suficientes. La epizotia continúa diezmando los carabaos y vacunos, principalmente en Leyte y en el Sur de Luzón.

En toda la parte meridional del Archipiélago se van extendiendo cada día más las plantaciones de abacá; en Bohol se dan también á plantar maguey ó sisal.

NOTICIAS PARTICULARES.

DISTRITO I.

Borongan.—Las cosechas de este mes, en esta costa oriental de Sámar, son bastante pobres. De ello, dos causas principalmente deben mencionarse; los destrozos causados por el baguio del día 10 en los cocoteros y plantaciones de abacá y la escasez de jornaleros. Alguna esperanza de mejora infunde la extensa plantación de palay, que se ha hecho y el vigor y lozanía con que hasta hoy se presenta. Tampoco es malo el estado de otras plantaciones, como palauan, camote, gabe, etc.

Tacloban.—El baguio del 10 de este mes ha destrozado más de 30 casas, el Tribunal municipal y dos iglesias. Asimismo han sufrido daños considerables las plantaciones de abacá y plátanos, estos daños se han avaluado en unos 13,000 pesos. La cosecha de palay ha sido mediana, el precio del mismo no ha bajado como otros años, debido en parte á que la producción es menor, pues una cuarta parte de los terrenos destinados al palay no pueden sembrarse por falta de carabaos que aren dichas tierras. De los pueblos de Naval, Palo, Carigara y Babatugon anuncian, que el baguio del 10 causó perjuicios en los plantíos de abacá, plátanos, cocos, palay y camote; en Babatugon varias casas sufrieron también por la violencia del baguio. La sequía no ha perjudicado este mes las cosechas pero en cambio, la siembra sufre, en muchos puntos, notable retraso por la escasez de carabaos. En Palo han causado daño en los sembrados los pájaros llamados vulgarmente "hanaos" y un gusano especial denominado en la localidad "tayangao." En Carigara se han avaluado en 500 pesos los daños causados por la epizotia. En Palo, el baguio del 10 de Enero ha causado la pérdida de casi la mitad de la cosecha de palay, plátano y abacá. Veinticinco casas fueron destruídas, todas eran de materiales ligeros. El día 11 del mismo mes hubo inundación dentro de este Municipio, especialmente en Luntad, donde, el agua subió un metro; no hubo desgracias personales ni de animales. El puente de San Joaquín destruído por la fuerza de la corriente. En Alang-alang, se estaba recogiendo la cosecha de palay de terreno secano, la cual se presentaba buena, cuando se vieron privados de buena parte de ella por el fuerte baguio que pasó el 10 del corriente. El palay sembrado ya en muchos campos de regadío fué llevado por las aguas. En toda la jurisdicción de este municipio, 385 casas, algunas de materiales fuertes, fueron destruídas por la vehemencia de los vientos y la gran cantidad de lluvia. En los barrios de San Miguel, San Francisco, Lourdes y Santiago subió 3 metros y medio el agua de los ríos y duró unas 3 horas la inundación, en ella perecieron 150 cerdos, 20 cabras y 10 carabaos. Las plantaciones de abacá han quedado destrozadas; se calcula asciende á unos 60,000 pesos el valor de los daños causados.

Ormoc.—El Sr. Francisco Galos comunica que son regulares las cosechas de maíz, gabe, camote, apale, etc. Los vientos y lluvias del temporal sentido el día 10 han perjudicado el abacá, cocos, plátanos, caña-dulce, maíz, etc. Las langostas han desaparecido; en cambio hubo gusanos que causaron daño al palay. Continúa la epizotia: ha muerto el 5 por ciento de los carabaos.

Tuburan.—El observador de este punto manifiesta ser malas las cosechas de maíz, palay y azúcar debido en parte á los daños causados por la langosta. El temporal del 10 y la excesiva lluvia han causado notables pérdidas en las plantaciones de abacá, tabaco y caña-dulce; ocúpanse actualmente los labradores en reparar en lo posible aquellos daños. Ha cundido bastante una enfermedad contagiosa entre los cerdos y aves de corral.

Cebú.—Los productos agrícolas son casi los mismos que el mes pasado. La cosecha de la caña-dulce ha sido regular, lo cual ha influído sin duda en que bajase algo el precio de la misma en la localidad. Los vientos del último temporal no han causado grandes daños en los sembrados de este lugar.

Surigao.—Uno de los trabajos propios de este mes, la trasplantación del palay, ha sufrido algún retraso por la escasez de lluvias. Algo se ha beneficiado este mes, aunque no en gran escala, el abacá y el cóprax. Ha sido regular la cosecha de tubérculos, ube, gabe, apale y especialmente camote, que es el principal, sino el único recurso de los campesinos pobres. El arroz se vende á 6.25 pesos el caván y el palay de 3 á 4.

Tagbilaran.—En este mes de Enero hubo poca cosecha de ubes, blanco y morado, en los pueblos de Tagbilaran, Dauis, Panglao, Valencia, García, Inabanga y Ubay. En Balilihan y Antequera se han obtenido muy abundantes y buenas cosechas de maíz; regulares en Ubay, Jagna, Valencia, Dimiao, García, Hernández y Cortes, y pobres en otros pueblos. Cosecharon con regular abundancia y en buena calidad, el palay, los pueblos de Dimiao, Valencia, Guindulman, Loboc, Bilar, y Ubay además de lo que aún queda en los campos por cosechar. Son puntos abacaleros Sevilla, Bilar, Carmen, Batuan, Guindulman, Calape y Tubigon. De buenas maderas lo son Anda y Candijay. Desde estos dos últimos pueblos, son exportadas á Cebú muchas maderas para los trabajos de la línea férrea de aquella ciudad Visaya. Según el presidente municipal de Tagbilaran, sólo en dicho lugar asciende ya á 200,000 el número de plantas de maguey que están sembradas; crecen lozanas, sobre todo las procedentes del sisal de Hawaii. En pueblo de Ubay la "surra" ha causado en los caballos un 96 por ciento de muertes, y la epizotia se ha llevado en Talibong, Inabanga y Antequera muchos cerdos y algunos carabaos. Las langostas han perjudicado algunas siembras de palay, coco y caña-dulce en Antequera y Balilihan. Arrasaron en Inabanga casi todas las plantas, menos el camote y la tapioca y en Ubay si bien no hicieron en este mes de Enero su aparición habían causado bastantes destrozos en las plantas, durante los últimos meses del año pasado, 1906.

Butuan.—La gente se ha ocupado durante este mes en recoger la cosecha de palay, en la cual han causado algunos daños los fuertes vientos del temporal que pasó por aquí el 8 de este mes. En Talacogon se planta camote, gabe y algunos otros tubérculos. No lejos de Talacogon las inundaciones causadas por el temporal destruyeron en parte la cosecha de palay. En Cabarbarán y Tubay se beneficia el abacá y se planta camote, ube y gabe. Se ha visto la langosta revolotear por el alto Agusan.

Balingasag.—En este mes se ha terminado la cosecha del palay; ha sido menor que el año pasado. También ha sido menor la cosecha de camote, maíz y verduras. Actualmente se vende en este pueblo á ₱2 el caván del palay. El abacá y el cóprax síguense beneficiando en pequeñas cantidades, y su precio corriente en este pueblo es ₱6.50 y ₱8 el pico respectivamente. Han muerto 14 carabaos y una vaca durante este mes de Enero.

Caraga.—Han escaseado las lluvias este mes y la sequía ha retardado la siembra del palay y las plantas ya nacidas se han secado en algunos puntos. Los vientos algo fuertes algunos días, han causado algún daño. Se obtiene el abacá en cantidad regular y en menor el cóprax. No se han presentado insectos dañinos á las sementeras ni enfermedad contagiosa entre el ganado.

Davao.—Durante el segundo semestre del año 1906 se han exportado los siguientes artículos:

Meses.	Abacá.	Almáciga.	Biao.	Balate.	Cera.	Cóprax.	Cuero.
	Picos.	*Picos.*	*Picos.*	*Picos.*	*Quintales.*	*Picos.*	*Picos.*
Julio	2,033	541	162	9	15	44	----------
Agosto	2,886	526	302	10	7.5	86	6
Septiembre	2,277	524	205	41	2.5	72	3
Octubre	2,590	547	510	5	18	29	1
Noviembre	1,140	----------	201	3	6	----------	7
Diciembre	3,114	528	138	----------	1	8	----------

DISTRITO II.

Cápiz.—El Sr. Álvaro Alcántara de Pilar me dice verbalmente que la caña-dulce de este año se presenta muy buena y que sólo en la Hacienda de Cabuc-cabuc pueden sacar de seis á siete mil picos de azúcar y otros tantos en la Hacienda del Carmen. En otras, se cosecharán de 500 á 1,000 picos. El palay este año, en todo aquel pueblo y barrios, ha sido muy escaso. El Sr. Florencio Melocoton, presidente municipal del pueblo de Nuevo Washington, me dice verbalmente, que la cosecha del palay del año 1906, no será suficiente para abastecer aquel pueblo, esto debido no á la mala cosecha sino á la poca extensión de los sembrados, á causa de la falta de animales de labor. El abacá se paga á 18 y 20 pesos el pico y el cóprax á 5 ó 6 pesos.

San José de Buenavista.—Durante el mes de Enero en los pueblos costeros la gente playera preparaba cañas para corrales de pesca, mientras que de los campesinos unos estaban moliendo caña-dulce y plantando nueva cosecha de la misma, otras sembraban maíz ú hortalizas y tubérculos como en tomates, rábanos, mostaza, gabe, ube y camote.—Además de caña-dulce se han cosechado un poco de maíz, tomates, gabe y ube. Crecen en los campos sitao, tabaco, amargoso, patola, y calabaza blanca: cuyo estado es bueno. No se ha notado enfermedad en los animales.

Iloílo.—De Janiuay comunican; que desde el día 6 hasta fines de Enero hubo buen tiempo, el cual dió lugar á que las gentes pudieran dedicarse á labrar y roturar los campos para sembrar varias plantas útiles como son camotes, plátanos, maíz, tomates, y tabaco. La cosecha del palay "macán" ha sido muy pobre á causa de los destrozos causados por la langosta, locton, ratas y el gusano denominado vulgarmente "tomasoc." La epizotia entre los animales de labor sigue aún cebándose en los barrios de este municipio diezmando los pocos animales ya existentes. De Barotac Nuevo comunican que el 11 de Enero durante la noche hubo un temporal bastante fuerte, que arrastró mucha cantidad de palay del que estaba ya segado en el campo y no recogido por sus dueños. En muchos campos la corriente de agua tenía medio metro y más de profundidad. Después hizo buen tiempo, el cual favoreció mucho para la plantación de caña-dulce y otras plantas. De Cabatuan comunican que los sembrados de maíz, tabaco y caña-dulce durante el mes de Enero han prosperado poco á causa de las demasiado abundantes lluvias. La escasez de animales de labor y la enfermedad de los pocos que aun quedan es causa de que muchos campos queden incultos. De Sara comunican que la lluvia casi continua desde el primero hasta el 31 del mes retrasó la molienda de la caña-dulce. El 10 se sintió un fuerte temporal desde las ocho de la noche hasta las dos de la madrugada del día siguiente, el cual destrozó varios sembrados.

Bacolod.—Como consecuencia de las lluvias de la primera quincena, en algunas haciendas se paralizó la molienda de la caña-dulce; pero en cambio dichas lluvias favorecieron mucho á todas las plantaciones, especialmente á la caña-dulce. En los terrenos comprendidos desde esta capital hasta el pueblo de Murcia abundan aún los loctones. Por efecto del temporal sentido del 10 al 11 de actual, sufrieron grandes destrozos los plátanos. En los pueblos del Norte los daños fueron enormes, pereciendo además muchas personas y ganados, ahogados por las inundaciones.

Dapitan.—Los agricultores de este pueblo durante la primera quincena estuvieron preparando los terrenos para el maíz y durante la segunda lo sembraron. Hay grande actividad en preparar los aperos de labranza y los productos destinados á la exposición de Zamboanga que tendrá lugar el día 12 del actual.

Isabela de Basilan.—En el presente mes se está cosechando caña-dulce: se beneficiaron unos siete picos de abacá, y para el mes de Febrero habrá mucha mayor cantidad. También se están recogiendo frutas de goma. Con las lluvias de los meses anteriores se ha desarrollado mucho toda clase de plantas, principalmente el abacá y los árboles de goma. Continúa el entusiasmo para plantar abacá, goma y maíz. En la primera quincena del presente mes han muerto tres caballos de la enfermedad llamada "surra" y gracias que hasta la fecha no ha habido más casos.

DISTRITO III.

Atimonan.—Por la fuerte monzón que ha reinado y por las contínuas lluvias que han caído en los días últimos de Diciembre pasado y primeros de Enero; el palay de segunda siembra y otras plantas débiles han sufrido algo. El palay estaba recién trasplantado y no pudo arraigar, flotando la mayor parte. El negocio del cóprax está en estado casi agonizante. Los cocales apenas dan frutas ni flores. El abacá está en el mismo estado de antes, aunque hoy ha subido algo su precio. Cotízase el pico de este filamento á ₱18 y ₱19. Se recolecta mucho gabe de gran tamaño y tamarindo. No se dice nada de enfermedades en los animales de labor, ni de insectos perjudiciales á las plantaciones. Á continuación copio la siguiente comunicación del Sr. Pina de Calauag:

"Muy Sr. mío: Tanto el palay de 'caiñgin' como el balibod de 'tubigan' ha sido muy abundante y de excelentes cualidades, por ser el grano bastante grande. Los sembrados del 'panagarao' para cosechar en el mes de Abril presenta en estos momentos un aspecto satisfactorio, y si no hay alguna desgracia, dará abundante cosecha. Hay gran demanda de resinas ó breas pagándose por arroba de ₱2.50 á ₱2.70; precios nunca vistos en este artículo. El cóprax tiene altos precios, de 7.50 á 8 pesos el pico, pero es muy escaso. Los árboles dan pocos cocos á pesar de la abundancia de aguas, creo que las frecuentes nortadas de los últimos meses del año pasado y los varios baguios de poca potencia, dañaron la flor, y las frutas pequeñas se cayeron, siendo esto el motivo de su poca producción. Siguen los cortes de maderas; hace poco llegó el bergantín goleta *Matilde* para llenar su bodega de diferentes clases y trasportarlas á Manila. Enfermedades en los animales ninguna, como tampoco langosta ni otros insectos que puedan perjudicar á las plantas."

Legaspi.—El beneficio del abacá va aumentando paulatinamente en los pueblos de la provincia y se reanuda el cultivo de los lates abandonados en el año pasado por la carencia de recursos suficientes á sostener trabajos. Las lluvias fueron benéficas, para todos los sembrados. La epizotia sigue haciendo estragos en los vacunos importados de China. En Libog la cosecha de los productos propios de este mes fué mediana. Han muerto unos 50 cerdos de las enfermedades reinantes. En Polangui continúa la recolección del palay, y se asegura que la cosecha será mucho mejor que la del año pasado. Hace dos meses que un comerciante chino de esta localidad viene comprando los desperdicios del beneficio del abacá para exportarlos á América, según se dice, y utilizarlos en la confección de papel.

Gubat.—En los pocos animales que quedan aún continúa la mortandad, especialmente entre los caballos, carabaos y cerdos. Durante este mes de Enero próximo pasado, recrudeció la epidemia entre las aves de corral, de tal manera que hasta en medio de la calle se las encuentra muertas: ni se escapan los gallos de pelea, á pesar de los exquisitos cuidados de que son objeto. Debo manifestar asimismo que desde el 31 de Diciembre hasta el 2 de Enero, las excesivas lluvias inundaron los campos y arrastraron mucho palay; no pocos tuvieron que plantar de nuevo, pero por ahora á Dios gracias se desarrolla bien.

Romblón.—El Presidente municipal del pueblo de Cajidiocan informa que en aquel pueblo se da y cultiva principalmente el tabaco, camote y gabe que crecen aún en los campos. La cosecha del palay ha sido buena. Las excesivas lluvias perjudicaron un poco las plantaciones del tabaco. No hay insectos dañinos, ni enfermedad notable en el ganado. El propietario D. Lucas Carralero del pueblo de Santa Fé informa que allí se da y cultiva el tabaco y camote. La cosecha del camote y parte del tabaco que está sembrado en los montes se presenta bastante buena. Las lluvias del mes favorecieron á la agricultura. Por la mucha fuerza de los vientos de la primera quincena, sufrieron algo las plantaciones de tabaco. No hay insectos perjudiciales, ni enfermedad notable en el ganado.

DISTRITO IV.

Santo Domingo.—Han comenzado la siembra del ube, ducay y camote á mediados de este mes; el camote sembrado en Septiembre y Octubre últimos, está bien y á punto de cosecharse; también se ha sembrado maíz en este mes; del que se sembró en Septiembre y Octubre apenas si ha habido cosecha; los ajos y cebollas están bien. No hay enfermedad en el ganado vacuno.

Aparri.—En los pueblos de Santa Cruz, Abulog, Pamplona y Clavería, se recolectan el palay desde principios del presente mes, así como en los ranchos de Paruddun y Tallungan, próximos á este pueblo. La cosecha es muy pobre á consecuencia de los baguios é inundaciones del año próximo pasado. Continúa la escasez de legumbres y frutas, que sólo se ven cuando llegan vapores que las traen procedentes de Ilocos. No hay enfermedades en el ganado en general, ni insectos dañinos.

Tuguegarao.—Los efectos de la inundación que ha asolado esta provincia se tocan con la miseria reinante. Los terrenos tabacaleros apenas si están plantados; pues toda la semilla disponible no ha cubierto ni siquiera la quinta parte de la necesaria: y esto á pesar de que la Compañía Tabacalera y otros comerciantes han facilitado cuanta semilla han podido. Apenas no hay en plaza plátanos y tubérculos y los que aparecen cuestan carísimos; no se encuentra un sólo tomate, teniendo que suplir su falta con los de lata; maíz poquísimo en venta; pues á falta de semillas de tabaco se están sembrando de maíz algunos terrenos. Abundan los robos de los animales de labor, con ser tenazmente perseguidos los cuatreros por los agentes de seguridad. No hay enfermedad en los ganados caballar, caraballar y vacunos.

Vigan.—Según informe del Sr. Presidente, en este mes de Enero se cosechan el palay, caña-dulce, maíz y maguey: la cosecha es mediana, casi buena. Crecen aún en los campos la cebolla y algodón. Por la falta de lluvia todas las plantas sufren algo á excepción del algodón, calabaza blanca y cebolla: pero la sequía no ha impedido sin embargo siembra alguna. No hay aquí insectos de ninguna clase y la epizotia que ya está por desaparecer, sólo causó este mes del 1 al 5 por ciento de pérdidas.

Candón.—Se cosechan caña-dulce, camote, algunos cocos y tomates. Los cocos sin embargo son muy escasos en este mes; su precio es de ₱5.75 por ciento. El arroz se vende á ₱3.50 caván; del azúcar aún no se sabe el precio. La sequía se ha dejado sentir algo en los sembrados, principalmente de legumbres y hortalizas. No hay insectos dañinos. De epizotia de ganados y aves de corral no se ha registrado caso alguno.

San Fernando (Unión.)—En este pueblo se cosecha el arroz, maíz, caña-dulce y toda clase de hortalizas. La escasez de agua se comienza á hacer sentir en las plantaciones del tabaco. No hay insectos dañinos. Entre los animales hay muchos atacados de una enfermedad cuyo nombre se desconoce, consistente en una especie de diarrea que les dura tres ó cuatro días pero sin que cause sino rara vez la muerte. La muerte de dos vacunos en San Fernando y de algunos más en los pueblos del Sur parece fué debida, en gran parte, á la falta de cuidado.

Baguio.—Se han preparado todos los terrenos de regadío de este pueblo para la siembra de palay. Las cosechas de patatas, repollo, tomates, camote y otros son regulares. No hay enfermedad en el ganado, ni tampoco insectos perjudiciales en los sembrados.

Tárlac.—La generalidad de los vecinos empiezan la trilla del palay; máxime los que tienen grandes cosechas: al propio tiempo se dedican á la nueva siembra de caña-dulce mientras sigue la molienda de la cosechada este año. Florecen ya las mangueras y otros árboles frutales. Abundan las hortalizas. Se hace sentir la falta de lluvia; los insectos llamados vulgarmente "tatag" y "alibangao" pululan en los terrenos de regadío. Todavía mueren algunos animales de labor y cerdos.

San Isidro.—En el mes anterior se dijo que las plantas sembradas crecían raquíticamente; hoy puede decirse que continúan en el mismo estado y prometen generalmente poco. El tabaco es el único que está lozano, gracias al rocío abundante, y da buenas esperanzas.

Aráyat.—En este municipio la mayor parte de los agricultores están ocupados en la trilla de su palay; hay algunos que han terminado ya. Se está moliendo la caña-dulce desde mediados de este mes. El maíz no se desarrolla bien por falta de agua. Muchas de las hortalizas sembradas han muerto por la misma causa. No se tienen noticias acerca de enfermedades en el ganado mayor. En Santa Ana, según informe del Sr. Pío Lansangan, propietario de aquel pueblo, la cosecha de palay es un 25 por ciento inferior á la del año pasado; la de caña-dulce muy pobre. El maíz está sufriendo también allí la falta de agua; así como los tubérculos. No hay epizotia en el ganado mayor.

Pórac (Dolores).—Estamos en la época de menos movimiento en la agricultura. Los precios del azúcar cosechado y del añil son los siguientes: Tipaquin ₱5 pilón; corriente, ₱3.50 pilón; tintarón, ₱4 tinaja. No existe enfermedad alguna, ni epidemia entre los animales.

Olongapó.—Según informes de los pocos agricultores que hay aquí, se cultivan en este mes el palay, maíz, plátanos, tomates y sitao. Á pesar de que mucho palay ha sido cortado por ratoncitos se espera buena cosecha. Se desarrolla una plaga de gusanillos en las legumbres y hortalizas que da mucho que hacer. No hay por ahora falta de lluvia; los vientos fuertes que soplaron durante este mes han perjudicado á los mangales, haciendo caer muchas flores. No hay ninguna enfermedad en los ganados.

Malolos.—Actualmente en esta cabecera se está moliendo la caña y trillando el palay; los productos que se cosechan durante el mes son maíz y hortalizas. Las mangueras están lozanas y con mucha flor, haciendo esperar que para los meses de Abril y Mayo será muy abundante el fruto. Los animales por aquí se hallan libres de enfermedad. Tampoco hay insectos dañinos. Los presidentes municipales de Santa María, Bulacán, Calumpit y Baliuag dan casi los mismos informes respecto de sus pueblos.

Balanga.—Según informe del presidente municipal de Abucay, la cosecha es menos que regular respecto á la caña-dulce, camote, maíz y gabe. La sequía de este mes ha impedido ulteriores sembrados. En Balanga, sigue la molienda de la caña y la nueva siembra. Abundan el camote, sandía, condól, maíz, y varias clases de hortalizas. Desde el 13 de este mes de Enero al 31 se han registrado 22 carabaos atacados de epizotia, de los cuales murieron 16. El presidente municipal de Orión Sr. Francisco Urquiza informa que la cosecha del maíz es allí regular. La enfermedad epidémica entre los ganados ha causado una pérdida del 50 por ciento.

Silang.—En esta región, se cultivan abacá, plátanos, calabaza, nanca, camote y cacao. Los que sembraron maíz en los primeros días del mes de Noviembre próximo pasado, están ya cosechándolo; también se cosechan en poca cantidad abacá, plátanos y cacao. No hay insectos dañinos, ni enfermedades notables entre los animales.

Batangas.—En el mes de Enero, han empezado los agricultores de esta provincia á moler la caña-dulce, cuya cosecha se espera, será mejor que la del año anterior, á no ser que por la escasez de animales, se dejen de cortar algunas plantaciones en todo ó en parte. La mortandad causada en esta población por la epizotia en los últimos meses del año próximo pasado, fué en la proporción del 3 por ciento entre los vacunos: el "surra" causó en los caballos el 6 por ciento. La cosecha de maíz, se cree, será pobre por haberlo perjudicado la mucha fuerza de los vientos y algunos insectos llamados vulgarmente "dapulac" y "alipod." La del café también es pobre y la del abacá mediana. En cambio la de naranjitas, plátanos y la de tubérculos y hortalizas es muy abundante. El cacao también ha producido bastante fruto. Gracias á la buena cosecha de palay del año anterior, los habitantes de esta provincia no han tenido aún necesidad de importar arroz de fuera.

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BULLETIN FOR FEBRUARY, 1907.

METEOROLOGICAL BULLETIN FOR FEBRUARY, 1907.

By Rev. José Coronas, S. J.,
Assistant Director of the Weather Bureau.

GENERAL WEATHER NOTES.

Pressure and temperature.—A single glance at the following table will suffice to show that the mean atmospheric pressure of this month is lower than that of February of last year in the southern part of our Archipelago and higher in the northern section. The greatest difference is found in Aparri and Santo Domingo. These stations are the nearest to the high-pressure centers, which at this season of the year are usually found in high latitudes. The highest pressures in the whole Archipelago were recorded from the 23d to the 26th, and the lowest from the 10th to the 13th.

The mean temperatures likewise are lower than those of February, 1906. It is noteworthy that San Isidro, a station in the interior of the Island of Luzon, gives us the highest absolute maximum, 35.3° C., and also the lowest absolute minimum, 15.2° C. The lowest readings of the thermometer in Manila during this month were 16.5° C. and 16.4° C., which were registered on the 7th and 16th, respectively. The highest absolute maximum at Manila did not exceed 33.2° C., a reading registered on the 27th.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS, FEBRUARY, 1907.

Station.	Pressure.						Temperature.					
	Mean.	Departure from Feb., 1906.	Mean maximum.	Day.	Mean minimum.	Day.	Mean.	Departure from Feb., 1906.	Highest.	Day.	Lowest.	Day.
	mm.	*mm.*	*mm.*		*mm.*		°*C.*	°*C.*	°*C.*		°*C.*	
Tagbilaran	759.03	−0.73	760.72	25	758.13	13	25.8	−0.5	31.5	17, 20	21	12
Surigao	59.34	− .79	61.08	26	58.53	12, 16	25.5	− .8			21	11
Cebu	59.64	− .72	61.55	25	58.80	11	26.1	− .4	30.5	15,16,18	21.3	11
Iloilo	59.21	− .45	60.80	25	58.20	12	25.4	−1	31.6	20	22.2	5, 26
Capiz	60.21	[1] + .44	62.38	25	58.85	11	25.7	− .3	29.5	14	20	14
Ormoc	59.05	− .83	61.07	25	58.03	10	24.8	− .6	31.8	12	19.3	11
Tacloban	60.07	− .60	62.06	25	59.01	11	25.1		32.7	19	22	12, 14
Legaspi	60.90	− .08	62.92	25	59.54	10	25.4	−1	31.5	17		
Atimonan	61.16	+ .15	63.06	26	59.26	11	25.7	− .5	32	27	21.6	11
Olongapo	60.40	+ .11	62.24	26	58.81	11	25.5		34	22	17.5	7
San Isidro	61.23	+ .28	63.48	26	59.34	10	24.9	−1.5	35.3	10	15.2	7
Dagupan	60.64	+ .14	62.26	26	59.10	12	25.2	−1.3	35	9	17	7
Vigan	61.13		62.68	26	59.33	11	24.8		29 ?	14	20.2	1
Aparri	62.48	+1.33	65.08	23	59.83	10	23.3	−1.4	29.5	16	17.6	13
Santo Domingo	62.85	+1.36	65.88	23	59.03	10	22.2	−1.8	29.2	28	17	23

[1] The barometric observations of this station are not very reliable.

Precipitation.—With the exception of the stations in the central and western parts of Luzon, where the rain was either nil or exceedingly slight, the amount of rainfall in the whole Archipelago is greater than that of February, 1906. The differences in stations of northern Mindanao, Samar, Leyte, southeastern and northern Luzon, are considerable and worthy of attention. The greatest amount of rainfall for a single day was 203.7 millimeters, as recorded in Surigao on the 4th of the month.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF FEBRUARY, 1907.

District.	Station.	Total.	Departure from Feb., 1906.	Rainy days.	Departure from Feb., 1906.	Greatest rainfall in a single day.	Day.
		mm.	*mm.*			*mm.*	
	Yap	337.6	+100.8	23	+ 6	134.6	11
	Davao	194.9	+ 96.2	6	+ 2	64.8	13
	Balingasag	29.9	+ 8.6	16	+13	6.6	27
	Tagbilaran	142.9	+126.4	22	+18	38.3	8
	Surigao	671.6	+457.3	22	+13	203.7	4
I	Maasin	219.5	+185.7	12	+ 6	54.4	4
	Cebu	114	+ 80.1	15	+ 6	25.4	5
	Tuburan	63.7	+ 47.4	12	+ 9	17.8	4
	Ormoc	223.5	+204	17	+12	60.5	1
	Tacloban	310.1	+237.2	23	+14	35.3	3
	Borongan	538.3	+387.8	25	+10	53.3	6
	Isabela, Basilan	122.9	+105.4	13	+11	42.7	19
	Zamboanga	87	+ 86.5	8	+ 7	24.6	3
	Dapitan	230.3	+210.7	15	+ 9	58.4	21
	Bacolod	151.6	+151.3	16	+15	60.9	21
II	Iloilo	64.5	+ 64.5	11	+11	15.7	5
	S. Jose Buenavista	76.5	+ 76.5	7	+ 7	30.5	11
	Cuyo	11	+ 11	2	+ 2	8.7	23
	Capiz	173.4	+162.7	13	+10	74.7	9
	Sumay, Guam	33.3	+ 31.3	5	+ 4	17.8	17
	Calbayog	212.8	+156.7	20	+ 9	31.2	2
III	Palanoc	474	+474	17	+17	176.8	20
	Gubat	487	+444.7	17	+11	101.6	20
	Legaspi	274.2	+225.1	17	+10	92.1	20
	Nueva Caceres	100.4	+ 80.3	3	+ 2	56.7	20
	Atimonan	124.8	+110.4	8	+ 5	41.2	23
	Silang	15.7	+ 15.7	1	+ 1	15.7	10
	S. Antonio, Laguna	42.8	+ 24.8	4	+ 1	15.7	24
	Corregidor	0	0				
	Manila	1.5	— 11.9	2	0	.9	4
	Balanga	0	0				
	Olongapo	0	0				
	Porac	0	0				
IV	Arayat	4.8	— 11.7	1	0	4.8	4
	San Isidro	0	0				
	Tarlac	0	— 4.8		— 3		
	Dagupan	0	— .8		— 2		
	Baguio	0	— .8		— 1		
	S. Fernando, Union	0	— 4.1		— 2		
	Candon	0	— 15.2		— 1		
	Tuguegarao	0	— 4.1		— 1		
	Aparri	107.2	+103.4	8	+ 5	47.8	21
	Santo Domingo	266.3	+253.8	22	+13	46.7	15

DEPRESSIONS AND TYPHOONS.

During this month no depression worthy of special mention has occurred either in the Philippines or in the Ladrones or western Caroline Islands. Still we notice in the table of meteorological data for Manila that westerly winds prevailed on the 10th, 18th, 20th, and 21st. Examining now the weather maps of those days, we find that on the 10th and 11th, the 18th and 19th, and the 20th and 21st there existed centers of low pressure in the Pacific to the NNE and NE of Manila and S of Japan. The air currents mentioned before were undoubtedly due to these depressions.

The first of these depressions appeared on the 9th to the E of Formosa in the form of an area of low pressure of very little importance; it moved first to NNE, then to NE, and on the afternoon of the 10th was situated on the easternmost part of the Eastern Sea, to the N of the Liukiu Islands, in the neighborhood of parallel 29° latitude. From this place it apparently moved to E by N and developed considerably as it crossed the Pacific to the south of Japan. The center of the depression passed not far south of Hachijo Island on the evening of the 11th, when the barometer at that station registered a minimum of 745 millimeters. At this time also winds of hurricane force blew from the E quadrant.

During the same period another depression was situated to the W. of the Bonin Islands in the early morning of the 11th. This depression crossed the northern part of those Islands on the afternoon of the same day in a southeasterly direction. The barometer fell in Chichijima (142° 11′ E, 27° 05′ N) to 745 millimeters and the winds veered rapidly from SE through S, W, N, to NE.

The depression of the 18th was located on the night of the 17th between the Liukiu and Bonin groups of Islands, moving in an easterly direction. On the 18th it crossed the Bonin Islands, and on the 19th moved away to the Pacific.

During the 20th and 21st we find there was another depression in the Pacific SE of Japan and N of the Bonin Islands.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[ϕ=14° 34′ 41″ N; λ=120° 58′ 33″ E; barometer above sea, 1.42 meters; gravity correction not applied, —1.72 mm.]

Date.	Pressure (mean).	Temperature. Open air.[2] Mean.	Temperature. Open air. Maximum.	Temperature. Open air. Minimum.	Underground. 0.25 meter. 8 a. m.	Underground. 0.25 meter. 2 p. m.	Underground. 0.50 meter. 8 a. m.	Underground. 0.50 meter. 2 p. m.	Underground. 1.50 meters. 8 a. m.	Underground. 2.50 meters. 8 a. m.	Relative humidity (mean)	Vapor pressure (mean)	Evaporation. Free exposure (total).	Evaporation. Shelter (total).
	mm.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	Per ct.	mm.	mm.	mm.
1	760.83	24.7	29.2	21.5	26.4	27	26.8	26.7	27	27.9	84.3	19.4	7.1	3.2
2	60.92	24.3	30.2	20.3	25.7	27.9	26.5	27.1	27	27.9	78.8	17.5	7.1	3.3
3	60.99	23.8	29.7	17.3	25	27.1	26.2	26.6	26.9	27.7	79.8	17.3	6	3.1
4	61.04	24.7	30.7	20.2	25.9	27.1	26.4	26.7	27	27.9	81.3	18.6	4.5	2.6
5	61.06	24.3	31.4	19.5	25.4	27.5	26.2	26.8	27	27.9	76.5	17.1	5	2.5
6	60.78	23.6	31.3	17.3	25	27.3	26.1	26.7	26.8	27.8	73.4	15.7	7.6	3.7
7	60.85	23.8	30.3	16.5	24.9	27	26	26.4	27	27.8	73.6	16	7.6	3.8
8	60.80	24.9	31.8	19.2	25.7	28.1	26.3	26.8	26.9	27.8	71.6	16.6	8	3.7
9	60.27	22.1	31.9	17.1	25.2	27.9	26.2	26.7	26.9	27.8	72	16.3	8	3.8
10	59.09	26	31.6	21.2	25.9	28.4	26.6	27	26.9	27.7	75.2	18.6	8.1	4
11	58.89	25.9	30.9	21.7	26.6	29	26.9	27.3	27	27.8	73.6	18.1	7.7	3.3
12	59.35	24.2	30.4	18.6	26.2	28.1	26.9	27.2	27	27.7	73.2	16.2	7	3.6
13	59.49	24.4	30.3	19.5	26	27.5	26.8	27.1	27	27.8	75.5	16.9	6.4	3.8
14	60	25.5	31.6	21.8	26.1	28.2	26.8	27.2	27	27.7	71.2	17.1	7.1	3.6
15	60.64	24.2	30.3	19.1	26	28	26.8	27	27	27.7	72.5	16	8	3.5
16	60.38	23.8	31.2	16.4	25.1	28	26.4	26.9	27	27.7	73.2	15.8	8.1	4
17	59.90	24.6	31.6	17.9	25.7	28.7	26.7	27.3	27	27.8	71.5	16.1	6.8	3.2
18	60.55	24.6	31	17.8	26	28.7	26.9	27.3	27	27.4	72.9	16.5	7.9	4
19	61	25	29.8	19.5	26.2	28	27.1	27.3	27	27.8	76	17.8	5.3	3.1
20	60.53	25.8	31.5	21.1	26.5	28.4	27	27.4	27.1	27.8	73.5	18	7.5	3.6
21	60.61	25.9	30.6	20.5	26.6	28	27	27.4	27	27.7	73.1	18	6.3	3
22	61.38	25.4	29.7	20.9	26.3	27.6	27	27.3	27	27.7	76.9	18.5	6.4	3.5
23	61.53	25.3	30.7	20.9	26	27.4	27	27.1	27.1	27.8	77.3	18.3	7.1	3.4
24	61.92	24.9	30.8	21.2	26.9	27.8	26.8	27	27	27.7	72.9	16.9	7	3.6
25	62.35	25.1	31.6	19.6	25.8	27.8	26.8	27.2	27.1	27.8	67	15.6	8.3	3.8
26	62.79	24.8	32.3	18.8	25.7	28.2	26.9	27.3	27	27.6	70	15.9	10.9	5.1
27	62.03	24.7	33.2	17.9	25.4	28.9	26.8	27.4	27	27.7	67.4	15.1	10.2	4.6
28	60.68	24.8	32.6	17.6	25.8	29	26.9	27.9	27	27.6	65.4	14.7	9.6	4.6
Mean	760.74	24.7	31	19.3	25.9	28	26.7	27.1	27	27.8	73.9	17	7.4	3.6
Total													206.6	
Departure from normal	—0.72	—0.6	+0.4	—1							+0.2	—0.6	+6.9	

Date.	Wind. Prevailing direction.	Wind. Total movement.	Wind. Maximum hourly velocity.	Wind. Direction at the time of the maximum velocity.	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Sunshine.		Rainfall.	Miscellaneous.
		Km.	Km.		0–10.					h.	m.	mm.	
1	N	172	15.5	N	7.8	A.-Cu.	E	Cu.	NE by E	2	50		≡° a.
2	N	219	16	WSW	4.5	A.-Cu.	NNE	Cu.	NE	7	20		⊕ ≡° a.
3	NE, WSW	124	13	WSW	6.3	Ci.		Cu.	ENE	7	25		⌓² ≡° a. ●° p.
4	NNE	103.5	15	WNW	7.4	Ci.-S.	SSE	N.-cf.	E by N	6	45	0.9	⊕ ⌣ ≡° a. ● p.
5	SE	110	14	SE	5.5	Ci.		Cu.	ENE	7	20		≡° a.
6	ESE	177	24	SE	3	Ci.		Cu.	ENE	9	35		≡° a. ↯° p.
7	ESE	185.5	21	NW	7.4	Ci.	SW by W	Cu.	ENE	9	35		⌓ ≡° a.
8	SE	207	22	SE	2.6	Ci.-S.		Cu.		9	50		≡° a.
9	SE	197.5	19.5	SE	2.5	Ci.		Cu.		10	15		⌓ ≡° a.
10	W	149	17.5	SW	5.9	A.-Cu.	SW by S	Cu.		7	35		≡° a. ⦕ ●° p.
11	N	226.5	18.5	N	4	Ci.-S.		Cu.	NE by E	9	10		≡° a.
12	ESE	114.5	13	E	6.6	Ci.-S.	ESE	Cu.	ENE	8	00		≡° a.
13	ESE	157	20	ESE	5.5	Ci.	SW	Cu.	E	7	50		≡° a.
14	ESE	150	16.5	ENE	6.2	A.-Cu.	N by E	Cu.	E	7	40		≡° a. d p.
15	ESE, W	126.5	16	ESE	8.5	Ci.-S.	SE	Cu.	E	3	30		≡° ◯ a.
16	SE	157.5	16.5	W	1.6	Ci.		Cu.		10	20		≡° a.
17	ESE, W	137	15	SSE	3.2	Ci.	SW	Cu.	E	10	30		⌓ ≡° a.
18	W	117.5	18	W	3.3	Ci.		Cu.	E	9	00		⌓ ≡° a.
19	Variable	125	12	SE	7.2	A.-Cu.	NE by E	S.-Cu.	E by N	4	45	.6	≡° a. ● p.
20	W	132	15.5	W by N	7.8	A.-Cu.	E	Cu.		6	45		≡° a.
21	WSW, SE	100.5	12	ESE	5.2	Ci.	SE	Cu.	E	5	10		≡° a. d p.
22	Variable	103.5	16	NE	8.6	A.-Cu.	NE by E	N.-cf.	ENE	3	50		≡° a.
23	ESE, WNW	116	16	E by S	8.6	Ci.-S.		Cu.	E	3	40		≡° a.
24	E	165.5	23	E	9.2	A.-Cu.	SSE	S.-Cu.	E	2	20		≡ a. ⌣ p.
25	E	239	24.5	E	6.2	A.-Cu.	NE	Cu.	ENE	8	50		
26	ENE	169.5	18.5	NNE	8.6	Ci.-S.	SE by S	Cu.	E	6	25		≡° a. ◯ a. &p. ⌣ p.
27	E	231	29	SE	6.8	Ci.	S	Cu.	ENE	9	15		≡° a. ↯° ⌣° ⊕ p.
28	ESE	227	29	ESE	4.2	Ci.-S	SW by S	Cu.	ENE	10	35		≡ a.
Mean		158.6	18.1		5.9					7	22		
Total										206	05	1.5	
Departure from normal		—35.7			+1.4					+0	17	—8.4	

[1] All the mean values given in this table are deduced from hourly observations.
[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

TAGBILARAN.

[ϕ=9° 38′ N; λ=123° 53′ E; barometer above sea, 21.8 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Lower.		
	mm.	°*C.*	°*C.*	°*C.*	*P. ct.*		*0-12.*	*0-10.*			*mm.*	
1	758.67	26.2	30.4	22.8	79.8	NNE, SE	1	8.5	Ci.-S.	Cu.-N. E	10.6	● ⛈ p.
2	58.57	25.6	30.2	22.1	83.3	NNE, SE	.7	8	Ci.-S.	N. NE	5.1	●² ϟ p.
3	58.99	25.4	29.1	22.7	81.2	NNE	1	9	A.-S.	N. NE	1.8	d a. ● p.
4	59.04	25.4	30.3	22	81	SE, NNE	1.2	8.7	Ci.-S.	N. NE	10	d a. ● p.
5	59.16	24.7	26.8	22.5	84.8	NNE	1	9.3	A.-S.	N. NE	.5	d a. p.
6	58.89	25.9	29.3	22.8	80.5	N, NNE	1.2	9.5	Ci.-S.	S.-Cu. NE	.2	d a.
7	59.22	25.7	29.8	22.9	83.9	NNE	1.3	9.2	A.-S.	N. E	.5	⌒ a. d p.
8	58.98	25.6	30.9	23.1	86.7	NNE	.7	6.7	A.-S.	N. N	38.3	●² ⛈ a. d p.
9	58.78	25.8	29.1	23	84.2	N	1.2	9.3	Ci.-S.	N. E	11.6	● a. p. ⛈² p.
10	58.19	25.5	29.6	22.4	82.3	NNE	1	6	A.-S.	N. E	2.2	⛈² a. ● p.
11	58.36	25.4	31.2	21.6	81.5	SE	1.2	3.8	Ci.-S.	Cu. NE	------	
12	58.25	25.2	30	21	77	N, NNE	1	5.8	Ci.-S. SE	S.-Cu.	------	
13	58.13	26	30.4	21.4	78.7	N, NNE	1	7.8	Ci.-S.	N. NE, NW	1.7	d a. ∞° ●° p.
14	58.92	25.6	30.4	22.4	78.8	NNE	1.3	9.8	A.-Cu. SE	S.-Cu.. NNW	------	
15	59	25.9	31.2	22.8	78.8	Variable	1.5	9.5	Ci.-S.	Cu.-N. NE	------	d a.
16	58.66	26.1	31.1	23	80.8	N	1.3	7.7	Ci.-S.	S.-Cu. N	------	d p.
17	58.47	26	31.5	23	83.2	NNE	1.2	5.2	Ci.-S.	S.-Cu. N	6.6	●² p.
18	58.89	26.4	31	23.3	83.7	NNW	1.3	7.8	A.-Cu.	Cu.-N. NE	.2	⊤ ϟ² d p.
19	59.19	26.5	30.6	23.7	81.7	NNE, SE	1.3	7.7	A.-S.	Cu.-N. E	.3	●° a. ⛈² ⊕° p.
20	58.88	25.4	31.5	23.1	87.8	NNE	1.2	7.7	Ci.-S.	N. ENE, NE	19.1	↙ ●² a. ⛈ p.
21	58.96	26.4	31.4	22.9	81.8	NNE	1.3	8.8	Ci.-S.	N. ENE	6.6	⛈² ● ϟ p.
22	59.27	26.1	30.2	23.6	84	NNE	1.3	8.2	Ci.-S.	Cu.-N. E, NE	19	⛈ a. ↙ ●² ϟ² p.
23	59.56	26.6	31.1	23.1	77.5	NNE	1.2	6.3	Ci.-S.	Cu.-N. ENE	1	●° p.
24	59.96	25.2	28.1	22.6	83.9	NNE	1.5	10	Ci.-S.	N. NE, ENE	3.7	●° p.
25	60.72	25.3	29.3	22.1	75.5	NNE	1.7	9	Ci.-S.	S.-Cu. NE	------	
26	60.58	25.8	30.1	22.1	75.1	NE	1.2	8.3	Ci.-S.	S.-Cu. E	.7	d a. p.
27	59.81	25.7	28.7	22.3	82	NNE	1.2	9.5	A.-S.	N. E	1	d a. p.
28	68.84	25.6	28.4	23	82.2	NNE	1.3	9.7	A.-S.	N. E	2.2	d a. p.
Mean	759.03	25.8	30.1	22.6	81.5	------	1.2	8.1	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	142.9	

SURIGAO.

[ϕ=9° 48′ N; λ=125° 29′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Force (mean).	Clouds. Amount (mean).	Upper.	Lower.	Rainfall.	Miscellaneous.
	mm.	°*C.*	°*C.*	°*C.*	*P. ct.*		*0-12.*	*0-10.*			*mm.*	
1	758.86	25.2	------	22.7	92.2	NNE	0.2	6.3	A.-Cu. SE	Cu.	------	Ω ≡ a. d p.
2	59.04	25.4	------	22.1	91.3	N	.5	5.3	A.-Cu.	Cu.	------	
3	59.33	23.2	------	22	97.3	ENE	1.5	10	------	N.	61.5	●² a. p.
4	59.44	23.7	------	21.5	96.3	NE, NNE	.5	10	------	N.	203.7	●² a. p.
5	59.68	24	------	22	96.2	NE	1	9.7	------	Cu.-N.	78.7	● a. d p.
6	59.18	25.2	------	23	94.3	NNE	.3	8.8	A.-Cu.	S.-Cu.	41.6	●² a.
7	59.60	24.2	------	23	99	NE, NNE	.3	9.8	------	N.	67.1	●² a. p.
8	59.12	24.5	------	22.5	98.2	N	.3	8.8	Ci.	Cu.-N.	36.8	●² a. p.
9	59.02	24.6	------	22.2	97.5	Calm	------	9.7	------	N.	18.3	≡ ● a. p.
10	58.77	25.6	------	20.5	92.2	NE	.2	7	Ci.	Cu.	3.8	Ω² ≡ ●° a.
11	58.70	25.6	------	21	88.3	N	.7	3.2	Ci.	Cu.	------	Ω² ≡ a.
12	58.53	26.4	------	21.1	84.2	NE	1	6.7	Ci.-S.	Cu. NNE	2.5	p p.
13	58.65	25.9	------	22	84	NE	1.5	7.2	Ci.-S.	Cu. NE	3.3	● a. ∞ p.
14	59.32	25.2	------	22.2	88.8	N	.7	8.5	Ci.-S.	Fr.-N.	8.6	●° p.
15	59.01	25.6	------	21.3	92.2	NNW	.8	10	Ci.-S.	Fr.-N.	10.2	d a. ● p.
16	58.53	25.3	------	23	96.2	NW	1.2	10	------	Fr.-N.	8.1	● a. d ⊤ p.
17	58.64	26.7	------	22.9	90.3	N	.3	3.2	Ci.	Cu.	------	
18	59.16	26.1	------	23.5	94.7	NNW, NNE	.3	7.7	Ci.-S.	S.-Cu.	6.9	d a. p p.
19	59.70	27	------	23.5	89.5	NE	1	3.8	Ci.	Cu.	3.3	p ≡ a. d p.
20	59.06	26.4	------	23.4	93.2	NNE	.5	7.8	Ci.	Cu.-N.	28.7	● a. p.
21	59.15	26.8	------	22.6	90.7	NE, N	.3	8.7	A.-Cu. ENE	S.-Cu.	13	● ≡ a. d p.
22	59.64	26.6	------	23.5	88	NE	.8	7.5	Ci.-S.	S.-Cu.	------	d p.
23	59.95	26.3	------	22.5	90.5	NE	1	6.7	Ci.	Cu.	13.2	● a. p p.
24	60.12	24.7	------	23	93.8	NE	3.3	10	------	Cu.-N.	13	● a. d p.
25	60.94	26.6	------	22.6	80.8	NE	3.7	8.5	Ci.-S.	Cu.	------	
26	61.08	25.6	------	22.7	89.5	NE	2.2	9.2	A.-Cu.	S.-Cu.	11.7	● a. p.
27	60.06	25.6	------	21.9	89.7	NE	1.8	10	------	S.-Cu.	26.2	● a. p.
28	59.28	25	------	22	94	NE	.8	9.3	Ci.-S.	N.	11.4	● a. ↙ ● p.
Mean	759.34	25.5	------	22.4	91.9	------	1	8	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	671.6	

[1] All the mean values given in these tables are deduced from six-daily observations.

METEOROLOGICAL DATA, ETC.—Continued.

CEBU.

[ϕ=10° 18′ N; λ=123° 54′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.					Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction.					
									Upper.		Lower.			
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.					mm.	
1	759.21	26.2	29.5	23.1	82.3	ENE, E	0.7	3.8	Ci.		Cu.	NE	------	Ω ≡ a. d p.
2	59.09	26.1	30	21.9	83.7	ENE, NE	1.2	5	Ci.		Cu.	NE	14.5	Ω² ≡ a. ● p.
3	59.59	25.5	29	22.5	84.3	ENE, NE	.7	6.5	Ci.		Cu.-N.	NE	17	Ω ≡ a. ● p.
4	59.66	25.4	28.8	21.6	85.5	E	.7	7.3	Ci.		N.	NE	12.7	≡ ● a. p.
5	59.95	24.4	26.3	22.4	86.2	NE	.7	9.6	Ci.-S.		N.	NE	25.4	● a. ⌒ p.
6	59.24	26.3	29	23.4	83.2	ENE	.7	7.2	A.-Cu.		S.-Cu.	ENE	------	⌒ p.
7	59.86	26	28.9	22.8	83.7	NE	.5	6.7	Ci.-S.		Fr.-Cu.	ENE	.5	d ≡ a.
8	59.56	26.4	29.9	23.5	84.3	NE, ENE	1	7	Ci.-S.		Cu.-N.	ENE	.8	≡ a. p p.
9	59.39	26.3	30	23.2	83	ENE	.5	6.3	Ci.-S.		Cu.	ENE	------	≡° ○
10	58.84	25.3	28.1	23.3	88.5	N, E	.5	5.3	Ci.		S.-Cu.	ENE	1.5	≡ p a. d p.
11	58.80	25.8	28.6	21.3	82.7	E	.5	3.5	Ci.		Cu.	N	------	Ω² ≡ a. ∞ p.
12	58.91	26.1	29.7	22.9	81.7	NE, E	.3	4.2	Ci.-S.		Cu.	NE	------	Ω² a.
13	58.88	26.4	30	22.5	82.5	E	.8	5.5	Ci.		Cu.	NE	------	Ω ≡ a. d p.
14	59.53	25.9	28.7	22.3	78.7	E	.5	6.5	Ci.-S.		Cu.	ENE	------	Ω ≡ a.
15	59.58	26.6	30.5	23.3	77.3	NE, E by N	.8	7.8	Ci.-S.		S.-Cu.	ENE	------	≡ ○ a. ∞ d p.
16	59.30	26.5	30.5	22.5	79.4	Variable	.3	7.2	Ci.-S.		Cu.	NNE	------	≡² a. ○
17	58.90	26.2	29.5	22.5	85.7	SE, NE	.3	6	Ci.	E	Cu.-N.	NE	1.8	≡ p a. p.
18	59.25	26.8	30.5	22	79.2	ENE	.8	5.2	Ci.-S.		Cu.-N.	NE	------	≡ a. ⛈ p.
19	59.72	26.9	------	22.6	82	E	.5	4	Ci.		Cu.	ENE	------	Ω² ≡ a.
20	59.38	27.1	29.8	23.5	79.5	E	.8	5.5	Ci.		S.-Cu.	ENE	------	Ω ≡ a. ⛈ p.
21	59.52	26.8	30.4	23.4	82.7	ENE	.8	6.7	Ci.-S.		Cu.-N.		5.8	ϟ ● a. ⛈ p.
22	59.98	26.2	29.7	23.7	84	NE, ENE	1	6.7	Ci.-S.		Cu.-N.	E	4.6	Ω² a. ● ⛈ p.
23	60.39	26.6	29.7	22.9	80.7	ENE	.5	5	Ci.		N.-cf.	NE	12.4	● ≡ a. ∞ p.
24	60.77	24.5	27.8	23.5	89.7	NE	1	8.5	------		N.	NE	5.3	≡ d a. ● p. ⊍
25	61.55	25.6	28.6	23.6	80	NE	.8	6.8	Ci.-S.		Cu.	NE	------	≡ a.
26	61.06	26.9	29.9	23.1	76.3	NE	.8	7.2	Ci.-S.		Cu.	ENE	2	Ω ●° a. d p. ⊍
27	60.50	26.6	29.6	23.8	78.8	NE	.7	7.2	Ci.-S.		N.-cf.	NE	1.3	Ω p a. ⊍
28	59.59	26.1	27.8	23	82.3	ENE, NE	.3	7.2	Ci.-S.		N.-cf.	ENE	8.4	≡ ● a. d p.
Mean	759.64	26.1	29.3	22.9	82.4	------	.7	6.3	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		114	

ILOILO.

[ϕ=10° 41′ N; λ=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature: Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind: Prevailing direction.	Force (mean).	Clouds: Amount (mean).	Upper.	Upper direction	Lower.	Lower direction	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.					mm.	
1	758.92	25.4	30	22.7	85.3	NE	1.3	4.5	------		Cu.	NE	1.8	p p.
2	58.92	24.7	28.5	22.7	85.5	NE	2	5.7	------		S.-Cu.	NE	5.1	p p.
3	59.29	24.8	28.9	22.8	82.7	NE	2	7	A.-Cu.		S.-Cu.	NE	4.3	p p.
4	59.25	25.4	29.9	22.8	83	N, NE	2.2	7.8	A.-Cu.		S.-Cu.	NE	8.9	p p.
5	59.30	24.8	28	22.2	84.1	NE	2	8.5	A.-Cu.		S.-Cu.	NE	15.7	● a.
6	59.16	25	28.1	23	82.2	NE	2.3	7.2	A.-Cu.		S.-Cu.	NE	.5	d a.
7	59.21	25.6	29.9	23	81	NE	1.8	5.7	A.-Cu.		S.-Cu.	NE	------	d a.
8	59.21	25.1	28.8	23.2	82.5	N	2	7	A.-Cu.		S.-Cu.	NE	------	
9	58.84	25.6	30	23.1	83.5	N, NE	1.5	6.8	A.-Cu.		S.-Cu.	NE	------	d a.
10	58.30	25.6	29.1	23.3	84.3	NE	4.3	7.2	A.-Cu.		S.-Cu.	NE	------	d a.
11	58.30	26	30.3	22.9	82.8	NE	1	5.5	Ci.		S.-Cu.		------	
12	58.20	25.5	30	23.1	82.3	N	1.5	6	A.-Cu.		S.-Cu.	NE	------	d a.
13	58.21	25.8	29.7	22.9	80.2	N	2	3.8	Ci.		S.-Cu.	NE	------	
14	58.98	25.8	30.5	22.7	77.7	NE	2	5.7	A.-Cu.		S.-Cu.	NE	------	
15	59.31	25.6	29.5	22.9	79.1	N	2	5.7	A.-Cu.		S.-Cu.	NE	------	
16	58.98	26	30.9	22.6	77.7	N	1.8	6	Ci.-S.		S.-Cu.	NE	------	
17	58.58	26.3	31.1	22.5	78.1	NE	1.7	4.2	Ci.		S.-Cu.		------	⊍
18	59.12	25.9	30.6	23.7	80.8	N, NE	1.5	5.3	Ci.-S.		S.-Cu.	NE	------	⊍
19	59.34	25.8	30.6	23	83.3	NE	1.5	4.8	Ci.		S.-Cu.	NE	9.4	d a. p ⛈ p.
20	58.82	26.7	31.6	23.6	80.8	N	1.8	6	Ci.-S.		S.-Cu.		------	⊍
21	59.29	25.2	29.6	23.6	85.5	NNE	1.7	6.7	Ci.-S.		S.-Cu.	N	------	⊍
22	59.60	25.4	28.7	23.3	85.7	N	2.2	8	A.-Cu.		S.-Cu.	NE	6.9	p a. p.
23	59.94	24.8	28.8	23.1	88.2	N	1.7	8.5	A.-Cu.		S.-Cu.	NE	7.9	p a. ⊍
24	60.24	24.7	28.7	22.5	84	NE	2.3	8	A.-Cu.		S.-Cu.	NE	1	d a.
25	60.80	24.6	28.8	22.7	82.5	NE	2	7.8	A.-Cu.		S.-Cu.	NE	------	⊍
26	60.70	25.6	29.9	22.2	78.5	N	1.8	6.3	Ci.-S.		S.-Cu.	NE	------	⊍
27	60.22	24.8	28.8	23.4	84	N, NE	1.8	8.3	A.-Cu.		S.-Cu.	NE	3	p a. d p.
28	58.92	25.7	30.6	23	78.5	N	2.3	7.7	A.-Cu.		S.-Cu.	NE	------	⊍
Mean	759.21	25.4	29.6	22.9	82.3	------	1.9	6.5	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		64.5	

METEOROLOGICAL DATA, ETC.—Continued.

ORMOC.

[ϕ=11° 00′ N ; λ=124° 36′ E ; barometer above sea, 4.5 meters ; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°*C.*	°*C.*	°*C.*	*P. ct.*		*0-12.*	*0-10.*					*mm.*	
1	758.57	24.1	30	21	92.3	Variable	0.7	7	Ci.-S.		Cu.	ENE	60.5	Ω d a. ⊤ ● p.
2	58.63	24	30	21.5	92.1	NNW	.7	7.8	Ci.-S.		Cu.	NE	4.3	● ⊤ p.
3	58.94	24.1	26.5	22.5	89.8	NNW, NE	1	10	Ci.-S.		Cu.	NE	14	● a. p.
4	58.99	24.4	29	22	89.5	Variable	.3	9.8	Ci.-S.		Cu.	ENE	5.8	●° a. p.
5	59.17	24.4	26.1	22.5	86.3	Variable	.8	10	Ci.-S.		Cu.	ESE	5.6	●° a. p.
6	59.02	24.8	28.7	22	85.9	NNW	.7	9.7	Ci.-S.		Cu.	ENE	------	d a.
7	59.05	25.5	30.7	22.8	83.5	NW	.7	9.3	Ci.-S.		Cu.	NE	------	d a. p.
8	58.94	24.9	31.4	23	91.2	NW	.3	8.2	Ci.-S.		Cu.	NE	16.8	● a. p.
9	58.72	25	29.5	22.3	90	S	.7	8.7	Ci.-S.		Cu.	ENE	6.1	● p.
10	58.03	24.9	28.8	22.5	90.3	WSW, SSW	.3	7.3	Ci.-S.		Cu.	ENE	------	d° a. p.
11	58.23	24.1	29.7	19.3	83.3	Variable	.3	2.2	Ci.	SE	Cu.	NE	------	Ω² a.
12	58.10	24.5	31.8	19.6	81.9	Variable	.7	6.7	Ci.-S.		Cu.	ENE	3.8	Ω a. ● p.
13	58.17	25.4	31.5	21.5	76.8	Variable	.3	8	Ci.		Cu.	ENE	------	
14	58.84	24.8	31.5	20	78.8	SW, S	.5	6.3	A.-Cu.	E	Cu.		------	Ω a.
15	58.89	24.9	29.5	22.2	84.5	Variable	.5	9.7	Ci.-S.		Cu.	NE	1.3	● p.
16	58.54	25.1	29.1	22	86	NNW	.3	7.5	Ci.-S.		Cu.	ENE	8.6	d a. ● p.
17	58.26	24.4	28.9	21.8	92.7	NNW, SE	.2	7.5	Ci.-S.		Cu.	NE	12.4	● ∞ p.
18	58.86	24.8	29	21.3	90.8	WSW, NNE	.2	6.8	Ci.-S.		Cu.	NE	2.8	⌒ ● ⊤ a. ⩽ p.
19	59.30	24.7	30.5	21.8	89.7	Variable	.3	4.2	Ci.		Cu.	E	------	Ω a. d p.
20	58.90	24.2	29.1	20.9	90.7	Calm	------	6	Ci.		Cu.	ENE	20.3	Ω a. ● ☈ p.
21	58.91	24.8	30.5	21.9	90.2	NW	.7	9	Ci.-S.		Cu.		45.7	d a. ● ☈ p.
22	59.42	24.7	28.5	22.7	93	NNW	.3	8.7	Ci.-S.		Cu.	E	7.9	● ⊤ p.
23	59.74	25	29.5	22	86.8	Variable	.3	7.7	Ci.	E	Cu.	E	5.1	● p.
24	60.27	24.5	28.1	21.9	81.7	NE	.7	9.5	Ci.-S.		Cu.	ENE	------	
25	61.07	25.1	29	22.3	73.2	NE	.5	8.8	Ci.-S.		Cu.	ENE	------	
26	60.76	26.2	30.5	21.9	68.3	NE	.8	8	Ci.	E	Cu.	ENE	------	d a. ⏀
27	60.05	24.7	30	22.5	84.3	NE, NW	.3	8.8	Ci.-S.		Cu.	ENE	2.5	● p.
28	59.09	25.9	29.5	22.5	72.3	NE	.7	9.5	Ci.-S.		Cu.	ENE	------	⊍
Mean	759.05	24.8	29.5	21.8	85.6	------	.5	8	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		223.5	

TACLOBAN.

[ϕ=11° 15′ N ; λ=125° 00′ E ; barometer above sea, 6 meters ; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.		Clouds. Lower.		Rainfall.	Miscellaneous.
	mm.	°*C.*	°*C.*	°*C.*	*P. ct.*		*0-12.*	*0-10.*					*mm.*	
1	759.42	24.8	28.6	23.3	89.2	NW	1	7.2	A.-S.		Fr.-N.		29.7	d a. ● p.
2	59.56	24.3	28	22.6	91.2	Variable	1.2	9	A.-Cu.		N.		23.1	● p.
3	60.05	23.9	26.9	22.6	92.8	NNW	.2	10	A.-S.		N.		35.3	● a. p.
4	60.01	24.6	28.5	22.6	86.4	NW	1	10	A.-S.		Fr.-N.	NE	27.7	●² a. d p.
5	60.46	24.1	27	23.1	88.5	Variable	.8	10	A.-S.		N.	ENE	12.4	d a. ● p.
6	60.29	23.8	26	22.9	92.9	NW	.8	9	A.-S.		N.		27.9	● a. p
7	60.11	25.4	30	23	85.7	NW	.8	8.8	Ci.-S.		Cu.		16.8	● a. ⊕
8	59.91	25.4	29.8	24.1	89.5	ENE	1.2	9	------		N.		13	● a. p.
9	59.74	24.8	30	23.3	92	NW	.6	8.6	Ci.-S.		Fr.-N.		12.2	● a. p.
10	59.02	25.1	29.5	23.1	89.9	S by E	1	7.6	Ci.-S.		Fr.-N.	NE	10.4	● a. p.
11	59.01	25.7	32	22.1	79.6	Variable	.4	3.4	Ci.	SE by S	Fr.-Cu.	NE by N	------	≡ a.
12	59.07	26	31	22	79	Variable	1	8.8	Ci.-S.		S.-Cu.		.8	◯ ⊕ ● p.
13	59.42	25.8	31	23.2	74.9	NE by N	1	4.6	A.-Cu.		S.-Cu.	ENE	------	
14	59.96	25.6	30.4	22	75.8	ENE	1	7.6	A.-Cu.	ENE	S.-Cu.		------	
15	59.99	25.1	28.4	23.6	84.8	N, NW	1.4	10	A.-S.		Fr.-N.		1.8	⊕ ● p.
16	59.47	24.8	27.5	23.5	88.1	N	1.2	8.6	A.-S.		Fr.-N.		.3	d a. ⊕
17	59.12	24.7	29	23.6	90	N	1.4	8.8	Ci.-S.		S.-Cu.		2.5	● ⊤ p.
18	59.68	25.5	31.5	23.6	84.9	Variable	.6	8.6	A.-Cu.	ENE	Fr.-N.		1	d ⊤ a. p. ⊍²
19	60.32	25.5	32.7	23.1	88.3	N	.8	7.2	Ci.-Cu.	SE	Fr.-N.		12.2	d a. ● ☈ p.
20	59.80	25.1	29.5	23.1	89.8	Variable	.6	7	A.-Cu.	ENE	Fr.-N.		15.2	≡ Ω a. ● ☈ p.
21	59.97	25.7	31.1	24.1	88.2	N	1.4	8.6	Ci.	SE	S.-Cu.	NW	------	⊕ ⊤ d ⊍ ⏀
22	60.52	24.7	28.5	23.5	91.2	N	.4	9.8	A.-Cu.		N.	NE	30	⌒ ● a. p. ⏀
23	60.87	24.7	30.5	23.1	88.4	N	1	9	Ci.		Fr.-N.	E	19.3	● a. p. ⏀
24	61.56	24.5	28	22.5	81	NE	1.8	10	A.-S.		Fr.-N.	ENE	7.6	● ⌒ p.
25	62.06	25.4	30.4	23	74.2	NE	1	8.8	A.-S.		Fr.-N.	NE	------	d a. ⏀
26	61.72	26.6	32	23.1	73.8	N	1	7.6	Ci.-S.		S.-Cu.	ENE	.8	●° a.
27	60.92	25.8	30	23.6	81.8	NE by N	1	9	A.-Cu.	E by N	Fr.-N.	ENE	9.6	● a. p.
28	59.96	25.4	29.5	23.1	82.2	Variable	.8	9.6	A.-S.		Fr.-N.		.5	●° a. ⊕ ⊍ ⏀
Mean	760.07	25.1	29.5	23.1	85.5	------	.9	8.4	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		310.1	

METEOROLOGICAL DATA, ETC.—Continued.

CAPIZ.

[ϕ=11° 35′ N; λ=122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°*C.*	°*C.*	°*C.*	*P. ct.*		*0–12.*	*0–10.*					*mm.*	
1	759.61	25.8	27.3	22.2	85.7	N	2.3	8	Ci.-S.		Cu.-N.	NE	3.3	●° a. p.
2	59.96	25.6	27	22	87	NNE, ENE	3.2	10	Ci.-S.		N.	N	8.1	● a.
3	60.16	26.1	27.9	22.1	81.8	NNE	1.5	9	Ci.-S.		Cu.-N.	NE	------	d p.
4	59.98	26.4	29.4	22.4	85	ENE	2.7	8.5	Ci.-Cu.		Cu.-N.	NE	------	d p.
5	60.37	26.1	28.1	22.2	81.3	NE	2	9.2	Ci.-S.		Cu.-N.	NE	------	
6	60.27	25.7	27.8	22.2	81.2	NNE	1.5	9.7	Ci.-S.		N.	NE	------	d a.
7	60.12	25.8	28.2	22.3	86.3	NE	2	6.5	Ci.-S.		Cu.	E	------	d a.
8	60.11	25.9	28	22.2	86.2	NNE	1.5	8.8	Ci.-S.		Cu.-N.	NE	1.5	d p.
9	59.66	25.4	27.6	21.7	90.2	NE	1.5	9.3	Ci.		N.	NE	74.7	● a. p. ↯
10	58.90	25.6	28	21.3	89.3	NE	.8	9.5	Ci.-S.		Cu.-N.	NE	------	
11	58.85	26	28.8	21.9	87.3	NE	.7	6.5	Ci.		Cu.-N.	SE	9.6	● p.
12	59.21	24.9	28	22	86.9	NE	2.2	9.2	Ci.		Cu.-N.	NE	------	p p.
13	59.07	26.1	28.9	22.2	85.2	NE	1.3	5	Ci.		N.	NE	------	
14	59.66	25.5	29.5	20	82.5	NE	.7	5.7	Ci.		S.-Cu.	E	------	Ω a.
15	60.32	25.8	28.1	21.5	81.2	NE	1.3	8.2	Ci.		N.	NE	------	d° p.
16	59.84	25.8	28.2	21.2	81.3	NE	1.7	6.3	Ci.		Cu.-N.	NE	.5	d a.
17	59.48	26	28.2	22	85	N	1	7.8	Ci.-S.		Cu.-N.	NE	.8	d p.
18	60.10	26	28.6	22.6	83.3	NE	1.8	9.7	Ci.-S.		N.	NE	------	p° p.
19	60.41	26	28.3	22	85.2	ENE	2.2	9.2	Ci.-S.		N.		------	p° a. d p.
20	59.81	26.1	27.9	22.5	86.7	NNE	2.3	8.2	Ci.-S.		N.	E	2.8	●° a. ⊤ p.
21	60.18	25.7	27.5	22.2	83	NE	.2	9.8	Ci.-S.		Cu.-N.	E	------	d° p° p.
22	60.70	25.2	27.6	22	89.1	ENE	.2	10	Ci.-S.		N.	NE	30.9	p° a. ● p.
23	61.19	24.4	25.5	22	92.5	ENE	3.2	10	------------		N.		21.4	● a. d² p.
24	61.68	24.8	27.8	21.6	86.7	NE, E	3.3	10	------------		N.		6.4	p a. p.
25	62.38	25.2	27.5	22.1	83	NE	1.5	9.3	Ci.-S.		Cu.-N.	NE	1.5	●° a. ◡° ⌓°
26	62.23	25.3	28.2	21.6	86.3	NE	1.7	9.2	Ci.-S.		N.		11.9	● a. ⌓ ◡
27	61.45	25.9	28.2	22.2	85	NE	1.5	9.8	Ci.-S.		Cu.-N.	NE	------	
28	60.18	26.4	28.5	22	85.8	NE	1.3	8.2	Ci.-S.		Cu.-N.	NE	------	
Mean	760.21	25.7	28	21.9	85.4	------------	1.8	8.6	------------		------------		------	
Total	------	------	------	------	------	------------	------	------	------------		------------		173.4	

LEGASPI.

[ϕ=13° 09′ N; λ=123° 45′ E; barometer above sea, 4.3 meters; gravity correction not applied, —1.77 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°*C.*	°*C.*	°*C.*	*P. ct.*		*0–12.*	*0–10.*					*mm.*	
1	760.26	25.5	29.4	------	81.7	NE, ENE	1	7.3	Ci.-S.		Cu.	NE	------	p p.
2	60.66	25.2	27.7	------	77.8	NE	1.7	8.5	Ci.-S.		N.	NE	21.8	● a. d ⌒ p.
3	60.78	25.8	29.5	------	77.2	NE	1.5	6.7	A.-Cu.	ENE	Cu.		3.2	● p.
4	60.90	26.1	29	------	79.2	ENE	1	8	Ci.	S	Cu.-N.	NE	7.4	● a.
5	61.30	25.8	29.4	------	69.6	NE	1	5.5	Ci.	S	Cu.	ENE	------	○
6	60.82	26.2	29.6	------	71.8	NE	1	8.7	Ci.-S.		S.-Cu.	NE	------	⊕ d p.
7	61.14	26.3	30.5	------	78.2	ENE	1	7.2	Ci.	S	Cu.	NE	1.6	p a.
8	60.87	26.2	29.1	------	75.3	NNE, NE	1	5	A.-Cu.	E	Cu.		------	p° p.
9	60.34	24.9	28	------	88.2	NE	1	8.3	Ci.-S.		Cu.	NE	22.9	● a. p. ⊕
10	59.54	25.7	29.5	------	83.4	ENE, E	.8	7	A.-Cu.	SSE	Cu.		6.6	● a.
11	59.55	25.3	30	------	83.5	ENE	.7	4.5	Ci.	S	Cu.	N	3.8	≡ a. ● p.
12	59.74	25.6	29	------	78.7	NE	1	7.7	Ci.	S	Cu.	NE	1.5	p p.
13	60.09	25.2	28.5	------	77.9	ENE	1	5.5	Ci.		Fr.-N.	NE	9.4	● p.
14	60.43	26.5	29	------	70.8	ENE	1	3	Ci.		Cu.		------	≡ a.
15	60.76	25.8	28.8	------	75.3	N, ENE	1	6.7	Ci.	S	Cu.	NE	------	○
16	60.25	26.8	31	------	73.3	NE	1	3.3	Ci.	S	Cu.	ENE	------	≡ a.
17	60.08	25.7	31.5	------	78.9	NE	.8	6	A.-Cu.	E	Cu.	NNE	------	d p.
18	60.57	25.3	28.5	------	81.8	NE	1	8.2	Ci.-S.		Cu.-N.	NE	2.2	d° a. ● p.
19	61.02	24.3	26.5	------	89.3	NNE	1	9.5	Ci.-S.		Cu.-N.	ENE	33.5	● a. p.
20	60.59	24.2	26.8	------	91.8	NE	1	9.2	Ci.-S.		Fr.-N.	NE	92.1	● a. ○ ↯ p.
21	60.97	24.6	28.1	------	84.7	N, NE	1	9.3	Ci.-S.		Cu.-N.	NE	9.8	● a. d p.
22	61.33	24.4	26.7	------	87.7	NE	1	8.3	Ci.-S.		Cu.-N.	NE	7	d a. ● ⌒ p.
23	61.98	23.9	25	------	88.7	NE	1	9.7	------------		Fr.-N.	NE	41.8	● a. p.
24	62.55	24.7	26.9	------	77.1	NE, E	1.5	8.3	Ci.-S.		Fr.-N.	NE	9.1	● a. d p.
25	62.92	25	27.1	------	74.2	NE	1.3	8.3	Ci.-S.		Cu.-N.	NE	------	d a.
26	62.77	26	29.1	------	72	NE	1.3	7.3	Ci.-S.		Cu.-N.	NE	.5	d a. p.
27	62.10	25.8	30.3	------	76.2	ENE, NNE	1	6.7	A.-Cu.	E	Cu.	NE	------	d p.
28	61.03	25.8	30.3	------	75.2	NE	1	4.5	Ci.	SE	Cu.	NE	------	d a. ○
Mean	760.90	25.4	28.7	------	79.3	------------	1.1	7.1	------------		------------		------	
Total	------	------	------	------	------	------------	------	------	------------		------------		274.2	

METEOROLOGICAL DATA, ETC.—Continued.

ATIMONAN.

[ϕ=14° 00′.5 N; λ=121° 55′ E; barometer above sea, 7.8 meters; gravity correction not applied, —1.74 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.					Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction.					
									Upper.		Lower.			
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.					mm.	
1	761.21	24.2	25.8	22.5	89.7	NNE	3.6	9.3	Ci.-S.		S.-Cu.	NNE	15.5	⊤ ●° a. p.
2	61.52	24.2	25.9	22.4	88.7	NNE	3.6	9.2	Ci.-S.		Fr.-N.	NE	10.7	●° a. p.
3	61.20	25.4	30.4	22	83.2	NNE	2.8	4.3	Ci.		Cu.	NE	1.5	⊤^{2} d a. p. ⌒
4	61.06	25.8	30.3	22	84.8	NE, NNE	2.1	5.8	Ci.		S.-Cu.	E	5.1	●° a.
5	61.52	25.9	30.5	23.4	80.1	NE	3.2	2	Ci.		S.-Cu.	NE	------	⊤°
6	61.18	26.2	31	23.6	80	NNE	3	4	Ci.		Cu.	NE	------	
7	61.21	26.1	30	23.6	82.5	NE, NNE	2.4	6.8	Ci.		S.-Cu.	NE	------	⊥°
8	61.33	26.4	31	23.8	79.7	NNE	2.8	6.3	Ci.	S	Cu.	NE	------	
9	60.92	25.4	28.5	23.9	83	NNE	2.4	7.7	Ci.		Cu.	NE	------	d p.
10	59.44	25.4	28.5	23.4	88.3	NNW	1.4	9	Ci.		Cu.	N	------	
11	59.26	25.5	29.8	21.6	86.6	NE	2.6	5.3	A.-Cu.	N	S.-Cu.	NE	4.1	Ω° ≡ a. p p.
12	59.67	26.2	30.6	23.8	83.3	NE	2.7	6.7	Ci.		S.-Cu.	NE	------	d p.
13	59.75	25.4	31.2	22.5	86.4	Variable	1.6	7.3	Ci.		S.-Cu.	NE	------	d p.
14	60.49	25	30.5	20	84.7	SW, NNE	2.2	2.7	Ci.		Cu.	NE	------	Ω ≡ a.
15	60.89	26.6	31.3	23.9	80.8	NE	2.8	7.2	Ci.-S.	S	S.-Cu.	NE	------	Ω° a. d ϟ° p.
16	60.56	26.3	31	23.6	79	NNE	2.2	3.3	Ci.		S.-Cu.	NE, N	------	
17	60.25	26.3	31.3	23.8	80.5	N	2.3	1.2	Ci.		S.-Cu.	N	------	Ω° ≡° a.
18	61.02	26.8	31.8	23.9	78.3	NNE	2.9	5.2	A.-Cu.		S.-Cu.	N	------	Ω° a. d p. ⊤
19	61.34	26.4	30.9	23	83	NNE	3	9.2	Ci.-S.		S.-Cu.	N	13	d a. ●° p.
20	60.95	26.4	30	22.4	82.8	NNE	3	8.8	Ci.-S.		S.-Cu.	N	------	
21	61.16	26	30.5	24.4	85.2	NE	2.7	8.7	Ci.-S.		N.	NE	------	d a. p. ⊤°
22	62.01	24.4	25.7	22.1	90.8	N, NNE	2.4	10	Ci.-S.		Fr.-N.	NNE	33.7	↙ ●° a. p.
23	62.37	24.4	25.9	22	88.5	NE	2.4	10	Ci.-S.		N.	NE	41.2	↙ ●° a. p.
24	62.72	25	28.9	23	82.3	ENE	2.7	9	Ci.-S.		S.-Cu.	NE	------	d a. p. ⊤°
25	63.03	25.6	29	23.3	78.8	NE	1.8	7.5	Ci.		S.-Cu.	NE	------	d p. ⊤°
26	63.06	26	29.8	23.8	80.2	NE	1.6	6.3	Ci.		S.-Cu.	NE	------	d p. ⊤° ⊥
27	62.38	26.6	32	24	78.2	NE	1.6	5.3	Ci.		Cu.	NE	------	⊤° ⊥°
28	60.98	26.3	31.4	23.5	79.8	NE	1.4	5.2	Ci.		Cu.	NE	------	⊤ ⊥
Mean	761.16	25.7	29.8	23	83.2	------	2.5	6.5	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		124.8	

OLONGAPO.

[ϕ=14° 49′ N; λ=120° 15′ E; barometer above sea, 3.5 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature: Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind: Prevailing direction.	Force (mean).	Clouds: Amount (mean).	Upper.		Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.					mm.	
1	760.63	25	32.2	20.5	88.5	Variable	0.4	7.8	A.-Cu.	E	Cu.		------	≡ a. ∞ p.
2	60.75	24.7	31.9	19.3	83.7	N	.5	3	A.-Cu.		Cu.		------	≡ a. ∞ p.
3	60.92	24.1	31.2	18.3	84.7	N	.5	5.8	Ci.-S.		Cu.	NE	------	Ω ≡ a.
4	60.74	25.1	32	19.5	87.2	NE	.4	8	Ci.-S.		Cu.	E	------	⊥^{2} ≡ a.
5	60.76	25.4	31.9	20.3	87	NNE	.4	6.2	A.-Cu.		Cu.-N.	NE	------	≡^{2} a. p.
6	60.54	24.3	32.2	18.2	89.7	Variable	.3	3.3	Ci.-S.		Cu.	E	------	Ω^2 ≡^{2} a. ∞ p.
7	60.64	24	32.5	17.5	90.8	NE	.5	7.2	Ci.-S.	SW	Cu.		------	≡ a.
8	60.30	25.4	33.2	19	89.7	NNW	.7	4.3	Ci.-S.		Cu.		------	≡ a. ∞^{2} p.
9	59.93	25.5	33	18.8	88.8	NE	.5	3	Ci.-S.		Cu.		------	≡a. ∞ p.
10	58.92	25.2	29.2	21.3	93.1	NE	.3	6.8	A.-Cu.	SW	Cu.-N.		------	
11	58.81	24.4	30	20.7	94.5	SW	.5	5.5	Ci.-S.		Cu.	E	------	≡^{2} a. ∞^{2} p.
12	58.96	25.7	32.2	20	83.2	NE	.5	7.2	Ci.-S.	SW	Cu.	E, NE	------	≡^{2} a. ○^{2} ∞^{2} p.
13	59.06	25.6	32.6	19.3	74.7	N, NE	.7	5.2	Ci.-S.		Cu.		------	Ω ≡ a.
14	59.62	26.4	33	20.8	79.1	NE	.4	5.8	Ci.-S.		Cu.	E, NE	------	≡^{2} a.
15	60.19	25.5	32.8	20.3	78.5	ENE	.5	8.3	Ci.-S.	SE	Cu.		------	≡^{2} ○^{2} a.
16	60.20	24.6	32.2	18.4	80.3	NNE	.8	4	Ci.-S.		Cu.		------	≡ a. ∞ p.
17	59.61	24.3	27.9	19.8	85.8	WNW	.2	4.5	Ci.-S.		Cu.		------	≡ a. ∞ p.
18	60.22	25.5	33.5	19.3	78.7	WNW	.6	3.2	Ci.-S.		Cu.		------	Ω^2 ≡^{2} a. ∞^{2} p.
19	60.74	21.2	33.4	19.8	78.3	NW	.7	5.3	A.-Cu.		Cu.		------	≡ a.
20	60.30	27.2	33.2	23.3	78	NE	.5	9.3	A.-Cu.	SE	Cu.-N.		------	≡ a.
21	60.21	26.3	33.6	22	78	Variable	.3	6.7	A.-Cu.	E	Cu.-N.	E	------	≡ a. ∞ p.
22	60.93	26.5	34	21.3	71.3	NE	.6	7.5	Ci.-S.		Cu.-N.	E	------	≡^{2} a. ∞ p.
23	60.99	25.7	31.2	21.2	71	NE	.8	9.5	Ci.-S.	S	Cu.		------	∞ p. ⊤
24	61.30	25.9	31.6	22.6	71.5	NE	1.1	8	A.-Cu.	S	Cu.		------	≡ a. ⊤
25	61.66	26.6	32.5	22.5	71.3	NE	1.2	6.8	Ci.-S.		Cu.	E	------	≡ a.
26	62.24	26.4	31.8	22.8	73.7	NE	.9	8.7	Ci.-S.		Cu.	E	------	≡ a. ∞ p. ⊥
27	61.71	26.3	33.9	18.5	76.8	NE	.7	7.5	Ci.-S.		Cu.	E	------	≡ ○ ∞ ⊥°
28	60.34	25.3	33.5	18.5	79	NNE, NNW	.8	4.7	Ci.-S.		Cu.	E	------	⊤° ≡ a. ∞ p.
Mean	760.40	25.5	32.2	20.1	81.7	------	.6	6.2	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		------	

METEOROLOGICAL DATA, ETC.—Continued.

SAN ISIDRO.

[ϕ=15° 22′ N ; λ=120° 53′ E ; barometer above sea, 20 meters ; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force. (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12	0-10.					mm.	
1	761.23	25.6	32.8	20.7	69.7	NNW	0.7	8	A.-Cu.		Cu.-N.	E	------	d ∞ a. Ψ
2	61.55	24.4	32.1	18.2	72	E	.5	3.7	Ci.		Cu.		------	Ω ≡ a. Ψ
3	61.52	23.7	31.8	16.5	73.8	N	0	7	Ci.		Cu.		------	Ω^{2} ≡ a.
4	61.72	24.3	34.5	18.6	74.8	ENE, E	.5	8.3	A.-Cu.		Cu.-N.		------	d p.
5	61.86	23.8	32.1	17.7	75.3	N	.2	6	A.-Cu.		Cu.	E	------	≡ a. Ω^{2} p.
6	61.36	25.3	33.3	16.8	64.6	E	.2	5.2	Ci.		Fr.-Cu.		------	Ω^{2} ≡ a.
7	61.33	23.7	33.7	15.2	73.8	NE	.3	5.2	Ci.		Cu.		------	Ω^{2} a. p. ≡
8	61.31	23.9	33.3	15.5	69.8	E	.3	3.7	Ci.		Fr.-Cu.		------	≡ a. Ω^{2} p.
9	60.64	25	33.5	16.5	68	WNW, E	.5	4.3	Ci.		S.-Cu.		------	≡ a.
10	59.34	25.4	35.3	18	70	E, NE	.3	8.5	A.-Cu.		Cu.-N.	SSW	------	d a. p.
11	59.51	25.6	34.4	18.9	70.2	ENE	.5	6.5	A.-Cu.		Cu.-N.	NE	------	≡ a. Ω^{2} p.
12	59.82	25	33.2	18.5	72.1	E	.5	7.2	Ci.-Cu.		Cu.-N.		------	≡ Ω^{2} a. p.
13	59.87	24.5	35.2	17.5	75.9	E	.7	6.5	Ci.		Cu.		------	≡ a. Ω^{2} p.
14	60.44	24.7	31.1	19.9	74.5	E	.5	9.2	Ci.-Cu.		Cu.-N.	E, ENE	------	d a.
15	61.22	24.4	33.3	19	73	E	.3	8.5	A.-Cu.		Cu.	SE	------	Ω^{2} p.
16	60.93	24.9	34.7	16	66.5	N, ENE	0	5	Ci.		Cu.	WNW	------	Ω^{2} ≡ a. p.
17	60.42	25.3	34.2	18	70.3	NNE	.5	5.5	Ci.		Cu.	NE	------	Ω^{2} a. p. ≡
18	61.05	25.4	34	18.2	71.3	E	.3	4	Ci.		Fr.-Cu.	E	------	Ω^{2} a. p.
19	61.47	25.8	33.9	18.2	71.6	ENE	.5	5.2	Ci.		Cu.-N.	E	------	Ω^{2} ≡ a.
20	60.94	26.4	33	20.9	70.1	ENE	.7	9	A.-Cu.		Cu.-N.	S, ENE	------	
21	60.94	27.4	34.8	21.6	65.5	ENE	.7	8.5	A.-Cu.		Cu.-N.	SE	------	Ω^{2} p.
22	61.81	25.8	33.7	19.9	72.3	NNE	.2	7.5	Ci.-Cu.		Cu.	NE	------	Ω^{2} a. p. ≡
23	61.87	24.7	32.9	18.9	73.3	N	.7	7.8	Ci		Cu.		------	Ω a. p. Ψ
24	62.05	24.3	32	18.6	74.8	NNE	.5	7.8	A.-Cu.		Cu.		------	≡ Ω^{2} p.
25	63.03	24.5	32.6	18.2	73.6	ENE	.5	6.8	Ci.		Cu.		------	≡ a. Ω^{2} p.
26	63.48	24	31.7	18.2	74.8	E	.3	8.7	A.-Cu.		Cu.-N.	E	------	Ω^{2} a. p. Ψ
27	62.62	24.4	33	16.2	69.8	E	.5	7	Ci.		Fr.-Cu.		------	Ω^{2} ≡ Ψ
28	61.11	24.9	33.3	17.7	73.7	ENE	.5	5.2	Ci.		S.-Cu.	E	------	≡ a. Ω^{2} p.
Mean	761.23	24.9	33.3	18.1	71.6	------------	.4	6.6	------------		------------		------	
Total	--------	------	------	------	------	------------	--------	--------	------------		------------		------	

DAGUPAN.

[ϕ=16° 03′ N ; λ=120° 20′ E ; barometer above sea, 2.7 meters ; gravity correction not applied, —1.67 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force. (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.					mm.	
1	761.16	24.4	28.3	19.5	75.3	NW	1.8	5.2	Ci.		S.-Cu.	S	------	≡ Ω a. ∞^{2} p.
2	61.14	23.5	28.8	18.3	77.5	NW	1.3	1.2	A.-S.		Cu.		------	≡ Ω a. ∞ p.
3	60.88	24	30.6	18.1	70.7	S, NW	.8	2	Ci.		Cu.		------	≡^{0} Ω^{0} a. ∞ p.
4	61.18	24.4	31.2	18.7	74.8	NW	.7	3.8	Ci.	S by W	Cu.		------	≡ Ω a. ∞^{2} p.
5	60.90	24.7	32.5	19.8	77.5	S, NW	1	2.8	Ci.	SW	Cu.		------	≡Ω a. ∞^{2} p.
6	60.87	24.3	30.3	19	73.8	SE, NW	1.3	1	A.-S.		Cu.		------	◓^{0} ≡^{0} Ω^{0} a. ∞^{2} p.
7	60.88	24.3	31.6	17.7	75.5	S, NW	1	3.7	Ci.	SW	Cu.		------	≡^{2} Ω^{2} a. ∞ p.
8	60.84	24.5	31.9	18.1	78	NW	.8	2.7	Ci.	SW	Cu.		------	≡^{2} Ω^{2} a. ∞^{2} p.
9	59.93	25.6	35	18.6	68.8	SE	1.3	1.5	Ci.	SW	Cu.		------	≡ Ω a. ∞^{2} p.
10	59.25	25	33	19.4	75.8	NW	1.7	3.3	A.-Cu.	SW	Cu.		------	≡ Ω a. ∞ p.
11	59.17	25.2	32	------	75.8	NW	1.7	2	A.-S.		Cu.		------	∞^{2} p.
12	59.10	24.8	31	19.6	71.7	NW	1.2	3.7	Ci.	WSW	Cu.		------	≡ Ω^{2} a. ∞ p.
13	59.30	25.4	32.5	18.8	68.2	SE	1.5	3.3	Ci.		Cu.		------	≡ Ω^{2} a. ∞ d p.
14	59.95	25.4	33.6	20.3	73.2	S, N	1.3	3.3	A.-S.		Cu.	SE	------	≡^{0} Ω a. d p.
15	60.33	26.1	34.7	20.3	63.8	SE	1.3	5	Ci.	SE	Cu.	ENE	------	∞^{2} a.
16	60.24	25.2	33.6	18.6	69	NW	1.7	1	Ci.		Cu.		------	
17	59.92	25	30	20	78.7	NW	1	2.3	Ci.		Cu.		------	≡ Ω^{2} a. ∞^{2} p.
18	60.44	25.2	32.1	19.8	77.8	NW	1	2	A.-S.		Cu.	SE	------	≡ Ω a. ∞^{2} p.
19	60.84	25.8	32.6	19.2	73.2	SE, NW	1	3.2	Ci.		Cu.	SE	------	≡ Ω a. ∞^{2} p.
20	60.50	26.4	33	21.3	70	SE, NW	1.5	5.8	A.-S.		S.-Cu.	SW	------	∞^{2} a. p.
21	60.61	25.7	29.4	21.6	78.5	NW	1	3.3	Ci.		Cu.	S	------	≡^{2} Ω a. ∞^{2} p.
22	61.32	25.5	33.7	------	77.3	NW	1.2	3.8	Ci.	S	Cu.		------	≡^{2} Ω^{2} a. ∞ p. ◓
23	61.34	25.2	32.5	20.3	69	S	.8	6.3	Ci.-S.	SSW	Cu.		------	∞ a. ○ ⊕ Ψ ◓
24	61.32	26.7	34.5	21.8	57.7	S	2.2	7.2	Ci.	SSE	S.-Cu.	SW	------	∞^{2} a. p.
25	61.89	26.3	34.6	21.5	65.2	S	1.8	5.5	Ci.		S.-Cu.		------	∞ p.
26	62.26	26	32.8	20.8	63.2	SE	1.2	5.3	Ci.	SSW	Cu.		------	◓^{2} ∞ a. p.
27	61.93	25.6	34.2	20.2	67.7	SE	1.3	6	Ci.	SSW	Cu.		------	∞ ○ ⊕^{2} ◓^{2} Ψ
28	60.42	25.6	33.9	18.9	69.8	SE	1.3	3.5	Ci.-S.	SSW	Cu.		------	◓^{2} Ψ ≡ Ω ∞$_{2}$
Mean	760.64	25.2	32.3	19.6	72.1	------------	1.3	3.6	------------		------------		------	
Total	--------	------	------	------	------	------------	--------	--------	------------		------------		------	

METEOROLOGICAL DATA, ETC.—Continued.

VIGAN.

[ϕ=17° 34′ N ; λ=120° 23′ E ; barometer above sea, 24 meters ; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°*C.*	°*C.*	°*C.*	*P. ct.*		*0–12.*	*0–10.*					*mm.*	
1	762.04	22.7	25.4	20.2	69.4	NE by N	3.8	0.3	A.-Cu.		Cu.		------	≡° a.
2	61.68	23.6	26.4	21	64.8	Variable	1.2	0	------		Cu.		------	≡ Ω a.
3	61.56	24.3	26.7	22.2	66.5	Varialbe	.7	0	Ci.		Cu.		------	≡ a.
4	61.97	23.8	26.9	20.8	74.3	NNE	1.3	2.8	Ci.	SSW	Cu.	N by E	------	≡ a.
5	61.68	23.5	26.5	20.8	76.4	N by E	.7	.8	Ci.		Cu.		------	≡ Ω a.
6	61.34	24·4	27.2	22	74.7	WWS, NNE	.3	.2	Ci.		Cu.		------	≡ a.
7	61.16	24.2	27	21	77.2	Variable	.7	1.2	Ci.	WSW	Cu.		------	≡ a.
8	60.97	24.4	27	22	76.2	N	.8	.7	Ci.	SSW	Cu.		------	≡ Ω a.
9	60.40	24.6	27.5	22.2	73.1	W	.5	·0	Ci.	W by S	Cu.		------	≡ a.
10	59.58	24.8	27.1	22.7	77.5	NNE	.8	1	A.-Cu.		Cu.	SW by W	------	≡ Ω a.
11	59.33	23.8	26.2	21.2	76.3	N by W	1.5	0	------		Cu.		------	≡ Ω a.
12	59.46	25	27.4	23	67.7	W by N	.3	0	A.-Cu.		Cu.		------	≡ a.
13	59.63	24.9	27.7	22.3	69.2	ESE	1	.2	Ci.		Cu.		------	≡ a.
14	60.46	25.2	29	23.1	70.3	Variable	.7	1.3	Ci.-S.	S by E	S.-Cu.		------	≡ a.
15	60.93	25.4	27.5	22.2	73.1	Variable	.7	1.3	Ci.	SE by E	S.-Cu.		------	≡² a.
16	60.92	25.8	27.9	24	73.2	Variable	1	1.5	A.-Cu.	NW by N	Cu.	S	------	≡ a.
17	60.65	24.7	27.2	22	73.8	NNE	2	.3	A.-Cu.		Cu.		------	≡ Ω a.
18	61.27	25.2	27.5	22.6	66.8	Variable	.5	.2	Ci.		Cu.		------	≡² Ω a.
19	61.25	25.6	28.2	22	69	Variable	.8	.5	Ci.		S.-Cu.		------	≡° a.
20	60.90	26.4	28.4	25	69.2	NNW, N	.8	2.5	A.-Cu.		Cu.		------	≡ a.
21	61.09	24.8	27.5	22.5	71.7	NNE	2.2	0	Ci.		Cu.		------	≡ Ω a.
22	62.04	24	27	21.6	72.2	NNE	3.7	1.3	Ci.	NW by W	Cu.		------	
23	61.71	24.8	27.3	21.9	68.9	N	1	3.8	Ci.	S by W	Cu.		------	≡ a. ψ
24	61.71	25.5	27.9	23.5	66.7	WNW	.5	1.7	A.-Cu.		Cu.		------	≡ a.
25	62.18	25.8	28.1	23.7	68.7	Variable	1.2	3.3	A.-Cu.	SW by W	Cu.		------	≡° a.
26	62.68	25.9	28	23.5	72.1	WNW	1	.5	Ci.	S by W	Cu.		------	≡° a.
27	62.24	25.2	27.6	23.5	75.8	NNW	.8	4.8	Ci.		Cu.	E by N	------	≡ Ω a. ψ°
28	60.74	25.4	27.4	23.8	77.7	Variable	1.2	3.5	Ci.		Cu.	E by N	------	ψ° ≡ Ω a. d p.
Mean	761.13	24.8	27.3	22.4	71.9	------	1.1	1.2	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		------	

APARRI.

[ϕ=18° 22′ N ; λ=121° 34′ E ; barometer above sea, 5 meters ; gravity correction not applied, —1.59 mm.]

	mm.	°*C.*	°*C.*	°*C.*	*P. ct.*		*0–12.*	*0–10.*					*mm.*	
1	763.73	22	24.5	19	82.5	NE	1.3	8.5	------		Cu.-N	E	2	● ⌒ a.
2	63.48	22.4	26	19.2	85.7	Variable	1.3	7.7	A.-Cu.		Cu.-N.	NE	12.2	● ⌒ a.
3	62.88	23.1	27.4	19.5	85.2	SE	1	4.2	------		Cu.-N.	E	------	
4	62..41	23.7	27.2	20	87.5	S, NE	1	5.7	Ci.	S	S.-Cu.	NE	------	
5	62.60	23.9	28.2	21.4	84.2	S	1.2	5.8	Ci.		S.-Cu.	E	.5	d ⌒ a.
6	62.07	24.1	28.5	19.6	80.8	SW	1	0	------		S.-Cu.		------	Ω a. p.
7	62.02	23.6	27.7	19.4	83.1	S, NE	1.3	.2	------		------		------	Ω a. p.
8	62.24	23.4	27.7	20	84.2	Variable	1	0	------		------		------	Ω a. p.
9	60.98	23.3	29	18.8	82.2	S	1.2	0	------		------		------	Ω a. p.
10	59.83	23.7	28	19	80	N	1.3	2.5	------		Cu.-N.	NW	------	Ω ≡ a.
11	61.04	23.8	26.2	20	77.3	N	1.8	7.5	------		Cu.-N.	NW, E	------	
12	61.50	23.2	26	20.5	72.3	ENE	2.2	6.3	A.-Cu.	S	S.-Cu.	S, SE	------	
13	60.56	23.3	28	17.6	80.·8	S	1	1.8	Ci.		Cu.-N.		------	Ω ≡ a.
14	60.98	24.4	28.5	20.1	81.2	S, NE	1	3.3	A.-Cu.	SW	Cu.-N.		------	Ω ≡ a.
15	61.48	24.2	29	19.2	78.3	S	1.3	1.8	Ci.	S, SE	Cu.	S	------	Ω ≡ a.
16	61.08	24.2	29.5	20	79.5	S	1.8	.8	------		S.-Cu.		------	Ω ≡ a.
17	61.22	23.7	27.8	20	81.8	W, N	1.5	2	------		Cu.-N.	NE	------	Ω ≡ a.
18	62.74	22.5	24.8	20.5	87.7	NE	2.2	9.2	------		Cu.-N.	N, E	2.3	p a.
19	63.04	23.6	27.8	19.1	83.2	E	1.2	8	A.-Cu.	S	S.-Cu.	E	------	
20	62.18	24.5	28	21	81.7	E	.8	5.8	A.-Cu.	SW	S.-Cu.		------	
21	63.36	22.2	23.5	20.2	89	NE	1.8	9.7	------		S.-Cu.	ENE	47.8	● a. d p.
22	64.96	21	23.6	19.3	89.5	NE	2.5	10	------		N.	NE	38.1	● a. p.
23	65.08	21.4	26.1	19	85.7	ENE, NE	3.8	10	------		N.	ENE	3.8	● a. d p.
24	64.90	22.2	24.8	20	79.2	E	1.8	10	------		S.-Cu.	E	.5	d a.
25	64.15	23.2	27.5	20	80.1	SE, S	1.2	5.7	A.-Cu.		S.-C.u.	SE	------	
26	63.85	24.1	28	20.5	81.3	S	1.2	2.7	Ci.		S.-Cu.	S	------	
27	63.30	24.2	28.2	20.4	80	S, E	1.7	2.5	Ci.	E	S.-Cu.		------	
28	61.85	24.4	28.2	20.4	79.2	NE	2.2	2.8	Ci.		S.-Cu.	ENE	------	Ω ≡ a.
Mean	762.48	23.3	27.1	19.8	82.3	------	1.5	4.8	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		107.2	

METEOROLOGICAL DATA, ETC.—Continued.

SANTO DOMINGO.

[ϕ=20° 28′ N ; λ=121° 59′ E ; barometer above sea, 18.7 meters ; gravity correction not applied, —1.51 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction.			
									Upper.	Lower.		
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	763.92	20.7	24.3	18.9	78.2	NNE	2.2	5.2	-----	Cu. N by E	0.9	●° p.
2	63.99	20.5	22.7	18.1	78.2	NNE	2.8	9.6	-----	N. NNE	13	● a. p.
3	63.22	22	25.9	19.5	83.5	N	1.2	7.4	A.-Cu.	Cu.-N. E	3.3	d² a. p.
4	62.74	22	24.4	20.6	89.3	NNE	2.4	9.4	-----	N. NNE	1.9	d a. p.
5	63.05	21.6	23.3	20.3	90.9	N, E	.8	10	-----	N. E	21.5	● a. p.
6	62.14	23.3	27.2	21.5	85.8	N	1.6	7.6	-----	Cu.-N. SE, NE	17.7	● a. p.
7	62.02	23	25.7	20.9	82.3	NNE	2.6	6.8	Ci.-S. S	Cu.-N. NE	.2	d a.
8	62.52	23.6	26	21.9	80.8	NNE	1.6	6.6	A.-S.	Cu.-N. NNE	2.1	● p.
9	61.18	24	28.1	20.2	81.4	E	1.4	1.4	Ci.-S.	Cu.	-----	
10	59.03	24.8	28.2	22.9	76.3	SW, NW	2.6	3.6	A.-Cu. W	Cu. SW by S	-----	
11	61.34	21.5	24	19.6	73.7	NNE	2.6	4.4	-----	N.	-----	d a.
12	61.96	21.6	25.6	18.9	76.2	NNE, E	2.8	6.4	-----	Cu.-N. E	.5	p a. d p.
13	61.27	21.2	22.4	18.9	89.5	N	3	9.6	-----	N.	63	↯ ● a. p.
14	61.70	21.8	25.8	20.3	89.9	E, N	1.4	9.8	-----	N. E, N	8.4	● a. d p.
15	61.84	22.8	27.9	20.3	90.7	E	1.2	9.2	-----	N. SE	46.7	● a. p.
16	61.52	22.1	23.8	21	90.3	N	1.6	10	-----	N. N	43.8	● a. p.
17	61.18	22.4	25.4	20.5	82.3	NW	2	2.8	-----	Cu. NW	4.8	● a.
18	63.21	21	22.8	19.5	79.7	NNE	1.8	9.8	A.-Cu.	N.	9.3	↯ ● a. d p.
19	63.62	22.1	25.5	19.6	81.4	E	1.2	8.4	A.-Cu.	N.	1.3	↯ ● a.
20	62.63	22.8	27.4	19.9	78.2	Variable	1.8	7.6	A.-Cu.	Cu.-N. S, NW	-----	⌒ d p.
21	64.15	20.6	23.2	17.9	77.4	NNE	3.6	9.8	-----	N. NE	3.5	●° a. p.
22	65.77	19.4	20.6	17.8	77.1	NNE	4.4	10	-----	N. NNE	5.5	●° a. p.
23	65.88	19	20.8	17	78.2	NNE	4.4	9.8	-----	N. NNE	10.4	↯ ● a. p.
24	65.38	20.7	23.3	18	74.8	ENE	3	8.2	A.-Cu.	N. ENE	4.9	↯ ●° a.
25	64.67	23.4	26.5	20.2	73.3	E	3	8.6	A.-Cu.	Cu.-N. SE by E	.6	p a.
26	64.20	24.8	27.8	22.9	70.7	ESE	2.8	3.4	A.-Cu.	S.-Cu. SE	-----	
27	63.54	24.9	28	23.4	74.7	E	2.2	2.4	Ci. SW	Cu. SE by E	-----	
28	62.46	23.9	29.2	20.1	80	E	3.2	7	A.-Cu. W	N. ENE	3.1	Ω a ↯ ● p.
Mean	762.86	22.2	25.2	20	80.9	-----	2.3	7.3	-----	-----	-----	
Total	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	266.4	

METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

ISABELA, BASILAN.

[ϕ=6° 43′ N; λ=121° 57′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	31.5	21.5	74	W	------	------	Ω a.
2	31.2	22	74	NE	------	------	≡ Ω a. ⌒ p.
3	33.1	22.4	75	NE	------	------	Ω a. [K p.
4	32.5	22	88	NE	------	1	Ω a. d. m. d.
5	32	21.6	81	NE	------	------	≡ Ω a.
6	30.6	22.5	71	NE	------	.8	≡ d a. ⊤ p.
7	31.6	21.5	78	NE	------	------	≡ d a.
8	29.6	22.4	76	W	------	3.6	Ω a. d p.
9	31.4	22.5	69	NE	------	1	d a.
10	30	------	71	W	------	------	Ω a.
11	30.5	22.5	81	W	------	------	Ω a.
12	33.2	------	75	W	------	------	Ω ⊤ a.
13	31.4	20	66	NE	------	------	≡ Ω a.
14	32.4	21.6	75	NE	------	------	≡ a.
15	32.4	21.4	69	NE	------	------	≡ a.
16	30.2	20.6	73	W	------	------	≡ Ω a.
17	31	22	74	W	------	------	Ω a.
18	31	22.6	75	W	------	------	Ω a. [K p.
19	30.2	23.2	93	SW	------	42.7	● a. p.
20	29.8	23	78	NE	------	21.3	⌒ a. [K p.
21	30.5	21.5	79	W	------	4.3	● p.
22	30.5	21.1	92	S	------	17	≡ a. ● p.
23	30	22.5	77	NE	------	19	≡ ● a.
24	31.5	21	84	W	------	5.1	Ω a. ● p.
25	33.3	22.5	64	NE	------	2.8	d ● a.
26	32	21.5	64	NW	------	------	≡ Ω a.
27	31.4	22.5	78	NE	------	1.5	Ω a. [K p.
28	31.5	22	70	NE	------	2.8	≡ Ω a. ● p.
Mean	31.3	21.9	75.9	------	------	------	
Total	------	------	------	------	------	122.9	

ZAMBOANGA.

[ϕ=6° 54′ N; λ=122° 05′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.5	21	70	W	1	------	
2	30.4	21.6	73	W	1	------	
3	31	21.9	62	Calm	------	24.6	● a. p.
4	30.5	22	71	W	2	------	
5	30.9	21.9	76	W	1	------	
6	30.4	22.5	74	W	1	------	
7	31.7	23	73	Calm	------	------	
8	30	22.4	76	W	1	2.5	● p.
9	29.6	22.8	81	W	1	------	
10	30	22.5	78	W	2	------	
11	29.4	21.9	78	W	1	------	
12	30.5	19.6	53	ENE	3	------	
13	28.7	21.4	69	W	2	------	
14	30.1	22.7	64	ENE	2	------	
15	30.1	22.4	71	WSW	1	------	
16	31.4	22	82	W	3	------	
17	31.4	22.4	75	W	1	------	
18	30	22.9	73	WSW	1	------	< p.
19	30.1	23.9	76	ESE	1	5.3	● a.
20	30	23.2	78	W	1	1.5	● a.
21	29.1	22	73	Calm	------	16.8	● a.
22	30.8	22.8	74	ESE	1	------	
23	29.6	23.4	73	Calm	------	5.3	● a.
24	29.5	23.4	83	W	2	10.2	● p.
25	30.7	22.9	63	W	1	------	
26	30.1	22.1	70	W	1	------	
27	31.5	23	76	W	1	20.8	● p.
28	30.6	21.9	75	WSW	1	------	
Mean	30.3	22.3	72.9	------	1.2	------	
Total	------	------	------	------	------	87	

DAVAO.

[ϕ=7° 01′ N; λ=125° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33.1	22.2	55	WNW	3	------	
2	33.2	------	61	N	2	------	
3	33	22.6	67	N	1	------	
4	------	------	52	Calm	------	------	
5	32.2	22.5	62	Calm	------	------	
6	33.3	22.9	52	Calm	------	14	● p.
7	------	22.7	69	NW	2	------	
8	31.9	23.3	70	NW	1	------	< p.
9	31.4	22.5	65	Calm	------	------	
10	------	------	61	Calm	------	------	
11	------	23.1	63	ENE	3	------	
12	28.1	20.1	65	N	5	48.5	↙ ● p.
13	27.1	19.2	75	NW	6	64.8	↙ ● a. p.
14	29.2	18.1	82	NNW	4	35.1	↙ ● a. p.
15	31.9	21.7	58	Calm	------	------	
16	31.7	22.9	63	Calm	------	------	⊤ p.
17	32.1	22.3	58	NW	2	------	⊤ p.
18	32.3	23.1	65	Calm	------	------	
19	32.7	22.6	62	SE	2	------	
20	------	23.2	54	WNW	2	11.4	● p.
21	------	22.4	58	N	1	------	
22	------	22.6	54	NE	2	21.1	● ⊤ p.
23	31.7	22.2	64	Calm	------	------	
24	32	21.8	63	WSW	2	------	
25	32.2	23.4	60	Calm	------	------	[K p.
26	31.9	23.9	63	WNW	1	------	
27	32	23	62	NE	1	------	
28	32.1	23.3	69	NE	1	------	
Mean	31.7	22.3	62.6	------	1.5	------	
Total	------	------	------	------	------	194.9	

CARAGA.

[ϕ=7° 30′ N; λ=126° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.9	21.4	78	Calm	------	2.5	⊍ a. ⊤ ●° p.
2	30.7	21.7	72	E	------	------	⊍ a. ∞ < p.
3	27.8	22.2	93	Calm	------	35.8	● a. p. < p.
4	29.3	21.4	75	E	------	11.7	d ⌒ a. < ●° p.
5	28.7	22.2	75	Calm	------	.3	d a. ⊕ ∞ p.
6	30.9	21.7	77	NE	------	20.3	∞ ●° p.
7	30.8	22.8	85	NE	------	6.9	≡ a. ●° ∞ p.
8	29.9	22.1	80	Calm	------	33.3	● a. p. ⊕ ⊤ p.
9	29	20.3	79	Calm	------	.3	d ⊕ a. ∞ p.
10	27.3	20.8	87	Calm	------	.5	●° a. ∞ p.
11	30.3	21	78	Calm	------	------	∞ p.
12	29.7	22.5	72	NE	------	------	∞ p.
13	26.5	23.2	93	NE	------	39.6	↙ ●° a. p.
14	24.7	21.2	87	N	------	33.8	● a. p.
15	31.1	20.5	74	NNE	------	------	
16	31.1	21.7	78	Calm	------	------	∞ [K ⊍ p.
17	29.7	22.7	87	NE	------	1.3	∞ ● ⊍ p.
18	30.8	21.9	77	Calm	------	------	∞ p.
19	31	21.8	78	Calm	------	------	⊍ p.
20	30.5	22.4	83	Calm	------	24.1	● p.
21	30.2	21.7	77	Calm	------	4.3	⊍ ● p.
22	30.2	22	69	Calm	------	25.7	d ⌒ ⊍ p.
23	30.8	21.6	70	E	------	------	∞ ⊍ p.
24	30.8	21.6	78	NE	------	16.3	⌒ a. ● p.
25	29.7	21.6	80	N	------	16	● a. p. ⊍ p.
26	30.2	23.1	76	NE	------	6.6	● a. p.
27	27.7	23	97	Calm	------	133.6	⊤ a. ● a. p. [K p.
28	25.5	22.3	91	Calm	------	1.5	●° a. d p.
Mean	29.5	21.9	80.2	------	------	------	
Total	------	------	------	------	------	414.4	

METEOROLOGICAL DATA, ETC.—Continued.

DAPITAN.

[ϕ=8° 38′ N; λ=123° 23′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	------	21.6	69	W	2	2	● p.
2	------	24.9	66	NE	2	2.8	● a. p.
3	------	------	------	------	------	------	d. p.
4	------	------	------	------	------	------	
5	------	------	------	------	------	------	
6	------	22.5	71	NE	3	------	
7	------	25.1	77	NE	3	------	
8	------	24.4	71	NE	2	33.5	● a. p.
9	------	22.5	66	NE	2	2.3	⌒ a. ● a. p.
10	------	24.2	66	Calm	------	------	
11	------	21.2	68	NE	2	------	
12	------	23.2	68	NE	2	------	d° a.
13	------	24.8	65	E	2	------	
14	------	25.2	67	NE	3	------	⌒ p.
15	------	23.8	65	E	2	------	
16	------	22.8	64	Calm	------	4.6	● a. p.
17	------	18.8	66	NE	1	2	● a. ⌒ p.
18	------	22.7	66	NE	1	3.3	d a. ⌈↯ p.
19	------	23.6	62	NE	2	2.3	● a. ⌈↯ p.
20	------	22.4	63	NE	2	3.6	● a. p. ↯ p.
21	------	20.7	65	SE	2	58.4	●² a. p. ↯ p.
22	------	19	65	E	2	25.9	● a. p. ⌒ a. ↯ p.
23	------	19	62	E	2	2.3	● a.
24	------	22.9	72	NE	3	54.6	● a. ↙ ● p.
25	------	22	66	NE	3	------	⊕ ◡ p.
26	------	22.9	74	NE	3	------	↯ p.
27	------	21.8	75	NE	3	30.2	● ↙ p.
28	------	23	74	NE	2	2.5	● a.
Mean	------	22.6	67.7	------------	2	------	
Total	------	------	------	------------	------	------	

BALINGASAG.

[ϕ=8° 45′ N; λ=124° 44′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.2	20.3	76	W by S	1	------	d° p.
2	35.7	20.8	57	W by S	1	1.5	d a. p.
3	27.2	21.1	90	W by S	1	1	d a.
4	31.2	20	67	WSW	1	1	d p.
5	34.2	21	66	WNW	2	------	d p.
6	34	21.5	71	W	1	------	
7	27.7	20.9	92	Calm	------	2	d a. p.
8	30.3	19.5	80	Calm	------	2	d p.
9	28	20	83	Calm	------	.8	d p.
10	32.5	17.3	79	W by S	1	------	
11	34.3	18.2	68	WNW	2	------	
12	33	16.6	79	W by S	1	------	
13	29.7	18.2	83	WSW	1	1	d p.
14	27.2	20.6	90	Calm	------	.5	d p.
15	------	19.3	72	WNW	1	1.3	d² p.
16	28	20.9	98	Calm	------	2.3	d a. p.
17	29.5	20.5	95	W by S	1	.5	d a. p.
18	33.5	20	80	W	1	------	d° p.
19	34.5	20.1	68	W	1	------	
20	30.8	21	97	Calm	------	1.5	d p.
21	30.5	20.5	84	Calm	------	------	
22	30.2	20.4	86	SW	1	------	
23	34	21.3	67	W by S	1	------	
24	31.4	19.3	84	Calm	------	3.6	d a. ● p.
25	34.8	21	78	WSW	1	1.3	d a.
26	32.6	18.5	85	SW	1	------	
27	30.3	21	85	Calm	------	6.6	d a. p.
28	28.8	21	88	Calm	------	3	d a. p.
Mean	31.3	20	80.3	------------	.7	------	
Total	------	------	------	------------	------	29.9	

BUTUAN.

[ϕ=8° 55′ N; λ=125° 31′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	28.9	22	------	NW	2	38.1	Ω ∞ d a. ● ⊤ p.
2	28.9	21.5	------	NW	1	.1	d a. p. ⊤ p.
3	28.1	22.5	------	Calm	------	46.8	● ≡ a.
4	27.7	21.8	------	N	1	5.3	d ∞ a. ● p.
5	27.4	22.5	------	NW	1	41.4	●² a. d p.
6	27.8	22.5	------	N	1	.3	Ω ∞ a. d p.
7	27.9	21.5	------	NNE	1	.2	●° a. p.
8	26.5	20	------	SE	1	.2	Ω a. p p.
9	27.5	21.5	------	NNW	1	.6	Ω ∞ d a.
10	29.1	21	------	SE	1	3.8	Ω ∞ a. p p.
11	29	20.6	------	WNW	2	------	Ω ≡ a.
12	28.4	18.5	------	NE	1	------	Ω ≡ a.
13	28.3	19.5	------	E	1	------	Ω ∞ a. d° p.
14	26.5	21.6	------	SE	2	3.8	Ω ≡ a. d a. p.
15	27.9	20.7	------	NW	2	------	≡ a.
16	27.5	23.1	------	Variable	3	41.9	● ≡ a. ⌈↯ p.
17	28	23	------	NW	2	------	≡ a. ⊤ p.
18	29.5	23.5	------	N	1	.1	Ω ≡ d a. ⌈↯ p.
19	30.5	22	------	SE	1	16.1	Ω ∞ a. ● ↯ p.
20	28.5	22.6	------	S	1	10.5	Ω d a. ● ∞ p.
21	28.5	22.1	------	W	0	------	∞ a. d ⌒ ↯ Φ p.
22	30.1	22.8	------	N	1	.1	∞ d a. ⊤ p Φ p.
23	30.7	23	------	S	2	1.7	Ω ∞ a. ● p.
24	30.9	21.4	------	Calm	------	.7	●° a. p.
25	29.5	22.7	------	W	1	12.8	● ≡ a.
26	29.1	20.6	------	SE	2	3	Ω ≡ a. ● a. p.
27	28	21.5	------	Calm	------	21.1	Ω ≡ ● a.
28	29.2	22.5	------	Calm	------	35.5	∞ a. ● a. p.
Mean	28.6	21.7	------	------------	1.1	------	
Total	------	------	------	------------	------	284.1	

YAP (Western Carolines).

[ϕ=9° 29′ N; λ=138° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33.2	23.8	70	NE	4	------	
2	31.4	22.5	70	NE	4	7.1	
3	33.6	22.8	68	NE	2	.3	
4	33	22.5	71	NNE	5	7.6	
5	31.2	22.8	72	NE	3	8.1	
6	29.9	22.8	96	NE	5	20.8	↙ p.
7	31.8	22.3	76	NE	5	6.6	
8	32	22.1	79	NE	5	1	
9	31.5	23.6	93	NE	5	65.5	
10	27.3	21.8	98	NE	3	33.3	
11	30.3	23.2	83	Calm	------	134.6	↙ ●² p.
12	30.5	22	86	N	3	2.5	
13	32.1	22.6	98	N	3	8.1	
14	32.7	24.1	73	SW	1	4.6	
15	31.4	23.4	84	E	3	.3	
16	31.5	21.8	75	E	1	2	
17	32.2	23.4	75	E	2	.3	
18	32.5	23.5	81	E	4	3.6	
19	33	24.5	88	E	3	------	
20	32.4	23.8	65	E	4	------	
21	32.7	22.5	87	E	4	------	
22	32	22.4	92	ENE	3	.5	
23	31.8	23.3	75	E	4	4.6	
24	31	22.8	71	NE	5	4.3	
25	30.8	23.1	74	NE	6	9.9	
26	28.6	23	96	ENE	4	10.2	
27	30.7	23.9	70	ENE	5	------	
28	32.1	23.1	89	E	5	1.8	
Mean	31.5	23	80.5	------------	3.6	------	
Total	------	------	------	------------	------	337.6	

METEOROLOGICAL DATA, ETC.—Continued.

MAASIN.

[ϕ=10° 08′ N; λ=124° 50′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	28.4	23	90	NW	1	13.2	⌒ a. ⎾ϟ p.
2	28.2	22	85	W	1	15.5	● ⊍ p.
3	25.1	22.3	83	NE	2	20.3	⊍ a. ● p.
4	29.5	22.1	87	NNE	1	54.4	↙ a. ↙ ● p.
5	26.1	22.2	91	S	1	50.8	● a.
6	27.1	22.6	81	WSW	3	8.9	⌒ ↙ ● a. d p.
7	26.5	22.5	89	SSW	1	16.5	≡ ⌒ a. ● a. p.
8	27.6	22.5	88	W	2	3.4	●° a.
9	29.1	22.3	81	E	3	------	d p.
10	28.5	22.5	83	E	1	------	
11	29.4	21.3	72	E	4	------	
12	30.4	20.5	54	E	5	------	↙ p.
13	29.4	21.9	58	E	2	------	d p.
14	28.5	21.2	70	SW	2	------	d a.
15	29	22.7	72	SE	2	10.4	↙ a. ● p.
16	28.6	22.6	78	NW	3	------	d ⊤ p.
17	28.5	22.6	78	SW	2	------	d p.
18	28.5	22.7	84	W	1	15.5	● ≡ ⊤ a. ϟ p.
19	30.5	23	76	SW	2	------	∞ ϟ a. ⊍ p.
20	30.3	22.6	70	E	2	------	d a. ϟ p.
21	30.1	23.6	77	NNW	1	------	d ⊤ a. ϟ p.
22	30.3	23.2	68	E	2	------	d ⌒ a.
23	31	23	56	E	3	------	d a.
24	27.1	22.4	86	E	1	2.8	● a. d p.
25	28.3	21.5	63	E	2	------	d ≡ a.
26	31	22.3	59	NE	5	------	↙ a. ●° p.
27	29.9	23	66	E	4	7.4	ϟ ⌒ ↙ a. ● ⊕ p.
28	28.9	23.2	69	NE	2	------	●° a. d p.
Mean	28.8	22.4	75.5	------------	2.2	------	
Total	------	------	------	------------	------	219.5	

BACOLOD.

[ϕ=10° 41′ N; λ=122° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	29	23	74	N	7	8.4	●° a. p. ↙ p.
2	28.3	23.3	80	NNE	7	------	↙ ⌒° d° p.
3	28.3	22.7	77	NNE	6	3.3	●° ↙ a. ◯° p.
4	28.4	22.9	81	NNE	6	16.5	●° a. ● p.
5	27.6	22.5	75	NE	5	5.8	● a. d° p.
6	28.7	23.3	76	NNE	6	.3	●° a. p.
7	29.2	23.3	79	NNE	6	2.6	● ⌒ ◯° a. ⊤° p.
8	28.6	23.6	77	NNE	6	13.8	●° ↙ a. ⌒^{2} ● p.
9	28.4	23.6	82	N	4	.5	⌒ a. p. ◯° ●° a.
10	27.3	23.4	90	NNE	2	11.4	●.° a. p. ⊤° p.
11	30	20.3	68	N	5	------	Ω^2 a.
12	28.2	22.2	75	N	5	------	◯° p.
13	29.6	22.5	62	NE	6	------	≡^{2} ◯° a.
14	29.4	23.8	66	NNE	5	------	≡^{2} a. ◯° p.
15	28.4	23.5	71	NNE	6	------	◯^{2} a. p.
16	29.4	23	70	NNE	5	.3	●° ⌒ a. ◯° ⊍° p.
17	29.2	23	70	N	5	------	◯° p.
18	29.2	24	72	NNE	6	------	d° ↙ a. ⊍° p.
19	29.5	23.7	83	NE	3	1.3	●° ⌒ a. ⊍° ⎾ϟ p.
20	29.9	24.1	75	NNE	5	2.8	⌒ a. ⎾ϟ p.
21	28	23.5	78	NNE	6	61	●^{2} a. ●° ⊍° p.
22	27.9	23.7	80	NNE	5	19.6	●° ⌒ a. ● ϟ p.
23	27.7	22.9	81	NNE	5	2.3	⊤° ⌒ ●° ⊍° p.
24	27.2	22.9	82	NE	7	------	⌒ d° a. ◯° ⊍° p.
25	28.1	23.1	73	NNE	5	------	≡^{2} a. ◯° ⊍° p.
26	28.4	22.5	70	NNE	6	------	↙ p.
27	27.3	23	86	NNE	5	1.8	⌒ a. ●° p.
28	28.4	23.4	71	NE	6	------	◯^{2} a. ◯° p.
Mean	28.6	23.1	75.9	------------	5.4	------	
Total	------	------	------	------------	------	151.7	

TUBURAN.

[ϕ=10° 44′ N; λ=123° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	28.4	23.4	81	N	3	1.5	●° a. ϟ° p.
2	28	22	80	N	4	------	⌒ a. ↙° p.
3	27.6	22.9	88	Calm	------	4.3	d° a. ●° a. p.
4	26.8	22.4	81	Calm	------	5.8	●° a. ●^{2} p.
5	26.5	23	78	Calm	------	17.8	d a. p.
6	27.4	22.5	86	N by W	3	------	d a. p.
7	28.8	22.9	76	N by W	1	------	d a.
8	27.4	22.4	93	N	4	5.6	●° a. p. ϟ° p.
9	29	22.1	78	Calm	------	------	ϟ^2 p.
10	28.3	22.8	77	Calm	------	5.8	●^{2} a.
11	29.5	21.1	75	N	3	------	◯ ⎾ϟ p.
12	29.6	20.1	69	N	1	------	◯° a. ∞ p.
13	29.6	21.1	72	N by W	3	------	≡^{2} a. ∞^{2} p.
14	29.6	20.9	70	NNW	4	------	≡° a. ↙° ◯^{2} p.
15	28.8	22.1	76	N	3	------	◯^{2} ↙° a. ↙^{2} p.
16	28.8	22.8	81	NNW	3	3.3	◯^{2} ●° a. p.
17	28.6	24.1	75	N by W	2	5.1	●° ⌒° d° ⊤°
18	27.9	23.1	86	N by W	3	------	●° ⊍^{2} p.
19	28.8	23.1	84	N	2	------	Ω^2 d ⊤° ⊍^{2} ϟ^2
20	29.7	21.8	87	N	1	------	Ω^2 ≡^{2} ●° ⌒^{2} ϟ^2
21	28.8	23.3	89	N	4	------	d a. ●° ⊤° ϟ^2 p.
22	28.9	23.4	81	N	3	1.3	d ◯° a. ●^{2} ⊤° p.
23	28.5	23.3	84	N	3	11.2	●° ◯° ⌒^{2} d ϟ°
24	27.5	22.9	77	N	2	------	d a. p. ϟ° p.
25	29.8	21.3	62	N	1	------	Ω° ◯° a. ⊕^{2} p.
26	29.9	20.3	76	N	4	------	Ω° a. ↙° ◯^{2} p.
27	29.3	23.1	88	N	5	------	d ⌒^{2} ↙° ●° ϟ°
28	29	22	69	N	2	2	≡° ⌒ a. ◯° ⊕^{2} p.
Mean	28.6	22.4	79.2	------------	2.3	------	
Total	------	------	------	------------	------	63.7	

SAN JOSE BUENAVISTA.

[ϕ=10° 44′ N; λ=121° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30	20	71	N	5	------	Ω a. ↙ p.
2	29.5	21	72	NNW	2	0.3	Ω a. d. ↙ p.
3	30.6	20.2	68	N	4	------	↙ p.
4	30	21	67	N	1	5.8	●° p.
5	31.2	21.9	60	N	1	------	Ω ↙ a.
6	31.1	21.9	64	N	1	------	
7	31.4	21.9	66	Calm	------	------	
8	31.6	20.2	65	NNW	3	------	Ω a. ↙° p.
9	29.8	21	78	N	3	1	Ω d a. ●° p.
10	30	21.4	80	SSE	3	3.8	Ω a. ●° ⊤ p.
11	31.4	22.3	72	SE	1	30.5	Ω a. ⊤ ● p.
12	31.5	20.2	69	SW	1	------	
13	31	21	62	NNW	2	------	Ω a.
14	30.9	20.4	60	W	2	------	
15	31	19	63	WSW	1	------	
16	30.9	20.3	68	NNW	2	------	
17	30.8	20.5	65	N	5	------	Ω a. ↙ p.
18	30.7	21	68	N	3	------	
19	31.5	21.3	69	NNW	1	------	Ω a. ϟ p.
20	31.3	21.4	69	NNW	4	------	● ⊤ ϟ p.
21	32	21.9	65	N	1	------	Ω ↙ a. ● ⊤ ⊍ p.
22	30.9	22	77	Calm	------	9.7	Ω a. ● ⊤ ⊕ p.
23	28.6	23.6	79	N	3	25.4	Ω a. ● ↙ ⊍ p.
24	29.3	21.5	71	Calm	------	------	↙° a. ⊍ p.
25	32	22.7	56	N	3	------	Ω a. ⊍ p.
26	31.4	19.9	70	N	2	------	Ω a. ⊍ p.
27	31.1	21.6	67	N	1	------	Ω a. ↙° ⊍ p.
28	33.4	21.6	57	ENE	1	------	Ω a ↙ p.
Mean	30.9	21.2	67.8	------------	2	------	
Total	------	------	------	------------	------	76.5	

METEOROLOGICAL DATA, ETC.—Continued.

BORONGAN.

[ϕ=11° 42′ N; λ=125° 25′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	------	22.4	79	NNE	4	39.6	⌒ ● ↙ a.
2	------	21.6	95	N	2	50	⌒ a. ● a. p.
3	------	21.8	89	NE	5	25.4	↙ ● p.
4	------	23.2	82	NE	5	9.7	↙ ●° a. p.
5	------	22.5	94	Calm	------	31	↙ ●° a. ●² p.
6	------	21.6	94	N	1	53.3	↙ ●² a. ↙ ●° p.
7	29.3	22.4	75	ENE	4	22.1	↙ ●° a. p.
8	29.5	23.5	86	NE	5	24.1	↙ ●° a. p.
9	29.4	22.8	96	NE	3	22.9	↙ ●° a. ● p.
10	30	21.7	72	ENE	2	3.3	↙ ●° a.
11	30.3	20.7	64	NE	2	------	Ω a.
12	30.3	20.8	93	ENE	3	12.7	Ω a. ●² ↙ p.
13	30.1	22.3	72	NE	4	7.4	↙ ●° a. ↙ p.
14	30.1	20.2	70	N	2	2.5	Ω a. ● p.
15	26.4	22.5	92	NNE	4	21.1	↙ ●° a. p.
16	23.9	22.7	96	N	2	31	● a. p.
17	30.4	21.9	82	NE	2	18.8	≡ a. ● p.
18	28.9	22.9	76	NE	1	9.4	● a.
19	30.2	22.8	80	NE	1	1.8	Ω a. ↙ ●° p.
20	31	23.4	74	ENE	2	27.7	↙ ●² a. ⏝ p.
21	28.3	23.2	81	NNE	2	5.1	Ω a. ↙ ●° p.
22	26.8	23.5	96	NE	3	35.1	↙ ● a. p.
23	28.7	22.5	76	NNE	4	43.7	↙ ● a. p.
24	25.6	22	80	NE	5	6.9	↙ ●° a. p.
25	29.4	23.2	77	NE	3	------	↙ a.
26	30.4	25	68	NE	4	------	↙ a. p.
27	28.7	23.4	92	NE	5	14.7	↙ ●° a. p.
28	29.4	23.2	71	NE	3	19	⏝ p. ↙ ● a. p.
Mean	29	22.5	82.2	------	3	------	
Total	------	------	------	------	------	538.3	

CALBAYOG.

[ϕ=12° 04′ N; λ=124° 36′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	28	20.5	92	N	1	11.4	d a. ●° p.
2	26.5	19.5	83	NNE	3	31.2	●° a. p. ↙° p.
3	28.2	21.5	81	NNE	1	------	
4	27.5	22	83	N	1	2.3	d a. p.
5	28	21.4	70	N	1	.3	●° p.
6	26.5	21	81	N	1	8.4	●° a.
7	30.5	22	66	NE	1	6.6	●° a.
8	28	21.6	81	NE	1	2.8	d a. p.
9	31	22.5	76	S	1	16.8	●° ⊤ p.
10	28	20.7	85	S	1	6.9	●° p.
11	30	19.5	77	S	1	------	
12	26.7	19.5	88	N	1	4.6	●° a. d p.
13	28.1	20	68	NE	2	------	d. a.
14	29.5	18.5	55	NNE	1	------	
15	27.8	18.5	76	NNE	1	------	
16	29	21	88	NNE	1	1	●° a. d p.
17	27.2	21.5	88	N	1	16.8	●° a. p.
18	28.7	20.5	93	N	1	13.2	●° a. p.
19	31.5	21	93	N	1	22.4	●² ⊤ p.
20	29.5	21	84	N	1	26.9	●² m. d.
21	28	21	92	N	2	1.5	●° a. p.
22	29.4	22	89	N	1	7.9	⌒°●° a. ⎾ p.
23	25.5	22	96	N	1	29.5	●° a. p.
24	26.5	21.6	71	NE	4	.3	⌒° a. ↙° p.
25	28.2	20	71	NE	2	------	
26	30.5	20	60	NE	2	------	d a. ↙° p.
27	29.4	19.5	80	NNE	1	2	↙ ●° p.
28	28.5	21.5	71	NE	3	------	↙° p.
Mean	28.4	20.8	79.9	------	1.4	------	
Total	------	------	------	------	------	212.8	

ROMBLON.

[ϕ=12° 35′ N; λ=122° 16′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	27.8	22.5	74	N	1	2.5	●° p.
2	28	22.6	70	NE	1	3.8	● a.
3	28.4	21.6	68	NNE	2	------	
4	30	23	70	NE	1	------	d° p.
5	30.1	22	64	NNE	2	------	d° p.
6	29.4	22	67	E	1	------	
7	29.5	22.6	73	Calm	------	------	d p.
8	30.1	22.6	70	N	1	------	d p.
9	27	22.6	87	N	1	2.5	●° a.
10	28.1	22.4	77	N	1	2.5	●° p.
11	29.1	22.4	75	NW	1	------	≡ a.
12	29.5	22	71	NE	1	------	d p.
13	28.4	22.6	70	NE	1	------	d a.
14	29.5	23.5	66	NE	1	------	d a.
15	28.6	22.5	63	N	1	------	
16	29	22.4	70	NE	1	------	
17	28	21.4	67	N	1	------	
18	29	23	68	NE	1	1.5	d p.
19	27.4	22.8	80	NE	2	2	d a.
20	27.6	22.6	77	N	2	------	d a.
21	29.1	23.2	68	ENE	1	------	⏝ p.
22	29.4	23	70	W	2	20.3	d a. ● p.
23	29.4	22.4	87	ENE	2	24.9	● a. p.
24	28	22	76	NE	1	4.3	● p.
25	28.6	21	69	E	2	------	d p.
26	28.5	22	67	NNE	3	------	d a. ⏝ p.
27	29.5	22	69	NW	3	------	
28	29	22.6	63	N	2	------	
Mean	28.8	22.4	71.3	------	1.4	------	
Total	------	------	------	------	------	64.3	

GUBAT.

[ϕ=12° 55′ N; λ=124° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	27.6	20.7	93	N	3	28.7	d a. p.
2	26.5	20.2	94	NE	2	59.7	● a. p.
3	28.6	20.5	89	NE	4	------	
4	29.9	21.8	89	NE	4	2.5	d p.
5	29.3	20.5	71	NE	4	------	
6	29	22.2	77	NE	3	------	
7	28.3	21.6	81	NE	4	5.1	d a.
8	28.4	21.7	83	NE	3	20.3	●° p.
9	30.5	21.8	80	NE	4	33	●° a. p.
10	30.5	20.8	78	NE	3	------	
11	29.2	20.5	76	NE	2	------	
12	27.8	21	90	NE	2	14.7	d a. ●° p.
13	28.2	21.7	70	NE	4	------	
14	30.2	22.7	71	NE	3	------	
15	30.5	23.8	77	NE	4	------	
16	30.2	21.2	80	NE	4	2.5	d p.
17	30	21.5	80	NE	3	14.7	●° a. p.
18	28.2	21	93	N	2	35.3	●° a. ● p.
19	29.6	21.8	94	N	4	62.2	● a. p.
20	28.3	20.5	87	N	3	101.6	●² a. p.
21	25.9	20.1	97	N	3	55.9	● a. ●° p.
22	27	20.6	86	NE	4	12.7	●° a. p.
23	26.7	20.5	96	NE	4	25.4	↙ ● a. ● p.
24	26.7	20.5	82	NE	5	10.2	↙ ● a.
25	27	21.1	68	NE	4	2.5	d a.
26	28.5	21.5	81	NE	3	------	
27	29.8	21.7	80	NE	4	------	
28	28.8	21.5	76	NE	4	------	
Mean	28.6	21.2	82.8	------	3.4	------	
Total	------	------	------	------	------	487	

METEOROLOGICAL DATA, ETC.—Continued.

SUMAY, GUAM (Ladrones Islands).

[ϕ=13° 22′ N; λ=144° 45′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2. p. m. Direction.	Wind, 2. p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	29.4	19	66	NE	3	1.3	
2	29.2	17.6	73	NE	3	------	
3	27.6	18.6	81	NE	5	------	
4	28.2	19.4	70	NE	4	------	
5	29.6	19.8	77	E	4	------	
6	29	19	68	E	5	------	
7	28.8	19.6	70	E	4	------	
8	29.6	20	62	SE	4	------	
9	28.4	19.6	70	NE	5	------	
10	30.2	19	71	E	3	------	
11	30	19	63	E	4	------	
12	29.8	18.2	70	NE	3	------	
13	30.5	19.2	68	E	3	------	
14	29.6	19	73	SE	2	------	
15	28.6	18.6	92	NE	1	7.9	
16	28.6	17.6	94	NE	3	2.5	
17	28.6	19.2	81	NE	3	17.8	
18	28.6	19.6	70	E	3	3.8	
19	30.2	19.6	79	W	1	------	
20	30.4	19.6	67	SE	4	------	
21	30.4	19.2	73	NE	3	------	
22	28	19.2	77	NE	3	------	
23	28.6	20	68	NE	3	------	
24	28.4	19.4	77	NE	5	------	
25	29.4	19.8	68	NE	5	------	
26	28.6	20.2	74	E	4	------	
27	29	19	68	E	4	------	
28	28.2	19.6	70	NE	2	------	
Mean	29.1	19.2	72.9	------------	3.4	------	
Total	------	------	------	------------	------	33.3	

NUEVA CACERES.

[ϕ=13° 38′ N; λ=123° 12′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2. p. m. Direction.	Wind, 2. p. m. Force.	Rainfall.	Miscellaneous.
	°C	°C.	P. ct.		0–12.	mm.	
1	27.8	21.5	81	NW	3	------	⌒ a.
2	29.4	21.5	63	NNW	3	------	
3	30	21.5	64	NW	2	------	
4	31	21.6	68	NW	2	------	
5	------	------	58	NW	3	------	
6	28.5	18.8	68	NW	3	------	
7	28.8	18.6	70	NW	4	------	
8	28.5	18.8	67	NW	3	------	
9	29	18	95	NW	3	33.5	● a p.
10	29	20	80	Calm	------	------	≡ a.
11	28.5	20.8	78	NW	4	------	
12	29	18.8	68	NW	4	------	
13	30	18.8	72	NW	4	------	
14	30.5	18.8	59	NW	2	------	
15	29	18	61	NW	4	------	
16	29	17.8	63	NW	4	------	
17	28.8	18.5	71	NW	3	------	
18	29	19	69	NW	4	------	
19	26	22	88	NW	5	------	d a.
20	25	21	95	NW	3	56.7	● a. p.
21	29	21.2	78	NW	4	------	
22	28	22	88	NW	4	------	
23	29	21.5	80	Calm	------	10.2	● a.
24	27.5	------	74	NNW	4	------	
25	29	21.8	57	NNW	3	------	
26	28.5	18	66	NNW	3	------	
27	28.7	18.5	66	NW	3	------	
28	29	17.5	64	NW	4	------	
Mean	28.7	19.8	71.8	------------	3.1	------	
Total	------	------	------	------------	------	100.4	

BATANGAS.

[ϕ=13° 45′ N; λ=121° 03′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.2	20.2	------	NE	1	------	
2	31.6	19.2	65	SSW	1	------	
3	32.9	16.7	57	ENE	2	------	
4	33.3	19.7	67	E	2	------	
5	32.2	19.4	62	ENE	2	------	≡ a.
6	31.5	17.7	65	E	2	------	
7	33.8	18.4	71	E	1	------	
8	34	20.6	66	SE	1	------	
9	32.8	18.9	72	SE	1	------	
10	36.5	19.7	53	SW	1	------	≡ a. ● p.
11	35.5	21.7	74	SSW	1	------	≡ a. d p.
12	32.3	19.1	76	ESE	1	------	
13	32.4	20.2	76	E	2	------	
14	33.3	19.8	75	SSE	1	------	
15	32.3	19.6	76	E	2	------	≡ d a. ○ p.
16	35.8	19.8	77	N	1	------	
17	34.3	17.2	77	SW	1	------	
18	34.5	17.1	79	SE	3	------	↯° ⦶ p.
19	32.7	21.9	87	ENE	2	------	d° p.
20	34.2	20.4	89	SE	1	------	
21	32.7	20.2	88	E	2	------	
22	31.1	23.3	95	NE	1	------	d° p.
23	30.6	22.4	91	NE	4	------	≡ a.
24	30.5	22	97	NE	3	------	
25	32.3	22.5	89	E	3	------	
26	32.5	20.6	85	E	2	------	⊍ p.
27	34.1	------	84	ENE	2	------	⊍ p.
28	33.8	19.8	82	SE	3	------	
Mean	33	19.9	76.8	------------	1.8	------	
Total	------	------	------	------------	------	------	

SILANG.

[ϕ=14° 14′ N; λ=120° 58′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	29	18.8	75	E	2	------	≡ a.
2	29.5	18.2	75	E	3	------	⌓ a.
3	29	18.6	75	E	4	------	⌓ a. d p.
4	28.6	18	76	E	3	------	
5	28.3	17.6	67	E	2	------	
6	28	17.3	65	E	4	------	≡ a.
7	29.2	17	65	E	2	------	
8	29.1	17.6	73	E	2	------	
9	29.4	17.2	74	E	2	------	⌓ ≡ a.
10	29.7	17.8	68	E	3	15.7	● ⊤ p.
11	30	18	67	E	2	------	⌓ ≡ a.
12	30	18.3	70	E	2	------	≡ a.
13	29.6	18.6	68	E	2	------	⌓ ≡ a.
14	29	18.1	73	E	2	------	≡ a.
15	30.6	18	72	E	3	------	
16	30.7	18.2	72	E	2	------	≡ a.
17	30.3	18.2	70	E	2	------	
18	30.5	18	70	E	3	------	
19	30	18.2	68	E	2	------	≡ a.
20	30	18	69	E	3	------	
21	29.6	18	68	E	2	------	⌓ ≡ a.
22	29.8	18.3	68	E	2	------	
23	28	18.1	68	E	3	------	
24	27.8	17.6	68	NE	3	------	d a.
25	28	17.2	71	NE	6	------	
26	28.1	17	73	E	2	------	
27	28.2	17.3	71	E	3	------	⌓ ≡ a.
28	28.9	17.5	72	E	4	------	≡ a.
Mean	29.2	17.9	70.4	------------	2.7	------	
Total	------	------	------	------------	------	15.7	

METEOROLOGICAL DATA, ETC.—Continued.

SAN ANTONIO.

[ϕ=14° 23′ N; λ=121° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	25.5	20	79	NE	3	------	∩ a. p.
2	26	20	68	NE	5	------	∩ a.
3	27	19	70	NE	4	4.8	∩ p.
4	26.6	19.5	71	NE	4	------	∩ a. p.
5	26.2	19.8	71	NE	5	------	
6	27.2	19.8	71	E	2	------	
7	27.6	19.5	70	NE	1	------	
8	26.2	19.5	65	NE	4	------	
9	25.5	15	69	NE	3	------	
10	30	19.6	66	E	2	------	
11	28.8	18.6	77	NE	4	------	
12	26.6	18.9	80	NE	5	------	
13	27.8	19.8	64	E	3	------	
14	29.1	19.6	63	E	3	------	
15	28	19.9	70	E	4	------	
16	28.6	20	60	E	2	------	
17	28.6	15	62	E	3	------	
18	28	16	71	NE	5	------	
19	27.2	19.9	91	NE	4	------	
20	27.2	19.8	71	NE	3	------	∩ p.
21	27.4	20	76	NE	5	------	
22	25.6	20.4	86	NE	6	8.1	∩ a. p.
23	24.6	19.5	91	NE	6	14.2	
24	24.5	19.4	95	E	5	15.7	∩ a.
25	26	19.5	69	NE	6	------	
26	25	20	76	E	4	------	
27	28	20	65	NE	5	------	
28	29.5	19.5	67	NE	3	------	
Mean	27.1	19.2	72.6	------------	3.9	------	
Total	------	------	------	------------	------	42.8	

CORREGIDOR.

[ϕ=14° 23′ N; λ=120° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	29.9	22.2	54	NE	1	------	
2	29.4	21.5	57	NE	1	------	
3	28.7	20.5	61	NE	1	------	
4	29.4	20.3	71	E	3	------	
5	29.2	22	47	NE	1	------	
6	29.7	21.3	52	N	1	------	
7	30.4	20.9	97	NE	3	------	
8	30.2	20.9	59	NE	3	------	
9	29.7	19.6	56	NE	3	------	
10	31.4	21.7	62	N	1	------	
11	30.7	21.8	98	N	1	------	
12	29.5	21.9	63	NE	2	------	
13	30	21	60	NE	3	------	
14	30.2	21.9	70	NE	2	------	
15	30.7	20.7	60	NE	2	------	
16	30.2	21.2	62	NE	2	------	
17	30.2	21.3	52	E	1	------	
18	30.2	21.5	60	NE	2	------	
19	30	22.1	60	NE	2	------	
20	29.7	22.8	67	NE	3	------	
21	31.2	22	64	NE	3	------	
22	30.1	22.8	61	E	1	------	
23	30.4	22.3	61	E	2	------	
24	30.5	21.2	65	E	2	------	
25	30.2	21.2	60	NE	2	------	
26	31	22.2	59	NE	2	------	
27	30.7	21.5	61	NE	2	------	
28	31.1	21.5	58	NE	2	------	
Mean	30.2	21.5	62.8	------------	1.9	------	
Total	------	------	------	------------	------	------	

BALANGA.

[ϕ=14° 41′ N; λ=120° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32.4	21	50	N	1	------	
2	32.3	20.3	51	NE	2	------	
3	32	18.7	54	NE	1	------	
4	32	20.4	59	N	1	------	⊕ a.
5	31.1	21.1	56	SE	2	------	
6	32.1	17.8	50	SE	2	------	Ω a.
7	32.1	16.5	46	N	2	------	Ω a.
8	32.9	19.9	52	SE	1	------	
9	33.2	17.8	46	Calm	------	------	Ω a.
10	33.5	21.3	52	SE	2	------	
11	33	22	53	N	1	------	
12	32.3	19.4	54	SE	1	------	
13	32.2	19.4	56	Calm	------	------	
14	32	21.2	54	SE	2	------	
15	32.4	20.5	51	SE	1	------	
16	32.5	17.1	47	SE	1	------	Ω² a.
17	32.3	19.6	54	SE	1	------	
18	32.5	18.5	50	SE	1	------	
19	32.5	19	53	SE	1	------	
20	31.5	21.6	57	Calm	------	------	
21	32.5	22.1	55	SE	1	------	⊕ p.
22	32.4	21.6	58	NE	2	------	
23	30.2	20.9	59	SE	1	------	⊕ ⊎ p.
24	30.9	22.1	55	NE	4	------	⊕ ⊎ p.
25	30.6	20.5	56	NE	1	------	⊕ p.
26	31	18.5	50	SE	2	------	⊕ ⊎° p.
27	33.5	18	44	SE	2	------	⊕² ⊎° p.
28	33	18	47	SE	1	------	
Mean	32.2	19.8	52.5	------------	1.3	------	
Total	------	------	------	------------	------	------	

MALOLOS.

[ϕ=14° 52′ N; λ=120° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	31.2	19.8	55	NNE	2	------	
2	31.3	18.2	46	NNE	1	------	≣° a.
3	31	16.8	57	ENE	4	------	≣° a.
4	30.8	18.3	65	W	1	------	d a.
5	30.9	19.8	63	ENE	2	------	
6	31.2	16	56	W	1	------	
7	32.2	15.7	48	E	1	------	
8	31.8	16.8	58	SW	1	------	
9	31.6	15.5	53	SSW	1	------	≡ a.
10	32.8	19.9	60	WSW	1	------	
11	32.6	20	61	W	1	------	
12	31.8	16.8	56	NE	4	------	≡° a.
13	30.9	17	64	S	1	------	
14	30.8	20.5	65	NW	1	0.5	d p.
15	31.8	19.5	57	E	1	------	
16	31.3	16	58	WSW	1	------	≣° a.
17	32.5	17.6	55	S	1	------	≣° a.
18	32.6	18	53	E	2	------	≣° a.
19	32.2	18.3	59	ENE	4	------	
20	31.8	20.5	60	NE	3	------	
21	31.8	21.1	56	ESE	2	------	
22	31.6	20	56	ENE	5	------	
23	31.3	19	56	ENE	4	------	
24	39.9	20.7	59	ENE	6	------	⊎² p.
25	31.6	19	55	ENE	4	------	
26	31.4	18.2	51	ENE	4	------	⊎² ⊕° p.
27	33.2	17.4	48	ENE	2	------	
28	33	16.6	57	S	2	------	
Mean	31.7	18.3	56.7	------------	2.2	------	
Total	------	------	------	------------	------	.5	

METEOROLOGICAL DATA, ETC.—Continued.

PORAC.

[ϕ=15° 05′ N; λ=120° 52′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.5	21	50	E	1	------	
2	32.5	20	43	E	1	------	
3	31.6	19	50	E by S	1	------	
4	31.4	20.6	59	Calm	------	------	d° a.
5	30.6	20.5	52	E	2	------	
6	33.9	18.7	41	E	1	------	
7	32.9	18.1	40	E	1	------	
8	34.4	19.4	42	E	2	------	
9	34.6	18.5	39	Calm	------	------	
10	36.9	21	42	Calm	------	------	d° a. ⌒ p.
11	34	19.4	42	E	1	------	
12	33.2	20.1	48	E	2	------	
13	32.3	19.2	48	E	2	------	≡ a.
14	31.7	20.5	57	SE by E	1	------	
15	32.9	20	46	ESE	2	------	
16	35.1	17.8	39	Calm	------	------	
17	33.4	19.5	45	E	2	------	
18	34.9	20	41	SE	2	------	
19	32.9	20.5	49	Calm	------	------	
20	32.2	21.8	59	Calm	------	------	
21	33	22.3	52	Calm	------	------	
22	33.9	22	48	Calm	------	------	
23	29	21	57	Calm	------	------	
24	30.5	19.6	50	ESE	2	------	
25	31.1	21.4	48	E	3	------	
26	29.4	19.6	54	E	2	------	
27	34.3	19.3	41	E	2	------	
28	34.9	19	39	E	1	------	
Mean	32.8	20	47.1	------------	1.1	------	
Total	------	------	------	------------	------	------	

ARAYAT.

[ϕ=15° 08′ N; λ=120° 46′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.6	21.5	51	N	1	------	
2	31.2	19.5	45	ENE	1	------	
3	30.9	19.2	52	E	2	------	
4	29.4	20	68	NNE	1	4.8	d a. ●° p.
5	30.5	20.3	51	ENE	2	------	
6	33.5	18.5	47	W	1	------	
7	32.4	16.5	44	ENE	1	------	
8	32.9	18.3	44	NE	1	------	
9	33.2	18	45	Calm	------	------	
10	35.2	21.1	48	SSW	1	------	d p.
11	33.4	21.1	47	N	1	------	
12	32.2	20	48	N	2	------	
13	31.2	18.9	54	NW	2	------	
14	28.9	21	70	SSW	1	------	⚡ p.
15	31.9	20.7	44	ENE	2	------	d a. p.
16	33.7	16.7	42	NW	1	------	
17	32.9	19.6	44	NW	1	------	≡ a.
18	33.2	19.1	40	SSE	1	------	
19	32.1	19.5	49	SE	1	------	
20	32	23	56	NW	1	------	
21	31.4	22.1	54	ESE	1	------	
22	30.4	22	55	NE	1	------	
23	30.5	21	50	E	2	------	
24	29.5	19.6	58	E	2	------	⇙° a.
25	31.7	22	44	SE	2	------	⇙° p.
26	29.6	21.6	53	ENE	1	------	
27	32.5	18.5	39	NE	2	------	
28	33	17.5	41	ENE	2	------	
Mean	31.8	19.9	49.4	------------	1.3	4.8	
Total	------	------	------	------------	------	------	

TARLAC.

[ϕ=15° 31′ N; λ=120° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32	19.6	44	NE by N	1	------	≡ Ω a. ∞ p.
2	32.6	17.5	42	E	1	------	≡² Ω a. ∞ p.
3	31.9	16.4	47	SE by E	2	------	≡ Ω a.
4	34.2	17.8	53	E	1	------	≡° Ω a. d° p.
5	32.9	17.8	46	SE by E	2	------	≡² Ω a.
6	33.6	16.9	45	SE	1	------	≡ Ω² a.
7	33.2	15.8	47	E	1	------	≡ Ω² a. ∞ p.
8	34.2	16.8	38	ENE	1	------	≡ Ω² a. ∞ p.
9	34.8	16.5	40	ENE	1	------	≡ Ω² a. ∞ p.
10	35.2	19.1	43	N	1	------	☈ p.
11	34.1	18.1	47	ENE	1	------	≡ Ω a. ∞ p.
12	34.2	18.1	49	SE by E	1	------	≡ Ω a.
13	34.1	17.3	48	E by S	1	------	≡ Ω a.
14	31.5	18	58	SE	1	------	≡ Ω a.
15	33.2	18.3	50	S	1	------	≡° Ω a.
16	35	15.8	43	NNE	1	------	≡ Ω² a.
17	34	18.6	49	WNW	1	------	≡ Ω² a. ∞° p.
18	35.5	19	43	E	1	------	≡ Ω a.
19	34.8	17.8	49	E	1	------	≡ Ω² a.
20	33	20.1	57	E	1	------	≡° Ω a.
21	35.7	21	54	SE	1	------	
22	34	19.2	48	SE	2	------	≡² Ω a. ◒° p.
23	31.5	19.2	63	ESE	1	------	≡° Ω ○² a. ◒² p.
24	33.2	20.3	49	ESE	2	------	Ω a.
25	32.3	18.2	48	SE	2	------	Ω a. ◒ p.
26	34.2	17.8	54	S by E	2	------	≡ Ω² d° a. ◡ ◒ p.
27	35.2	16.5	38	ENE	1	------	≡ Ω² a. ◡ ◒° p.
28	36.1	17.2	35	NNW	1	------	
Mean	33.8	18	47.4	------------	1.2	------	
Total	------	------	------	------------	------	------	

BALER.

[ϕ=15° 47′ N; λ=121° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	29	23	------	NE	2	------	
2	30	22.4	------	E	1	------	
3	28.5	22.5	------	NE	2	------	
4	26.5	21	------	E	1	54.6	● a. p.
5	27.5	20.4	------	E	1	46.5	● a. p.
6	28.5	19.4	------	NE	2	------	
7	27	22	------	E	1	------	
8	30	21	------	E	1	------	
9	29.6	20	------	E	1	------	
10	29	21	------	NE	2	------	
11	30	19.4	------	E	1	------	
12	27.2	20	------	NE	2	------	
13	25.4	21	------	NE	2	3	⇙ ●°
14	24	20.6	------	NE	1	29	⇙ ●
15	28.4	20.5	------	E	2	------	
16	28	20	------	E	1	------	
17	29.3	19.5	------	E	1	4.1	⇙ ●°
18	25.4	20.2	------	NE	2	8.1	⇙ ●°
19	27.5	20.6	------	E	1	6.6	⇙ ●°
20	29	22	------	NE	2	------	
21	29.5	21.2	------	NE	2	------	
22	28.4	20	------	NE	2	------	
23	26.7	21	------	NE	2	------	
24	25.4	22.5	------	NE	3	11.7	⇙ ●
25	26.2	21.4	------	NE	2	7.1	⇙ ●°
26	27.8	22	------	E	1	8.6	⇙ ●°
27	29	19.5	------	NE	2	------	
28	29	20.5	------	NE	2	------	
Mean	27.9	20.9	------	------------	1.6	------	
Total	------	------	------	------------	------	179.3	

METEOROLOGICAL DATA, ETC.—Continued.

BAGUIO.
[ϕ=16° 35′ N; λ=120° 43′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	20.1	9.5	81	Calm			
2	20.2	7	72	SW	1		≡ a.
3	17.6	10.1	80	Calm			
4	20.2	10	76	Calm			
5	21.1	8	69	WSW	1		≡ a.
6	20.7	9.9	72	Calm			
7	21.2	8	75	SW	1		
8	20	7	78	WSW	1		
9	21.6	8	74	WSW	1		
10	21.4	9.6	72	Calm			
11	23.4	8.5	58	Calm			
12	19.9	9	65	SW	1		
13	20.2	9	76	WSW	1		
14	19.2	10	87	Calm			
15	18.8	10.6	84	Calm			
16	20	8	80	Calm			≡ a.
17	19.6	8.5	76	Calm			
18	21	8.5	72	Calm			
19	21.3	8.2	76	SW	1		
20	19.6	10.1	81	WSW	1		
21	22.4	9	73	Calm			
22	21.2	10	86	Calm			
23	19.6	10.2	59	S	1		
24	20.6	10.2	74	WSW	1		
25	21	10.1	78	Calm			
26	20.6	10	76	Calm			
27	21.5	11	76	Calm			≡ p.
28	22.3	8.2	86	Calm			
Mean	20.6	9.2	75.4		.4		
Total							

SAN FERNANDO.
[ϕ=16° 37′ N; λ=120° 18′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	26.6	16	63	N	4		Ω a. ↙° p.
2	26.4	16.8	65	N	3		Ω a.
3	27.2	17.4	69	N	3		Ω a.
4	27	17	71	N	4		Ω a.
5	28.2	16.8	74	WNW	2		Ω a.
6	27	17.8	68	NNW	4		Ω a.
7	28	18	76	NNW	2		Ω a.
8	28.4	18.6	68	W	3		Ω a.
9	29	18.7	75	W	2		Ω a.
10	28	18.2	75	NNW	2		Ω a.
11	27	19.6	71	NW	3		Ω a.
12	27	18.6	67	NNW	2		Ω a.
13	28.4	18.2	61	NNW	2		Ω a.
14	28.5	19.2	70	NNW	2		Ω a.
15	28.2	19.2	64	NNW	3		Ω a.
16	29.4	19.4	63	W	2		Ω a. Γ↯ p.
17	27.6	19.6	73	NW	4		Ω a.
18	29	19	61	W	3		Ω a.
19	29.4	18	70	W	2		Ω a.
20	28.4	19.2	74	NW	2		Ω a.
21	28	20	67	NNW	2		Ω a. Γ↯ p.
22	28	19.2	70	N	3		Ω a. ψ p.
23	28.5	20	64	NNW	2		Ω a.
24	28.4	20.2	65	W	2		Ω a.
25	28.4	19.8	70	W	2		Ω a. ● p.
26	28	20.1	74	N	2		Ω a.
27	29	20.2	70	N	3		Ω a. ψ p.
28	29	18.8	67	NW	3		Ω a. Γ↯ p.
Mean	28.1	18.7	68.8		2.6		
Total							

CANDON.
[ϕ=17° 12′ N; λ=120° 26′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	27.6	18.7	62	NW	4		Ω² ≡ a. ↙° p.
2	27.2	17.5	56	NW	2		Ω² ≡ a.
3	28.7	17.8	64	NW	1		Ω ≡ a.
4	27.7	18.9	63	NNW	3		Ω ≡ a. ↙° p.
5	28	18.6	64	NW	2		Ω² ≡ a.
6	28.5	19.5	66	NW	1		Ω² ≡ ↙° a.
7	28.6	20	66	NW	1		Ω² ≡ a.
8	28.1	21	60	NW	2		Ω ≡ a.
9	28.5	20.1	70	WSW	1		Ω² ≡ a.
10	28.5	20	61	NW	1		Ω² ≡ a.
11	27.7	20	63	NNW	4		Ω² ≡ a. ↙° p.
12	28.5	19.5	59	NW	1		Ω ≡ a.
13	28.8	20.5	59	NNW	1		Ω ≡ a.
14	28.9	20.4	69	W	3		Ω ≡ a. ↙° p.
15	29	22.5	67	SW	3		Ω ≡ a. ↙° p.
16	29.2	21.9	65	SW	4		↙° p.
17	28.7	21.2	64	NW	5		Ω ≡ a. ↙° p.
18	29.2	21.5	64	SW	1		Ω a.
19	29.5	21	64	NW	1		Ω ≡ a.
20	29.7	23.4	58	NW	3		≡ a. ↙° p.
21	29.5	20.5	60	NW	3		Ω ≡ a. ↙° p.
22	29.2	21	61	NW	4		Ω° ≡ a. ↙° p.
23	28	22	58	W	1		
24	29.2	22	67	WSW	3		d a. ↙° p.
25	30.2	22.6	61	NW	2		↙° p.
26	29.5	22	61	NW	1		
27	28.6	21	68	NW	2		⊕ p.
28	28.6	21.5	70	NW	4		Ω² ≡ a. ↙° p.
Mean	28.7	20.6	63.2		2.3		
Total							

TUGUEGARAO.
[ϕ=17° 35′ N; λ=121° 39′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.3	15.3	55	N	1		
2	31.6	13.6	49	NW	1		Ω² a.
3	29.7	15.8	66	SE	1		d p.
4	32	15.1	59	NE	1		Ω² ≡² a.
5	32.2	17.4	58	N	1		Ω a.
6	34.9	14.1	45	Calm			Ω a.
7	35.1	14	39	NW	2		Ω² ≡² a.
8	34.5	14.7	49	SE	1		Ω² ≡ a.
9	33.3	14.5	42	SE	1		Ω² a. ≡² p.
10	35.4	13.8	43	W	1		Ω² a.
11	33.5	14.7	39	NNW	1		Ω a.
12	31.5	16.5	56	N	1		Ω a.
13	33	14.3	38	NE	1		
14	33.7	15	52	SW	1		Ω° a.d p.
15	34.8	16.9	42	SSE	1		
16	35.5	16.8	40	S	1		Ω ≡ a.
17	33.4	15.6	40	NE	2		Ω a.
18	30.8	16.4	62	NE	2		Ω a.
19	29.5	17.4	69	N	1		d a.
20	33.2	16	50	N	1		Ω a.
21	32.5	15.9	58	NNW	2		Ω a.
22	31.6	17.4	70	N	3		Ω a. ↙ p.
23	29.1	15.7	67	N	1		Ω d a.
24	30.4	16.7	64	N	1		
25	31.3	17.2	47	S	1		Ω a.
26	33.6	15.1	45	SE	1		Ω a.
27	35	13.8	42	SE	1		Ω² a.
28	35.8	14.7	35	SE	1		Ω a.
Mean	32.8	15.5	50.8		1.2		
Total							

NOTAS GENERALES DEL TIEMPO.

Presión y temperatura.—Una simple ojeada á la primera tabla que acompaña el texto inglés bastará para echar de ver que la media presión atmosférica resulta este mes inferior á la de Febrero del año pasado en la región meridional de nuestro Archipiélago; y superior á ella en la región septentrional. La máxima diferencia corresponde á Aparri y Santo Domingo, estaciones las más próximas á los centros de alta presión que en esta época del año suelen prevalecer en altas latitudes. Las más altas presiones fueron registradas en todo el Archipiélago del 23 al 26, y las más bajas del 10 al 13.

Las medias temperaturas resultan también menores que las de Febrero, 1906. Nótese cómo San Isidro, estación situada en el interior de la Isla de Luzón, nos da la mayor máxima absoluta 35.3 °C. y juntamente la mínima absoluta más baja 15.2 °C. Las temperaturas más bajas observadas en Manila durante este mes han sido 16.5 °C. y 16.4 °C. registradas respectivamente los días 7 y 16. La máxima absoluta mensual en Manila no ha sido mayor de 33.2 °C., lectura registrada el día 27.

Precipitación acuosa.—Á excepción únicamente de las estaciones situadas en el centro y región occidental de Luzón, donde la lluvia ha sido escasísima y casi nula, la cantidad de agua recogida en los pluviómetros ha superado en todas partes la de Febrero del año próximo pasado. Las diferencias para estaciones del Norte de Mindanao, Sámar, Leyte, Sudeste y Norte de Luzón resultan bastante notables y dignas de llamar la atención. La mayor cantidad de lluvia caída en un día ha sido de 203.7 mm.: corresponde á la estación de Surigao y tuvo lugar el día 4.

DEPRESIONES Y TIFONES.

Apenas se ha sentido en todo el mes ni en Filipinas ni en las Marianas ó Carolinas Occidentales influencia de ninguna depresión que merezca aquí mención especial. Con todo, si en el cuadro de observaciones de Manila nos fijamos por un momento en la columna del viento, nos llamará desde luego la atención que dominasen corrientes de la parte del W los días 10, 18, 20 y 21. Examinando los mapas diarios del tiempo de aquellos días hallamos que del 10 al 11, del 18 al 19 y del 20 al 22 existían centros de baja presión en el Pacífico hacia el NNE y NE de Manila y S del Japón, y á ellos deben sin duda atribuirse las dichas corrientes.

La primera de estas depresiones apareció el día 9 hacia el E de Formosa en forma de un área de baja presión de poca importancia; del 9 al 10 se movió hacia el NNE primero y NE después, hallándose situada la tarde del 10 en la parte más oriental del Mar del Este, hacia el N de las islas Liukiu, en los alrededores del paralelo 29° latitud N. Desde allí se movió aparentemente al E¼NE aumentando en intensidad á medida que atravesaba el Pácifico por el S del Japón: el centro pasó no lejos por el Sur de la isla Hachijo la tarde del 11, observándose allí la mínima barométrica 745 mm. con vientos huracanados de la parte del Este.

Simultánea con ésta puede decirse que fué otra depresión que se presentó hacia el W de las islas Bonin la madrugada del 11, y atravesó el N de aquel grupo de islas la tarde del mismo día, moviéndose entonces, al parecer, en dirección al SE. El barómetro bajó en Chichijima (142° 11′ E., 27° 05′ N.,) á 745 mm. rolando los vientos del SE al NE por el S, W, N.

La depresión del 18 se hallaba la noche del 17 entre las islas Liukiu y Bonin; y dirigiéndose al E atravesó el 18 las islas Bonin, internándose en el Pacífico el 19.

Durante el 20 y 21 hallamos que otra depresión demoraba en el Pacífico hacia el SE del Japón y N de las islas Bonin.

SEISMOLOGICAL BULLETIN FOR FEBRUARY, 1907.

By Rev. Miguel Saderra Masó, S. J.,
Assistant Director of the Weather Bureau.

EARTHQUAKES FELT IN THE PHILIPPINES.[1]

4, 3^h 42^m. **Vigan** (NW of Luzon). Oscillatory earthquake, intensity II, duration 7^s.

5, 17^h 18^m. **Aparri** (NE of Luzon). Oscillatory earthquake shocks, intensity II, duration 6^s.

6, 7^h 15^m. **Ormoc** (W of Leyte). Earthquake, intensity II.

6, 12^h 4^m 15^s.* **Vigan** (NW of Luzon). Oscillatory earthquake shocks, intensity II, short duration.

20, 5^h 45^m 59^s.* **Aparri** (NE of Luzon). Oscillatory earthquake, direction E–W, intensity III, duration 9^s.

23, 15^h 22^m 53^s.* **Panay and Negros Islands.** Earthquake shocks, intensity II, short duration. According to the reports received from the observers of the three meteorological stations established in Panay Island, namely, Capiz, San José, and Iloilo, and from the observer of Bacolod (NW of Negros), the earthquake did not show anywhere a great intensity; and it seems probable that this intensity was not greater to the east or south of the Island of Negros, since the shock was not even perceptible in the western coast of Cebu Island.

23, 22^h 17^m. **Caraga** (SE of Mindanao). Oscillatory earthquake, direction NNE–SSW, intensity III, duration 4^s.

[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

RECORDS OF THE SEISMOGRAPHS.

[Time of the one hundred and twentieth meridian east of Greenwich. Midnight = 0^h.]

No.	Date.	Component.	Beginning.			Maximum range of motion.			End.	Instrument.	Remarks.
			First preliminary tremors.	Second preliminary tremors.	Principal portion.	Hour.	Amplitude (*2 a.*).	Period.			
			h. m. s.	*h. m. s.*	*h. m. s.*	*h. m. s.*	*mm.*	*s.*	*h. m. s.*		
17	3	NNW-SSE	14 17 38	—	—	14 18 46	0.38	2.4	14 31 14	V. M.	Vertical component; amplitude, 0.02 mm.
		NNW-SSE	14 17 37	—	14 19 22	14 19 27	.19	5.4	14 48 29	H. P.	
18	4	WSW-ENE	3 42 08	—	—	3 43 27	.03	2.6	4 21 40	V. M.	Earthquake, intensity II, at Vigan (NW of Luzon).
		WSW-ENE	3 41 42	—	—	3 53 47	.10	6.6	4 20 07	H. P.	
19	5	WSW-ENE	15 16 14	—	15 17 07	15 17 19	.06	1.6	15 21 16	V. M.	
20	6	WSW-ENE	12 04 15	—	12 04 52	12 05 08	.18	1.8	12 09 48	V. M.	Vertical component; amplitude, 0.24 mm. Earthquake, intensity III, at Vigan (NW of Luzon).
21	6	WSW-ENE	16 41 18	—	—	16 42 39	.09	1.6	16 49 13	V. M.	
		WSW-ENE	16 41 17	—	—	16 47 52	.03	4.8	17 04 03	H. P.	
22	10	WSW-ENE	9 44 33	—	9 45 47	9 45 53	.03	3	9 49 44	V. M.	
		WSW-ENE	9 44 03	—	—	—	—	—	9 51 44	H. P.	
23	12	WSW-ENE	9 38 53	—	9 40 05	9 40 57	.05	1.6	9 44 22	V. M.	
24	18	WSW-ENE	10 27 07	—	10 27 19	10 27 38	.05	2.4	10 29 10	V. M.	Vertical component; amplitude, 0.08 mm.
25	18	WSW-ENE	15 41 38	—	15 41 58	15 42 36	.68	2.2	15 46 53	V. M.	Vertical component; amplitude, 0.38 mm.
		WSW-ENE	15 41 33	—	15 41 49	15 42 13	.12	2.4	15 47 45	H. P.	
26	20	WSW-ENE	5 45 59	—	5 46 42	5 46 52	.04	3	5 51 26	V. M.	Earthquake, intensity III, at Aparri (NE of Luzon).
27	23	WSW-ENE	15 22 53	—	15 23 36	15 23 47	.05	2.4	15 27 15	V. M.	Earthquake, intensity II, in Panay Island and in Negros Island.
		WSW-ENE	15 22 54	—	—	15 25 46	.04	4.8	15 31 55	H. P.	
28	28	WSW-ENE	19 24 43	—	19 25 00	19 25 47	.02	2.4	19 28 29	V. M.	Vertical component; amplitude, 0.08 mm.

Instrumental constants.—Vicentini microseismograph (V. M.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record: NNW–SSE component, 50 times; WSW–ENE component, 50 times.

Horizontal Pendulums (H. P.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation, NNW–SSE pendulum, T=7 seconds; WSW–ENE pendulum, T=6.4 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

Foundation and location.—The instruments are mounted against a solid cut-stone pier measuring 5×5 meters at its base and 3.30×3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above the sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above the sea level.

Geological structure.—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters which extends many kilometers toward north and south and only four to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

TEMBLORES SENTIDOS EN FILIPINAS.[1]

4, 3^h 42^m. **Vigan** (NW de Luzón). Temblor oscilatorio, intensidad II, duración 7^s.

5, 17^h 18^m. **Aparri** (NE de Luzón). Temblor oscilatorio, intensidad II, duración 6^s.

6, 7^h 15^m. **Ormoc** (W de Leyte). Temblor de intensidad II.

6, 12^h 4^m 15^s.* **Vigan** (NW de Luzón). Temblor oscilatorio, intensidad II, duración corta.

20, 5^h 45^m 59^s.* **Aparri** (NE de Luzón). Temblor oscilatorio, dirección E–W, intensidad III, duración 9^s.

23, 15^h 22^m 53^s.* **Islas Panay y Negros.** Temblor de tierra de intensidad II, duración corta. Según las notas enviadas por los Observadores de Cápiz, S. José é Iloílo, tres estaciones pertenecientes á la isla de Panay, y la del Observador de Bacolod, NW de Negros, el fenómeno tuvo en todas partes muy poca intensidad; ni es probable que la tuviese mayor hacia el E y S de la isla de Negros, pues en este caso debiera haberse sentido en Cebú.

23, 22^h 17^m. **Caraga** (SE de Mindanao). Temblor oscilatorio, dirección NNE–SSW, intensidad III, duración 4^s.

REGISTROS DE NUESTROS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

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[1] La intensidad de los terremotos se indica conforme á la conocida escala de De Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago, que es el del meridiano 120° E de Greenwich.

CROP BULLETIN FOR FEBRUARY, 1907.

By Rev. George M. Zwack, S. J.,
Secretary of the Weather Bureau.

GENERAL NOTES.

During February the crops suffered more or less severely from excessive rains in the southeastern part of the Archipelago and from drought in the northwest. Especially remarkable were the copious rains on the Island of Basilan, where they are quite unusual during this month, and in the northwest of Negros. Nevertheless the state of the crops which were still growing was generally fair at the end of the month.

The principal products harvested during this month are rice, hemp, sugar cane, and cocoanuts. The rice crop, taken as a whole, can be called only middling. If in some very limited regions it exceeded the average, it was a comparative failure in others. Limited extent of the fields, mice, birds, but above all, heavy rains, are responsible for the small quantity produced. The production of hemp is increasing, since the fiber commands a good price, which, according to quality and locality, ranges from ₱16.75 per pico (63.25 kilos) at Gubat, Sorsogon, to ₱28.50 at Isabela, Basilan. In the northern provinces maguey is steadily gaining in favor. The quantity of sugar produced appears to be slightly above the average rather than below. The planters in Negros are complaining of the low price of this commodity, ₱3.25 to ₱3.75 per pico. Cocoanuts, and hence copra, are scarce almost throughout the Islands. Their price is everywhere relatively high; thus in Ilocos Sur they cost ₱6 per hundred, while at Butuan, Mindanao, the same number can be bought for ₱2, which, however, is double the usual price in said locality.

There is general complaint of the lack of work animals. For this reason extent of those plantations, the cultivation of which depends chiefly upon the use of draft animals, was very limited. The crushing of the sugar cane was likewise greatly hampered by this scarcity, though the heavy rains also caused considerable retardation in the southeast.

The number of work animals has been further decreased by sicknesses, some form of which was prevalent in most provinces, carrying off, besides horses and carabaos, also hogs and poultry. The ravages were especially great in the Province of Iloilo, where the loss of carabaos alone amounted to 25 per cent; in the north of Samar, where in the single town of Calbayog 20 horses succumbed to surra, and in the Province of Bataan, which reports the loss of 34 carabaos. The Provinces of Oriental Negros and Sorsogon suffered likewise severely.

Insects have done but little harm, except locally. Cagayan reports that the tobacco plants have been attacked by worms; Principe, that the rice has been damaged to some extent by an other kind of worm. In the neighborhood of Tagbilaran the cocos palms have suffered from the ravages of a small white insect, which is said to be worse than the cocoanut beetle.

The Province of Cagayan is still far from having recovered from the effects of the inundation of last year and the repeated typhoons.

SPECIAL NOTES.

DISTRICT I.

Borongan.—During this month a fair amount of copra has been prepared from the nuts which had been torn from the trees by the fury of the typhoon of January 10; owing, however, to the copious rains it has not yet been possible to enter fully upon the work of making copra. As a rule, the cocos trees are laden with fruit. The rice is likewise in a flourishing state, thanks to the abundant rains. One discordant note is to be lamented—the appearance of epizoötia during this month, causing a considerable number of deaths among the few carabaos and horses which are to be found along this coast.

Tacloban.—The information furnished by the presidents of the municipalities in the east and north of Leyte show that the rains have been excessive in the northern regions, damaging the plantations of sweet potatoes, tobacco, corn, rice, white squash, and tomatoes. During this month work begins in the highland rice fields provided with artificial irrigation. Tubers, sitao, corn, and sugar cane are also being planted. Growing in the fields are rice, sweet potatoes, gabe, and sugar cane. The condition of the crops is very good on the Island of Biliran, good in the towns north of Tacloban, but only fair in some municipalities south of here. At present hemp, rice, cocoanuts, and some articles of minor importance are being harvested. The rice crop has been good nearly everywhere; nevertheless it is not abundant, as is sufficiently indicated by the arrival in this port of large quantities of rice from Pangasinan and Saigon. The price of this rice has been as high as ₱6.90 per pico (63.25 kilograms), and does not fall below ₱6.40. In Caibiran and the surrounding country there is less demand for this article. The hemp crop continues to be good. Cocoanuts are scarce and are quoted at ₱5 per hundred at Tacloban. There are at present no locusts; but small birds called *hanao* at Palo, field mice at Dagami, and insects (not nearer designated) at Carigara are damaging the rice fields. Epizoötia is responsible for the death of two carabaos at Naval, for a loss of 5 per cent at Dagami, and a few cases at Dulag. Reports have been received from the municipal presidents of Alangalang, Abuyog, Caibiran, Carigara, Dagami, Dulag, Naval, and Palo.

Ormoc.—Mr. José Renomeron reports that the principal agricultural products of this month are hemp, sugar cane, corn, cocoanuts, bananas, and tubers. The rains have been somewhat excessive, harming the corn. The locusts have not reappeared, nor were there other injurious insects. Owing to the small number of cattle left, the cases of death from epizoötia among them are hardly noticed. The exports of hemp during this month amounted to about 5,000 picos and its price reached ₱28 per pico.

Tuburan.—The principal crop of this month is corn. Tobacco is still growing in the fields and is in fair condition. The rains have not been heavy and have benefited the tobacco plants. On the other hand, there has not been any drought either during this month. Although the winds have been somewhat strong, they have not done any damage worth mentioning. There have been grasshoppers in the fields, but they have not harmed the plants to any extent. During this month a sickness has spread among hogs, which carried off three or four per day.

Cebu.—The fields in this neighborhood are nearly entirely cleared of crops; some are being prepared for the new planting of corn. In the local market there is an abundance of tubers, poultry, and eggs, all very cheap, and a moderate supply of vegetables; mangoes are still scarce. The cases of epizoötia have been few in number.

Maasin.—Only a very small quantity of sweet potatoes and sugar cane has been harvested during the month of February in this region.

Surigao.—During this whole month we have had much rain, which proved very harmful to those rice fields which, being far advanced, commenced to produce ears, because on account of the rain the ears will be without grains; on the contrary, to the fields which were still far back, the rains have been beneficial. On February 4 a torrential rain fell during the whole day and night. On the following day, February 5, in the morning, a great flood swept down the Surigao River. The water rose so high that it submerged all the rice fields, not only the low lying but also those on a higher level, especially from Badas upstream as far as Bugsucan, where many animals, such as hogs, chickens, etc., perished. Between Bungso and Bugsucan several hemp plantations have been destroyed, the flood carrying away the plants. The bridge across the Surigao, only recently constructed near this city, likewise suffered harm, since one of the piles in the middle sank. Hemp stripping and the making of copra are extending over a great part of this province. Here the price of hemp is ₱24 to ₱25 per pico (63.25 kilograms); that of copra ₱9 to ₱10 the pico. At present the rice fields are in a flourishing condition.

Tagbilaran.—Of the different rice plantations at Calape only those on high ground have given a good harvest; the irrigation rice proved an almost complete failure, owing to the excessive rains which fell in this region. In said municipality and in that of García Hernandez the corn has been brought in which had been left over from the preceding month. Several other towns have finished the rice harvest similarly. The yield of uve, both white and red, is less abundant this year than last at Tagbilaran, Baclayon, Dauis, and Panglao. Considerable quantities of this tuber have been exported to the neighboring Island of Cebu. The fruit of the chico is very abundant at Tagbilaran; this in spite of a loss of at least 40 per cent caused by the voracity of a great number of huge bats. During this month no locusts have been seen; but Mr. Cecilio García, farmer at Calape, reports the appearance of a new enemy of the cocoanut tree, which is even worse than the beetle. This is a small white insect which in large numbers attacks the succulent tops of the trees, with the result that the latter gradually dry up.

Butuan.—The sowing of rice is almost finished, but few people in this region dedicate themselves to the raising of this cereal. Thanks be to God, we have had no invasion by the locusts, which during the past month have done so much damage in our neighborhood. Nor is there any sickness among the draft animals. A man from Cabarbaran told me that in his place the greater part of the people are planting rice. At Butuan as well as at Cabarbaran and Tubay hemp stripping is going on continually, the price of the fiber being at present ₱20 per pico. At Tubay the price of cocoanuts is high. Formerly they sold for ₱1 per hundred, but now they cost ₱2. This appears to be the effect of the present great demand.

Balingasag.—At the beginning of February four carabaos died, also some hogs and chickens. The mortality among the poultry still continues. Hemp stripping and the preparation of copra go on apace. Some people are already preparing the ground for the planting of corn.

Caraga.—Rains and squalls have been of ordinary intensity and have benefited all classes of plants. At present tobacco is being planted and the fruit of the mango tree gathered. The cocos trees and hemp plants are improving from day to day. The quantity of fiber shipped during this month exceeded 300 picos, at ₱24.50 per pico (63.25 kilograms); that of copra was nearly 30 picos, the price being ₱7.50 to ₱8.50 per pico. During all the years which I have been here as observer the cacao and coffee plants have never given good results; at present few of them are left—so different from the conditions of former days, according to the natives of the place—owing to the ravages of monkeys, rats, and worms.

Davao.—Hemp sustains its high price in this neighborhood; wherefore the owners of plantations do not lose an hour in preparing the fiber. The amount of gum mastic collected during this month appears to be equal to that of former months; but it is feared with good reason that during the time of the northwest monsoon boats will find it for some time impossible to penetrate to the different points at which this product has been stored. The same is true of biao. The rains and strong winds from the first quadrant during some days of this month have been favorable to plants in general, but especially to the hemp.

DISTRICT II.

Capiz.—Most of the banana trees having been blown down by the typhoon of January, bananas are naturally very dear. Corn, gabe, sweet potatoes, tugui, and uve are being harvested; likewise radishes, eggplant, and parsley, the two former of extraordinary size. The bags made from the buri palm, which are being manufactured here, cost ₱4.25 to ₱4.50 per hundred. In Sigma, Panay, and Ivisan, as I have been informed by persons coming from those places, the products mentioned above likewise constitute the harvest during this month. At Sigma palay (unhulled rice) costs ₱1.60 per cavan (75 liters); at Mamburao, ₱1.80.

Cuyo.—The mango, casoy, lomboy, and plum trees are blossoming fairly well, notwithstanding the fact that it rained on the 11th and 23d of the month. That these rains failed to do any harm to the flowers of the fruit trees mentioned appears to be due to the lucky circumstance that we had a light wind during those days of rain. Last year it rained while calm reigned and the blossoms were attacked by *degma*, which caused them to turn black and fall off. May God grant that when the time for the harvest comes we may have some abundance of these fruits.

San Jose de Buenavista.—During this month continued the crushing of the sugar cane, whose yield I believe to be superior to that of last year, both in quantity and quality. There is being harvested a small quantity of sitao, gabe, and uve; tobacco, corn, and sweet potatoes are still growing. Nothing is known of sickness among the stock; but the locusts hold full sway in these regions, without, however, causing much alarm, since during these months the fields are to a great extent clear of crops. The people living on the coast have placed their fish corrals, but the catch is small. The fishermen ascribe it to the strong currents caused by the monsoon; at least experience has shown that the fishing is better in those years in which the currents are weaker. Rice, whose price should be lower during the months of January to March than during the period April to December (when it costs 10 to 14 centavos per ganta, at most), shows at present no tendency to remain even at 15 to 18 centavos per ganta (3 liters), but rather to go up. It is difficult to decide whether this is due to the small demand from Iloilo during the past months or to the fact that the farmers needed money to pay their taxes.

Iloilo.—At Santa Barbara the harvesting of rice is finished; the yield is slightly better than it was last year. Tobacco plantations are not extensive, partly on account of the heavy rains, but chiefly owing to the fact that the greater part of the land could not be tilled, epizoötia being prevalent among the work animals. From Janiuay it is reported that probably during the whole year agriculture will be seriously handicapped by the lack of draft animals. Most of the carabaos in said vicinity are sick, and about 25 per cent of them have perished. Similar losses occur among the other domestic animals and the poultry. The crushing of the sugar cane has begun, but there is no hope of a good yield, as a great part of the crop has been destroyed by grubs and locusts. Onions, garlic, radishes, and eggplant are in a flourishing condition at present, having been benefited by the mild weather of the preceding month. At Barotac Nuevo the weather has been somewhat cloudy during February, with occasional fine rain which greatly favored the fields planted in sugar cane, corn, tobacco, sweet potatoes, etc.; but the crushing of the sugar cane has been greatly hindered by the fact that the owners of the cane could not provide the necessary firewood. Cabatuan has finished harvesting the small quantity of corn found in the fields. During this month also began the preparation of the seed beds for the rice called *lubang* and the planting of sugar cane on a rather reduced area, likewise the crushing of the very limited amount of sugar cane harvested.

Bacolod.—At present we ought to be in the dry season corresponding to our location on the western coasts during these months, but thus far it has not made itself felt; on the contrary, the rains are so heavy and frequent that the farmers can not continue the crushing of the sugar cane, partly because they have not the firewood necessary for the evaporation process, partly for other reasons. The fields newly planted with cane are full of vigor. Corn is nearly ripe and promises good returns. There is great activity among the rice growers, who are preparing the plots for mountain rice in order to profit by the rains falling at present, which are a blessing to them. Thus it seems that the sowing of rice will be somewhat early. The locusts and grubs are disappearing. At Murcia and in the hamlet of Granada epizoötia is gaining headway among the cattle and carabaos, claiming many victims. There is general discontent among the producers of sugar on account of the low price of this commodity. The present prices are: No. 1, ₱3.75; No. 2, ₱3.50; No. 3, ₱3.25 per pico. Imported rice, No. 2, white, costs ₱6.25 per pico. On the beach there is considerable activity, owing to the export of the present sugar crop to the Iloilo market.

Dapitan.—The agricultural situation of this district is at present as follows: The water deposits of this town, which had dried up during the second half of January, are again filled, thanks to the rains and squalls of the second half of February. During this month the farmers have been occupied in preparing their land, which they plowed repeatedly in order to kill the weeds. The government of the Moro Province is distributing various kinds of seeds imported from the United States; but they have not yet been tried, as the time for planting them has not yet arrived. The councilman of the hamlet of Haya reports that on February 24 there was a flood along the water courses in the vicinity of said place, but it was not a matter of grave importance; the only damage done was to the cane along the banks, which was carried away. Copra, the second product of this region as regards importance, does not turn out as excellent as it did last year. Nevertheless the dealers almost fight to get some of this product, because much of it has been spoiled by the rains which fell during the second half of this month.

Zamboanga.—Acccording to information furnished by some farms of this region, the rice harvest has been finished during this month. The crop is fair, palay costing at present ₱2.50 per cavan (75 liters). The prices of the various products have not changed during this month, except that of imported rice, which is now ₱0.32 per ganta (3 liters) even for quality No. 2 rice.

Isabela de Basilan.—During the month of February 17 picos of hemp and 3 picos of copra have been produced in this town; all of which went to Zamboanga. Information received from the hamlet of San Pedro (Lamitan) indicates that the hemp produced there is of fine quality. During the month some 14 or 15 picos of said fiber have been exported to Zamboanga, the price being ₱28.50 per pico. Many farmers are planting abacá, coffee, and rubber, both here and at San Pedro. The rains have been somewhat abundant, which is quite extraordinary, since, as a rule, it does not rain much in this region during February.

DISTRICT III.

Legaspi.—In nearly all the municipalities of this province slightly more hemp has been stripped than in the preceding month. Its price oscillates between ₱19.50 and ₱20.50 at the warehouses of this port. Albay, Daraga, and Guinobatan had a fair crop of sugar cane, cocoanuts, tomatoes, sweet potatoes, bananas, nanca, and some vegetables; Polangui and Oras a good crop of rice. Sickness among animals has not been very notable, only a few head of cattle imported from China having been affected. There were no injurious insects in the fields.

Gubat.—The market price of hemp was ₱16.75 to ₱17 per pico, according to quality. Saigon rice is sold here at ₱6.75 per cavan, that from Bayambang (Pangasinan) at ₱6.30. But prices are different in the towns which depend upon the merchants of Gubat; thus at Barcelona rice costs ₱8 and at Bulusan even ₱8.50. The prices of the products mentioned are not regulated by the abundance or scarcity of the article, but are fixed by an agreement among the dealers. After the work of plowing the fields 19 carabaos died—maybe that this is chiefly due to the little rest which was given the poor beats. Of the cows which had been sent to this capital to be butchered, a few were attacked by epizoötia a few days after their arrival and died.

Romblon.—The landowner, Don Lucas Carralero, writes that, in his town of Santa Fe, tobacco and corn are being cultivated; the former is at present being harvested, while the latter is still growing. The state of the crops is fairly good; the rains have done no harm, but the strong winds have slightly damaged the tobacco. There are no injurious insects, nor is there any notable sickness among the stock. Mr. Leocadio Dianco, municipal president of Cajidiocan, reports that in his locality sweet potatoes and nanca are being harvested; the yield is good. Corn and tobacco are still growing. The rains have been favorable. Neither insects nor sickness among the animals have caused losses during this month.

Calbayog.—The production of hemp, the principal agricultural product of this region, is improving. The current price is ₱25 to ₱26 per pico of 6 arrobas (1 arroba = 11.5 kilograms). According to information gathered from the merchants, 8,740 picos of hemp, but only about 10 picos of copra, have been shipped to Manila from here during the month of February. Several farmers complain of a very small rice crop, since the mice have destroyed a large part of it. Surra is spreading among the horses, about 20 having thus far died of it in this town alone.

DISTRICT IV.

Santo Domingo.—The planting of ube has been finished during this month. At present the trellises are being placed in position for the grape vines, and the digging of sweet potatoes (which had been planted during October and November of last year) is in progress. Garlic and onions are in a flourishing state, as is likewise the corn planted last December. The planting of sugar cane has begun. There is no epidemic sickness among the animals. Rice brought from Manila sells for ₱9 per sack.

Aparri.—The rice harvest is finished in all the municipalities, the yield being, as a rule, very poor. Fruit and vegetables continue to be scarce. Luckily some are being imported from the Ilocos provinces. There is no sickness among the stock, nor among the poultry, and no insects have infested the fields.

Tuguegarao.—During the month just passed the tobacco and corn fields, besides being of very limited extent, could not develop well for lack of water. At present the corn is doing pretty well, but the tobacco has been attacked by a species of worm called *arabat*, which diminishes the yield both in quantity and quality. The necessaries of life continue to be expensive, the whole state of the province is precarious, and it is hard to support oneself. Notwithstanding all this, public health is excellent. In the municipality of Enrile the cattle are subject to a sickness which, it is said, was hitherto unknown: they begin to lose their appetite, their whole body becomes inflamed, and afterwards a great weakness overcomes them, of which they die. Steps have been taken to arrest the spread of this malady, one of these being the stationing of an American veterinary at said point.

Vigan.—During the month of February, sugar cane, corn, tobacco, and various kinds of vegetables are cultivated in this place and the surrounding towns. Sweet potatoes, cotton, onions, etc., are still growing, while watermelons, maguey, sugar cane, etc., are being harvested. The crop is only fairly good, except in the municipality of Cabugao, where, as the president says, this year's quantity of said products surpasses that of last. Though considerable drought has been experienced, nothing is heard of harm done by it to agriculture. Likewise, although there have been frequent squalls from the northern quadrants, they have not given the slightest reason for lamentations about losses caused. There have been no injurious insects. Epizoötia appears to be disappearing. The losses due to it amounted to only 1 to 3 per cent, except at Cabugao, where they reached 5 per cent among the smaller animals.

Candon.—Sugar cane, cocoanuts, sweet potatoes, tomatoes, and camánchile are the crops of this month. At Santa Lucia they are besides harvesting maguey, cotton, and beans. Local prices are as follows: Sugar, ₱2 per pico; cocoanuts, ₱6 per hundred; rice, ₱3.75 per cavan. Growing in the fields are corn, tobacco, and vegetables. There have been no harmful insects, but the drought has made itself felt in the crops.

San Fernando, Union.—The greater number of the farmers have been occupied during the month in preparing the plots of land destined to be planted in mountain rice. In some parts of the province they are beginning to harvest the tobacco and sugar cane. Generally speaking, the yield of these two products is good and surpasses that of corn. The planting of maguey is coming more and more into favor throughout the province. There are no injurious insects. The only cause for complaints is the prevalence of epizoötia and other sicknesses, which are carrying off the few animals still left after the disasters of the preceding years. There is grave reason for fearing that these sicknesses will be communicated to the natives, because in some places the inhabitants eat the meat of animals which died. Thus, for instance, at Aringay 17 carabaos and 3 cows succumbed to epizoötia. The people disinterred the cows and ate them! In San Fernando itself and its suburbs epizoötia is unknown, but cases of glanders do occur, without, however, the death of any animal having been reported thus far.

Baguio.—All the irrigation rice fields of this place are ready for the planting. The crops of potatoes, cabbage, and sweet potatoes are fairly good. Neither sickness among the animals nor injurious insects have appeared.

Baler.—Rice, corn, tubers, and tobacco are at present growing in the fields. Rice is doing fairly well, while the other products mentioned are in a flourishing condition. There is no sickness among the animals; but the rice fields are infested by a kind of worm which the people call *lunao*.

Tarlac.—The cutting of sugar cane continues, crop fair; likewise the planting of new shoots of the same plant. The lack of draft animals is responsible for the fact that many people have turned to the planting of corn and other crops the cultivation of which is less dependent on said animals. This region is still feeling the effects of the drought. The insects mentioned in the reports for the preceding months continue to devastate the irrigated plantations. There was no sickness among the horses and cattle, but only among the animals of less importance. The municipal president of Concepción reports that in his municipality rice, sugar cane, gabe, and peanuts are chiefly cultivated, all for local consumption. The rice and cane planted during the last year gave a good crop; likewise sweet potatoes and tomatoes; the two last mentioned are, however, of less importance. Sickness has carried off about 5 to 6 per cent of the stock. According to information furnished by the president of Camiling, the usual early planting of sweet potatoes and eggplant has been delayed by the prolonged drought experienced in said locality; but at present these crops are doing pretty well. Many animals, carabaos and other cattle as well as horses, have died of sickness; among the smaller animals there were likewise many victims. Some localities are infested by green worms, but so far these have done no harm to any kind of crop. The crops planted during the past year, as rice, corn, and sugar cane, have given really fair results.

San Isidro.—The municipal president of Bongabon reports that during February the thrashing of rice and crushing of sugar cane has begun throughout his jurisdiction. The crops of tomatoes, eggplant, garden balsamine, sweet potatoes, watermelons, and síncamas are tolerably good. The tobacco plants grow well, although during the whole month not a single drop of rain refreshed the earth. The prevailing prices are: Palay, ₱1.25 per cavan; rice, ₱3.75 per cavan; gogo, ₱10 per 1,000 pieces; rattan, ₱6 per hundred bundles. In the neighborhood of San Isidro the state of the crops is about the same as during the preceding month. In the town of Concepción epizoötia has appeared carrying off six carabaos between the 13th and 23d of the month. Among the hogs a few deaths have likewise occurred.

Arayat.—According to information furnished by the landowners of this municipality, most of them have finished the thrashing of rice; some are occupied in planting a new crop of sugar cane. The corn fields which are being harvested at present, besides being few in number, give a poor crop, since the ears are small. The tubers, as sweet potatoes, gabe, etc., are suffering from the effects of drought; likewise the garden products. The same holds true with regard to Santa Ana. Arayat itself is free from cattle diseases, but at Santa Ana one carabao has succumbed to sickness.

Porac (Dolores).—There is at present great activity in the fields, since sugar cane and rice must be planted. Tubers and garden products are very cheap; for instance, tomatoes may be bought for 3 centavos a hundred. The price of sugar has fallen considerable, being at present only ₱4 per pilon. There is no sickness among the domestic animals, nor are there injurious insects in the fields.

Olongapo.—Although the vegetables have been attacked by worms and the tubers by mice, gabe, uve, sweet potatoes, squash, and balsamine have yielded good returns. Neither drought nor excessive rains have been experienced. At present the mango and casoy trees are blossoming, and some already show small fruits. Many animals, such as hogs and poultry, are succumbing to epidemic disease.

Malolos.—The crushing of sugar cane and thrashing of rice are still in progress and the result is satisfactory. Lemons, anonas, síncamas, bananas, eggplants, sugar cane, tomatoes, sweet potatoes, and greens form the harvest of this month. The lack of rain hurt some of the plants. No class of harmful insects has been observed in this whole region. The municipalities of Malolos and Paombong are likewise free from sickness among the stock; but in Angat two carabaos have died of epizoötia during the month, and at Bocaue the same sickness still continues to carry off carabaos, hogs, and chickens.

Balanga.—During the last days of February many farmers have finished the cutting of the sugar cane. The crop is below the average. Many people are at present occupied with the thrashing of rice. Epizoötia is responsible for the death of 34 carabaos during the month.

Silang.—Hemp, cacao, bananas, corn, watermelons, sweet potatoes, and sugar cane are the chief products of this region. The rain which fell during the month, though very little, greatly benefited the plantations, especially the hemp. The higher fields have been cleared and a few people try to plant rice and hemp. A source of danger and harm to the hemp plantations are the fires which unscrupulous passers-by occasionally start in near-by cogon patches and which sometimes reach the abacá fields.

San Antonio.—During the month of February all those who are so lucky as to still possess carabaos were occupied in plowing their fields in preparation for the planting of rice, cocos, hemp, sweet potatoes, and vegetables. The hemp crop of this town and also of Paete, Paquil, Pangil, Siniloan, Santa Maria, Longos, and Lumbang is very poor. The abacá plantations have not yet recovered from the effects of the cyclones which during the last two years crossed this region. In Longos epizoötia has appeared among the carabaos.

Batangas.—The crushing of sugar cane continues, although progress is very slow, owing to the lack of draft animals. Sugar is at present quoted in this province at ₱3.50 per pico. Compared with those of last year, the cane fields are small in extent, in spite of the efforts of the farmers, many of whom, not having carabaos, prepared and cultivated their fields by means of the hoe. The mango, prune, and lomboy trees are in blossom. The crop of corn, tobacco, síncamas, sweet potatoes, tomatoes, and tubers, without being precisely abundant, is quite fair; but that of coffee has been very poor.

Atimonan.—In consequence of the strong monsoon and the continuous rain the crops, especially the rice, show very little signs of life. Hence, unless people succeed in replacing the plants by new ones taken from the seed beds, there is grave fear that the harvest will amount to very little. In fact people are at present occupied in making the substitution. Only sweet potatoes have prospered greatly; on the contrary, the freshly planted seeds of cacao have rotted. The cocos trees are in the same condition as last month; there is, however, some hope that they will improve, since they have been thoroughly scoured by the rain and monsoon. Coprax sells for ₱6.50 to ₱7 per pico; abacá costs ₱15 to ₱16 per pico. No cases of sickness among the draft animals have been registered.

ESTADO GENERAL DE LAS COSECHAS.

Algo han sufrido las cosechas durante el mes de Febrero, por exceso de lluvia en el sudeste del Archipiélago, y por sequía en el noroeste. En Basilan y en el noroeste de Negros, especialmente, ha excedido la cantidad de lluvia el promedio de otros años. Esto no obstante, hacia fines del mes, era satisfactorio el estado y desarrollo de la futura cosecha en los campos y sembrados.

Las principales cosechas, durante este mes, han sido las de arroz, abacá, azúcar y cocos.—La de arroz, en su conjunto, no ha sido más que mediana. Si en algunas regiones, muy limitadas, ha excedido el promedio, en otras ha sido muy escasa. Á ello han contribuido lo limitado de los cultivos, las ratas y pájaros dañinos y principalmente las excesivas lluvias.—La producción de abacá aumenta con el aumento del precio, el cual, según calidad y localidad varía entre ₱16.75 el pico (63.25 kilógramos) en Gubat y Sorsogón y ₱28.50 en Isabela de Basilan. En las provincias del norte, es cada vez más extenso, el cultivo del maguey.—La cantidad de azúcar antes ligeramente excede que está por debajo del promedio. Los cosecheros de Negros se lamentan de su bajo precio, de ₱3.25 á ₱3.75 el pico. El coco y la copra escasean casi en todas las Islas. Su precio es en todas partes, relativamente alto: en Ilocos Sur cuestan á ₱6 el ciento, mientras que en Butuan (Mindanao) el mismo número se puede comprar por ₱2, el cual, no obstante, es precio doble del ordinario en dicha localidad.

En todas partes se deja sentir la falta de animales de trabajo. Por esta razón se han visto muy reducidas las plantaciones cuyo cultivo necesita de ellos. Á la misma escasez se debió también, en parte, el que la caña de azúcar estuviera tanto tiempo caída, bien que, hacia el sudeste, las copiosas lluvias causaron también notable retardo.

Á la ya general escasez de animales de trabajo, se han juntado enfermedades, que entre los mismos se han desarrollado, alguna de las cuales ha dominado en casi todas las islas y causado la muerte á carabaos y caballos, puercos y aves de corral. Las pérdidas fueron especialmente grandes, en la Provincia de Iloílo, donde la mortandad de carabaos solamente, llegó al 25 por ciento; en el norte de Sámar, donde en un solo pueblo, Calbayog, murieron 20 caballos de surra, y en la Provincia de Bataan que comunica haber muerto allí 34 carabaos. Han sido igualmente muy castigadas las Provincias de Negros Oriental y Sorsogón.

Los insectos, si se exceptúan algunos puntos aislados, han causado pocos daños; Cagayán da cuenta que el tabaco se ha visto atacado por los gusanos, y lo mismo ha sucedido en Príncipe con el arroz. En las cercanías de Tagbilaran ha causado grandes destrozos en la palma del coco un pequeño insecto blanco. La Provincia de Cagayán no se ha repuesto aún de la inundación del año pasado y de los repetidos baguios.

NOTICIAS PARTICULARES.

DISTRITO I.

Borongan.—En este mes se ha hecho bastante cóprax de los cocos que el baguio del diez del pasado Enero hizo caer; pero debido á las abundantes lluvias, no se ha podido entrar aún de lleno en la preparación de dicho producto. La generalidad de los cocos están cargados de fruta. El palay se halla igualmente en buen estado, debido á la abundancia de lluvias. Una contrariedad hay que lamentar en este mes, la aparición de la epizotia; que ha causado bastantes muertes en los pocos carabaos y caballos que existen por esta costa.

Tacloban.—Los informes suministrados por los presidentes de los pueblos orientales y septentrionales de Leyte demuestran que las lluvias han sido excesivas en aquellos que se hallan más al Norte: lo cual perjudicó las plantaciones de camote, tabaco, maíz, palay, calabaza blanca y tomate. Se comienza en este mes el cultivo del palay en los terrenos secanos que tienen regadío. Se siembran además tubérculos, sitao, maíz y caña-dulce. Están creciendo en los campos: palay, camote, gabe y caña-dulce. El estado de las cosechas es muy bueno en la Isla de Biliran; bueno en los pueblos al Norte de Tacloban; pero mediano en algunas poblaciones hacia el Sur de esta cabecera. Se cosechan actualmente: abacá, palay, cocos y algunos otros productos de menor importancia. La buena calidad del palay es casi general; pero la cosecha no es abundante, como lo evidencia la grande importación del arroz de Pangasinán y Saigón en este puerto. El precio de este arroz llegó á ₱6.90 y no baja de ₱6.40 por pico. En Caibiran y sus adyacentes es menor la demanda de este producto. Continúa la buena cosecha de abacá. El coco escasea y se cotiza en plaza ₱5 por ciento. No hay actualmente langostas; pero sí, los pajaritos llamados "hanao" en Palo, los ratones en Dagami y algunos insectos no especificados en Carigara: todos perjudiciales á las plantaciones de palay. Por la epizotia se cuentan dos carabaos muertos en Naval; 5 por ciento de pérdida en Dagami y algunos casos de esta plaga en Dulag. Han enviado informaciones sobre el estado de las cosechas los señores presidentes municipales de Alañgálang, Abuyog, Caibiran, Carigara, Dagami, Dulag, Naval y Palo.

Ormoc.—El Señor José Renomeron informa que los principales productos agrícolas que se dan este mes son: abacá, caña-dulce, maíz, cocos, plátanos y tubérculos. Las lluvias han sido algo excesivas, y perjudicado el maíz. Las langostas no han vuelto á aparecer; tampoco ha habido otros insectos perjudiciales. Por lo escaso del ganado que queda, casi no se nota en él la mortandad. La exportación del abacá alcanzó este mes á unos 5,000 picos y su precio llegó á ₱28 el pico.

Tuburan.—La cosecha principal de este mes es el maíz. El tabaco está todavía creciendo en los campos y su estado es regular. Las lluvias han sido muy benignas y han favorecido las plantas de tabaco. No se ha sentido sequía durante este mes. Si bien los vientos han sido algo fuertes, no han perjudicado la mayor parte de las plantas. Ha habido saltones en los campos, pero no han causado mucho daño en las plantas. En este mes se ha propagado en los cerdos alguna enfermedad, muriendo de tres á cinco al día.

Cebú.—Las sementeras de estas cercanías están casi limpias de toda clase de frutos; algunas se van preparando para el nuevo sembrado del maíz. En el mercado abundan tubérculos, aves de corral y huevos baratísimos, con algunas verduras; escasean las mangas todavía. Casos de epizotia han sido muy contados.

Maasin.—Durante el mes de Febrero, solamente se ha cosechado en esta localidad y en otros puntos cercanos á esta, una pequeñísima cantidad de camote y caña-dulce.

Surigao.—Durante todo este mes ha habido mucha lluvia, la cual ha sido perjudicial para los campos de palay muy adelantados que ya empezaban á espigar; pues con la lluvia saldrán las espigas sin grano. Á los muy atrasados, al contrario, la lluvia los ha favorecido. El día 4 de Febrero ha caido una abundantísima lluvia durante todo el día y la noche; el día siguiente, ó sea el día 5, por la mañana hubo una gran avenida del Río Surigao, tal, que todas las sementeras de palay tanto altas como bajas quedaron inundadas por el agua, especialmente desde el sitio de Badas hasta arriba de Bugsucan, donde varios animales, como cerdos y gallinas, se perdieron. En el sitio de Bungso á Bugsucan, la corriente arrastró y arrancó el abacá de varios campos. El mismo puente de Surigao, recién construido cerca de la población, sufrió deterioros por la misma avenida, que hizo hundir un arigue en el intermedio de dicho puente. El beneficio del abacá y coprax se extiende á gran parte de esta provincia: el precio del abacá en plaza es de ₱24 á ₱25 el pico y el del coprax, de ₱9 á ₱10 el pico. Los campos de palay presentan por ahora buen aspecto.

Tagbilaran.—De las siembras de palay que hubo en Calape, únicamente se ha obtenido buena cosecha en los campos de secano, pues en los de regadío se ha perdido casi totalmente, á causa de las excesivas lluvias caidas en aquella región. En dicho pueblo, y en el de García Hernandez también, se ha cosechado el maíz que aún quedaba en los campos desde el mes anterior. Varios pueblos asimismo han rematado la cosecha de palay. Con menor abundancia que el año anterior, se cosechó el ube, blanco y morado, en Tagbilaran, Baclayon, Dauis y Panglao. De este tubérculo se ha exportado bastante á la vecina Isla de Cebú. Las frutas de chico se van recogiendo abundantes en Tagbilaran, á pesar de tanta pérdida, $\frac{2}{3}$ partes á lo menos, causada por la voracidad de muchos y muy grandes murciélagos. Durante este mes no aparecieron las langostas. Pero el Señor Cecilio García, agricultor en Calape, informó haberse visto allí un nuevo enemigo del coco, peor que el escarabajo. Son unos diminutos insectos de color blanco, que en gran número atacan el coco por el cogollo resultando de ello que la planta se seca paulatinamente.

Butuan.—Se está terminando la siembra de palay; pero son pocos los que aquí se han dedicado á este cultivo. Gracias á Dios, no hemos tenido que lamentar la invasión de langosta, que tantos estragos hizo el mes pasado, ni tampoco enfermedad de animales de labor. Un vecino de Cabarbaran me ha dicho que allí la mayoría del pueblo está plantando palay. Tanto en Butuan como en Cabarbaran y Tubay se trabaja constantemente el abacá, el cual se vende al presente á ₱20 el pico. En Tubay va caro el coco: antes se vendía á ₱1 el 100, y ahora á ₱2. Parece que esto proviene de la grande demanda que hay.

Balingasag.—Á principios de Febrero murieron cuatro carabaos, algunos cerdos y gallinas, y siguen muriéndose algunas gallinas. Continúa beneficiándose el abacá y el coco en cantidades proporcionadas. Algunos ya están labrando el terreno para el maíz.

Caraga.—Las lluvias y chubascos han sido bastante regulares y favorables á toda clase de plantas. Actualmente se siembra el tabaco y se cosecha la fruta de la manga. Las plantas de coco y abacá siguen prosperando de día en día. La exportación de dicha fibra ha llegado este mes á más de 300 picos, al precio de ₱24.50 el pico; y la del coprax á cerca de 30 picos, á razón de ₱7.50 á 8.50 por pico. Durante los años que yo llevo de observador, las plantas de cacao y café no han dado buenos resultados; son ya muy escasas hoy día, y no como en los tiempos pasados, según decir de los naturales, á causa de los perjuicios causados por los monos, ratas y gusanos.

Davao.—El abacá se sostiene á buen precio en esta plaza: así es que los propietarios no dejan perder una sola hora para beneficiarlo.

La recolección de la almáciga parece ser igual á la de los meses anteriores; pero se teme con muchísima razón que en esta época de la monzón del Norte será por algún tiempo, imposible á las embarcaciones penetrar hasta los diferentes puntos de depósito de este producto. Lo mismo puede decirse del biao. Las lluvias caidas y los fuertes vientos del primer cuadrante, ocurridos durante algunos días de este mes han sido favorables á todas las plantaciones, principalmente al abacá.

DISTRITO II.

Capiz.—La mayor parte de los ponos de plátanos se ha tumbado por el baguio del Enero pasado, por esto se han puesto muy caros los plátanos. Se cosechan maíz, gabe, camote, tugui, ube; además rábanos, berengenas y peregil, los dos anteriores muy grandes. El bayón que se confecciona aquí está al precio de ₱4.25 á ₱4.50 el ciento. En Sigma, Panay é Ivisan, según me dicen personas venidas de aquellos puntos, se cosechan igualmente los productos arriba mencionados. En Sigma el palay está á ₱1.60 el caván; en Mamburao á ₱1.80.

Cuyo.—La florecencia de las mangas, casoy, lomboy, y ciruelas se presenta regular, á pesar de haber llovido en este pueblo los días 11 y 23 de este mes. El no haber causado daño la lluvia á las flores de los mencionados árboles frutales, parece que se debe á la favorable circunstancia de haber tenido un poco de viento durante dichos días de lluvia. El año pasado llovió con calma y fueron atacadas las flores por la llamada "dégma," que hace que se pongan negras y caigan. Quiera Dios que en las próximas cosechas tengamos un poco de abundancia de estas frutas.

San José de Buenavista.—Este mes sigue la molienda de la caña-dulce, cuyo producto creo que es mejor que el año pasado, tanto por la cantidad, cuanto por la calidad. Se cosechan sitao, aunque en poca cantidad, gabe y ube y están creciendo aún tabaco, maíz y camote. No se ha notado ninguna enfermedad entre los animales; pero en cambio, las langostas se paseaban libremente por estos contornos, aunque sin causar alarma ninguna por hallarse los campos muy desprovistos durante estos meses. Los costeros tienen puestos los corrales de pesca, pero con poco resultado. Según lo que dicen los pescadores esto se debe á las fuertes corrientes causadas por la monzón: á lo menos la experiencia enseña que la pesca es mejor en los años en que se nota menos corriente. El arroz, cuyo precio debía ser menor durante los meses Enero-Marzo, que durante el período Abril-Diciembre, en el cual costaba, á lo más, 10-14 centavos la ganta, no muestra por ahora señales de mantenerse siquiera á 15-18 centavos por ganta, pero sí de subir todavía más. Difícil es asegurar si es esto debido á la poca demanda desde Iloílo durante los meses pasados, ó más bien á que los agricultores necesitaban entonces dinero para las contribuciones.

Iloílo—En Santa Bárbara la cosecha de palay ya se ha terminado y la producción se presenta poco mayor en comparación de la del año pasado. Las plantaciones de tabaco son escasas por causa de abundantes lluvias, pero principalmente porque la mayor parte de los terrenos no ha podido ser cultivada, debido á la epizotia de los ganados. De Janiuay comunican que la agricultura durante todo este año probablemente quedará muy atrasada por la escasez de animales de labor. La mayor parte de los carabaos de esta localidad se hallan enfermos, y se muere el 25 por ciento de los mismos, padeciendo igual estrago los otros animales domésticos y aves de corral. Se ha empezado la molienda de la caña-dulce, de la cual no hay esperanza de recoger abundante cosecha por haber sido destruida por loctones y langostas. Las cebollas, ajos, rábanos, tomates y berengenas son los artículos que han mejorado en este pueblo, favorecidos por el tiempo benigno del mes próximo pasado. De Barotac Nuevo nos informan que durante el mes de Febrero se presentó el tiempo un poco nublado y á veces con lluvias menudas que favoreció los sembrados de caña-dulce, maíz, tabaco, camote y otros; pero la molienda de la caña-dulce se ha retrasado bastante, pues los propietarios de las haciendas no contaban con leña bastante para combustible. En Cabatuan se ha hecho la recolección del poco maíz que había en el campo. En este mes se empezó también la roturación de los terrenos para el palay "lubang," las siembras de muy reducidos campos de caña-dulce, y la molienda de la muy poca caña-dulce que se ha cosechado.

Bacolod.—Al presente debería reinar la estación de secas que es propia de esta región occidental en estos meses; pero hasta ahora aún no ha ejercido su influencia, siendo tan copiosas y frecuentes las lluvias que impiden á los hacendados continuar la molienda de las cañas, por falta de combustibles necesarios para su beneficio y otras causas. Los campos sembrados nuevamente de este producto están llenos de verdor y lozanía. El maíz que está pronto para cosechar promete buenos rendimientos. Entre los arroceros se nota gran movimiento y actividad en preparar terrenos de secano, por aprovechar las lluvias que favorecen á las faenas agrícolas. Es de creer que la siembra del palay se adelantará más este año. Las langostas y loctones van desapareciendo. En Murcia y en el barrio de Granada se desarrolla la epizotia entre los vacunos y carabaos con muchas víctimas. Es general el descontento de los productores de azúcar por el bajo precio de este artículo, pues en la actualidad se cotiza el pico del No. 1 á ₱3.75, el del No. 2 á ₱3.50 y el del No. 3 á ₱3.25. El pico de arroz

No. 2 blanco importado del estranjero se cotiza ₱6.25. En la playa hay gran movimiento de exportación de azúcares de la presente zafra hacia el mercado de Iloílo.

Dapitan.—La situación agrícola en este distrito durante el mes de Febrero es la siguiente: Los basacanes de este pueblo que habían sido secados en la segunda quincena de Enero se han vuelto otra vez á llenar de agua, gracias á las lluvias y chubascos que tuvimos en la última quincena de Febrero. Durante el mismo mes los agricultores estaban preparando los terrenos: los hacían arar y rearar con el fin de matar las yerbas. El gobierno de la Provincia Mora está repartiendo semillas de los Estados Unidos de varias clases; pero aún no están plantados por no ser aún el tiempo para ello. El Sr. Concejal encargado del barrio de Haya me comunica desde dicho pueblo que el 24 de este mes ha habido avenidas en los ríos, pero no han sido de mucha importancia: solamente sufrieron las cañas de las orillas, casi todas se desprendieron de su sitio. El coprax, segundo producto principal de estos pueblos, no ha resultado tan excelente como el año anterior. Los comerciantes casi luchan entre si para conseguir dicho producto: pues este año mucho se ha perdido á causa de la lluvia en la segunda quincena de este mes.

Zamboanga.—Según datos suministrados por algunos agricultores de esta región, la cosecha del palay se ha terminado durante este mes. Ha resultado regular y cuesta por ahora el caván ₱2.50. El precio de todos los productos no ha cambiado en este mes, excepto el del arroz importado, que ha subido, pues aún el de segunda calidad cuesta ₱0.32 la ganta.

Isabela de Basilan.—Durante el mes de Febrero se han obtenido en este pueblo 17 picos de abacá y 3 de coprax, que fueron conducidos á Zamboanga. Según informe recibido, en la visita de San Pedro (Lamitan) se está cosechando abacá de buena calidad. Durante este mes se han exportado desde allí á Zamboanga unos 14 ó 15 picos. Su precio es de ₱28.50 el pico. Muchos de los agricultores se animan á plantar abacá, café y goma en el presente año, tanto aquí en este pueblo como en San Pedro Lamitan. Las lluvias han sido algo abundantes, lo cual es cosa extraordinaria, pues por regla general no suele llover mucho en Febrero.

DISTRITO III.

Legaspi.—En casi todos los municipios de esta provincia se ha beneficiado un poco más de abacá que en el mes anterior; el precio por pico oscila en los almacenes de este puerto entre ₱19.50 y 20.50. De caña-dulce, cocos, tomates, camote, plátanos, nancas y algunas hortalizas fueron regulares las cosechas en Albay, Daraga y Guinobatan; buena la de palay en Polanguí y Oas. No se han notado enfermedades notables en los animales más que en algunos vacunos importados de China; ni insectos dañinos en las plantaciones.

Gubat.—El precio del abacá que se ha visto en el mercado fué ₱16.75 á ₱17 el pico, según su calidad. El arroz de Saigón se vende aquí á ₱6.75 el caván, el de Bayambang (Pangasinán) á ₱6.30. Pero en los pueblos inmediatos, como Barcelona y Bulusan, por estar sujetos á los comerciantes de Gubat, los precios del arroz son ₱8 en el primero, y ₱8.50 en el segundo. Los precios de los productos mencionados no se rigen por la abundancia ó escasez de estos artículos, si no son fijados por un convenio de los comerciantes. Después de labrar las sementeras se han muerto diez y nueve carabaos. Esto es tal vez debido al poco descanso que han tenido los pobres animales. Asimismo de las vacas que han sido enviadas á esta capital con destino á la matanza, varias han sido atacadas por la epizotia algunos días después de su llegada y algunas han muerto.

Romblón.—El propietario Don Lucas Carralero informa que en su pueblo de Santa Fé se cultivan por ahora el tabaco y algo de maíz. En la actualidad se cosecha el tabaco, mientras el maíz está todavía creciendo. El estado de la cosecha es regular; las lluvias no han perjudicado en nada la agricultura; pero los vientos por su fuerza han dañado un poco al tabaco. No hay insectos dañinos, ni enfermedad notable en el ganado. El señor presidente municipal de Cajidiocan, Señor Leocadio Dianco, informa que en aquel pueblo se cultivan maíz y camote. Los productos que se cosechan son camote y nanca: la cosecha es regular. Maíz y tabaco crecen aun en los campos. Las lluvias han sido benignas á la agricultura. Ni insectos ni enfermedad notable en los ganados han hecho daño durante este mes.

Calbayog.—La producción del abacá, principal producto agrícola que se cultiva en este pueblo, va mejorando. El precio corriente en plaza es de ₱25 á ₱26 el pico de seis arrobas. Según noticias adquiridas de varios comerciantes, durante el mes de Febrero se han mandado á Manila 8,740 picos de abacá, pero de coprax solo 10 picos. La cosecha del palay, según noticias de varios labradores, resulta muy escasa, por haber comido los ratones una gran parte. Se ha propagado la enfermedad de zurra entre los caballos, de que murieron unos 20 dentro de esta población.

DISTRITO IV.

Santo Domingo.—En este mes se ha terminado la siembra de ube y empezado á colocar los rodrigones y cosechar el camote sembrado en los meses de Octubre y Noviembre últimos. Los ajos y cebollas tienen buen aspecto, como también el maíz sembrado el mes de Diciembre. Se ha empezado también en este mes la siembra de la caña-dulce. No existe enfermedad epidémica en el ganado. El arroz de Manila se vende á ₱9 el saco.

Aparri.—La recolección del palay se ha terminado este mes en todos los pueblos, siendo la cosecha en general muy escasa. Continúa la escasez de frutas y legumbres. Gracias á Dios que las traen de Manila é Ilocos! No se ha presentado enfermedad en el ganado en general, ni en las aves de corral; ni insectos en los sembrados.

Tuguegarao.—Durante el mes pasado las siembras de tabaco y maíz, además de haber sido muy escasas, no pudieron desarrollarse bien por falta de agua. El maíz se presenta por ahora muy regular; pero el tabaco está invadido por el gusano llamado "arabat," que hace desmerecer su cantidad y su calidad. Los artículos de necesidad no experimentan rebaja en sus precios, la situación de esta provincia sigue precaria y la vida apenas sostenible. Esto no obstante, la salud pública está inmejorable. En el pueblo de Enrile de esta provincia los ganados sufren una enfermedad hasta ahora desconocida, según se dice: empiezan por desganarse é inflamarse todo el cuerpo y luego caen en una mortal languidez, que les causa la muerte. Se han adoptado ya medidas para atajar el mal, entre otras, ha ido un veterinario americano á dicho punto.

Vigan.—En este mes de Febrero se cultiva en esta localidad y pueblos cercanos, caña-dulce, maíz, tabaco y muy variadas clases de legumbres. Crecen aún en los campos, camote, algodón, cebolla, etc. Los productos que se cosechan son: sandía, maguey, maíz, caña-dulce, etc. La cosecha es regular, excepto en el municipio de Cabugao donde, según informa su presidente, maguey, maíz y caña-dulce se han cosechado en cantidad superior al año pasado. Á pesar de la sequía que se experimenta aquí, no se oye decir que produzca perjuicios á la agricultura y también, aunque han sido muy frecuentes las rachas de los cuadrantes del Norte en este mes, no han causado estragos, ni el más pequeño que pueda ser motivo de lamentación. No hubo aquí insectos dañinos, y la epizotia, que ya está por dejar de hacer víctimas, solo ha causado una pérdida de 1 á 3 por ciento, excepto en el municipio de Cabugao, donde ha llegado á un 5 por ciento en el ganado menor.

Candón.—Se cosechan caña-dulce, cocos, camote y camánchile. En Santa Lucía además de estos productos, maguey, algodón y frijoles. Los precios que se cotizan en la plaza son: azúcar ₱2 por pico, cocos ₱6 por ciento, arroz ₱3.75 por caván. En los campos están creciendo: maíz, tabaco, legumbres. No hubo insectos dañinos, pero la sequía se ha dejado sentir en los sembrados.

San Fernando, Unión.—La mayoría de los agricultores se ocupan en este mes en la preparación de los terrenos destinados á la plantación del palay de los montes; además están principiando, en algunos pueblos de la provincia, la recolección del tabaco y de la caña-dulce. Las cosechas en general dicen son buenas, tanto la del tabaco, como la de caña-dulce, y superior la del maíz. Sigue extendiéndose en la provincia la plantación del maguey. No hay insectos dañinos. Lo único que hay que lamentar es la prevalencia de la epizotia y de otras varias enfermedades que acaban con los pocos animales que de años anteriores quedaban. Aunque se toman medidas muy enérgicas para combatir estas enfermedades, todas parecen ser inútiles. Es mucho de temer que las enfermedades se comuniquen también á los naturales; porque hay pueblos en que los vecinos comen los animales muertos. Por ejemplo: en Aringay habían muerto 17 carabaos y 3 vacas de la epizotia. Desenterraron las últimas y las comían los habitantes! En el pueblo y barrios de San Fernando no se conoce la epizotia; pero sí el muermo, por más que hasta ahora no hay noticias de que hayan muerto animales á causa de dicha enfermedad.

Baguio.—Se han preparado todos los terrenos de regadío de este pueblo para la siembra de palay. Las cosechas de patatas, repollo y camote son regulares. No ha habido en el ganado enfermedad notable, ni insectos perjudiciales en los campos.

Baler.—Durante este mes crecen en los campos palay, maíz, tubérculos y tabaco. El estado del palay es regular, el de los demás productos bueno. No hay enfermedad en los animales, pero una especie de gusano llamado por los naturales "lunao," ha atacado las sementeras de palay.

Tarlac.—Todavía continúa la recolección de la caña-dulce, la cual está dando una cosecha regular; también sigue la plantación de nuevos vastagones de la misma planta. Las dificultades nacidas de la falta de animales de labor han sido causa de que muchos se dedicasen á la siembra de maíz y otros productos, para cuyo cultivo es menor la necesidad de estos animales. En esta región se sienten aún los efectos de la sequía. Los insectos mencionados en los meses anteriores continúan dañando las plantaciones de regadío. No hubo enfermedad en el ganado mayor durante este mes, pero sí entre los animales de menor importancia. El Señor Presidente Municipal de Concepción dice que en su pueblo se cultivan palay, caña-dulce, gabe, maní y otros productos para el consumo local. El palay y la caña-dulce plantados durante el año pasado han dado buena cosecha; también camote y tomates, pero estos dos últimos artículos son de menor importancia. La enfermedad entre los ganados ha llevado unos 5 ó 6 por ciento. Según las informaciones del Señor Presidente Municipal de Camiling la siembra temprana de camote y berengenas ha sido retrasada por la larga sequía que hubo en este municipio; pero ahora estos productos están en estado regular. Han muerto muchos animales, tanto carabaos y vacunos, como caballos. Hubo también víctimas en el ganada menor. Algunos puntos de esta región están infestados por bandas de gusanos verdes, pero no han hecho daño á ningún género de siembras. Los productos sembrados el año anterior, como palay, maíz y caña dulce, han dado resultado bastante regular.

San Isidro.—El Señor Presidente Municipal de Bongabon informa que durante el mes de Febrero se dió principio á la trilla del palay y la molienda de la caña dulce en toda la jurisdicción de este municipio. La cosecha de hortalizas, como tomates, berengenas, amargoso, camote, sandía, síncamas, es bastante regular. La siembra de tabaco se desarrolla bien, apesar de que durante el mes no ha regado la tierra ni una gota de lluvias. El precio corriente del palay es ₱1.25 caván, el del arroz ₱3.75 caván, gogo ₱10 mil pedazos, y bejuco ₱6 cien manojos. En los alrededores de San Isidro la cosecha no ha tenido variación con relación al mes anterior. En el pueblo de Concepción ha aparecido la epizotia y causado la muerte de seis carabaos desde el 13 al 23 del mes. También se registró mortandad de cerdos.

Arayat.—Segun informes de los propietarios de este municipio, la mayor parte de los mismos han terminado ya la trilla de su palay; algunos de los agricultores están plantando puntas de caña dulce. Es mala la cosecha del maíz, pues son pequeñas las mazorcas que al presente se recogen. Los tubérculos como camote, gabe, etc. están sufriendo sequía, así como las hortalizas. Lo mismo acontece en el pueblo de Santa Ana. Aqui por ahora no se nota enfermedad en el ganado mayor, pero en dicho pueblo de Santa Ana ha muerto un carabao, víctima de la epizotia.

Poraç (Dolores).—Hay mucha actividad en los campos con motivo de plantarse la caña dulce, al mismo tiempo que se siembra el palay. Los tubérculos y hortalizas se venden á muy bajo precio: los tomates á tres centavos el ciento. El precio del azúcar ha disminuido mucho, siendo ahora de ₱4 el pilón. No hay enfermedad entre los animales de labor, ni insectos perjudiciales á las plantas.

Olongapó.—Apesar de que los gusanos aparecieron en las hortalizas, y los ratones en los tubérculos, han dado buena cosecha el gabe, uve, camote, calabaza y amargoso. No se ha sentido sequia, ni tuvimos lluvias en exceso. En la actualidad están floreciendo los mangales y casoyes, y algunos están ya con frutos pequeños. Muchos animales domésticos murieron de peste, como cerdos, gallos y gallinas.

Malolos.—Sigue en esta cabecera la molienda de la caña dulce y la trilla del palay con resultados algo satisfactorios. Los productos que se cosechan son: limones, anonas, síncamas, plátanos, tomates, berengenas, caña-dulce, camotes y legumbres. Por la escasez de lluvia sufren algunas plantas. Ningún insecto perjudicial se nota en toda esta región. En los municipios de Malolos y Paombong no hay tampoco enfermedad en los ganados; pero en el pueblo de Angat dos carabaos han muerto de epizotia durante este mes, y en Bocaue la misma enfermedad está todavía causando pérdidas de carabaos, cerdos y gallinas.

Balanga.—En los últimos días de este mes de Febrero han terminado algunos propietarios la cosecha de la caña dulce, con resultado menos que regular. Muchos vecinos se ocupan actualmente en la trilla del palay. La epizotia ha causado la pérdida de 34 carabaos durante este mes.

Silang.—En esta región se cultivan abacá, cacao, plátanos, maíz, sandía, camote y caña-dulce. La lluvia caida durante este mes, siquiera fuese poca, ha favorecido los sembrados, especialmente los de abacá. Los terrenos de secano se habían ya limpiado y algunos prueban de sembrar palay y abacá. Transeuntes poco escrupulosos se permiten, á veces, prender fuego en cogonales cercanos á plantaciones de abacá, de donde resulta, que propagándose el incendio hasta las mismas, es causa de no pocos daños.

San Antonio.—En este mes de Febrero todos los habitantes de este pueblo que tienen carabaos han estado arando los campos para sembrar palay, coco, abacá, camotes y hortalizas. La cosecha de abacá de este pueblo y también de Paete, Paquil, Panguil, Siniloan, Santa María, Longos y Lumbang ha sido muy escasa. En las plantaciones de abacá todavía se sienten los efectos de los baguios que han cruzado por esta región durante los últimos dos años. En Longos ha aparecido la epizotia entre los carabaos.

Batangas.—Continúa la molienda de la caña dulce, si bien con mucha lentitud por falta de animales. Actualmente se cotiza el azúcar en esta provincia á ₱3.50 el pico. Comparadas con las del año pasado, las plantaciones de caña son pequeñas; á pesar de los esfuerzos de los agricultores, muchos de los cuales se sirven de azadones para cultivar y preparar sus terrenos por falta de animales. En este mes florecen las mangas, ciruelas y lomboy. La cosecha del maíz, tabaco, síncamas, camotes, tomates y tubérculos sin ser abundante, es bastante regular. La del café ha sido muy escasa.

Atimonan.—Como consecuencia de las fuertes monzones y contínuas lluvias, las plantas, especialmente el palay, solo dan medianas muestras de vida y témese no poder recolectar sino una cosecha pequeñísima, si la gente no logra sustituir con nuevas plantas del semillero las que el agua ha destruído. Está pues la gente por ahora ocupada en este trabajo. Solo el camote ha prosperado mucho con las lluvias; en cambio las semillas de cacao recien plantadas se han podrido. Los cocos siguen en el mismo estado del mes anterior, aunque hay esperanza que mejoren, porque han sido limpiados por las lluvias y monzones. El pico de coprax se vende á ₱6.50–₱7; el de abacá á ₱15–₱16. No se registra ningun caso de enfermedad en los animales de labor.

O

BULLETIN FOR MARCH, 1907.

METEOROLOGICAL BULLETIN FOR MARCH, 1907.

By Rev. José Coronas, S. J.,
Assistant Director of the Weather Bureau.

GENERAL WEATHER NOTES.

Atmospheric pressure and temperature.—The mean atmospheric pressure in all parts of the Islands was a little lower than that of March of the preceding year. In Manila the difference is —0.65 millimeter. It is to be noted, nevertheless, that the monthly mean pressures of March last year were above the normal; for this reason the mean pressure of Manila for this month, in spite of being lower than that of March, 1906, is above the normal by 0.13 millimeter. The highest pressures of the month were observed in most of the stations of the Archipelago on the 18th and 19th; the lowest from the 10th to the 12th, inclusive.

The mean temperatures are also lower in general than those of March, 1906, the greatest differences being observed in various stations of the Visayas Islands. The mean of Manila is 0.7° C. lower than the normal. The highest temperatures registered at the first and second class stations were 37.8° C. in San Isidro on the 12th and 38.5° C. in Dagupan on the 15th. The minimum, 16.2° C., was observed in San Isidro on the 1st. In Manila the absolute maxima of the whole month were 35.4° and 35.2° on the 12th and 13th, respectively.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS, MARCH, 1907.

Station.	Pressure.						Temperature.					
	Mean.	Departure from March, 1906.	Mean maximum.	Day.	Mean minimum.	Day.	Mean.	Departure from March, 1906.	Highest.	Day.	Lowest.	Day.
	mm.	*mm.*	*mm.*		*mm.*		°*C.*	°*C.*	°*C.*		°*C.*	
Tagbilaran	759.54	—0.66	760.79	19	757.78	10	25.8	—1.3	32.1	13	21.1	26
Surigao	59.86	------	61.21	26	58.07	10	25.6	------	------	------	20	8
Cebu	60.20	— .53	61.46	26	58.62	11	26.5	— .7	31	26	20.6	19
Iloilo	59.58	— .48	60.74	18	57.84	12	26.1	—1	33.9	13	21.8	29
Ormoc	59.51	— .89	60.77	18	57.74	10	25.3	— .7	32.5	18	17.5	29
Tacloban	60.40	— .76	61.62	18	58.69	11	26	—1	34.5	14	22	22
Capiz	60.61	------	61.80	18	58.84	12	25.9	------	31.2	26	19.2	17
Calbayog	60.50	------	61.88	18	58.91	10	25.2	------	33.5	26	18	29, 31
Legaspi	61.22	— .45	62.41	18	59.38	10	26.4	— .1	32.2	30	------	------
Atimonan	61.17	— .66	62.84	6	59.05	12	26.5	+ .1	33.5	29	21.3	21
Olongapo	60.37	— .63	61.90	19	57.99	12	26.7	------	35.6	12, 14	17.8	1
San Isidro	61.18	— .77	63.08	6	58.53	12	26.8	— .3	37.8	12	16.2	1
Dagupan	60.45	— .79	62.01	18	58.14	12	27.1	— .3	38.5	15	19.2	8
Vigan	60.92	—1.03	62.78	5	58.94	12	26.7	— .8	------	------	------	------
Aparri	62.09	— .56	67.14	5	59.07	12	24.7	.0	32.8	22	17.5	6
Santo Domingo	62.33	—1.02	67.83	5	58.62	12	23.9	+ .1	30.3	12	17.6	6

Precipitation.—If we except Baguio and San Fernando de Union, the rain in all the stations of Luzon, and very especially in the SE of this island, was less than in March of last year. The same can be said in general of the stations of the western coasts of the Visayas Islands. Calbayog gives us a difference of —125 millimeters, Atimonan of —120.9, Legaspi of —161.9, and Gubat of —192.3; the differences which appear in other stations that had less rain than in March, 1906, are of minor importance.

Other stations of the Visayas and Mindanao had an abundance of rain compared with March, 1906. This in some places was somewhat extraordinary, as, for example, in Dapitan, Tagbilaran, and Caraga, where the differences from the former year were +150.9, +180.1, and +140.5 millimeters, respectively.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF MARCH, 1907.

District.	Station.	Total.	Departure from Mar., 1906.	Rainy days.	Departure from Mar., 1906.	Greatest rainfall in a single day.	Day.
		mm.	*mm.*			*mm.*	
I	Yap	276.4	+203.1	24	+ 5	132.1	30
	Davao	129.7	— 81.5	6	+ 1	31.7	7
	Caraga	365	+140.5	19	+ 2	52.6	19
	Balingasag	69.8	+ 62.7	7	+ 6	19.8	7
	Butuan	271.3		22		75.3	6
	Tagbilaran	197.3	+180.1	12	+ 7	96.4	20
	Surigao	600.5		21		87.6	8
	Maasin	176.4		11		59.7	5
	Cebu	75.9	+ 40.1	12	+ 5	24.1	5
	Tuburan	67.2		10		22.4	1
	Ormoc	82.9	+ 7.4	11	— 2	21.8	20
	Tacloban	146.9	+ 13.2	19	+ 3	47.2	2
	Borongan	274.7	+ 51.1	23	0	62.7	2
II	Isabela, Basilan	87.2	+ 59.	12	+10	47.8	3
	Zamboanga	15.5	+ 2.3	4	+ 1	8.1	22
	Dapitan	165.4	+150.9	12	+ 2	62	7
	Bacolod	12.8	— 8.6	7	+ 2	5.3	1
	Iloilo	13	— 30.4	5	— 2	8.6	20
	S. Jose Buenavista	0	— 19.4		— 4		
	Cuyo	0	0				
	Capiz	56.4		6		25.1	4
	Culion	11.4		1		11.4	4
III	Sumay, Guam	65.5	+ 49.2	7	+ 2	20.3	30
	Calbayog	48.4	—125	11	— 4	25.7	11
	Palanoc	32.5	— 28	10	+ 5	13.5	9
	Romblon	52.3		4		33	4
	Gubat	87.6	—192.3	7	— 1	24.1	1
	Legaspi	93	—161.9	9	— 8	41.1	4
	Nueva Caceres	39.9	— 30.1	2	— 3	32.3	5
IV	Batangas	1.3		2		0.7	16
	Atimonan	48.6	—120.9	8	— 4	13.9	6
	Silang	8.9	— 13.9	2	— 1	4.6	17
	S. Antonio, Laguna	79.4	— 15.4	10	— 2	31.7	5
	Corregidor	0	— 5.3		— 1		
	Manila	7.2	— 2.1	2	— 3	6.9	17
	Balanga	0	— 2.3		— 3		
	Olongapo	0					
	Malolos	0					
	Porac	.5	— 16.4	1	— 6	.5	5
	Arayat	0	— 6.4		— 1		
	San Isidro	0	— 1.6		— 3		
	Tarlac	6.9	— 38.8	1	— 4	6.9	31
	Baler	55.4		5		21.1	5
	Dagupan	7.1	— 24.3	1	— 4	7.1	16
	Baguio	61.8	+ 38	7	+ 1	22.1	18
	S. Fernando, Union	18.6	+ 1.2	2	— 2	17.8	21
	Candon	2		1		2	21
	Vigan	0	0				
	Tuguegarao	15.8	— 51.8	4	+ 2	8.9	18
	Aparri	74.1	— 3.6	10	+ 5	19	5
	Santo Domingo	62.1	— 57.8	13	+ 1	12.8	1

DEPRESSIONS AND TYPHOONS.

During the whole month of March no atmospheric disturbance of any importance exerted any influence on our Archipelago. Nevertheless the Observatory was able to announce on the 30th a typhoon to the northeast of Yap, western Carolines, when the cyclonic center was about 1,100 miles distant from Manila. Although the influence of this typhoon was not felt in the Philippines in any degree whatever, owing to the fact that it recurved at a great distance from the Islands, still, because of its extraordinary intensity, we intend to treat of it at some length, giving at the same time all those details which we think will prove interesting to our readers. Various islands or islets which form the well-known group of the western Carolines were overwhelmed by the hurricane wave of the typhoon. For these reasons we believe we are sufficiently justified to name this storm as

THE TYPHOON OF THE WESTERN CAROLINES.

We give here the different warnings sent by the Manila Observatory to Indo-China, China, and Japan:

March 30, 10 a. m.—Typhoon NE of Yap, western Carolines, direction unknown.

April 1, 5 p. m.—The typhoon in the Pacific, N of western Carolines, is probably moving NNW with tendency to recurve.

In addition to these telegrams, on the 31st of March the Observatory had given out in the ordinary weather note of that day the following:

The typhoon is now N of Yap, western Carolines, moving probably WNW or NW. Navigation is dangerous in the Pacific between the Philippines and the western Carolines.

For the foundation of these warnings the Observatory depended on only three telegrams received from the meteorological station of Yap on the 30th and 31st of March and the 1st of April, respectively.

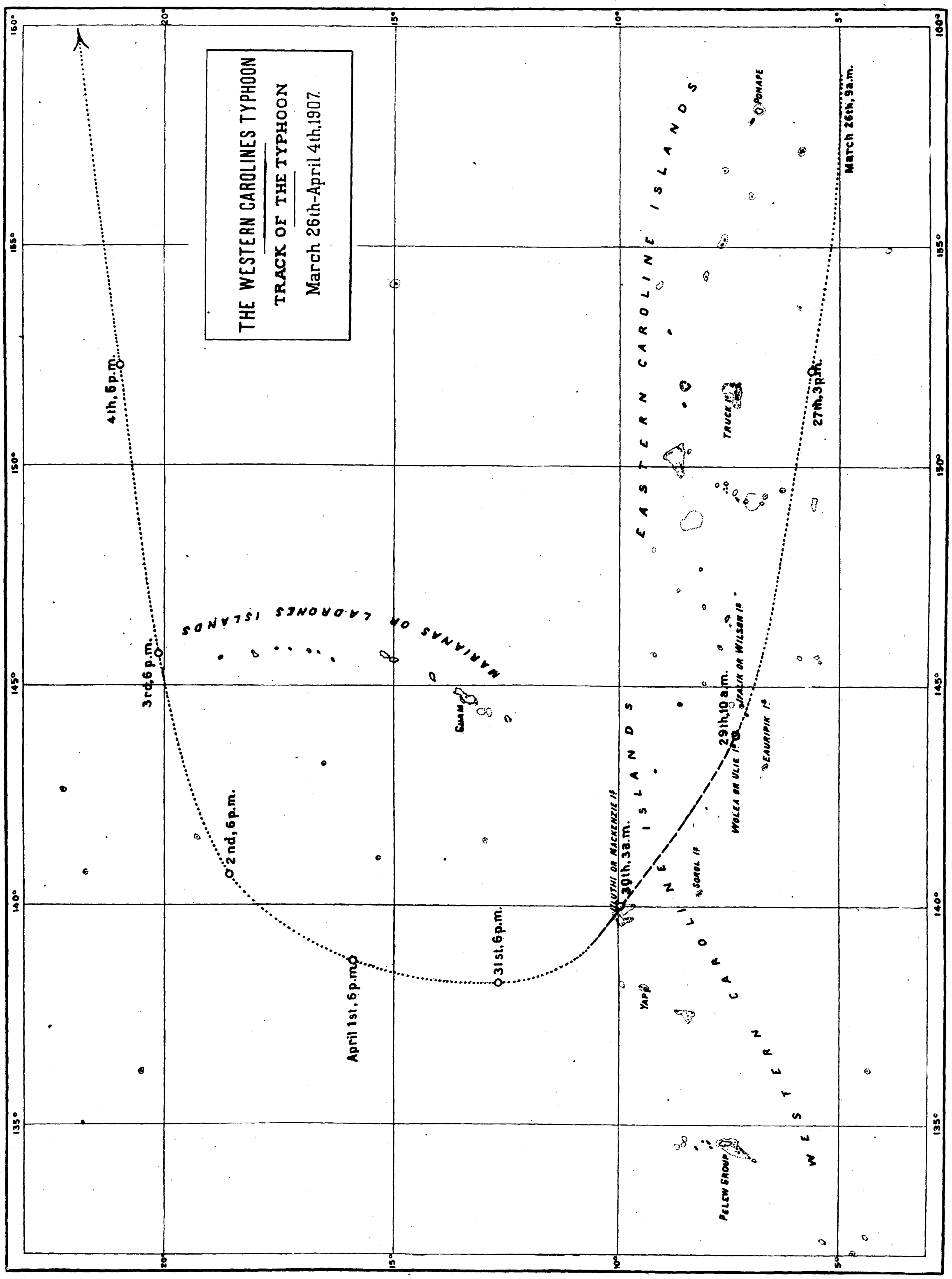
Our observer at Yap, Rev. Father Calixtus Lopinot, by his diligence and zeal for the good of the service, is deserving of our most profound gratitude. He was not content with making hourly observations during the passing of the storm in that locality and sending them to us with the greatest dispatch possible, but he went on gathering more information and taking notes on the destructiveness of the storm in the other islands of that archipelago. All this was done with the sole intention of assisting us in our meteorological investigations.

Later on Commander Charles F. Kurtz, I. G. N., commanding H. M. survey ship *Planet*, sent us a detailed account of the passing of this typhoon across the Carolines—a report too interesting, indeed, not to be published in its entirety at the end of our discussion.

Origin of this typhoon.—According to the report of Commander Kurtz, the typhoon seems to have been forming from the 24th to the 26th about 20 miles south of Ponape. This supposition is confirmed from the fact that Kusaie, an island more to the east than Ponape, experienced no influence of any cyclonic center, at least to any noteworthy degree, during the last decade of March. The distance of Ponape from the vortex of the typhoon can only be approximately estimated. The same may be said of the part of the track comprised between the south of Ponape and the Wlea Islands. The data in our possession are not at all sufficient for us to give with certainty the course of the typhoon across this portion of the Carolines. The very position of some of the various islands and islets mentioned in Mr. Kurtz's report is unknown to us, nor have we been able to locate them on any of our maps of that archipelago. But as the commander was cruising about the islands at the time when he collected the data he has sent us in his interesting description, we have copied the first part of the track of this typhoon—that is, from south of Ponape to Uluthi Islands—from a little sketch that accompanied the report.

We have to confess that we wonder somewhat at the circumstance that in Wlea, according to the observations we will give presently, winds blew from the NNE with ever-increasing force for so many hours before the vortex touched the southern extremity of that island. This would seem to indicate that the typhoon did not come from an ESE or E by S direction as the supposed track shows, but rather from SE. For this and some other similar reasons we give as probable only the first part of the track as Commander Kurtz has traced it. As for the unusual direction of the winds at Wlea, we might say that either their direction was not given with sufficient accuracy or perhaps local circumstances modified it to some extent.

The typhoon in the western Carolines.—The greatest violence of the hurricane seems to have been experienced in the Wlea Islands. To Rev. Father Calixtus Lopinot we owe the excellent observations, which Captain Martens, of the schooner *Ponape,* forwarded to him and which we publish in the following table. These observations were made on board the *Ponape,* which was at the time anchored in the Bay of Wlea.


THE WESTERN CAROLINES TYPHOON
TRACK OF THE TYPHOON
March 26th-April 4th,1907.
March 26th, 9a.m.
27th, 3p.m.
29th, 10 a.m.
30th, 3a.m.
31st, 6p.m.
April 1st, 6p.m.
2nd, 6p.m.
3rd, 6 p.m.
4th, 6p.m.
EASTERN CAROLINE ISLANDS
MARIANAS OR LADRONES ISLANDS
WESTERN CAROLINE ISLANDS
PONAPE
TRUCK IS
GUAM
YAP
PELEW GROUP
SOROL IS
EAURIPIK IS
WOLEA OR ULIE IS
IFALIK OR WILSON IS
UTHI OR MACKENZIE IS

METEOROLOGICAL OBSERVATIONS ON BOARD OF SCHOONER "PONAPE" ANCHORED AT WLEA, WESTERN CAROLINES.

Date and hour.	Pressure.		Wind.		Remarks.
	Inches.	Millimeters.	Direction.	Force.	
Mar. 28:				*0-12.*	
6 p. m	29.75	755.65	NNE	8	
8 p. m	29.76	55.90	NNE	8	
9 p. m	29.73	55.14	NNE	8	
10 p. m	29.70	54.38	NNE	8	
11 p. m	29.66	53.36	NNE	8	
12 midnight	29.61	52.09	NNE	8	
Mar. 29:					
1 a. m	29.54	50.31	NNE	8	
2 a. m	29.49	49.04	NNE	8	
3 a. m	29.39	46.50	NNE	8	
4 a. m	29.30	44.22	NNE	10-11	
5 a. m	29.22	42.19	NNE	10-11	
6 a. m	28.90	34.06	NNE	10-11	
7 a. m	28.74	29.99	NNE	10-11	
7.30 a. m	28.58	725.93	NNE	11	Barometer falling very rapidly from 8 to 10 a. m. Gale blowing with typhoon force.
10 a. m[1]	27.24	691.89	NE	12	After 10 a. m. the barometer began to rise again. The wind veered from NE to SE, S, and SW.
4 p. m	29.10	739.14	SW	12	
8 p. m			SSE	12	
11 p. m			SSE	9	
12 midnight			SSE	8	
Mar. 30:					
1 a. m			SSE	9	
4 a. m	29.64	52.85	SSE	8	
8 p. m	29.82	57.43	SSE	8	
12 midnight	29.83	57.68	SSE	8	

[1] According to these observations we suppose in the track of this typhoon, given in the accompanying plate, that the vortex passed over Wlea at 10 a. m. of the 29th whereas Commander Kurtz supposes in his report and in his sketch that it passed at 9 a. m. Hence the velocity per hour of the typhoon given by Mr. Kurtz at the end of his report would be a little changed in our supposition.

According to the report of Commander Kurtz, though the vortical calm was not observed in Wlea, the violence of the wind abated somewhat before the wind veered from NE to SSE. The hurricane wind from the SW which was blowing at 4 p. m., according to the observations forwarded to this Bureau by Father Lopinot, is an anomaly to us. We believe that the wind came from that direction only for a very short time and backed soon to S and SSE. This can be clearly deduced from the report of the commander of the *Planet*.

Father Lopinot tells us that the vortical calm was not observed in Wlea, but that it was noted in other places in that group of islands.

The typhoon in passing from the S of Ponape to Wlea moved in a WbyN direction; thereafter it inclined more to the N, so that from the Wlea to the Uluthi Islands it was following approximately a NWbyW direction. The cyclonic center crossed the Island of Essor, situated on the northeastern part of that group; winds from the NE quadrant blew in this island with hurricane force during the night of the 29th until 3 a. m. of the 30th, when a half hour of calm was observed. After this the wind jumped to WSW, and its fury was then much greater than when it came from NE.

No meteorological observations were taken in the Uluthi Islands. Those, however, which Father Lopinot took in Yap serve admirably to follow the typhoon while it was passing at some distance to the NE and NNE of that island.

METEOROLOGICAL OBSERVATIONS AT YAP, WESTERN CAROLINES, MARCH 29 TO APRIL 1.

Date and hour.	Pressure.		Wind.		Rainfall.		Sea.	Weather.
	Inches.	Millimeters.	Direction.	Force.	Inches.	Millimeters.		
Mar. 29:				*01-2*				
6 a. m	29.81	757.20	NE	1			L	o.
2 p. m	29.72	55	NE	3	1.18	30	L	o ⩽ T.
Mar. 30:								
4 a. m	29.60	51.90	WNW	6				o q.
6 a. m	29.61	52.10	WNW	6			M	o q.
8 a. m	29.59	51.50	WNW	6				o q.
9 a. m	29.58	51.40	WNW	7				o q.
10 a. m	29.57	51.05	WNW	7				o q.
11 a. m	29.54	50.25	WNW	8				o q.
12.15 p. m	29.44	47.70	WNW	10				o q.
1 p. m	29.48	48.70	WNW	10				o q.
2 p. m	29.43	47.50	WNW	9			M	o q.
4 p. m	29.43	47.40	WSW	10				o q.
5 p. m	29.47	48.50	WSW	9				o q.
6 p. m	29.47	48.60	WSW	8				o q.
9 p. m	29.53	50	WSW	10				o q.
11 p. m	29.54	50.20	WSW	10	5.20	132.1		o q.
Mar. 31:								
5 a. m	29.60	51.90	WSW	7				
6 a. m	29.60	51.80	WSW	7			H	o q.
7 a. m	29.60	51.90	WSW	7				
9.30 a. m	29.64	52.95	WSW	7				
11 a. m	29.66	53.40	WSW	6				
2 p. m	29.61	52	WSW	6	.09	2.3	M	o q.
Apr. 1:								
4 a. m	29.68	53.80	WSW	6				
6 a. m	29.75	55.70	WSW	6			M	o.
10 a. m	29.79	56.70	WSW	5				
2 p. m	29.73	55.10	SW	5	.02	.5	M	o.

Two things attract the attention principally in the observations of Yap: First, that though the barometer had reached about its minimum at 12.15 p. m., nevertheless the winds continued to blow from WNW and did not back to WSW until 4 p. m.; and, second, that the barometer remained practically stationary in its minimum for some hours; and when it commenced to rise, it rose so slowly that at 11 p. m. it reached in its ascent the same height that it had reached in its descent at 11 a. m.

From these facts it appears (*a*) that the vortex was at the least distance from Yap when it was NE of that station, and (*b*) that the typhoon tended to recurve as soon as it had crossed the Wlea Islands and this caused a remarkable slowness of its translatory movement. Another circumstance which confirms the slow movement of the typhoon is the fact that the barometer on board the Japanese schooner *Chomei Maru No. 2* also remained stationary at its minimum for several hours, as the captain related to Commander Kurtz. We agree with the commander in saying that the data given by the captain are not entirely satisfactory, above all in regard to the position of the ship at 10 a. m. of the 30th. It seems to us that the schooner should not have been one degree farther S at that time than at 6 a. m. but rather somewhat farther N; and likewise not somewhat farther E, but a little farther W. Nevertheless, prescinding from this, and also from the exact duration of the lowest reading of the barometer, it can not be denied that this period of low pressure lasted some time and that it agreed with what was observed in Yap. It is then necessary to say that the typhoon moved very slowly during that space of time.

Effects of the typhoon.—It is not our intention to give here a full description of the havoc wrought by this typhoon in the numerous islands and islets of the western Carolines. We will only mention a few particulars sent us by Father Lopinot. Other details will be found in the report of Commander Kurtz.

Wlea.—In this group of islands it may be said that the destruction was complete. Some 200 persons perished in two islands, carried away by the immense waves which like cataracts swept away everything in their path—trees, houses, and inhabitants. In the other islets such terrific waves were not observed, but the water rose so high that the people could save themselves only by climbing to the tops of cocoanut trees. The captain of the schooner *Ponape* does not explain how it was possible to sail out of Wlea Bay. He claims that the violence of this typhoon was even greater than that of the celebrated cyclone of Ponape in April, 1905. (See "Bulletins for 1905," pp. 123–126.)

Ifalik.—The destruction here was also widespread, especially in the southern part of the island; 20 persons perished.

Eauripik.—The effects of the typhoon were not so great here as in the other islands.

Sorol.—The waves here were immense and five persons were drowned. The winds were violent, but did not have the force of hurricane winds.

Wave and swell of the hurricane.—Among many interesting details which Commander Kurtz gives us, we wish to mention here that his report offers us a splendid example of the hurricane wave as distinct from the cyclonic swell. We suppose that our readers are perfectly acquainted with the difference between those two terms since so many writers have written so fully on the subject, especially Fathers Froc and Algué as regards the typhoons of the Far East.

The report of Commander Kurtz tells us that in Wlea on the morning of the 28th a heavy swell from the SE was observed which increased as the day advanced; within the lagoon the sea was very heavy; all this happened when light winds were blowing from the NE quadrant and the barometer had fallen but little. This swell increased to such an extent that at 2 p. m., the time of low tide, the waves reached the house of the surgeon. This house was built at a height of about one meter above high-water level and is protected from the sea by a sand beach about 100 meters in width. Similar occurrences were observed in other parts of that archipelago. The swell as described here was properly the so-called *hurricane swell* which extends in all directions from the center of the cyclone and reaches to enormous distances. It constitutes one of the best precursory signs of typhoons.

To get some idea of the distance to which the cyclonic swell of this typhoon of the western Carolines was propagated, it is sufficient to say that in Borongan, a station entirely open to the Pacific on the eastern coast of Samar, P. I., heavy seas from E were observed from the 29th of March until the 3d of April, according to the observations sent to us by Father Cesario Montes, our observer in that station. This swell was so heavy in that place and its direction so significant that, although the weather was not exceptional, the observer sent to the Director of the Weather Bureau one cablegram on the 31st of March and two on the 1st of April giving an account of the phenomenon.

After this no one will wonder that our observer at Sumay, Guam, Ladrones Islands, notes in his observations of the 1st and 2d of April a very extraordinary swell and very high seas, the highest in four years, which caused some damage in that place.

The *hurricane wave* which accompanied the cyclonic vortex is described by Commander Kurtz when he gives us the account of the storm in Raur and Paliau, islands of the Wlea group. About 8 a. m. on the 29th the inhabitants heard a terrifying roar and saw in the E a black cloud of immense size. This cloud, the natives say, came down on the middle of the island like an immense cataract. "The destructive effects of this phenomenon," adds Commander Kurtz, "shows that the inundation was caused by the storm wave, the spray of which, carried on the wings of the wind, appeared to the natives as a cloud." Another still greater wave followed the first, sweeping away everything in its path.

There is no doubt, as Commander Kurtz very well observes, that the wave here described is the hurricane wave in the strict sense of the word, namely, those immense masses of water which accumulate in the vortex of the typhoon and following it in its translatory movement are the cause of so great havoc at times on the seacoasts.

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Recurval of the typhoon.—The fact that the barometer began to rise in Yap and the wind did not back more to SW was sufficient for the Manila Observatory to announce on the 1st of April that the typhoon tended to recurve about N of Yap. Later on the observations from our station of Guam confirmed our opinion that the typhoon had recurved N of Yap and W of Guam. The veering of the winds in this latter station was complete, from NE toward WNW passing through E, S, and W, thus showing clearly day by day the different positions of the cyclonic vortex. We give these observations in the following table:

METEOROLOGICAL OBSERVATIONS AT SUMAY, GUAM, LADRONES ISLANDS, MARCH 28 TO APRIL 4.

Date and hour.	Pressure.	Wind.		Cloudiness.	Rainfall.	Remarks.
		Direction.	Force.			
Mar. 28:	*mm.*		*0-12.*	*0-10.*	*mm.*	
6 a. m	757.54	NE	3	7	--------	Moderate sea.
2 p. m	56.91	NE	4	8	--------	Moderate sea. Frequent heavy rain squalls.
6 p. m	57.31	E	4	8	12.7	Moderate sea.
Mar. 29:						
6 a. m	57.64	E	3	8	--------	Do.
2 p. m	55.76	E	5	10	--------	Moderate sea. Frequent very heavy squalls.
6 p. m	56.46	E	5	10	8.9	Moderate sea.
Mar. 30:						
6 a. m	56.54	SE	5	10	--------	Do
8.30 a. m	57.89	SE	5	10	--------	Moderate sea. Terrific rain squall from 7.15 to 8.15 a. m.
11 a. m	57.49	SE	5	10	--------	Moderate sea.
2 p. m	55.51	SE	4	10	--------	Do.
3.30 p. m	55.64	SE	4	10	--------	Do.
6 p. m	56.54	SE	3	10	20.3	Do.
Mar. 31:						
6 a. m	56.94	SE	2	7	--------	Moderate swell.
2 p. m	54.97	SE	4	7	--------	Do.
6 p. m	55.74	SE	3	7	7.6	Moderate swell. 8 p. m. to 10 p. m., vivid lightning and heavy thunder.
Apr. 1:						
6 a. m	56.29	SE	1	4	--------	Heavy swell.
2 p. m	55.64	S	3	4	--------	Do.
6 p. m	56.02	S	3	10	10.2	Do.
Apr. 2:						
6 a. m	57.19	S	2	8	--------	Do.
2 p. m	56.19	SW	3	6	--------	Heavy swell. Heaviest sea for four years.
6 p. m	57.11	SW	3	10	--------	Heavy swell.
Apr. 3:						
6 a. m	58.04	SW	2	10	--------	Do.
2 p. m	57.44	WSW	2	7	--------	Heavy swell. Very high tide does some damage.
6 p. m	57.62	WSW	2	6	--------	Heavy swell.
Apr. 4:						
6 a. m	56.94	WSW	1	7	--------	Do.
2 p. m	55.47	WNW	3	10	--------	Do.
6 p. m	55.71	SW	1	7	--------	Do.

With the end of proving that the typhoon moved very much inclined to E when it passed N and NE of Guam, we give here the observations of 6 a. m. from the 31st of March till the 4th of April in the station of Chichijima, Bonin Islands. The relatively low barometer observed there on the 1st of April and likewise the SE winds of the same day and the SW of the following day were owing to one or rather various low-pressure centers of little importance which during those days passed W and N, respectively, of the Bonin Islands, as may be seen in the daily weather maps of the Tokio Observatory.

METEOROLOGICAL OBSERVATIONS AT CHICHIJIMA, BONIN ISLANDS.

[Latitude, 27° 5′ north; longitude, 142° 11′ east of Greenwich; gravity correction not applied, —1.2 mm.]

Date.	Hour.	Pressure.	Wind.		Weather.
			Direction.	Force.	
		mm.		*0–12.*	
Mar. 30	6 a. m	764	E	6	c.
Mar. 31	do	62.5	NW	4	c.
Apr. 1	do	58.4	SE	6	r.
Apr. 2	do	60.3	SW	2	c.
Apr. 3	do	64.6	NE	4	c.
Apr. 4	do	66.5	NE	4	c.

The typhoon as reported by Commander Charles F. Kurtz, I. G. N.—Commander Charles F. Kurtz, I. G. N., commanding H. M. survey ship *Planet,* sent us under date of April 11, 1907, from Yap, the story of a typhoon as learned from the captain of the Japanese schooner *Chomei Maru No. 2,* which had weathered it on March 29 and 30, though somewhat the worse for wear and tear. As this communication is substantially embodied in a subsequent report from the same source, we need not consider it here. The letter of Commander Kurtz also contained the promise to make further inquiries about the typhoon and to communicate their results to the Weather Bureau. This promise has been fulfilled under date of April 27 in a manner which far exceeded our expectations.

The document, which we insert in an English translation, gives the history of the storm as far as painstaking inquiry into its phenomena and effects could ascertain it. We make use of this occasion to express to Commander Kurtz our sincerest gratitude for the practical interest in our work which he has manifested repeatedly.

NOTES ON THE "EASTER TYPHOON"[1] IN THE CAROLINES, MARCH 26 TO APRIL 1, 1907.

PACIFIC OCEAN, *April 27, 1907.*

The following report is a compilation of all the information which H. M. S. *Planet* was enabled to obtain at Yap and Palau [Pelew Islands] during the period between April 10 and 26, concerning the typhoon which at the end of March, 1907, traversed the Caroline Islands and caused great destruction on the atolls of Ululssi [Mackenzie Islands] and Oleai [Wlea Islands], especially on the latter. Unfortunately no systematic observations are available, except from Yap [which is a station of the Weather Bureau].

1. **Ponape.**—The following information is given by the apostolic prefect of the Carolines, Fr. Venantius, who resides on Ponape, on the north side of the island, near the "Bezirksamt" [tribunal]. He has not made any systematic observations, nor taken notes or made readings of the barometer, but gave his information from memory on April 20.

On March 24 the normal northeast wind assumed a very squally character, reaching force 8 [Beaufort scale], accompanied by heavy rains. This sort of weather lasted until the morning of March 26. The rain squalls were especially violent during the nights. At about 9 a. m. of March 26 a northeast squall of hurricane force blew for a few minutes, bringing extraordinarily heavy rain. After this squall the wind jumped to southeast or south, force 6. It has not been observed how long it blew from this direction; but before noon the wind had returned to northeast. Later the wind gradually subsided, and the weather became normal.

The barometer had certainly been below normal height, but nothing more definite is known. Nothing could be learned concerning the cyclonic swell. Fr. Venantius himself designates his statements as not absolutely reliable. At any rate they are valuable as a proof that Ponape has been within the sphere of influence of the typhoon.

2. **Truck.**—From Kusaie no unusual weather has been reported, although the imperial German mail steamer *Germania* touched there on March 28.

Uman.—"Marine-Ober-Stabsarzt" [medical inspector?], Dr. Krämer, who resided at the time in the northern part of Uman Island, furnishes the following data:

As the existence of the typhoon was not suspected, no systematic observations have been made. Up to March 26 we had normal trade-wind weather, though on the 25th and 26th some rain squalls occurred toward evening.

[1] Easter Sunday fell on March 31.

On March 27, at an early hour in the morning, the wind increased and blew during the whole day from the first quadrant, with strong squalls and heavy rains. The house in which Dr. Krämer lived is sheltered by mangrove trees against winds from this quadrant, wherefore the exact direction can not be given. The wind attained its greatest force (10) between 1 and 5 p. m. of the 27th, the barometer its absolute minimum—approximately 752 millimeters—between 2 and 4 p. m. The height of the barometer was read on a compensated aneroid barometer by Bohne, which on comparison with the mercurial barometers of H. M. S. *Planet* on April 14 showed a correction of —1 millimeter. This correction has been applied to the reading as given above.

During the night of March 27–28 the light winds were frequently replaced by short rain squalls coming from the south, force 3. Before the evening of the 28th the weather became again normal.

On March 27 and 28 a heavy swell from the south was observed, which caused breakers on the shore reef of Uman, within the atoll lagoon. Mesejon Islet and a few others, situated on the outer reef, have been flooded by the breakers, some damages resulting.

On the eastern point of Wola (Sobuk) three houses of natives have been blown down by the wind, which likewise damaged the breadfruit trees. Throughout the group of islets a few cocos trees have been uprooted, but no further harm has been done.

On March 28 and 29 wreckage of houses has been washed ashore on some of the southern islets of Truck. The natives claim that it drifted thither from Mortlock or Lossop.

3. **Ifaluk.**—The mail steamer *Germania* visited this atoll on April 12. The following notes embody the statements of a Japanese who resides on the island and of Dr. Born:

The typhoon attained its greatest violence during the night of March 28–29. During the storm the water rose so high that the inhabitants of the island had to take refuge in the trees and on house tops. Twenty-five natives perished. It is said that most of these have been killed by falling trees; a few have been swept away by the waves. Ten persons have been injured seriously. With the exception of a few canoe shelters all buildings have been wrecked. To judge from the débris, the strongest winds must have been those from the south.

4. **Oleai.**—The information concerning the storm as experienced on Oleai has been given by Dr. Born, government surgeon, who passed through the typhoon on said island.

Dr. Born was unable to make barometric observations. There exists, however, the curve traced by the barograph of the government schooner *Ponape*, which vessel was carried out of the lagoon of Oleai by the storm. I have not been able to examine this curve; hence my remarks are third-hand information and can not be accepted as absolutely reliable.

On March 27 northeast trade winds prevailed during the day; the night was calm and clear. In the morning of the 28th appeared a southeast swell, which caused a heavy surf on the eastern reefs and on the shore within the lagoon, the surf increasing as the day advanced. Within the lagoon the sea was very heavy. Frigate birds have been observed, which are never seen in this locality during normal weather. During the day a light wind blew from the first quadrant; several thunderstorms with squalls came from north and east. The barometer was falling and the swell increased to such an extent that already at about 2 p. m.—at the time of low water—breakers running over the beach reached the house of the surgeon. This house is built on the southwest corner of Oleai, at a height of about one meter above high-water level, and is protected toward the sea not only by the reef but also by a sand beach approximately 100 meters wide. Still the water rose; at 5 p. m. a wave swept Dr. Born through the crashing railing from the porch of his house. Up to this time the wind had been light, interrupted by occasional rain squalls; in the evening heat lightning in several directions. Later a violent north-northeast wind sprang up which already during the night did heavy damage to the trees.

Toward 9 a. m. of March 29 the wind abated somewhat and then suddenly changed from northeast to south-southeast, blowing now with hurricane fury. It is said that between 8 and 10 a. m. the barometer reached its absolute minimum, which according to the aneroid of the *Ponape* was below 700 millimeters (it is given as 691 millimeters).

The hurricane raged from the direction south-southeast to south until 3 p. m., then its violence subsided somewhat and at times the sun was visible. Until then the sky had been covered by a structureless sheet of nimbus. It was noted as remarkable that the clouds, which now became discernible, drifted very slowly in comparison with the storm which was still blowing. During the afternoon the wind veered to south, with heavy squalls. In the evening the force of the wind was more uniform, but still that of a storm, bringing heavy rain.

In the morning of March 30 the sky was clear, dotted with numerous cumulus clouds. During the whole day the wind blew from south with force 8. During the night of March 30–31 there were still isolated showers, but the wind subsided gradually, and during the forenoon of March 31 (Easter Sunday) we had very fine weather with light southerly winds.

Regarding the floods which accompanied the typhoon, Dr. Born furnishes the following data: On the islands of Raur and Paliau the water had attained a height of 1 to 1.50 meters during the night of March 28–29. About 8 o'clock a. m. of the 29th the natives inhabiting these islands suddenly heard a terrifying roar and saw toward east over the ocean a dark cloud, which in height surpassed the tallest trees, though the latter reach 40 meters. This cloud, they say, came down upon the middle of the island like a cataract, whence the masses of water rushed into the lagoon. The destructive effect of this phenomenon seems to indicate that the inundation was caused by a storm wave, whose spray, carried on the wings of the wind, appeared to the natives as a cloud. A second, still higher wave followed the first. These two waves, but especially the second, swept away everything—trees, buildings, and inhabitants. Of the population of Raur only two survive, who luckily became entangled in the brushwood; the rest, 130, perished. Of the 90 people who lived on Paliau, 50 lost their lives. Throughout the whole atoll about 200 natives have been killed and many seriously injured.

Raur itself, once a fertile island, is now nothing but a white bank of coral rock, showing here and there the stump of a tree. The northern part of Paliau escaped the storm wave, but the southern part presents the same aspect as does Raur.

On Oleai itself, the place of residence of Dr. Born, the water rose 2 to 3 meters above the normal high-water level. An area of 60 to 100 meters in diameter in the center of the island remained dry, probably the only spot on the atoll which has not been inundated.

The flood reached its maximum about 9 or 10 a. m. of March 29, the inundation lasting at least six hours. On the evening of that day, at the time of high tide, when the storm also increased, the water rose again about one meter above the highest tide mark.

Regarding the flooding of Oleai Island, the circumstance is worthy of notice that the greatest elevation of the water level came rather suddenly through a wave which, coming from northeast, hurled itself upon the island at approximately the same time when Raur and Paliau were flooded; that is, shortly before the hurricane winds changed from northeast to east-southeast. Hence the inundation is not to be ascribed exclusively to the masses of water of the surging sea carried onward by the storm—which certainly could produce similar effects—but must have been due to a prolonged [local] raising of the level of the sea.

5. **Aurepik.**—A canoe which crossed from Aurepik to Oleai reported that on the former island no storm of any consequence had been experienced.

6. **Ululssi Islands.**—H. M. S. *Planet* visited this group of islands April 15 to 17. On Essor Island, which is situated on the northeast part of the atoll, resides a Tagalog trader; on Mogomog the native inhabitants have been questioned. The information derived from these sources appears to be trustworthy.

On Essor normal northeast trade winds prevailed during the week preceding the typhoon. On the day before the storm (the exact date could not be learned, but, according to the observations made at Yap, it must have been March 29) the wind was light during the forenoon, but about noon an east-northeast [?] wind sprang up. This wind, gradually increasing until it reached hurricane force, continued until 3 a. m. of March 30 (?). At this time a calm ensued, which after a duration of about half an hour was replaced by hurricane winds blowing from west-southwest. Since on this island most of the trees fell toward east, the westerly winds must have been the more violent.

On Mogomog the wind, which at first came from northeast, backed to north. The directions in which the uprooted trees lie show that the greatest destruction was caused while the wind blew from this point. Afterwards the wind suddenly changed to west, which direction is likewise marked by a great number of uprooted trees.

On Fassarai no inquiries have been made. The damage is less than on the two islets mentioned. Nearly all the trees which have been blown down lie from west to east.

On an average about one-half of all the cocoanut trees on this group of islands has been ruined by the typhoon—on Mogomog the loss amounts to 70 per cent, on Essor to about 50 per cent, while on Fassarai it reaches only 30 per cent. But even the remaining trees have been injured to so great an extent that on Mogomog and Essor no nuts have been left on them, and on Fassarai only very few; moreover the trees will not be able to bear fruit for about two years.

The houses of the natives have been destroyed without an exception; the trading station on Essor is likewise ruined; but the greater part of the canoes are still serviceable and many have not been damaged at all.

Judging from the traces left (sand about 2 meters above high-water mark), the water level was 2 to 3 meters above normal. From a number of small islands, which luckily were not inhabited, the whole covering of humus has been swept away—*Pigef, Mass, Mototul,* are now white banks which are awash at high tide. A portion of the southern part of *Mangejang* has likewise been carried away.

It borders almost on the miraculous that, notwithstanding all these devastations, not a single native has lost his life, nor even been injured.

7. **The Japanese schooner "Chomei Maru No. 2."**—This schooner entered the harbor of Yap on April 11, carrying an emergency rigging. The Japanese captain made the following statements, which, however, are not very valuable, owing to the uncertainty of the positions of the ship and to the fact that they do not agree with other observations:

March 29 the schooner was approximately in 10° N and 139° E. The wind, gradually freshening, backed from northeast to north, the barometer falling slowly to 29.10 inches (739.13 mm.), this being its reading at 6 a. m. of March 30. Then followed a rapid descent until about 10 a. m., when it indicated 28.58 inches (725.92 mm.). During this period a hurricane wind blew from northwest. The jib boom and foremast were carried away, the mainmast had to be cut. According to the captain, the schooner was at this time in 9° N and 139.5° E. The barometer is said to have remained during ten hours stationary at the minimum before it commenced to rise slowly. This does not sound very plausible. The captain was probably kept busy with more important duties. Afterwards the wind backed to southwest, from which direction it continued to blow for several days, gradually dying out.

8. **Sorol.**—The mail steamer *Germania* visited Sorol on April 13. Strong winds had indeed been experienced on the islands, but the material damages were only slight. Unfortunately five lives were lost by drowning. The island had been flooded, but houses and canoes escaped without harm and the cocoanut trees suffered but little.

9. **Observations made at Yap.**—[Captain Kurtz gives here an abstract of the observations made at the Weather Bureau station on the Island of Yap. These are given in full in the discussion of the typhoon.]

10. **Palau.**—Mr. Winkler, in command of the station, states that March 29 to 31 strong northwesterly winds prevailed on the island, with a clear sky and no rain. Even taking into consideration the fact that it was the time for springtides, the water level must be called extraordinarily high during those three days. Near the government station *Matalai* it rose about half a meter above the ordinary springtide mark. At *Pililiu, Niaur* (*Angaur*), and *Nabukit* the combined effect of the high water and the waves has carried the salt water into a great number of taro fields and thereby ruined them—a calamity which, as far as the natives remember, has probably never before happened. On the east coast, near *Meligcok*, the water level has likewise been higher than usually, and although the shore is protected by an outlying reef of at least 400 meters' width, it nevertheless bears the marks made by a powerful surf, since in many places the rocky stratum underlying the sandy beach has been laid bare. According to the accounts of the natives, which, however, are not quite intelligible, the surf was caused by an easterly swell.

Remarks.—From the foregoing information we infer that the place of origin of this typhoon must be sought in approximately 160° E and 5° N, unless further news from Kussaie, or an island still farther east, force another conclusion.

As unusual as is the occurrence of a typhoon in the Carolines, is also its formation in so low a latitude, its recurving toward the north as far east as 138°, the very low barometer, and the velocity of translation.

Ponape to Truck, 390 nautical miles in thirty hours; 13 miles per hour.

Truck to Oleai, 480 nautical miles in forty-two hours; 11.4 miles per hour.[1]

Oleai to Ululssi, 300 nautical miles in eighteen hours; 16.7 miles per hour.[1]

Ponape to Ululssi, 1,170 nautical miles in ninety hours; 13 miles per hour.

(Signed) KURTZ.

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[1] See note on page 97.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[ϕ=14° 34′ 41″ N; λ=120° 58′ 33″ E; barometer above sea, 1.42 meters; gravity correction not applied, —1.72 mm.]

Date.	Pressure (mean).	Temperature. Open air.[2] Mean.	Open air. Maximum.	Open air. Minimum.	Underground. 0.25 meter. 8 a. m.	0.25 meter. 2 p. m.	0.50 meter. 8 a. m.	0.50 meter. 2 p. m.	1.50 meters. 8 a. m.	2.50 meters. 8 a. m.	Relative humidity (mean)	Vapor pressure (mean)	Evaporation. Free exposure (total).	Evaporation. Shelter (total).
	mm.	*°C.*	*°C.*	*°C.*	*°C.*	*°C.*	*°C.*	*°C.*	*°C.*	*°C.*	*Per ct.*	*mm.*	*mm.*	*mm.*
1	760.09	24.9	31.1	17.7	26	28.7	27.1	27.7	27	27.7	65.3	15	10.2	4.9
2	60.49	24.8	29	19	26.3	27.9	27.2	27.8	27.1	27.8	73.4	16.9	8	4.1
3	61.02	25.7	33.7	19.2	25.9	29.8	27	28	27.2	27.6	68.1	16	10.9	4.7
4	61.13	25.4	31.8	18.6	------	29.7	------	28.1	------	------	73.6	17.4	8.3	3.9
5	62.30	24.7	30.4	19.2	26.9	29	27.8	28.1	27.2	27.7	75.4	17.2	6.6	3.1
6	62.31	24.7	29.2	20.9	27	28.5	27.8	27.9	27.1	27.6	67.6	15.6	9.9	4.1
7	61.90	23.8	28.4	17.7	26	27.3	27.2	27.5	27.2	27.7	74.5	16.1	6.9	3.8
8	61.06	24.5	31.4	17.7	25.4	28	26.9	27.5	27.1	27.6	70.9	15.9	6.9	3.4
9	59.68	25	31.1	19.1	25.7	27.4	26.8	27.3	27.2	27.7	70.8	16.5	7.7	3.8
10	58.81	25.3	32.7	18.7	26	27.8	26.8	27.3	27.3	27.5	72.6	17.2	7.1	3.7
11	58.63	26.6	34.6	19.4	26	28.9	26.9	27.4	27.2	27.8	70.1	17.8	9.2	4.4
12	58.31	27.9	35.4	21.3	27.1	30.1	27.4	28.1	27.2	27.8	69.4	19	9.6	4.5
13	58.68	28.5	35.2	22.9	28	32.3	28	28.9	27.2	27.8	64.6	18.1	9.6	4.8
14	59.62	27	34.7	19.3	28	30.9	28.3	28.9	27.2	27.7	68.2	17.6	11.2	5.2
15	60.76	26.3	32.4	19.2	27.9	29	28.3	28.8	27.3	27.8	68	16.9	7.6	3.8
16	61.62	26.4	32.8	21.2	27.9	30.3	28.3	28.8	27.2	27.7	74.6	19	7.6	3.9
17	61.55	25.9	29.5	23.5	28.2	29.3	28.4	28.6	27.3	27.8	81.5	20.2	3.3	2.6
18	62.07	26.6	31.9	22.2	27.4	29.7	28.1	28.6	27.4	27.8	72.2	18.4	7	3.3
19	62.14	26.1	31.5	20.6	27.1	29	28.1	28.5	27.5	27.7	74.8	18.6	7.9	3.8
20	61.24	26.3	33.8	20	26.9	30	28	28.8	27.7	27.7	73.6	18.5	7.5	3.7
21	60.83	27.5	34.3	20.8	27.4	30	28.2	28.9	27.6	27.9	63.4	16.8	10.4	5.1
22	60.66	26.9	33.7	20.3	27.5	30.3	28.4	29	27.4	27.9	64.9	16.7	9.8	4.6
23	60.62	26.4	34.2	19.8	27.9	30.3	28.7	29.1	27.8	27.9	67.9	17.1	8.9	4.5
24	60.85	27.1	34.4	19.6	27.5	31	28.6	29.2	27.7	27.8	63.1	16.3	10.4	4.8
25	60.79	27.1	34.2	19.6	28.1	31.2	28.8	29.6	27.7	27.8	61.3	15.9	11.6	5.5
26	61.37	26.8	34.2	19.2	28.1	31.5	29	29.9	27.8	27.9	62.5	16.1	10.4	4.7
27	61.19	26.5	33.6	18.6	28.1	31.9	29.1	29.8	27.9	27.8	68.4	17.2	9.9	4.9
28	60.76	26.7	33.6	20.9	29	31.2	29.4	29.9	27.8	27.6	67.6	17.5	8	4.4
29	61.49	26.2	33.8	19.8	28.1	31.2	29.3	29.9	27.8	27.8	64.6	16.1	9.9	4.9
30	60.91	26	33.3	18.6	28	31.2	29.2	29.8	27.8	27.8	64.1	15.7	9	5.3
31	59.72	26.4	33.1	19.8	28.4	31.3	29.4	30	27.9	27.9	65.5	16.6	9	5
Mean	760.73	26.1	32.7	19.8	27.3	29.8	28.1	28.6	27.4	27.8	69.1	17.1	8.7	4.3
Total	------	------	------	------	------	------	------	------	------	------	------	------	270.3	------
Departure from normal	+0.13	—0.7	+0.4	—1.7	------	------	------	------	------	------	—2.7	—1.2	+3.6	------

Date.	Wind. Prevailing direction.	Wind. Total movement.	Wind. Maximum hourly velocity.	Wind. Direction at the time of the maximum velocity.	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Lower.		Sunshine.		Rainfall.	Miscellaneous.
		Km.	*Km.*		*0–10.*					*h.*	*m.*	*mm.*	
1	Variable	213	18	E	3.9	Ci.-S.		Cu.	ENE	10	50	------	≡° a.
2	ESE	155	13.5	E	8.3	A.-Cu.	NE	N.-cf.	ENE	4	30	------	≡° a. d p.
3	SE, ESE	214.5	24.5	SSE	8.2	Ci.	SW	Cu.	E	9	50	------	≡° a.
4	NE	151.5	16	W	4.8	Ci.	SSE	Cu.	E	10	00	------	≡° a.
5	N	193	26	N	8.7	A.-Cu.		Cu.	ENE	4	20	------	∪° ≡ d a. d ⌒ p.
6	N	221.5	20.5	ESE	8.3	Ci.-S.		S.-Cu.	E by N	4	00	------	⌒° p.
7	SE	180	16.5	WNW	6.3	Ci.-S.		S.-Cu.	E by N	5	30	------	≡° a.
8	SSE, W	186.5	24.5	ESE	8.3	Ci.	SSE	Cu.	E, ENE	6	35	------	≡° a.
9	SE	182	16.5	SE	7	Ci.-S.	SE	Cu.	E by N	5	05	------	◯° a. p.
10	SE	172.5	29.5	SE by S	6.2	Ci.		Cu.	ENE	8	20	------	≡° a. d ⌒° p.
11	SE	234.5	25	SE	2.6	Ci.		Cu.	ESE	11	00	------	≡° a.
12	SE	271	25.5	SE by S	1.8	Ci.		Cu.	E	11	00	------	≡° a.
13	SE	186	20	SE	3.3	Ci.-S.		Cu.	SE by S	10	45	------	≡° a.
14	SE	276	35	SE	1.8	------	------	Cu.	ENE	11	05	------	≡° a.
15	ENE	175	21.5	NNE	5.1	A.-Cu.		Cu.	E by N	8	45	------	≡° a. ⌒ p.
16	SW	100.5	14	SW	6.2	A.-Cu.		Cu.	ENE	7	30	0.3	≡° a. d p.
17	ESE	70	11	E	8.4	Ci.-S.		Cu.	E	3	45	6.9	≡° ●° a ⌒° ● ϟ° p.
18	E	158.5	18	WNW	5.6	A.-Cu.	NE	Cu.	ENE	8	40	------	≡° a.
19	W	134.5	15	W	6.1	Ci.-S.		Cu.	E	7	10	------	≡° a. d° p.
20	ESE	232	23.5	SE	4.9	Ci.		Cu.	E by S	8	50	------	⌓ ≡° a.
21	ESE	237.5	20	SE	6	A.-Cu.	ENE	Cu.	E	8	50	------	≡ a.
22	SE	276	26.5	SE	5.8	Ci.	S by W	Cu.	E by S	10	10	------	≡° a.
23	SE	256.5	25	SE	6.8	Ci.	W by N	Cu.	E	9	00	------	≡° a. ◯° p.
24	SE	301.5	30	SE	2	Ci.		Cu.	E by N	11	05	------	⌓ a. ≡° a. p.
25	ESE	348.5	35.5	SSE	5.7	Ci.	SSW	Cu.	E by S	10	30	------	≡° a. ∪ p.
26	SE	290.5	31.5	SE	2.3	Ci.		Cu.	E	11	00	------	⌓ ≡° a.
27	ENE, W	192.5	19	WSW	2.4	Ci.	SW	Cu.		11	05	------	≡° a.
28	ESE	250.5	24.5	SE	4.5	Ci.-S		Cu.	ENE	10	05	------	≡° a.
29	ESE	267	30.5	SE by E	5	Ci.		Cu.	ENE	9	15	------	≡° a.
30	ESE	233	21	SSE	2.5	Ci.	SSW	Cu.	ENE	9	50	------	≡° a.
31	SE	212.5	24.5	SE	3.6	Ci.		Cu.	NE	9	30	------	≡° a. p.
Mean	------	212	22.6	------	5.2	------		------		8	38	------	
Total	------			------	------	------		------		267	50	7.2	
Departure from normal	------	—17.9	------	------	+1	------		------		+20	12	—9.9	

[1] All the mean values given in this table are deduced from hourly observations.
[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

TAGBILARAN.

[ϕ=9° 38′ N ; λ=123° 53′ E ; barometer above sea, 21.8 meters ; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.					mm.	
1	758.26	26.1	30.5	22.6	77	NNE	1.3	9.3	A.-S.		Cu.-N.	E	------	
2	58.79	25.9	29.1	22.4	81	NNE	1.5	10	Ci.-S.		N.	E, NE	13.6	● a. p.
3	59.33	25.6	29.3	22.5	81.3	NNE	1.3	9.5	Ci.-S.		N.	E	8	● a. p. ∪°
4	59.15	25.9	29.8	21.8	81.8	NNE	1.3	7.5	Ci.-S.		Cu.-N.	ENE	4.1	●° a. p.
5	60.16	24.7	28.5	22.8	88.9	NNE	1	10	A.-S.		N.	ENE	14	● a. p.
6	60.05	24.8	28.2	22.7	84.1	NNE	1.3	10	Ci.-S.		N.	ENE	2.9	d a. p.
7	60.02	24.7	27.4	22.4	84.2	NNE	1.2	10	A.-S.		N.	NE	5.6	d a. ●° p.
8	59.68	25.2	28.6	22.7	85.2	NNE, SE	1.2	10	A.-S.		N.	NE	3.3	d a. p.
9	58.21	26.2	30.9	22.8	77.3	NNE	1.2	8.7	A.-S.		S.-Cu.	ENE	------	
10	57.78	25.8	28.9	24	85.2	NNE	.8	9.3	A.-S.		N.	NE	.6	d a. p.
11	57.92	26.1	30.5	23.7	85.3	NNE	1.2	7.7	------		Cu.-N.	ENE	8.1	⌈ϟ p.
12	58.12	26.7	30.7	23.2	83	SE	1.2	5.2	Ci.-S.		Cu.-N.	NE	------	
13	58.14	26.2	32.1	21.2	75.7	NNE	1.2	4.2	Ci.-S.		Cu.	E	------	
14	58.60	26.7	31.9	22.7	78.5	N, SE	1.3	3.3	Ci.-S.		Cu.-N.	ENE	------	d° a.
15	59.44	26.1	30.8	21.7	79	NNE	1.2	5	Ci.-S.		Cu.-N.	ENE	------	
16	60.16	25.8	31.2	21.6	77	N	1.3	4.8	Ci.-S.		S.-Cu.		------	
17	60.07	26.4	30.8	22.6	75.7	NE	1.2	5.3	------		S.-Cu.	E	------	
18	60.66	25.8	31	21.7	74	NNE	1.5	4.3	Ci.-S.		Cu.	E	------	∞ p.
19	60.79	25.1	27.4	22	80	N, SE	1.3	7.7	A.-S.		S.-Cu.	E	38.6	● a. p.
20	60.17	24.5	27.9	22.3	84.2	NNE	.8	8	Ci.-S.		N.	E	96.4	●° a. ⌈ϟ p.
21	59.83	25.7	30	21.7	79.8	NNE	1.2	6.7	Ci.-S.		Cu.-N.	E	------	d° p.
22	59.85	25.8	30.1	21.9	77.1	NNE	1.5	8.5	Ci.-S.		Cu.-N.	E	------	≡° a.
23	59.54	26.2	30.1	21.7	77.5	NNE, SE	1.3	8.2	Ci.-S.		Cu.-N.	E	------	
24	60.16	25.7	29.7	23.3	80.3	NNE	1.2	9.2	Ci.-S.		N.	E	2.1	d a. p. ⊤ ⌒
25	60.22	26	30.4	23.2	80	NNE SE	1.5	4.7	Ci.-S.		Cu.-N.	E	------	
26	60.74	26.2	31.8	21.1	77.2	NE	1	3.7	Ci.-S.		Cu.	E	------	
27	60.50	26.1	31.8	22	77.7	NNE, NW	1.3	5.3	Ci.-S.		Cu.	E, NNE	------	
28	60.09	26	30.6	21.8	77.5	NNE, SE	1.5	6.5	A.-Cu.		Cu.	N	------	
29	60.34	26.1	31.5	22.7	77.5	SE	1.5	8.5	Ci.-S.		S.-Cu.	NNW	------	
30	59.91	26.2	30.7	22.5	74.3	NNE, SE	1.2	7.2	Ci.-S.		S.-Cu.	NE	------	
31	59	26.1	31.8	22.5	71.5	NNE, SE	1.2	7.5	Ci.-S.		Cu.	NE	------	
Mean	759.54	25.8	30.1	22.4	79.6	------	1.2	7.3	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		197.3	

SURIGAO.

[ϕ=9° 48′ N ; λ=125° 29′ E ; barometer above sea, 6 meters ; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.		Clouds. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.					mm.	
1	758.74	25	29	21	92.2	NE	0.7	8.7	------		Fr.-N.		20.8	● a.
2	59.24	25.8	29.6	22	90	ENE	1.2	9.8	Ci.-S.		Fr.-N.		26.7	● p.
3	59.60	25.7	29.4	22	88.2	NE	1.5	7.7	A.-Cu.		Cu.		13.2	● a.
4	59.41	25.6	30	22.3	92.3	NE	.7	7.5	Ci.-S.		Cu.		9.9	Ω ≡ a. ● p.
5	60.13	24.8	27	22.5	94.5	NE	1	10	------		N.		67	●² a. p.
6	60.12	24.7	26.2	22.5	94.5	NE	2.8	10	------		Cu.-N.		72.9	↙ ●² a. p.
7	59.93	25.3	27.1	22.4	92.3	NNE	3	9.8	A.-Cu.		N.		27.2	● a. p.
8	59.95	24.6	26	20	94.8	NE	1.2	9.7	------		N.		87.6	●² a. d p.
9	58.51	25.8	30.5	20.5	85.3	NE	.8	6.3	Ci.		Cu.	NE	10.9	Ω ≡ a ● p.
10	58.07	25	27	22	97	N	.3	10	------		N.		28.4	● a. p.
11	58.08	26	30.4	23.3	95.2	ENE	.3	9	A.-Cu.		Fr.-N.	E	11.4	● a. p.
12	58.86	26.4	31.5	23	90.2	NE	.7	5.8	Ci.	SSE	Cu.	E	------	p° a. d° p.
13	58.68	26.2	31.6	20.5	87.7	NE	.7	1.7	Ci.		Cu.		------	Ω ≡ a.
14	59.42	26.4	30.4	20.4	89.2	NE	1.2	4.7	Ci.		Cu.	ENE	------	Ω ≡ a.
15	59.76	26.8	30.3	23.5	84.8	NE	1	4.5	A.-Cu.	NE	Cu.		------	
16	60.49	25	29.5	21.4	91.7	Variable	.5	6.8	Ci.		N.		26.9	Ω ≡ p. a. ●° p.
17	60.36	25.9	30.5	21.7	85.3	NE	1	5.7	Ci.		Fr.-N.		13.5	● a.
18	61.09	26	29.7	21	86.1	NE	1.3	5	Ci.		Cu.	ENE	27.4	≡ ● a. p.
19	60.74	25.3	30.3	21	90.7	NNE, E	.7	9.2	Ci.-S.		N.		27.2	● a. p.
20	60.57	25.2	27.4	22.5	92.3	N, E	.3	6.5	A.-Cu.		Fr.-N.	E	41.9	●² a.
21	60.05	26	29.5	21.2	87.7	ENE	1.3	3.8	Ci.		Cu.		------	
22	60.10	26.2	29.2	22	88.2	ENE	.8	5	Ci.		Cu.	E	6.6	p p.
23	59.98	25.4	29.5	22.1	92.3	ENE	1.2	7.3	Ci.		S.-Cu.		3.8	p a. d p.
24	60.52	24.2	26.5	22	95.8	NNE	.2	10	------		Fr.-N.		57.4	● a. p. ⊤
25	60.70	25.7	30.2	21.7	89.3	ENE	.7	6.7	A.-Cu.	ENE	Cu.		------	d° a.
26	61.21	25.5	30.2	21.3	87.8	ENE	.7	2.7	Ci.		Cu.		------	Ω ≡ a.
27	60.90	25.7	33.5	20.5	87.7	N	.3	3.7	Ci.		Cu.		------	Ω ≡ p.° a.
28	60.57	25.7	32.4	20.6	85.8	WNW	.7	6.3	Ci.		Cu.		------	Ω ≡ a. d° p.
29	60.73	25.9	30.7	21.7	86.2	NE	.3	7.2	Ci.-S.		Cu.		15.2	● a.
30	60.12	25.4	30.4	21.9	89.2	N	.5	6	Ci.		Cu.		4.6	Ω ≡ ● a.
31	59.08	25.4	31.2	20.6	86.5	NW, N	.3	6.8	Ci.-S.		Cu.		------	Ω ≡ a.
Mean	759.86	25.6	29.6	21.6	90	------	.9	6.9	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		600.5	

METEOROLOGICAL DATA, ETC.—Continued.

CEBU.

[ϕ=10° 18′ N; λ=123° 54′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.					Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction.					
									Upper.		Lower.			
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.					mm.	
1	759.06	26	29.4	22.7	81.7	NE	0.5	6.3	Ci.-S.		Cu.	E, NE	------	⌓² ≡ a.
2	59.49	25.8	29	22.5	82.4	NE	.7	6.8	Ci.-S.		N.-cf.	NE	15.7	● ≡ a.
3	59.95	25.5	29.5	23	82.6	NE	.7	6	Ci.		N.-cf.	NE	11.7	● ≡ a. p p.
4	59.82	26.1	29.1	22	82.8	ENE	.7	5.8	Ci.-S.		S.-Cu.	NE	.2	d° ≡ a. p.
5	60.63	25.2	28.4	22.4	86.2	NE	.7	8.3	Ci.-S.		N.-cf.	NE	24.1	● a. p. ≡
6	60.69	26.8	29	24.5	76.6	NE	1.3	6.4	Ci.		N.-cf.	NE	------	≡ a.
7	60.39	25.7	29	24.5	79.3	NE	.8	7.2	Ci.-S.		N.-cf.	NE	------	d° p.
8	60.18	26	29.8	22.6	79.1	ENE	.5	6.7	Ci.-S.		Cu.	NE	------	⌓² a. ⌒ p.
9	58.93	27	29	23.4	77.8	E	.5	6.7	A.-Cu.		Cu.	ENE	.5	⌓ ●° a.
10	58.65	25.3	27.1	22.7	86.7	E, NE	.3	8.7	Ci.-S.		N.-cf.	ENE	10.2	⌓ ≡ d a. ● p.
11	58.62	26.6	29.2	23.6	85	ENE	.5	6.2	Ci.		Cu.	ENE	.2	d ≡ a.
12	59.02	27.1	30	23.6	83.2	E	.5	4.2	Ci.		Cu.	ENE	.2	⌓ ≡ a. ∞ p.
13	59.22	26.9	30.5	22.1	80	SE, ENE	.3	2.3	Ci.		Cu.	E	------	⌓² a. ∞ p.
14	59.81	27	30.3	23.6	82.2	N, ENE	.8	3.6	Ci.		Cu.	ENE	------	≡ a.
15	60.12	26.7	29.5	22.9	81.2	NE	.7	3.2	Ci.		Cu.	NE	------	⌓ ≡ a. ∞ p.
16	60.84	27	30.1	22.3	77.6	ENE	.5	4.8	Ci.		Cu.	ENE	------	⌓² ≡ a. d p.
17	60.60	26.9	29.4	23.6	76.4	NE	.7	3.3	Ci.		Cu.	ENE	------	⌓ a. ∞ p.
18	61.23	26.7	30	22.6	77.5	ENE	.5	3.2	Ci.		Cu.	ENE	------	⌓ ≡ a. ∞ p.
19	60.90	26.4	30.6	20.6	82.5	NE, E	.7	4.3	Ci.		Cu.	NE	------	⌓ a. d° p.
20	61.17	25.2	29	24.1	86.8	E	.7	6.3	Ci.		S.-Cu.		2.5	≡ a. ↯ ● p.
21	60.46	26.6	28.6	23	79.7	NE, E	.5	3.7	Ci.		Cu.	NE	------	⌓ ≡ a.
22	60.48	26.6	29.4	22.8	81.6	ENE	.5	4	Ci.		Cu.		------	⌓ ≡ a.
23	60.50	27.7	30.1	23.4	76	E	.4	5.4	Ci.		Cu.	ENE	------	≡ a.
24	60.61	25.8	29.8	22	84.3	E	1.2	6.5	Ci.		Cu.	ENE	.2	⌓ ≡ a.
25	60.83	26.8	30	22.8	78.7	E	.7	3.2	Ci.		Cu.	ENE	------	⌓ ≡ a. ∞ p.
26	61.46	27.6	31	23	77.2	ENE	.7	2.7	Ci.		Cu.	NE	------	≡ a.
27	61.12	27.2	30.5	22	75.3	ENE	.5	3	Ci.		Cu.	E	------	≡ a. ∞ p.
28	60.66	26.3	29.7	23.2	80.8	E	.7	3.7	Ci.		Cu.	ENE	10.2	≡ a. ∞ p.
29	60.81	26.7	30	22.4	75	ENE	.8	5	Ci.-S.		Cu.	ENE	------	≡ a. ∞ p. ○ ⏀
30	60.36	27	29	22.4	77.8	ENE	.7	5.7	Ci.		Cu.	NE	.2	d° ≡ a
31	59.70	26.5	29	22.7	77.9	ENE	.8	5.3	Ci.-S.		Cu.	NNE	------	⌓ ≡ a. ∞ p. ○² ⏀
Mean	760.20	26.5	29.5	22.9	80.4	------	.6	5.1	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		75.9	

ILOILO.

[ϕ=10° 41′ N; λ=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temp. Mean.	Temp. Maximum.	Temp. Minimum.	Relative humidity (mean).	Wind prevailing direction.	Wind force (mean).	Clouds amount (mean).	Upper clouds.		Lower clouds.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.					mm.	
1	758.63	25.6	29.6	23.4	81.4	NE	2.3	6.8	A.-Cu.		S.-Cu.	NE	------	
2	59.02	25.6	29.9	22.6	78.3	NE	2	7.5	A.-Cu.		S.-Cu.	NE	------	⏀
3	59.46	26	30.3	22.9	77.5	NE	2	7.5	A.-Cu.	E	S.-Cu.	NE	1.3	p° a.
4	59.42	25.5	29.5	23.1	84.3	NE, N	2	7.3	A.-Cu.		S.-Cu.	NE	1	p° p.
5	60.03	24.9	28.8	23	84.3	NE	2.2	7.2	A.-Cu.		S.-Cu.	NE	1.3	p p.
6	60.09	24.7	29	22.8	85.2	N, NE	2.5	7.3	A.-Cu.		S.-Cu.	NE	.8	p° a.
7	60.20	25.4	29.1	22.3	80	N, NE	2	7	A.-Cu.		S.-Cu.	NE	------	d° a.
8	59.85	25.6	30	22.5	78.2	NE	2.2	6.2	A.-Cu.		S.-Cu.	NE	------	
9	58.56	25.7	29	23.6	80.5	N	2	7.7	A.-Cu.	E	S.-Cu.	NE	------	d° a.
10	58.04	25.6	30	23.3	82	NE	1.5	7	A.-Cu.		S.-Cu.	NE	------	d° a.
11	57.98	26.5	31.5	23.1	80.5	NE	1.8	6.5	Ci.-S.		S.-Cu.		------	T ↯ p.
12	57.84	27.4	31.7	24.6	78.5	NE	1.5	6.5	Ci.		S.-Cu.	NE	------	
13	58.05	27.1	33.9	22.9	76.5	NE	1.2	4.3	Ci.		S.-Cu.		------	
14	58.60	27	32	22.9	76.2	N, NE	1.8	2	------		S.-Cu.		------	
15	59.46	26.3	31	22.8	77.6	N, NE	1.7	2.3	------		S.-Cu.	NE	------	
16	60.20	26.4	31.1	22.4	77.5	N, NE	1.8	2.3	Ci.-S.		Cu.		------	
17	60.09	26.2	30.9	22.7	77	NE	2	1.8	Ci.		Cu.	NE	------	
18	60.74	26.4	31	22.5	76.5	NE	2	2.3	Ci.-S.		Cu.		------	
19	60.62	26.7	31.9	22.8	75	NE	1.8	4.5	Ci.-S.		Cu.	NE	------	
20	60.16	24.4	27.1	23	88.5	NE	1.8	8.7	------		S.-Cu.	NE	8.6	p a. d p.
21	59.82	26.6	31.6	22.8	73.2	NE	1.5	4	Ci.		S.-Cu.	NE	------	⏀
22	59.85	26.4	30.7	22.7	72.3	NE	1.7	3.7	Ci.-S.		S.-Cu.		------	⏀
23	59.70	26.6	31.1	22.8	74.2	NE	1.8	5.5	Ci.-S.		S.-Cu.		------	
24	60.06	26.8	31	23.6	74	NE	2	4	Ci.-S.		S.-Cu.	NE	------	⏀
25	59.96	26.7	31.6	23	73.7	N, NE	2	2.3	Ci.		Cu.		------	⏀
26	60.38	26.8	31.9	22.8	75.2	NE	1.5	3	Ci.-S.		S.-Cu.		------	⏀
27	60.20	26.8	32.9	22.7	75.1	NE	1.2	4.3	Ci.-S.		S.-Cu.		------	
28	60.08	26.1	31	22	76.7	NE	1.7	2.5	Ci.-S.		Cu.		------	⏀
29	60.60	26	31.4	21.8	76.6	N, NE	1.8	5.7	Ci.-S.		Cu.	NE	------	
30	59.96	26.3	31.3	22.5	76.5	N, E	1.8	4.3	Ci.-S.		Cu.	NE	------	⏀
31	59.25	26.1	31.3	22.4	77	N, NE	1.3	6.3	Ci.-S.		S.-Cu.		------	⏀
Mean	759.58	26.1	30.7	22.8	78.1	------	1.8	5.1	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		13	

METEOROLOGICAL DATA, ETC.—Continued.

ORMOC.

[φ=11° 00′ N; λ=124° 36′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.					mm.	
1	758.54	24.6	29	21	85.3	Variable	0.5	9	Ci.-S.		Cu.	ENE	8.4	● p. ◡
2	59.08	24	27.1	22.3	92.3	Calm	------	10	Ci.-S.		Cu.	NE	13	● p.
3	59.58	25.2	30.4	22.5	77.4	NE	.8	6.7	A.-Cu.	E	Cu.	ENE	------	
4	59.11	25.2	29.1	22	81.2	Variable	.8	7.5	Ci.		Cu.	ENE	------	Ω a.
5	59.77	25.9	29.2	22.4	73.6	N	.2	10	Ci.-S.		Cu.	ENE	11.4	● a.
6	59.78	26.2	30.5	24.5	66.6	NE	1.3	8.5	Ci.-S.		Cu.	NE	------	d° p.
7	59.91	25.6	28.9	23.4	74.5	NW	.7	8.3	Ci.		Cu.	NE	------	d° a. p.
8	59.58	24.8	29.7	20.5	83.5	Variable	.5	9.3	Ci.-S.		Cu.	ENE	------	d° p.
9	58.15	25.6	30	21.5	83	Variable	.3	9.2	Ci.-S.		Cu.	ENE	------	
10	57.74	25.2	28	23	86.1	NNW	.3	8.5	Ci.-S.		Cu.	E	8.6	● a.
11	58.07	25.7	28.8	22.4	87.7	SW	.3	9.3	Ci.-S.		Cu.	E	8.1	● a. p. ⌒
12	58.06	26.8	30.6	23.5	80.9	Variable	.5	4.5	Ci.	SSE	Cu.	ENE	1.5	● a.
13	58.18	25.3	30.5	19.8	81.7	S	.8	3	Ci.		Cu.	E	------	
14	58.94	26.5	31.5	21.2	75	NE	1	3.7	Ci.		Cu.	E	------	
15	59.49	26.2	31.7	20.2	71.7	NNE	.8	2.2	Ci.-S.		Cu.	ENE	------	d° a.
16	60.28	24.6	30.6	19.5	83.5	Variable	.5	5.3	Ci.-S.		Cu.	ENE	2.5	Ω a. ⌐↯ ● p.
17	60.20	26.4	31	22.1	72.7	NE	.3	4.2	Ci.		Cu.	ENE	------	p° p.
18	60.77	26.2	32.5	19.8	68.3	N, NE	1	2.5	Ci.		Cu.	ENE	------	Ω a.
19	60.44	25.2	31.6	19.7	80	N	.7	6.2	Ci.-S.		Cu.	NE	1.5	Ω a. ⊤ ●° p.
20	60.17	24.6	28.2	22.5	84.8	N	.7	8.3	Ci.-S.		Cu.	ENE	21.8	● a. d p.
21	59.74	26.1	32.2	21.5	70.5	NE	.7	2.3	Ci.		Cu.	ENE	------	Ω a. p° p.
22	59.66	26.1	31.7	21.1	72.2	Variable	.5	5	Ci.		Cu.	ENE	------	ᗜ
23	59.61	25.2	30.7	21.1	78.8	N	.7	6.7	Ci.	E	Cu.	ENE	------	d° p.
24	60.08	24	30	20.3	86.3	S quadrant	.5	8.7	Ci.-S.		Cu.	NE	3.8	Ω d a. ● p.
25	60.15	24.4	30.3	19.5	78.3	N, ENE	1	2.3	Ci.		Cu.	NE	------	
26	60.72	25.2	30.5	19.7	77.8	SSW	.5	3.7	Ci.	SSE	Cu.	ENE	------	
27	60.45	25.4	30.7	20.1	81.7	SSW	.3	5.7	Ci.	SSE	Cu.	ENE	2.3	● p.
28	60	24.8	30.5	19.2	75.2	S	.7	3.5	Ci.		Cu.	ENE	------	Ω a. d° p. ᗜ
29	60.05	24.4	31.8	17.5	73.3	Variable	.5	6.7	Ci.		Cu.	NE	------	Ω a. d° p. ᗜ
30	59.71	25	30.7	20.6	76.7	Variable	.5	7.7	Ci.	SSE	Cu.	NE	------	
31	58.77	24.5	29.5	18.8	75	Variable	.5	7.7	Ci.		Cu.	NE	------	Ω a. ○ ◡
Mean	759.51	25.3	30.2	21.1	78.6	------	.6	6.3	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		82.9	

TACLOBAN.

[φ=11° 15′ N; λ=125° 00′ E; barometer above sea, 5 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.		Clouds. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.					mm.	
1	759.35	25	30	23.1	85.7	NW, NE	1	9.6	A.-S.		Fr.-N.		4.1	● a. p. ⊕
2	60.07	24	26.4	23.1	90.1	Variable	1	10	------		N	NE	47.2	● a. p.
3	60.51	25.4	31	23.3	81.6	Variable	1	5	Ci.		S.-Cu.		1	d a. ● p.
4	60.06	25.7	30	22.8	84.1	Variable	.8	8	Ci.		Fr.-N.	E	2.8	●° a. p. ○ ⊕
5	60.92	26.1	31.2	23.6	76.2	ENE	1.4	10	A.-S.		Fr.-Cu.		.8	d a. ●° p. ○ ⊕
6	61.07	25.6	30	23.1	75.4	N quadrant	1.8	9	Ci.-S.		Fr.-N.	NE	1.8	●° a.
7	61.01	25.3	30.5	23.6	79.9	N quadrant	1.4	7.2	A.-S.		S.-Cu.	NE	.2	⌒ d a. p.
8	60.54	25.8	31	23.1	82.3	NE	.8	9.8	A.-S.		Fr.-N.		2.3	p a. p. ⊕
9	59	25.8	31.5	22.8	80.7	WNW	.8	8	A.-Cu.	E	Cu.		------	
10	58.87	25.3	29	23.6	86.5	Variable	.6	9.6	Ci.-S.		Fr.-N.		6.1	● a. p p. ⊕
11	58.69	25.7	29.6	23.1	90.2	S	.4	9.2	Ci.-Cu.		N.		19.8	● a. p.
12	59.14	26.7	31	24.1	81.2	SSE	1	4.8	Ci.		S.-Cu.	ESE	------	
13	59.08	26.6	31	22.7	80.2	SSE	.8	3.2	Ci.		S.-Cu.	SE by E	------	
14	59.75	27.1	34.5	23.7	77.7	Variable	1.2	1.4	Ci.		Cu.		1.3	●° a.
15	60.38	26.6	33.5	22.9	74.8	Variable	1.2	3.4	A.-Cu.		S.-Cu.	ENE	------	
16	60.94	26.5	32	23.6	74.3	NW by W	1	6.2	A.-Cu.	E	N.		------	p° p.
17	61.16	26.1	32	23.6	75.2	E	1.2	2.8	Ci.-Cu.	E	Cu.		.8	●° a. d p.
18	61.62	26.6	33	23.1	72.8	N quadrant	1.2	2	Ci.		Cu.		------	∞ a. p.
19	61.27	26.3	32.1	23.1	75.7	NE	1.4	8.8	Ci.-S.		Fr.-N.	ENE	.5	d a. p.
20	61.07	25	29.6	22.5	86.8	SE quadrant	.6	7.4	A.-Cu.	E	Fr.-N.		40.6	●² a. d p.
21	60.72	26.4	33	23.4	77	Variable	1	3.2	Ci.		Fr.-Cu.	E	------	⌒ d° p.
22	60.69	26.2	32.5	22	76.9	NE	1	3.6	Ci.-S.		Fr.-Cu.	E by N	2.8	● a. d° p. ᗜ
23	60.46	26.5	32.5	23.8	76.7	Variable	1	7.8	Ci.		Fr.-N.	ENE	.5	Ω a. ●° p.
24	60.83	25.2	28.9	22.4	85.3	Variable	1	8.8	A.-S.		Fr.-N.		6.9	● a. p p.
25	61.03	25.8	34.1	22.2	78.7	Variable	1	4	Ci.		Cu.	E by N.	------	
26	61.59	26.6	32.6	22.6	78.8	Variable	.8	5.8	Ci.		Fr.-Cu.		------	
27	61.13	26.6	31.5	24.2	77.2	SE	1	8.4	Ci.-S.		Cu.		6.6	● p.
28	60.72	26.4	32.5	22.6	73	Variable	1	6	Ci.		Fr.-Cu.		------	ᗜ
29	61.04	26.4	31.7	22.7	72.3	Variable	.8	7.4	Ci.-S.		Fr.-Cu.		------	p° a. ᗜ
30	60.39	26.7	32.9	23.6	71.8	N	1	7.8	Ci.-S.		Fr.-Cu.	NE	------	○ ⊕
31	59.25	26.2	32.5	23.2	72.5	N quadrant	1	8.6	Ci.-S.		Fr.-Cu.		.8	Ω a. ●° p. ⊕
Mean	760.40	26	31.4	23.1	79.1	------	1	6.7	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		146.9	

METEOROLOGICAL DATA, ETC.—Continued.

CAPIZ.

[ϕ=11° 35′ N; λ=122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.					Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction.					
									Upper.		Lower.			
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.					mm.	
1	759.80	25.4	28.2	22.3	86.3	NE	1.8	9.7	Ci.-S.		N.	NE	------	d° p.
2	60.21	26.1	28.7	21.9	82.5	NE	1	8.8	Ci.-S.		Cu.-N.	NE	------	d° a ⊕ ∪
3	60.54	26.4	28.7	21.2	83.3	NE quadrant	1	7.2	Ci.-S.		Cu.-N.	N, NE	------	
4	60.56	25.1	26.9	21.9	91.3	NE	1.2	9.5	Ci.-S.		N.	NE	25.1	d° a. ● p.
5	61.28	25.9	29.1	21.7	84.8	NE	1.3	8.5	Ci.-S.		N.	E, NE	9.1	Ω ● a.
6	61.49	25.4	27.2	22.5	86.5	ENE	1.8	9.2	Ci.-S.		Cu.-N	E, NE	5.6	d° a. ● p.
7	61.44	25.6	27.8	22.2	84.2	NE	1.7	8.3	Ci.-S.		Cu.-N.	NE	------	d° p.
8	61.03	25.6	28	20.6	85.7	NE	.8	8.7	Ci.-S.		Cu.-N.	NE	------	
9	59.84	24.8	25.8	22.2	90.2	NE	1.3	9.7	Ci.-S.		N.		2.8	●° a d° p.
10	59.06	25.6	28.5	21.3	88.3	NE	.3	6.8	Ci.-S.		S.-Cu.	NE	11	Ω a.
11	59.19	26	28.5	21.6	87.2	NE	.7	7.2	Ci.-S.		Cu.-N.	NE	------	Ω a. d° p.
12	58.84	26.7	30.7	22.2	83.7	E	.8	6.2	Ci.-S.		S.-Cu.			d. a.
13	58.94	26.2	29.8	22	85.1	NE	.7	4.7	Ci.-S.		S.-Cu.	NE	2.8	Ω a.
14	59.54	26.8	30.8	22	83.3	E	.7	3.2	Ci.		Cu.	E, SE	------	Ω a.
15	60.52	25.6	29.8	21.9	86.5	SE, ENE	1.2	4.5	Ci.		Cu.-N.	E	------	Ω ≡ d° a.
16	61.33	25.9	29.5	20.2	83.8	Variable	1	2.3	Ci.		Cu.	NE	------	Ω a.
17	61.24	25.7	29.4	19.2	82.1	SE	.8	3.3	Ci.		Cu.		------	Ω a.
18	61.80	26.3	29.6	21.6	83.3	ESE	.8	4.5	Ci.		S.-Cu		------	Ω a.
19	61.73	26.1	28.9	20.4	84.3	NE quadrant	.8	6	Ci.		Cu.	NE	------	Ω a.
20	61	26.3	28.9	22.4	85.8	E	1	9.2	Ci.-S.		Cu.-N.	NE	------	d° a.
21	60.77	26.2	30.6	21.5	85.4	ENE	1	2.8	Ci.		Cu.	E	------	Ω a.
22	60.74	26.6	30.2	21.9	84.3	NE quadrant	1.2	6.3	Ci.-S.		S.-Cu.	E	------	
23	60.62	26.3	29.7	22.1	84	NE	.7	7	Ci.		Cu.	E	------	
24	61.01	25.6	29.2	19.3	84.7	NE	.3	4.5	Ci.		S.-Cu.	NE	------	Ω² a.
25	61.14	26	29.7	20.6	83.2	NE	.5	2.8	Ci.		Cu.		------	Ω° a.
26	61.30	26.2	31.2	20.9	86.3	E	.3	2.3	Ci.		Cu.	E	------	Ω° a.
27	60.95	26.7	30.6	22	87	ENE	.8	4.5	Ci.		S.-Cu.		------	Ω a.
28	60.90	26.3	30.7	21	82.7	ENE	.5	3	Ci.		S.-Cu.	NE	------	Ω² a.
29	61.39	25.5	29.2	19.8	84	E	.5	3.2	Ci.		Cu.	E, NE	------	Ω a.
30	60.90	25.9	29.7	21.5	84	NE	.5	4.7	Ci.		Cu.	NE	------	Ω a.
31	59.95	25.6	29.2	20.4	85.2	NNE	.3	6	Ci.		S.-Cu.	NE	------	Ω a.
Mean	760.61	25.9	29.2	21.4	85.1	------	.9	6	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		56.4	

CALBAYOG.

[ϕ=12° 04′ N; λ=124° 36′ E; barometer above sea, 4.1 meters; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temp. Mean.	Temp. Maximum.	Temp. Minimum.	Relative humidity (mean).	Wind prevailing direction.	Wind force (mean).	Clouds amount (mean).	Upper.		Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.					mm.	
1	759.51	23.9	28.1	21	90.2	N	1	6.7	Ci.-S.		S.-Cu.	NE	3.8	p. a. p.
2	59.86	25.2	29.2	21.4	81.5	N, NE	1.5	6.3	A.-Cu.		S.-Cu.	NE	------	p° a.
3	60.64	25.5	31	20.5	80.2	N, NE	1.5	4.5	Ci.		S.-Cu.	NE	------	d° p.
4	60.24	25	29	22	89.7	N	1	7.2	Ci.-S.		Cu.-N.	NE	5.3	●° a. p.
5	61.15	24.8	29	20.9	82.5	N, NE	1.5	7	Ci.-S.		S.-Cu.	NE	------	●° ⌒ a.
6	61.22	24.7	27.9	20	81.8	N, NE	1.3	6.8	A.-Cu.	NE	S.-Cu.	NE	2.3	
7	61.12	24.3	28.7	21	82.3	N	1.3	6.8	A.-Cu.		S.-Cu.	NE	.3	p° a. d° p.
8	60.75	24.5	29.2	19.5	85.8	N	1.2	6.3	A.-Cu.		S.-Cu.	NE	.5	p. p.
9	59.17	25.6	30.2	22.1	86.5	N	1	6.7	A.-Cu.	NE	Cu.-N.	NE	4.8	●° a.
10	58.91	25.2	29.8	21	86.7	N	1.2	6.2	A.-Cu.		S.-Cu.	NE	1.3	p. p.
11	58.99	25	30	22.5	92	N	1	7.2	Ci.-S.		Cu.-N.	NE	25.7	d. a. ↙ ● p.
12	59	26	31.6	22	87.2	N	1	5.3	A.-Cu.		S.-Cu.	NE	------	
13	59.02	25.5	31.6	19.7	86.8	N	1	5.5	A.-Cu.		S.-Cu.	NE	------	
14	59.83	26	32.2	20.5	80.2	N, NE	1	4.7	A.-Cu.	NE	S.-Cu.	NE	------	
15	60.38	25.2	31.2	20	81.2	N	1.3	4.5	Ci.-S.		S.-Cu.	NE	------	p° a.
16	61.13	25.5	31.2	20.2	76.5	N	1	4.5	Ci.		S.-Cu.	NE	------	
17	61.20	25.5	31.5	20	76.8	N, NE	1.5	5.5	A.-Cu.	NE	S.-Cu.	NE	------	
18	61.88	25.3	31.5	19	75.7	N, NE	1.5	4.2	Ci.		S.-Cu.	NE	------	≡ a.
19	61.42	24.9	31.9	19.5	81.8	N, NE	1.3	5.7	A.-Cu.		Cu.-N.	NE	1.3	p. p.
20	61.26	25.4	30.7	21.9	83.2	N, NE	1.3	7.3	A.-Cu.		S.-Cu.	NE	1.3	d a.
21	60.74	25.4	31.6	19.5	79	N, NE	1.3	4.8	A.-Cu.		S.-Cu.	NE	------	p° p.
22	60.79	25.9	32	20.9	75.7	N, NE	1.2	4.5	A.-Cu.		S.-Cu.	NE	------	
23	60.54	26.3	32	21.4	76	N	1	6.3	Ci.		S.-Cu.	NE	------	
24	60.96	24.9	31	19.5	81.5	N	1	5.8	A.-Cu.		S.-Cu.	NE	1.8	● p.
25	60.99	25.3	32.2	19.5	78.5	N	1	4	Ci.-Cu.		S.-Cu.	NE	------	
26	61.49	26.2	33.5	19.5	76.5	N, NE	1	5.3	A.-Cu.		S.-Cu.	NE	------	
27	61.35	26.2	32.5	21.2	79	N	1	5.8	A.-Cu.		S.-Cu.	NE	------	
28	60.90	25.2	32.8	18.4	74.8	N	1	4.7	Ci.		S.-Cu.		------	
29	61.16	24.8	32	18	77.2	N	1.2	5.5	Ci.		S.-Cu.	NE	------	
30	60.56	25.1	31.4	19.9	79.2	N	1	4.8	Ci.		S.-Cu.	NE, N	------	
31	59.49	24.2	31.3	18	76.3	N	1	6.2	Ci.		S.-Cu.	NE, N	------	
Mean	760.50	25.2	30.9	20.3	81.4	------	1.2	5.7	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		48.4	

METEOROLOGICAL DATA, ETC.—Continued.

LEGASPI.

[ϕ=13° 09′ N; λ=123° 45′ E; barometer above sea, 4.3 meters; gravity correction not applied, —1.77 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.					Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.		Lower.			
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.					mm.	
1	760.39	25.7	29	-----	73.2	NNE	1	8.3	Ci.-S.		Cu.-N.	NE	-----	d° p.
2	60.77	26.6	30.6	-----	69.2	NE	1	3.3	A.-Cu.	SE	Cu.		-----	≡ a.
3	61.33	26.3	29.5	-----	74.2	NE	1	4.8	A.-Cu.	ENE	Cu.		0.3	d° a.
4	61.19	24.7	27.7	-----	90.8	ENE	.8	9.3	Ci.-S.		Fr.-N.	NE	41.1	● a. p.
5	62.28	25.6	28.5	-----	78.8	NE	1	7.3	Ci.-S.	S	Cu.-N.	ENE	33.6	● a. p.
6	62.39	24.8	27.6	-----	77.7	NE	1.2	6.7	A.-Cu.		Cu.-N.	NE	.8	p° p.
7	62.16	25.7	29.7	-----	72.7	NE	1	5.7	Ci.	S	Cu.	NE	-----	○
8	61.52	26	28.4	-----	75.7	NE	1	8.8	Ci.-S.		Cu.	NE	-----	d° a. ○
9	59.92	25.2	28.5	-----	85.7	NE	1	9.7	Ci.-S.		N.	NNE	13.5	● a. p.
10	59.38	26.4	29.5	-----	79.3	NE, E	1	2.8	Ci.		Cu.	NE	-----	d° a.
11	59.49	26.3	30.3	-----	80.5	ENE	1	3.7	A.-Cu.		Cu.-N.	NE	.5	d a.
12	59.70	26.8	31.1	-----	78	E	1	1.2	-----		Cu.	NE	-----	≡ a.
13	59.53	26.3	30.6	-----	82.2	E	1	3.8	A. Cu.	SE	Cu.	NE	-----	≡ a. d p.
14	60.43	26.8	30.5	-----	81.3	E	1	2	-----		Cu.	NE	-----	d° a.
15	61.14	26.3	29.5	-----	77.9	NE	1	3.8	A.-Cu.		Cu.		2	●° a.
16	62.02	26.7	31	-----	69.8	NE, E	1	.8	-----		Cu.		-----	≡ a.
17	61.94	26.7	30.9	-----	71.2	NE, E	1	1.2	Ci.		Cu.		-----	≡ a.
18	62.41	27.1	31	-----	71.3	E	1	2.5	Ci.		Cu.	ENE	-----	≡ a.
19	62.24	27.1	31.3	-----	72.6	NE	1	3.5	Ci.	SW	Cu.	ENE	-----	≡ a.
20	61.84	27.1	30.5	-----	72.8	NE	1	2.8	A.-Cu.		Cu.	ENE	.5	d a. p° p.
21	61.51	27.2	30.7	-----	73	NE	1	2.2	-----		Cu.	E	-----	p° a.
22	61.53	26.7	30.5	-----	72.8	ENE	1	2.2	Ci.		Cu.		-----	≡° a.
23	61.23	27.1	30.9	-----	69.9	NE	1	3.3	Ci.	S	Cu.	NE	-----	p° a.
24	61.32	27.2	31.6	-----	72	NE	1	3	Ci.		Cu.	NE	-----	≡ a.
25	61.62	27	30.6	-----	74	NE	1	2.5	Ci.		Cu.	ENE	.7	●° a.
26	62.18	26.4	31.5	-----	75	E	.8	1.5	A.-Cu.		Cu.			≡ a.
27	61.82	26.6	31.2	-----	73.8	NE	.7	1.2	Ci.		Cu.		-----	≡ d° a. ⌒
28	61.46	26.8	31.5	-----	71.6	E	.7	1.2	Ci.		Cu.		-----	≡ a. d p.
29	61.86	27.3	31.2	-----	67.8	NE, E	1	3.8	Ci.	S, SW	Cu.	NE	-----	≡ a.
30	61.38	26.5	32.2	-----	70.3	NNE	.7	3.2	Ci.		Cu.	NE	-----	≡ a.
31	59.92	26	31	-----	71.6	NE	.7	2.5	Ci.		Cu.	NE	-----	≡ a.
Mean	761.22	26.4	30.3	-----	75.1	-----	1	3.8	-----		-----		-----	
Total	-----	-----	-----	-----	-----	-----	-----	-----	-----		-----		93	

ATIMONAN.

[ϕ=14° 00.5′ N; λ=121° 55′ E; barometer above sea, 7.8 meters; gravity correction not applied, —1.74 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Force (mean).	Clouds. Amount (mean).	Upper.		Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.					mm.	
1	760.44	26.8	32	22	78.2	NE	1.3	1.7	Ci.		Cu.	N	-----	⏀^{2}
2	60.98	26.8	32.2	23.6	77.3	NE	2	1.7	Ci.		Cu.	NE	-----	⏀^{2}
3	61.54	26	30.4	23.8	80.9	NE	2.7	7.5	Ci.		Cu.	NE	-----	⏀°
4	61.46	26.2	28.8	24.1	82.8	NNE	2	6.7	Ci.		S.-Cu.	NE	-----	d° a. p. ⏀°
5	62.54	25.1	29.5	22.5	89.2	NE	3.9	9	Ci -S.		Fr.-N.	NE	6.1	●° a. p. ⏀°
6	62.84	23.6	24.5	22	88.5	NNE	4.6	9.8	Ci.-S.		N.	NE	13.9	↙ ●° a. p.
7	62.42	25.1	28.7	22.5	81.3	NE	3.2	9.5	Ci.-S.		S.-Cu.	NE	4.5	d a. p.
8	61.72	26.1	30.8	23	78.7	NE	2.2	9.2	Ci.	NE	Cu.	NE	2	Ω d a. ⏀^{2}
9	60.31	26.6	30	23.5	77.7	NE	2.1	9	Ci.	E	S.-Cu.	NE	-----	Ω° a.
10	59.17	25.8	29.3	23.4	85.8	NE	2.3	9.3	Ci.-S.		S,-Cu.	NE	-----	d° a.
11	59.19	26.6	31	22.5	82.6	N	1.6	7.5	A.-Cu.	NE	S.-Cu.	NE, N	-----	
12	59.05	27.4	30.9	25	84.8	N	1.7	7.2	A.-Cu.	SE	Cu.	N	-----	⊕°
13	59.20	26.6	31.3	23.3	83.8	N, NW	1.5	2.7	Ci.	ESE	S.-Cu.	NE	-----	Ω° a.
14	60.04	26.9	32.8	21.9	83.5	NE	1.4	4.3	Ci.-Cu.	NE	Cu.	NNE	-----	Ω ≡ a.
15	61.08	26.8	32	23.7	83.7	NE	2.7	6.8	A.-Cu.	E	Cu.	NE	6.9	d a. p.
16	61.79	26.7	32.8	22.9	84.4	NE	2.1	5.8	Ci.		S.-Cu.	NE	-----	d° p.
17	61.71	27	32.6	24.5	80.7	NE	2	6	Ci.		S.-Cu.	NE	2	●° a.
18	62.40	27.2	32	24.4	81.2	NE	2.4	3	Ci.	NE	Cu.	NE, N	-----	
19	62.44	27.3	31.6	24.1	79.5	NE	2.2	2.7	Ci.		Cu.	NE	-----	≡ a.
20	61.54	26.4	29.8	24 7	85.3	N	2.1	6.2	Ci.-S.		S.-Cu.	NE	4.6	Ω p a. d p. ⏀°
21	61.11	25.8	31.1	21.3	85	NE	1.3	3.7	Ci.-S.		Cu.	E, NE	8.6	Ω ≡^{2} a. ●° p.
22	61.17	26	31.6	21.4	82.2	SW, NNE	1.5	5	Ci.	S	Cu.	N	-----	Ω ≡^{2} a. ⏀
23	61.15	26.7	31.5	22	79.2	NE	1.8	6.8	Ci.		Cu.	N, NE	-----	Ω d° a. p. ⏀^{2}
24	61.40	27.3	32.4	22.6	75.5	NE	1.8	3	Ci.		Cu.	NE	-----	Ω° a. ⏀° ◡
25	61.28	27.7	32.1	25	78.4	NNE	2	5.3	Ci.	SW	S.-Cu.	NE	-----	d° a. ⏀°
26	61.77	26.8	32.4	21.6	79	NNE	1.3	1	A.-Cu.	NE	Cu.	E	-----	⏀°
27	61.28	26.2	31.5	22	82.5	WSW, NNW	1.2	2.8	Ci.		Fr.-Cu.		-----	≡° Ω° a. p. ⏀°
28	61.44	27.2	33.3	21.7	75.7	ENE	2	1.2	Ci.		Cu.	NE	-----	Ω° a. ⏀°
29	61.88	27.3	33.5	22	76.3	NE	1.7	2.2	Ci.	E	Cu.	NE	-----	Ω° a. ⏀°
30	61.36	27.4	32.4	24.5	74.5	NNE	2	1.8	Ci.		Cu.	NNE	-----	⏀°
31	60.50	26.3	30	24	77.4	NNE	2.2	3.8	Ci.-S.		S.-Cu.	NE	-----	≡° d° a. ⏀
Mean	761.17	26.5	31.1	23.1	81.1	-----	2.1	5.2	-----		-----		-----	
Total	-----	-----	-----	-----	-----	-----	-----	-----	-----		-----		48.6	

METEOROLOGICAL DATA, ETC.—Continued.

OLONGAPO.

[ϕ=14° 49′ N; λ=120° 15′ E; barometer above sea, 3.5 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force. (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12	0-10.			mm.	
1	759.72	25.4	34.2	17.8	83.8	NNW, NE	0.5	4.2	Ci.-S.	Cu. NE	------	≡ a. ∞ p.
2	60.03	26	33.2	19.7	78.9	NE	.3	7.3	Ci.-S.	Cu. NE	------	≡ a.
3	60.60	27.2	33.8	22.2	75.8	NNE	.7	8.2	Ci.-S.	Cu. E	------	
4	60.93	26	34.2	19.4	81.2	NNE, E	.8	5.5	Ci.-S.	Cu.	------	≡ a. ∞ p.
5	61.60	25.8	31.9	21.6	81.2	NNE	.8	8.5	Ci.-S.	Cu.-N. E	------	≡ a. ∞ p. ψ
6	61.69	26.1	32	21.8	72.8	NE	.9	6.2	Ci.-S.	Cu.	------	≡ a. ○
7	61.39	26.4	32.8	22.3	76	NE	.8	5.2	Ci.-S.	Cu.	------	≡ a.
8	60.74	36	32.9	20.2	80.4	E	.5	7	Ci.-S. S	Cu.	------	≡ a.
9	59.52	25.3	32.9	20.6	84.3	Variable	.5	7.7	Ci.-S. S	Cu. E	------	○²
10	58.51	26	33.4	21.2	86	NNE, SW	.6	4	Ci.-S.	Cu.	------	≡ a.
11	58.33	27.7	34.6	22.3	80.3	NW	.6	1.8	Ci.-S.	Cu.	------	≡ a. ∞ p.
12	57.99	28.6	35.6	24.1	83.4	NE	.6	2	Ci.-S.	Cu.	------	≡ a. ∞ p.
13	58.38	27.8	33.9	24.5	86	Variable	.3	4.8	Ci.-S.	Cu. E	------	≡² a.
14	59.23	27.6	35.6	22	83.5	Variable	.4	1.5	Ci.-S.	Cu.	------	Ω² ≡ a. ∞ p.
15	60.23	27.7	35.4	21.6	80.8	NE	.7	3.2	Ci.-S.	Cu.	------	≡ a. ∞ p.
16	61.28	27.4	35	22.1	76.7	NNE	.5	6.7	Ci.-S.	Cu.-N.	------	↯ a. p.
17	61.08	27.5	33.5	22.5	80.2	NNE	.5	6.8	Ci.-S.	Cu.-N. ENE	------	≡ a. d° p. ↯
18	61.88	27.4	33.5	22.5	79	Variable	.3	6.3	A.-Cu. NE	Cu.-N. NE	------	≡ a.
19	61.90	26.4	33.5	21	82	NE	.5	5.5	Ci.-S.	Cu. E	------	≡ a. ∞ p.
20	60.98	26	34.2	20.8	84.3	NE, SW	.4	4.5	Ci.-S.	Cu.	------	≡ a. ∞ p.
21	60.50	26.6	34.2	21.8	83.2	NE	.6	5	A.-Cu. E	Cu.	------	∞ p.
22	60.34	28.2	34.6	22.2	76.8	NE	.6	4.2	Ci.-S.	Cu.	------	≡ a. ∞ p.
23	60.26	26.9	33.9	23.5	82	NE	.7	5.7	Ci.-S. W	Cu.	------	≡ a. ∞ p. ○
24	60.48	27	35.2	22	81.8	NE	.6	1.7	Ci.-S.	Cu.	------	≡ a. ∞ p.
25	60.41	27.7	33.4	22.7	77.8	NNE	.6	6.7	Ci.-S.	Cu.	------	∞ p. ○
26	60.96	27.7	35.2	21.7	76.7	NE	.6	2.2	Ci.-S.	Cu.	------	≡ a. ∞ p.
27	61.02	25.8	31.4	20.5	76	NNE	.7	2.5	Ci.-S.	Cu.	------	≡ a. ∞ p.
28	60.44	26.3	33.4	21.3	86.7	Variable	.5	4.8	Ci.-S.	Cu.	------	≡ a. ∞ p.
29	60.90	26.5	34.4	21.5	80.2	Variable	.5	4	Ci.-S. NE	Cu.	------	≡ a. ∞ p.
30	60.67	25.6	30.4	21.2	83.2	SW	.5	4.5	Ci.-S. NE	Cu.	------	≡ a. ∞ p. ψ
31	59.41	26.2	32.5	22.1	77.5	SW, N	.6	5	Ci.-S. N, NE	Cu.-N.	------	≡ a. ∞ p.
Mean	760.37	26.7	33.7	21.6	80.6	------------	.6	4.9	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	------	

SAN ISIDRO.

[ϕ=15° 22′ N; λ=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force. (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	760.46	24.8	33.6	16.2	70.7	ENE	0.3	5.3	Ci.	Fr.-Cu. E	------	Ω² ≡ a. ψ Φ
2	61.03	25.5	33	18.3	69.5	E	.5	5.8	A.-Cu. E	Fr.-Cu. ENE	------	≡ a. Ω² p.
3	61.64	25.7	32.9	19	70.7	NNE	.7	6.7	Ci.	Cu. E	------	Ω² a. p. ≡
4	61.86	26	35.8	17.6	67	E	.2	5.3	A.-Cu. NE	Cu. SE	------	Ω² ≡ a. Φ
5	62.85	25.6	30.6	20.4	71.8	ESE	.3	7.7	A.-Cu. E	Cu. E, NE	------	Ω² ≡ d a. ψ
6	63.08	24.2	32.4	16.9	72.5	E	.2	5.8	A.-Cu. E	Cu. ENE	------	Ω² ≡ a.
7	62.51	25.1	34.5	17.2	67.2	Variable	.3	6.7	A.-Cu. ENE	Cu. E	------	≡ a. Ω° p.
8	61.64	25	33.5	17.5	68.8	ENE	.3	7.3	Ci.	Cu. NE	------	≡ a. Ω² p.
9	60.31	25.8	34.5	18.1	69.5	NNE	.2	6.2	Ci.	Cu.	------	Ω² p.
10	59.28	26.3	34.5	18.3	65.3	ENE	.5	5.2	Ci.	Fr.-S.	------	
11	59.12	28	35.5	21.5	62.7	ENE	.3	5.8	A.-Cu. E, NE	Cu.-N. ENE	------	
12	58.53	28.8	37.8	20	59.8	Calm	------------	4.3	Ci.	Cu.	------	≡ a.
13	58.73	29.8	37.2?	23.8	61.8	Calm	------------	7	A.-Cu. ENE	Cu.-N. NE	------	
14	59.90	28	36.7	20.1	65.3	ENE	.5	4	Ci.	Fr.-Cu.	------	Ω² p.
15	60.92	27.2	35.5	19.8	67.2	ENE	.3	5	A.-Cu. E	Cu.-N	------	Ω² a.
16	62	27	35.2	20.7	67	ENE	.2	5.8	A.-Cu. E	Cu.-N. E	------	≡ a. d p.
17	62.07	26.9	34.5	20.3	69.8	ENE	.3	8.7	A.-Cu. E	Cu.-N. E	------	
18	62.79	27.2	34.5	22.1	68.9	ENE	.5	5.8	A.-Cu. E, N	Cu. ENE	------	d a. Ω² p.
19	62.66	27	35.2	20.4	69.5	NE, E	.3	7.8	A.-Cu. Var.	Cu. SE	------	
20	61.65	26.8	35	19.8	69.3	ENE	.3	5.7	A.-Cu. E	Cu. NE, ENE	------	Ω² ≡ a.
21	61.26	27.4	35	20.6	67.9	Variable	.3	8	A.-Cu. Var.	Cu. SE	------	↯ p.
22	61.29	27.5	36	21	65.3	Variable	.5	6	A.-Cu. E	Cu.-N.	------	≡ a.
23	61.01	27.4	35.5	19.9	66.3	ESE	.5	6.8	Ci. ESE	Cu. ESE	------	Ω² ≡ a.
24	61.17	28	37.5	18.8	60	E	.5	5.7	Ci.	Cu.	------	≡ a.
25	61.40	26.9	36	18.5	66.2	E	.5	7	Ci. E	Cu.	------	Ω ≡ a.
26	61.88	26.4	36.1	18.1	68.2	ESE	.5	3.2	Ci.	Cu.	------	Ω² p. ψ
27	61.38	28	36.8	18.8	63.1	NE	.5	4.7	A.-Cu. NE	Cu.	------	≡ a. Φ
28	61.04	27.8	34.5	21	68.3	E	.3	7.5	A.-Cu. E	Cu. E	------	≡ a.
29	61.78	27	34.6	20	66.1	Variable	.5	7	Ci.	Cu. E	------	Ω² ≡ a. Φ
30	61.28	27	36.5	19.6	68.2	NE	.3	5.2	Ci.	Cu.	------	Ω² p.
31	60.06	28	36.6	20.9	64.5	E	.3	6.8	A.-Cu. ESE, E	Cu.-N.	------	≡ a. ↯ p.
Mean	761.18	26.8	35.1	19.5	67	------------	.4	6.1	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	------	

METEOROLOGICAL DATA, ETC.—Continued.

DAGUPAN.

[ϕ=16° 03′ N; λ=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	759.79	25	31	20.4	77.5	S, NW	1	2	Ci. SW	Cu.	------	Ω≡² a. ∞ p. ◯ ⊕ ◒°
2	60.22	25.5	31.5	20.7	71	SE, NW	1.5	2.2	Ci.	Cu. ESE	------	Ω ≡ a. ∞ p. ◒
3	60.72	26.7	33	21.9	69	SE, NW	1.3	3.5	Ci.	Cu. E by S	------	∞ a. p. ◒
4	61.42	25.6	30.7	20.4	73.3	NW	1.3	5.2	A.-Cu. NNE	Cu.	------	Ω ≡ a. ∞ p.
5	61.80	26.3	34.9	21.9	67.8	SE, NW	1.3	4.2	Ci. ESE, SSW	Cu.	------	Ω ≡ a. ∞ p.
6	61.80	26.1	35	19.9	56.2	S, SE	1.5	2.5	Ci. SSW	Cu.	------	∞² p.
7	61.49	25	33.8	20.2	65.3	S, NW	2.2	1.3	Ci.	Cu.	------	
8	60.83	25.7	35.2	19.2	67	SE, NW	1.5	4.3	Ci. S	Cu.	------	≡Ω a. ∞² p.
9	59.55	26	34.5	20	70.7	SE, NW	1.5	4.8	Ci. N	Cu.	------	Ω° ≡ a. ∞² p.
10	58.52	27.1	37.5	20	67.3	SE, NW	1.3	5.3	A.-Cu. SE	Cu.	------	Ω° ≡ a. ∞² p.
11	58.36	28	37.9	22.4	68.3	SE, NW	1.5	1.5	A.-S.	Cu.	------	∞ p.
12	58.14	27.4	38	21.6	74.8	S, NW	1.5	.8	A.-S.	Cu.	------	≡ Ω a. ∞ p.
13	58.55	27.8	35.4	23.3	76.2	SE, NW	1.3	2.3	A.-S.	Cu.	------	≡ Ω a. ∞² p.
14	59.36	27.2	35.5	21.7	76.2	SE, NW	.8	.7	A.-Cu.	Cu.	------	≡ Ω a.
15	60.16	27.8	38.5	21.3	73	NW	1.5	1.8	A.-S.	Cu.	------	≡ ²Ω a. ∞ p.
16	61.44	27.2	33.6	23.5	77.7	NW	.8	4.8	A.-S.	S.-Cu. SE by E	7.1	≡° a. ⌈↯ ● p. ∞°
17	61.13	26.8	32.8	21.7	73.3	NW	1.8	1.7	Ci.	Cu.	------	≡ Ω a.
18	62.01	26.6	33.4	22.8	72.7	SE	1.2	6	A.-S.	S.-Cu. NE	------	d° p.
19	61.88	27.5	34	22	68	S, N	1.7	2	Ci.	Cu.	------	
20	60.88	27.8	35.5	22.5	69.7	SE, NW	1.3	2.8	Ci. SW by S	Cu.	------	≡° a. ∞ d° p.
21	60.50	28	37	22.7	67.7	SE, N	1.5	4	Ci.	Cu.-N.	------	∞ d° T ↯ p.
22	60.49	28.5	38.1	22.3	69.3	SE, NW	1.5	2	Ci.	Cu.	------	≡ Ω a. ∞° p.
23	60.30	28.2	34.6	23.6	70.5	SE, NW	1.2	4	Ci. SW	Cu.	------	∞ p.
24	60.59	27.4	36.6	21.5	69.7	SE, NW	1.3	.8	A.-S.	Cu.	------	≡ Ω² a. ∞ p.
25	60.45	27.8	38.1	21.8	70.5	SE, NW	1	1.8	Ci. WSW	Cu.	------	≡° Ω° a. ∞² p.
26	61.02	28.2	38	21.5	61.7	S, NW	1.3	.7	Ci.	Cu.	------	≡° Ω° a. ∞² p.
27	61	28	35.5	22.4	69.3	NW	1.7	2.2	Ci.	Cu.	------	≡° a. ∞² p.
28	60.45	27.7	32.6	23.9	73.5	NW	1.3	5.7	A.-S.	S.-Cu. ENE	------	∞² a. p.
29	61.08	27.9	34.9	22.8	69.3	SE, NW	1.7	3.7	A.-S.	Cu.	------	∞² a. p.
30	60.72	27.4	32.5	23.2	72.8	NW	1.3	4.5	Ci.	Cu.	------	∞² a. p.
31	59.30	28.1	35.5	23.4	67.8	SE, NW	1.7	6.5	A.-S.	S.-Cu. N by W	------	d° a. ∞² p.
Mean	760.45	27.1	35	21.8	70.2	------------	1.4	3.1	------------	------------	------	
Total	------	------	------	------	------			------	------------	------------	7.1	

VIGAN.

[ϕ=17° 34′ N; λ=120° 23′ E; barometer above sea, 24 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.	Clouds. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	760.04	26.1	------	------	69.3	NW quadrt.	1.2	1.8	A.-Cu.	Cu.	------	
2	60.48	26.4	------	------	67.8	N	.8	0	Ci.	Cu.	------	
3	61.24	26.3	------	------	73.5	W by N	.7	1	Ci.	Cu.	------	Ω a.
4	61.93	25.6	------	------	73.7	N quadrant	2.8	1.8	Ci.	Cu. NNE	------	⇙ p. ◡
5	62.78	25.4	------	------	56.2	NE	4	7	A.-Cu. E by S	Cu.	------	◯
6	61.97	26.1	------	------	51.8	ENE	2.3	2.2	Ci. SW by S	Cu.	------	◒
7	61.91	25.7	------	------	61.7	Variable	1.3	.8	Ci.	Cu.	------	
8	61.54	25.8	------	------	71.1	NW	.8	1.8	Ci. SSW	Cu. N	------	
9	60.24	25.4	------	------	77	NNW	.7	3.8	Ci.	Cu. SSE	------	
10	59.20	25.6	------	------	80.3	Variable	1	4	A.-Cu.	Cu.	------	
11	59.05	25.9	------	------	81.4	Variable	1	.7	A.-Cu.	Cu. S	------	Ω² ≡ a.
12	58.94	26.3	------	------	76.4	WNW, N	.5	0	Ci.-S.	Cu.	------	Ω² a.
13	59.04	26.6	------	------	79.4	Variable	.7	.2	Ci.-S.	Cu. NE by N	------	Ω a.
14	59.61	26.9	------	------	75.1	Variable	.7	0	Ci.	Cu.	------	
15	60.39	27.5	------	------	78.9	Variable	1.2	0	------------	Cu.	------	
16	61.53	27.6	------	------	70.6	NNW	2	2.7	A.-Cu. E	S.-Cu.	------	Ω² a.
17	61.66	27.9	------	------	61.4	NNW	1.8	1.3	Ci.	Cu.	------	
18	62.38	27.2	------	------	72.8	NNW	.8	3.7	Ci.	Cu. E	------	Ω a.
19	62.27	27.6	------	------	70.6	WNW	.5	2.2	A.-Cu. E	Cu.	------	Ω a.
20	61.21	27	------	------	75.7	Variable	1	1.2	Ci.	Cu. E by S	------	
21	61.02	26.8	------	------	76.8	Variable	.7	3.2	A.-Cu.	Cu. S by W	------	Ω a. d° ⌒ p.
22	61.01	27	------	------	76	Variable	.8	2	Ci.	Cu. ESE	------	
23	60.62	27	------	------	75.3	Variable	.7	.7	A.-Cu.	S.-Cu.	------	
24	61.10	27.4	------	------	78.2	Variable	.7	3.5	A.-Cu.	Cu.	------	◒
25	60.86	27.5	------	------	78.2	NW quadrt.	.7	2.5	Ci.	Cu. N by E	------	Ω° a.
26	61.38	27.6	------	------	80	Variable	1	3	Ci.	Cu. SW by W	------	⊕ ◒
27	61.65	27.3	------	------	76.2	Variable	1.5	.3	A.-Cu.	Cu.	------	↯ p.
28	60.91	27.4	------	------	68.2	Variable	1	0	Ci.	Cu.	------	
29	61.54	27.6	------	------	71.9	Variable	.8	1.2	A.-Cu. NE	Cu.	------	
30	61.10	27.2	------	------	76.1	N quadrant	1.3	1.8	Ci.	Cu.	------	
31	59.81	27.5	------	------	75.9	N quadrant	1.5	1.7	A.-Cu. NE by E	Cu. N	------	Ω a.
Mean	760.92	26.7	------	------	72.8	------------	1.2	1.8	------------	------------	------	
Total	------	------	------	------	------	------------		------	------------	------------	------	

METEOROLOGICAL DATA, ETC.—Continued.

APARRI.

[φ=18° 22′ N; λ=121° 34′ E; barometer above sea, 5 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12	0-10.			mm.	
1	762.50	23.1	25	21.4	87	NE	2.5	9.5		N. NE	0.3	d ⌒ a.
2	63.10	22.4	25.7	20.8	90.7	NE	2.3	10		S.-Cu. ENE	8.1	● a. p.
3	63.15	22.9	25.5	20.4	90.2	ENE	1.7	9.5		Cu.-N. E	13.7	● a. ⌒ p.
4	63.31	23.1	28.5	20.4	90.7	NE	2	9.7		Cu.-N. NW, E	7.4	d a. ● p.
5	67.14	20	22	18.4	86.5	NE	3.5	10		N. NE	19	↙ ● a. p.
6	66.15	20.6	23.1	17.5	83.2	E	2.7	10		N. E	17	● a.
7	63.69	22.6	26	18.5	82	Variable	1	6.8		S.-Cu. SE		
8	61.87	24.1	29.5	19.7	81.5	S, NE	1.3	2.7	Ci.	S.-Cu. W		
9	60.26	24.2	28.7	20	83.3	S, NE	1.3	1.5	Ci. W	S.-Cu.		
10	59.23	24.6	30.4	20.5	81.8	S	1.5	.7	A.-Cu.	S.-Cu.		
11	59.15	24.9	31.6	18.5	81.2	S, NNW	1.7	0				Ω a.
12	59.07	25.8	31.5	21.6	83.8	S, N	1.2	1.2		S.-Cu. SW		Ω ≡ a.
13	59.21	26	29.7	22.5	85	NE	1	.2		Cu.		Ω ≡ a.
14	60.66	25.7	29.7	21.5	84.9	Variable	.7	1.8		Cu.-N. NE		Ω ≡ a.
15	62.51	25.7	29.4	22	83.3	W, E	1.7	2.5		Cu.-N.	.3	Ω ≡ a. d p.
16	64.07	24.8	27.2	22.5	80.3	NE	3	10		Cu.-N. NE	2.5	●° a. ⌒
17	63.83	23.7	26.2	22.1	88.7	ENE	2	8.5		S.-Cu. ENE	3.3	●° a. p.
18	64.30	24.2	27.8	22	88.5	ENE	1.8	9.8		Cu.-N. ENE	2.5	●° a.
19	63.76	25.1	28.6	22	84.3	NE	1.2	4.7	A.-Cu. S	S.-Cu.		
20	61.93	25.3	30	20.7	83.8	Varialbe	1.2	2.5		Cu.-N. S		Ω ≡ a.
21	61.02	26	30.9	22.4	79.6	S, SW	1.5	2.5	Ci.-S. W	S.-Cu. ENE		Ω a.
22	61.41	26.6	32.8	22.7	78.5	S	1.5	2.3	A.-Cu. SW	S.-Cu. N		
23	61.48	25.6	30	21.5	85.7	SW	.8	3.2	A.-Cu. E	Cu.-N. N		
24	61.31	26.2	31	22.3	78.3	S	1.7	1	Ci.-S. W			
25	61.12	26.4	30.6	22.3	80.8	S, NE	1.5	0				
26	61.36	26.7	32.4	22.5	77.3	S	1.5	0				
27	61.63	26.6	31.7	23	80.8	S, NE	1.5	2.2		S.-Cu. NW		Ω a.
28	62.05	26.4	30.2	22.7	83.3	NE	1	2.7		Cu.-N. E, NE		
29	61.93	26.4	30.3	21.5	81.2	S, NE	1.5	0				
30	61.74	26	30	21.8	79.2	NE	1.2	0				
31	61	25.5	29.5	20.3	82.2	NE	.8	6.5	A.-Cu. N	S.-Cu. NE		Ω ≡ a.
Mean	762.09	24.7	28.9	21.2	83.5		1.6	4.3				
Total											74.1	

SANTO DOMINGO DE BASCO.

[φ=20° 28′ N; λ=121° 59′ E; barometer above sea, 18.7 meters; gravity correction not applied, —1.51 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	763.45	20.1	21.4	17.7	82.3	NE	4.2	10		N. NE	12.8	↙ ● a. p.
2	64.17	21	23.7	18.7	82.4	NE	1.6	9.8	A.-Cu.	Cu.-N. NE	6.1	↙ ● a. p. ⊕
3	63.81	22.8	25.1	20.2	83	E	2	10	A.-Cu. SW	Cu.-N. E	2.6	● a. d p.
4	64.01	22.4	27.3	20.4	85	NE	3	8.6	A.-Cu. W	N. NE	7.4	≡ a. ↙ ● p.
5	67.83	19.3	22.4	17.8	70.1	NE	4	10		N. NNE		↙ a. p.
6	66.76	20	23	17.6	69.3	NE	3.2	8	Ci.	S.-Cu.		d a. ↙ p.
7	63.80	22.4	25.3	19	72.2	ENE, E	2.4	8.6		S.-Cu. SE		
8	61.81	24.8	27.6	22.7	75.7	ESE	2.6	5.4	Ci.	Cu.-N SE		≡ p.
9	60.37	25.1	28.3	23.5	80.2	ESE	2.4	1	Ci.	Cu. SE		v a.
10	59.49	25	28.2	22.9	81.2	E	1.8	2.2	Ci.	S.-Cu.		
11	59	26	29.3	23.5	81	ESE	2.6	1.4	Ci.	Cu. S		≡ p.
12	58.62	26.2	30.3	24.4	84.4	Variable	1.4	.8	A.-Cu.	Cu. S		Ω a. p.
13	58.94	25.7	29.2	22.5	84.2	NNW	1.2	1.8		S.-Cu. SSE		Ω ≡ a. p. v
14	60.64	25.3	29.6	21.4	84.1	Variable	1	.4		Cu.		Ω a. ∞ p.
15	63.37	23.2	25.5	21.2	85.7	NNE	3.6	9.8		N. NE	1.5	d a. ↙ ●° p.
16	64.94	21.1	23	19.5	85.2	NNE	3.4	8.6		N. NE	5.2	↙ ●° a. p.
17	64.66	21.9	25.5	19.7	83.7	NE	1.4	8		Cu.-N. NE	3	● a.
18	64.84	22.2	24.8	20.4	87.8	NNE	2.6	9		N. NNE	8.2	↙ ● p.
19	64.03	23.5	27.4	21.1	86.1	E	1.2	6.2		Cu.-N. S	2.9	●° a. p.
20	62.21	24.5	28.2	21.5	87.5	E	1.6	5		Cu. E	3.8	● a. ≡ p.
21	61.06	25.7	29.3	24	86.2	ESE	2.6	6.8		Cu.-N. SSE	.8	●° a.
22	61.14	25.8	30.1	22.7	82.8	Variable	1.8	3		Cu. S, SW		Ω a.
23	61.25	25.5	29.5	22.1	80.4	SSE	1.2	2		Cu. SSE		Ω a. ◡
24	61.10	25.8	28.9	24	85.2	ESE	2.6	3		Cu.-N. S		
25	61.06	26.2	29.8	24.3	84.8	E	1.8	1.4	Ci.-S.	Cu. SE		
26	61.33	26.2	29.7	23.6	83.8	ESE	2.4	1.6	Ci.	Cu.-N. SE		
27	61.13	25.5	29.6	22.1	85.8	Variable	1.6	.4		Cu. WSW		Ω² ≡² a.
28	62.09	24.7	27.5	23.4	81.2	E	2.4	7	A.-Cu.	Cu.-N. NE	1.3	●° a. ≡ p.
29	62.05	25.6	28.6	23.6	82.3	E	2.8	2.8		Cu.-N.		≡ p.
30	61.98	24.9	29.4	21.7	87	NE	1.4	1.8	A.-Cu.	Cu.-N. E		≡² ○² a.
31	61.40	23.5	27.4	20.7	89.5	NNE	2.8	8.2		N. NNE	6.5	● a. p.
Mean	762.33	23.9	27.3	21.5	82.6		2.3	5.2				
Total											62.1	

METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

ISABELA, BASILAN.

[ϕ=6° 43′ N; λ=121° 57′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33	22.2	62	NE	------	------	⌓ ≡ a. ☈ p.
2	32.5	22	67	NE	------	------	⌓ a. < ⊤ p.
3	31.2	22.4	73	W	------	47.8	⌓● a. ☈ ↙●° p.
4	29.2	21.9	74	W	------	------	≡ d a.
5	29.5	22.2	74	N	------	.8	d a.
6	31.4	22.5	72	NE	------	.5	↙° a.
7	29.8	23.6	77	W	------	1.5	≡ a. d a. p.
8	32.6	23.6	76	W	------	2	d a.
9	29.8	22.6	78	W	------	1	d a.
10	31.5	23.4	73	W	------	------	⌓ a. ●° p.
11	32.6	22	74	W	------	1.5	≡ ↙●° a.
12	31.5	23	75	SW	------	7.1	⌓ ●° a. ∩ d° p.
13	30.2	22	81	W	------	16.8	⌓ ⊤ a. ● m. d.
14	33.4	21.6	59	NE	------	------	⌓ a.
15	30.2	21.6	66	NE	------	------	⌓ a.
16	31.5	21.4	73	NE	------	------	⌓ a.
17	32.4	20.5	75	NE	------	------	⌓ ≡ a. ⊤ < p.
18	31.5	22.5	74	W	------	------	⌓ a.
19	31.5	22	75	W	------	------	⌓ ≡ a.
20	32	22.2	70	W	------	.8	⌓° ≡ a. ●° p.
21	32.2	21.9	76	W	------	------	⌓ a.
22	32.2	23	76	W	------	------	⌓ ≡ a. < p.
23	33.5	22.6	78	Calm	------	4.6	⌓ ●° a. d° p.
24	30.6	21.5	76	W	------	------	⌓ ≡ a.
25	33	22.2	92	SW	------	2.8	≡ a. ☈ m. d. ●° p.
26	32	22.4	75	W	------	------	⌓ ⊤ a.
27	31.2	22.6	75	W	------	------	⌓ ≡ a. < p.
28	31.9	22.6	74	NE	------	------	⌓ a.
29	31.4	20.5	75	W	------	------	⌓ a.
30	33.7	21.5	65	NE	------	------	⌓ a.
31	32.1	21	64	W	------	------	⌓ ≡ a.
Mean	31.6	22.2	73.4	------	------	------	
Total	------	------	------	------	------	87.2	

ZAMBOANGA.

[ϕ=6° 54′ N; λ=122° 05′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	31.5	22.4	82	W	1	------	
2	30.5	22.9	79	W	1	------	
3	28	23.4	78	W	1	4.6	● p.
4	29.4	22.9	69	W	1	------	
5	29.2	22.4	71	ENE	1	1.5	● a. d p.
6	31.5	22.1	74	Calm	------	1.3	● p.
7	28.5	23.5	77	W	1	------	
8	30.1	23	79	W	1	------	
9	29.4	23.7	60	Calm	------	------	
10	31	23.8	75	Calm	------	------	
11	31.9	23.1	63	E	2	------	
12	31.5	24	65	E	1	------	
13	30.9	23.9	81	WSW	2	------	
14	32	21.7	78	ESE	2	------	
15	31.7	22.7	76	W	1	------	
16	32	22.4	79	W	1	------	
17	32.1	21.9	71	W	1	------	
18	32.1	------	------	------	------	------	
19	31.3	22.4	68	Calm	------	------	
20	31.2	23	73	SSW	1	------	
21	31.1	23.5	74	SSE	1	------	
22	32	21.9	68	SSE	1	8.1	● p.
23	30.6	23	74	SE	1	------	
24	30.1	22.9	71	W	1	------	
25	30.9	23	66	ESE	2	------	
26	30.4	23.5	68	ESE	1	------	
27	30	23.3	74	W	1	------	
28	32.1	22.1	70	W	1	------	
29	31.5	20.5	65	W	1	------	
30	31.6	22.1	66	ESE	1	------	
31	30.9	21.9	74	Calm	------	------	
Mean	30.9	22.8	72.3	------	1	------	
Total	------	------	------	------	------	15.5	

DAVAO.

[ϕ=7° 01′ N; λ=125° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	------	21.9	56	Calm	------	18	● p.
2	------	22.3	61	Calm	------	------	
3	------	23.2	58	NE	2	------	
4	------	22.6	58	NW	1	------	< p.
5	------	23.2	68	NE	2	------	
6	------	22.7	61	Calm	------	------	
7	------	23.3	61	NE	3	31.7	● ⊤ p.
8	------	22.8	65	Calm	------	------	
9	------	23.2	70	NNW	1	------	☈ p.
10	------	22.2	63	Calm	------	------	
11	------	23.1	60	NW	1	23.4	● ∩ p.
12	------	23.4	67	Calm	------	------	
13	------	23.4	64	NW	2	------	< p.
14	------	23	60	WNW	1	11.4	● p.
15	------	23.3	58	Calm	------	------	
16	------	22.1	53	WNW	1	------	
17	------	21.6	57	Calm	------	------	
18	------	22.3	54	NE	1	------	
19	------	21.4	66	NW	1	26.4	● p.
20	------	22.4	53	Calm	------	------	
21	------	22	60	NE	1	------	< p.
22	------	23	58	Calm	------	------	
23	------	21	63	NE	3	------	
24	------	22.2	61	NE	1	------	
25	------	23.1	65	N	3	------	
26	------	22	70	Calm	------	18.8	● p.
27	------	23.2	65	SW	2	------	
28	------	22.3	67	NNW	3	------	
29	------	23.3	61	NW	2	------	
30	------	23	55	------	------	------	
31	------	22.4	59	------	------	------	
Mean	------	22.6	61.2	------	1.1	------	
Total	------	------	------	------	------	129.7	

CARAGA.

[ϕ=7° 30′ N; λ=126° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	29.5	22.8	74	NNE	1	------	⊍ p.
2	30.1	21.9	90	NNE	3	50.5	↙° a. d ● p.
3	29.3	22.3	77	N	2	25.4	● a. p. < p.
4	30.4	22.4	73	NNE	1	.34	d ● p.
5	28.4	22	96	NE	2	52.6	● a. p.
6	26.8	21.7	84	NW	2	12.7	●° a. ● p.
7	29.9	22.3	85	Calm	------	22.6	● a. p.
8	28.9	22.3	77	NNE	1	1.8	↙●° a. ● p.
9	29.8	21.3	92	Calm	------	4.8	⊍ a. ● p.
10	29.7	21.4	89	NNE	1	------	⊕ ≡ p.
11	29.9	23.3	74	Calm	------	40.1	⌓ d a. ● a. p.
12	30.2	22.4	74	NE	1	------	∞ p.
13	31.1	20.8	69	Calm	------	------	∞ p.
14	28.4	22.2	85	NE	1	1	●° a. p.
15	30.1	21.4	76	NE	1	------	↙●° a.
16	29.4	21.6	76	NE	1	4.1	● a.
17	29.5	21.8	73	NE	1	.5	●° p.
18	30.2	21.4	63	N	2	.3	∩² d a. ●° p.
19	31.4	21.6	66	Calm	------	------	d a. ↙° p.
20	31.1	21.9	75	N	1	.8	d a. ●° p.
21	28.6	21.8	94	Calm	------	87.1	●° a. ● p.
22	28.7	21	80	NE	2	16.5	● a. d p.
23	30.3	21.1	79	NE	2	------	
24	29.3	21.7	79	N	3	1.8	d° a. ☈ ●° ⊍ ϖ p.
25	28.5	22.7	83	N	2	7.9	d ∩ a. ● ⊍ p.
26	29.7	21.8	78	E	1	.5	●° a. ⊍ p.
27	30.3	22.3	76	NNE	3	------	
28	29.8	20.6	72	NE	3	------	↙° a.
29	30.1	20.6	82	NE	4	------	d° a. p. ⊍ ϖ p.
30	30.4	19.7	69	NE	5	------	↙° a. ⊍ ϖ p.
31	29.9	21.4	77	NE	2	------	
Mean	29.7	21.7	78.6	------	1 5	------	
Total	------	------	------	------	------	365	

METEOROLOGICAL DATA, ETC.—Continued.

DAPITAN.
[ϕ=8° 38′ N; λ=123° 23′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1		24.5	64	E	2		
2		24	64	E	2	1.8	d ● p.
3		24.2	69	NE	3		↙° a.
4		24.6	64	NE	2	1	●° p.
5		22.7	82	NE	3	28.7	● a. p. ↙° p.
6		22.4	72	NE	3	1	●° ↙° a. p.
7		22	78	NE	4	62	↙ ● a. p.
8		21.8	73	Calm		52.1	↙ ● a. ●° p.
9		24.1	71	Calm		3	●° a. d° p.
10		22.4	64	E	2	.5	●° a. p.
11		24	67	E	2	6.4	● a. p.
12		21.9	68	E	3	2.3	● a.
13		24.6	68	E	2		
14		24.3	70	E	2		
15		24	79	E	3		
16		24.3	82	E	3		d° p.
17		24.2	80	E	2		d° a.
18		25	81	E	2		⊍ p.
19		23	83	E	2		Ω a.
20		22	80	NE	3	5.3	● ⌒ a. ↙ ●° p.
21		24	72	NE	2		⊕ ⊍ p.
22		24.2	80	NE	2		⊍ p.
23		22.8	83	NE	2	1.3	Ω d° a. ●° p.
24		23.3	74	NE	3		d° a.
25		24.1	88	NE	2		⊍ p.
26		24.4	90	NE	2		
27		22.8	85	E	2		d° a.
28		23.7	91	E	2		
29		24.2	84	E	2		
30		24.4	80	E	2		Ω a.
31		22.2	87	E	2		Ω a.
Mean		23.6	76.5		2.2		
Total						165.4	

BALINGASAG.
[ϕ=8° 45′ N; λ=124° 44′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	35.2	20.5	72	W by S	1		
2	30.9	21.4	85	Calm		2.5	●° p.
3	33	22	67	WSW	1	4.6	●° a.
4	31.7	19.9	61	WSW	1		
5	26.2	22.1	85	Calm		17.8	d a. p. ● p.
6	26.4	20.6	84	WSW	1		d a.
7	28	20.7	82	W by S	1	19.8	● p.
8	27.3	20.1	80	W by S	1	.5	●° a.
9	29.9	20	71	Calm			
10	30.3	20.5	76	W by S	1		
11	31.1	20.7	79	W by S	2	17	● ⊤ p.
12	32.2	20	75	Calm			
13	33.4	19.4	67	NW	2		
14	35.2	18	65	W by S	2		
15	35.7	19.4	58	W by S	1		
16	34.3	19.9	60	W by S	1		
17	37	20.4	53	W	1		
18	34.4	18.9	56	W by S	2		
19	30.9	19.5	70	W by S	1		
20	30.5	20	79	NW	2	7.6	●° ⊤ p.
21	32.3	19.1	70	W by S	1		
22	35.3	20.1	66	W by S	2		
23	34.4	19.5	63	W by S	1		
24	30.2	21.6	76	Calm			⊍ p.
25	34.2	20.3	65	W by S	1		
26	33.5	19.1	58	SW	2		
27	34.5	18.4	60	SW	1		
28	33.3		52	NW	3		
29	33.3	21.5	55	NW	2		
30	33.9	17.2	58	Calm			
31	31.2	20	60	W by N	3		
Mean	32.2	20	68		1.2		
Total						69.8	

BUTUAN.
[ϕ=8° 55′ N; λ=125° 31′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	29.6	22		NW	1	4.8	Ω ≡ a. ● p.
2	29.9	23		NNW	1	9	d a. ∞ ● a. p.
3	29.3	22.6		N	1	30.5	●² ≡ a. d ⌒ p.
4	29.8	21.5		NNW	1	2.3	Ω ≡ a. ●° p.
5	28.8	22.3		SE	1	39.9	≡ a. ● a. p.
6	26.8	22.3		W	1	75.3	● ∞ a. p.
7	27.5	22.7		N	2	34.8	≡ a. ● a. p.
8	27.3	22.5		NNW	1	12.4	● a. p. ∞ p.
9	29	21		W	1	1	Ω ≡ a. ●° p.
10	28.1	22.7		NE	1	5.4	≡ ● a. ∞ p.
11	30	22.5		NW	1	10.5	Ω ●° ∞ a. ⊤ ● p
12	31	23.5		NW	1		Ω ∞ a. ●° p.
13	31	22.5		S	1		Ω a.
14	31.7	21.8		NW	1		Ω ∞ a. d° a. p.
15	30	20.5		N	1	.3	≡ a. ●° p.
16	29.6	20		N	1	1.8	Ω ∞ a. ●° a. p. ⌒ p.
17	29.6	22		WNW	1	.6	Ω ●° a.
18	30.5	20.6		WNW	1		Ω ∞ a.
19	30	21.5		ENE	1	1.1	●° a. p.
20	29.3	22		NNW	1	5.6	Ω ≡ a. ●° a. p.
21	29.5	21		E	1	8.8	Ω ∞ ●° a. ● p.
22	29.6	21.5		W	1	.1	Ω ∞ d a. ⌒ p.
23	29.5	22.2		N	1		Ω ≡ d° a.
24	28.9	22.4		NW	1	16.5	Ω ∞ ● a. ●° p.
25	29.4	22.5		NNW	1		Ω ∞ a.
26	30.9	22		NNW	2		Ω ≡ a.
27	30.9	21.5		NNW	1		Ω ≡ a.
28	29.9	21.5		WNW	1	1.8	Ω ≡ a. ● p.
29	28.2	22.4		W	1	5.5	● a. ⊕ p.
30	28.9	21.2		WNW	2	3.3	Ω ≡ a. ●° p.
31	28.3	20.6		WNW	1		⊕ ≡ a.
Mean	29.4	21.9			1.1		
Total						271.3	

YAP (Western Carolines).
[ϕ=9° 29′ N; λ=138° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.1	23.6	81	E	5		
2	32.3	23.5	75	E	5	6.6	
3	31.9	22.3	87	E	6	6.9	
4	33.1	23	92	E	3		
5	32	22.9	83	NE	2	9.7	
6	31.7	22.4	73	NE	3		
7	30.9	23.1	69	ENE	1		
8	32.1	24.2	81	NE	3	2	
9	28.8	23.2	86	E	3	7.9	
10	32	22.7	71	NE	3	2.5	
11	31.3	22.5	85	NE	3		
12	32.5	23.3	76	NE	4	4.3	
13	32.1	23.2	85	NE	2	.5	
14	31.2	20.1	68	NE	3		
15	32	22.2	69	NE	3	3.6	
16	32.1	22.9	97	NE	4	1	
17	32.2	22.9	71	NE	3		
18	33	21.6	76	NE	3	1	
19	33.3	22.5	79	NE	3	1.3	
20	33.2	22.2	62	NE	4	4.3	
21	30.3	22.1	81	NE	3	3.3	
22	32.8	22.8	67	NE	4	20.8	
23	31.7	22.5	72	NE	4	.5	
24	32.5	24	73	NE	4	9.9	
25	31.2	22.5	71	NE	4	2	
26	32.6	22.7	72	NE	3	.5	
27	31.5	22.5	85	NE	4	3	
28	32.5	22.4	82	NE	3	11.4	
29	31.5	23.2	81	NE	3	30	↯ ⊤ p. ↙ ●
30	25	22	92	WNW	9	132.1	↙ ●² a. p.
31	27.5	22.1	88	WSW	6	2.3	
Mean	31.6	22.7	78.4		3.6		
Total						267.4	

METEOROLOGICAL DATA, ETC.—Continued.

MAASIN.

[ϕ=10° 08′ N; λ=124° 50′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	29.4	22	66	W	2	------	d p.
2	30	22.2	58	E	4	5.3	↙ a. p. ● p.
3	29	22.6	67	NE	2	15.4	● ↙ a.
4	30.5	22	73	W	1	6.4	↙ a. ● p.
5	27	22.8	85	NE	1	59.7	● d a. p. ⋖ p.
6	29	22.7	81	NE	1	2	●° a. p. ⋖ p.
7	27.1	22.2	88	E	2	------	●° ⋖ a. p.
8	27.4	22.3	87	S	1	6.4	↙ a. ● p.
9	29.6	22.1	70	S	3	------	⋖ p.
10	28.1	22.7	73	E	1	26.9	● a.
11	29.3	23.1	82	SW	1	------	↙ a. p.
12	30.5	23.1	69	E	5	------	↙ p.
13	31	22.7	72	SW	3	------	∞ p.
14	31.9	23.4	56	NE	2	------	
15	31.3	22	64	NE	3	4.3	↙° ● p.
16	30.9	21	72	NE	1	------	d a.
17	30.9	21.6	55	E	4	------	↙ a. p.
18	31.5	21.8	49	E	4	------	
19	28.9	21.5	69	N	1	3	↙ a. ≡ ●° a. p.
20	27.4	22.8	81	NW	1	10.4	● a. p.
21	30.7	22.1	57	E	2	------	d p.
22	31	21.5	51	E	4	------	d ↙ a. ⊎ p.
23	28.7	23.2	74	W	1	------	d ⌒ a. ⊎ p.
24	28.4	22.4	92	S	1	36.6	● a. p. ∞ ⦶ p.
25	29.5	21.4	72	SW	2	------	
26	29.5	21	76	SW	2	------	⋖ p.
27	29.5	22.5	72	W	1	------	⌒ a. d p.
28	29.6	21.1	68	SW	2	------	⌒ d p.
29	29.5	21	61	W	1	------	⊎ p.
30	29.1	21.7	67	SW	1	------	●° a.
31	29.8	20.1	59	NNW	1	------	⦶ a.
Mean	29.5	22.1	69.9	------------	2	------	
Total	------	------	------	------------	------	176.4	

BACOLOD.

[ϕ=10° 41′ N; λ=122° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	28	23.4	76	NE	6	5.3	● ⌒^{2} a. ◯° ⌒ ●° ↙° p.
2	28.3	23	74	NNE	5	------	d° a.
3	28.6	23.2	75	N	6	------	
4	27.8	22.5	83	NNE	6	------	⌒ d° a.
5	27.1	24	76	NE	5	1.3	●° a. p.
6	27.5	23.5	81	NE	6	1.3	↙° a. p. ●° p.
7	28.1	23.3	77	NNE	5	------	d° p.
8	28.4	23.2	77	NE	5	------	≡^{2} a. ◯° p.
9	27.7	23.5	79	N	4	.8	●° a.
10	28.9	23.9	83	NNE	5	.5	●° a. ⊤° p.
11	28.6	23.7	78	N by E	5	.3	⌒° ●° p.
12	30.4	23.3	83	N by W	4	------	Ω^2 a.
13	29.7	21	66	NNW	3	------	Ω^2 ≡° a.
14	30.8	23.4	69	NNE	4	------	Ω° ≡° a.
15	31	22.7	65	N	4	------	↙° p.
16	29.9	22	62	NE	5	------	≡^{2} a.
17	29.8	23.5	62	NNE	5	------	≡° a. ↙° p.
18	30	22	67	N by E	6	------	≡^{2} a.
19	29.9	22.9	70	N by E	6	------	≡^{2}◯°a. d°⊏°p.
20	26.4	23	88	NE	5	3.3	●° a.
21	29.8	20.7	69	N by E	5	------	Ω° ≡^{2} a.
22	29.7	22.3	71	N by E	5	------	≡^{2} a. ◯° ⊎° p.
23	29.9	23.5	59	NE	5	------	≡^{2} ◯° a. ⊎ p.
24	30.5	23.6	58	N by E	5	------	≡° a.
25	29.6	23.2	72	N by W	5	------	≡° a.
26	30.4	22.2	72	N	5	------	≡° Ω° a.
27	31.3	20.2	69	N	4	------	≡^{2} Ω^2 a. ◯° p.
28	30.2	22	60	N by W	6	------	↙° p.
29	29.7	22.2	58	NNE	5	------	⊎° p.
30	30.4	22.5	58	NNE	5	------	⌒ a.
31	29.7	22.6	65	N	6	------	◯° a.
Mean	29.3	22.8	71	------------	5	------	
Total	------	------	------	------------	------	12.8	

SAN JOSE BUENAVISTA.

[ϕ=10° 44′ N; λ=121° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	31.3	20.5	68	N	1	------	Ω a. ↙° p.
2	32.8	21.6	63	NNW	2	------	Ω a.
3	32.5	22.9	59	WSW	1	------	
4	30.8	20.4	67	NNW	2	------	d° p.
5	31.8	21.5	70	Calm	------	------	↙° p.
6	34.4	22.6	50	N	1	------	↙° a. p.
7	32.9	21.9	57	NW	1	------	
8	30.5	19.4	64	W	1	------	Ω a.
9	30.2	21.7	72	Calm	------	------	
10	31.7	22.1	70	NNW	1	------	↙° d° p.
11	32	22.1	67	N	1	------	Ω a.
12	32.1	22.8	75	N	2	------	Ω a.
13	32.1	20.3	71	NW	1	------	Ω a.
14	33.5	20.3	64	N	1	------	Ω a.
15	33.9	20.4	66	NNW	1	------	Ω a.
16	33.5	20.5	57	NNW	2	------	Ω a.
17	31.9	19.1	59	NW	1	------	Ω a.
18	33.1	20.2	55	NNW	2	------	Ω a. ↙° p.
19	32.8	19.7	51	NNW	2	------	●° p.
20	30.8	22.1	73	N	1	------	⌒ a. d° p.
21	31.8	20	62	WNW	2	------	Ω a.
22	33.4	19.7	66	NNW	1	------	Ω a. ⊎° p.
23	32.7	19.2	59	W	1	------	⊎ p.
24	32.3	20.2	65	NW	1	------	Ω a.
25	32.3	21.6	65	WNW	1	------	
26	32.1	20.4	62	W	1	------	Ω a.
27	32.1	20	67	WSW	1	------	Ω a.
28	32.4	19	56	SW	1	------	Ω a.
29	32.3	18.7	51	W	2	------	
30	32.8	19	51	NNW	1	------	
31	32.2	19.3	55	NW	2	------	⦶ p.
Mean	32.3	20.6	62.5	------------	1.2	------	
Total	------	------	------	------------	------	------	

TUBURAN.

[ϕ=10° 44′ N; λ=123° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	28.2	21.9	90	N	3	22.4	●^{2} p.
2	27.3	22.4	89	N	2	2.8	●° a. p.
3	30.3	23	72	Calm	------	------	d p.
4	30.4	21.4	86	N	2	1.8	●° a. ⊕^{2} ◯° p.
5	28.3	22.9	72	N	1	7.9	● a. ◯^{2} p.
6	29	22.1	80	N	4	3.3	↙° a. ●° p.
7	28.3	21.6	87	N	4	1.3	↙° a. ●° p.
8	27.7	20.9	77	N	1	------	Ω^2 ◯^{2} a. ⋖^{2} p.
9	28.5	23.2	84	N by W	2	------	d a. p.
10	27.3	22.7	93	Calm	------	9.7	Ω^2 ●^{2} a. ●° p.
11	27.7	23	90	N by W	2	3	●° a. p.
12	30.2	22.4	78	Calm	------	------	Ω° a. ∞ p.
13	30.4	20.9	68	Calm	------	------	Ω^2 ≡^{2} a.
14	33	21.5	53	NNE	2	------	Ω^2 ≡^{2} a.
15	31.2	20.6	76	NNW	2	------	Ω^2 a. d p.
16	31.2	20.5	68	N	2	------	≡^{2} a. ⌒^{2} p.
17	30	22.7	72	N by W	2	1.3	●° ≡^{2} a. ⋖° p.
18	31.2	19.8	75	N	3	------	Ω^2 ≡^{2} a. ⋖° p.
19	29.5	20.4	80	NNW	2	------	Ω^2 ≡^{2} a. d p.
20	27	23	87	Calm	------	13.7	●^{2} a. ●° p.
21	31	19.9	75	N	2	------	Ω^2 ≡^{2}a. ◯° ∞p.
22	30.4	20.6	73	N	2	------	◯^{2} a. p.
23	30.6	21.9	70	N	2	------	d p.
24	29.5	21.9	76	Calm	------	------	Ω^2≡°◯°a. ◯^{2}dp.
25	30.1	20.8	69	N	1	------	Ω^2 ≡^{2} a. ∞ p.
26	29.9	20.4	75	NNW	2	------	≡^{2} a. ∞ p.
27	30.7	21.1	69	N by W	1	------	∞ p.
28	31.3	20.7	60	N by W	2	------	Ω^2 ≡^{2} a.
29	30.4	19.9	64	N	2	------	Ω° ◯° a. d p.
30	30.3	21	62	N by W	3	------	◯^{2} a.
31	30.1	20.3	67	N	1	------	Ω^2 a. ◯° p.
Mean	29.7	21.5	75.4	------------	1.7	------	
Total	------	------	------	------------	------	67.2	

METEOROLOGICAL DATA, ETC.—Continued.

BORONGAN.

[ϕ=11° 42′ N; λ=125° 25′ E]

Day.	Temperature.		Relative humidity, 2 p. m.	Wind, 2 p. m.		Rainfall.	Miscellaneous.
	Maximum.	Minimum.		Direction.	Force.		
	°C.	°C.	P. ct.		0-12.	mm.	
1	28.8	21.4	85	NE	3	17.8	Ω a. ↯ ●° a. p.
2	27.8	22.1	75	NE	4	62.7	●^{2} a. p. ↯° p.
3	30.2	22	69	NE	3	15.2	↯° a. ↯ ●° p.
4	29.7	22.7	72	NE	5	6.1	↯° a. ↯ ●° p.
5	28.6	22.5	74	NE	5	13.2	↯^{2} a. p. ↯ ●° a
6	30.3	22.1	73	NE	5	9.9	↯^{2} ↯ ●° a. p.
7	29.8	23.4	73	ENE	4	3	↯ a. ↯ ●° a. p.
8	29.4	22.5	85	NE	3	11.4	●° a. ↯ ●° p.
9	30.8	21.9	71	NE	2	8.6	● ◯ a. ↯ ●° p.
10	29.1	22.5	78	NE	3	12.7	↯ ●° a. p.
11	27.8	23.9	92	NE	2	38.4	↯ ●° a. p. ●^{2} p.
12	30.9	23.8	68	ENE	1	5.1	↯ ●° a.
13	31.6	21.8	66	SE	1	.8	●° a. p.
14	32.2	23.3	68	ENE	2	------	
15	30.8	22.1	63	ENE	3	1.5	●° a.
16	31.6	21.4	64	NE	3	------	≡ a. ↯° p.
17	30.8	22.7	66	NE	3	4.6	↯ ● a. ↯ p.
18	31.3	22.8	65	NNE	3	------	↯ a. p.
19	30.3	21.3	76	NNE	3	8.6	Ω a. ↯ ● a. p.
20	29.3	22.3	76	ESE	3	26.7	↯ ● a. p.
21	31.8	24.3	69	ENE	3	------	↯ a. ↯^{2} p.
22	31.3	21.8	64	NE	3	3	●° a. ↯ ●° p.
23	31.8	22.9	65	ENE	2	4.1	↯ ●° a.
24	30.5	22.8	64	NE	3	9.1	● a. ↯ p.
25	30.6	21.2	66	NE	4	2.8	↯ ●° a. ↯^{2} p.
26	31.3	22.5	69	NE	3	5.6	Ω a. ↯ ●° p.
27	31.6	22.3	67	NE	2	------	Ω a.
28	31.9	20.4	58	NE	2	------	Ω a.
29	31.3	21.2	75	NNE	3	------	Ω a. ψ p.
30	30.6	22.4	71	NNE	3	3.8	↯ ●° ◯ a. ψ p.
31	32	21.1	59	NNE	2	------	Ω a.
Mean	30.5	22.3	70.5	------------	2.9	------	
Total	------	------	------	------------	------	274.7	

ROMBLON.

[ϕ=12° 35′ N; λ=122° 16′ E]

Day.	Temperature.		Relative humidity, 2 p. m.	Wind, 2 p. m.		Rainfall.	Miscellaneous.
	Maximum.	Minimum.		Direction.	Force.		
	°C.	°C.	P. ct.		0-12.	mm.	
1	29.4	22.6	68	N	2	------	
2	29.5	22.6	73	ENE	2	------	
3	30	22.4	57	ENE	2	------	d a.
4	29.5	23.4	70	N	1	33	d a. ●^{2} p.
5	29.5	23.4	70	ENE	2	12.7	● ↯° a. p.
6	29.5	22.6	72	NE	3	------	d p.
7	29	22.8	68	NE	2	------	d p.
8	29	22.6	70	ENE	1	------	d a.
9	29	22.6	71	Calm	------	2	●° p.
10	29.5	23.8	73	NE	1	------	
11	31	23.4	68	NE	2	4.6	↯ ●°
12	31	24	77	ENE	1	------	
13	30.5	23.4	70	Calm	------	------	
14	30.9	24.4	70	N	1	------	
15	30.6	23.6	66	NNE	1	------	
16	30.8	22.8	56	N	1	------	
17	31	22	60	NNE	2	------	
18	30	23.8	71	NE	1	------	d a.
19	30	23.9	64	NNW	2	------	
20	31	25.3	68	NW	1	------	
21	30.5	25.4	65	SE	1	------	ψ a.
22	30.1	23.2	66	NE	1	------	
23	31	25	66	NNE	1	------	
24	31	25	61	NE	1	------	ψ a.
25	31	25	64	NNE	2	------	
26	32.4	24.5	64	NNE	2	------	
27	30.5	23.6	62	E	1	------	ψ a.
28	31	21.6	59	SE	1	------	
29	31.4	23.6	64	NE	2	------	ψ a.
30	31	23.6	61	N	1	------	ψ a.
31	31	23	57	NW	1	------	
Mean	30.4	23.5	66.2	------------	1.4	------	
Total	------	------	------	------------	------	52.3	

GUBAT.

[ϕ=12° 55′ N; λ=124° 08′ E]

Day.	Temperature.		Relative humidity, 2 p. m.	Wind, 2 p. m.		Rainfall.	Miscellaneous.
	Maximum.	Minimum.		Direction.	Force.		
	°C.	°C.	P. ct.		0-12.	mm.	
1	27	20.5	87	NE	4	24.1	●° a.
2	29.9	21.5	75	NE	4	------	
3	29.1	21.5	80	NE	4	------	
4	27.5	20.8	97	NE	4	21.3	●° a. ↯ ●° p.
5	28.2	20.9	76	NE	5	11.9	↯ ●° a.
6	28	20.6	76	NE	5	------	
7	29.5	21	77	NE	4	------	
8	28.6	22	80	NE	3	------	
9	26.7	21.7	87	NE	3	12.7	●° a. p.
10	29.6	21.5	81	NE	3	------	
11	30.1	22	86	NE	3	8.9	●° a.
12	30.5	23.3	74	NE	3	------	
13	31	23	78	NE	2	------	
14	31.5	23.2	75	NE	2	------	
15	29.9	23.7	77	NE	2	------	
16	30	20.4	76	N	3	------	
17	30	20.4	74	N	3	------	
18	29.8	21.7	77	NE	4	3.6	●° a.
19	30.1	21.6	77	NE	3	5.1	●° p.
20	31	23.5	77	NE	4	------	
21	29.8	23.6	74	NE	4	------	
22	31.5	23	69	NE	3	------	
23	30	22.1	71	NE	2	------	
24	30.1	21.4	75	NE	3	------	
25	31	21.5	74	NE	4	------	
26	31.7	20.5	74	NE	3	------	
27	32	23.7	70	NE	3	------	
28	31.3	19.9	68	NE	3	------	
29	31.2	21	72	NE	2	------	
30	31.5	20	71	NE	3	------	
31	31.2	19.6	62	NE	2	------	
Mean	30	21.6	76.4	------------	3.2	------	
Total	------	------	------	------------	------	87.6	

SUMAY, GUAM (Ladrones Islands).

[ϕ=13° 22′ N; λ=144° 45′ E]

Day.	Temperature.		Relative humidity, 2 p. m.	Wind, 2 p. m.		Rainfall.	Miscellaneous.
	Maximum.	Minimum.		Direction.	Force.		
	°C.	°C.	P. ct.		0-12.	mm.	
1	29.6	21.2	69	SE	3	------	
2	29.8	21.8	68	E	3	------	
3	30	21.8	66	NE	3	------	
4	30	21.6	67	E	3	------	
5	29.8	21.6	59	E	2	------	
6	29.4	22	65	E	3	------	
7	28	21.4	77	NE	4	------	
8	29.8	22	66	E	3	------	
9	29.8	21.4	59	SE	3	------	
10	28.2	21.6	69	NE	3	------	
11	28.6	21.6	80	NE	4	------	
12	28.6	21.4	76	NE	3	------	
13	28.8	21.6	68	NE	3	------	
14	28.2	21.4	70	NE	5	------	
15	28.2	21.6	73	NE	5	0.8	↯^{2} ●°
16	28.4	21.8	73	NE	4	------	
17	29.8	21	77	NE	5	------	
18	28.2	21.2	68	NE	5	------	
19	28.2	21.8	70	NE	4	------	
20	26.4	22.6	82	NE	4	12.7	↯ ●
21	27.6	22	70	NE	5	------	
22	27.2	22	72	NE	5	2.5	↯^{2} ●
23	27.6	22	74	NE	5	------	
24	28	21.8	77	NE	5	------	
25	28.2	23.3	71	NE	5	------	
26	28.4	23.9	70	NE	5	------	
27	27.6	24.4	71	NE	4	------	
28	27.8	23.1	87	NE	4	12.7	↯ ●
29	28.4	23.9	88	E	5	8.9	↯ ●^{2}
30	27.8	22.8	81	SE	4	20.3	↯ ●^{2}
31	29	22.8	77	SE	4	7.6	↯ ● ⚡^{2} T^2
Mean	28.6	22.1	72.3	------------	4	------	
Total	------	------	------	------------	------	65.5	

METEOROLOGICAL DATA, ETC.—Continued.

NUEVA CACERES.

[ϕ=13° 38′ N; λ=123° 12′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C	°C.	P. ct.		0–12.	mm.	
1	28.6	18.6	67	NW	2	------	
2	29	18.5	64	NW	4	------	
3	30.4	17.5	67	NNW	3	------	
4	30.8	16.2	90	NNW	2	------	d p.
5	29.2	22.4	65	NNW	4	32.3	● a.
6	28.5	21.4	63	N	4	------	
7	27.6	20	68	NNW	4	------	
8	28.5	19	68	NNW	4	------	
9	29	19	81	NNW	4	------	
10	30	19.5	76	NNW	4	------	
11	30.5	20	72	NW	3	------	
12	31.5	21.8	64	NNW	3	------	
13	31.5	------	64	N	3	------	≡ a.
14	31.8	20.6	66	NNW	4	------	≡ a.
15	28.7	19	84	NNW	2	7.6	●° p.
16	30	17.2	54	NW	4	------	
17	30.5	17.5	60	NNW	2	------	
18	31	17.5	63	NW	4	------	
19	30	18	61	NW	4	------	
20	31.5	20	58	NNW	3	------	
21	31.4	19.5	57	N	3	------	
22	31.2	17.8	66	NW	3	------	
23	31.5	18.5	62	NNE	2	------	
24	32	18	63	N	4	------	
25	32	18	63	N	3	------	
26	32.5	17.5	52	N	2	------	
27	33	17	52	N	1	------	
28	32.6	17	58	N	3	------	
29	32.5	16.4	58	N	3	------	
30	32.5	16.2	59	N	3	------	
31	32	17	55	N	2	------	
Mean	30.7	18.6	64.5	------------	3.1	------	
Total	------	------	------	------------	------	39.9	

BATANGAS.

[ϕ=13° 45′ N; λ=121° 03′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	34.8	20	64	E	2	------	
2	33.5	20.5	62	E	2	------	ω p.
3	32.9	19.1	50	E	2	------	
4	33.2	20.1	61	SW	1	------	d p.
5	31.6	21.8	63	ENE	3	------	
6	30	21.3	58	ESE	3	------	d° a. ↯° p.
7	32.5	20.3	54	ENE	2	------	
8	32.9	21.4	51	ENE	2	------	
9	36.5	20.6	50	ENE	2	------	
10	34.2	22.5	65	SE	2	------	
11	35.6	22.5	54	E	2	------	
12	36.4	22.4	56	S	3	------	↯° p.
13	37	22.1	57	SSE	2	------	
14	35.8	21.6	56	E	2	------	
15	34.5	21.8	57	ESE	2	0.6	d a. p.
16	32.4	20.7	71	E	2	.7	d a. p.
17	34.3	21.5	59	ENE	2	------	
18	34	22	60	E	2	------	
19	34.7	20.4	59	NE	2	------	
20	33.1	20.2	58	E	2	------	
21	34.4	22.9	63	SSE	2	------	
22	35.1	22.9	67	SSE	2	------	
23	35.7	21.4	48	SE	2	------	
24	35.1	20.7	48	SSE	3	------	
25	34.8	21.8	51	SE	3	------	↯° p.
26	35.5	21.2	42	E	2	------	
27	37.2	20.4	53	E	2	------	
28	35.4	20.5	57	E	1	------	
29	35	19.9	48	E	2	------	
30	36.4	19.9	46	E	2	------	
31	37.2	19	55	SW	1	------	
Mean	34.6	21.1	56.2	------------	2.1	------	
Total	------	------	------	------------	------	1.3	

SAN ANTONIO.

[ϕ=14° 23′ N; λ=121° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	29.5	18	69	NE	4	------	↯° p.
2	28	17.8	87	NE	3	------	⌒ p.
3	27.2	19	91	E	5	------	↯ ⌒ p.
4	28	20	80	NE	2	1.3	⌒ p. ●
5	26.5	20.5	95	NE	6	31.7	⌒ a. ↯ p. ●
6	24.5	18.5	91	NE	5	10.7	⌒ ↯ p. ●
7	26	18	82	NE	4	1.5	⌒ a. ↯° p. ●
8	27	18.9	76	NE	2	------	
9	27.6	18	76	NE	4	------	↯° p.
10	28.5	19.4	81	NE	4	------	⌒ a. p. ↯° p.
11	29.1	20.4	73	NE	5	------	↯ p.
12	29.9	20.1	80	NE	4	------	↯° p.
13	30.6	20.1	80	NE	2	------	
14	30	19.8	70	E	4	------	↯° p.
15	29	20	88	NE	4	11.2	⌒ a. ↯° p. ●
16	27.2	20.6	76	NE	4	8.4	⌒ a. p. ↯° p. ●
17	26.8	20.6	64	E	5	8.6	⌒ a. ↯ p. ●
18	28.6	20 6	70	E	4	1	⌒ ↯° p. ●°
19	28.2	19.9	85	E	3	------	⌒ a. p.
20	27.8	20	97	E	1	2.5	●
21	30.1	20.5	76	E	3	2.5	●
22	28.1	20.6	62	E	3	------	
23	28.9	20.2	61	E	4	------	⌒ a. p. ↯° p.
24	29.5	19.9	63	E	3	------	
25	29.1	20.3	65	E	4	------	↯° p.
26	28.9	18.5	55	E	3	------	
27	31.5	17.9	57	Calm	------	------	
28	29	18	67	E	3	------	
29	28.9	17	60	E	3	------	
30	29	16.9	63	E	4	------	↯° p.
31	------	16.5	62	E	4	------	↯° p.
Mean	28.4	19.2	74.3	------------	3.5	------	
Total	------	------	------	------------	------	79.4	

SILANG.

[ϕ=14° 14′ N; λ=120° 58′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	29	18.1	71	NE	3	------	≡ a. ↯° p.
2	30	18.8	73	E	5	------	d° ↯ p.
3	30.2	18.9	69	E	2	------	≡ a.
4	30.6	18.6	68	E	3	------	≡ a. ↯° p.
5	30.6	18	70	NE	5	4.3	● a. ↯ p.
6	30.5	17.7	75	E	5	------	Ω a. ↯ p.
7	30	17.9	72	E	3	------	≡ a. ↯° p.
8	30	18.2	70	E	3	------	d° a.
9	31.6	18.6	67	E	3	------	≡ a. ↯° p.
10	31.4	19.2	62	E	3	------	≡ a. ↯° p.
11	31.7	19	63	E	2	------	↯° p.
12	31.6	19.6	64	E	2	------	Ω ≡ a. ↯° p.
13	31.3	19.6	73	E	2	------	↯° p.
14	31.6	19.8	71	E	3	------	Ω a.
15	31.3	19.8	71	E	3	------	Ω a. ↯° p.
16	30.8	19.6	73	E	3	------	
17	31.2	19	67	E	3	4.6	● a. ●° p.
18	31.2	19.8	73	E	3	------	Ω a. ↯° p.
19	31.6	19.7	71	E	2	------	
20	31.2	20	68	E	3	------	
21	31.6	19.8	68	E	2	------	Ω a. ↯° p.
22	32	20	68	E	2	------	
23	32	19.9	68	E	2	------	Ω a.
24	32	20	69	E	3	------	↯° a. p.
25	32.2	20	67	E	3	------	Ω a.
26	32.6	20.1	68	E	2	------	
27	32.6	20.2	68	E	3	------	↯° p.
28	32.8	20.3	68	E	2	------	↯° p.
29	32.8	20	67	E	3	------	
30	32.9	20.2	66	E	3	------	
31	31.6	20.6	66	E	3	------	Ω a. ↯° p.
Mean	31.4	19.4	68.8	------------	2.9	------	
Total	------	------	------	------------	------	8.9	

METEOROLOGICAL DATA, ETC.—Continued.

CORREGIDOR.
[ϕ=14° 23′ N; λ=120° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.9	21.2	61	NE	2		
2	31.2	20.2	66	E	2		
3	31	21.1	58	NE	2		
4	32.3	21.5	64	NE	2		
5	28.3	22.8	84	E	2		d p.
6	28.2	21.2	64	E	4		
7	30.2	21	61	NE	2		
8	29.4	21.2	66	NE	2		
9	29.2	21.5	61	NE	2		
10	30.3	21.9	66	NE	2		
11	31.2	22.4	66	NE	2		
12	31.2	22.4	66	NE	2		
13	31.9	22.3	65	NE	1		
14	33.5	22.2	66	NE	2		
15	31.2	22.5	68	NE	2		
16	30	22.2	71	NE	2		
17	29.7	22.9	76	E	1		
18	30.7	22.6	61	NE	1		
19	30.7	22.9	65	NE	2		
20	32	22.8	64	N	1		
21	31.7	22.9	68	NE	2		
22	32.2	23	65	NE	2		
23	31.3	22.8	62	E	1		
24	31.3	22.7	61	NE	2		
25	32	22	55	NE	2		
26	32.5	21.4	63	NE	2		
27	33.8	21.2	57	N	1		
28	32.8	22.5	66	NE	2		
29	31.8	22.7	61	N	1		
30	31.8	21.4	61	N	1		
31	32.2	22.5	69	N	1		ϟ ⊤ p.
Mean	31.2	22.1	64.7		1.8		
Total							

BALANGA.
[ϕ=14° 41′ N; λ=120° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33.1	17	46	SE	2		Ω² a.
2	31.5	19.3	62	SE	2		⊕ a.
3	32.7	20.8	46	SE	2		
4	34.5	18.9	44	NW	2		
5	31	21.5	61	NE	4		⊕ a. ↙ a. p.
6	31.2	21.2	52	NE	4		↙ p.
7	31	18.8	54	NE	1		
8	32.5	18.8	51	SE	1		
9	32.9	20.1	46	NE	1		
10	32.9	19.1	59	SE	2		
11	34.1	21.1	51	SE	2		
12	34.5	22.4	58	SE	2		
13	35	23.5	47	NE	1		
14	34.5	21.3	56	SE	3		
15	33.5	20	58	NE	2		
16	32.2	21.4	74	NE	1		d p.
17	31.1	22.5	65	SE	2		d a.
18	34	22.6	50	SE	1		
19	33.5	21.4	57	N	2		
20	35	20.5	49	NE	1		
21	33.5	20.5	52	SE	1		
22	33.9	21	55	SE	1		
23	35	20.7	49	SE	2		
24	34.8	20.6	47	SE	2		
25	33.9	20.8	55	SE	2		◡² p.
26	34.1	20	53	SE	1		
27	34.4	19.5	50	SE	2		⊕² p.
28	34.3	21.7	56	SE	3		
29	34.4	20.6	55	NE	2		⊕² p.
30	34.7	20	52	SE	2		
31	34.5	21	56	SE	1		ϟ p.
Mean	33.5	20.6	53.7		1.8		
Total							

MALOLOS.
[ϕ=14° 52′ N; λ=120° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33.2	15.2	56	E	2		≡ a.
2	31.7	17	55	ENE	5		↙ p.
3	33.2	20.6	46	ENE	2		≡² a.
4	34.1	17.5	49	NE	1		
5	30.8	20	66	NE	5		↙ p.
6	30.5	20.5	56	NE	4		
7	31.5	19.7	54	SSE	1		
8	31.2	17	56	SW	1		
9	31.8	17.5	65	SW	1		○² p.
10	32.3	17.8	56	SW	1		
11	33.5	18.8	54	WSW	1		
12	33.8	20.3	54	S	1		
13	33.6	21	47	S	2		
14	33.8	19.8	48	SW	1		
15	32.2	19	51	ENE	5		≡ a. ↙ a. p.
16	33	19.8	54	SW	1		
17	33.2	20	53	ENE	5		↙ p.
18	33.8	19.6	50	SSE	2		≡ a.
19	31.8	20.7	58	SW	2		
20	33.3	20.8	47	SSW	1		≡ a.
21	32.8	19.4	54	SE	1		
22	32.8	19.4	52	SW	2		
23	33.7	19.3	52	SW	1		
24	31.7	19	58	SSE	3		
25	33.8	19.4	50	ENE	4		↙ p.
26	33.8	20.2	46	SSW	2		
27	34.2	18.3	48	SW	2		
28	33.8	20.5	49	SW	3		
29	33.3	20	48	ENE	4		↙ ⊕² p.
30	33.8	18.8	49	SW	2		⊕° p.
31	33.2	19	51	SW	1		
Mean	32.9	19.2	52.6		2.2		
Total							

PORAC.
[ϕ=15° 05′ N; λ=120° 52′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	34.4	18.4	42	E	2		
2	32.4	20.5	52	ESE	1		
3	34	20.6	43	E	2		
4	35.7	20	34	ENE	2		
5	31.3	21.9	79	Calm		0.5	↙ ●° p.
6	31.4	19.6	46	ESE	3		d a. ↙° p.
7	33.6	20	44	Calm			
8	34.9	18.4	43	Calm			
9	34.4	19.5	42	Calm			
10	35.9	19.7	43	Calm			
11	37.5	21.6	42	S	1		↙° p.
12	37.9	21	43	S by W	1		↙° p.
13	37.8	23.5	62	S	1		↙° p.
14	38	20.7	36	ESE	2		↙° p.
15	35.2	20.6	44	ESE	3		↙ ●° a.
16	36.5	22.5	45	ESE	3		↙° ⌈ϟ p.
17	31.9	21.2	55	E	1		↙° ϟ p.
18	32.5	22.3	49	E	2		
19	36.4	21.5	45	ESE	2		↙° p.
20	36	21.2	41	ESE	2		↙° p.
21	35.9	20.5	49	Calm			↙° p.
22	36.8	19.5	41	Calm			
23	35.6	21.7	44	Calm			
24	38.1	19.9	39	SE	2		↙° p.
25	38.4	20	40	S	2		◡ p.
26	37.4	19.9	35	SSE	2		↙° p.
27	37.9	19.8	36	S	2		↙° p.
28	35.3	21	45	ESE	2		↙° p.
29	35.8	20.7	40	E	1		↙° p.
30	37.1	20	36	ENE	1		↙° p.
31	35.9	21	43	E	1		↙° ϟ p.
Mean	35.5	20.6	44.5		1.3		
Total						.5	

METEOROLOGICAL DATA, ETC.—Continued.

ARAYAT.

[ϕ=15° 08′ N; λ=120° 46′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32.6	16.5	42	ESE	2	------	
2	32	20.3	48	E	2	------	
3	32.9	21	41	ESE	2	------	
4	35	19	36	N	1	------	
5	29.7	21.6	50	SE	3	------	d ↙° p.
6	29.9	19.5	46	ESE	4	------	↙ p.
7	32.3	21	44	ESE	1	------	
8	32.9	18.5	43	SE	1	------	
9	33.2	18.4	46	SW	1	------	
10	34.9	19	44	SE	1	------	
11	35.5	22	43	SSW	1	------	
12	37.1	21.5	41	SW	2	------	
13	36.7	24.6	40	S	1	------	
14	36.4	20.5	33	E	2	------	
15	33.9	18.3	42	E	2	------	↙ p.
16	33.9	22.4	44	ESE	2	------	↙ p.
17	33.2	22	47	E	1	------	
18	33.6	23.4	40	E	1	------	
19	33.9	21.8	40	ENE	1	------	d a.
20	35.1	21.1	36	ENE	1	------	
21	33.5	20.6	47	Calm	------	------	
22	35.4	21.1	35	WSW	1	------	
23	35.1	21	37	S	1	------	
24	36.9	19.1	28	S	1	------	
25	36.3	20	31	ESE	1	------	
26	36.4	18.5	35	SSW	1	------	
27	36.9	19.5	30	SSW	1	------	
28	35.4	21.8	36	SE	1	------	
29	35.2	20.6	37	E	1	------	
30	36.9	19.5	33	S	1	------	
31	35.4	21.4	41	ESE	1	------	
Mean	34.5	20.5	39.9	------------	1.4	------	
Total	------	------	------	------------	------	------	

TARLAC.

[ϕ=15° 31′ N; λ=120° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	35.1	17.9	40	ESE	1	------	⌓ ≡ ↙° a.
2	34.3	18.4	44	SE	2	------	⌓ ≡ a. ↙° ⊕^{2} p.
3	35.3	18.9	40	ESE	1	------	⌓ ≡ a. ∞° p.
4	36.2	17.8	40	ENE	1	------	⌓ ≡ a. ∞° p.
5	32.8	20.4	45	ENE	3	------	d° ≡° a. ↙° p.
6	33.5	18.8	38	E	2	------	↙° p.
7	33.9	16.7	44	ENE	1	------	⌓ ≡° a.
8	35.1	17.4	44	ENE	1	------	⌓ ≡° a.
9	35.7	17.8	47	SE	1	------	⌓^{2} ≡ a.
10	37.6	18.2	42	SE	1	------	⌓ ≡ a.
11	37.5	21	42	NE	1	------	
12	38.7	20.2	41	ESE	1	------	⌓ ≡° a.
13	38.7	22.5	47	SSE	1	------	↙° p.
14	39.3	20.5	36	SE	1	------	⌓ ≡ a.
15	36.9	20.2	40	SE	4	------	⌓ ≡° a. d° p. ↙ a. p.
16	37	21	52	E	3	------	≡ a. ↙° d° p.
17	36.2	20	52	SE	3	------	⌓ a. d° p. ↙ a. p.
18	34.8	22.7	46	SE by E	1	------	
19	36.8	20.1	40	SE	1	------	⌓ ≡^{2} a.
20	37.7	19.7	41	E	1	------	⌓ ≡^{2} a.
21	36.2	21	54	S by E	1	------	⌓ ≡° a. d° ϟ p.
22	36.3	20.8	45	SE by E	1	------	⌓ ≡^{2} a. ϟ p.
23	38	20.3	39	SSE	1	------	⌓ ≡ a.
24	38.4	18.4	38	SSE	1	------	⌓^{2} ≡^{2} a. ∞^{2} p.
25	38.5	18.6	39	SSE	2	------	⌓ ≡^{2} a.
26	38.2	18.1	33	SSE	2	------	⌓ ≡^{2} a. p.
27	38.4	19.4	34	SE	1	------	⌓ ≡^{2} a. ↙° ∞^{2} p.
28	36.9	21.4	43	SSE	3	------	⌓ ≡ a. ↙° p.
29	37.7	21	35	E	1	------	⌓ ≡^{2} a. ∞ p.
30	38.4	19.6	35	SW by W	1	------	≡ a. ∞^{2} p.
31	38	20.9	41	E	1	6.9	⌓ ≡ a. ∞^{2} ⌈ϟ p.
Mean	36.7	19.7	41.8	------------	1.5	------	
Total	------	------	------	------------	------	6.9	

BALER.

[ϕ=15° 47′ N; λ=121° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	28.4	20	------	NE	2	------	
2	29.8	19.5	------	NE	2	------	
3	29.4	22	------	E	1	6.1	↙ ●
4	29.6	19.5	------	E	1	------	
5	26.3	22.4	------	NE	3	21.1	↙ ●
6	27.5	20.6	------	NE	2	------	
7	28.4	21	------	NE	1	9.1	↙ ●
8	28.8	21.4	------	NE	1	------	
9	29.4	21.5	------	NE	2	------	
10	30	19.5	------	E	1	------	
11	29.4	22.8	------	E	2	------	
12	29.8	20.5	------	NE	2	------	
13	30.4	24	------	E	1	------	
14	30	21	------	NE	1	------	
15	29	22.4	------	NE	2	------	
16	29.5	23.3	------	E	2	------	
17	30.4	23.6	------	E	2	------	
18	29.4	22	------	E	1	------	
19	30.4	19.8	------	NE	2	------	
20	30	21.5	------	NE	2	------	
21	28.4	22.6	------	NE	2	8.4	↙ ●
22	26	21	------	NE	2	10.7	↙ ●
23	30.4	20.6	------	NE	2	------	
24	30.5	20.5	------	E	1	------	
25	31	19.5	------	E	1	------	
26	29.5	18.8	------	NE	2	------	
27	32.4	19.4	------	E	1	------	
28	30	22.3	------	NE	2	------	
29	30.4	23.4	------	E	1	------	
30	30.6	22.6	------	NE	1	------	
31	31.8	22.8	------	NE	2	------	
Mean	29.6	21.3	------	------------	1.6	------	
Total	------	------	------	------------	------	55.4	

BAGUIO.

[ϕ=16° 35′ N; λ=120° 43′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	20.5	8.2	78	WSW	0	------	≡ a. p.
2	19	10	93	WSW	0	------	≡ p.
3	22.2	11	89	WSW	0	------	
4	19.7	10.2	95	WSW	0	------	
5	21.5	11.6	74	S	1	------	
6	20.5	10	75	WSW	0	------	
7	20.7	9	82	WSW	1	------	
8	18.5	10	96	WSW	0	------	
9	19.2	9	85	SW	1	------	≡ p.
10	22.3	9	93	WSW	1	------	
11	23.1	10	83	WSW	0	------	
12	24	13.1	79	Calm	------	------	
13	23.8	13	73	SW	0	------	
14	23.4	11.2	90	SW	0	------	
15	22	11.5	95	WSW	1	------	
16	18.2	11	94	SSW	0	0.5	≡ a. ●° p.
17	21.6	11	86	SW	0	8.1	● p.
18	20.5	11	84	Calm	------	22.1	● p.
19	19	11.5	89	SW	0	.8	●° p.
20	19.4	10.4	89	Calm	------	16.3	● p.
21	19.5	11.5	88	WSW	0	13.2	● p.
22	22.8	13	72	WSW	0	.8	●° p.
23	19.9	13.5	87	SW	0	------	
24	22	10.2	81	SW	0	------	≡ a.
25	23.6	10.5	70	WSW	0	------	
26	22.2	10.5	74	WSW	0	------	≡ a.
27	21.7	9	73	SW	0	------	
28	22.2	13	77	Calm	------	------	
29	20.1	11.5	80	SW	0	------	
30	21.6	12	76	WSW	0	------	
31	20.4	13.6	84	SW	0	------	
Mean	21.1	11	83.4	------------	.2	------	
Total	------	------	------	------------	------	61.8	

METEOROLOGICAL DATA, ETC.—Continued.

SAN FERNANDO UNION.
[ϕ=16° 37′ N; λ=120° 18′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct		0–12.	mm.	
1	28.2	20.4	68	NW	2		
2	30	20.2	76	N	3		
3	29.2	20.4	62	N	3		
4	29.2	20	76	N	4		↯ p.
5	29	20.4	71	N	3		
6	28.4	19.4	74	E	3		Ω a.
7	28.6	19.2	66	W	2		Ω a.
8	29.9	18.8	57	W	2		Γ↯ p.
9	29.8	18.6	63	N	3		
10	30.6	19.6	67	N	3		
11	31	21.2	68	N	2		
12	29.7	21.8	68	N	2		
13	31.4	21	71	N	3		
14	31.4	21	68	SW	2		
15	30.8	21	58	N	2		
16	30	21.6	71	NNW	2		Ω a. T d° p.
17	30.2	20.6	76	NNW	4		↯ p.
18	29.5	21.8	64	N	2		d° p.
19	30.2	21	65	NW	2		
20	31.6	21.4	56	WSW	2		d° a.
21	32	22	66	NW	2	17.8	● ↯ T p.
22	31.5	22.4	59	SW	2		
23	31.5	22.2	68	NW	2	.8	●° a.
24	31.6	19.4	68	NW	3		
25	32.8	21.8	65	W	2		
26	32.8	22.6	54	W	3		
27	32.8	21.4	70	N	2		
28	30	21.9	68	NW	3		
29	30.2	23	64	W	2		
30	30.5	22.4	75	N	3		
31	32	22	65	N	2		
Mean	30.5	21	66.7		2.5		
Total						18.6	

CANDON.
[ϕ=17° 12′ N; λ=120° 26′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	29.8	22	61	W	1		Ω² ≡ a. ⊕ p.
2	29.5	22.5	66	W	1		
3	29.5	23.1	71	W	4		↯ p.
4	29.5	23.5	64	NW	6		Ω a. ↯ d° p.
5	30.7	23.2	42	NNE	6		↯ a. p.
6	31.1	21.9	54	W	3		↯ a.
7	29.7	21.5	53	NW	1		
8	29.4	20.7	65	WSW	2		Ω a.
9	28.8	22.1	64	SW	3		Ω² ↯ ○ a.
10	29.5	22	64	WNW	1		Ω² a.
11	30.5	22	65	NW	2		Ω² ≡ a.
12	30.7	22.1	65	NW	1		Ω² ≡ a.
13	30.5	23	68	WSW	2		Ω a.
14	30.5	22.5	70	SW	1		Ω a.
15	30.7	23.8	67	W	3		Ω² a. ↯ p.
16	31	24.4	61	NW	1		T° p.
17	30.6	23.5	63	NW	3		↯ p.
18	30.5	23.1	64	SW	4		↯ a. p.
19	31	23.5	68	WSW	1		Ω a.
20	30.7	22.9	64	SSW	2		Ω² a.
21	29.7	23.4	68	SW	4	2	T° ●° p. ↯ a. p.
22	31	24.6	62	NW	2		
23	31	23.8	67	WSW	2		Ω ↯ a. T° p.
24	30.9	24.5	63	SW	2		Ω a.
25	31	24.1	68	WSW	3		Ω ↯ a. T° p.
26	30.7	24.5	67	W	2		Ω a.
27	31	25.2	68	W	1		Ω a.
28	31.2	22.5	58	W	1		Ω a.
29	30.9	25	67	SW	3		Ω a. ↯ p.
30	30.7	24	63	W	1		
31	30.9	24	62	NW	3		Ω a. ↯ a. p.
Mean	30.4	23.2	63.6		2.3		
Total						2	

TUGUEGARAO.
[ϕ=17° 35′ N; λ=121° 39′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.2	19.2	58	NNE	2		
2	34.2	18.4	46	N	2		Ω a. ↯° p.
3	31.2	17.8	65	S	1	1.3	●° a. p.
4	33	17.7	60	N	3		●° a. ↯° p.
5	27.6	16.5	54	N	5		↯ a. p.
6	28.4	14	61	N	1		
7	33.4	12.3	44	SE	1		Ω a.
8	35	13.8	55	Calm			Ω a.
9	36.2	16.5	40	SE	1		Ω a.
10	36.5	16.4	43	SE	1		Ω a.
11	37.4	17.4	41	S	1		Ω a.
12	38.4	18.6	39	SE	1		Ω a.
13	37.1	19.8	53	NE	1		Ω a.
14	38.3	19	40	SE	1		Ω² ≡² a. ↯° p.
15	36.8	19.4	42	NNW	2		Ω a. ↯ p.
16	30.8	19.8	83	Calm		3	●° a. p. ↯ p.
17	30.7	17.4	81	N	1	2.6	●° a. p.
18	30	19	73	Calm		8.9	●° a. ● p.
19	31.2	18.5	55	NW	1		d a.
20	34.7	17.8	45	SE	1		Ω a.
21	36.9	17.5	42	S	1		Ω a.
22	36.3	17.8	37	S	1		Ω a. ↯ ⋜ p.
23	36.3	19.8	42	SW	1		Ω a.
24	37.5	18	30	SSE	1		Ω a.
25	37.3	18	38	SE	1		Ω a.
26	37.3	16.8	39	SE	1		Ω² a.
27	37.3	18.3	37	NW	1		Ω a.
28	36.7	19.5	42	NW	1		Ω a. ⋜ p.
29	36.8	18	38	S	1		Ω a.
30	36.4	17.7	49	NW	1		Ω a. ∞ p.
31	34.1	17.1	50	NE	1		Ω a. ⋜ p.
Mean	34.7	17.7	49.1		1.2		
Total						15.8	

NOTAS GENERALES DEL TIEMPO.

Presión atmosférica y temperatura.—La media de la presión atmosférica resulta en todas partes menor que la de Marzo del año próximo pasado. En Manila la diferencia es de — 0.65 mm. Nótese sin embargo, que las medias mensuales del año pasado eran superiores á la normal: de ahí que la media de Manila, á pesar de ser inferior á la de Marzo 1906, resulta superior á la normal en 0.13. Las mayores presiones de todo el mes fueron observadas en la mayoría de las estaciones del Archipiélago del 18 al 19: las menores tuvieron lugar en todas ellas del 10 al 12.

Las temperaturas medias son también menores en general que las de Marzo, 1906, correspondiendo las mayores diferencias á varias estaciones de las Islas Visayas. La media de Manila resulta inferior á la normal en 0.7° C. Las máximas temperaturas registradas en nuestras estaciones de 1ª y 2ª clase han sido 37.8° C. y 38.5° C.: aquélla se observó en S. Isidro el día 12 y ésta en Dagupan el 15. La mínima lectura 16.2° C. nos la da la estación de S. Isidro el día 1.º En Manila las máximas absolutas de todo el mes han sido 35.4° C. y 35.2° C.: fueron registradas los días 12 y 13 respectivamente.

Precipitación acuosa.—Si exceptuamos únicamente Baguio y S. Fernando de La Unión, la lluvia ha sido en todas las estaciones de Luzón, y muy especialmente en el SE de la isla, inferior á la de Marzo del año próximo pasado. Lo mismo puede decirse en general de las estaciones situadas en las costas occidentales de las Islas Visayas. Calbayog nos da una diferencia de — 125 mm., Atimonan, de — 120.9, Legaspi, de — 161.9, y Gubat, de — 192.3; las diferencias que aparecen en otras estaciones, donde la lluvia ha sido también menor que en Marzo, 1906, son mucho menos notables.

Otras estaciones de Visayas y Mindanao dan un superavit de lluvia, con respecto también á Marzo, 1906, que llega á ser en algunos puntos bastante extraordinario. Así v. gr., las cantidades de agua recogidas en Dapitan, Tagbilaran y Caraga discrepan respectivamente de las del año anterior en + 150.9, + 180.1 y + 140.5 mm.

DEPRESIONES Y TIFONES.

En todo el mes de Marzo no ha influído en nuestro Archipiélago tifón ó depresión alguna que sea digna de especial mención. El observatorio pudo, sin embargo, anunciar el día 30 un tifón al NE de Yap, Carolinas Occidentales, cuando el centro se hallaba á unas 1,100 millas distante de Manila. Aunque por haber recurvado muy lejos de Filipinas no ejerció aquí influencia alguna, todavía fué tan notable este tifón y de tan extraordinaria intensidad que no podemos menos de tratar de él con alguna extensión dando todos aquellos pormenores que más creemos intensarán á nuestros lectores. Varias de las islas é islotes que forman el grupo conocido con el nombre de Carolinas Occidentales fueron materialmente barridas por la ola del huracán y de ahí que nos creamos suficientemente justificados para llamar á este tifón:

EL BAGUIO DE LAS CAROLINAS OCCIDENTALES.

He ahí los anuncios que sobre este tifón envió el Observatorio de Manila á Indochina, China y Japón:

Marzo 30, 10 a. m.—Tifón al NE de Yap, Carolinas Occidentales; dirección desconocida.

Abril 1, 5 p. m.—El tifón se halla ahora en el Pacífico, al N de las Carolinas Occidentales, moviéndose probablemente al NNW con tendencia á recurvar.

Además el día 31 de Marzo había dicho el Observatorio en la nota ordinaria del tiempo:

El tifón se halla ahora hacia el N de Yap, Carolinas Occidentales, moviéndose probablemente al WNW ó NW. La navegación es peligrosa en el Pacífico entre las Filipinas y Carolinas Occidentales.

Contó el Observatorio para estos anuncios con solos tres telegramas de la estación meteorológica de Yap recibidos respectivamente los días 30 y 31 de Marzo y 1.º de Abril.

Nuestro observador de Yap, R. P. Fr. Calixto Lopinot, se ha hecho acreedor á nuestro más profundo agradecimiento por su diligencia é interés en bien del servicio; pues no contentó con hacer observaciones horarias durante el paso del temporal por aquella localidad y remitírnoslas con la mayor prontitud posible, fué recogiendo más información y más detalles, tomando nota de lo observado en otras islas de aquel Archipiélago, con el único fin de ayudarnos en nuestras investigaciones meteorológicas.

Más tarde nos fué remitida por el Sr. Carlos F. Kurtz, comandante del *Planet,* barco alemán en Comisión Hidrográfica, una relación minuciosa del paso de este tifón á través de las Carolinas: relación demasiado interesante por cierto para que dejemos de insertarla íntegra, siquiera al fin de nuestra discusión en el texto inglés.

Origen de este tifón.—Según la relación del Comandante Kurtz, parece ser que el tifón se estuvo formando del 24 al 26 hacia el Sur de Ponapé á la distancia de unos 20 millas. Confirma esta suposición el hecho de que en Kusaie, isla situada más al E que Ponapé, no se sintió, al menos de un modo notable, la influencia de ningún centro ciclónico durante la última década del mes de Marzo.

La distancia de Ponapé con respecto al centro ciclónico no puede ser más que algo aproximada. Lo mismo podría decirse de la parte de la trayectoria comprendida entre el Sur de Ponapé y las Islas Wlea. Los datos que poseemos no son ni de mucho tan precisos que nos den con certeza el curso del tifón á través de aquella porción de las Carolinas. La posición misma de alguna de las islas é islotes mencionados por el Comandante Sr. Kurtz nos es desconocida, ni nos ha sido posible encontrarlos en ninguno de los planos de aquel Archipiélago que obran en nuestro poder. Mas como quiera que dicho Sr. Comandante estaba recorriendo dichas islas cuando recogió los datos que nos envía en su interesante descripción, hemos copiado la primera parte de la trayectoria de este baguio desde el S de Ponapé hasta Uluthi de un pequeño croquis que acompaña dicha relación.

Confesamos á la verdad que nos llama la atención entre otras cosas cómo en Wlea, según las observaciones que mencionaremos luego, soplaron vientos del NNE de fuerza siempre creciente por espacio de tantas horas antes que pasase el vórtice tangenteando aquella isla por el S, lo cual parecería suponer que el tifón no se presentaba por el ESE, como aparece en la supuesta trayectoria, sino más bien por el SE. Por esto, no nos atrevemos á dar sino como probable esta primera parte de la trayectoria tal como la trazó el Sr. Kurtz; y por lo que toca á los vientos de Wlea podría tal vez decirse que ó su dirección no se da con bastante aproximación ó que era acaso modificada por circunstancias locales.

El tifón en las Carolinas Occidentales.—La mayor violencia del huracán parece que se observó en el grupo de las Islas Wlea. Al citado P. Calixto Lopinot debemos las preciosas observaciones que le proporcionó el Sr. Martens, capitán del barco *Ponapé,* y que publicamos en el texto inglés. Dichas observaciones se hicieron a bordo de dicho barco que se hallaba á la sazón fondeado en la bahía de Wlea.

Según la relación del Sr. Kurtz, aunque no se observó en Wlea la calma vortical, la violencia del viento amainó algún tanto antes de verificarse el salto del NE al SSE. El viento huracanado del SW que aparece á 4 p. m. en el cuadro de observaciones remitido por el P. Lopinot es realmente anómalo y creemos soplaría por muy poco tiempo volviendo luego al S y SSE. Así parece deducirse claramente de la relación del comandante del *Planet.*

El P. Lopinot nos dice que aunque en Wlea no se observó la calma, pero sí la hubo en otros puntos de aquel grupo de islas.

El tifón que desde el S de Ponapé hasta cerca de Wlea se había movido al W$\frac{1}{4}$NW se inclinó luego algo más al N, de suerte que desde Wlea hasta Uluthi venía dirigiéndose próximamente al NW$\frac{1}{4}$W. El centro ciclónico cruzó la Isla Essor, situada en la parte NE de estas últimas islas. Los vientos del primer cuadrante soplaron allí con fuerza huracanada la noche del 29 hasta 3 a. m. del 30 en que se observó media hora de calma: después de ella saltó el viento al WSW, siendo la violencia destructora de este último mayor todavía que la del NE.

En ninguna de las Islas Uluthi se tomaron observaciones meteorológicas. Las que hizo en Yap el P. Lopinot sirven admirablemente para seguir al tifón mientras pasaba á alguna distancia por el NE y NNE de dicha isla. Pueden verse completas en el texto inglés.

Dos cosas llaman principalmente la atención en las observaciones de Yap: (1) que el barómetro había alcanzado ya próximamente su mínima altura á 12.15 p. m., y, sin embargo, los vientos siguieron soplando del WNW sin rolar al WSW hasta 4 p. m.; (2) que el barómetro se mantuvo prácticamente en su mínima altura por espacio de varias horas, y el principio de la subida fué tan extraordinariamente lento, que á 11 p. m. se hallaba la columna mercurial á la misma altura que á 11 a. m.

De estos hechos parece deducirse: (*a*) que el vórtice se halló á la menor distancia de Yap, cuando demoraba aún hacia el NE de aquella estación, y (*b*) que el tifón tendió ya á recurvar así que hubo atravesado las Islas Wlea, siendo esto causa de que retardase notablemente su movimiento de traslación. Confirma esta lentitud en la marcha del tifón el hecho de que el barómetro permaneciera también por varias horas en su mínima altura á bordo de la goleta japonesa *Chomei Maru No. 2* según afirmó su capitán al Comandante Kurtz (véase la relación de éste en el texto inglés). Confesamos con dicho Sr. Comandante que los datos dados por el capitán no son enteramente satisfactorios, sobre todo, á lo que nos parece, la posición de la goleta á 10 a. m. del 30. Á nosotros nos parece que debía hallarse en aquella hora no un grado más al Sur que á 6 a. m., sino mas bien algo más al Norte; y así mismo, no algo más al E, antes un poco más al W. Sin embargo, prescindiendo de esto y aún de la duración exacta de la lectura mínima del barómetro, parece no puede negarse que ésta duró mucho tiempo; y como esto concuerda con lo observado en Yap, necesario es concluir que el tifón se movía por entonces con mucha lentitud.

Efectos del tifón.—No es nuestro intento dar aquí una lista completa de los estragos causados por este tifón en las numerosas islas é islotes que forman las Carolinas Occidentales. Solamente indicaremos los principales tal como nos fueron remitidos por el P. Lopinot á raíz de la catástrofe. Otros detalles y pormenores pueden verse en la relación del Comandante Kurtz.

Wlea.—Puede decirse que la destrucción fué completa en este grupo de islas. Unas 200 personas perecieron en dos isletas barridas y arrastradas por inmensas olas que á manera de cataratas se lanzaron sobre ellas barriendo cuanto encontraron á su paso: árboles, casas, habitantes. En otras isletas las olas no se abalanzaron en esta suerte, pero fué tal la altura de las aguas que la gente sólo pudo salvarse encaramándose en los cocoteros. El Sr. Capitán del *Ponapé* no se explica cómo le fué posible salir de la laguna de Wlea, y asegura que la violencia de este tifón fué todavía mayor que la del célebre tifón de Ponapé en Abril, 1905. (Véase "Bulletin for 1905," páginas 123–126.)

Ifalik.—La destrucción fué también general especialmente en la parte Sur. Perecieron 20 personas.

Eauripik.—Los efectos del tifón fueron aquí más benignos que en las islas anteriores.

Sorol.—Las olas fueron muy crecidas, pereciendo cinco personas, víctimas de la inundación. Los vientos soplaron con bastante fuerza, pero no parece llegasen á ser huracanados.

Ola y oleaje del huracán.—Entre los muchos datos interesantes que nos da el Comandante Kurtz, queremos indicar aquí, aunque sea brevemente, que su report nos ofrece un ejemplo magnífico de la llamada *ola* del huracán como distinta del *oleaje* del huracán. Suponemos á nuestros lectores perfectamente enterados de la diferencia que existe entre la una y el otro después de lo mucho que sobre ello han escrito varios autores, sobre todo, por lo que toca á los tifones del Extremo Oriente, los PP. Froc y Algué.

Se dice pues en la citada relación que en Wlea se observó la mañana del 28 grande oleaje del SE que iba creciendo más y más á medida que avanzaba el día, y había mucha marejada dentro de la laguna; todo esto cuando no soplaban más que vientos ligeros del primer cuadrante y cuando el barómetro bajaba muy ligeramente. El oleaje fué creciendo tanto que ya á 2 p. m., hora de baja marea, llegaban las olas hasta la casa del médico situada á la altura de un metro sobre el nivel de las más altas mareas, y protegida por una playa de arena de unos 100 metros de anchura. Hechos parecidos á este se refieren haberse observado en otros puntos de aquel Archipiélago. El oleaje de que se habla era propiamente el *oleaje del huracán* que se extiende en todas direcciones desde el centro del vórtice ciclónico llegando á grandísimas distancias y constituyendo por ende una de las más valiosas señales precursoras de temporal, sobre todo en alta mar.

Para formarse alguna idea de la distancia á que se propagó el oleaje ciclónico de este tifón de las Carolinas Occidentales, basta deir que en Borongan, estación enteramente abierta al Pacífico en la costa oriental de Sámar, Islas Filipinas, se observaron marejadas y mares gruesas del E desde el 29 de Marzo hasta el 3 de Abril, según hallamos anotado en las observaciones que nos remitió el observador de aquella estación, P. Cesareo Montes. Este oleaje allí observado fué tan notable y su dirección fué tan significativa que, aun cuando el tiempo no presentaba anomalía alguna, el citado observador envió un telegrama el 31 de Marzo y dos el 1.º de Abril dando cuenta de semejante fenómeno al Director de esta Oficina Meteorológica.

Después de esto ya nadie se extrañará que el observador de Sumay, Guam, Islas Marianas, anote en sus observaciones del 1.º y 2 de Abril, oleaje muy extraordinario y mares muy altas, las mayores allí observadas por cuatro años, las cuales llegaron á causar algunos perjuicios en la población.

La *ola del huracán* que acompaña y se mueve con el vórtice ciclónico la describe el Comandante Kurtz al darnos cuenta de lo observado en las Islas Raur y Paliau del grupo de Wlea. Eran las 8 de la mañana, próximamente, del día 29, cuando de repente los habitantes de aquellas islas oyeron un como bramido espantoso procedente del E, y efectivamente vieron en aquella dirección sobre el océano una negra nube de gigantescas dimensiones que superaba en altura á los árboles más altos, por más que éstos alcanzan hasta 40 metros. Esta nube, dicen los indígenas que se lanzó encima de las islas á la manera de inmensa catarata. "Los efectos destructores de este fenómeno," añade el Comandante Kurtz, "indican que la inundación fué causada por la ola del huracán, cuya espuma llevada en alas de los vientos aparecía á los ojos de los indígenas como una gigantesca nube." Otra ola todavía mayor sucedió á la primera, barriendo materialmente cuanto encontró á su paso.

No cabe duda alguna que se trata aquí, como observa muy bien el Sr. Kurtz, de la ola del huracán en el sentido estricto de la palabra, es decir de esas inmensas cantidades de agua que acumuladas en el vórtice del ciclón siguen al mismo vórtice en su movimiento de traslación y son causa de los grandes estragos observados á las veces en las costas y en alta mar.

Recurva del tifón.—El hecho de que los barómetros comenzaron á subir en Yap sin que los vientos rolasen más al SW fué suficiente para que el Observatorio anunciara el 1.º de Abril que el tifón tendía á recurvar al N de Yap. Más tarde las observaciones recibidas de nuestra estación de Guam vinieron á confirmar del modo más satisfactorio la supuesta recurva del tifón hacia el N de Yap y W de Guam. El role de veintos en esta última estación fué completo, desde el NE hasta el WNW por el E, S, y W, indicando perfectamente día por día la diferente posición del vórtice ciclónico. Pueden verse estas observaciones en una tabla que acompaña el texto inglés.

Con el fin de dejar bien asegurado que el tifón se dirigía muy inclinado al E cuando pasaba por el N de Guam, damos en el texto inglés las observaciones hechas á 6 a. m., desde el 31 de Marzo hasta el 4 de Abril, en la estación de Chichijima (lat. 27° 5′ N long. 142° 11′ E). Nótese que la bajada barométrica observada allí el día 1.º de Abril así como los vientos del SE de dicho día y del SW del 2 eran debidos á uno ó varios centros de baja presión de poca importancia que corrieron aquellos dos días por el W y N respectivamente de las Islas Bonin, como puede verse en los mapas diarios del tiempo del Observatorio de Tokio.

SEISMOLOGICAL BULLETIN FOR MARCH, 1907.

By Rev. Miguel Saderra Masó, S. J.,
Assistant Director of the Weather Bureau.

EARTHQUAKES FELT IN THE PHILIPPINES.[1]

1, 11^h 53^m 55^s.* **Samar, NE of Leyte and SE of Luzon.** An earthquake of intensity IV in the NE part of Samar. At Calbayog, in the NW of this island, and at Borongan, in the eastern part, two different series of oscillations were noted, the first being of greater intensity than the second. The direction observed in Calbayog was E–W. At Gubat, in the extreme SE of Luzon, and at Tacloban, in the E of Leyte, light oscillations were felt of intensity not exceeding II. It is probable that the earthquake originated in the Pacific at no great distance from the coast of Samar.

4, 18^h 11^m. **Aparri** (NE of Luzon). Oscillatory earthquake; direction NW-SE; intensity III; duration 5^s.

7, 8^h 57^m.* **Legaspi** (SE of Luzon). Oscillatory earthquake; direction NNW–SSE; intensity II; very short duration.

10, 20^h 16^m. **Legaspi** (SE of Luzon). Oscillatory earthquake of intensity IV and of considerable duration. Two distinct series of oscillations were observed, the first and more perceptible in a direction ENE–WSW and the second N–S.

11, 19^h 23^m.* **Aparri** (NE of Luzon). Oscillatory earthquake; direction E–W; intensity III; duration 12^s. Subterranean noises accompanied this earthquake.

14, 3^h 24^m. **Romblon Island.** Oscillatory earthquake; intensity II; direction SSE–NNW.

17, 15^h 36^m. **Aparri** (NE of Luzon). Oscillatory earthquake of short duration; direction NW–SE; intensity II.

30, 4^h 40^m.* **Caraga** (SE of Mindanao). Earthquake; direction SE–NW; intensity II; duration 5^s. This shock, which originated in the Pacific, was clearly recorded by the seismographs of Manila, Zikawei, Calcutta, and Apia (Samoan Islands). The following table shows, in Greenwich time, the hours in which the shock began to register:

	h.	m.	s.
Manila, 29th	20	49	12
Zikawei, 29th	20	52	36
Calcutta, 29th	20	52	12
Apia, 29th	20	59	41

The duration of the movements which can be considered as preliminary was in Manila 3^m, in Zikawei 6^m 38^s, and 9^m 12^s in Apia. Applying to these durations the corresponding formulas of Omori, the following values are obtained: 1,308 kilometers for Manila, 2,931 for Zikawei, and 7,158

[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

for Apia. If we take these values as radii and trace three circles around these stations we will find that they intersect in a point near 7° lat. N and 129° long. E, more than 300 kilometers to the E of Caraga. This point will be found to be to the east of a great depression in the bed of the ocean more than 8,000 meters in depth, which runs at a distance of from 70 to 80 kilometers from the eastern coasts of Mindanao and Samar. This great earth depression, or ocean valley, is volcanic in nature, according to recent observations of the *Planet*. In this region earthquakes frequently originate, and though they are only slightly felt on the neighboring coasts of Mindanao they are often registered at great distances.

If we apply the formula of Omori $t_0 = t_1 - 1.165\ y$ sec. to the duration of the preliminary movements of Manila and Apia, the following values will be the result: $t_0 = 20^h\ 45^m\ 43^s$, $t_0 = 20^h\ 45^m\ 58^s$. The mean value between these two extremes, $20^h\ 45^m\ 50^s$, will give us the hour the earthquake began at the epicenter. In this supposition, we find that the preliminary movements were propagated to each station with the corresponding velocities given in the following table. In addition it might be said that the values seem very acceptable, except that for Zikawei, which is certainly too low.

Station.	Distance from epicenter.	V_1.
	° ′	*Km. sec.*
Manila	10 17	6.9
Zikawei	25 45	7.2
Calcutta	42 06	12.2
Apia	62 11	12.5

It is very probable that the seismic waves of this earthquake were propagated as far as Europe, but we have no means to ascertain it. The reason is because at the very time ($21^h\ 00^m$) when the seismic waves, propagated with the velocity they ought to have had, were to reach Europe, the seismographs there were registering, from $20^h\ 58^m$, another shock, corresponding to an earthquake not so far distant, apparently in Armenia some 4,000 kilometers from the principal German observatories.

In their ordinary seismological bulletins only one seismic disturbance is mentioned. A minute examination of the seismograms would probably reveal the interference of the waves coming from the disturbance in the Pacific.

RECORDS OF THE MICROSEISMOGRAPHS.

[Time of the one hundred and twentieth meridian east of Greenwich. Midnight = 0^h.]

No.	Date.	Component.	Beginning. First preliminary tremors.	Beginning. Second preliminary tremors.	Beginning. Principal portion.	Maximum range of motion. Hour.	Maximum range of motion. Amplitude (*2 a.*).	Maximum range of motion. Period.	End.	Instrument.	Remarks.
			h. m. s.	*h. m. s.*	*h. m. s.*	*h. m. s.*	*mm.*	*s.*	*h. m. s.*		
29	1	WSW-ENE	11 53 55	----------	----------	11 57 15	0.03	2.4	12 01 57	V. M.	Earthquake force III, in SE Luzon, Samar, and Leyte.
30	3	WSW-ENE	23 17 40	----------	----------	23 23 41	.11	7.8	23 38 16	H. P.	
31	4	WSW-ENE	10 25 23	----------	----------	10 26 35	.03	2.4	10 33 33	V. M.	
		WSW-ENE	10 25 36	----------	----------	10 31 48	.03	6.6	10 47 04	H. P.	
32	5	WSW-ENE	0 10 39	----------	----------	0 12 17	.06	2.6	0 23 46	V. M.	
		WSW-ENE	0 10 38	----------	----------	0 14 55	.13	7.8	0 24 53	H. P.	
33	7	WSW-ENE	8 33 22	----------	8 34 51	8 37 18	.70	8.4	8 51 37	H. P.	
34	7	WSW-ENE	8 57 46	----------	8 58 12	8 58 29	.13	8	8 59 58	H. P.	Earthquake force III, at Legaspi (SE Luzon).
35	8	NNW-SSE	8 56 33	----------	8 56 57	8 57 15	.05	2.8	9 00 40	V. M.	
36	8	WSW-ENE	19 20 43	----------	19 21 09	19 21 23	.49	3	19 26 30	V. M.	
		NNW-SSE	19 20 44	----------	----------	19 22 46	.05	3	19 30 37	H. P.	
37	11	NNW-SSE	19 23 41	----------	19 24 32	19 25 21	.13	1.8	19 32 10	V. M.	Vertical component; amplitude, 0.04 mm. Earthquake force III, at Aparri (N Luzon).
		WSW-ENE	19 23 44	----------	19 24 33	19 25 29	.07	6	19 34 03	H. P.	
38	12	WSW-ENE	19 00 39	----------	----------	19 01 06	.03	2.4	19 02 09	V. M.	Vertical component; amplitude, 0.05 mm.
39	15	WSW-ENE	9 47 37	----------	9 48 01	9 48 07	.04	2.2	9 50 25	V. M.	
40	16	WSW-ENE	19 20 29	----------	----------	19 20 47	.03	2.4	19 22 11	V. M.	
41	17	WSW-ENE	11 23 55	----------	11 24 11	11 24 15	.69	1.4	11 29 40	V. M.	Vertical component; amplitude, 0.21 mm.
		WSW-ENE	11 23 49	----------	----------	11 24 53	.17	4.8	11 29 39	H. P.	
42	20	WSW-ENE	3 31 38	----------	----------	3 31 50	.08	2	3 38 08	V. M.	Vertical component; amplitude, 0.03 mm.
		WSW-ENE	3 31 39	----------	----------	3 36 10	.04	7.2	3 46 08	H. P.	
43	20	WSW-ENE	6 07 36	----------	6 09 08	6 09 44	.41	2.8	6 27 12	V. M.	Vertical component; amplitude, 0.10 mm.
		WSW-ENE	6 07 30	----------	----------	6 12 30	.40	7.8	6 39 11	H. P.	
44	25	NNW-SSE	19 26 43	----------	----------	19 30 57	.02	2.4	19 43 39	V. M.	
		WSW-ENE	19 27 35	----------	----------	19 32 57	.08	6	19 46 56	H. P.	
45	30	WSW-ENE	4 49 17	----------	4 51 21	4 51 59	1.25	1.6	5 58 10	V. M.	Vertical component; amplitude, 0.18 mm. Earthquake force II, at Caraga (SE of Mindanao).
		NNW-SSE	4 49 12	4 50 21	4 51 28	4 53 16	4.87	8.4	5 48 34	H. P.	
46	30	WSW-ENE	22 25 15	----------	22 26 43	22 27 08	.05	2.4	22 32 37	V. M.	
47	31	WSW-ENE	6 26 20	----------	6 26 35	6 26 44	.46	1.6	6 33 50	V. M.	Vertical component; amplitude, 0.08 mm. Earthquake force III, at Davao (S of Mindanao).
		WSW-ENE	6 26 28	----------	----------	6 27 20	.04	6	6 28 59	H. P.	
48	31	WSW-ENE	10 19 45	----------	10 20 01	10 20 11	.20	3.6	10 23 44	V. M.	Vertical component; amplitude, 0.08 mm.
49	31	NNW-SSE	18 42 14	----------	18 42 25	18 42 33	.50	4	18 48 42	V. M.	Vertical component; amplitude, 0.21 mm.
		WSW-ENE	18 42 21	----------	----------	18 42 26	.15	7.2	18 45 07	H. P.	

Instrumental constants.—Vicentini microseismograph (V. M.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record: NNW–SSE component, 50 times; WSW–ENE component, 50 times.

Horizontal Pendulums (H. P.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation, NNW–SSE pendulum, T=7 seconds; WSW–ENE pendulum, T=6.4 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

Foundation and location.—The instruments are mounted against a solid cut-stone pier measuring 5×5 meters at its base and 3.30×3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above the sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above the sea level.

Geological structure.—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters which extends many kilometers toward north and south and only four to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

1, 11^h 53^m 55^s.* **Samar, NE de Leyte y SE de Luzon.** Temblor de tierra, de intensidad IV en la parte NE de Samar. En la estación de Calbayog, que está al NW de la isla, y en Borongan que está al E, se distinguieron bien dos series diferentes de oscilaciones, más intensas las primeras que las segundas. En Calbayog además se notó la dirección, que era E-W. En Gubat, extremo SE de Luzón, y en Tacloban, E de Leyte, tan solo se experimentaron movimientos de intensidad II. Probablemente el origen se hallaba dentro del Pacífico pero no lejos de la costa de Sámar.

4, 18^h 11^m. **Aparri** (NE de Luzón). Temblor oscilatorio, dirección NW-SE, intensidad III, duración 5^s.

7, 8^h 57^m.* **Legaspi** (SE de Luzón). Temblor oscilatorio, dirección NNW-SSE, intensidad II, duración muy corta.

10, 20^h 16^m. **Legaspi** (SE de Luzón). Temblor oscilatorio, intensidad IV, duración larga: distinguiéronse dos series de oscilaciones, ENE-WSW, las primeras y más fuertes, N-S, las últimas.

11, 19^h 23^m.* **Aparri** (NE de Luzón). Temblor oscilatorio, dirección E-W, intensidad III, duración 12^s. Acompañado de ruidos subterráneos.

14, 3^h 24^m. **Isla de Romblón.** Temblor oscilatorio, intensidad II, dirección SSE-NNW.

17, 15^h 36^m. **Aparri** (NE de Luzón). Temblor oscilatorio, dirección NW-SE, intensidad II, duración corta.

30, 4^h 49^m.* **Caraga** (SE de Mindanao). Temblor de tierra, dirección SE-NW, intensidad II, duración 5^s. Este terremoto, cuyo origen se hallaba en el Pacífico fué perfectamente registrado por los seismógrafos de Manila, Zikawei, Calcuta y Apia (Islas Samoa). Las horas del principio de la perturbación en tiempo de Greenwich son las siguientes:

	h.	m.	s.
Manila, día 29	20	49	12
Zikawei, día 29	20	52	36
Calcuta, día 29	20	52	12
Apia, día 29	20	59	41

La duración de los movimientos que pueden considerarse como preliminares, fué de unos 3^m en Manila, 6^m 38^s en Zikawei, y 9^m 12^s en Apia. Aplicando á estas duraciones las correspondientes fórmulas de Omori se obtienen los siguientes valores: 1,308 km. para Manila, 2,931 km. para Zikawei y 7,158 km. para Apia. Si tomamos estos valores como radios y trazamos desde dichas estaciones tres círculos, veremos que vienen á cortarse en el Pacífico en un punto cercano á los 7° lat. N y 129° long. E, situado hacia el E y á más de 300 km. de Caraga. Dicho punto se halla al oriente de la fosa de más de 8,000 ms. de profundidad que se abre á lo largo de las costas orientales de Mindanao y Sámar, á una distancia de 70 á 80 km. La naturaleza del fondo de esta sima, según las recientes observaciones del *Planet* es volcánica. En esta región frecuentemente se originan terremotos, que siendo débilmente sentidos en las vecinas costas de Mindanao se registran á grandes distancias.

Si aplicamos la fórmula de Omori $t_0 = t_1 - 1.165 \ y^{\text{seg.}}$ á la duración de los movimientos preliminares de Manila y Apia, resultan los siguientes valores: $t_0 = 20^h\ 45^m\ 43^s$, $t_0 = 20^h\ 45^m\ 58^s$, cuyo

[1] La intensidad de los terremotos se indica conforme á la conocida escala de De Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120 E de Greenwich.

promedio, $20^h\ 45^m\ 50^s$, será la hora del terremoto en su origen. Tomando esta hora como punto de partida, dichos movimientos se propagaron con las siguientes velocidades, que nos parecen muy aceptables, excepto la de Zikawei que es demasiado baja.

Estación	Distancia del epicentro.		V_1.
	°	′	*Km. sec.*
Manila	11	17	6.9
Zikawei	25	45	7.2
Calcuta	42	06	12.2
Apia	62	11	12.5

Es muy probable que las ondas séismicas de este terremoto se propagaron hasta Europa; no nos es sin embargo posible averiguarlo con certeza. La razón es porque al mismo tiempo que, conforme á la velocidad media que suelen tener, debían llegar allí, hacia las $21^h\ 00^m$, los seismógrafos estaban registrando, desde las $20^h\ 58^m$, otra perturbación correspondiente á un terremoto menos lejano, al parecer en Armenia á unos 4,000 km. de los principales Observatorios alemanes. En sus Boletines seismológicos ordinarios no se menciona sin embargo más que una sola perturbación; un examen minucioso de los seismogramas revelaría probablemente la interferencia de las ondas procedentes del Pacífico.

REGISTROS DE LOS MICROSEISMOGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

62648——6

CROP BULLETIN FOR MARCH, 1907.

By Rev. George M. Zwack, S. J., *Secretary of the Weather Bureau.*

GENERAL NOTES.

As a rule, the agricultural products harvested during the month of March gave fair results. The quantity of hemp stripped and of copra was quite satisfactory; the prices of the former commodity ranging from ₱14 to ₱23, of the latter ₱8.50 to ₱10.50 per picul (63.25 kilos). Rice crop fair on the average. Corn, while scarce south of Manila, was very abundant in northern Luzon, where a few years ago it was almost unknown. Except in the southern part of Cagayan Province, tobacco gave good returns. Sweet potatoes and tubers in general were plentiful in the north of Luzon, but less abundant in the southern islands. Sugar is relatively low priced, costing from ₱1.60, in Ilocos, to ₱3.76, in Batangas.

It is very difficult to form an opinion of the agricultural conditions in the different provinces from the prices paid for their products. Thus ₱22 to ₱23 per picul for hemp was being paid at Surigao; at Butuan ₱16.50 was considered a satisfactory price; but ₱18 could not tempt the inhabitants of the district of Dapitan to exert themselves in preparing the fiber. Similarly, the sugar growers of Ilocos are discontented with the low price of sugar (₱1.60), but those of Batangas are likewise dissatisfied with ₱3.76 per picul and are holding their crop for higher prices.

There were, indeed, almost complete failures of some crop or other in a few localities, as, for instance, of tobacco and corn in the middle Cagayan Valley, and of corn generally in the south of the Archipelago; but, as stated, the average yield was fair. The limited quantities harvested were in most instances due more to the small extent of the areas under cultivation than to climatological or biological causes. As to the latter, injurious insects have been reported only from the region of Tuguegarao, where they ruined the tobacco crop almost completely, and, in conjunction with the lack of rain, severely damaged the corn; and from Principe, where the "lunao" (worms) made heavy inroads upon the rice fields. Near Caraga, southeast coast of Mindanao, rats did considerable damage, and in southern Leyte wild hogs created havoc in the corn and camote fields. Excessive rains were experienced in the district of Surigao, which stopped just in time to let the rice fields escape very serious harm; likewise on the east coast of Leyte, where in several localities hemp and tobacco have been injured to some extent. In southeast Mindanao agriculture has been benefited by timely rains. The west coast of Leyte felt already the lack of rain; while north of parallel 13, but especially in northern Luzon, complaints of delay in agricultural operations or of some injury to the growing crops, both due to drought, were well-nigh general, except as regards the western coasts, where the little rain which fell came very timely.

The great drawback to agriculture, the one responsible for the small extent of the areas planted, is the lack of draft animals. Unfortunately, there is no prospect for an early cessation of rinderpest and other animal sicknesses. The losses are more or less severe in different provinces, but few of these are entirely free of the pest. A great menace lies in the animals imported from China; it is a common experience that epizoötia develops among them within a few days after their arrival in the Islands.

In Mindanao the cultivation of Manila hemp is extending steadily. Also on the Island of Bohol abacá plantations are advancing into the interior. On the contrary, in the north of the

Archipelago maguey (sisal hemp) is gaining ground, the chief obstacle to its rapid spread being at present the difficulty with which young plants are obtained.

The characteristic work of the month consists in preparing the plots on which mountain rice is to be planted, be they permanently occupied fields or so-called "caiñgin" (woodland clearings).

The outlook for the next harvest is bright. Fair to excellent conditions of the growing crops are reported from nearly everywhere.

SPECIAL NOTES.

DISTRICT I.

Borongan.—Copra and hemp gave good returns during this month, especially the former. The rice fields are in an extraordinarily flourishing condition, wherefore there is good hope of an abundant crop, a thing unknown along this coast for several years. There is, however, one discordant note—the severe losses caused by epizoötia, which carries off carabaos, cattle, and horses.

Tacloban.—The amounts of hemp and copra produced continue to exceed the average; the crops of sugar cane, sweet potatoes, palawan, gabe, and other vegetables are good. The rice and corn fields, as well as the plantations of the products mentioned, are in a flourishing condition. Bananas and greens are, however, scarce at present. Rice maintains itself at a high price. The rains have injured the tobacco at Hinunangan and the hemp at Carigara. In the former municipality bats have likewise done some harm. Epizoötia, far from disappearing, creates havoc among the carabaos and hogs, especially at Carigara, where it has caused the following losses: Carabaos, ₱4,100; hogs, ₱1,050. In Naval two carabaos died; in Alangalang many hogs.

Ormoc.—The products harvested during this month are the same as those gathered during the preceding, but the result has been less. The rains were below the average for this month. People are beginning to prepare woodland clearings ("caiñgin") in which mountain rice is to be planted. The mortality among carabaos during the month was about 3 per cent.

Tuburan.—The principal products harvested during the month were corn, tobacco, and cacao. The crops still growing present, as a rule, a healthy appearance; but some rice plantations and cacao trees, which had been severely damaged by the violent winds of January 7, have not yet regained their full vigor. Disease has spread among the goats, hogs, and poultry, claiming two or three victims per day.

Maasin.—About the middle of March were harvested very small quantities of sugar cane, corn, and sweet potatoes. In a few places the latter two crops had been devastated by wild hogs.

Surigao.—During the first decade of the month rains were excessive, so much so that the owners already despaired of their rice fields; and really, if the heavy downpours had continued a few days longer, the damage to the rice would have been very serious. At present the fields planted with this cereal are in a very flourishing condition and give hopes of a crop which will surpass that of last year. The production of hemp and copra is increasing; the price of the latter commodity being ₱9 to ₱10; that of the former, ₱22 to ₱23 per picul. The hemp plantations and cocoanut groves are multiplying throughout the province, and everybody is busy planting wherever he can. On the Island of Dinagat people occupy themselves nearly exclusively in the cultivation of hemp, since the planting of rice holds out but small inducements.

Tagbilaran.—The aspect of the rice fields is fair in some municipalities in the interior where an early sowing was had, as, for instance, Corella, Balilihan, Antequera, Loboc, and Inabanga, but rather bad in Albuquerque and other localities. Abacá plantations are extending into the interior of the island. At Inabanga, Tubigon, and Calape some corn has been harvested; but at Tagbilaran and the neighboring towns along the coast corn has been so scarce that its price rose from 9 centavos per ganta (3 liters) to 12 centavos. At Bâtuan quite a number of cattle have succumbed to rinderpest.

Butuan.—The continuous rains which fell during this month have greatly promoted the growth of the rice. Among the poultry a sickness has appeared which killed as many as 8 in a single day in one and the same house. Dead chickens are likewise found in the fields. Hemp and copra form the principal crops, the respective prices being ₱16.50 and ₱9 per picul.

Balingasag.—About the middle of March, 6 carabaos, 1 head of cattle, and a number of chickens died of sickness.

Caraga.—The rice fields look well, thanks to the rains and squalls, which have had a good effect upon all kinds of plants. The growing of hemp is spreading more and more every day; but during this month neither hemp nor copra have been exported from here. There was a great scarcity of rice in this place, which went so far that this important article could not be obtained even at the stores. Nothing has been heard of sickness among the stock. Some crops have been damaged by the nightly depredations of rats.

Davao.—The wild tribes of this region are gradually coming to understand the advantage of fixed habitations, and in proportion to their establishing such, morality and agricultural pursuits grow among them. At present most of them, if not all, are already well provided with the necessaries of life. The rainfall, though very small, and the somewhat strong winds proved a boon to the farmers. The exportation of commercial products such as hemp, gum mastic, copra, wax, biao, and first, second, and third class woods is continually on the increase. Greens and vegetables of the various classes are abundant.

DISTRICT II.

Capiz.—During the months of February and March the chief occupation of the farming population consisted in clearing their fields for the planting of rice and other commodities. Palay (unhulled rice) sells for ₱1.70 per cavan (75 liters). There is a good supply of sweet potatoes, gabe, and sugar cane in the market, but uve and corn are scarce.

San José de Buenavista.—During March corn and white cabbage have been planted, while gabe, uve, sweet potatoes, and tomatoes have been harvested, the last two, however, in smaller quantities than last year. Tobacco and sugar cane are still growing in the fields. No cases of rinderpest have been recorded, but chickens are suffering from a sickness which the natives of this province call "ătay." This seems to be a sort of dysentery; the animals attacked by it grow very weak until they finally die, after having emitted water and foam from the mouth. As to a remedy, some say the fowls can be saved by amputation of the comb, others by a bleeding effected by an incision of the veins which are below the wings; but neither remedy is effective, as has been found out by the selfsame people who recommended them.

Iloilo.—During this month the weather has been more favorable for farm work than during the preceding, especially as regards the crushing of sugar cane and the planting of a new crop of this product. At Barotac Nuevo and Cabatuan these tasks are finished in spite of the lack of draft animals, but at Santa Barbara people are still working at them. The tobacco fields are of very much reduced size, owing to the scarcity of work animals, but the crop is, as a rule, relatively better than last year's. Mongos, sweet potatoes, and other tubers have given good returns, likewise bananas. Sugar cane, however, gave a poor crop, especially in the township of Janiuay, where the failure is due to the ravages of locusts and grubs during preceding months. The planting of the new crop has been delayed considerably by the heavy rains which fell during January, February, and the first half of March. At present people are occupied in preparing the ground for the rice to be planted. This task has to be performed to a great extent by means of bolo and hoe, since rinderpest has left very few animals alive and even of these many are sick. The result is that few fields are being cultivated.

Bacolod.—During the month of March, especially since the second decade, the weather has been favorable for the crushing of the sugar cane, an operation which had been very much delayed by the continual rains during February. In Murcia only a small quantity of mountain rice could be sown thus far, and many fields, though already prepared, can not be sown until some rain falls. Epizoötia continues decimating the stock; of the carabaos and other cattle sent by the Government to Bacolod 11 head have fallen victims to this disease. According to information received from Sagay the corn crop harvested during the month is very small, the cyclone of January 10 and 11 being responsible for the failure.

Dapitan.—In some parts of this municipality—that is to say, in the more elevated regions—the people have begun to make woodland clearings; in others they are still waiting. Many of the low-lying fields are fully prepared for planting and the farmers are only waiting for favorable weather, because at present the ground is so hard that the plow can hardly break it. Copra maintains its high price, selling for ₱10.50. Hemp, however, has fallen as low as ₱18, while during the preceding months it brought as much as ₱22 to ₱24 per picul. The result is that few people devote their energies to the stripping of the fiber. Sweet potatoes, the staple article of food on Siquijor Island, cost at present ₱1 per sack, which is double the price paid in former years.

Isabela, Basilan.—During March 7 piculs of copra and 10 piculs of hemp have been produced at Isabela, all of which was sent to Zamboanga. The crop of sugar cane, bananas, and guayabas is fair. Since March 1 many people have cleaned up their "caiñgin" and looked for new plots of ground, where they might plant rice, corn, and other crops. Several have fired their plots during the last days of the month in order to be fully prepared when the rainy season sets in.

DISTRICT III.

Legaspi.—During the second half of the month the lack of rain made itself felt, as it interfered with the planting of hemp. It is feared that the drought will continue during April, which would mean serious losses to the planters. Libog had a good crop of hemp, sampaloc, macopa, bananas, guayabas, sweet potatoes, and lemons. The drought has slightly injured one or the other crop of small importance. Among the hogs and poultry is spreading a sickness which has already caused some losses. At Albay and Daraga the hemp crop was fair, but that of sweet potatoes and gabe abundant; of bananas, squash, and tomatoes only a small quantity was gathered. Tiui had no crop at all.

Gubat.—About the middle of March the harvest began here and in the other municipalities of the province, as Bacon, Prieto-Diaz, and Sorsogon. It is already apparent that same will not be abundant. The market price of hemp is ₱14 per picul, that of rice ₱6.75.

Romblon.—The state of the crops is fair, since neither rains nor violent winds have done any damage during the month of March. The island is free from injurious insects and from sickness among the animals.

Calbayog.—The amount of hemp bought by local merchants during the month of March reached 8,410 piculs, while only 20 piculs of copra changed hands. The rice harvest is still in progress in several places, the yield being very small. The greater part of the crops growing at present are suffering from lack of moisture. Surra continues its ravages among the horses.

DISTRICT IV.

Santo Domingo.—During this month the stakes for uve have been placed in the fields. Sweet potatoes, sugar cane, and rice are doing well. Of the latter commodity there is at present a great scarcity. The price is ₱9 per sack. Uve is likewise a rare article, especially since the time for planting them. Even then they cost more than 6 centavos (medio real) apiece. A few old cows have died, having been unable to stand the changes of temperature (?).

Aparri.—During this month only few corn fields are met with in this region which are in a flourishing condition. Vegetables are becoming gradually more abundant than they were in the preceding months. In Mision people are gathering the first crop of maguey, which had been planted last year as an experiment. There is some sickness among the poultry, but it does not amount to much. No losses have occurred among the stock.

Tuguegarao.—The tobacco and corn crops are very bad. The poor farmers are lamenting the almost complete loss of their plantations, caused by the enormous number of worms which attacked the stalks, sprouts, and leaves of the tobacco plants. It is said that the leaves can not be used for even fifth-class tobacco. The corn, besides suffering the same fate as the tobacco, also dried up for lack of water. Luckily, the rice crop yielded a fair harvest. Peñablanca is the only place in this province (Cagayan) where first-class tobacco leaves can be obtained and where the corn crop was likewise at least fair. From Auitan, which is a barrio of Cabagan Viejo, to Echague, both in the Province of Isabela, crops are said to have been fair both in quantity and quality. The sickness among the carabaos, which has been mentioned in the report for the preceding month as prevailing at Enrile, has been checked successfully.

Vigan.—The state of the crops is about the same as during the preceding month, except that at present the indigo harvest is in progress; yield passable. This may be due to the excessive rains during last September, at the time when the seeds were sown. A few ripe mangoes begin to appear in the market, costing 10 centavos apiece. People are complaining bitterly of the scarcity of this fruit. Said scarcity may be the effect of the squally winds which prevailed at the time when the mango trees were flowering. It seems as if epizoötia were breaking out anew in the town of Narvacan and there is grave fear of its spread.

Candon.—The sugar growers are rather disheartened because their products fail to command a good price this year. The price prevailing during the month was ₱1.60 per picul, with a tendency to fall still lower. The rainfall has been small but none the less beneficial. The strong winds have damaged the fruit trees, such as mangoes, lomboy, oranges, santol, and prunes. Neither locusts nor other injurious insects, nor sickness among the stock, have been in evidence.

San Fernando, Union.—Throughout the greater part of the province people have begun to harvest tobacco, corn, sugar cane, and all kinds of vegetables; while sweet potatoes and oton are the principal crops growing in the fields. About the tobacco crop opinions are divided; some believing that it will be good and others maintaining that it will be only middling, on account of insufficient rainfall. Corn is giving excellent returns and the farmers devote themselves to its cultivation with enthusiasm. Two years ago this article was hardly known; now, between 1,300 and 1,400 quintals (1 quintal = 46 kilos) are sold per month, bringing an amount of ₱900 to ₱1,000, a sum which is almost sufficient to support San Fernando and its neighboring towns. Fortunately rinderpest does not cause great losses; but sickness has appeared among the hogs and claims many victims.

Baguio.—The crops growing at present in the fields consist chiefly of cabbage, sweet potatoes, and potatoes. They are in a fair condition, though suffering slightly from lack of water. The coffee trees are flourishing and promise a good crop.

Bolinao.—The maguey crop has been fair; the price of the fiber prevailing here is ₱10 per picul. The cocoanut trees and bongas have not given any fruit at all, owing to the cyclone which passed through this region last year, but mangoes, lomboys, guayabas, etc., promise fruit in abundance. The crop of tomatoes, balsamine, eggplant, and other garden plants has been rather small. The price of rice is ₱4.50 per cavan.

Baler.—The crops of tobacco, corn, and tubers are good; but rice is very scarce, one of the reasons for this fact being that the plantations had been infested by worms called "lunao."

Tarlac.—Watermelons, sweet potatoes, sincamas, tomatoes, etc., are abundant and very cheap, except watermelons, the price of which has risen in spite of the great supply. The mango groves promise plenty of fruit, but the lomboy and other important fruit trees have been harmed by the violent winds, which tore off a vast amount of blossoms. At the beginning of the month some farmers were still occupied in thrashing rice. Rain has been scarce. The municipal president of Capas reports that rice, sugar cane, corn, and gabe have yielded a fair crop. Some people are contemplating devoting themselves to the cultivation of maguey, but it is difficult to obtain plants.

Arayat.—All the farmers of this and the other townships of the province have finished the task of storing away their rice and sugar crops in the warehouses; but the work of planting corn could not be brought to a close, as the fields are dried out, not a single drop of rain having fallen during the whole month of March. The tubers are likewise set back considerably by the lack of water.

Porac (Dolores).—The cutting and crushing of sugar cane and the planting of rice were finished by the middle of the month. The growing crops suffer from drought, as it has not rained during the month. Neither harmful insects nor sickness among the draft animals have made their appearance.

Olongapo.—Bananas, tubers, and garden products are plentiful, especially squashes. People are beginning to prepare their fields for the sowing of rice. Rinderpest has caused the loss of five carabaos.

Malolos.—There is an abundant supply of tomatoes, sincamas, and corn in the market. The crushing of sugar cane and planting of various products still continues. No rain whatever fell during the month. This whole province is free from injurious insects, but not entirely from epizoötia, because at San Miguel de Mayumo 8 carabaos fell victims to this disease.

Balanga.—During the first decade of the month all the work incidental to the sugar crop was finished, but the thrashing of rice is not yet completed and it appears as if results would not correspond with the expectations which had been entertained; there is altogether too much chaff. The sugar cane growing at present and some fruit trees such as mangoes—which are laden heavily with fruit—suffer from the drought, and many fruits fall. The crop of sincamas and of the small quantity of corn which had been planted is fair. Of the 28 carabaos which, according to the records of the Bureau of Health, had been attacked by rinderpest, not one escaped with its life.

Silang.—Corn, sweet potatoes, and watermelons gave good crops in this vicinity. Sugar cane, gabe, and other plants growing at present are in a fair condition. The lumber trade is paralyzed on account of the lack of draft animals.

San Antonio (Laguna).—The farmers are at present occupied in tilling the dry fields, nearly all those who possess carabaos being busy with plowing to prepare the ground for the planting of rice and other products. San Antonio itself is free from animal sickness, but some towns in the neighborhood are still suffering as before. The rice now growing gives promises of a good crop, provided insects and rodents do not damage it. The amount of hemp produced is diminishing, owing to the devastation caused by the wild hogs and to the effects of the last cyclone.

Atimonan.—Favored by a few timely showers during the month, lowland rice is at present, as a rule, in an extremely flourishing condition. The ears are beginning to ripen and it will soon be ready for cutting. It is expected that the yield will be above the average. Copra being scarce, its price has risen; here it is quoted at ₱8.50 per picul. The price of hemp is ₱19. No cases of sickness among animals have been recorded.

Batangas.—The crushing of sugar cane is finished in this province; but the greater part of the sugar produced is stored in the warehouses, the owners hoping for better prices than are being paid at present, which do not exceed ₱3.70 per picul of improved sugar. The fields of sugar cane are beginning to languish under the heat, because during the whole month it has rained only once and even then the amount of water was very small. People are occupied in preparing their fields for the planting of rice which is to take place next May. Hemp, coffee, cacao, sweet potatoes, gabe, sincamas, onions, tomatoes, and bananas are the principal products which are at present for sale in the markets; a few mangoes and prunes, still green, are likewise to be seen.

ESTADO GENERAL DE LAS COSECHAS.

Por regla general, los productos agrícolas propios de este mes, han dado regular cosecha. El abacá y el cóprax se han beneficiado en cantidad satisfactoria. El precio del primero ha variado entre ₱14 y 23, el del segundo entre ₱8.50 y ₱10.50 el pico. La cosecha de arroz ha sido buena por término medio. El maíz, mientras que ha escaseado al sud de Manila, ha sido muy abundante al norte de Luzon, donde algunos años atrás era poco menos que desconocido. Los rendimientos del tabaco han sido buenos, si se exceptúa la parte sud de la Provincia de Cagayán. El camote y otros tubérculos han fructificado en abundancia en el norte de Luzon, pero menos en las islas del sud. El azúcar ha tenido relativamente precios bajos, desde ₱1.60 en Ilocos hasta ₱3.76 (mejorado) en Batangas.

Es muy difícil formar exacto juicio de las condiciones agrícolas de las diferentes provincias por los precios que alcanzan en los mercados los productos cosechados. Así, mientras que en Surigao ha valido el pico de abacá ₱22 á ₱23, á los agricultores de Butúan les ha parecido precio satisfactorio el de ₱16.50; en cambio los cosecheros de Dapitan no se creyeron suficientemente pagados con ₱18 por pico para trabajar con energía en la preparación de dicha fibra. Por modo semejante, los cosecheros de azúcar de Ilocos se lamentan del bajo precio (₱1.60) de su producto, y los de Batangas tampoco se contentan con ₱3.76 por pico de azúcar mejorado y guardan en sus almacenes la cosecha esperando precios más altos.

En unas pocas localidades se perdió casi por completo alguna que otra cosecha, como por ejemplo, la de tabaco y maíz en el centro del valle de Cagayan, y la de maíz generalmente en el sud del Archipiélago: pero esto no obstante, por término medio las cosechas han sido buenas, como ya se ha dicho. Que algunos productos se hayan cosechado en corta cantidad es debido, en la mayoría de los casos, más á la pequeña extensión de los cultivos que á causas climatológicas y biológicas. Por lo que toca á estas últimas, insectos dañinos no se han presentado más que por la parte de Tuguegarao, donde destruyeron casi por completo la cosecha de tabaco y, juntamente con la escasez de agua, causaron grandes perjuicios en la de maíz; y en Príncipe, donde el gusano "lunao" perjudicó notablemente los arrozales. En Caraga, en la costa sudeste de Mindanao, las ratas, y en el sud de Leyte los jabalíes, causaron grandes pérdidas en los campos de maíz y de camote. Ha habido excesivas lluvias en el distrito de Surigao, donde cesaron á tiempo para que los campos de arroz se libraran de grandes daños; y en la costa oriental de Leyte, donde la cosecha de abacá y tabaco ha sufrido algun tanto por esta causa en algunas localidades. En cambio, en el sudeste de Mindanao, lluvias en buena sazón han favorecido no poco á la agricultura. En la parte occidental de Leyte se dejó ya sentir la falta de lluvia. Al norte del pararelo 13, y especialmente en el norte de Luzon, la escasez de lluvia ha causado quejas generales de haberse retrasado los trabajos agrícolas y de haber sufrido algun daño las futuras cosechas. Deben empero exceptuarse las costas occidentales, donde la poca lluvia que hubo, cayó en tiempo muy oportuno.

Al presente, el mayor obtáculo para el progreso de la agricultura y causa de que solo pequeñas extensiones de terreno se destinen al cultivo, es la falta de animales de labranza. Desgraciadamente, la peste de carabaos y otros vacunos no lleva trazas de desaparecer en breve plazo, lo mismo que otras enfermedades de animales. La cuantía de las pérdidas varía segun las provincias, pero son pocas las que se han visto enteramente libres de la peste. La importación de animales de la China constituye un gran peligro, pues es cosa averiguada que la epizotia se desarrolla entre ellos á los pocos dias de haber llegado á estas islas.

En Mindanao se extiende rápidamente el cultivo del abacá, lo mismo que en el interior de la Isla de Bohol. Al contrario, al norte del Archipiélago avanza cada día el cultivo del maguey; siendo al presente el principal obstáculo al mayor desarrollo de dicho cultivo, la dificultad de obtener plantas tiernas.

El trabajo característico de este mes es el preparar los terrenos para las plantaciones de palay de secano, ya sean campos constantemente cultivados, ya sean los que se llaman "caiñgin".

La próxima cosecha ofrece ser excelente; de casi todas partes llegan satisfactorias noticias del halagüeño estado de crecimiento y desarrollo en que se encuentra.

NOTICIAS PARTICULARES.

DISTRITO I.

Borongan.—Las cosechas del cóprax y abacá continúan en buen estado, particularmente la del cóprax. El palay sigue también en su desarrollo extraordinariamente bueno y floreciente, por lo cual se espera obtener en este año una cosecha abundante, cual no se ha conocido hace ya algunos años. Son muy de lamentar los graves perjuicios causados por la epizotia con la muerte de carabaos, vacas y caballos.

Tacloban.—La recolección ordinaria de abacá y cóprax continúa tan buena como la cosecha de caña-dulce, camote, palawan, gabe y otros vegetales. Los campos de palay, maíz y de los productos ya mencionados están lozanos; escasean hasta ahora verduras y plátanos. El arroz permanece en su alto precio. Las lluvias perjudicaron el tabaco en Hinunangan y el abacá en Carigara; el murciélago causó daño en Hinunangan. La epizotia, lejos de desaparecer, hace estragos entre carabaos y cerdos, especialmente en Carigara, donde causó las pérdidas siguientes: ₱4,100 en carabaos y ₱1,050 en cerdos. En Naval murieron dos carabaos y en Alañgalang muchos cerdos.

Ormoc.—Los productos que se dan este mes son los mismos que los del mes anterior, pero la cosecha ha sido menor. Las lluvias han sido menos que regulares. Se empiezan á preparar los terrenos llamados "caiñgin," para la siembra del palay. La mortandad entre los carabaos ha sido este mes un 3 por ciento.

Tuburan.—Los productos principales que se han cosechado durante el mes de Marzo son: maíz, tabaco y cacao. La futura cosecha, en crecimiento todavía, se presenta, en general, regularmente buena; pero algunas siembras de palay y árboles de cacao, perjudicadas por los fuertes vientos del 7 de Enero, hasta ahora no han recobrado completamente su lozanía. Se ha propagado una enfermedad entre cabras, cerdos y gallinas, muriendo dos ó tres cada día.

Maasin.—Á mediados de Marzo se han cosechado pequeñísimas cantidades de caña-dulce, maíz y camote. En algunos sitios los últimos dos productos habían sido perjudicados por los jabalíes.

Surigao.—En la primera década del mes ha habido lluvias excesivas, tanto que los agricultores desesperaban ya de sus palayales; en verdad, si la lluvia hubiese continuado algunos días más, el daño al palay hubiese sido serio.—El estado actual de este cereal es muy bueno en general y los labradores esperan una cosecha superior á la del año pasado. El beneficio del abacá y del cóprax va extendiéndose; siendo el precio de este artículo ₱9 á 10 y el de aquel ₱22 á 23. Las plantaciones de abacá y los cocales se multiplican en toda la provincia y todo el mundo se apresura á introducir estos cultivos, donde quiera que pueda. En la isla de Dinágat la gente se dedica casi exclusivamente al cultivo de abacá, porque el del palay promete muy poco.

Tagbilaran.—El aspecto de los palayales es regular en alguns pueblos del interior, que pudieron anticipar la siembra, como Corella, Balilihan, Antequera, Loboc é Inabanga; pero bastante mal en Alburquerque y otras poblaciones. Se van extendiendo los abacales por el interior de la isla. En Inabanga, Tubigon y Calape se recolectó algo de maíz; en Tagbilaran y otros pueblos playeros vecinos escaseó de tal modo este producto, que durante el mes de Marzo el precio del mismo ha subido de 9 á 12 centavos la ganta.

En el pueblo de Batuan ha muerto bastante ganado, víctima de la epizotia.

Butuan.—Las continuas lluvias que han caido en este mes han favorecido mucho el buen crecimiento del palay. Ha aparecido una enfermedad en las gallinas que ha llevado hasta 8 en un día, en la misma casa. También se encuentran muertas en las sementeras. Se cosechan abacá y cóprax, cuyos respectivos precios son ₱16.50 y ₱9 por pico.

Balingasag.—Á mediados de Marzo murieron de epizotia 6 carabaos, una vaca y varias gallinas y gallos.

Caraga.—Las sementeras de palay presentan buen aspecto por las lluvias y chubascos que han sido favorables para toda clase de plantas. El cultivo de abacá se va extendiendo más cada día. Este mes no hubo exportación de abacá, ni de cóprax. Se ha sentido aquí escasez de arroz, hasta el punto de ser imposible obtenerlo en las casas de comercio. No se oye decir que haya enfermedades notables entre los animales. Las ratas destrozan algunas sementeras por la noche.

Davao.—Las tribus infieles van entendiendo las ventajas que trae el tener residencias fijas, y á medida que las van estableciendo, progresa gradualmente entre ellos la moralidad y la agricultura. Actualmente si no todos, la mayor parte tiene lo suficiente para sus necesidades. Las pocas lluvias caidas durante este mes y los vientos algo fuertes han sido favorables para las plantaciones. Cada día aumentan las exportaciones de todos los productos comerciales, como abacá almáciga, cóprax, cera, biao y maderas de primera, segunda y tercera clase. Hay abundancia de hortalizas.

DISTRITO II.

Cápiz.—Durante los meses de Febrero y Marzo los agricultores se han dedicado á limpiar sus terrenos para la siembra del palay y otros artículos. El palay se vende al precio de ₱1.70 por caván.—En la plaza hay bastante camote, gabe, caña-dulce, pero escasea el uve y el maíz.

San José de Buenavista.—En este mes se ha sembrado maíz, calubay y calabaza blanca; y se ha cosechado gabe, uve, berengena, camote y tomate; los últimos en menor cantidad que el año pasado. Crecen en los campos tabaco y caña-dulce. No se han registrado casos de epizotia en los ganados; pero entre las gallinas hay una enfermedad, que los naturales de esta provincia llaman "atay." Esta parece ser una especie de disentería, con la cual las aves se debilitan hasta que mueren después de haber echado por la boca agua con espuma. Cuanto al remedio de este mal, unos dicen que con cortarles la cresta las gallinas atacadas se salvan, otros que con una sangradura cortándoles las venas de debajo las alas; con todo, estas medidas no pueden remediar el mal como han comprobado los experimentos que se han hecho.

Iloílo.—Durante este mes, el tiempo ha sido más favorable para trabajos de agricultura, en especial para la molienda de la caña-dulce y plantación de nueva cosecha de la misma, que el mes anterior. En Barotac Nuevo y Cabatúan ya se han terminado estas tareas, no obstante la falta de animales, pero todavía continúan en la jurisdicción de Santa Bárbara. Las plantaciones de tabaco son muy reducidas, debido á la escazes de carabaos, pero en general la cosecha es relativamente mejor que el año pasado. La cosecha de mongo, camote y demás artículos es regular, como también la de plátanos. La caña-dulce resulta muy menguada, especialmente en el municipio de Janiuay, donde las langostas y loctones han causado destrozos en los meses anteriores; y las nuevas plantaciones están bastante atrasadas por las abundantes lluvias que cayeron en los meses de Enero y Febrero y hasta mediado mes de Marzo. La gente está ocupada en limpiar los terrenos para la siembra de palay, á fuerza de brazos con bolos y azadones, porque los animales han sido reducidos á número muy corto por la epizotia, y de los que quedan muchos están enfermos. Por esto son pocos los campos cultivados.

Bacolod.—En este mes de Marzo, especialmente desde la segunda década, el tiempo favoreció á los hacenderos para continuar la molienda de caña-dulce, muy impedida por las lluvias continuas del mes de Febrero. En Murcia se ha podido sembrar poco palay de secano, quedando aun muchos terrenos dispuestos á recibir semillas en cuanto haya lluvia. La epizotia sigue causando estragos en el ganado. Entre los carabaos y vacunos depositados por el Gobierno en esta cabecera han muerto unas 11 cabezas de la misma enfermedad. Según noticias de Sagay, la cosecha de maíz es muy poca, por el temporal del 10 al 11 de Enero pasado.

Dapitan.—En algunos puntos de esta municipalidad, es decir en los terrenos altos, los agricultores ya han empezado hacer "caiñgin," en otros todavía no. Varios terrenos bajos están limpiados y la gente solamente aguarda el tiempo favorable para plantar; pues por ahora la tierra está tan dura, que apenas es posible pasar los arados. El cóprax sigue á precio alto, vendiéndose á ₱10.50 el pico. En cambio el abacá ha bajado hasta ₱18, mientras en los meses anteriores llegaba á ₱22 y ₱24. Por esto poco se dedican al beneficio de este producto. El camote, principal alimento entre los Siquijorinos, se compra por ahora á ₱1 el saco, que es doble del precio de este artículo en los años anteriores.

Isabela, Basilan.—En el mes de Marzo se han cosechado en este pueblo 7 picos de cóprax y 10 picos de abacá que fueron conducidos á Zamboanga. La cosecha de caña-dulce, plátanos y guayabas es regular. Desde el día 1.° de Marzo muchos de los agricultores han limpiado sus "caiñgin" y buscado otros terrenos para la siembra de palay, maíz y otras plantas de provecho. Varios de ellos han principiado á quemar, para tenerlos preparados para la siembra cuando llegue la época de lluvias.

DISTRITO III.

Legaspi.—En la segunda quincena del mes se ha sentido la falta de lluvias necesarias para la plantación del abacá, y temen los hacenderos que en el siguiente mes continúe de igual modo, lo cual será en grave perjuicio para los mismos. En la jurisdicción de Libog fueron buenas las cosechas de abacá, sampaloc, macopa, plátano, guayaba, camote y limón. La sequía ha perjudicado algunas plantas de menor importancia. En las gallinas y cerdos se ha propagado una enfermedad que ha causado la pérdida de varios. En Albay y Daraga fueron regulares las cosechas del abacá y abundantes las del camote y gabe, con poca cantidad de plátanos, calabazas y tomates. En Tini no ha habido cosecha ninguna.

Gubat.—Á mediados de Marzo principió la cosecha en Gubat y otros municipios de esta provincia, como Bacon, Prieto-Diaz y Sorsogón, la cual se ve que no será abundante. El precio del abacá en el mercado es ₱14 el pico y el del arroz ₱6.75.

Romblón.—El estado de las cosechas es regular. Ni lluvias, ni vientos fuertes han hecho ningún daño durante el mes de Marzo. También está libre esta isla de insectos perjudiciales y de enfermedades en el ganado.

Calbayog.—La cantidad de abacá que se ha vendido durante el mes de Marzo asciende á 8,410 picos; de cóprax; solo se han vendido 20 picos. Continúa la recolección de palay en varios sitios de esta población, pero es muy poco el rendimiento. La mayor parte de las plantas sufren falta de agua. Continúa la enfermedad que riena entre los caballos.

DISTRITO IV.

Santo Domingo.—En este mes se han colocado los rodrigones en las sementeras de uve. El camote está bien y lo mismo la caña-dulce y el palay. Hay escasez de arroz y lo mismo de uve, después de la siembra de este tubérculo: El arroz que llegó aquí en el mes anterior se vendió á ₱9 el saco; y el uve ya antes de la siembra se vendió á medio real el tubérculo. Por no haber podido resistir á los cambios de temperatura han muerto algunas vacas viejas.

Aparri.—En este mes no se ven en los campos más que algunos sembrados de maíz que presentan buen aspecto. Las legumbres van siendo más abundantes que en los meses pasados. Se está beneficiando en Misión maguey del que se sembró el año pasado como ensayo. Hay alguna mortandad en las aves de corral, aunque no de importancia. El ganado en general, sin novedad.

Tuguegarao.—La cosecha tanto de tabaco como de maíz está malísima. Los pobres agricultores se lamentan de la pérdida total de sus sembrados, debida á la infinidad de gusanos que han roido los troncos, tallos y hojas de las plantas de tabaco, pues, según se dice, ni para 5.ª clase pueden servir. El maíz, además de sufrir los mismos daños que el tabaco, se ha secado por falta de agua. Afortunadamente el palay se ha recogido en regular cantidad. Peñablanca es el único pueblo de esta provincia donde se pueden sacar buenas hojas de tabaco y el maíz es regular. Desde Auitan, barrio de Cabagán Viejo, hasta el pueblo de Echagüe, de la Provincia de Isabela, según noticias, la cosecha es bastante regular en calidad y en cantidad. La enfermedad de los carabaos en el pueblo de Enrile de que habla el reporte correspondiente al mes anterior ya se ha localizado.

Vigan.—El estado de las cosechas es casi el mismo que el mes pasado, solo que actualmente se cosecha el añil, pero con resultado mediano. Esto puede ser efecto de las lluvias excesivas que tuvieron lugar en el mes de Septiembre del año pasado, época en que sembraron las semillas. Ya empiezan á aparecer en el mercado algunas mangas maduras y se venden á ₱0.10 cada una. La gente se queja mucho de la escasez de estas frutas, tal vez causada por los vientos racheados en el tiempo de inflorescencia de los mangales. La epizotia parece recrudecer en el pueblo de Narvacán y se teme que tomará grandes incrementos.

Candon.—Los cosecheros de azúcar están desanimados por no tener buen precio este año, el corriente durante este mes es ₱1.60 el pico, con tendencia á bajar más. La lluvia, aunque poca, ha favorecido las faenas. Los fuertes vientos han perjudicado los árboles frutales, como manga, lomboy, naranja, santol y ciruela. No hubo insectos dañinos, plaga de langostas ó enfermedad de ganados mayores.

San Fernando, Unión.—En la mayor parte de la provincia ha principiado la recolección de tabaco, maíz, caña-dulce y toda clase de verduras. Creciendo en los campos se halla el camote, otón y otros varios productos. La cosecha del tabaco, según unos se espera que dé buenos resultados, mientras otros afirman que será mediana, debido á que ha llovido muy poco. La cosecha del maíz está dando muy buenos rendimientos y los agricultores se dedican con mucho entusiasmo al cultivo de este artículo. Hace dos años apenas se conocía maíz en esta región y hoy mensualmente se venden de 1,300 á 1,400 quintales, lo cual da un beneficio de ₱900 á ₱1,000 mensuales próximamente, cantidad que basta para sostener en regular estado el pueblo de San Fernando y limítrofes. La epizotia afortunadamente no hace grandes estragos; pero en los cerdos ha aparecido una enfermedad que causa bastantes víctimas.

Baguio.—Es regular el estado actual de los sembrados consistentes principalmente en repollo, camote y patatas. En general sufren algo los sembrados de falta de agua, pero florece bien el café y se espera buena cosecha.

Bolinao.—Se ha recolectado algo de maguey, cuyo precio en la plaza es de ₱10 el pico. Los cocos y bongas no dieron fruto por efecto del temporal que pasó por aquí el año pasado. Los demás árboles frutales prometen bastante fruto, pero la cosecha de tomates, amargosos, berengenas y otras hortalizas es solo mediana. El precio del arroz es ₱4.50 por caván.

Baler.—Las cosechas de tabaco, maíz y tubérculos son buenas, mas la del arroz es muy escasa, entre otras razones por haber sido atacada por los gusanos llamados "lunao."

Tárlac.—Es buena la cosecha de sandía, camote, síncamas, tomate, etc., y se venden estos productos á muy bajo precio, excepto la sandía, cuyo precio ha subido, no obstante la abundancia. Los mangales prometen muchas frutas, pero los lomboys y otros frutales de importancia han sido perjudicados por los vientos fuertes que han hecho caer muchísimas flores. Á principio de mes algunos agricultores todavía estaban ocupados en la trilla del palay. Las lluvias han sido muy escasas. El Señor Presidente de Capas informa que los sembrados de palay, caña-dulce, gabe, etc., han dado cosecha regular. Algunos piensan dedicarse al cultivo de maguey, pero es difícil obtener las plantas.

Arayat.—Todos los agricultores de este municipio y de otros de la provincia han terminado de colocar su cosecha de palay y azúcar en sus camarines, pero todavía no han acabado de plantar el maíz, porque los campos están sufriendo sequía, por no haber caído ni una gota de lluvia durante el mes de Marzo. Los tubérculos están atrasados por la misma falta de agua.

Pórac (Dolores).—Á mediados de este mes ha terminado la cosecha de caña-dulce y la siembra de palay. Las plantas sienten la sequía por no haber llovido en este mes. No hay insectos perjudiciales á las plantas, ni enfermedad notable entre los animales de labor.

Olongapó.—Dan buenos rendimientos el plátano, lo mismo que los tubérculos y las hortalizas, principalmente la calabaza. Los agricultores empiezan á preparar los terrenos para la siembra del palay. La peste ha causado la pérdida de 5 carabaos.

Malolos.—En el mercado se venden tomates, síncamas y maíz en abundancia. Continúa la molienda de caña-dulce y la plantación de varios artículos. No ha habido lluvia durante el mes. Toda esta región está libre de insectos dañinos, pero no del todo de la epizotia, porque en San Miguel de Mayumo 8 carabaos han muerto víctimas de esta enfermedad.

Balanga.—En la primera década del mes de Marzo se ha terminado la cosecha de azúcar. La trilla del palay aún no se terminó y parece que no da el resultado que se esperaba, por haber tenido muchas granzas. La caña-dulce y algunos árboles frutales, como los mangos, que se presentan con mucha fruta, sufren por la sequía, y en efecto caen los frutos. La cosecha de síncamas y maíz (en pequeña escala) es regular. De los 28 carabaos atacados de epizotia, según registro de Sanidad, todos se perdieron.

Silang.—En este pueblo hubo buena cosecha de maíz, camote y sandía; las de caña-dulce, gabe y otros artículos se presentan regulares. El negocio de maderas está paralizado por falta de animales de labor.

San Antonio.—Los labradores se hallan actualmente ocupados en cultivar los campos secanos; siguen arando casi todos los que poseen carabaos, para sembrar palay y otras plantas. Este pueblo está libre de peste de animales, pero otros pueblos limítrofes sufren las mismas enfermedades que antes. El palay plantado promete ser bueno, si no es atacado por los gusanos ó roedores. La cosecha de abacá decrece por los daños que causan los jabalíes y los que causó el último baguio.

Atimonan.—Favorecido el palay de regadío por algunas lluvias caidas en buena sazón durante el mes pasado y presente, hoy, en su mayor parte, presenta un aspecto inmejorable. Maduran ya sus espigas y se podrá hacer la recolección en breve plazo, esto es, hacia fines de Abril, en cantidad quizás más que regular. El cóprax, debido á su escasez, ha subido de precio. En la plaza se cotiza el pico en ₱8.50; el del abacá en ₱19. No se registra ninguna enfermedad en los animales de labor.

Batangas.—Ha terminado la molienda de la caña-dulce en esta provincia; pero la mayor parte del azúcar se halla en las bodegas, esperando sus dueños mejor precio que el que se paga por hoy, que no es más que ₱3.76 el pico del azúcar mejorado. Las plantaciones de caña-dulce empiezan á resentirse del calor, pues en todo el mes de Marzo no ha llovido más que un solo día, y aún esta vez fué la lluvia muy escasa. Los agricultores se dedican á preparar el terreno para sembrar palay en Mayo venidero. El tabaco, café, cacao, camote, gabe, síncamas, cebollas, tomates y plátanos son los productos que actualmente se venden en estos mercados, y también se ven algunas mangas y ciruelas verdes.

O

BULLETIN FOR APRIL, 1907.

METEOROLOGICAL BULLETIN FOR APRIL, 1907.

By Rev. José Coronas, S. J.,
Assistant Director of the Weather Bureau.

GENERAL WEATHER NOTES.

Pressure and temperature.—The average of the atmospheric pressure for April, 1907, in the Philippines, differs very little from the normal of that month deduced from a series of several years of observation. The difference for Manila is only—0.18 millimeter. We see in the following table that the mean monthly values of the different stations of the Weather Bureau are generally somewhat higher than those of April, 1906. The highest pressures were observed everywhere on the 3d, and the lowest on the 29th and 30th.

The mean monthly temperature for all our stations is a little inferior to that of April, 1906. The stations of San Isidro, Dagupan, and Tuguegarao reported the highest temperatures 38.5° C., 38.9° C., and 39.4° C., respectively. The absolute maximum for Manila has been 36.7° C., and was registered on the 23d; the absolute minima, 19.5° C. and 19.4° C., were observed on the 7th and 8th.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS, APRIL, 1907.

Station.	Pressure.						Temperature.					
	Mean.	Departure from April, 1906.	Mean maximum.	Day.	Mean minimum.	Day.	Mean.	Departure from April, 1906.	Highest.	Day.	Lowest.	Day.
	mm.	*mm.*	*mm.*		*mm.*		°*C.*	°*C.*	°*C.*		°*C.*	
Tagbilaran	758.67	0.0	761.20	3	756.84	30	27	—1	34.1	25	21.1	6,14
Cebu	59.35	+.18	61.60	3	57.32	30	27.4	—.7	31.9	30	21	6
Iloilo	58.61	+.06	61.28	3	56.49	30	27.5	—1	35.1	25	21.2	1
Ormoc	58.71	—.03	61.25	3	56.73	30	25.5	—1.3	34	20	18.2	14,15
Tacloban	59.55	—.02	62.16	3	57.36	30	26.7	—1.1	36 ?	26	21.9	14
Capiz	59.39	+.05	62.09	3	57.30	30	27.2	—.7	33	29	19.6	4
Calbayog	59.58		62.34	3	57.43	29,30	25.8		35.1	30		
Legaspi	60.03	+.19	63.04	3	57.39	30	27	—.9	33	30		
Atimonan	59.72	—.01	62.69	3	56.54	30	27.4	—.9	36.6	30	21	1
Olongapo	59.38	+.32	61.57	3	57	29	27.3		35.6	18,20	19.9	7
San Isidro	59.79	+.47	62.82	3	57.16	29	28.2	—1.1	38.5	24	19.5	7
Dagupan	59.06	+.15	61.85	3	56.35	29	28.2	—.9	38.9	23	21.5	7,8
Vigan	59.60	—.07	62.06	3	57.02	29	27.5	—1.4				
Tuguegarao	59.84		63.89	3	56.28	30	27.7		39.4	19		
Aparri	60.20	+.57	64.54	3	56.62	29	26	—1	34.1	22	19.8	9

Precipitation.—The following table shows that in about half of the stations of the Weather Bureau the total amount of rainfall for last month has been greater than that of April, 1906. Nevertheless it is stated in the Crop Bulletin for this month that the complaint of lack of rain has been quite general throughout the Archipelago. This is not to be wondered at, if we consider that, with few exceptions, all the stations which reported this month more rain than for April of last year had reported then less rain than for the same month of 1905. Besides it is well known that April is one of the months in which drought is more frequently felt in the greater portion of the Archipelago, especially if thunderstorms are rather rare. In Manila only 4.9 millimeters of water fell during the whole month; this amount is equal to that of April, 1906, but inferior to the normal of that month by 25.5 millimeters.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF APRIL, 1907.

District.	Station.	Total.	Departure from Apr., 1906.	Rainy days.	Departure from Apr., 1906.	Greatest rainfall in a single day.	Day.
		mm.	mm.			mm.	
I	Yap	24.9	− 60.9	12	−12	7.1	22
	Davao	144.7	− 44.2	5	− 2	43.7	16
	Caraga	112.5	− 86.8	10	− 6	29.7	20
	Balingasag	9.4	− 27.7	2	− 1	8.1	18
	Butuan	130.8	------	16	------	28.3	7
	Tagbilaran	10	+ 5.5	3	+ 1	8.6	27
	Maasin	10.4	− 4.6	2	0	5.3	18
	Cebu	1.9	− 16.7	5	+ 4	.5	7, 23, 28
	Tuburan	4.8	+ 1	2	0	3	7
	Ormoc	58.3	+ 32	6	+ 1	22.1	8
	Tacloban	74	− 57.4	11	0	31	8
	Borongan	128.4	−139.6	16	+ 2	32.5	8
II	Isabela, Basilan	130.9	+ 30.4	8	− 3	60.5	15
	Zamboanga	42.7	+ 26	3	− 3	23.9	9
	Dapitan	70.1	+ 53.5	12	0	30.2	24
	Bacolod	3.6	+ 1.6	3	+ 1	2.3	23
	Iloilo	2.1	------	3	------	1	2
	S. Jose Buenavista	22.3	+ 18.2	2	0	21.8	23
	Cuyo	0	− 11.7	------	------	------	------
	Capiz	36.3	------	5	------	16.3	4
	Culion	.3	------	1	------	.3	26
III	Sumay, Guam	68.6	+ 2.3	7	0	22.9	12
	Calbayog	75.1	+ 31.6	10	− 1	27.2	8
	Palanoc	8	− 1.1	5	+ 4	3.6	2
	Romblon	10.7	------	2	------	5.6	3
	Gubat	94.8	− 19.9	9	+ 3	35.6	9
	Legaspi	115.2	+ 53.3	8	− 5	71.4	9

District.	Station.	Total.	Departure from Apr., 1906.	Rainy days.	Departure from Apr., 1906.	Greatest rainfall in a single day.	Day.
		mm.	mm.			mm.	
IV	Batangas	1.6	------	3	------	0.8	19
	Atimonan	14.2	− 16	2	−3	10.6	2
	Silang	23.3	+ 20.8	3	+2	13.2	29
	S. Antonio, Laguna	51.3	− .2	7	−2	16	5
	Corregidor	25.7	+ 25.7	1	+1	25.7	1
	Manila	4.9	0	3	0	2.4	5
	Balanga	8.1	+ 2.6	1	−1	8.1	1
	Olongapo	3.8	+ 3.8	3	------	1.8	1
	Malolos	6.9	------	1	------	6.9	1
	Porac	29.2	+ 15.4	4	0	21.3	28
	Arayat	12.5	− .2	2	+1	11.2	19
	San Isidro	31.9	+ 13.1	3	+2	15.7	25, 28
	Tarlac	16.6	− 47.2	6	0	7.9	4
	Baler	292	------	12	------	47	12
	Dagupan	113.1	+ 73.6	5	−3	58.4	23
	Bolinao	2.3	------	2	------	1.3	7
	Baguio	1.3	−175.2	1	−9	1.3	2
	S. Fernando, Union	1.3	+ .5	1	0	1.3	23
	Candon	1.3	− 11	1	−3	1.3	2
	Vigan	47.8	− 2.2	1	−3	47.8	24
	Tuguegarao	93.2	+ 20.5	5	−6	64.3	23
	Aparri	28.5	−114.1	4	−4	19.8	24
	Santo Domingo	139.6	− 67.9	6	−7	95.4	24

DEPRESSIONS AND TYPHOONS.

No depression worthy of special discussion was observed during the whole month in the Philippines, or in the western Carolines or in the Ladrone Islands. Yet Commander C. F. Kurtz, I. G. N., commanding the survey ship *Planet,* kindly sent to this Bureau a report which tends to show that a depression or typhoon was probably forming on April 4 to 7 over the Pacific between the southern part of the Philippines and the western Carolines.

As we agree entirely with the remarks of Mr. Kurtz on this depression, we will publish here in its entirety his communication, dated Yap, April 11, 1907. It reads as follows:

April 5 and 6 H. M. S. *Planet* experienced unusually unfriendly weather, without, however, the typhoon barometer (barocyclonometer) falling below the red arrow, which marks the typhoon limit.

April 2 the *Planet* was near the northeast corner of Catanduanes Island, steaming eastward. April 2 to 4 northeast to north-northeast winds prevailed, the force ranging from 3 to 5. April 4 at noon, the position of the ship was 13° 59′ N and 128° 6′ E. From this time until April 5 the barometer fell slowly and the wind diminished; direction, northeast to north. Ship's position at noon of April 5: 13° 33′ N, 130° 19′ E. During the afternoon of this day the wind increased within four hours from force 2 to 5, and during rain squalls to force 6; direction, northeast. At 7 p. m. the *Planet* was in 13° 8′ N, and 130° 59′ E. As the barometer had not fallen further, and the rise after the minimum of 4 p. m. took place very slowly, I surmised that a barometric disturbance lay to the south of our position, and altered the course from 118°—followed since noon—to 90°, in order at least not to approach closer to the center of the supposed depression. During the night the wind continued to blow from northeast, with force 4 to 5, reaching 6 in rain squalls. After the barometer had reached its absolute minimum, 756.8 millimeters at 4 a. m. of April 6, a normal daily oscillation became again apparent.

Ship's position at noon of April 6: 13° 0′ N, 132° 10′ E. The barometer commenced to rise again; wherefore I returned to a course of 120°. The wind decreased gradually and veered to east-north-east at midnight, April 6/7.

At noon of April 7 the *Planet* was in 11° 42′ N, 133° 34′ E. Until our arrival at Yap, 10 a. m. of April 10, we had winds from north-north-east to east-northeast, the force ranging from 2 to 4.

During the afternoon of April 5 the sea came from northeast and no other swell was noticeable. Nor were there any cirri or other precursory signs of a typhoon. If, nevertheless, I concluded that there was a depression south of the ship, this was due chiefly to the consideration that in these regions high winds are to be expected only when the barometer is high, while with a low barometer light easterly winds should blow. The squally character of the wind (the squalls came, however, invariably from the direction of the wind), together with the rain, which was a regular "bad-weather rain" and had no similarity with the trade-wind rains, confirmed me in my suspicions. The subsequent veering of the wind prior to its abatement is likewise in accordance with my view.

I doubt that the disturbance felt by the *Planet* is identical with the typhoon through which the *Chomei-Maru No. 2* had to pass. [See Bulletin for March.] The wind directions indicate that the track of this typhoon lay toward a northerly direction. Hence the center would have had to move in a very abnormal manner if on April 5 and 6 it had been in approximately 9° N and 132° E.

I rather suspect that the disturbance observed on board the *Planet* was a typhoon in the process of formation. The absence of the swell and of the cirrus clouds is easily explained if we assume that the center was just forming; while a fully developed typhoon ought to spread the indications of its existence in all directions.

We will only add to the foregoing interesting report of Mr. Kurtz (*a*) that undoubtedly there was no connection between this depression of April 4 to 7 and the typhoon of the western Carolines, according to the track of that famous typhoon published in the Bulletin for last month; and (*b*) that such a depression or typhoon which seemed to be forming over the Pacific, south of the position of the *Planet*, either did not acquire a complete development or, in case it did, it filled up very soon before reaching the Philippines, where we find no trace of its existence.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[ϕ=14° 34′ 41″ N; λ=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied,—1.72 mm.]

Date.	Pressure (mean).	Temperature. Open air.[2] Mean.	Maximum.	Minimum.	Underground. 0.25 meter. 8 a. m.	0.25 meter. 2 p. m.	0.50 meter. 8 a. m.	0.50 meter. 2 p. m.	1.50 meters. 8 a. m.	2.50 meters. 8 a. m.	Relative humidity (mean)	Vapor pressure (mean)	Evaporation. Free exposure (total).	Shelter (total).
	mm.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	Per ct.	mm.	mm.	mm.
1	759.59	25.8	31.4	19.6	28.6	31.1	29.6	29.9	27.9	27.9	71.9	17.7	9.1	4.7
2	60.72	25.7	30.2	22.5	28.9	30.1	29.5	29.6	28	27.9	76.5	18.7	4.4	2.2
3	62.27	25.6	30.2	21.5	27.9	28.8	29	29.2	28	27.9	73.1	17.7	5.8	3
4	61.80	26.2	31	22	27.5	29	28.7	29	28	27.9	69.5	17.5	6.6	3.2
5	60.95	25.1	29	22	27.2	28.6	28.6	28.7	28	27.9	73.7	17.4	5.9	2.9
6	60.66	25.5	31.8	20	26.9	29.1	28.2	28.6	28	27.9	69.5	16.7	7.8	3.7
7	60.96	25.4	31	19.5	26.4	29	28	28.6	28	27.9	71.3	17	8.1	4.2
8	61.53	26.6	33.5	19.4	26.8	30.4	28.1	28.9	28	28	65.8	16.6	8.7	4.3
9	61.34	27.4	33	21	28	31.2	28.8	29.4	28	28	68.2	18.4	8.9	4.9
10	60.80	27.7	34.5	22.1	28.8	31.9	29	29.9	28	28	69.6	18.9	8.6	4.2
11	59.78	27.8	34.5	20.9	28.8	31.2	29.6	29.9	28	28	65.4	17.8	9.6	4.5
12	59.15	27.5	34	21.4	29	32	29.7	30.3	28	28	66.8	17.9	10	4.8
13	58.57	27.5	34.7	19.7	28.9	32.3	29.8	30.5	28	27.9	59.9	15.8	10.7	5.1
14	59.33	27.7	34.8	20	29.5	32.8	30	31	28.1	27.9	61.2	16.6	11.4	5.7
15	59.44	27.8	35.2	20	29.6	33	30.2	30.9	28.1	28	59.7	16.1	11.6	5.4
16	58.72	28	34.7	22.9	30.2	33	30.8	31.1	28.2	28	64.3	17.8	9.2	4.9
17	58.22	27.8	35.8	19.7	29.9	33.3	31.1	31.5	28.2	28.1	60.9	16.3	10.7	5.7
18	58.65	28.4	36.2	20	30.1	33.6	31	31.5	28.2	28.1	62	17.2	11.5	6.1
19	59.17	29.5	36.1	24.2	31	34.3	31.2	31.8	28.5	28	62.8	18.9	10.8	5.4
20	59.09	29.3	36.2	22.4	31.3	34.5	31.5	32.3	28.7	28.1	58.6	17	12.2	5.8
21	58.82	28.5	35.7	20.3	31	34.4	31.5	32.3	28.7	28.2	56.9	15.8	12.6	6.5
22	58.31	28.4	34.5	20.9	31.1	34.1	31.7	32.2	28.8	28.2	64.1	18.1	11	5.6
23	57.89	29.7	36.7	23.4	31.8	35	31.9	32.6	28.9	28.2	63.3	18.9	10.3	5.3
24	57.94	29	36.4	22.5	31.9	35	32	32.7	29	28.2	68.2	19.8	10.3	5.2
25	58.34	28.7	35.6	23.8	32.1	35	32.2	32.9	29	28.2	70.3	20.3	9.2	4.4
26	57.72	28.8	34.3	23.1	32.2	35	32.5	32.9	29	28.1	70.3	20.4	9.1	4.3
27	57.73	28.9	33.6	24.2	32.2	35	32.5	33.1	29	28.4	73	21.5	8.8	4.4
28	57.67	28.9	33.7	24.2	32.3	35.1	32.7	33.4	29.2	28.3	74.6	21.8	8.6	4.7
29	56.58	29	33.5	23.6	32.1	35	32.7	33.1	29.1	28.2	70.6	20.7	7.3	3.7
30	56.72	29.5	33.5	25.5	32.9	35.2	32.9	33.3	29.2	28.2	72.2	21.9	11.8	4.9
Mean	759.28	27.7	33.8	21.7	29.8	32.6	30.5	31	28.4	28.1	67.1	18.2	9.4	4.7
Total													280.6	
Departure from normal	—0.18	—0.6	+0.1	—1.2							—2.7	—1.4	—2	

Date.	Wind. Prevailing direction.	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Clouds. Amount (mean).	Prevailing form and its direction. Upper.		Lower.		Sunshine.		Rainfall.	Miscellaneous.
		Km.	Km.		0-10.					h.	m.	mm.	
1	NNE, WNW	171	17.5	WSW	5.8	A.-Cu.	N	Cu.	NNE	7	05	2.2	≡° a. p. ⌈↯° ● p.
2	SE	186	17	SE	9.4	A.-Cu.	NE by E	N.-cf.	ENE	0	40		≡° a.
3	SE	222	25	SE	7.4	A.-Cu.	E	Cu.	ENE	5	20	.3	≡° a. ●° p.
4	SE	167	19.5	E by S	6.9	A.-Cu.	NE	Cu.	NE by E	6	25		≡° a. d° p.
5	ESE	166.5	19.5	ESE	7.1	A.-Cu.	NE	Cu.-N.	ENE	3	25	2.4	≡ °◯° d a. ● p.
6	E	144.5	16	NE	6.2	A.-Cu.		Cu.	E by N	7	00		≡° a.
7	SE	228.5	27	SSE	6.6	A.-Cu.	ESE	S.-Cu.	E	5	50		≡° a.
8	SE	200.5	18	W by N	5	A.-Cu.	SSE	Cu.	E	9	35		≡° a.
9	SE	250	24.5	SE	6.1	Ci.	W by S	Cu.	E	9	10		≡° a.
10	SE	247.5	27	SE	6.8	Ci.-S.	SW	Cu.	E by N	9	10		≡° a. ◯° a. p. ↯ p.
11	SE	325	30	SE	3.8	Ci.-S.		Cu.	ENE	10	30		≡ a. ⊕ p.
12	SE	325.5	30	SE	3.8	Ci.		Cu.	ENE	11	10		≡° a. p.
13	SE	303	21	SE	1.2	Ci.		Cu.		11	30		≡° a. p.
14	SE	310	32.5	SE	3.5	Ci.	W by N	Cu.	E by N	11	20		≡° a.
15	SE	271	26	SE by S	2.3	Ci.		Cu.	E	11	25		≡° a.
16	SE	263	21.5	SE	2.4	Ci.	W	Cu.	E	11	05		≡° a.
17	SE	243.5	18.5	SE	1.4	Ci.-S.		Cu.	ENE	11	30		≡° a. p.
18	SE	274.5	24.5	SE	2.2	Ci.-S.		Cu.	E	11	20		≡° a.
19	SE	200	16	SE	4.1	A.-Cu.	E	Cu.	ESE	10	35		≡° a. p. ⊤° ↯ p.
20	SE	275	27.5	SE	2	Ci.-S.		Cu.	E	10	50		≡° a.
21	SE	293.5	30	SE by E	3.2	Ci.	W	Cu.		11	30		≡° a. ⊕ p.
22	E, W	211.5	19.5	W	1.8			Cu.	E by S	11	20		≡° a.
23	SE	215.5	20.5	SE by E	3.6	Ci.-S		Cu.	ENE	10	25		≡° a. p. ↯° p.
24	SSE	191	22	WSW	2	Ci.		Cu.	ESE	11	10		≡° a. p. ⊤° ↯ p.
25	W	144	13	NE	3.1	Ci.-S.		Cu.		9	55		≡° a. p. ⌈↯° p.
26	W, SE	198	16	W	2.8	Ci.-S.		Cu.		10	20		≡° a. p. ↯° p.
27	NE, WNW	245.5	24.5	WSW	5.2	Ci.		Cu.	SE	9	10		≡° a. p, ↯ p.
28	SSW	211.5	19	SW	6.2	Ci.		Cu.		9	30		≡° a. p. ⊤° p.
29	SSW	257	26	SW by W	5.2	Ci.		Cu.		8	55		≡° a. p.
30	WSW	272	27.5	WSW	3.8	Ci.		Cu.		10	40		≡° a. p.
Mean		233.8	22.6		4.4					9	16		
Total										277	50	4.9	
Departure from normal		—6.4			+ .5					+11	31	—25.5	

[1] All the mean values given in this table are deduced from hourly observations.
[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

TAGBILARAN.

[ϕ=9° 38′ N; λ=123° 53′ E; barometer above sea, 21.8 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.					mm.	
1	759.02	25.6	30.7	21.5	74.6	NNE, SE	1.5	5	Ci.-S.		Cu.	NE	------	
2	59.89	25.8	30	21.6	77.7	NNE, SE	1.3	6	Ci.-S.		Cu.-N.	NE	------	d° p.
3	61.20	26.7	31.6	22.8	74.4	NNE, SE	1.2	7.2	Ci.-S.		S.-Cu.	NNW	1	↙ ●° a.
4	60.68	26.5	30.8	22.7	73.3	NNE, SE	.8	5.9	Ci.-S.		Cu.	NE	------	d° p.
5	59.80	26.3	31.4	23	72.5	N, SE	1.5	4.7	Ci.-S.		Cu.-N.	NE	------	
6	59.56	26.1	31.4	21.1	71.5	NNE, SE	1.7	2.5	Ci.-S.		Cu.	NE	------	
7	60.03	26.3	29.4	22.4	76.3	NNE, SE	1.2	8.5	Ci.-S.		N.	E	------	d° a. p.
8	60.26	26.9	30.7	23	76.7	SE	1	5.7	Ci.-S.		S.-Cu.	ENE	------	
9	60.40	27.1	31.1	24	76.8	NNE, SE	1.3	5.7	Ci.-S.		S.-Cu.	E	------	d° p.
10	60.09	26.6	32.6	22	74.1	SE	1.2	6	Ci.-S.	E	Cu.	ENE	------	
11	58.89	26.6	30.8	22.8	75.8	NNE, SE	1.3	4.8	A.-Cu.		Cu.	E	------	d° p.
12	58.50	26.8	30.3	23.7	74	NNE	1	9	Ci.-S.		S.-Cu.	E	------	
13	58.10	26.6	31.6	22.3	73.3	NNE, SE	1.5	4.7	A.-Cu.	SE	S.-Cu.	E	------	
14	58.66	26.4	33.1	21.1	70	SE	1.5	2.2	Ci.-S.		Cu.	NE	------	⚡° p.
15	58.68	26.9	32.5	22.3	73.5	SE	1.2	5	Ci.-S.		Cu.	E, NE	------	⚡° p. ○°
16	58.31	27.1	32.7	23.8	74.3	NNE, NNW	1.2	4.5	Ci.-S.		Cu.	NE	------	
17	57.65	26.8	32.8	22.2	74.9	NNE, SE	1.5	3.7	Ci.-S.		Cu.	E	------	
18	57.98	27.6	33	23	74	NNE	1.5	4.8	Ci.-S.		S.-Cu.	E	------	
19	58.29	27.4	31.9	23.4	74	NNE, SE	1.5	3.8	Ci.-S.		Cu.	E	------	
20	58.42	28.1	32.7	23.7	69.5	NE, SE	1.3	4.5	Ci.-S.		Cu.	E	------	
21	58.12	28	32.7	22.9	68.2	NE, SE	1.3	4.8	Ci.-S.		Cu.	E	------	
22	57.78	28.2	32.6	24.5	73.5	NNE, SE	1.3	5.2	Ci.-S.		S.-Cu.	E	.4	d a. ⊤° ⚡° p.
23	57.66	28.6	33.2	23.6	70.8	N, NW	1.3	4.8	Ci.-S.	SW	Cu.-N.	ENE	------	⊤ ⚡ p.
24	57.59	27.3	30.5	23	77	SE, N	1.2	6.5	Ci.-S.		Cu.	E, NE	------	
25	57.89	27.4	34.1	23.5	73.8	NNE, SE	1.3	4.2	A.-Cu.	SW	S.-Cu.		------	
26	57.52	27.3	33.1	22.1	75.2	NNE, SE	1	6	Ci.-S.	SW	Cu.	NE	------	
27	57.44	27	34	23.8	79.2	NNE	1.2	3.2	Ci.-S.		Cu.	NE	8.6	⊤ ● p.
28	57.73	26.9	33	23.5	75.3	NNE, SE	1.3	6.2	Ci.-S.		S.-Cu.	ENE	------	⚡ ⊍²
29	57.11	26.8	30.5	22.6	74	NNE, SE	1.7	8.3	Ci.-S.		Cu.	E	------	⊍²
30	56.84	27.7	31.1	23.1	74.8	SW	1.3	7.2	Ci.-S.		Cu.	E	------	○²
Mean	758.67	27	31.9	22.8	74.1	------	1.3	5.4	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		10	

SURIGAO.

[ϕ=9° 48′ N; λ=125° 29′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.					mm.	
1	759.28	------	------	------	------	NW	0.7	3.7	Ci.		Cu.		------	
2	60.17	------	------	------	------	NE	.8	5.8	A.-Cu.	E	Cu.-N.	E	------	Ω a.
3	61.69	------	------	------	------	NE quad.	1.2	5	A.-Cu.	NE	Cu.	NE	23.6	● p.
4	61.24	------	------	------	------	ENE	.8	5.3	------		Cu.	E, NE	------	d° ⌒ a.
5	60.10	------	------	------	------	NNE	1.5	2.5	A.-Cu.		Cu.		------	
6	59.96	------	------	------	------	N	1.2	6.3	A.-Cu.	N, NE	Cu.		------	Ω a.
7	60.38	------	------	------	------	NE	.5	8.2	A.-Cu.		Cu.-N.	NE	35.3	● ⊤ a. d p.
8	60.54	------	------	------	------	N, NE	.8	2.5	Ci.		Cu.		2	Ω ● a.
9	61.30	------	------	------	------	NE	.5	5.8	A.-Cu.		Cu.		------	p° a. d° p.
10	60.50	------	------	------	------	N	.5	5.7	Ci.	S	Cu.		------	Ω a. d° p.
11	59.63	------	------	------	------	NE	.7	9.2	A.-Cu.		N.		22.9	p² a. ● ⊤ p.
12	58.89	------	------	------	------	ENE	1.2	8.8	A.-Cu.		Fr.-N.		15.2	● a. ⚡ p.
13	58.90	------	------	------	------	NE	.7	2.3	Ci.		Cu.	E	------	Ω a. ⚡ p.
14	59.63	------	------	------	------	NE	.3	3.8	Ci.		Cu.	E	------	Ω a.
15	59.30	------	------	------	------	NE	.8	6.2	------		Fr.-S.		10.7	Ω a. ●² ⊤ ⚡ p.
16	59.07	------	------	------	------	NE	.3	5.8	Ci.-S.		N.-Cf.		9.6	● a. p.
17	58.38	------	------	------	------	NNE	.3	6.3	A.-Cu.		Cu.		23.4	p. ⌒ a. ● ⊤ p.
18	58.54	------	------	------	------	ENE	1	4.2	Ci.		Cu.	E	------	p° a.
19	59.06	------	------	------	------	ENE	1	3.5	Ci.		Cu.		3.8	● p.
20	59.24	------	------	------	------	NE	.7	4.2	Ci.		Cu.		------	Ω a.
21	58.94	------	------	------	------	ENE	.8	6.2	Ci.		Cu.		19	Ω a. ● p.
22	58.43	------	------	------	------	E	.7	5.3	A.-Cu.	E	Cu.		------	
23	58.05	------	------	------	------	E	.5	3.8	A.-Cu.		Cu.		------	Ω a.
24	------	------	------	------	------	------	------	------	------		------		------	
25	------	------	------	------	------	------	------	------	------		------		------	
26	------	------	------	------	------	------	------	------	------		------		------	
27	------	------	------	------	------	------	------	------	------		------		------	
28	------	------	------	------	------	------	------	------	------		------		------	
29	------	------	------	------	------	------	------	------	------		------		------	
30	------	------	------	------	------	------	------	------	------		------		------	
Mean	759.62	------	------	------	------	------	.8	5.2	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		------	

METEOROLOGICAL DATA, ETC.—Continued.

CEBU.

[ϕ=10° 18′ N; λ=123° 54′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.					mm.	
1	759.24	26.5	29.9	21.5	74	E	0.8	3.2	Ci.		Cu.	NNE	------	≡ a.
2	60.34	26.5	29.5	21.5	79.3	ENE	1.2	6.4	Ci.		S.-Cu.	NE	0.2	≡ a. d p.
3	61.60	27.4	29.8	22.7	73.6	NE quad.	.8	3.4	Ci.		Cu.	ENE	------	≡ a. ∞ p.
4	61.18	27	29.5	23.4	77.4	E	.8	2.6	Ci.		Cu.	ENE	------	≡ a. ∞ p.
5	60.30	27.3	31	22.7	74.6	ENE	.8	2.6	Ci.		Cu.	ENE	------	≡ a. ∞ p.
6	60.03	26.8	29.4	21	76	ENE	.8	3.2	Ci.		Cu.	ENE	------	≡ ⌓ a. ∞ p.
7	60.60	26.5	29.1	23.7	78.7	NE	1	6.8	Ci.-S.		S.-Cu.	ENE	.5	●° ≡ a.
8	60.72	27.2	30.1	23.8	76.2	ENE	.7	4.5	Ci.		Cu.	ENE	------	≡ a.
9	61.15	27	29.9	24.9	81.1	NE	.4	4.7	Ci.		Cu.	ENE	------	≡ a.
10	60.69	27	30.1	22.5	80.4	E	.5	3.3	Ci.		Cu.	ENE	------	⌓ a.
11	59.88	27.4	30.6	23.2	77.7	ENE	.8	3.5	A.-Cu.		Cu.	ENE	------	⌓ a. ⌒ p.
12	59.26	27	29.8	23.4	76.6	ENE	.7	4.5	Ci.		Cu.	ENE	------	
13	58.89	26.8	29.7	22	79.1	ENE	.8	2.7	Ci.		Cu.	ENE	------	⌓ a. ∞ p.
14	59.32	26.8	29.9	23.1	77.7	E	.7	2.7	Ci.		Cu.	ENE	------	
15	59.37	26.6	29.9	21.6	84.3	E	.5	3.3	Ci.		Cu.	ENE	------	⌓ a.
16	59.19	27.1	29.7	24.1	82.7	E	.5	4	Ci.		Cu.	ENE	------	≡ a.
17	58.48	27.3	30.5	23	76.9	ENE	.7	3.7	A.-Cu.		[illegible]	ENE	------	⌓ a.
18	58.76	28.3	31	25.6	78	ENE	.5	3.7	Ci.		Cu.	E	------	≡ a.
19	59.27	27.8	31.2	24	76.6	E	.8	3.3	Ci.		Cu.	E	------	≡ d° a. ∞ p.
20	59.43	27.8	30.6	24	76.8	E	.7	3.2	Ci.		Cu.	E	------	≡ a. ∞ p.
21	59.02	28.1	31.4	23.5	78.6	E	1	3.4	Ci.		Cu.	E	------	≡ a. ∞ p.
22	58.38	27.9	31.2	24	77.7	ENE	.7	8.8	Ci.		Cu.	ENE	------	≡ a. ↯ p.
23	58.31	28	30.8	24.8	78.2	NE quad.	.7	4.7	Ci.		Cu.	ENE	.5	●° ≡ a ∞ p.
24	58.25	27.9	31	24.7	79.7	NE quad.	.7	5	Ci.		Cu.	ENE	.2	●° ≡ a. ↯ p.
25	58.64	28.4	31.5	24.2	75.7	E, NE	.5	4.2	Ci.-S.		Cu.	ENE	------	⌓ ≡ a.
26	58.47	29.2	31.6	23.9	68.3	E	.8	4.4	Ci.		Cu.	ENE	------	≡ a. ∞ p.
27	58.34	28.3	31.3	24.2	77.3	E	.3	3.5	Ci.		Cu.	ENE	------	⌓ ≡ a. ∞ p.
28	58.40	28	30.5	24	75.4	ENE	.5	4.2	Ci.		Cu.	ENE	.5	◺° ≡ a.
29	57.54	27.4	30.5	23.1	79.2	ENE	.2	4	Ci.		Cu.	E	------	⌓ ≡ a. ○
30	57.32	28	31.9	24.1	76.8	Variable	.5	5.7	Ci.-S.		Cu.	NE	------	≡ a. ○
Mean	759.35	27.4	30.4	23.4	77.5	------	.7	4.1	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		1.9	

ILOILO.

[ϕ=10° 41′ N; λ=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.		Clouds. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.					mm.	
1	759	26	31.3	21.2	74.4	N, NE	1.3	5	Ci.-S.		Cu.		------	
2	59.54	26.7	32	23	76.7	NE quad.	1.5	3.8	------		S.-Cu.		1	d p.
3	61.28	26.4	30.3	23.1	77.2	N	2.2	2.8	Ci.		S.-Cu.		------	
4	60.91	25.8	31	22.2	80.8	NE quad.	1.8	4.5	Ci.-S.		S.-Cu.	NE	------	
5	60.04	25.4	29.9	22	77.8	E	1.7	2	Ci.-S.		S.-Cu.	NE	------	
6	59.78	26	31.1	21.6	75.5	NE	1.5	1.5	Ci.		Cu.		------	
7	60.09	26.5	31	23.2	77.2	N, NE	1.5	4.2	A.-Cu.	E	S.-Cu.		------	d° a.
8	60.32	27.3	32	23.5	74.5	NE	1.5	3	A.-Cu.		S.-Cu.		------	
9	60.18	27.6	32	24	76	N, NE	1.5	4.3	Ci.		S.-Cu.		.8	d° a. ↯ p.
10	59.87	27	32.3	23.8	76.8	NE quad.	1.5	2.7	Ci.-S.		Cu.		------	
11	58.75	27.8	33	23.5	74.5	NE	2.2	2.8	------		S.-Cu.		.3	d° ↯ ⊤ p.
12	58.50	26.7	31.9	23.2	75.7	NE	2	2.7	Ci.		Cu.		------	
13	58.12	26.8	32.6	22.1	72.7	NE quad.	1.7	1.2	Ci.-S.		Cu.		------	
14	58.71	26.9	31.4	22.9	72.4	N	1.8	1.7	Ci.		Cu.	NE	------	
15	58.61	27.6	33.1	23.6	70.5	N	1.7	1	------		Cu.		------	
16	58.10	27.8	32.5	23.4	71.1	N	1.7	2	------		Cu.		------	
17	57.52	28	32.9	24	71.7	N	1.8	1.3	------		Cu.		------	
18	57.77	28.7	33.9	24.8	72.7	N	1.7	2.5	------		S.-Cu.		------	
19	58.31	28.6	33.7	25	71.9	N, NE	1.5	2.3	Ci.		S.-Cu.		------	⦶
20	58.39	28.4	34	24.5	73.7	NE	1.7	1.3	Ci.		S.-Cu.		------	⦶
21	58.18	28.5	33.9	24.6	72.9	NE quad.	1.7	1.5	------		Cu.		------	
22	57.84	28.3	34.3	23.6	71.7	NE quad.	1.3	2.7	------		S.-Cu.		------	⊤ ↯ p.
23	57.63	28.4	33.9	24.7	71.5	N, NE	1.2	4.7	A.-Cu.		Cu.		------	⊤ ↯ p,
24	57.41	28.7	35	23.9	71.6	N, E	.7	4.7	Ci.-S.		Cu.		------	⊤ ↯ p.
25	57.89	29.1	35.1	25.1	71.3	E	1.3	4.2	Ci.-S.		S.-Cu.		------	⊤ ↯ a. p. ⦶
26	57.33	28.4	33.8	24.3	70.3	N, E	1.3	3	Ci.-S.		S.-Cu.		------	⊤ p.
27	57.32	28.7	35	23.8	68.8	E	.8	3.3	Ci.		S.-Cu.		------	⦶
28	57.74	28.1	32.6	24.9	73.6	SW	.8	4.2	Ci.		S.-Cu.		------	↯ p.
29	56.74	27.8	31.9	24.7	74.7	SW	1	5.8	Ci.		S.-Cu.		------	↯ p.
30	56.49	27.8	31	24.5	76.1	SW	.8	3.8	Ci.		S.-Cu.	SSW	------	⦶
Mean	758.61	27.5	32.6	23.6	73.9	------	1.5	3	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		2.1	

METEOROLOGICAL DATA, ETC.—Continued.

ORMOC.

[ϕ=11° 00′ N; λ=124° 36′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.					mm.	
1	758.73	24.6	30.3	19	79.2	Variable	0.5	5.8	Ci.	E	Cu.	NE	------	d p.
2	59.83	23.4	28	19.6	89.7	W	.2	5.2	Ci.-S.		Cu.	NE	5.3	Ω d a. ● p.
3	61.25	24.8	30.4	20.4	78.8	Variable	.5	3.3	Ci.-S.		Cu.	NE	------	Ω² a.
4	60.67	25.1	29.8	19.9	74.8	S	.5	4.0	Ci.-S.		Cu.	NE	------	Ω a. d p.
5	59.76	24.2	31	19.2	71	SSW	.3	2.7	Ci.-S.		Cu.	NE	------	Ω a.
6	59.46	24.8	31	18.6	75.8	Variable	.3	5.5	Ci.-S.		Cu.	NE	------	Ω a. d p.
7	59.99	24.9	30.6	22.6	82	Variable	.2	7.8	Ci.-S.		Cu.	ENE	8.6	d a. ● p.
8	60.35	24.9	29	21.9	86.3	N, SW	.0	7.8	Ci.-S.		Cu.		22.1	● a. ⌈ʒ p.
9	60.84	25.2	29.1	22.7	85.8	SSE, N	.2	7.7	Ci.-S.		Cu.	E	19	● ⌒ a.
10	60.02	25.4	30.6	19.8	77.8	Variable	.3	2.7	Ci.		Cu.	E, NE	------	Ω a.
11	59	25.4	30.5	20.1	80.3	Variable	.5	2.3	A.-Cu.	ESE	Cu.	ENE	1.3	Ω a. ⌈ʒ° p.
12	58.63	26.1	32.4	19	69.8	Variable	.7	1	Ci.		Cu.	E	------	Ω a.
13	58.24	24.8	30.5	18.7	74.3	N	.5	1	Ci.		Cu.		------	Ω a.
14	58.82	25.2	31.8	18.2	72	N, SSW	.3	.3	Ci.		Cu.		------	Ω a.
15	58.67	25.8	30.7	18.2	72.6	N	.8	4	Ci.		Cu.	NE	------	Ω a. ϟ p.
16	58.45	26.4	32.2	22.5	72	SE quadrant	.8	2.7	Ci.		Cu.	NE	------	ϟ p.
17	57.73	24.9	30.9	19.1	78.8	Variable	.5	4.8	Ci.-S.		Cu.	E	------	Ω a. d° p.
18	58	26.4	32.8	21.1	74.3	Variable	.7	2.7	Ci.		Cu.	E	------	Ω a.
19	58.65	26.2	31.5	20.8	75.3	Variable	.5	2.2	Ci.		Cu.	ENE	------	Ω d a. ϟ p.
20	58.56	26.6	34	21.2	72	Variable	.5	2	Ci.		Cu.	E	------	Ω a.
21	58.22	26.5	33.5	21	72.2	Variable	.5	1	Ci.		Cu.		------	Ω a.
22	57.94	26.6	31.1	21.4	77.7	Variable	.7	3.2	Ci.-S.		Cu.	NE	------	⊤ ϟ p.
23	57.64	27	33	21.2	71.7	NE quad.	.7	3.5	Ci.		Cu.	ENE	------	Ω a. ᴗ
24	57.54	26.1	31.4	21.3	79	Variable	.7	6.8	Ci.	SW	Cu.	ENE	------	ϟ p. ᴗ
25	57.97	26	31.3	20.7	76.7	Variable	1	4.5	Ci.	WSW	Cu.	ENE	------	⊤ d° p.
26	57.39	26.6	31.4	20.3	73.7	Variable	.8	4.8	Ci.	WSW	Cu.	ENE	------	Ω a. ϟ p.
27	57.47	25.8	31.5	21.4	78.8	NNW, NE	.5	3.7	Ci.	WSW	Cu.	ENE	2	Ω a. ●° ⊤ p.
28	57.63	25.6	30.7	20.7	77.8	N	1	4.7	Ci.	W	Cu.	E	------	Ω a. ϟ p. ○
29	57.02	24.9	30.3	18.7	73.4	Variable	.5	4	Ci.	W	Cu.		------	Ω a.
30	56.73	26.2	30.8	21.4	80.8	SSE	.7	6.2	Ci.	W, SW	Cu.	ESE	------	Ω a. ϟ p.
Mean	758.71	25.5	31.1	20.4	76.8		.5	3.9						
Total													58.3	

TACLOBAN.

[ϕ=11° 15′ N; λ=125° 00′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.		Clouds. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.					mm.	
1	759.28	26.6	33.5	22.6	73.8	NW	1	6.6	Ci.-S.		Fr.-Cu.	NE	------	
2	60.49	25.1	30.5	23.1	85.2	NW, W	.8	7.4	A.-S.		Fr.-N.		3.6	Ω ●° a. p.
3	62.16	26.1	31.7	23.7	74	Variable	1	5.8	Ci.-S.		S.-Cu.		------	d a. p.
4	61.68	25.3	31.6	23.2	74.9	Variable	1	5.2	Ci.		Fr.-N.	NE	------	d° a. p.
5	60.60	25.8	32	22.1	68.3	NE	1.2	1.8	------		Fr.-Cu	NE by N	------	Ω
6	60.27	25	31.8	22.5	80.9	NNW	1	7.2	Ci.		Fr.-N.		6.1	d a. ● p.
7	60.93	25.1	28.9	22.7	83.5	NW quad.	1	8	A.-Cu.		Fr.-N.	NE	1.3	●° p.
8	61.15	25.3	30.4	23.1	89.5	NW quad.	.6	8.2	Ci.-S.		N.		31	● a. p. ⊤
9	61.63	25.8	31	23.7	85.7	SSE	.8	6.6	Ci.-S.		Cu.		10.9	● a.
10	60.90	26.3	33.4	22.4	80.8	Variable	.6	4.6	Ci.		Cu.		------	
11	59.96	26.2	32	23.3	81	NE	.6	3.2	Ci.		Fr.-N.	E by N	1	Ω ●° a.
12	59.55	26.3	33	22	74.3	Variable	1	2	Ci.		Cu.		------	Ω a.
13	59.25	26.3	32.9	22	73.8	S	1	2.8	Ci.		Cu.		------	Ω a.
14	59.80	26.6	33.9	21.9	73.3	S	.8	1.4	Ci.		Fr.-Cu.		------	Ω a.
15	59.55	27.1	33.4	23.2	76.5	S	1.4	3.8	Ci.		Cu.		------	Ω a. d ϟ p.
16	59.32	27.1	34.5	23.4	76.8	Variable	.8	2.4	Ci.		S.-Cu.		.8	●° a.
17	58.74	25.7	32.5	23	84.8	NW	.4	3	A.-Cu.		Cu.		7.6	● p.
18	58.97	26.8	32	23.7	80.7	Variable	1.2	4.4	A.-Cu.		Fr.-N.		1.5	●° a. ⌈ʒ p.
19	59.42	27.2	33	23.6	79.1	Variable	.8	5.2	A.-Cu.		S.-Cu.	NE, ESE	------	Ω a.
20	59.69	27.6	34.4	23.8	76.8	Variable	.8	2.6	Ci.		Cu.		------	Ω a.
21	59.09	27.4	33	23.6	75.9	Variable	1	1.4	Ci.		Cu.		------	Ω² a.
22	58.76	27.4	33	23.4	78.2	SSE	1	4.8	A.-Cu.		Cu.		------	⊤ d p.
23	58.37	27.7	32.8	24.5	76.8	SE	1	3.6	Ci.		Cu.		------	ᗢ²
24	58.50	27.4	31.5	24.1	78.2	SSE	.8	7.2	Ci.-S.		S.-Cu.	E	9.4	● a.
25	58.92	27.7	32.5	24.2	75.4	SSE	.6	5.4	Ci.	W, SW	Cu.		------	Ω a. ⊤ ϟ p.
26	58.26	27.5	36 ?	24	76.6	Variable	.8	4.4	Ci.		Cu.		.8	Ω a. ⌈ʒ p.
27	58.14	27.8	32.6	24.5	76.8	Variable	.8	4.2	Ci.		Cu.		------	Ω ⊤ d a.
28	58.28	28	34	24.5	72.4	SE	.8	4.4	Ci.-S.		Cu.		------	ϟ p.
29	57.57	27.9	35.7	24	76.8	SSE	1	6.8	Ci.-S.		Cu.		------	Ω a.
30	57.36	28.3	35.5	25	75.3	SSE	.8	7.2	Ci.-S.		Cu.		------	Ω○°⊕°a. ϟp. ᴗ°ⴲ
Mean	759.55	26.7	32.8	23.4	77.9		.9	4.7						
Total													74	

METEOROLOGICAL DATA, ETC.—Continued.

CAPIZ.

[ϕ=11° 35′ N; λ=122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	759.44	25.8	30	19.8	80.2	Variable	0.7	7	Ci. E	Cu. NE	5.8	● a.
2	60.28	25.9	30.5	21.7	86.1	NE	.7	6.8	Ci.-S.	Cu.-N. SE	2	●° a.
3	62.09	27.3	30.6	23	81.3	ENE	1.2	6.2	Ci.-S.	Cu.-N E, NE	------	
4	61.73	25.8	29.7	19.6	82.7	NE	.8	3.3	Ci.-S.	S.	16.3	Ω ● a.
5	60.96	26	29.3	21	84.5	E	.7	6.3	Ci.-S.	C.-N N	------	d° p.
6	60.83	25.7	29.1	21.2	85	NE	.8	5.8	Ci.	Cu. NE	2.3	● p.
7	60.89	26.3	29.6	21.5	83.5	NE	1	8.8	Ci.-S.	Cu.-N. NE	9.9	● a. T p.
8	61.36	26.5	29.3	21.5	84	N, ENE	1	6.5	Ci. NE	Cu.-N. NE	------	Ω a.
9	60.82	28.2	32	23.6	84.2	NE	1.2	6.8	Ci. N	Cu.-N. NE	------	d° p.
10	60.98	27	30.9	22.2	82.3	NE	.5	3.3	Ci.	Cu.	------	
11	60.08	27.2	30.9	22.3	85.3	NE	1	6.3	Ci.-S.	N. NE	------	d° a.
12	59.16	27.1	31.2	22.6	80.8	Variable	.7	3	Ci. E	Cu. SE	------	Ω° a.
13	59.12	26.1	31.9	20.3	83.2	NE	.7	2	Ci.	Cu.	------	Ω a.
14	59.65	26	32.5	19.8	80	ENE	.3	1.7	Ci.	Cu. E	------	Ω a.
15	59.49	26.8	30.7	20.7	83.8	NE	.7	3	Ci.	S.-Cu. E	------	Ω a.
16	58.78	27.6	32.2	21.9	82.2	ENE	.7	2	Ci. E	S.-Cu. NE	------	Ω a.
17	57.96	27.5	32	21.9	80.5	NE	.7	3.8	Ci. E	S.-Cu. SE	------	Ω° a.
18	58.06	28.3	32.3	23	81.3	NE	1.3	4	Ci. E	Cu. E	------	d° p.
19	59.04	28	32.7	22.8	80.7	ENE	.8	2.7	Ci. E	Cu. E	------	
20	59.24	28.3	32.5	23.1	80.2	E	.8	2.8	Ci.	Cu. SE	------	
21	58.95	28.1	32.9	23	81.3	NE quad.	1.2	2.8	Ci. E	Cu. E	------	d° a.
22	58.67	27.4	31.2	21.7	81.9	NE	.5	5	Ci. E	Cu.-N. E	------	
23	58.19	27.9	32.9	21.9	81.2	NE	.5	6.7	Ci.	Cu. SW	------	Ω° d° a. ☇° p.
24	57.96	28.1	32.5	22.2	81.5	NE	.5	7.7	Ci. E	Cu.-N. NE	------	☇° p.
25	58.62	28.2	31.9	22.9	83	ENE	.3	2.8	Ci. E	Cu. E	------	Ω° a.
26	58.08	28.1	32.5	23.2	79.5	NE	.5	2.5	Ci.	Cu. E	------	
27	58.07	27.6	32.5	21.9	82.7	E	.5	2.7	Ci.	Cu. E	------	Ω° a.
28	58.37	27.6	32.5	22	82	ENE	.3	3.7	Ci. NE	Cu. E	------	Ω a. ⊍²
29	57.55	27.6	33	20.9	83.3	NE quad.	.7	4.8	Ci. E	S.-Cu.	------	Ω² a. ☇° p. ⊍²
30	57.30	28	32.6	21.2	82	NE	.5	4.7	Ci.	Cu. NE	------	Ω² a. ↘° p.
Mean	759.39	27.2	31.5	21.8	82.3	------------	.7	4.5	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	36.3	

CALBAYOG.

[ϕ=12° 04′ N; λ=124° 36′ E; barometer above sea, 4.1 meters; gravity correction not applied, —1.80 mm.]

	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	759.52	24.6	31	------	82.5	N	1	5.8	A.-Cu.	S.-Cu. N	1.3	p p.
2	60.54	24.8	30.6	------	80.8	N	1.3	5.8	A.-Cu.	S.-Cu. NE	.3	p ⌒ a. ☇ p.
3	62.34	24.6	30.6	------	75.5	N	1.3	4.8	A.-Cu.	S.-Cu. NE	------	
4	61.74	24.5	31	------	79	N	1	6.3	A.-Cu.	S.-Cu. NE	------	
5	60.74	24.1	31	------	72.8	N	1.2	3.7	A.-Cu.	S.-Cu.	------	
6	60.76	23.2	29	------	89.8	N	1	7.5	A.-Cu.	S.-Cu. NE	6.6	d a. ● p.
7	61.21	25.6	30.5	------	76.3	N	1	4.3	A.-Cu.	S.-Cu. NE	------	
8	61.39	25.1	30	------	88.3	N	1	7	A.-Cu. NE	S.-Cu. NE	27.2	☈ p.
9	61.47	26.1	31	------	84.2	N	1	6.8	A.-Cu.	S.-Cu. NE	1.3	d ⌒° a. ●° ☇ p.
10	60.92	26.2	32.5	------	79.8	N	1	6.2	A.-Cu.	S.-Cu. NE	------	☇ p.
11	60.03	26	32	------	82.5	N	1	5.3	A.-Cu.	S.-Cu. NE	------	d ⌒° a.
12	59.46	25.2	31.9	------	79.7	N, W	.8	5.3	A.-Cu.	S.-Cu. NE	------	
13	58.90	24.8	31	------	76.2	N	1	3.3	Ci.	S.-Cu. NE	------	☇ p.
14	59.64	25.5	32	------	77.5	N	1	3.8	A.-Cu.	S.-Cu. NE	------	
15	59.57	25.8	31.6	------	82	N	.8	5.2	A.-Cu.	S.-Cu. NE	------	d° a. ☇ p.
16	59.17	26.7	32.2	------	82	N	1	4.7	A.-Cu.	S.-Cu. NE	------	
17	58.55	25.9	33.2	------	82.7	N	1	5.3	A.-Cu.	S.-Cu. NE	10.7	● ⌒ p.
18	58.72	26.2	31.4	------	86.5	N	1	5.2	A.-Cu.	S.-Cu. NE	3.8	p a. ●° ☇ p.
19	59.37	25.6	32.8	------	89	N	.8	4.3	A.-Cu.	S.-Cu. NE	9.6	● ⌒° p.
20	59.50	25.4	30.6	------	87.3	N	1	4.2	A.-Cu.	S.-Cu.	13	p a. ● p.
21	59.08	25.6	32.2	------	84.2	N, NE	1	3.8	A.-Cu.	S.-Cu. NE	------	
22	58.88	26.2	32.9	------	82.7	N	1	4.5	A.-Cu.	S.-Cu. NE	------	T ☇ p.
23	58.39	26.8	33	------	82.2	Variable	1.2	4.7	A.-Cu.	S.-Cu. NE	------	☇ p. ⊍°
24	58.46	26.7	33.6	------	84.5	N	1	6.5	Ci.	S.-Cu. NE	------	T ☇ p. ○°
25	58.85	26.8	33.6	------	84.5	N	1	5.8	Ci.	S.-Cu.	------	d ☇ ⌒° p. ⊍°
26	58.36	27.2	34	------	79	N	1	5	Ci.	S.-Cu. NE	------	p p.
27	58.44	26.6	32.8	------	82.8	N	1	5.5	A.-Cu.	S.-Cu. NE	------	T p p. ⊕
28	58.41	27.2	34	------	77.5	N	1	5.2	Ci.	S.-Cu.	1.3	● p.
29	57.43	27.1	34.2	------	79.8	NE	1	4.8	Ci.	S.-Cu. NE	------	
30	57.43	27.9	35.1	------	80.5	N	1	5.2	Ci.	S.-Cu.	------	d° p.
Mean	759.58	25.8	32	------	81.7	------------	1	5.2	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	75.1	

METEOROLOGICAL DATA, ETC.—Continued.

LEGASPI.

[ϕ=13° 09′ N; λ=123° 45′ E; barometer above sea, 4.3 meters; gravity correction not applied, —1.77 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.					mm.	
1	760.02	25	30.8	------	78.8	ENE	0.7	4.8	Ci.		Cu.-N.	N	1	≡ p. a.
2	61.02	26.1	30	------	76.7	NE quad.	1	6.8	A.-Cu.		Cu.-N.	NE	4.3	● p.
3	63.04	26.2	29.7	------	69.8	ENE	1	6.2	A.-Cu.		Cu.-N.	NE	------	d p.
4	62.15	26.8	30.2	------	65.8	NE quad.	1	2.8	------		Cu.	NE	------	
5	61.41	26.4	30.1	------	67.2	NE	1	1.5	------		Cu.	NE	------	
6	61.05	25.2	31.5	------	76.5	ENE	.8	5.2	A.-Cu.		Cu.-N.	ENE	------	≡° a. d° p.
7	61.57	26.1	29	------	74.9	E	1	5	A.-Cu.		Cu.-N.	NE	8.6	● a.
8	61.98	26.3	30.1	------	78.8	NE	1	5.7	Ci.-S.		Cu.-N.	NE	.7	d° a. ●° p.
9	62.34	25.8	29.1	------	85.2	ENE	.7	6.2	Ci.		Cu.-N.		71.4	● a.
10	61.58	27.2	30.9	------	73.8	NE	1	2.2	Ci.	S	Cu.		------	
11	60.62	27.2	31	------	75.9	ENE	1	3.7	------		Cu.	NE	.3	d a.
12	60.20	27	30.4	------	71.3	ENE	1	1.2	------		Cu.	E	------	
13	59.70	26.7	30.7	------	74.8	NE	.7	1.2	------		Cu.	E	------	
14	60.20	27.1	31	------	72.9	E	.7	.3	------		Cu.		------	
15	60.02	27.6	31.5	------	73.3	ENE	1	1.2	------		Cu.	E	------	≤ p.
16	59.73	27.4	31	------	73.8	E	1	.5	------		Cu.		------	
17	59.27	27.6	31.1	------	74.1	NE, E	1	1.2	------		Cu.-N.		------	
18	59.55	26.5	29.9	------	84.2	ENE	1	5.2	A.-Cu.		Cu.-N.	E	28.4	● ⌒ a.
19	59.89	27.7	30.5	------	78.3	ENE	1	2.2	------		Cu.	E	------	
20	60.02	27.7	30.7	------	76.9	ENE	1	1.8	------		Cu.	E	------	
21	59.68	27.6	31.5	------	73.8	E	1	1	------		Cu.	E	------	
22	59.12	27.5	31.6	------	74.7	E	.8	1	------		Cu.		------	
23	58.73	27.5	31.7	------	77.7	E	1	2	------		Cu.	E	------	
24	58.69	27.7	31.6	------	77.2	E	.7	3.7	Ci.	SW	Cu.		.5	d° p.
25	59.11	28.4	32.2	------	74.2	NE	.8	1.2	Ci.		Cu.		------	
26	58.55	27.4	31.9	------	75.6	E, NE	.7	2.5	A.-Cu.	S	Cu.		------	d° a.
27	58.41	27.5	32.1	------	76.8	E	.8	1.5	Ci.	NW	Cu.		------	≡° a.
28	58.38	27.8	32	------	76.7	E	.7	1.5	Ci.	NW	Cu.		------	≡° a. ≤ p.
29	57.56	27.5	32.3	------	76.7	ENE	.8	.8	Ci.	NW	Cu.		------	≡° a.
30	57.39	27.7	33	------	79.3	E	.7	1.2	Ci.		Cu.	S	------	≡° a. ≤ p.
Mean	760.03	27	31	------	75.5	------	.9	2.7	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		115.2	

ATIMONAN.

[ϕ=14° 00′ N; λ=121° 55′ E; barometer above sea, 7.8 meters; gravity correction not applied, —1.74 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.		Clouds. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.					mm.	
1	759.95	26.5	31.2	21	80.8	N	1.5	5.5	Ci.		Cu.	NE, N	3.6	p p. ⊕°
2	61.06	25.5	27.2	23.3	84	NE	2.8	10	Ci.-S.		N.	NE	10.6	p a. d° p.
3	62.69	27.1	32.4	24	76.1	E, NNE	2.7	6.7	Ci.		S.-Cu.	NE	------	⊕°
4	62.33	27.3	31.4	24.8	72	NE	2.7	8	A.-Cu.	N	S.-Cu.	NE	------	d° a.
5	61.37	27	32.7	23.5	74.9	E, NNE	2.2	4.7	A.-Cu.	NE	Cu.	NE	------	d° p. ⊕°
6	61.22	27.3	32.4	24.1	73.4	NE, N	2.8	6.3	A.-Cu.	NE	Cu.	NE	------	⊕°
7	61.64	26.2	30.1	23	78.5	NE quad.	2.2	6.5	A.-Cu.	NE	S.-Cu.	NE	------	
8	62.03	27.2	32.7	24.4	76.5	NE quad.	2.5	3.2	A.-Cu.	NE, SSE	Cu.	NE	------	
9	61.96	26.7	29.3	24.3	85	NE	2.2	6.8	Ci.-S.		S.-Cu.	NE	------	d° a.
10	61.18	26.9	32.4	23.3	82.3	NE	1.3	1.7	Ci.	ENE, SW	Cu.	NE	------	
11	60.35	27.1	31.3	24.9	81.8	NE	2	2.8	Ci.	SW	Cu.	NE	------	Ω a.
12	59.90	26.8	31.9	22.4	77.8	NE quad.	1.7	2	Ci.	NW	Cu.	NE, N	------	
13	59.24	27	32.7	22.4	75.7	SW, ENE	1.5	3	Ci.		Cu.	NE	------	Ω a.
14	59.68	26.6	32.6	21.6	80.3	NE	1.3	3.3	Ci.		Cu.	NE	------	
15	59.95	27.2	32.3	22.9	78.1	NNE	1.8	2.3	C.-Cu.		Cu.	NE	------	
16	59.46	27.7	31.5	24.9	77.5	NE, NNW	1.7	.7	Ci.		Cu.	NE	------	
17	58.90	26.9	31.6	21.9	78.7	NE	1.7	1.3	Ci.		Cu.	NE, N	------	
18	59.28	27.5	33.4	22.4	79.8	NNE	1.7	3.8	Ci.		Cu.	NE	------	≤ p.
19	58.51	28.1	33.4	24.1	79.3	Variable	1.7	3.5	Ci.		Cu.-N	SE	------	
20	59.55	28.3	32.4	24	78.4	NE	1.8	2.5	Ci.		Cu.		------	≤ a.
21	59.40	28	32.6	23.6	79.4	Variable	2	3.2	Ci.		Cu.	NE	------	Ω° a.
22	58.70	27.4	32	23.4	80.9	NE, NNW	1.5	1.7	Ci.		Cu.		------	
23	58.34	27.1	33	22	82	Variable	1.7	1.2	Ci.-Cu.		Cu.		------	≤° p.
24	58.22	27.8	32.7	22	81.8	Variable	1.8	3.5	Ci.		Cu.-N		------	⊕° p.
25	58.82	27.8	32	23.8	82.5	NNE, NNW	2	3.8	Ci.		Cu.	N, NE	------	≤ a. ⊕°
26	58.19	28.6	33	24.9	76.3	NNE	1.8	4.2	Ci.	N	Cu.	N	------	⊕°
27	57.82	28.3	33.6	23.8	80.2	Variable	1.2	6.3	Ci.	N	Cu.-N.		------	≤° p. ⊕°
28	57.80	28.6	35.2	24.5	79.3	Variable	1.2	6.2	Ci.		Cu.	SSW	------	Ω d a. ⊕°
29	56.66	28.8	35.9	24	78	SW quad.	1.2	3.5	Ci.		Cu.	S	------	
30	56.54	29.1	36.6	23.6	73.8	SW	1.7	.5	Ci.		Cu.	S	------	⊕°
Mean	759.72	27.4	32.4	23.4	78.8	------	1.9	4	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		14.2	

METEOROLOGICAL DATA, ETC.—Continued.

OLONGAPO.

[ϕ=14° 49′ N; λ=120° 15′ E; barometer above sea, 3.5 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force. (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Prevailing form and its direction. Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0-12	0-10.			mm.	
1	759.46	25.7	29.2	22.1	83.3	Variable	0.6	7.5	Ci.-S.	Cu.	1.8	≡ a. ∞ p. p.
2	60.31	27.5	33	22.5	75	NE quad.	.7	7.8	Ci.-S.	Cu.	------	∞ a. p. Ω
3	61.57	27.5	34	23.7	75	NE	.7	6.5	Ci.-S.	Cu.	------	∞ a. p.
4	61.37	26.6	34.2	22.4	82.2	N	.6	7.3	Ci.-S. E	Cu.	1.5	∞ p. p.
5	61.11	26.7	33.2	22	75.2	NE quad.	.3	6.2	A.-Cu.	Cu.-N. NE	------	≡ d° a.
6	60.86	26.3	33.4	20.9	71.9	NNE	.6	6.2	A.-Cu.	Cu. E	------	≡ a. ∞ p.
7	60.97	26.6	34.5	19.9	70.5	NE	.6	5.3	Ci.-S.	Cu.	------	∞ a. p.
8	61.52	27.6	34.6	21.6	69.2	NE	.5	5.2	Ci.-S.	Cu. E	------	≡ a.
9	61.50	27.1	34.5	22	74.8	Variable	.4	7	Ci.-S. W, S	Cu. E	------	≡ a. ◯°
10	60.80	27.9	33.5	24.6	76.3	Variable	.4	7.3	Ci.-S. SW	Cu. ENE	------	∞ p. ◯°
11	59.81	28.2	35	24	69.8	E	.6	4	Ci.-S.	Cu.	------	≡ a. ∞ p.
12	59.32	28	34.5	23.6	72.2	NNE	.6	4.8	A.-Cu.	Cu.-N. E, NE	------	≡ a.
13	58.61	26.2	33.5	21.6	75.8	Variable	.6	3	Ci.-S.	Cu.	------	≡ a. ∞ p.
14	59.37	27.5	35.4	22	69.4	NE quad.	.5	3.5	Ci.-S. NW	Cu.	------	≡ a. ∞ p.
15	59.65	27.2	34.1	21.4	64	Variable	.5	2.2	Ci.-S.	Cu.	------	≡ a. ∞ p.
16	58.91	27.1	33.2	22.7	76.2	Variable	.5	3.7	Ci.-S.	Cu. E, NE	------	≡ a.
17	58.51	26.8	35	22.1	73.2	N	.5	2.3	Ci.-S.	Cu.	------	≡ a. ∞ p.
18	58.70	28.6	35.6	22.8	69.9	NE, SE	.5	2.5	Ci.-S.	Cu. E	------	≡ a. ∞ p.
19	59.28	28	34.4	24.4	79.8	N	.4	5.2	A.-Cu. SE	Cu.	.5	≡ a. p. p.
20	59.16	27.9	35.6	23.1	77.6	NE	.5	3.2	Ci.-S.	Cu.	------	≡ a. ∞ p.
21	59.02	28.4	35.4	23.5	73.6	NE quad.	.4	1.5	Ci.-S.	Cu.	------	≡ a. ∞ p.
22	58.68	27.2	35.4	22.6	79.7	Variable	.7	2.5	A.-Cu.	Cu.	------	≡ a. ∞ p.
23	58.13	27.4	32.8	23.6	85.2	SW	.5	5.8	Ci.-S. W	Cu. E	------	≡^{2} a. ∞ p.
24	58.16	27.2	31	23.1	86.2	NE, SW	.7	4.7	Ci.-S.	Cu.	------	≡^{2} a. ∞^{2} p.
25	58.57	27.1	32.4	23.2	77.8	N, SW	.6	4.5	Ci.-S.	Cu.	------	≡^{2} a. ∞^{2} ⊤ p.
26	57.89	27.7	31.9	24	79.3	NE	.4	6.3	Ci.-S.	Cu. E	------	≡^{2} a. ∞^{2} p.
27	58.05	27.5	31.8	24.2	79.3	Variable	.6	5.3	Ci.-S.	Cu.	------	≡ a. ∞ ⊤ p.
28	58.06	27.2	32.4	22.5	80.7	Variable	.5	4	Ci.-S.	Cu.	------	≡ a. ∞^{2} p.
29	57	27	32	23.1	88	SW	.7	3.7	Ci.-S.	Cu. E	------	≡^{2} a. ∞^{2} p.
30	57.17	27	31.2	22.6	87.7	N, SW	.5	2.8	Ci.-S.	Cu.	------	≡ a. ∞ p.
Mean	759.38	27.3	33.6	22.7	76.6	------------	.5	4.7	------------	------------	------	
Total	-------	-----	-----	-----	-----	------------	-------	-------	------------	------------	3.8	

SAN ISIDRO.

[ϕ=15° 22′ N; λ=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Force. (mean).	Clouds. Amount (mean).	Upper.	Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	760.36	27.1	34.2	20.6	68.7	NNE	0.3	8.2	Ci.	Cu.-N NNE	0.5	Ω^{2} ≡ a. d° ⊤ p.
2	61.41	26.4	33.7	21.5	74.1	NE	.3	7.8	A.-Cu. NE	Cu.	------	⩽ p.
3	62.82	27.3	33.8	22.2	68.8	E	.7	6.8	Ci.	S.-Cu.	------	⩽ p.
4	62.42	26.8	34.5	20.1	67.8	E	.7	6.7	A.-Cu. E, NE	Fr.-Cu. NE	------	⩽ p.
5	61.61	26.7	32.5	20.7	67.6	E	.5	7.5	Ci.	Cu.	------	
6	61.35	26.4	33.5	20.5	69	E	.7	8.3	A.-Cu. Var.	Cu. E	------	Ω^{2} p.
7	61.72	26.1	34.1	19.5	65.8	E	.5	7.8	Ci.	Cu.	------	Ω^{2} a.
8	62.26	27.4	35.1	20.2	64.2	E	.5	7.2	A.-Cu. ESE	Cu.	------	
9	61.92	27.5	35.5	20.6	65.2	E	.7	7.3	Ci.	Cu.	------	
10	61.02	29	38	23	65.2	E	.3	8	A.-Cu. E	Cu.-N. ENE	------	⩽ p.
11	60.06	28.6	36.5	21.4	61.8	E	.5	7	Ci.	Fr.-Cu.	------	
12	59.60	27.4	36.2	21.4	67.8	E	.5	7.7	A.-Cu. NE, ESE	Cu.-N. NE, E	------	d° a.
13	58.90	28.3	37.5	20.4	63.3	E	.5	6.5	A.-Cu. E	Fr.-Cu. E	------	Ω^{2} a. ⊤ p.
14	60.02	27.6	35.9	20.5	64.2	E	.3	6.7	Ci.	Cu. E	------	Ω^{2} ≡ a.
15	59.89	27.9	36.5	19.6	63.2	E	.3	5.8	Ci.	Fr.-S.	------	Ω^{2} ≡ a. ⩽ p.
16	59.07	29.4	38	23.2	60	E quadrant	.2	7.2	A.-Cu. SE, NE	Cu. ESE	------	
17	58.47	29	37.4	22	60.3	E	.3	6	A.-Cu. E, ESE	Fr.-Cu. E	------	
18	59.04	28.7	37	21.1	61.8	E	.5	5.7	Ci.	Cu. ESE	------	
19	59.48	28.8	37.6	22.5	63.5	E	.3	7.3	A.-Cu. ENE, SW	Cu.-N. WSW	------	⊤ ⩽ p.
20	59.40	28.7	36.5	22.9	65.3	ESE	.3	5.7	A.-Cu. E	Cu.	------	◯
21	59.38	27.7	36.5	20.4	64.9	ESE	.5	5	Ci.	Fr.-S.	------	Ω^{2} a. p. ψ
22	58.87	29.1	38.2	20.2	60	Variable	.2	5.7	A.-Cu. E	Cu. ESE	------	
23	58.31	29.5	37.5	23.5	60.2	ESE	.3	6.8	A.-Cu. S	Cu. NNE, SSE	------	d ⩽ ⊤ p.
24	58.27	29.1	38.5	22.1	64	NE	.2	6.8	A.-Cu. SE, W	Cu. ESE, W	------	⩽ p.
25	59.01	27.8	38	23.2	70.7	E	.3	7.7	Ci.	Cu.-N.	15.7	⊤ ● p. Φ
26	58.22	29.1	37.4	23.2	65.5	ENE, SE	.3	8.3	A.-Cu. S, SE	Cu.-N.	------	≡ a. d° ⊤ p.
27	58.39	28	37	23	72	Variable	1	7.3	A.-Cu. SE	Cu.-N. W	------	≡ a. ⊤ ⩽ p.
28	58.12	29.4	38	23.8	66.5	W	.3	7.7	Ci.	Cu.-N. NE	15.7	≡ a. ● p.
29	57.16	29.8	37.1	24.5	63.2	SW	.2	8.7	A.-Cu. ESE, W	Cu.-N. W	------	d° a. ⊤ ⩽ p. ψ
30	57.19	30.1	37.5	23.4	63.7	ENE	.7	7.8	A.-Cu. SE, SW	Cu.-N.	------	Ω^{2} p. ψ
Mean	759.79	28.2	36.3	21.7	65.3	------------	.4	7.1	------------	------------	------	
Total	-------	-----	-----	-----	-----	------------	-------	-------	------------	------------	31.9	

METEOROLOGICAL DATA, ETC.—Continued.

DAGUPAN.

[ϕ=16° 03′ N; λ=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.					mm.	
1	759.78	26.5	32.3	22.4	75.7	S	1	6.5	A.-Cu.	N, NE	S.-Cu.	NE	1.3	≡² Ω² a. ∞² ☈ p.
2	60.40	26.2	33.9	21.7	74.8	SE, NW	1.5	4.2	A.-C.	WNW	Cu.		48	∞° ☈ p.
3	61.85	27.3	34.6	21.7	70.7	SE, NW	1.3	5.2	A.-S.		S.-Cu.	WSW, SE	------	∞ ⊤ p.
4	61.51	27.2	35	22.7	68.8	S, NW	1.5	3.3	------------		Cu.-N.		------	∞° a. p.
5	60.37	26.7	36.2	22.1	70	SE, NW	1.5	5.7	A.-S.		S.-Cu.	NNE, E	4.1	≡° a. ●° p.
6	60.44	26.8	34.8	22.1	72.7	NW	1.3	6.5	Ci.		S.-Cu.	NE, SE	1.3	∞ ●° p.
7	60.64	27.2	34.5	21.5	63.7	S	1.2	3	Ci.	W	Cu.		------	∞² a. p.
8	61.29	27.9	36.6	21.5	64.3	SE, NW	1.5	1	Ci.	W	Cu.		------	≡° a. ∞ p.
9	61.30	27.4	34.8	22.1	69.7	SE, NW.	2	2.8	Ci.	W	Cu.		------	≡° a.
10	60.60	28	34.6	24.2	77.8	NW	1.8	3.2	Ci.	ESE, W	Cu.		------	∞ a. p. ⊤ <
11	59.41	28.3	36.5	23.7	72.3	SE, NW	1.5	2.2	A.-Cu.	E by S	Cu.		------	≡° Ω° a. ∞ p.
12	58.92	28.6	36.1	24.2	67.5	S, NW	1.5	5.2	Ci.	NE by E	S.-Cu.	NE, SE	------	◯° ⊕ ∞ p.
13	58.34	27.7	34.4	22.3	70.8	SE, NW	1.7	1.8	A.-S.		Cu.		------	≡ Ω a. ∞ p.
14	59.06	27.5	34.6	22	74.8	S, NW	1.7	2.3	A.-S.		Cu.	SE by S	------	≡ Ω² a. ∞² p.
15	59.19	28.2	36	22	66	SE, NW	1.7	2.3	Ci.	NW, WSW	Cu.		------	≡ Ω a.
16	58.55	28.9	36.6	24.2	70	NW	1.5	2.5	Ci.		Cu.	SE	------	≡ Ω a. ∞ p.
17	57.93	28.4	36.4	23.8	66.2	S, NW	1.5	3	Ci.	WNW	Cu.		------	∞ a. p.
18	58.29	29.4	38.8	23.2	64.3	SE	1.5	.8	------------		Cu.	E by N	------	∞° p.
19	59.08	28.5	36.1	23.1	70.5	Variable	1.7	2.3	Ci.-S.		Cu.		------	≡ Ω a. ∞ <° p.
20	58.78	29.4	38.2	[illegible].6	65.5	S, NW	1.5	3	A.-S.		Cu.		------	≡° a.
21	58.48	29.7	38.5	24.2	62.2	SE, NW	1.7	1	A.-Cu.	ENE	Cu.		------	∞° a. p.
22	58.27	29	36.4	24.4	65.7	SE, NW	2	4.7	Ci.-Cu.	ENE	Cu.		------	∞ a. p. ϖ
23	57.63	29.3	38.9	24.8	70	SE, NW	1.3	5.8	Ci.-S.		Cu.	SE	58.4	≡° ⊤ a. ∞ ☈ p.
24	57.88	28	34.4	21.9	76.5	SE, NW	1.2	5.3	A.-Cu.	WSW	Cu.		------	≡² Ω² a. ∞² p.
25	58.26	28.8	36.2	23.7	70.3	SE, NW	1.5	4.5	A.-Cu.	W	Cu.		------	≡ Ω a. ∞² ⊤ p.
26	57.54	28.8	36.2	24.1	71.2	NW	1	5.5	Ci.		Cu.		------	{≡² Ω² ⊤ a. ∞² < p. ϖ² ⌣°
27	57.62	28.1	34.6	24	74.2	NW	1.5	1.7	Ci.	W	Cu.		------	≡ a. ∞² p. ϖ²
28	57.60	28.6	33.2	24.2	72.3	NW	1.7	2.5	Ci.		Cu.		------	≡ Ω° a. ∞² p. ϖ
29	56.35	29.2	35.2	25.3	72.5	NW	1.5	2.7	------------		Cu.	SSE	------	∞² ⊤ < p.
30	56.42	29.9	36.5	25.5	66.8	NW	1.7	.7	A.-Cu.	S	Cu.		------	≡° a. ∞² p.
Mean	759.06	28.2	35.7	23.2	69.9	------------	1.3	3.4	------------		------------		------	
Total	------	------	------	------	------	------------	------	------	------------		------------		113.1	

VIGAN.

[ϕ=17° 34′ N; λ=120° 23′ E; barometer above sea, 24 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.		Clouds. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.					mm.	
1	759.84	26.4	------	------	73.4	N	2	3	A.-Cu.		Cu.	E by N	------	p° p.
2	60.77	26.3	------	------	72	W quadrant	.7	.8	A.-Cu.		Cu.		------	<° p.
3	62.06	27.2	------	------	66.7	Variable	1	2.5	A.-Cu.		Cu.		------	
4	61.94	27	------	------	70	Variable	.8	0	A.-Cu.		Cu.		------	
5	60.98	27.1	------	------	67.8	WNW	.5	2.3	A.-Cu.		Cu.	N by E	------	
6	60.78	27.1	------	------	65	Variable	.8	.5	Ci.		Cu.		------	
7	61.05	27.3	------	------	70.2	Variable	.8	2.3	Ci.	S by W	Cu.		------	
8	61.76	27.6	------	------	71.7	Variable	1.2	.7	Ci.	S	Cu.		------	
9	61.90	27.4	------	------	73.5	Variable	1.8	2.5	Ci.	S	Cu.		------	
10	61.08	27.3	------	------	73.7	Variable	1.7	1.7	Ci.		Cu.		------	< p.
11	59.92	27.2	------	------	75.3	Variable	.8	.2	Ci.		Cu.		------	Ω² a.
12	59.42	27.4	------	------	76.2	Variable	.7	1.3	Ci.	W by N	Cu.	S by W	------	◯
13	59.03	26.6	------	------	73	N	1.5	0	Ci.		Cu.		------	
14	59.37	27.4	------	------	70.2	NNE, NNW	1	.3	Ci.		Cu.		------	
15	59.71	27.8	------	------	75.5	Variable	1.3	1.2	Ci.	NNW	Cu.	SW by W	------	◯
16	59.19	27.1	------	------	77.2	Variable	.8	.2	Ci.		Cu.		------	Ω a.
17	58.72	27.4	------	------	72.8	NNW	1	.5	A.-Cu.	WSW	Cu.		------	◯
18	58.95	27.8	------	------	71.8	Variable	.8	3	A.-Cu.	WSW	S.-Cu.	E	------	
19	59.63	28.4	------	------	71.6	Variable	1.2	1.2	A.-Cu.	WSW	Cu.		------	<° p. ϖ
20	59.44	28.5	------	------	67.3	NW quadrt.	1	.3	A.-Cu.		Cu.		------	<° p. ϖ
21	59.02	28.6	------	------	70	Variable	1	.2	A.-Cu.	E by N	Cu.		------	ϖ
22	58.86	28.1	------	------	75.9	Variable	1.2	2.5	Ci.	WNW	Cu.	NW	------	ϖ
23	58.20	28.4	------	------	71.8	NW quadrt.	.7	5.3	A.-Cu.		Cu.		------	◯° ϖ
24	58.70	26.6	------	------	78.8	NNE	.5	4.8	A.-Cu.	SW by W	S.-Cu.	SW	47.8	☈ a.
25	58.87	27.6	------	------	78.5	Variable	.8	1.5	A.-Cu.	SW by W	Cu.		------	
26	58.25	27.8	------	------	77.5	SSW, WSW	.7	1.3	Ci.	W	Cu.		------	<° p.
27	58.27	27.4	------	------	79	Variable	.7	1	Ci.	W by N	Cu.		------	
28	58.30	28.1	------	------	78.3	NW quadrt.	.7	.3	Ci.		Cu.	SSW	------	d° a. <° p.
29	57.02	28.2	------	------	77.3	Variable	.5	0	Ci.		Cu.		------	
30	57.09	28.4	------	------	77.8	SW	1	.8	Ci.		Cu.	SW	------	<° p.
Mean	759.60	27.5	------	------	73.3	------------	1	1.4	------------		------------		------	
Total	------	------	------	------	------	------------	------	------	------------		------------		47.8	

METEOROLOGICAL DATA, ETC.—Continued.

TUGUEGARAO.

[ϕ=17° 35′ N; λ=121° 39′ E; barometer above sea, 33 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12	0–10.			mm.	
1	761.24	24.2	29.5		84.7	N, NW	2.3	9.2	Ci.-S.	Cu.-N.	1.5	●° a.
2	62.36	24.3	29.8		76	N	1.8	7.3		S.-Cu.		
3	63.89	25.3	32.2		76.7	N	1.2	5.2		S.-Cu.		
4	63.11	26.4	33.8		67	N	.3	6		S.-Cu.		⌓ a.
5	61.97	25.6	38.5		64.3	NW, N	.3	5	Ci.	Cu.		
6	62.20	24	33.2		73.9	N	.5	4.5		S.-Cu.		
7	62.33	25.7	38.5		72	N	.2	6.8	Ci.	Cu.		
8	62.08	28.5	36.6		59.8	Variable	.5	3	Ci.	S.-Cu.		
9	61.94	28.8	37.5		63	N	.8	6.5	Ci.	S.-Cu.		⌓ a.
10	61.20	29.5	38.5		68.5	N	1	7.8		Cu.		⊤ p.
11	60.02	29.4	38.7		67	N	.8	5	Ci.	S.		⊤ ⩽ p.
12	59.12	29.4	39.1		64	Variable	.5	2.5	Ci.	S.-Cu.		
13	58.55	29	38.1		62.2	N, NE	.5	1.5	Ci.	Cu.		
14	59.80	28	38.2		66.5	NW	.5	4	Ci.	Cu.		⌓ a.
15	59.70	28.3	37.8		67	S, N	.3	2	Ci.	Fr.-Cu.		⌓ a.
16	58.91	28.8	37.5		65.8	Variable	.8	3.8	Ci.	S.		
17	58.19	30.2	38.7		64	Variable	.5	6.5	Ci.	S.		⩽ a. p.
18	58.84	29.7	38		63.3	S	.5	4.2	Ci.	Fr.-Cu.		⩽ p.
19	59.83	27.6	39.4		70.8	S	.7	5		N.	9.6	⌈⊲ p.
20	59.70	28.3	36.5		70.8	S	.5	2.5	Ci.-S.	S.		
21	58.89	29.6	37.3		63.3	S, SE	.3	2.8		S.-Cu.		⊤ p.
22	58.56	29	38.3		62.2	SE, N	.5	3.3	Ci.	Cu.		⩽ p. ⌣
23	58.32	28.1	38.5		78.7	S, N	.3	8.3	Ci.	Cu.	64.3	⌈⊲² p.
24	58.98	24.6	33.1		85	S	1	6.7	A.-Cu.	Cu.		⊤ ⩽ p.
25	59.42	26.2	34.2		82	Variable	.7	7.3		Cu.		⌓ a.
26	57.84	28.5	36.2		73	N	1.2	4.8		Fr.-Cu.	14.8	⌓ a. ⌈⊲ p.
27	57.71	28	35.4		78.5	Variable	.5	6		Cu.-N.	3	● a. d ⌒ ⊤ ⩽ p.
28	57.62	28.7	36		71	N	.8	6.3		Cu.		d a. p. ⩽
29	56.68	29.6	36.7		72.8	N	.8	5		Cu.		⩽ d p.
30	56.28	28.2	35.3		77.8	Variable	.7	7.5	Ci.-S.	Cu.		⩽ d a. ⌓² p.
Mean	759.84	27.7	36.4		70.4		.7	5.2				
Total											93.2	

APARRI.

[ϕ=18° 22′ N; λ=121° 34′ E; barometer above sea, 5 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	762.04	23.2	25.2	21	83.7	NE	3	10		N. NE	6.1	↙ ● a. d p.
2	63.10	23.2	25.2	21.6	79.2	NE	2.2	10		S.-Cu. NE, E		
3	64.54	23.2	25	20.5	83.8	SW, NE	1.3	8.5		S.-Cu.		
4	63.66	24.5	28.7	21.4	80.7	ENE	1.7	5.8		S.-Cu. NW, E		
5	62.79	25	28.2	22.6	77.2	NE	2.2	3	Ci.	Cu.-N. E		∞ a p.
6	62.60	24.7	30.9	20	76.3	Equad.	1.3	1.3		Cu.-N.		∞ a p.
7	62.77	23.8	27.5	21	85.6	S, E	1	5.8		S.-Cu. SE		
8	62.48	24.8	31.2	20	80.8	SE, ENE	1	2	Ci. W	S.-Cu.		
9	62.36	25.2	31.7	19.8	84	Variable	1.2	2.8	Ci. W	S.-Cu.		⌓ a.
10	61.66	25.8	30	21.6	84.2	Variable	.7	.7	A.-Cu. SW	S.-Cu.		⌓ a. ⩽ p.
11	60.30	26.3	31	22	84.9	Variable	1	.2		Cu.-N. S		⌓ a.
12	59.31	27.1	32.1	21.6	81	Variable	.8	.7	Ci.	Cu.-N S		⌓ a. ∞ ⩽ p.
13	59.06	26.6	30.4	21.8	82.8	Variable	.2	.2		Cu.-N. S		⌓ a.
14	60.39	26.1	30.1	21.5	84.7	Variable	.7	.3	Ci.	Cu.-N.		⌓ a.
15	59.99	26.7	31	22	78.3	Variable	1.2	2.8	Ci. NW	Cu.-N. S		⌓ a. ⊤ ⩽ p.
16	59.30	27.4	31.2	23.4	78.6	Variable	.7	5.2	Ci. W	S.-Cu.		
17	58.43	27	31.9	22.5	82.4	Variable	.7	4.5	Ci.-S. W	S.-Cu.		⌓ a. ⊤ p. ○
18	58.80	26.9	31.5	23	82.4	SW, S	.8	2.5	Ci.-S. W	Cu.-N.		⊤ ⩽ p.
19	59.88	27.2	32.4	23	79.8	SW, S	.5	.7	A.-Cu. W	S.-Cu.		⌓ a. ⊤ ⩽ p.
20	59.58	27.2	32.9	22.5	79.8	Variable	1.2	1.7	Ci.-S. W	S.-Cu.		∞ a p.
21	59.03	28.3	33.8	24	81.8	SW, S	.7	1.7	Ci.-S.	S.-Cu.		∞ a p. ⊤
22	58.88	27.6	34.1	23.5	78	Variable	1	4.2	Ci.-S. W	Cu.-N.		
23	58.60	26.5	33.9	23.3	85.7	Variable	.8	9.3	Ci.-S. SW	S.-Cu. SW, W	2.3	⌈⊲ p. ○ ⌣
24	59.38	24.2	27	20.9	87.2	Variable	1	9.7	Ci.-S. W	S.-Cu. SW	19.8	↙ ● ⊤° p.
25	59.71	25.1	32.8	20	84.5	Variable	1.3	3.2	Ci.-S. W	S.-Cu. NE, W		∞ a p. ⌣
26	58.26	26.6	32.2	21.3	85.6	S	1.2	4.3	Ci. W	S.-Cu. SW		⊤ ⩽ p.
27	57.93	27.4	31.5	23.6	84.3	S, NE	1.2	5.8	Ci.-S. W	S.-Cu. N		∞ a. ⩽ p.
28	58.06	27.6	32	24	82.6	S	.5	3.2		S.-Cu. N		⌓ a.
29	56.62	27.8	31.1	24	81.2	Variable	.8	1.2		Cu.-N. S		⊤ ⩽ p.
30	56.64	27.7	31.4	23	83.8	Variable	.8	2.8	Ci.-S. SW	Cu.-N. S	.3	∞ ⌈⊲° p.
Mean	760.20	26	30.6	22	82.2		1.1	3.8				
Total											28.5	

METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

ISABELA, BASILAN.

[ϕ=6° 43′ N; λ=121° 57′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.6	21	72	W	------	------	Ω ≡ a.
2	32.5	19.4	71	NE	------	------	Ω ≡ a.
3	31.5	20.5	73	W	------	------	Ω a.
4	31.8	21.4	68	NE	------	------	Ω ≡ a.
5	34.4	21.1	65	W	------	------	Ω ≡ a.
6	31.5	21	67	W	------	------	Ω ≡ a.
7	32.6	20.6	64	NE	------	------	Ω ≡ a.
8	35	22.5	54	NE	------	------	Ω ≡ ⊤ a.
9	31.5	21.5	73	W	------	35.6	● ⊤ a. ●° p.
10	30.5	22.5	95	Calm	------	7.1	Ω ⊤ a. ● p.
11	33	22	76	W	------	------	Ω ≡ a. ⊤ ↯ p.
12	32.5	22.3	71	W	------	1.8	●° a.
13	31	23	74	W	------	4.3	●° a. p. ⌒ ⊤ a.
14	31	23.2	77	W	------	------	Ω ≡ a.
15	29.5	23.1	77	W	------	60.5	Ω ≡ a. ●² ◸ p.
16	30	22.7	78	NE	------	------	Ω ≡ a.
17	31.2	21.5	68	W	------	------	Ω a.
18	31.2	21.5	68	W	------	------	Ω ≡ a. ↯ p.
19	31.5	22.4	73	W	------	------	Ω ≡ a. ⊤ ↯ p.
20	30.6	22.7	71	W	------	------	Ω ≡ a. ↯ ⊤° p.
21	30.5	23	81	W	------	------	Ω ≡ a. d ⊤° ↯ p.
22	31.3	22.6	73	W	------	------	Ω° ≡ a. ⊤ d p.
23	32.2	22.5	74	NE	------	4.1	Ω ≡ a. ● ⊤ ↯ p.
24	30	22	75	NE	------	------	Ω ≡ a.
25	32.5	22.2	72	W	------	------	Ω ≡ ⊤ a.
26	31.2	22.5	75	W	------	------	Ω ≡ a. ⊤ p.
27	30.5	22.2	94	Calm	------	11.7	Ω ≡ a. ● ⊤ p.
28	29.5	22.3	82	W	------	------	Ω ≡ ⊤ a.
29	30.5	22	79	W	------	------	Ω ≡ a.
30	29.9	22.3	93	Calm	------	5.8	Ω ≡ a. ● ◸ p.
Mean	31.4	22	74.4	------------	------	------	
Total	------	------	------	------------	------	130.9	

ZAMBOANGA.

[ϕ=6° 54′ N; λ=122° 05′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	29.8	20.1	74	WSW	2	------	
2	31.5	21.4	56	E	2	------	
3	30.6	20.5	59	SE	2	------	
4	30	22	71	S	1	------	
5	31	22.4	64	SE	2	------	
6	30.5	21.7	65	WSW	1	------	
7	30.4	22.4	69	S	1	------	
8	32	23.5	58	E	3	------	
9	30.5	22.5	69	ESE	1	23.9	● ◸ a.
10	29	24.5	85	W	2	------	⊤ a.
11	30	22.8	76	ESE	2	------	
12	31.8	23.5	67	E	2	------	
13	30.4	23.4	78	Calm	------	8.9	● a.
14	30.5	24.5	70	W	1	------	
15	29.4	24.4	76	WSW	1	------	
16	31.5	22	73	SE	2	------	
17	30.1	23.4	73	W	1	------	
18	30.4	23.1	74	W	1	------	
19	30.6	23.5	73	W	1	------	
20	30.4	23.6	79	W	1	------	
21	30	24.4	71	W	2	------	
22	30.5	23.8	72	W	1	------	↯ ⊤ p.
23	32.1	23.4	73	SSE	1	------	
24	31.6	23.1	59	E	1	------	
25	30.1	23.5	80	W	2	------	
26	31	23.4	69	Calm	------	9.9	● a.
27	32	23	69	W	1	------	⊤ p.
28	29.4	23.3	78	W	2	------	
29	30	23	78	Calm	------	------	
30	29.9	22.9	82	Calm	------	------	
Mean	30.6	23	71.3	------------	1.3	------	
Total	------	------	------	------------	------	42.7	

DAVAO.

[ϕ=7° 01′ N; λ=125° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.1	22.7	68	------------	------	------	
2	33.1	23.2	62	------------	------	------	
3	------	22.8	68	------------	------	------	⊤ p.
4	31.7	23.7	57	------------	------	------	
5	32.8	22.3	65	------------	------	------	
6	33.3	22.4	62	------------	------	------	◸ p.
7	32.5	23	62	------------	------	------	
8	33.6	22.7	60	------------	------	------	
9	32.7	23.1	61	------------	------	------	
10	31.1	23.5	73	------------	------	------	↯ p.
11	32.3	23	69	------------	------	------	
12	------	22.9	56	------------	------	------	
13	32.7	23.1	65	------------	------	------	
14	33.1	22.8	70	------------	------	------	
15	33.1	23.4	60	------------	------	------	
16	33.1	23.1	62	------------	------	43.7	● ◸ p.
17	32.7	22.3	65	------------	------	------	
18	31.7	23.6	64	------------	------	15.7	● ⊤ p.
19	32.2	23.2	60	------------	------	------	
20	33	23.2	61	------------	------	20.8	● ⊤ p.
21	32.1	22.6	62	------------	------	------	
22	33.1	23.3	64	------------	------	------	↯ p.
23	33.1	22.7	62	------------	------	------	
24	33.1	23.5	63	------------	------	31.5	● p.
25	33.7	24	61	------------	------	------	
26	32.6	23.4	61	------------	------	------	↯ p.
27	------	23	55	------------	------	------	◸ p.
28	31.9	23.1	59	------------	------	33	● ⊤ p.
29	32.6	22.6	61	------------	------	------	
30	33.6	23.2	63	------------	------	------	
Mean	32.7	23	62.7	------------	------	------	
Total	------	------	------	------------	------	144.7	

CARAGA.

[ϕ=7° 30′ N; λ=126° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31	20.6	74	Calm	------	------	
2	30.7	20.9	71	NE	2	------	∞ d p.
3	28.2	22	91	Calm	------	3.6	●° a. p ∞ ↯ p.
4	30	21.7	71	N	4	------	↙° a. ∞ p.
5	30.9	21	68	NE	2	------	∞ a.
6	30.2	20.6	70	NE	2	------	
7	30.8	21.5	75	Calm	------	------	d a. ∞ p.
8	31.1	21.7	68	Calm	------	------	∞ a. p.
9	31.8	22.2	59	Calm	------	------	d° p.
10	30.6	22.6	70	E	1	------	d° a. p.
11	30.2	22.8	72	Calm	------	5.3	Ω ● a. ●° ↯ p.
12	30.7	22.6	79	NE	1	------	
13	28.6	21.7	81	NE	2	4.8	● ⌒ a. ●° p.
14	30.4	22.5	74	NE	2	4.6	●° a. p.
15	30.7	22.3	64	Calm	------	3.8	●° a. p.
16	30.6	22.2	72	NE	1	------	⊕ p.
17	31.2	21.9	72	ENE	1	------	
18	30	22.6	80	Calm	------	12.5	●° a. ● p.
19	30.9	22.1	76	E	1	9.9	⌒ ≡ ● p.
20	29.5	23.2	78	NE	2	29.7	⌒ a. ● a. p.
21	30.4	22.4	75	NE	1	------	d° a. ≡ p.
22	30.4	22.6	84	Calm	------	22.3	● ⊤ a. p. ◸ p.
23	30.2	22.4	80	NE	1	------	
24	30.8	22.1	75	NE	1	------	⋓ p.
25	30.6	22	75	NE	2	------	
26	31	22.6	96	Calm	------	16	● p.
27	30.7	22.4	79	Calm	------	------	⊕ p.
28	30.4	21.4	73	Calm	------	------	
29	30.5	21.4	72	Calm	------	------	≡ p.
30	30.7	22.3	76	Calm	------	------	≡ p.
Mean	30.5	22	75	------------	.9	------	
Total	------	------	------	------------	------	112.5	

METEOROLOGICAL DATA, ETC.—Continued.

DAPITAN.
[ϕ=8° 38′ N; λ=123° 23′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	------	22.1	84	E	2	------	
2	------	24.1	86	E	2	------	
3	------	23.7	88	E	2	1	●° a.
4	------	24.1	87	E	3	.5	●° a.
5	------	23.5	91	E	2	1.5	●° a.
6	------	20.2	82	E	2	------	
7	------	21.2	80	E	2	------	
8	------	22.3	85	E	3	.8	●° a. ≤ p.
9	------	24.2	83	E	4	.8	●° ≤ T a.
10	------	23.8	76	E	2	2	● a.
11	------	23.8	91	E	2	------	
12	------	25.2	76	E	2	------	
13	------	24.6	82	E	3	------	⌒ a.
14	------	25.9	77	E	2	------	≤ p.
15	------	25.5	77	E	2	------	≤ p.
16	------	25.4	78	E	2	------	
17	------	26	81	E	3	------	
18	------	22.9	81	E	3	1	● a.
19	------	23.6	79	NE	2	.8	●° a.
20	------	23.3	77	E	2	------	
21	------	23.9	72	E	2	.5	●° a. ≤ p.
22	------	20.9	76	SE	2	------	
23	------	23.4	77	E	3	------	
24	------	23.8	79	E	2	30.2	●² a. ≤ p.
25	------	24	76	E	2	------	
26	------	23.7	76	E	2	------	
27	------	23.9	81	SSE	2	29	●² a.
28	------	24.1	79	E	2	2	●° a.
29	------	22.8	82	E	2	------	
30	------	23.2	83	NNW	2	------	
Mean	------	23.6	80.7	------------	2.3	------	
Total	------	------	------	------------	------	70.1	

BALINGASAG.
[ϕ=8° 45′ N; λ=124° 44′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33	15.9	62	W by S	1	------	
2	32.7	15.9	63	SW	3	------	
3	34.4	21.2	53	W by S	1	------	
4	34.8	20.5	62	NW	2	------	
5	34.4	18.8	54	NW	2	------	
6	32.9	16.6	62	NW	2	------	
7	26.7	18.1	91	Calm	------	1.3	●° p.
8	32.9	18.5	72	Calm	------	------	
9	33.3	21.2	63	W by S	2	------	⌒ d p.
10	32.6	20.1	61	W by S	2	------	
11	32.3	20.2	65	NW	2	------	
12	35.1	20.8	66	W by S	2	------	
13	34.6	20.9	57	W by N	1	------	
14	35.7	21.1	60	SW	1	------	
15	33.6	19.5	64	SW	1	------	
16	33.3	20.2	65	SW	1	------	
17	35	18.9	64	W by S	1	------	
18	32.2	20.1	68	SW	1	8.1	● T p.
19	33.3	20.5	66	W by S	1	------	
20	35.8	20.9	67	WSW	2	------	
21	35.6	21	54	W by S	1	------	
22	35.8	20.7	62	W by S	2	------	d p.
23	33.5	22.5	63	W by S	2	------	
24	34.8	22.4	66	WSW	1	------	
25	33.9	21.1	59	SW	2	------	
26	34	19.5	69	W by S	2	------	
27	34.8	21	62	W	2	------	
28	34.2	21.5	51	NW	2	------	
29	32.9	18.1	61	NW	2	------	
30	33.7	20	62	NW	3	------	
Mean	33.7	19.9	63.1	------------	1.6	------	
Total	------	------	------	------------	------	9.4	

BUTUAN.
[ϕ=8° 55′ N; λ=125° 31′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	28.9	19.3	------	NW	2	------	Ω ≡ a.
2	31	19	------	NW	2	------	Ω ≡ a.
3	30	23.5	------	WNW	3	1.5	● ∞ a.
4	29.1	21.7	------	NW	2	------	Ω ≡ a.
5	28.6	21	------	NW	2	------	Ω ∞ a.
6	29	19.3	------	NNW	3	------	Ω ≡ a. ≤ p.
7	28.6	22.6	------	W	1	28.3	Γ a. ≡ ● a. p.
8	30.6	21.5	------	NNW	1	6.4	Ω a. ⌒ ● T p.
9	30.2	22.7	------	N	1	5.8	Ω ≡ a. ● T p.
10	29.5	22.7	------	NW	2	7.4	●° ≡ a. ● T p.
11	29.9	22.5	------	SSW	1	4.7	Ω ∞ a. ● a. p.
12	29.6	23.1	------	N	1	17.5	Ω ≡ T a. ● a. p.
13	30	23	------	W	1	.5	Ω ≡ a. T ⌒² ●° p.
14	30.9	23	------	NNW	1	------	Ω a. Γ d p.
15	30.5	21	------	W	1	8.9	Ω ≡ a. Γ ● p.
16	30.9	22.7	------	W	1	2.6	Ω ≡ ⌒ a. ● a. p.
17	30.5	20.1	------	N	1	------	Ω ≡ a. d T p.
18	31.4	22.6	------	S	2	3.8	Ω ≡ ●° a. ● p.
19	31	23.1	------	NW	2	8	Ω ≡ ● a.
20	32.4	23.5	------	SW	1	1.8	≡ a. ● T p.
21	31.1	22.7	------	N	1	1.3	Ω ≡ ● a.
22	32.6	24	------	E	1	8.9	≡ a. Γ ● p.
23	32.6	23	------	N	2	------	Ω ≡ a. d° T ◒ p.
24	32.9	23.6	------	S	2	------	Ω ≡ a. T ≤ ⊎ p.
25	32.7	23.5	------	N	1	------	Ω ≡ a.
26	32.5	22.5	------	NNW	1	------	Ω ≡° a. T ⌒ d° ⊎² p.
27	33	22.7	------	SE	2	23.4	Ω ≡° a. ↙ ●² ◒ p.
28	32.9	22.5	------	NNW	1	------	Ω ≡° a.
29	32.9	22.5	------	SW	1	------	Ω ≡° a. ≤ ◒ p.
30	33.1	22.5	------	SSW	1	------	Ω ≡ a. ≤ p.
Mean	31	22.2	------	------------	1.5	------	
Total	------	------	------	------------	------	130.8	

YAP (Western Carolines).
[ϕ=9° 29′ N; λ=138° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.7	23.9	82	SW	5	0.5	
2	32.1	23.5	72	W	4	------	
3	32.2	22.7	70	NNW	3	------	
4	33.5	22.5	72	N	1	------	
5	33.3	21.5	64	NNW	1	------	
6	31.1	21.7	94	NE	1	6.1	
7	30.9	22.6	77	NE	4	.5	
8	32.4	22.9	67	NE	3	------	
9	33	23.3	70	NE	3	2.8	
10	31.7	22.7	78	NE	3	2.3	≤ T a.
11	32.1	22.7	71	NE	1	1.3	
12	32	23	71	NE	2	------	
13	34.2	22.5	70	NE	3	------	
14	32.1	24	73	NE	3	.5	
15	32.1	23.3	80	NE	3	------	
16	32.3	23.2	75	NE	4	------	
17	32.2	23.2	73	NE	1	1.5	
18	32	24	77	NE	3	1.5	
19	30.4	23.8	63	NE	3	------	
20	30.4	24.2	70	NE	3	------	
21	30.9	24.8	77	NE	5	.5	
22	30.7	23.8	88	NE	7	7.1	
23	31	25	71	NE	4	------	
24	32	24.9	69	NE	4	------	
25	32.2	24.5	69	NE	4	------	
26	31.5	24.4	70	NE	3	------	
27	31.6	24.7	68	NE	4	.3	
28	33.4	24	64	NE	3	------	
29	30.2	25.3	90	NE	5	------	
30	32.2	25.5	88	NE	2	------	
Mean	31.9	23.6	74.1	------------	3.2	------	
Total	------	------	------	------------	------	24.9	

METEOROLOGICAL DATA, ETC.—Continued.

MAASIN.

[ϕ=10° 08′ N; λ=124° 50′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30	20	59	S	1		
2	28.2	21	77	NW	1	5.1	●° a. ↙ ● p.
3	28.6	21	73	SW	2		d a. p.
4	28.9	21.6	68	WSW	2		
5	29.9	21.3	61	SW	4		
6	30.6	22	54	NW	2		d p.
7	28	22.7	75	W	2		≡ ●° a. d p.
8	30.1	22	78	W	2		≡^{2} ↙ a. d a. p. ϟ p.
9	29.1	22.9	79	NE	1		d ≡ a. ϟ p.
10	30.8	21	70	SW	3		ϟ p.
11	30.1	22.1	75	E	1		d a. p. ϟ p.
12	31	21.7	67	W	2		
13	31.6	23.2	66	SW	1		ϟ p.
14	31.2	21.6	70	SW	2		
15	30.7	24.5	68	SW	3		d a. p. ϟ p.
16	31.5	22.1	54	E	5		d ↙ a. p.
17	31.9	21.6	73	SW	3		
18	31.6	23.4	80	E	2	5.3	● a. ↙ a. p.
19	32	24	62	E	5		d a.
20	33.5	23.2	68	SW	2		ϟ p.
21	32	22.9	59	SW	1		ϟ p.
22	32.5	24.5	74	NE	1		●° a. ↙ a. p. ϟ p.
23	31.7	23.4	64	E	3		ϟ p.
24	30.7	23.5	76	E	5		↙ p.
25	32.8	23.5	60	E	6		↙ a. p.
26	31.1	23.4	76	SW	2		↙ a. d ϟ ⊕ p.
27	32	23.5	65	N	1		↙ a. ⊕ a. p.
28	31.6	23.1	68	S	2		ϟ p.
29	30.6	21.5	68	SE	2		↙ a.
30	32	23.6	65	S	2		⊕ p.
Mean	30.9	22.5	68.4		2.4		
Total						10.4	

BACOLOD.

[ϕ=10° 41′ N; λ=122° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.9	20.8	53	NNE	4		≡^{2} a.
2	30.7	23.2	73	NE	5		≡^{2} a.
3	30.8	24	51	NE	6		≡^{2} a. ↙ p.
4	30.4	23	57	N by E	5		≡^{2} a.
5	30.3	22.4	53	NE	5		≡^{2} a.
6	29.9	21	52	N by E	5		≡^{2} a.
7	31.5	22.7	55	NE	5		≡^{2} a.
8	31.7	24	58	NE by N	5	1	●° p.
9	31.7	23.5	71	NNE	5		⊤° a. ◯° ϟ p.
10	30.5	21.2	63	NNE	6		Ω^2 ≡^{2} a. ◯° ↙ p.
11	30.8	22.9	70	N by E	5		⌈ϟ° p.
12	29.6	22.5	68	N	5		≡^{2} a.
13	31.4	20.8	56	N	4		≡° a.
14	30.1	20.3	63	N	5		Ω° ≡^{2} a.
15	30.3	20	66	N	4		Ω° ≡° a.
16	31.1	20.4	68	N	6		≡^{2} a. ↙ ϟ p.
17	31.2	21.5	69	N	6		Ω° ≡° a. ↙ p.
18	31.3	24	68	N	5		
19	31.7	23	72	N	5		≡^{2} a.
20	31.7	22.8	64	N	5		≡^{2} a.
21	31.5	22.8	69	N by W	5		Ω^2 ≡^{2} a.
22	32.6	22	66	NNW	3		≡^{2} a. ⊤° ϟ p.
23	32.7	23.5	61	N	3	2.3	≡^{2} ● ⌈ϟ^2 a. ⌈ϟ° ●° p.
24	32.7	23.2	75	NNW	3	.3	≡^{2} a. ●° ⊤° ϟ p.
25	33.4	25	61	N	3		⊤° p.
26	32.7	24	61	N by W	5		⊤° a. p.
27	33.8	22.3	69	N	4		≡^{2} a. ⊤° ϟ p.
28	32.9	23.5	69	NNW	3		⌈ϟ p.
29	34.2	23.2	55	W	2		ϟ p.
30	34.3	22.9	59	WSW	2		ϟ p.
Mean	31.6	22.5	63.2		4.5		
Total						3.6	

SAN JOSE BUENAVISTA.

[ϕ=10° 44′ N; λ=121° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	31.5	20.5	65	NNW	1		↙° p.
2	32.4	20.3	64	NW	4		↙ p.
3	33.6	22.2	58	SW	1		
4	33.2	21.4	52	NW	2		↙° p.
5	32.4	20	53	NNW	2		↙° p.
6	32.4	19.7	48	NNW	1		
7	32.9	21	54	SW	1		
8	32.5	20.2	64	SW	1		
9	33.7	24	56	NNW	1	●	ϟ° p.
10	33.3	23.1	51	W	2		
11	33.3	20.4	57	WSW	1		ϟ p.
12	32.8	21.7	58	NNW	2		
13	33.1	18.6	49	WNW	1		
14	32.8	19.9	64	S	1		
15	32.8	19.6	56	NNW	1		
16	33.2	20.6	59	WSW	1		
17	33.2	21.4	60	SW	1		
18	33.8	21.9	60	NNW	1		⊤ ↙° p.
19	33.8	23	66	NNW	2		
20	33.8	22.5	61	SW	1		
21	33.7	21.6	55	WSW	1		
22	33.4	21.7	62	W	2		
23	33.7	24.1	61	W	3	21.8	↙° ⊤ ● ϟ p.
24	32.5	23.2	69	NW	4		↙ ϟ p.
25	32.9	24.4	66	NNW	2		⊤ p.
26	33.8	23.7	64	W	1		⌈ϟ ⌒ d° p.
27	33.8	23.3	61	WSW	1		
28	33.8	24.4	65	SW	2	.5	⌈ϟ ●° p.
29	32.9	24.4	65	SSW	2		⌈ϟ p.
30	32	24.2	66	SSW	3		↙° ϟ p.
Mean	33.1	21.9	59.6		1.6		
Total						22.3	

TUBURAN.

[ϕ=10° 44′ N; λ=123° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.3	20.8	65	N by W	2		Ω^2 ≡^{2} a. ◯° ∞^{2} p.
2	30.1	21.4	75	N	1		Ω^2 ≡^{2} a. d° p.
3	30.6	21.4	62	N	3		≡^{2} a. ∞^{2} p.
4	30.5	21	63	N by W	3		≡° a. ∞^{2} p.
5	30.5	20	62	N by W	4		Ω^2 ≡^{2} a. ∞^{2} p.
6	30.3	19.3	67	N	1		Ω^2 ≡^{2} a. ∞^{2} p.
7	30.3	23.5	73	N	2	3	●° a.
8	30.7	22.1	71	N	1		≡° a. d ϟ^2 p.
9	33.5	22.9	63	NE	3	1.8	●° ⌒ a. ϟ^2 p.
10	31.2	20.4	65	N by W	2		Ω^2 ≡^{2} a.
11	31.6	21.2	71	N	2		Ω^2 ≡^{2} a. ϟ^2 p.
12	30.7	20.8	58	NNW	2		Ω^2 ≡^{2} a. ∞^{2} p.
13	31.4	20.7	59	NNW	1		Ω^2 ≡^{2} a. ∞^{2} ϟ° p.
14	31.4	20.6	63	N by W	2		Ω^2 ≡^{2} a. ∞^{2} p.
15	31.6	20.4	63	N by W	2		Ω^2 ≡^{2} a. ∞^{2} ϟ^2 p.
16	31.6	22.5	67	Calm			d° a. ∞^{2} ϟ^2 p.
17	32.6	21.1	61	N	2		Ω^2 ≡^{2} a. ∞° p.
18	33.2	22.9	72	N	3		≡^{2} a. ∞^{2} ϟ^2 p.
19	33.2	22.2	51	Calm			≡^{2} a. ∞^{2} p.
20	35	22.2	41	Calm			Ω^2 ≡^{2} a. ∞^{2} p.
21	32.5	22.3	63	N by W	3		≡^{2} a. ∞^{2} p.
22	32.5	21.8	64	N	1		≡^{2} a. ϟ^2 p.
23	31.8	23.2	68	Calm			≡^{2} a. ⊤° ϟ^2 ∪^{2} p.
24	32.4	23.2	68	NNW	1		ϟ^2 p.
25	32.9	23.4	63	N	2		≡° a. ∞^{2} p.
26	33.1	23	64	N	2		≡^{2} a. ϟ^2 ∪^{2} p.
27	33	22.7	65	N	2		≡^{2} a. ∞^{2} ϟ° p.
28	33.3	23.2	61	N by W	2		≡° a.
29	33.3	21.7	55	Calm			≡° a. ϟ° p.
30	33.3	22.1	60	N by W	1		≡^{2} a.
Mean	31.9	21.8	63.4		1.7		
Total						4.8	

METEOROLOGICAL DATA, ETC.—Continued.

BORONGAN.

[ϕ=11° 42′ N; λ=125° 25′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.3	20.7	63	NE	3	------	Ω a. ↙ p.
2	30.7	21.6	75	ENE	5	8.6	↙ ●^{2} a. ↙ p.
3	30.3	22	71	N	3	5.1	● a. ↙ p.
4	29.8	21.5	63	NE	3	4.3	↙ ●° a. ●° p.
5	31.2	20.6	55	NNE	3	------	Ω a. ↙ p.
6	30.7	20.6	75	NE	3	2.8	Ω ●° a. ↙ p.
7	30.6	20.7	67	NE	3	------	Ω a. ↙ a p.
8	30.3	22.4	92	SE	4	32.5	● a. ↙ ●° p.
9	30.7	23.8	72	ESE	5	14	↙ ●° a. ●° ↙ p.
10	31.4	22	66	ENE	1	5.6	↙ ●° a.
11	31.3	21.7	75	NE	3	2.3	↙ ●° a. ↙ p.
12	31.8	20.5	57	ENE	1	------	Ω a.
13	32.2	19.5	57	ESE	2	------	Ω a.
14	32.4	19.4	60	E	2	------	Ω a.
15	31.8	21.2	63	ESE	2	.8	↙ ●° a.
16	32.5	22.7	63	ESE	2	1.3	●° a.
17	32.1	21.9	93	ENE	2	15.2	●° a. ⊤ ↙ ●p.
18	32.3	22.9	87	ENE	3	29	↙ ● a. p.
19	32.4	23.3	68	E	2	------	
20	32.7	23.1	80	ENE	2	.3	Ω a. ●° p.
21	32.3	23.3	68	E	2	------	Ω a.
22	32.8	22.5	66	SE	3	1.5	●° a.
23	33.1	23.2	65	ESE	2	------	Ω a.
24	32.3	22.9	66	SE	2	4.6	● a.
25	33	22.5	68	SE	2	------	Ω a. ☈ ◡ p.
26	33.2	21.8	64	ENE	3	------	Ω a. ⊕ p.
27	32.8	22.8	74	ESE	3	------	●° p.
28	33.1	22.1	60	SE	2	------	Ω a. ↯ p.
29	33.3	21.9	62	SE	2	.5	Ω a. ●° p.
30	33.1	22.8	70	SE	2	------	
Mean	32	21.9	68.8	------	2.6	------	
Total	------	------	------	------	------	128.4	

ROMBLON.

[ϕ=12° 35′ N; λ=122° 16′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.1	21.9	64	NNE	1	------	
2	30.2	23.8	74	NNE	1	5.1	● a.
3	30.4	25.1	64	E	1	5.6	● a.
4	31.1	24.5	61	ESE	1	------	
5	31.3	24.3	65	ENE	1	------	
6	31.2	22.7	69	NE	1	------	
7	29.7	24.8	70	ENE	1	------	d a.
8	31.1	24.7	71	NNW	2	------	
9	31.4	25	72	NE	2	------	↯ p.
10	31.5	25.3	53	NE	1	------	
11	31.6	24.5	68	SE	1	------	d a.
12	31.1	25.2	64	N	1	------	
13	31.8	23.6	64	NW	1	------	
14	32.1	23.9	62	NE	1	------	
15	30.8	25.9	65	NNW	1	------	
16	31.8	25.2	62	E	1	------	
17	31.3	24.4	69	E	1	------	
18	31.2	25.8	67	NW	1	------	d ↯ p.
19	33.4	26.3	62	N	1	------	
20	33.1	26.1	67	NE	1	------	
21	32.4	26.4	62	NNE	1	------	
22	32.1	24.6	61	NW	1	------	
23	32.2	23.3	65	NW	1	------	
24	33.1	23.5	71	Calm	------	------	
25	34.6	24.8	56	NE	1	------	
26	33.5	25.6	60	ESE	1	------	
27	32.5	25	66	N	1	------	
28	33	24	69	NW	1	------	
29	34.6	23.5	63	N	1	------	
30	33	23.1	67	NW	1	------	
Mean	32	24.6	65.1	------	1	------	
Total	------	------	------	------	------	10.7	

GUBAT.

[ϕ=12° 55′ N; λ=124° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.6	20	72	NE	2	------	
2	29.5	21.2	77	NE	4	10.2	●° a.
3	30.6	23	73	NE	4	------	●° p.
4	29	21.6	68	NE	3	------	
5	29.5	21.5	64	NE	3	------	
6	29.1	16.4	77	E	3	10.2	● p.
7	28.9	20.8	68	E	4	2.5	●
8	29.4	21.1	82	NE	4	7.6	● p.
9	30.3	21.9	79	NE	3	35.6	● a. p.
10	30.3	20.3	74	NE	3	3.8	●° a.
11	30	22.1	79	NE	4	6.4	●° a.
12	30.4	20.6	71	NE	3	------	
13	30	16.8	70	NE	2	------	
14	31.1	------	------	NE	2	------	
15	30.2	23	75	NE	3	2	●° a.
16	30.5	20.8	72	NE	2	------	
17	30.4	22.4	72	NE	3	------	
18	31.2	22.3	76	NE	2	16.5	●° ⌒ a.
19	30.7	22.8	78	NE	3	------	
20	31	21.5	78	NE	3	------	
21	31	21.5	78	NE	2	------	
22	31.2	21.8	75	NE	3	------	
23	32	21.1	72	NE	3	------	
24	31.9	22.1	76	SE	3	------	
25	31.9	21.9	74	NE	2	------	
26	32	22.5	70	SE	3	------	
27	32.3	20.7	73	NE	3	------	
28	32.2	21.9	66	NE	3	------	
29	32.5	19.4	68	NE	2	------	
30	------	------	------	------	------	------	
Mean	30.7	21.2	73.5	------	2.9	------	
Total	------	------	------	------	------	94.8	

SUMAY, GUAM (Ladrones Islands).

[ϕ=13° 22′ N; λ=144° 45′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	29.6	23.9	71	S	3	10.2	
2	30	24.4	79	SW	3	------	
3	29	25	78	WSW	2	------	
4	30.6	24.7	90	WNW	3	------	
5	28	23.1	81	NNE	3	2.5	
6	27.6	23.1	75	NE	4	------	
7	27.6	23.6	70	E	2	------	
8	27.6	23.9	70	NE	3	------	
9	27.6	23.3	95	NE	1	5.1	
10	29.8	22.2	76	N	1	11.4	
11	30	21.7	71	N	1	------	
12	28.6	21.7	82	NW	1	22.9	
13	28.8	23.3	75	E	3	8.9	
14	29.2	23.3	73	E	4	7.6	
15	28.8	24.4	76	NE	3	------	
16	30	24.4	71	NE	1	------	
17	29.8	24.4	66	E	3	------	
18	29.8	24.4	70	NE	4	------	
19	28.8	24.2	76	NE	4	------	
20	30	24.4	68	SE	3	------	
21	30.4	24.7	71	E	3	------	
22	30.6	25	66	E	2	------	
23	29	24.7	72	NE	3	------	
24	29	24.4	79	NE	3	------	
25	28.8	25	76	NE	4	------	
26	29.6	25	71	NE	4	------	
27	29.6	25.3	77	NE	3	------	
28	28.6	23.9	76	NE	2	------	
29	29	24	70	NE	3	------	
30	28.4	24.4	72	NE	3	------	
Mean	29.1	24	74.8	------	2.7	------	
Total	------	------	------	------	------	68.6	

METEOROLOGICAL DATA, ETC.—Continued.

NUEVA CACERES.
[ϕ=13° 38′ N; λ=123° 12′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32	19	67	N	3		
2	31.5	21	63	N	3	6.4	●° ≡ a.
3	32	22	52	N	3		
4	32	21.5	52	N	3		
5	32.2	18	53	N	3		
6		20.5	55	NNW	2		
7							
8							
9							
10							
11	32.5						
12	32	17.5	56	N	3		
13	32.5	17	52	N	3		
14	32.5	18	57	N	3		
15	31.5	18.5	61	NNW	3		
16	32	20	53	NW	3		≡° a.
17	32.5	18.5	57	NW	3		
18	32.5	20.5	55	NNW	1		
19	32.8	18.7	59	W	3		
20	33	19	63	W	1		
21	33	18	57	NNW	2		
22	32.6	18	51	NNW	3		
23	32.5	18	56	NNW	3		
24	32.8	20	57	NNW	3		
25	32.5	21.5	61	NNW	3		
26	33	21.2	60	NNW	3		
27		21	54	Calm			
28	33.8						
29	33.6	21.6	51	NNW	2		
30	33.8	21	53	NNW	2		
Mean	32.5	19.6	56.5		2.5		
Total							

BATANGAS.
[ϕ=13° 45′ N; λ=121° 03′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	36.4	20	50	SE	2		
2	28.5	19.9	80	NE	1	0.5	●° a.
3	31.5	21.8	59	E	1		
4	32.9	22.2	69	E	2		
5	32.5	20.2	84	NNE	3	.3	●° a. p.
6	34	19.1	65	ENE	2		
7	33.7	20.7	55	ENE	2		d° a.
8	35	20.8	76	S	1		
9	34.8	20.7	57	ESE	1		
10	35.9	22.6	63	NE	1		
11	36.1	21.4	62	E	2		
12	34.9	21.3	44	E	2		
13	35.1	20.2	47	ESE	2		
14	35.8	19.3	50	E	2		
15	36.4	19.2	46	S	2		
16	37.5	21.4	49	SSE	2		
17	35.3	21.2	43	S	2		
18	37.2	22	46	SSW	2		
19	35.2	21.9	55	WSW	2	.8	●° a.
20	35.8	22.8	54	SSE	3		
21	35.6	22.6	51	SSE	2		
22	38	22.4	51	W	1		
23	38	22.6	49	SE	2		
24	39	22.9	49	SW	2		
25	39.3	23.8	38	SW	2		
26	38.8	23.5	38	SW	1		
27	38.8	23.4	37	SW	1		⚡ p.
28	38.5	25	53	SW	2		⊤ p.
29	37.7	24.2	52	SW	2		Γ⚡ p.
30	38.5	23.1	55	SW	2		
Mean	35.9	21.7	54.2		1.8		
Total						1.6	

SILANG.
[ϕ=14° 14′ N; λ=120° 58′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.2	20.3	70	E	2		↙° p.
2	31.7	20	72	E	3		d a.
3	31.6	20.4	71	E	2		Ω a. ●° p.
4	31.2	20.4	71	E	3		Ω a. ↙° p.
5	31.2	20.2	71	E	3		●° p.
6	31.5	20.2	69	E	2		
7	31.8	20.5	70	E	2		≡ a.
8	32	20.4	68	E	3		Ω ≡ a.
9	32	20.5	69	E	1		↙° p.
10	31.8	20.5	68	E	1		↙° p.
11	31.8	20.2	71	E	1		↙° p.
12	32	20.3	67	E	2		≡ a. ↙° p.
13	32	20 8	67	E	3		↙° p.
14	32.2	20.2	68	E	3		↙° p.
15	33	20	69	E	3		
16	33.3	20.3	58	E	1		↙° p.
17	33.2	20	59	E	2		
18	33.5	20.2	59	E	1		
19	33.2	20.3	61	E	1		↙° p.
20	33.5	20.5	61	E	1		↙° p.
21	33.8	20.8	59	E	2		↙° p.
22	33.6	21	59	E	1		↙° p.
23	33.8	21	60	Calm			⊤ p.
24	33.3	21.3	62	E	1		↙° p.
25	33.6	21.2	60	E	2		d p.
26	33.6	21.6	60	Calm			≡ a. ⊤ p.
27	33.3	21.2	60	E	1		↙° p.
28	33.5	21.3	58	E	1	2.5	● p.
29	33.8	21.3	60	E	1	13.2	Ω ≡ a. ● p.
30	33	21.5	60	E	2	7.6	Ω a. ● ⊤ p.
Mean	32.6	20.6	64.6		1.7		
Total						23.3	

SAN ANTONIO.
[ϕ=14° 23′ N; λ=121° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30	17	80	E	4		↙° p.
2	26.6	19.9	86	NE	2	15.2	●
3	26	20.2	77	E	5	4.6	⌒ p. ●
4	27	20	92	E	3	6.1	●
5	25	19.5	85	E	2	16	●
6	27.5	19.4	88	E	4	1	⌒ p. ●°
7	26	19.5	91	N	2	3.3	⌒ a. p. ●
8	28	20	71	E	2		
9	28.9	19.8	74	E	3		⌒ p.
10	29.6	21	63	E	2		
11	29.5	20.3	66	E	3		⌒ a.
12	28	21	65	E	3		
13	29.8	17.2	52	E	3		
14	29.1	16.4	66	E	4		↙° p.
15	31	16	55	E	1		
16	30.4	20	60	E	2		
17	31	18.4	53	E	3		
18	30.5	20.4	62	E	4		↙° ⌒ p.
19	31	21.4	63	E	3		
20	31.1	21	61	E	3		⌒ a.
21	30.5	21.6	49	E	3		
22	32.5	19.8	51	E	2		
23	32	21.5	48	E	3		
24	33	19	60	E	2		
25	31.2	19.6	70	NE	2		
26	32.1	20	57	E	2		
27	32	20.6	61	SE	2	5.1	●
28	33	20.6	61	W	3		
29	33.5	20.2	60	SW	2		
30	33.5	19.5	48	SW	2		
Mean	30	19.7	65.8		2.7		
Total						51.3	

METEOROLOGICAL DATA, ETC.—Continued.

CORREGIDOR.
[ϕ=14° 23′ N; λ=120° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32.8	22.4	66	W	2	25.7	⛈ ● p.
2	30.3	21.5	68	E	2	------	
3	30.4	23	71	NE	2	------	
4	31.3	23	85	NE	1	------	
5	31.5	22.2	64	E	4	------	
6	31	22.2	67	NE	2	------	
7	31.8	22.5	68	NE	2	------	
8	31.5	22.5	55	N	2	------	
9	31.5	22.3	65	NE	2	------	
10	32.2	22	66	E	1	------	
11	32	22.2	59	NE	2	------	
12	33.5	23.2	63	NE	2	------	
13	31.8	22.6	62	NE	2	------	
14	32.3	21.6	61	NE	2	------	
15	31.8	22.9	53	NE	2	------	
16	32.7	23.5	57	NE	1	------	
17	32.4	23	68	NE	1	------	
18	32.3	22.6	59	N	2	------	
19	32.5	24.2	63	N	1	------	
20	33.2	23.6	55	NE	2	------	
21	34.8	23.2	45	NE	2	------	
22	33	23	55	NE	2	------	
23	34.8	23.9	50	S	1	------	
24	34.7	24	49	W	2	------	
25	34.2	24.6	58	N	1	------	
26	33.5	24.5	56	Calm	------	------	
27	33.8	23.2	50	W	2	------	
28	33.7	25	53	W	2	------	
29	35.2	24	45	W	2	------	
30	34.2	24.8	60	W	2	------	
Mean	32.7	23.1	59.9	------------	1.8	------	
Total	------	------	------	------------	------	25.7	

BALANGA.
[ϕ=14° 41′ N; λ=120° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	35.4	21	52	Calm	------	8.1	● ⊤ ϟ p.
2	31.5	22.6	77	SE	2	------	
3	32.4	23.1	54	SE	2	------	
4	32.9	23.1	52	SE	2	------	
5	32.5	21.6	66	SE	2	------	
6	32.5	20.5	52	SE	1	------	
7	34	19.6	44	NE	1	------	↙° p.
8	34.4	20.8	42	SE	2	------	
9	35.6	21.5	44	SE	1	------	
10	35.6	24.6	46	SE	2	------	
11	35.1	24	46	SE	1	------	
12	34	24	48	SE	1	------	
13	35.6	20.7	40	SE	2	------	
14	35	22.3	43	SE	2	------	↙° p.
15	35.1	21.5	38	SE	1	------	
16	35.6	22.4	43	SE	1	------	
17	35.5	22.1	38	NE	1	------	
18	35.6	22.1	42	SE	1	------	
19	35.7	23.5	44	N	1	------	ϟ p.
20	35.8	23.5	44	SE	1	------	
21	36	22.5	42	SE	2	------	
22	36.9	23	34	N	2	------	
23	36.5	24.1	42	E	2	------	ϟ p.
24	35.4	24.4	51	E	1	------	ϟ p.
25	36.2	24	47	Calm	------	------	
26	35.9	24	49	SE	2	------	
27	36.1	25	50	S	2	------	⏝° p.
28	35.8	23.4	54	SE	1	------	
29	35.6	24	54	SE	2	------	
30	36.8	23.8	49	SW	3	------	↙° p.
Mean	35	22.8	47.6	------------	1.5	------	
Total	------	------	------	------------	------	8.1	

MALOLOS.
[ϕ=14° 52′ N; λ=120° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32.8	19	59	SW	1	6.9	● ⊤ p.
2	31.4	21.1	53	ENE	3	------	⊤ p.
3	31.2	21	61	E	1	------	
4	32	21.2	54	ENE	2	------	
5	31.4	21	44	E	4	------	↙° p.
6	31.3	19.8	49	ENE	3	------	≡° a.
7	34	18.6	42	NE	3	------	
8	33.8	20.7	51	ESE	2	------	
9	34.9	20.3	51	S	1	------	
10	34.6	21.5	56	S	2	------	
11	33.9	20.8	47	SE	1	------	
12	33.2	20.6	51	S	1	------	
13	33.5	18.7	60	SSE	2	------	
14	33.9	19	57	S	3	------	
15	34.3	18.7	54	S	2	------	
16	33.8	21.8	54	SW	1	------	
17	34.5	20	51	SW	2	------	
18	34.8	19.8	50	S	1	------	
19	34.8	21.3	57	S	3	------	⛈° p.
20	35.8	21.7	49	S	2	------	
21	34.5	19.9	54	SSW	2	------	
22	34.8	20.5	49	SSW	2	------	⏝° p.
23	35.3	23	51	S	1	------	ϟ p.
24	36.3	20.8	45	SW	1	------	ϟ p.
25	36.4	23	49	SW	1	------	
26	36.2	22	50	S	1	------	d ⛈ p.
27	36.5	23.2	52	WSW	1	------	⌣² ⏝° p.
28	35.8	21.5	52	WSW	1	------	≡° a.
29	35.7	23.2	49	SW	1	------	
30	35.8	23.8	55	S	1	------	ϟ p.
Mean	34.2	20.9	51.9	------------	1.7	------	
Total	------	------	------	------------	------	6.9	

PORAC.
[ϕ=15° 05′ N; λ=120° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	34.9	21.5	44	Calm	------	------	⊤ ϟ p.
2	34	21.5	49	E	1	------	d ϟ p.
3	34.2	22.6	56	S	0	------	d p.
4	34.9	22	52	ESE	2	------	
5	33.9	21.9	55	ESE	2	------	d ϟ p.
6	34.4	20.5	46	SE	2	------	↙° p.
7	36.1	20.5	39	ESE	2	------	↙° p.
8	34.3	20.3	45	E by S	1	------	
9	37.4	20.8	48	E	2	------	d p.
10	37.5	20.7	37	E	0	------	ϟ p.
11	38.4	22.7	45	S by W	0	------	↙° p.
12	35.4	21.2	48	SE by E	2	------	↙° p.
13	38.4	20.5	42	Calm	------	------	
14	37.5	21.2	42	E	1	------	
15	39.3	19.5	32	Calm	------	------	
16	38.6	22.5	38	ESE	0	------	
17	38.7	21.1	38	Calm	------	------	
18	38.6	22.1	38	ESE	2	------	
19	39.9	23.4	42	Calm	------	1.8	⛈ ● ↙° p.
20	38.9	22.3	48	ESE	1	------	
21	39.4	21	36	SE	1	------	
22	39.6	21.6	32	Calm	------	------	
23	38.5	23.1	48	S by E	0	------	d ϟ p.
24	38.8	23.7	39	ESE	2	------	d a. p. ⛈ p.
25	37.7	23.4	84	W by N	1	5.1	⛈ ● p.
26	37.4	23.5	48	S	2	------	⛈ p.
27	38.6	24	45	Calm	------	1	⛈ ●° p.
28	36	21.9	78	S	2	21.3	● ⊤ ϟ p.
29	36.4	23	48	SSW	1	------	⛈ p.
30	37.7	22.4	47	S	3	------	ϟ p.
Mean	37.2	21.9	46.3	------------	1	------	
Total	------	------	------	------------	------	29.2	

METEOROLOGICAL DATA, ETC.—Continued.

ARAYAT.

[ϕ=15° 08′ N; λ=120° 46′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	34.1	22.7	40	NNE	2	1.3	● p.
2	31.5	22.5	50	SE	1	------	
3	32.9	22.9	49	SE	1	------	
4	33.5	23	44	SE	1	------	
5	31.3	22.5	48	E	2	------	
6	32.4	22.5	43	ESE	2	------	
7	34.9	21.7	39	SE	1	------	
8	33.5	21.5	41	SE	1	------	
9	35.5	21	45	NE	2	------	⌐ʒ p.
10	37.6	24.6	39	S	1	------	
11	36.4	23	45	N	2	------	⌐ʒ p.
12	34	22	48	SE	1	------	
13	36.9	21.1	41	SE	1	------	
14	35.9	21.2	36	ESE	1	------	
15	36.6	21	33	SSW	1	------	
16	37.1	24.5	36	W	1	------	
17	36.6	24	39	SW	1	------	
18	37.1	22	33	WSW	1	------	
19	32.5	23.9	52	SW	3	11.2	⊤ ● p.
20	36	23.4	46	W	1	------	d p.
21	36.8	21.9	39	WSW	1	------	
22	37.2	21.1	36	WSW	1	------	
23	36.2	24.5	60	WSW	1	------	
24	37.3	23.5	37	SW	1	------	⊤ p.
25	36.9	24.4	40	S	1	------	⊤ p.
26	34.9	23.8	44	Calm	------	------	d p.
27	37	24.2	40	S	1	------	⊤ ϟ d p.
28	37.1	23.5	40	W	1	------	
29	37.1	25	41	SSE	1	------	⊤ p.
30	37.7	25.1	33	SW	1	------	
Mean	35.5	22.9	41.9	------------	1.2	------	
Total	------	------	------	------------	------	12.5	

TARLAC.

[ϕ=15° 31′ N; λ=120° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33.8	20.9	61	E	1	0.3	≡° a. ●° p.
2	35.2	20.9	48	S	1	------	
3	35.4	21.6	46	SSE	1	.3	≡° a. ϟ ●° p.
4	37	21.9	39	SSE	1	7.9	≡° a. ↙° ●° p.
5	33.9	21.6	49	S by E	2	------	
6	35.9	21.2	45	SE	1	------	
7	36.4	19.9	42	SSE	1	------	Ω a.
8	37.5	20.4	39	ENE	1	------	Ω a. ∞ p.
9	37.7	21	44	SE	1	------	Ω ≡ a. d° p.
10	38.7	22.7	41	E by S	1	------	Ω ≡ a. d° ϟ° p.
11	39.1	22.2	36	SSE	1	------	≡ a. ∞ p.
12	37.1	21.7	42	SSE	1	------	Ω $≡^2$ a.
13	38.7	20.2	41	W by S	1	------	Ω $≡^2$ a.
14	38.7	20.4	41	ESE	1	------	Ω ≡ a.
15	38.4	19.8	31	E by N	1	------	Ω ≡ a. $∞^2$ p.
16	38.6	21.5	35	NNW	1	------	Ω $≡^2$ a. ∞ p.
17	38.2	22.1	35	SE	1	------	Ω $≡^2$ a.
18	38.6	21.5	36	S	1	------	Ω a. ⊤° p.
19	39	22	42	SE by E	1	2.8	Ω a. ⌐ʒ ●° p.
20	38.8	22.1	47	SSE	1	------	≡° a.
21	39	21.4	35	S	1	------	Ω ≡° a.
22	39.9	20.2	32	NE by E	1	------	Ω ≡ a. $∞^2$ ⊤° ↙° p.
23	39.1	23.5	41	ENE	1	2.8	Ω ≡ a. ⌐ʒ ●° p.
24	37.2	22.1	46	NE by E	1	------	≡ a. ∞ ⌐ʒ p.
25	38.7	22.4	50	SE	1	------	Ω° ≡° a. ⊤° p.
26	38	23.4	46	ESE	1	2.5	$≡^2$ a. ∞ ⌐ʒ ●° ↙° p.
27	38.5	23.4	44	E	1	------	≡ a. ∞ ↙° ⊤ p.
28	38.5	23	43	NNE	1	------	Ω $≡^2$ a. d° p.
29	39.7	23.4	48	S	1	------	≡ a. $∞^2$ ⊤° ϟ° p.
30	41.2	23.5	41	SW	1	------	Ω° a. ⊤ p.
Mean	37.9	21.7	42.2	------------	1	------	
Total	------	------	------	------------	------	16.6	

BALER.

[ϕ=15° 47′ N; λ=121° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	29.5	22	------	NE	3	38.1	↙ ●
2	26.4	20	------	NE	2	41.1	↙ ●
3	25.5	21.6	------	NE	2	16.5	↙ ●
4	26.5	20.8	------	NE	2	20.3	↙ ●
5	27.6	21.4	------	NE	2	11.7	↙ ●
6	28.5	21	------	NE	1	------	
7	30.5	22	------	E	1	------	
8	26.5	20.5	------	NE	2	30.5	↙ ●
9	25.8	20	------	NE	3	10.7	↙ ●
10	27.6	20.2	------	NE	2	15.7	↙ ●
11	26	21.6	------	NE	3	11.7	↙ ●
12	27.4	21	------	NE	1	47	↙ ●
13	30.5	21.4	------	NE	1	------	
14	31.3	20.3	------	E	1	------	
15	31	21	------	NE	2	------	
16	31	23.4	------	E	1	------	
17	30.4	22.5	------	E	1	------	
18	31	20	------	NE	2	------	
19	28.5	23	------	E	1	8.1	↙ ●°
20	30.7	22.2	------	E	1	------	
21	31.5	22.4	------	E	2	------	
22	31.8	20.4	------	E	1	------	
23	31	22.4	------	NE	2	------	
24	31.6	22.5	------	NE	2	------	
25	31	23.6	------	NE	2	------	
26	30	23.4	------	E	1	40.6	↙ ●
27	32.8	24	------	E	1	------	
28	32	23.6	------	E	1	------	
29	34.2	23	------	NE	1	------	
30	35.4	24.5	------	E	1	------	
Mean	29.8	21.9	------	------------	1.6	------	
Total	------	------	------	------------	------	292	

BOLINAO.

[ϕ=16° 24′ N; λ=119° 53′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33.2	23.8	63	NNW	1	1	●° ↙° a. ⊤ p.
2	33	23.4	59	N by W	1	------	↙° p.
3	33.2	22.5	59	N by W	1	------	⋓° ↙° a. ⊤ p.
4	33.5	21.2	53	NNW	1	------	↙° a. p.
5	33.8	22.8	53	Calm	------	------	
6	33.5	21.8	56	NNW	1	------	≡° ↙° a.
7	32.7	21	55	NNE	3	1.3	●° a. ↙° ⊤ p.
8	33.6	22.1	54	NW	1	------	≡° a. ↙° p.
9	33.9	23.8	52	N	1	------	↙° p.
10	33.4	23.7	57	NNW	1	------	≡° a. ↙° ϟ p.
11	33.6	24.4	60	N by E	1	------	≡° a. ϟ p.
12	34.5	24.2	58	NW	2	------	↙° ϟ p.
13	34.9	23.2	57	Calm	------	------	Ω ≡ a.
14	33.4	24.2	67	NNE	2	------	↙° a.
15	33.2	24.7	64	WNW	1	------	↙° a. p.
16	33.6	23.3	60	NNW	1	------	Ω° ≡° a.
17	33.5	24	60	Calm	------	------	
18	33.4	24.7	58	WNW	3	------	↙° p.
19	33.6	24.1	68	NNW	1	------	ϟ p.
20	33.6	24.5	56	N	1	------	ϟ p.
21	34.3	24.6	55	WNW	1	------	Ω° ≡° a ↙° p.
22	34	25.3	59	NW	1	------	⊕ ⋓ p.
23	33.9	25.5	62	Calm	------	------	⊤ a. ϟ p.
24	33.9	24.7	64	Calm	------	------	Ω ≡ a.
25	33.5	24.3	60	Calm	------	------	Ω ≡ a. ∞ p.
26	33.8	24.5	56	W by N	1	------	↙° p.
27	33.4	23.8	63	W by N	1	------	
28	33.5	23.8	60	Calm	------	------	$Ω^2$ $≡^2$ a. ↙° p.
29	33.4	24.9	58	W by N	2	------	≡° a. ↙° p.
30	33.7	24.8	52	WSW	4	------	Ω ≡ a. ↙ p.
Mean	33.6	23.8	58.6	------------	1.1	------	
Total	------	------	------	------------	------	2.3	

METEOROLOGICAL DATA, ETC.—Continued.

BAGUIO.

[ϕ=16° 35′ N; λ=120° 43′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct		0–12.	mm.	
1	19.2	12	85	WSW	0		
2	19.2	12	84	WSW	1	1.3	●° p.
3	22.2	12.4	77	WSW	0		
4	20	11	83	SW	0		
5	19	11.5	81	WSW	0		≡ a.
6	20.5	12	72	SW	0		
7	22.2	10.5	77	W	0		
8	21	10.2	75	WSW	1		
9	23.2	10.2	72	WSW	0		
10	23.2	12.5	74	WSW	1		≡ a. ⊤ p.
11	22.3	11.5	78	SW	0		
12	21.1	13	81	SW	0		≡ a.
13	22.2	10.5	77	WSW	1		≡ a.
14	23.4	10.6	70	SSW	0		
15	21.7	10.6	80	SW	1		
16	24	11	67	SW	0		
17	22.6	12.5	69	SW	1		
18	23.1	11	66	SW	1		≡ a.
19	23.1	9.6	74	WSW	0		≡ a. ⊤ p.
20	22.5	12	72	WSW	0		⊤ p.
21	23.2	11.5	66	WSW	0		
22	22.1	12.6	70	WSW	0		⊤ p.
23	23.6	12	68	WSW	1		
24	20.8	11.6	79	WSW	0		≡ a.
25	21.1	12	72	WSW	1		
26	21.1	13	77	SW	0		
27	22.4	12.2	67	WSW	0		
28	21.8	11.5	75	WSW	0		
29	22.6	11	76	WSW	1		
30	23.2	12.5	71	WSW	0		
Mean	21.9	11.6	74.5		.3		
Total						1.3	

SAN FERNANDO UNION.

[ϕ=16° 37′ N; λ=120° 18′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.4	21.4		NW	3		
2	31.6	21.4	67	W	3		⚡ p.
3	31.9	21.6		N	3		
4	31.9	21.4		W	3		
5	32	20.6		W	3		↙° ⊤ p.
6	31.5	21.2	59	W	3		d° p.
7	31.4	22.3	83	W	2		
8	32.8	20.4		W	3		
9	32.2	22	68	NW	3		
10	32.5	22.3	70	W	3		⚡ p.
11	32.8	22	73	W	3		
12	33.5	22.2	68	W	3		
13	31.5	22.2	75	NW	4		↙ p.
14	32	21.8	51	NW	3		
15	33.6	21.4	72	NW	3		
16	32.6	21.4	71	NNW	3		
17	33.6	22	75	N	2		
18	34.4	22		N	2		
19	31.5	23	78	N	2		
20	34	21.4		NW	2		
21	35.5	22.3		SW	3		
22	34.6	23	60	W	3		
23	33	23.4	63	W	3	1.3	●
24	33.2	22.3	75	N	3		
25	34.2	23	57	W	3		
26	34.4	22.6	60	W	3		
27	34.6	22.4	69	W	3		
28	34.4	24	65	N	2		
29	34	23	62	W	2		
30	36	23.4	66	W	2		
Mean	33.1	22.1			2.8		
Total						1.3	

CANDON.

[ϕ=17° 12′ N; λ=120° 26′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30	24.5	64	NNE	4		↙ a.
2	30.4	24.5	66	NW	1	1.3	⊤ ● a. ⚡ p.
3	30.6	23.6	65	W	3		↙ a. ⚡ p.
4	30.7	23.2	65	W	1		
5	30.2	23.5	65	WSW	4		↙ a.
6	30.7	23.5	56	SW	3		↙ a. p.
7	30.6	24	65	W	2		↙ a.
8	31	23.9	60	SW	3		Ω° ↙ a.
9	31	23.5	55	WSW	3		↙ a.
10	31.1	24.2	62	NW	4		↙ ⚡ p.
11	31.2	22.6	68	WSW	3		Ω a. ↙ p.
12	32.2	22.9	64	SW	1		Ω² a.
13	30.8	22.6	63	NW	4		Ω² a. ↙ p.
14	31.7	23	58	NW	3		Ω a.
15	31.5	24	59	SW	4		↙ a. p.
16	31.5	23	65	WSW	3		Ω² ↙ a.
17	31.2	23	64	W	1		
18	31.9	24.5	64	W	1		↙ ⚡ p.
19	32.2	25.9	52	WNW	3		↙ a.
20	31.9	24.1	64	SW	4		↙ a.
21	32.2	24.8	59	SW	2		↙ a.
22	31.7	25.9	65	W	4		↙ a. ⚡ p.
23	31.7	26.5	64	SW	4		⊤ a. d. ⚡ p.
24	30	25.5	68	NNW	3		↙ a.
25	31.9	24.2	62	WSW	3		↙ a. ⚡ ⊖ p.
26	31.5	25	58	SW	2		Ω a.
27	31.7	24	58	W	2		Ω ↙ a. ⚡ p.
28	32	24.4	57	W	3		Ω ↙ a.
29	32.1	25	64	WNW	2		↙ a. ⚡ p.
30	32.2	26.1	61	S	4		↙ a. ⚡ p.
Mean	31.3	24.2	62		2.8		
Total						1.3	

SANTO DOMINGO.

[ϕ=20° 28′ N; λ=121° 59′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	22.5	19.7	72	NNE	3		↙° a. p.
2	24.6	19.2	67	E	3	2	↙° a. p. ●
3	26.4	19.8	66	E	2		↙° p.
4	27	21.7	67	ENE	4		↙° p.
5	27.8	20.7	71	ENE	2		d p.
6	28.2	21	69	ENE	2		Ω° a. ○ p.
7	27.7	22	70	E	2		Ω° a.
8	29.2	22.8	70	ESE	3		↙° a. p.
9	29.4	23.6	77	SSE	3		↙° a. p.
10	30.3	21.7	73	NW	1		Ω² a.
11	30.8	22	78	ESE	3		Ω° a. ↙° p.
12	29.9	23.8	71	SE by E	3		
13	29.5	23.3	76	W	3		
14	30.2	23.3	75	NNW	1		≡ p.
15	29.9	19.9	75	ESE	2		Ω° ≡ a. ↙° p.
16	29.9	18.7	70	ESE	3		Ω² a. ↙° p.
17	30.1	22.3	68	ESE	1		≡ p.
18	30.5	23.3	73	SE	4		≡ a. p. ↙° p.
19	31	23.9	70	ESE	3		d a. ↙° p.
20	31.3	21.1	72	ESE	3		Ω° a. ↙° p.
21	31	24.1	69	SE	3		d° a ≡ ↙ p.
22	30.5	23.9	68	W	2		⊤° p.
23	28.7	22.4	71	ENE	2	.4	d° a. ↙° ⌐ ●² p.
24	26.8	17.6	80	E	4	95.4	●² ⊤ a. ●° ↙° p.
25	27.6	20.2	79	ENE	1	1.3	
26	29	21.6	76	ESE	2		d° ⌐ p.
27	26.5	21.2	85	ESE	2	21.7	⌐ a. ● a. p.
28	29.3	21.2	77	NW	1	18.8	≡ p.
29	30.2	20.3	71	SSW	1		Ω² a. ≡ p.
30	30.3	24.4	80	WSW	2		Ω² ≡ a. ⚡ p.
Mean	28.9	21.7	72.9		2.4		
Total						139.6	

NOTAS GENERALES DEL TIEMPO.

Presión y temperatura.—La presión atmosférica media de Abril, 1907, en Filipinas, se diferencia muy poco de la normal de este mes deducida de varios años de observación. Esta diferencia no pasa en Manila de — 0.18 mm. Comparados con las medias del año pasado, los valores promedios que nos dan las diferentes estaciones del Archipiélago resultan en general algo mayores. Las máximas presiones se observaron en todas partes el día 3 y las mínimas el 29 y 30.

La temperatura media resulta en todas las estaciones algo inferior á la de Abril, 1906. Las máximas 38.5° C., 38.9° C. y 39.4° C., corresponden á las estaciones de S. Isidro, Dagupan y Tuguegarao respectivamente. En Manila la máxima absoluta ha sido 36.7° C., registrada el día 23; las mínimas absolutas 19.5° C. y 19.4° C., se observaron los días 7 y 8.

Precipitación acuosa.—Comparando en la tabla que acompaña el texto inglés la lluvia de este mes con la de Abril, 1906, hallamos que la mitad de estaciones nos dan una diferencia negativa y la otra mitad una diferencia positiva. Sin embargo, como se verá en el *Crop Bulletin,* la queja de falta de lluvia ha sido bastante general. No es esto de extrañar si se tiene en cuenta que, salvas muy pocas excepciones, todas las estaciones que aparecen este año con un total de lluvia superior al de Abril del año pasado habían aparecido entonces con una diferencia negativa con respecto á la lluvia del año precedente. Á más de que es cosa bien sabida que Abril es uno de los meses en que más frecuentemente se hace sentir la falta de agua en la mayor parte de nuestro Archipiélago, especialmente si escasean las turbonadas. En Manila no han caído en todo el mes más que 4.9 mm. de agua, cantidad exactamente igual á la de Abril del año pasado, pero inferior á la normal deducida de 42 años de observación en 25.5 mm.

DEPRESIONES Y TIFONES.

Ni en Filipinas, ni en las Carolinas, ni en Marianas se ha observado este mes ninguna depresión que sea digna de especial estudio. Sin embargo, una comunicación remitida á esta Oficina Meteorológica por el Sr. Carlos F. Kurtz, Comandante del *Planet,* barco alemán en Comisión Hidrográfica, parece indicar con bastante claridad la existencia de una depresión que probablemente se hallaba todavía en estado de formación del 4 al 7 de este mes, en el Pacífico, entre la región meridional de nuestro Archipiélago y las Carolinas Occidentales. Como nos adherimos por completo á las consideraciones que sobre esta depresión hace el Sr. Kurtz, nos contentaremos con publicar aquí íntegra su comunicación, fechada en Yap el 11 de Abril, 1907. Dice así:

Del 5 al 6 de Abril experimentó el *Planet* tiempo muy desagradable, sin que, á pesar de ello, pasase la aguja del barociclonómetro más allá de la flecha encarnada indicadora del límite entre tiempo variable y tifón.

El 2 de Abril se hallaba el *Planet* cerca de la extremidad NE de Catanduanes, moviéndose hacia el E. Del 2 al 4 dominaron vientos del NE y NNE, fuerza entre 3 y 5 de la escala de Beaufort. La posición del barco á mediodía del 4 era 13° 59′ N y 128° 6′ E. Desde esta fecha hasta el 5 de Abril el barómetro fué bajando lentamente, disminuyendo algo la fuerza de los vientos, cuya dirección oscilaba entre el NE y N. El barco se hallaba á mediodía del 5 en 13° 33′ N y 130° 19′ E. Por la tarde de este día el viento aumentó su fuerza de 2 á 5 de la citada escala, en el espacio de unas cuatro horas, y aún alcanzó en algunos chubascos la fuerza 6; su dirección era NE.

Á 7 p. m. demoraba el *Planet* en los 13° 8′ N y 130° 59′ E. Como el barómetro no había bajado más, y la subida después de la mínima de 4 p. m. era muy lenta, dí por supuesto que una depresión barométrica demoraba hacia el S de nuestra posición, y así alteré el rumbo que llevábamos desde mediodía, que era 118°, y seguimos el rumbo 90°, con el fin de no acercarnos más al centro de la supuesta depresión. Durante la noche, el viento continuó soplando del NE, fuerza 4 y 5, alcanzando la fuerza 6 durante los chubascos. Después que el barómetro hubo llegado á su mínima absoluta 756.8 mm. á 4 a. m. del 6, se normalizó de nuevo la oscilación diaria. La posición del barco á mediodía del 6 era: 13° 0′ N y 132° 10′ E. El barómetro comenzó á subir de nuevo, y emprendimos otra vez el rumbo 120°. La fuerza del viento disminuyó gradualmente, rolando al ENE á media noche del 6 al 7.

Á mediodía del 7 nos hallábamos en 11° 42′ N. y 133° 34′ E. Hasta nuestra llegada á Yap, á 10 a. m. del 10, tuvimos vientos del NE y ENE, oscilando su fuerza entre 2 y 4.

Durante la tarde del 5 la mar venía del NE sin que se notase oleaje en ninguna otra dirección. Tampoco se observaron cirrus ni otras señales precursoras de tifón. Á pesar de esto, deduje que existía una depresión al Sur de nuestro barco, principalmente por tener en cuenta que en estas regiones solo deben esperarse vientos fuertes cuando reinan altas presiones y los barómetros por consiguiente están altos, al paso que con barómetros bajos [y no suponiendo depresión alguna] suelen soplar vientos flojos de los cuadrantes del Este. Corroboraba mis sospechas lo borrascoso del tiempo juntamente con la abundante lluvia que caía, la cual no tenía semejanza alguna con las lluvias que suelen acompañar los vientos alisios. Asimismo me confirmaba en mi opinión el pequeño role de los vientos que tuvo lugar antes que disminuyeran su fuerza.

Yo dudo mucho que esta perturbación atmosférica experimentada por el *Planet* pueda ser el mismo tifón en que se encontró la goleta japonesa *Chomei Marú No. 2* [Véase el *Bulletin for March*]. Las direcciones de los vientos observados á bordo de dicho barco indicaban claramente que el tifón le pasaba por el N. De ahí que el centro ciclónico debiera haber seguido una trayectoria extraordinariamente anormal para poder suponer que del 5 al 6 de Abril demoraba próximamente en los 9° N y 132° E.

Más bien sospecho que la perturbación observada á bordo del *Planet* era un tifón en estado de formación. La ausencia de oleaje y cirrus se explica fácilmente si se supone que el centro ciclónico se estaba aún formando: pues un tifón bien desarrollado debería haber enviado en todas direcciones señales de su existencia.

Hasta aquí el comandante del *Planet*. Sólo añadiremos como complemento á tan interesante relación: (*a*) que no cabe la menor duda que esta depresión no tenía relación alguna con el tifón de las Carolinas Occidentales, según se deduce claramente de la trayectoria de dicho tifón publicada en el Boletín del mes pasado; y (*b*) que esta depresión ó tifón, que parece se hallaba en estado de formación en el Pacífico al Sur del *Planet,* ó no llegó á adquirir formación completa, ó, si la adquirió, se hubo de deshacer muy pronto antes de llegar á nuestro Archipiélago, pues ninguna de nuestras estaciones dió señales de su existencia.

SEISMOLOGICAL BULLETIN FOR APRIL, 1907.

By Rev. MIGUEL SADERRA MASÓ, S. J., *Assistant Director of the Weather Bureau.*

EARTHQUAKES FELT IN THE PHILIPPINES.[1]

7, $8^h\ 26^m$. **Santo Domingo** (Batanes Islands.) Earthquake; intensity I; duration short. Repetition at $14^h\ 50^m$, of intensity II; direction NW–SE.

10, $16^h\ 25^m$. **Tuburan** (NW of Cebu). Shocks of intensity I, accompanied by subterraneous rumblings coming from the east; duration 2 seconds.

14, $9^h\ 34^m$. **Samar and northeast Leyte.** Oscillatory shocks; force III; duration 10 seconds.

19, $5^h\ 0^m\ 1^s$.* **Camarines.** First violent earthquake, felt over a great part of Luzon and the Visayas. (See special chapter on this disturbance.)

19, $7^h\ 52^m\ 53^s$.* **Camarines.** Second violent earthquake, felt throughout the same region as the first.

During that day 24 repetitions or aftershocks of intensity II and III were felt in the Camarines, 15 before and 9 after noon.

20. **Camarines.** Six repetitions of force II, all before noon.

21. **Camarines.** Two small earthquakes of intensity III; after noon.

22. **Camarines.** Three repetitions of intensity II; three before and one after noon.

22, $11^h\ 0^m$. **Zamboanga** (W of Mindanao). Oscillatory shocks; force I; duration 5 seconds.

23, $0^h\ 2^m$. **Camarines.** Earthquake of intensity III.

26. **Camarines.** Two shocks of intensity II, after noon.

27. **Camarines.** Two shocks of intensity II, before noon.

29. **Camarines.** Two shocks of intensity III, before noon.

30. **Camarines.** Three shocks; intensity II and III; two before and one after noon.

[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

RECORDS OF THE MICROSEISMOGRAPHS.

[Time of the one hundred and twentieth meridian east of Greenwich. Midnight = 0^h.]

No.	Date.	Component.	Beginning. First preliminary tremors.	Beginning. Second preliminary tremors.	Beginning. Principal portion.	Maximum range of motion. Hour.	Maximum range of motion. Amplitude (*2 a.*).	Maximum range of motion. Period.	End.	Instrument.	Remarks.
			h. m. s.	*h. m. s.*	*h. m. s.*	*h. m. s.*	*mm.*	*s.*	*h. m. s.*		
50	1	WSW-ENE	6 11 03	6 15 00	6 19 46	6 21 07	0.54	7.2	7 13 44	H. P.	Earthquake in Tonga Island.
		WSW-ENE	6 11 08	6 15 13	6 19 50	6 20 36	.03	3.2	7 10 07	V. M.	
51	8	NNW-SSE	10 04 15	----------	10 04 41	10 05 19	.09	2.4	10 08 52	V. M.	
52	15	WSW-ENE	14 06 48	----------	14 07 07	14 07 16	.07	2	14 10 11	V. M.	
53	15	NNW-SSE	14 27 12	----------	----------	----------	------	------	16 41 54	V. M.	Earthquake in Mexico.
		WSW-ENE	14 27 12	----------	----------	----------	------	------	16 35 38	H. P.	
54	19	WSW-ENE	5 00 24	----------	5 00 45	----------	------	------	7 09 16	H. P.	Earthquake in Camarines, intensity VIII, origin of disturbance some 200 kilometers ESE of Manila.
		NNW-SSE	5 00 24	----------	5 00 44	----------	------	------	6 53 21	V. M.	
55	19	NNW-SSE	5 18 49	----------	5 19 33	5 20 07	.28	2.4	----------	V. M.	Aftershock, intensity III, in Camarines.
56	19	WSW-ENE	6 59 17	----------	6 59 52	6 59 57	.05	2.4	7 02 13	V. M.	Vertical component; amplitude, 0.02 mm. Aftershock, intensity III, in Camarines.
57	19	WSW-ENE	7 53 04	----------	7 53 34	----------	------	------	----------	V. M.	Second earthquake in Camarines, intensity VII.
58	19	WSW-ENE	8 08 12	----------	8 08 54	8 09 08	.70	2.5	----------	V. M.	Vertical component; amplitude, 0.45 mm. Aftershock, intensity II, in Camarines.
		NNW-SSE	8 08 11	----------	8 08 50	8 09 00	.76	1.6	----------	V. M.	
59	19	WSW-ENE	8 12 53	----------	8 13 24	8 13 35	.26	2.8	----------	V. M.	Vertical component; amplitude, 0.19 mm. Aftershock, intensity II, in Camarines.
60	19	WSW-ENE	8 15 57	----------	8 16 24	8 16 29	.16	2.4	----------	V. M.	Vertical component; amplitude, 0.12 mm.
		NNW-SSE	8 16 03	----------	8 16 25	8 16 36	.24	2	----------	V. M.	
61	19	WSW-ENE	9 10 34	----------	9 11 14	9 11 17	.07	2.4	----------	V. M.	Vertical component; amplitude, 0.06 mm. Aftershock, intensity III, in Camarines.
62	19	NNW-SSE	9 44 01	----------	9 44 41	9 46 00	.50	1.7	9 53 25	V. M.	Vertical component; amplitude, 0.60 mm. Aftershock, intensity III, in Camarines.
		NNW-SSE	9 44 17	----------	9 45 07	9 45 32	.57	6.3	10 01 16	H. P.	
63	19	NNW-SSE	11 40 43	11 41 12	11 42 00	11 42 08	.20	2	11 48 26	V. M.	Vertical component; amplitude, 0.15 mm. Aftershock, intensity II, in Camarines.
		WSW-ENE	11 40 54	11 41 40	11 42 54	11 43 07	.16	5.4	11 58 16	H. P.	
64	19	WSW-ENE	12 09 38	----------	12 10 05	12 10 13	.27	2.6	12 16 38	V. M.	Vertical component; amplitude, 0.19 mm. Aftershock, intensity II, in Camarines.
		WSW-ENE	12 09 44	----------	12 10 29	12 10 34	.11	6.6	12 14 42	H. P.	
65	19	WSW-ENE	12 28 56	----------	12 29 29	12 30 02	.07	2.4	12 35 14	V. M.	Vertical component; amplitude, 0.05 mm. Aftershock, intensity II, in Camarines.
		NNW-SSE	12 29 10	----------	12 29 38	----------	------	------	12 34 02	H. P.	
66	19	NNW-SSE	----------	----------	15 30 39	15 30 59	.07	2.8	15 35 05	V. M.	Vertical component; amplitude, 0.04 mm. Aftershock, intensity II, in Camarines.
67	20	NNW-SSE	0 59 21	----------	0 59 43	0 59 51	.09	2.4	1 01 30	V. M.	Vertical component; amplitude, 0.04 mm. Aftershock, intensity II, in Camarines.
68	20	WSW-ENE	7 03 47	----------	7 04 11	7 04 22	.04	2.4	7 07 31	V. M.	
69	20	NNW-SSE	10 54 00	----------	10 54 32	10 54 50	.05	2.4	10 58 15	V. M.	Vertical component, amplitude, 0.03 mm. Aftershock, intensity II, in Camarines.
		WSW-ENE	10 54 17	----------	10 55 00	10 55 25	.05	6	11 00 39	H. P.	
70	20	NNW-SSE	16 27 00	----------	16 27 40	16 28 07	.32	2.5	16 35 02	V. M.	Vertical component; amplitude, 0.12 mm.
		WSW-ENE	16 27 14	----------	16 28 00	16 28 29	.25	6.3	16 45 15	H. P.	
71	21	NNW-SSE	----------	----------	7 45 19	7 45 25	.10	2	7 47 26	V. M.	Vertical component; amplitude, 0.06 mm.
72	21	WSW-ENE	14 12 30	----------	14 12 56	14 13 57	.12	2.4	14 18 07	V. M.	Vertical component; amplitude, 0.03 mm. Aftershock, intensity III, in Camarines.
		WSW-ENE	12 12 49	----------	14 13 14	14 13 34	.13	4.8	14 28 02	H. P.	
73	22	WSW-ENE	----------	----------	7 27 32	7 27 34	.04	1.6	7 30 24	V. M.	
74	22	WSW-ENE	11 46 39	----------	11 47 09	11 47 12	.10	2.2	11 50 53	V. M.	Vertical component; amplitude, 0.06 mm. Aftershock, intensity II, in Camarines.
		WSW-ENE	11 46 57	----------	11 47 35	11 48 26	.05	6.6	11 53 30	H. P.	
75	25	WSW-ENE	7 30 10	7 32 01	7 33 47	7 34 34	.06	2.6	7 48 22	V. M.	
		NNW-SSE	7 30 14	7 32 18	7 34 28	7 34 47	.47	6.6	8 12 07	H. P.	
76	26	WSW-ENE	17 48 39	----------	17 49 05	17 49 43	.24	2.8	18 00 04	V. M.	Vertical component; amplitude, 0.08 mm. Earthquake, intensity III, at Nueva Caceres (Camarines).
		WSW-ENE	17 48 47	----------	17 49 16	17 49 48	.27	6.6	18 00 48	H. P.	
77	27	WSW-ENE	3 19 54	----------	3 20 14	3 20 18	.04	1.8	3 22 25	V. M.	Earthquake, intensity III, at Nueva Caceres (Camarines).
78	27	WSW-ENE	3 47 15	----------	3 47 36	3 47 41	.03	2.4	3 50 38	V. M.	Earthquake, intensity II, at Legaspi (SE Luzon).
79	28	NNW-SSE	14 29 16	----------	14 29 40	14 29 48	.14	2.2	14 32 40	V. M.	
80	29	WSW-ENE	12 16 21	----------	12 16 39	12 17 45	.03	2.4	12 19 59	V. M.	Earthquake, intensity IV, at Nueva Caceres (Camarines).
81	29	WSW-ENE	12 59 03	----------	12 59 43	12 59 47	.01	2.2	13 00 33	V. M.	Earthquake, intensity IV, at Nueva Caceres (Camarines).

Instrumental constants.—Vicentini microseismograph (V. M.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record: NNW–SSE component, 50 times; WSW–ENE component, 50 times.

Horizontal Pendulums (H. P.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation, NNW–SSE pendulum, T=7 seconds; WSW–ENE pendulum, T=6.4 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

Foundation and location.—The instruments are mounted against a solid cut-stone pier measuring 5×5 meters at its base and 3.30×3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above the sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above the sea level.

Geological structure.—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters which extends many kilometers toward north and south and only four to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

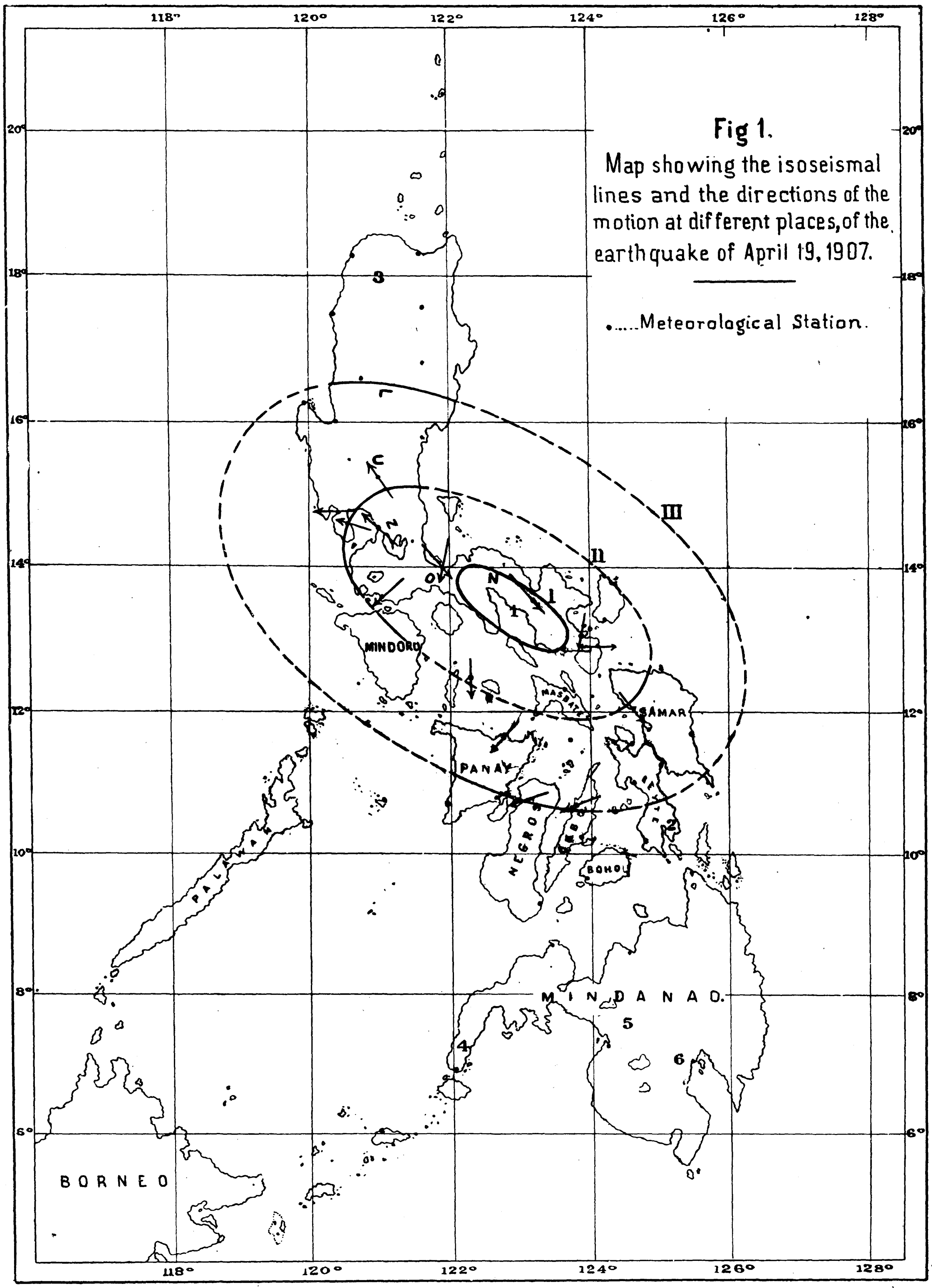
Fig 1.
Map showing the isoseismal lines and the directions of the motion at different places, of the earthquake of April 19, 1907.
•.....Meteorological Station.
118°
120°
122°
124°
126°
128°
20°
18°
16°
14°
12°
10°
8°
6°
III
II
I
MINDORO
PANAY
SAMAR
NEGROS
CEBU
BOHOL
PALAWAN
MINDANAO.
BORNEO

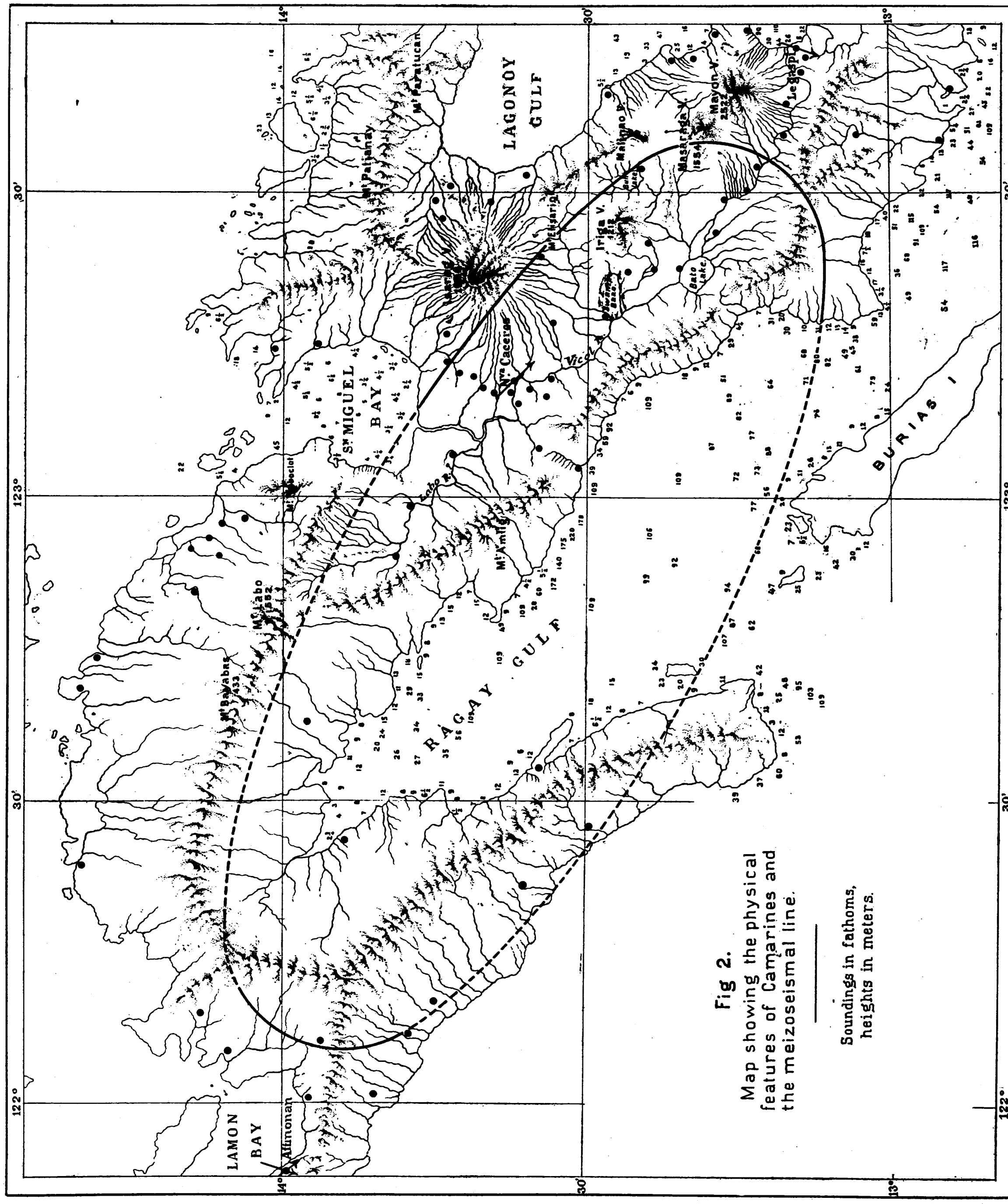

Fig 2.
Map showing the physical features of Camarines and the meizoseismal line.

THE EARTHQUAKES OF AMBOS CAMARINES.

[April 19, 1907: $5^h\ 0^m\ 1^s$ and $7^h\ 52^m\ 53^s$.]

Introduction.—The earthquakes in the Province of Ambos Camarines on April 19, 1907, were perceptible in the greater part of Luzon and of the Visayas, throughout an area of more than 800 kilometers in greatest diameter. Map fig. 1 shows the various isoseismal curves which inclose the regions within which the seismic movements were, respectively, violent, and moderate, said qualifications corresponding to the degrees IX–VIII, VII–VI, and V–IV of De Rossi-Forel. The meizoseismal area lay almost entirely within the Province of Ambos Camarines. Map fig. 2 gives an idea of the peculiar physiographic character of the region thus affected. Its general direction is SE–NW. In the south it is bounded by a not very high and discontinous range of mountains, which seems to be a continuation of the so-called eastern cordillera of Luzon. The latter, after crossing the Isthmus of Atimonan, divides into two branches, of which one runs southeast and terminates in Bondog Point; while the other continues in an easterly direction as far as Mount Labo, where its course assumes likewise a southeast direction, the range decreasing at the same time in height and continuity. The northern portion of the former Province of Camarines Sur is traversed by another range, which runs in a generally W–E direction from San Miguel Bay to the Gulf of Lagonoy. The mean distance between the northern and southern ranges exceeds 50 kilometers. The intervening country is generally low, with a great number of rivulets, marshes, and pools. Along this region is arranged a series of volcanic cones which commences with the majestic Mayon in the east and ends in Mount Isarog, close to San Miguel Bay. The general orientation of this line of peaks is from southeast to northwest. The five principal peaks are Mayon, Masaraga, Malinao, Iriga, and Isarog. South of this series of cones, and in the same direction, flows the largest river of this region, which in its upper course is called the Quinali, but the Vicol in its lower half, that is, from Bato Lake to the point where it empties into San Miguel Bay. From its source, only a few kilometers from the Gulf of Albay, to its mouth it flows for a distance of about 100 kilometers from southeast toward northwest. Consequently all the volcanoes mentioned are to the right of its course, while on the left side thereof we find the mountains of the southern border range, in which volcanic formations are unknown. These latter heights seem to consist mainly of coral limestones and other sedimentary formations, which extend as far as the river bed and possibly even farther underneath the volcanic tuffs and ejecta, which are in evidence to the north of the water course. A glance at the map of this region suggests the idea that at epochs not so very far remote from the present this whole area formed a shallow sea which by and by was filled up by the material poured forth from the volcanoes rising along its center line and by the silt due to erosion of the southern range of elevations. A slow rising of the entire island may likewise have contributed toward raising the region above the level of the sea.

As far as the meager geological data available warrant conclusions, it would appear that the sedimentary formations found in the range to the south of the region in question do not predominate in the chain of elevations which limits said area in the north. The material of the latter is older, consisting of quartzes and metal- and coal-bearing conglomerates of the kind which form the base or skeleton of the Archipelago. Above and around these have accumulated the more recent sedimentary and coral formations.

These facts suggest the idea that the course of the Vicol River represents the line of division between the old and recent formations. Along this line, or at least at only a short distance therefrom, the volcanic eruptions forced their passages through the overlying strata, thereby pointing out—almost with certainty—the existence of an important fault-line. The dividing line, marked by the depression in which flows the Vicol, seems to be continued toward northwest by the Labo River, a tributary of the former, descending from the heights of the former Province of Camarines Norte in a southeast direction. On its south side runs the mountain range mentioned before, with imposing limestone formations, while to the north of the river occur the older formations, where we find the quartzes and the gold- and copper-bearing conglomerates of Paracale and Mambulao. In this part of Camarines Norte the distinction between the two chains or elevations of different constitution and age is less well marked than in Camarines Sur; still we may be convinced that on the southern watershed the limestones predominate, while on the northern the older formations are in the ascendency. The latter appear to extend far back, as is indicated by the auriferous sands which some of the water courses have brought down from the heights of Labo and Bayabas. Still farther west, in the direction of the Isthmus of Atimonan, only one cordillera exists, whose geological character is not known. There are, however, indications that even in this single range we have on the north the older formations, revealed by mica conglomerates, while on the south side the limestones predominate.

Isoseismal lines.—Curve I (fig. 1) incloses the region in which the earthquakes developed their greatest violence. It forms a very elongated ellipse, about 200 kilometers long by some 60 kilometers in width, which follows, in general, the Vicol and its tributary (the Labo River), runs along the Labo and Bayabas Mountains, and extends to the neighborhood of the Isthmus of Atimonan. The meizoseismal area thus included comprises the whole cordillera which has been mentioned as bounding the Camarines region in the south.

The curve marked II circumscribes the area within which the earthquakes were strong. Its shape is similar to that of the preceding, namely, an elongated ellipse whose major axis lies in the direction SE–NW, extending from northwest Samar to Manila Bay, a distance of over 600 kilometers, while the minor axis measures only about 200 kilometers.

Curve III, inclosing the area of moderate intensity, comprises the whole of Samar and part of the Islands of Leyte, Cebu, Panay, Mindoro, and of Luzon the part lying south of parallel 17° N.

Character and effects of the earthquakes.—The two violent earthquakes took place at an interval of slightly less than three hours. Both had the same meizoseismal area; but the outermost isoseismal curve of the second comprised a smaller extent of territory. The second shock was in reality less severe than the first. If, nevertheless, it caused some damages, these were done to buildings which had been badly shaken by the first quake. Photographs and verbal descriptions of a goodly number of severely damaged structures convey the impression that their destruction was largely due to their small power of resistance, the latter resulting from flimsy construction, poor materials, and old age, severally and conjointly. Moreover, it is very apparent that the area most thickly strewn with ruins follows persistently the courses of the rivers. It is confined chiefly to the more recent alluvial soil, swampy in many instances and intersected by water courses. Hence the cause, which more than any other tended to magnify the effects of these disturbances, must be sought in the bad quality of the ground. There is talk of fissures in the soil and of subsidences; but all these occurred along the river banks on made ground or other land of small consistency. Regarding the happenings in the cordilleras, we have not been able to obtain information. From all these circumstances we conclude that these earthquakes can not be classified as *destructive,* since their intensity can hardly have reached degree IX of the scale of De Rossi-Forel.

Besides the two violent disturbances, twenty-four smaller quakes or aftershocks were felt during the 19th, all well perceptible at the station of Nueva Caceres, which may be considered as situated a short distance to the north of the middle point of the meizoseismal area's major axis. At Legaspi, which place is about 20 kilometers east of the first isoseismal line, only five aftershocks were noticed on the 19th, while Daraga, whose distance from the same line is approximately 15 kilometers, felt ten to twelve. The prevailing directions, both of the violent earthquakes and of the aftershocks, were NW–SE at Nueva Caceres, NNW–SSE at Legaspi, while at Atimonan, whose distance from the

WNW end of the meizoseismal area is about the same as that of Legaspi from the opposite, the principal waves showed both directions, that is, NW–SE and NNW–SSE. These directions are deduced from the seismograms traced by the simple seismographic pendulums, the only recording seismic instruments wherewith these stations are equipped.

At Manila Observatory the two earthquakes were registered by the Cechi seismograph, various ordinary recording pendulums, the Vicentini microseismograph, and another microseismograph of two horizontal pendulums. From the records of the first, more violent, earthquake it follows that the initial movements perceptible at Manila lay in a SE–NW direction, the impulse being directed toward northwest, the ground inclining in the same direction. The more intense impulses showed at first a strong inclination toward south and south-southwest—due, no doubt, to transversal waves—but soon they swung round to SE–NW, the inclination of the ground toward northwest becoming again apparent. The maximum amplitude slightly exceeded the value $2\ a=9$ mm. per second. Hence, if we apply the formula $\alpha=\frac{4\pi^2 a}{t^2}$, we obtain the acceleration $\alpha=177$ mm. per second; a value which agrees perfectly with the sensation produced in Manila by said earthquake, which was described by everybody as strong and not as violent; that is to say, as lying between degrees VI and VII of the scale of De Rossi-Forel. The microseismographs did not come to rest until 1 hour 58 minutes after the earthquake.

It has already been stated that the second earthquake was of much smaller intensity than the first. At Manila, its force was V or VI. The same prevailing directions were registered as in the case of the preceding; but as it was followed by more intense aftershocks than the former, the microseismographs remained agitated for more than two hours after the disturbance.

Origin and probable cause of the earthquakes.—Although these earthquakes took place in a region of the Archipelago in which volcanic forces display at present considerable activity, we do not believe that they belonged to the class of volcanic earthquakes. This opinion is based, first, upon the absolute absence of any extraordinary activity on the part of the near-by volcanoes, especially of the Mayon, which is at present the most turbulent of all the volcanoes within the Islands, and rises within a few kilometers from the meizoseismal area; second, upon the fact that the epicenter lay entirely outside of the strictly volcanic region, with its conical elevations and its formations of volcanic tuffs and ejecta. Moreover, it is certain that the seismic movements decreased rapidly in force toward the volcanic district. The northern limit of the meizoseismal area passed only a few kilometers north of the bed of the Vicol River, which, as has been stated before, according to all appearances forms the boundary line between the sedimentary and the igneous formations; while toward the south said area extended as far as the sea, inclosing the mountain range and the southern coast. Hence it is not possible to ascribe—with any degree of probability—these earthquakes to strictly volcanic causes, or even to some movement along the fault-line marked by the line of volcanoes which lie at some distance to the north of the meizoseismal region.

If we now turn our attention to the nature of the coasts and the depths found in the seas north and south of the Camarines, the idea suggests itself that the disturbances may have resulted from a lateral displacement of the recent formations forming the southern cordillera, over the older strata on which they rest. As a matter of fact, the seas to the north are very shallow, the depths varying from 0 to 60 meters, while to the south soundings of 400 meters are found very close to the shores. (See chart, fig. 2.) Hence it is almost certain that underneath the whole extent of the Camarines the basal strata form an inclined plane sloping toward south. Consequently the modern formations resting upon them may be considered to be in a somewhat unstable equilibrium. Their plane of junction with the basal formations probably constitutes a "thrust plane."

The NW–SE and NNW–SSE directions of the seismic movements do not disprove the assumption of lateral displacement; they merely show that there were stresses and impulses in these directions. On the other hand, this hypothesis explains at once why the intensity of the disturbances decreased so rapidly north of the Vicol River, which latter we consider as the superficial dividing line between the ancient and modern formations—simply only the latter moved! We do not deny, on the contrary, we are rather inclined to believe, that the initial movement, which started the disturbance, came from the fault whose existence is indicated by the deep channel gaping between the southern coasts of Camarines and the Islands of Burias, Ticao, and Masbate, on which islands reappear the old basal strata. In this channel or fault, whose northern edge appears to be represented by the coasts of Camarines, exists a seismic center which is responsible for a great number of earthquakes.

This last explanation does away with the only difficulty which could be urged against our hypothesis, to wit: If there had been merely a lateral displacement, the earthquake would have been confined to very shallow depths. But the amplitude of the vertical component as registered at Manila and the fact that the two principal quakes have been recorded all over the globe—as we shall see anon—indicate that the disturbances were due to a center lying at a much greater depth than our hypothesis would suggest. For the present these short and easily understood indications must suffice; the solution of the problem is left to others.

Determination of the center and the exact time of earthquakes.—A glance at map fig. 1 shows that Manila was within the second isoseismal line, a distance of about 150 kilometers from the western limit of the meizoseismal area. All the seismographs of the Observatory registered in a perfect manner the beginning of each earthquake; but later on, owing to the violence of the movements, some pens were thrown off the recording sheets, and even broken. None of the shocks came so suddenly as not to be preceded by a few preliminary movements, which lasted approximately 25 seconds for the first and 28 seconds for the subsequent shock, which was less violent than the former. For the numerous aftershocks registered by the Vicentini microseisgraph and the horizontal pendulums the mean duration of the preliminary movements is found to have been likewise 28 seconds.

With these values, applying the formula $t_0 = t_1 - 1.165 y^{\text{sec.}}$, we find that the first earthquake which began to be felt at Manila at $5^h\,0^m\,24^s$ should have taken place at its center at $4^h\,59^m\,52^s$; the second, whose beginning was registered at $7^h\,53^m\,16^s$, should have occurred at the center at $7^h\,52^m\,44^s$. We are, however, of the opinion that the times thus found represent merely the earliest possible limits. Our reason is that the resulting wave velocities of 7 kilometers are too small in view of the short distance intervening between Manila and the center of disturbance. In fact, if we apply Omori's formula for distance, $x = 7.27 y^{\text{sec.}} + 38^{\text{km.}}$, we obtain for the distance of the origin 230 kilometers. If we keep in view the shape of the meizoseismal area, namely, that it was an ellipse whose northwestern and southeastern extremities were at a distance from Manila of respectively 150 and 320 kilometers, this value appears as very acceptable, since it locates the center very close to the center of said ellipse.

Supposing now that for the first 200 kilometers of their journey the seismic waves advanced with a velocity which can not have been less than 10 kilometers per second, we obtain for the true times of their beginning at the center $5^h\,0^m\,1^s$ for the first and $7^h\,52^m\,53^s$ for the second earthquake. These values will serve as a basis in computing the velocities with which the seismic waves were propagated outside of the Philippine Archipelago.

Propagation of the seismic waves outside of the Archipelago.—As has been stated, the earthquakes of the Camarines have been registered by the seismographs of all the observatories scattered over the globe. We are in possession of the data obtained at the majority of observatories in Europe and Asia, and also of the records made at Apia (Samoa). Those of North and South America are not yet on hand, but we must suppose that there the disturbances have likewise been registered. In order to calculate the velocities of the different classes of waves outside of the Archipelago we start from the hours found above and suppose the center situated in 123° east longitude and 13° 30′ north latitude. Of the available data we use only the most complete. With their aid the following table has been formed, which shows the various stations in the order of increasing distances from the center. V_1 represents the velocities in kilometers per second of those waves which are recorded by the seismographs as the beginning of the first preliminary phase; V_2 the velocities of those which constitute the beginning of the second preliminary phase; and V that of the waves which mark the commencement of the principal phase.

Place.	Latitude.	Longitude.	Epicentral distance. = X	Epicentral distance. Kilometers.	First earthquake. V1	First earthquake. V2	First earthquake. V	Second earthquake. V1	Second earthquake. V2	Second earthquake. V
	° ′	° ′	° ′		km.	km.	km.	km.	km.	km.
Origin	13 30 N	122 54 E	----							
Shanghai	31 12 N	121 11 E	17 46	1,977	12.36	7.06	5.32	13.92	6.55	5.18
Calcutta	22 33 N	88 20 E	34 0	3,785	9.44	----	2.69	12.09	----	2.56
Apia (Samoa)	13 48 S	171 46 W	70 13	7,816	----	6.38	4.50	----	6.50	4.06
Krakau	50 4 N	19 58 E	87 45	9,767	----	----	3.97	----	----	3.79
Budapest	47 30 N	19 4 E	89 9	9,922	12.34	7.02	3.85	12.77	7	3.87
Wien	48 15 N	16 22 E	90 35	10,083	13.15	7.01	3.86	13.11	6.98	3.99
Sarajevo	43 52 N	18 27 E	90 44	10,100	----	----	3.48	----	----	3.44
Graz	47 5 N	15 27 E	91 35	10,194	13.12	7.11	4.59	14.77	7.18	3.98
Laibach	46 3 N	14 30 E	92 35	10,304	12.20	7.22	3.66	12.24	7.69	3.44
Göttingen	51 32 N	9 57 E	93 3	10,356	13.29	7.35	3.84	13.19	7.47	4
Triest	45 39 N	13 45 E	93 13	10,375	10.88	7.62	----	13.87	----	3.28
Padua	45 24 N	11 52 E	94 31	10,523	13.06	7.43	3.44	12.57	7.14	3.72
Strassburg	48 35 N	7 46 E	95 38	10,645	14.21	7.23	4.28	13.03	7.18	4.65
Granada	37 11 N	0 1 W	106 15	11,827	15.46	----	4.49	12.72	----	3.44
San Fernando	36 28 N	6 12 W	110 46	12,329	----	7.85	3.55	----	8.05	3.56
Mean	----	----	----	----	12.68	7.21	3.97	13.12	7.17	3.80

If we make due allowance for a few exceptions, due to some error in the time or in the interpretation of the seismograms, the velocities given in the preceding table agree perfectly with the values which a great number of observations, including nearly every possible surface distance and direction, give as characteristic velocities wherewith the different classes of seismic waves travel to great distances. By way of illustration we adduce here the velocities of the waves of a few memorable earthquakes, which were propagated to distances exceeding 7,000 kilometers.

Earthquake.	V_1	V_2	V
	km. p. sec.	km. p. sec.	km. p. sec.
India, April, 1904	11.42	6.09	4.34
San Francisco, Cal., April, 1906	11.61	6.66	----
Calabria, September, 1905	12.40	6.74	3.99
Manila, December, 1901	12.15	7.25	3.10
Camarines, April, 1907	12.66	7.19	3.96
Do	13.09	7.18	3.79

Repetitions and aftershocks.—Those repetitions and aftershocks, which took place between April 19 and the end of the month, have already been mentioned. But for the convenience of the reader we present in the following table a resumé of all the small shocks felt at Nueva Caceres up to the end of July, at which time the seismic period of the Camarines appears to have terminated.

Date.	Number of repetitions. A. M.	Number of repetitions. P. M.	Date.	Number of repetitions. A. M.	Number of repetitions. P. M.	Date.	Number of repetitions. A. M.	Number of repetitions. P. M.
Apr. 19	15	9	Apr. 29	0	2	May 11	1	2
Apr. 20	6	0	Apr. 30	2	1	May 12	0	1
Apr. 21	0	2	May 1	1	0	May 13	2	0
Apr. 22	2	1	May 4	2	1	May 14	1	0
Apr. 23	1	0	May 7	1	0	June	0	0
Apr. 26	0	2	May 8	0	2	July 7	0	1
Apr. 27	2	0	May 9	1	1	July 10	4	[a]1

[a] Strong.

Total: 40 before and 26 after noon.

A remarkable circumstance in connection with these feeble shocks is the way in which they appear distributed as to the time of their occurrence; after April 21 nearly all of them took place in groups, at intervals of two to three hours.

SEISMIC ACTIVITY IN THE REST OF THE ARCHIPELAGO DURING THE PERIOD APRIL TO SEPTEMBER.

April.—During this month extraordinary seismic calm reigned throughout the rest of the Archipelago, as if all the forces had been concentrated in the Camarines.

May.—Several centers in north Luzon, in Samar and Leyte, and in southern Mindanao displayed great activity. On the 4th, 25th, and 27th numerous shocks were felt throughout the northernmost part of Luzon. Of these the one of the 25th was violent, but not followed by aftershocks. On the 16th three different shocks were experienced within thirty minutes in eastern Samar. Finally, on the 17th, 19th, and 20th, a center situated in the south of Leyte became very active, a great number of shocks occurring on the 20th, of which several were of intensity III, while two reached V–VII.

June.—Complete calm prevailed in the Camarines; but the number of very feeble shocks which occurred in Mindanao was quite extraordinary. On June 2, 9, and 15 the west of the island was shaken; on the 13th two quakes took place in the more easterly part; on the 22d and 23d the neighborhood of the volcano Apo was disturbed; on the 15th, 26th, and 28th the center and south of the island had their turn. In addition to the happenings in Mindanao, two slight earthquakes were felt in the northeast of Luzon respectively on the 5th and 11th; one in the eastern Visayas on the 13th; and on the 25th one in the extreme southeast of Luzon.

July.—On the 20th and 23d there were frequent repetitions of earthquakes throughout central and eastern Mindanao, and on the 27th an earthquake of force II in central Luzon.

August.—Local earthquakes of small intensity. Fifteen of these tremors were distributed throughout the Archipelago.

There can be no doubt that the months April to August, 1907, mark a period of extraordinary seismic activity in the Philippine Islands, which contrasts strongly with the calm of the preceding months, January to March. Were the earthquakes in the Camarines during April the factor which precipitated the subsequent outbreak of seismic activity at so many different points of the Archipelago? We are not prepared to answer this query at present. If other occupations permit it, we propose to make a special study of some of the principal earthquakes which have taken place in various well-defined unstable regions of the Archipelago, and especially of the awakening of endogenous forces throughout the greater part of the Islands, similar to the one which followed the earthquakes of April of this year.

On the chart (fig. 1) we have indicated by means of numerals the order in which from April to September the seismic periods and principal earthquakes mentioned above have succeeded one another in the various regions of the Archipelago.

TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

7, 8^h 26^m. **Santo Domingo** (Islas Batanes). Temblor de tierra; intensidad I; duración corta. Repitió á 14^h 50^m con intensidad II y dirección NW–SE.

10, 16^h 25^m. **Tuburan** (NW de Cebú). Temblor de intensidad I, con ruído subterráneo procedente del E, duración 2^s.

14, 9^h 34^m. **Sámar y NE de Leyte.** Temblor oscilatorio; intensidad III; duración 10^s.

19, 5^h 0^m 1^s. ***Camarines.** Primer terremoto violento, perceptible en gran parte de Luzón y Visayas. (Véase más abajo un capítulo especial).

19, 7^h 52^m 53^s. ***Camarines.** Segundo terremoto violento, perceptible en la misma área que el primero.

Durante este día se experimentaron en Camarines 24 repeticiones ó *aftershocks* de intensidad II y III, 15 por la mañana y 9 por la tarde.

20. **Camarines.** Se percibieron 6 repeticiones de intensidad II, todas por la mañana.

21. **Camarines.** Dos temblorcitos de intensidad III, por la tarde.

22. **Camarines.** Tres repeticiones de intensidad II; dos por la mañana y una por la tarde.

22, 11^h 0^m. **Zamboanga** (W de Mindanao). Temblor oscilatorio de intensidad I; duración 5^s.

23, 0^h 2^m. **Camarines.** Temblor de intensidad III.

26. **Camarines.** Dos temblores de intensidad II por la tarde.

27. **Camarines.** Dos temblores de intensidad II por la mañana.

29. **Camarines.** Dos temblores de intensidad III por la mañana.

30. **Camarines.** Tres temblores; intensidad II y III; dos por la mañana y uno por la tarde.

REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

LOS TERREMOTOS DE CAMARINES.

[19 Abril, 1907: 5^h 0^m 1^s y 7^h 52^m 53^s.]

Introducción.—Estos terremotos fueron perceptibles en el mayor parte de Luzón y de las Visayas en un área de más de 400 kilómetros de radio. El mapa (fig. 1) presenta las líneas isoséismas que limitan las regiones donde los movimientos séismicos fueron violentos, fuertes y moderados, correspondiendo á los grados IX–VIII, VII–VI y V–IV de la escala de Rossi-Forel. El área meizoséisma queda casi en su totalidad dentro de la Provincia de Camarines. El mapa (fig. 2) da una idea de los caracteres fisiográficos especiales de esta región: su dirección general es SE–NW; la parte S está limitada por una cordillera de poca altura y no muy continua, que parece ser prolongación de la llamada oriental de la Isla de Luzón; la cual después del Istmo de Atimonan se divide en dos ramas, viniendo á morir una al SE en la punta de Bondog, mientras que la otra continúa primero hacia el E y luego desde el pico Labó se dirige también al SE pero perdiendo altura y continuidad. La parte norte de la antigua Provincia de Camarines Sur se vé

[1] La intensidad de los terremotos se indica conforme á la conocida escala de Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120 E. de Greenwich.

como cerrada por otra cordillera que corre en dirección general de W á E, desde la bahía de San Miguel hasta el seno de Lagonoy. Separa ambas cordilleras una distancia media de más de 50 kilómetros. El terreno intermedio es generalmente bajo con numerosos riachuelos, pantanos y lagunas. Á lo largo de ésta región se levanta una série de conos volcánicos, que comenzando en el magestuoso Mayón, el más oriental, termina en el Isarog, cerca ya de la bahía de San Miguel. La dirección general de esta línea de conos es de SE á NW y los conos principales son cinco: Mayón, Masaraga, Malínao, Iriga é Isarog. En la misma dirección y por el lado S de todos ellos corre el río más caudaloso de esta región, llamado Quinali en su mitad superior y Vicol desde el lago Bató hasta su desembocadura en la bahía de San Miguel. Desde su nacimiento, á pocos kilómetros del seno de Albay, hasta su desembocadura recorre cerca de 100 kilómetros en dirección SE–NW. Todos los volcanes quedan por consiguiente á la derecha de su cauce; á su izquierda arrancan las estribaciones de la cordillera meridional, en la que no se conocen formaciones volcánicas; parece que más bién la constituyen en su mayor parte calizas coralíferas y otros terrenos de sedimentación, los cuales se extienden hasta el cauce del río y aún más allá, tal vez por debajo las tobas y deyecciones volcánicas que se desarrollan en la parte N del cauce. La simple vista del mapa de esta región sugiere la idea de que en épocas no muy remotas toda ella era un mar de poco fondo, el cual se ha ido rellenando poco á poco con los materiales eruptivos de los volcanes que surgieron á lo largo de su línea central, y con los de erosión de la cordillera del S; influyendo también el progresivo levantamiento de la isla. Como en la cordillera que limita esta región por el N, según los pocos datos geológicos disponibles, no predominan las formaciones sedimentarias que en la del S, sino otras más antiguas, cuarzos y conglomerados metalíferos y hullíferos, de las que constituyen la base ó esqueleto del Archipiélago, sobre y alrededor de la cual se fueron acumulando las formaciones sedimentarias y coralinas modernas, surge la idea de que la cuenca del Río Vicol representa la línea divisoria entre ambas formaciones, antiguas y modernas. Por consiguiente las erupciones volcánicas se abrieron paso á lo largo de esa línea divisoria ó muy cerca de ella, revelándonos esto la existencia casi segura de una importante falla. Dicha línea divisoria constituída por la depresión del Vicol parece continuar hacia el NW, marcada por su tributario el Rio Labó, el cual desciende de las alturas de la antigua Provincia de Camarines Norte, en dirección al SE. Á su lado Sur corre la cordillera antes mencionada, con imponente desarrollo de las formaciones calcáreas, y al Norte las antiguas donde se encuentran los cuarzos y conglomerados auríferos y copríferos de Paracale y Mambulao. En esta parte de Camarines Norte no aparecen tan bien definidas y distintas las dos cordilleras de diferente constitución y edad como en Camarines Sur; puede sin embargo asegurarse que en las vertientes del Sur predominan las formaciones calcáreas y en las del Norte las antiguas. Éstas se extienden hasta muy adentro, según parece indicarlo el arrastre de arenas de oro por algunos ríos procedentes de las alturas de Labó y Bayabas. Más al W en dirección al Istmo de Atimonan continúa aparentemente una sola cordillera, cuyos caracteres geológicos desconocemos; hay sin embargo indicios de que en esta parte dominan también al N las formaciones antiguas reveladas por conglomerados micaceos, mientras al S dominan las calizas.

Líneas isoséismicas.—La curva I (fig. 1) que circunscribe la región donde los terremotos desarrollaron mayor violencia, forma una elipse muy prolongada de cerca 200 kilómetros de longitud, por unos 40 de anchura á lo largo de los ríos Vicol y su tributario el Labó, y de la cordillera Labó y Bayabas hasta cerca del Istmo de Atimonan; comprendiendo en realidad dentro de si la cordillera que, según se ha dicho, limita por el S la región de Camarines.

La curva II, que encierra el área donde el terremoto fué fuerte, afecta la misma forma; una elipse prolongada cuyo eje mayor corre en dirección SE–NW, desde la parte NW de Sámar hasta la bahía de Manila, una distancia de más de 600 kilómetros, mientras que el eje menor tiene tan solo unos 200 kilómetros.

La curva III comprende casi toda la Isla de Sámar, parte de las de Leyte, Cebú, Panay y Mindoro, y la de Luzón hasta el paralelo 17° N.

Caracteres y efectos de los terremotos.—Se experimentaron dos terremotos violentos en un intervalo de poco menos de tres horas; ambos tuvieron la misma región meizoséismica; la última línea isoséisma tiene sin embargo menor extensión en el segundo, el cual fué en realidad menos violento; y si causó algún daño, fué en los edificios ya malamente sacudidos por el primero. Á la vista de algunas fotografías y otros datos descriptivos referentes á buen número de los edificios que sufrieron mayores daños, ocurre al momento que su destrucción se debió en gran parte á malas condiciones de resistencia; resultantes ya de su construcción defectuosa ó ya de la pobre calidad de los materiales y de su vejez. Llama desde luego la atención el que el área más sembrada de ruinas siga tan constantemente el curso de los ríos; puede decirse que se circunscribe principalmente á los terrenos de aluvión más recientes, pantanosos, y cortados por cauces de agua: debieron por consiguiente influir más que todo en aumentar los efectos del terremoto las malas condiciones del mismo terreno.—Se habla de grietas y hundimientos, pero todas ellas se abrieron en los bancos de los ríos ó en terraplenes y otros terrenos de poca ó ninguna consistencia. De lo ocurrido en la cordillera no hemos podido adquirir datos.—Juzgamos por consiguiente que estos terremotos no pueden llamarse verdaderamente destructores, puesto que su intensidad escasamente debió llegar al grado IX de la escala de Rossi-Forel.

Además de los dos terremotos violentos se experimentaron durante el día 19 veinticuatro temblorcitos ó *aftershocks* bien perceptibles en la estación de Nueva Cáceres, la cual puede considerarse situada casi á la mitad del eje central del área meizoséismica, pero algo al Norte. En Legaspi, situado á unos 20 kilómetros al E de la primera línea isoséisma, tan solo fueron perceptibles el mismo día 19, cinco *aftershocks*, y en Daraga que está á unos 15 kilómetros, diez ó doce. La dirección dominante tanto de las oscilaciones violentas como de los numerosos *aftershocks* fué en Nueva Cáceres NW-SE, en Legaspi NNW-SSE y en Atimonan, situado casi á la misma distancia que Legaspi, pero al WNW de la línea meizoséismica, la dirección de las ondas principales fué NW-SE y NNE-SSW. Estas direcciones son las que nos dan los seismogramas trazados por sencillos seismómetros de péndulo, únicos aparatos séismicos existentes en las mencionadas estaciones.

En el Observatorio de Manila los dos terremotos principales fueron registrados por el seismógrafo Cechi, por varios péndulos ordinarios, por el seismógrafo Vicentini y por otro de péndulos horizontales. De los seismógramas del primer terremoto, que fué el más fuerte, se deduce que los movimientos iniciales perceptibles tenían la dirección SE-NW, de tal manera que el impulso se dirigía al NW, mientras que el suelo se inclinaba hacia la misma dirección. Los primeros impulsos más intensos venían muy inclinados al S y SSW, debido sin duda á ondas transversales, pero volvieron luego al rumbo SE-NW, notándose de nuevo la inclinación del suelo hacia el NW. Su amplitud máxima pasó muy poco de $2a=9$ mm. por segundo, de donde, aplicando la fórmula $\alpha=\frac{4\,\pi^2\,a}{t^2}$, resulta una aceleración de $\alpha=177$ mm. por segundo; valor que concuerda perfectamente con la sensación que en Manila dejó este terremoto, calificado por todos de fuerte pero no violento; esto es, comprendido entre los grados VI y VII de la escala Rossi-Forel. Los microseismógrafos no volvieron á su reposo hasta $1^h\ 55^m$ después del terremoto.

Ya hemos dicho que el segundo terremoto fué mucho menos fuerte que el primero. Su intensidad en el Observatorio estaba comprendida entre los grados V y VI; se registraron las mismas direcciones dominantes, pero como fué seguido de más intensos *aftershocks* que aquel, la perturbación producida en los microseismógrafos duró más de dos horas.

Origen y causa probable de estos terremotos.—Aunque ocurrieron en la región del Archipiélago donde las manifestaciones volcánicas están actualmente en mayor actividad, no creemos sin embargo que pertenezcan á los llamados volcánicos. Persuade esto, primero, la carencia absoluta de actividad extraordinaria en los volcanes vecinos y principalmente en el Mayón, en la actualidad el más activo de las Islas y situado á pocos kilómetros del área meizoséismica; segundo, el que el epicentro se halla en realidad fuera de la región estrictamente volcánica, cubierta de conos, tobas y otras clases de deyecciones. Consta además que los movimientos séismicos perdieron pronto su intensidad, en dirección á la región volcánica. El límite septentrional del área meizoséismica pasa á pocos kilómetros por el N del cauce del Río Vicol, el cual, según se apuntó más arriba, constituye aparentemente la línea divisoria entre las formaciones sedimentarias y las ígneas, mientras que por el S dicha área se extiende hasta el mar, encerrando dentro de sí la cordillera y costas meridionales. No es por lo tanto posible atribuir con probabilidad estos terremotos á acción propiamente volcánica, pero ni siquiera á algún movimiento ocurrido en la falla señalada por la línea de volcanes, la cual queda algo lejos al N del área meizoséismica. Ahora bien; considerando tanto la naturaleza de las costas como las profundidades de los mares del N y del sur de Camarines, surge en el ánimo la idea de un posible resbalamiento de los terrenos modernos, que constituyen la cordillera meridional, sobre los antiguos, que les sirven de base. En efecto, los mares del Norte tienen poca profundidad, de 0 á 60 metros, mientras que en los del S muy cerca de la costa ya se encuentran sondas de 400 metros (véase el mapa fig. 2). Es casi seguro por consiguiente que en toda la región de Camarines los terrenos basales presentan un plano inclinado de N á S; de donde resulta que los modernos que sobre ellos descansan pueden considerarse como en un equilibrio algo inestable. Probablemente la unión de ambos constituye lo que se llama un *thrust-plane.*

Á la hipótesis de un resbalamiento no se opone la dirección de los movimientos séismicos NW–SE y NNW–SSE, indicadoras solamente de presiones y empujes en el mismo sentido. Por otra parte ella explica por qué decreció tan rápidamente la intensidad hacia el norte del Río Vicol, supuesta divisoria superficial entre las antiguas y modernas formaciones, pues en realidad solo estas últimas se habrían movido. No negamos, sino que más bien nos inclinamos á creer que el movimiento inicial que provocó el terremoto procedió de la falla señalada por el canal profundo que se abre al S entre la costa y las Islas de Burias, Ticao y Masbate, donde aparecen de nuevo los terrenos antiguos basales. En este canal ó falla, cuyo labio septentrional parece estar representado por las costas de Camarines, existe un centro séismico en el que se originan frecuentes terremotos.

Esta explicación resolvería la única objeción sería que hay contra nuestra hipótesis, y es, que si se trata de un simple resbalamiento, el terremoto hubiera sido muy superficial, mientras que por el contrario tanto la amplitud de la componente vertical registrada en Manila, como el hecho de haberse registrado los dos principales terremotos en todo el globo, según veremos luego, indican que el origen estaba á mucha mayor profundidad de la que supondría nuestra hipótesis. Por ahora nos contentamos con estas vulgares y breves indicaciones, dejando para otros la resolución del problema.

Determinación del centro y hora de los terremotos.—Manila, según puede verse en el mapa (fig. 1), estuvo comprendida dentro de la segunda línea isoséismica, á la distancia de 150 kilómetros del extremo NW de la región meizoséismica. Todos los seismógrafos del Observatorio registraron perfectamente el principio de ambos terremotos, mas luego por la violencia de los movimientos algunas plumas saltaron fuera y aún se rompieron. Ninguno de los dos terremotos fué tan repentino que no le precedieran algunos movimientos preliminares imperceptibles, cuya duración fué de unos 25 segundos en el primero y de 28 segundos en el segundo algo menos violento que aquél. En los numerosos *aftershocks* registrados después por el microseismógrafo Vicentini y un seismo-péndulo horizontal, la duración media de los movimientos preliminares resulta ser de 28 segundos.

Con este dato y valiéndonos de la fórmula $t_0 = t_1 - 1.165\ y$ segundos, deducimos que el primer terremoto, el cual tuvo principio en Manila á $5^h\ 0^m\ 24^s$, ocurrió en su origen á $4^h\ 59^m\ 52^s$; el segundo de $7^h\ 53^m\ 16^s$, debió ser en el origen á $7^h\ 52^m\ 44^s$. Creemos sin embargo que estos valores tan solo representan un límite inferior, y decimos esto porque atendida la poca distancia entre Manila y el centro, la velocidad de las ondas resultaría muy pequeña, 7 kilómetros. En efecto, aplicando la fórmula de Omori, $x = 7.27\ y + 38$ km., se obtiene para la posición del origen la distancia de unos 230 kilómetros; cantidad que si se tiene en cuenta que la región meizoséismica forma una elipse muy prolongada, cuyos dos extremos NW y SE distan respectivamente de Manila 150 y 320 kilómetros, parece muy aceptable pues coloca el foco no lejos del centro del eje mayor de la elipse.

Ahora bien, suponiendo que las ondas séismicas dentro de los primeros 200 km. se propagaron con una velocidad que no bajaría de 10 km. por segundo, tenemos que las verdaderas horas en el origen fueron $5^h\ 0^m\ 1^s$ y $7^h\ 52^m\ 53^s$, respectivamente; las cuales tomaremos como punto de partida para el cálculo de la velocidad con que se propagaron las ondas séismicas fuera del Archipiélago.

Propagación de las ondas séismicas fuera del Archipiélago.—Conforme se indicó más arriba, los terremotos de Camarines fueron registrados por los seismógrafos de todos los Observatorios del

Globo; poseemos los datos de la mayor parte de los de Europa, Asia y de Apia (Samoa); de las Américas no se han recibido aún, pero es de suponer que allí fueron también registrados. Para calcular la velocidad con que las diferentes clases de ondas se propagaron fuera del Archipiélago partiremos de la hora calculada antes y supondremos el centro situado en los 123° 0′ longitud E y 13° 30′ latitud N. De los datos recibidos utilizamos los más completos; con ellos se ha formado el siguiente cuadro en el que figuran por orden de distancias con respecto al centro. V_1 representa la velocidad en kilómetros por segundo con que se propagaron las ondas séismicas que en los seismógrafos constituyen el principio de la primera fase preliminar; V_2 la velocidad de las ondas que constituyen el principio de la segunda fase preliminar, V la de las ondas del principio de la fase principal. (Véase este cuadro en el texto inglés.)

Los precedentes valores, salvo raras excepciones debidas á algún error en la hora ó en la interpretación de los seismogramas, concuerdan perfectamente con las velocidades que multitud de observaciones, en casi todas las distancias superficiales y rumbos posibles, dan como características de cada clase de ondas séismicas al propagarse á grandes distancias. Por vía de ilustración presentamos á continuación las velocidades de las ondas de algunos memorables terremotos propagadas á distancias superiores á 7,000 kilómetros.

Terremoto.	V_1	V_2	V
	Km. p. seg.	*Km. p. seg.*	*Km. p. seg.*
De la India, Abril de 1904	11. 42	6. 09	4. 34
De San Francisco Cal., Abril 1906	11. 61	6. 66	------
De Calabria, Septiembre 1905	12. 40	6. 74	3. 99
De Manila, Diciembre 1901	12. 15	7. 25	3. 10
De Camarines, Abril 1907	12. 66	7. 19	3. 96
Id	13. 09	7. 18	3. 79

Repeticiones ó aftershocks.—En otro lugar van ya indicadas las que tuvieron lugar desde el 19 de Abril hasta el fin del mes; para mayor comodidad sin embargo, presentamos en el siguiente cuadro un resumen de todos los temblorcitos sentidos en Nueva Cáceres hasta el fin del mes de Julio, en que parece terminó el período séismico de Camarines.

Fecha.	Número de repeticiones.		Fecha.	Número de repeticiones.		Fecha.	Número de repeticiones.	
	Mañana.	Tarde.		Mañana.	Tarde.		Mañana.	Tarde.
19, Abril	15	9	29, Abril	0	2	11, Mayo	1	2
20, Abril	6	0	30, Abril	2	1	12, Mayo	0	1
21, Abril	0	2	1, Mayo	1	0	13, Mayo	2	0
22, Abril	2	1	4, Mayo	2	1	14, Mayo	1	0
23, Abril	1	0	7, Mayo	1	0	------	0	0
26, Abril	0	2	8, Mayo	0	2	7, Julio	0	1
27, Abril	2	0	9, Mayo	1	1	10, Julio	4	[a]1

[a] Fuerte.

Total: 40 por la mañana y 26 por la tarde.

La única cosa digna de atención es la manera como estos temblorcitos aparecen distribuídos en cuanto á las horas; después del 21 del Abril generalmente tuvieron todos ellos lugar en grupos, dentro de intervalos de dos á tres horas.

ACTIVIDAD SÉISMICA EN RESTO DE LAS ISLAS DURANTE EL PERÍODO ABRIL-SEPTIEMBRE.

Abril.—Este mes fué extraordinaria la calma séismica en las demás regiones del Archipiélago; como si todas las fuerzas estuviesen concentradas en Camarines.

Mayo.—Se mostraron muy activos algunos centros en el norte de Luzón, en Sámar y Leyte, y en el sur de Mindanao. El 4, 25 y 27 se sintieron numerosos temblores en todo el extremo norte de Luzón, siendo violento el del 25, pero sin *aftershocks*. El 16 se sintieron tres distintos en el espacio de 30 minutos en la parte oriental de Sámar. Por último los días 17, 19 y 20 se mostró muy activo un centro situado en la parte sur de Leyte; sintiéndose el último día muchos temblores; dos de intensidad V–VII y varios de intensidad III.

Junio.—Reinó calma completa en Camarines, pero fué extraordinario el número de temblores de poca fuerza en Mindanao; el 2, 9 y 15 los hubo en la parte occidental de la isla; el 13 dos en la más oriental; el 22 y 23 en la región del volcan Apo; el 15, 26 y 28 en el centro y Sur de la isla. Además se sintieron el 5 y el 11 dos ligeros temblores en el NE de Luzón; el 13 uno en las Visayas occidentales; y el 25 otro en el extremo SE de Luzón.

Julio.—Del 20 al 22 se repitieron frecuentes temblores en todo el centro y este de Mindanao. El 27 hubo temblor de intensidad II en toda la parte central de Luzón.

Agosto.—Temblorcitos locales y de poca intensidad; fueron 15 repartidos en todo el Archipiélago.

No hay duda de que los meses enumerados Abril á Agosto fueron de extraordinaria actividad séismica, la cual contrasta con la calma de los meses precedentes Enero á Marzo. Fueron por ventura los terremotos de Abril en Camarines los que determinaron el desarrollo de actividad que les siguió en tantos otros puntos del Archipiélago? Á esto no pretendemos contestar por ahora. En cuanto las ocupaciones nos lo permitan pensamos hacer un estudio de algunos principales terremotos ocurridos en determinadas regiones inestables del Archipiélago y principalmente del despertar de las fuerzas endógenas en la mayor parte de él, que en ocasiones semejantes á la de este año les ha seguido.

En el mapa (fig. 1) hemos indicado con números el orden con que desde Abril á Septiembre fueron sucediéndose en las diferentes regiones del Archipiélago los períodos séismicos y principales temblores que acabamos de mencionar.

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CROP BULLETIN FOR APRIL, 1907.

By Rev. George M. Zwack, S. J.,
Secretary of the Weather Bureau.

GENERAL NOTES.

The crops harvested during the month of April gave, as a rule, good results. The east coast of Samar reports a rice crop which came fully up to the high expectations mentioned last month. The north of Mindanao and the west coast of Luzon have likewise reason to be well satisfied with the yield of their rice fields. On the Island of Bohol, however, 50 per cent of the rice was destroyed by insects and rats. Other more local failures of this crop—due to insects or rodents, or to both these pests—are reported from the districts of Caraga, Legaspi, and Gubat. In the rest of the Archipelago the rice crop was fair to good. Tobacco proved a complete failure in the middle Cagayan Valley, as had been foreseen. But Isabela Province (upper Cagayan Valley) had a good crop of the aromatic weed; in fact, with the exception mentioned, tobacco gave good results throughout the Islands, the drought notwithstanding. Union Province is jubilant over its vast amount of tobacco and the high prices prevailing. Cocoanuts were rather scarce in the north, costing as much as ₱7.50 per hundred in Ilocos Sur; while in the south corn continued to be an expensive commodity, since with few exceptions but little had been harvested. The price of sugar is improving, at least from the viewpoint of the producer.

There was little activity in the stripping of hemp, since the people were occupied in bringing in their crops and in preparing ground for the sowing of mountain rice, corn, and tobacco.

Nearly the whole Archipelago suffered from lack of rain. The northern part of Cebu Island reported less than the average rainfall; the northern part of Mindanao and that part of the western coast of Luzon which is comprised between parallels 14° 30′ and 16° 30′ N had just enough rain to prevent drought; but in Bataan the sugar cane suffered from lack of water; nor did Bulacan escape all harm. Severe damage is reported from the southern part of Cebu, the Island of Panay, Tayabas, and the northern end of Luzon. In all these regions farm work was greatly impeded by the dryness, as neither plowing nor planting was possible.

Locusts held sway in the Province of Antique and have appeared likewise at Janiuay, Iloilo Province. Thick swarms of these insects have been seen on the west coast of Negros, from Valladolid down to Isabela. So far they have not done any serious harm. The losses caused by worms on the Island of Bohol have been mentioned before.

Rinderpest and other animal sicknesses continued their ravages. On Basilan Island poultry were dying of "atay." Northern Mindanao reports losses of carabaos and poultry. The east coast of Samar was suffering severely, and the west coast at least to some extent. In the northern part of Cebu the pest is increasing rather than abating. On the Island of Negros it appears to assume a more virulent form, animals dying sometimes within twenty-four hours after showing the symptoms. At Murcia alone 200 head of cattle have died since the beginning of the year. The southern part of Luzon suffers less intensely, but the central and northern provinces of Zambales, Pampanga, Bulacan, Nueva Ecija, and Tarlac have sustained great losses.

SPECIAL NOTES.

DISTRICT I.

Borongan.—The rice harvest is at present in progress along the whole east coast of Samar. The yield is good in quality and abundant in quantity. There is but little activity in the copra and hemp trade during the bringing in of the rice. Epizoötia continues to carry off the few carabaos, cattle, and horses which escaped during the preceding months.

Tacloban.—The condition of the various crops such as hemp, sugar cane, cocoanuts, corn, tomatoes, and tubers is generally good in the east and north of Leyte. Unfortunately Carigara had a small rice crop, due to the lack of water and to the ravages of an insect whose name could not be learned. In the same town epizoötia continues with the virulence displayed during the preceding months, the total loss caused up to date being estimated at about ₱1,300. Similar damage has been done at Caibiran. At Alangalang and Barugo hogs are dying of sickness, and during the last days of the month surra has been discovered in several horse stables of Tacloban. At Hinanungan the locusts have done some harm.

Ormoc.—The crops of hemp, corn, and copra are fairly good. Rain has been scarce and hemp and corn have felt the effects of this scarcity, which on the other hand favored the preparation of the plots called "caiñgin," destined to be planted in rice. No locusts have appeared and the sickness among the stock is hardly noticed.

Tuburan.—The principal products of this region are hemp, tobacco, rice, corn, and sugar cane. The last excepted, they are still growing, hemp doing well, tobacco and rice fairly well. During April some rain has fallen and favored the growing corn and tobacco. There were no injurious insects, but sickness has gained considerable headway among the work animals.

Cebu.—During the second half of the month a severe drought reigned, so much so that work in the fields had to be abandoned almost entirely. To this same cause and to the suffocating heat is also ascribed the fact that dengue fever is prevalent and that some cases of malignant fever have occurred. Only a few mangoes are seen in the market this year; maybe that this fruit has been merely delayed, because many of the trees still show blossoms.

Surigao.—About the middle of the month the rice harvest began with results which are highly gratifying to the farmers. The crop is good in quality and quantity and far surpasses that of last year. Aside from the work incident to the gathering of the rice, some people are occupied in stripping hemp and in preparing the ground for tobacco. There were light rains in the beginning of the month which prevented the plants suffering from lack of water; nevertheless the month was a little too dry for the planting of tubers. The production of copra is increasing slowly but steadily.

Tagbilaran.—The municipalities of Carmen, Vilar, and others in the interior of the Island of Bohol have finished the rice harvest. Calape, Tubigon, Inabanga, Talibon, Getafe, and Ubay have gathered various kinds of tubers, an abundance of bananas, and some rice, but very little corn. In some of these places as much as 50 per cent of the crops has been destroyed by worms which left nothing of the grain but the bare husks; in others, worms and rats shared in the work of further reducing the crops, which were already small enough. While at Ubay the lack of rains proved harmful to agriculture, damage was done at Carmen by the superabundance of it. On Tagbilaran the fact that rice and corn have been harvested appears to have no effect; the importation of corn from Carcar, Sibonga (Cebu), and several places on the Island of Negros continues as before. The present price of corn is ₱2.60 to ₱3 per cavan (75 liters).

Butuan.—The rice is now in blossom and a good crop is expected, since the rain which fell during the first half of the month has greatly helped its development. The sickness among the poultry has disappeared completely. The cultivation of hemp follows its usual course. The fiber brings ₱14.50 per picul (63.25 kilos). The price of copra is ₱9 to ₱10.

Balingasag.—During this month four carabaos, one cow, and a number of chickens died of various diseases, The farmers are at present preparing their fields for the planting of corn, which will take place as soon as the rains begin.

Caraga.—During the month the harvest of early rice commenced, which was expected to give fair results. But various causes combined to diminish the crop considerably, chief among which were the ravages of rats, wild hogs, and birds. The production of hemp continues about the same as during the preceding months. The quantity of fiber exported exceeded 1,512 piculs, while of copra 88 piculs have been shipped. The mango trees are blossoming a second time. No cases of animal diseases have been recorded.

Davao.—The ground on which mountain rice is to be grown is at present being prepared. Hemp is growing vigorously. The mango trees are now bearing fruit, and there is hope that a considerable quantity of this fruit will be available for exportation to other points. The other products continue the same as in the preceding month. During the first quarter of the present year the following articles have been shipped from this port:

Article.	January.		February.		March.		Total.	
	Quantity.	Price.	Quantity.	Price.	Quantity.	Price.	Quantity.	Value.
Hemp ....piculs..	1,088	₱24.50	2,833.68	₱24.00	1,375.80	₱23.50	5,297.48	₱126,995.62
Gum mastic..........do....	498.85	6.00	692.79	6.00	680.83	6.00	1,872.47	11,234.82
Biao ....do....	387.57	9.50	363.59	10.50	306.48	10.00	1,057.64	10,564.42
Hides ....quintals..	7.5	40.00	2.5	30.00	2.65	50.00	12.65	507.50
Copra ....piculs..	14	6.50	49.5	7.50	21.13	8.50	84.63	641.85
Wax ....quintals..	....	....	1.69	50.00	....	....	1.69	84.50

Hence the total value of exports from Davao for the three months amounted to ₱150,028.71. For the month of April the corresponding figures were: Hemp, 2,665 piculs, at ₱22.50; gum mastic, 590 piculs, at ₱5.50; biao, 369.76 piculs, at ₱9.50, and copra, 81 piculs, at ₱8.25; representing a total value of ₱67,388.49.

DISTRICT II.

Capiz.—Throughout this province the farmers are complaining of the lack of rain; even in the kitchen gardens the plants are dying and people can neither sow nor plow their fields. Wherefore, in all the Catholic churches public prayers are offered and processions held to implore rain.

San Jose Buenavista.—During this month the camanchiles trees should have ripe fruits and the mangoes flowers. But the former have produced a quantity much smaller than usual, and the latter showed few blossoms and these far behind time. Some attribute these facts to the rains which fell in March, but they may just as well be due to the persistent squalls during January and February. As regards the crops, the seed beds for the rice and the land to be planted in corn are ready prepared. White squash, sweet potatoes, gabe, uve, and a small quantity of corn have been harvested. The present price of rice is 16 to 18 centavos per ganta (3 liters). The locusts are passing from one part of the province to another.

Iloilo.—The farmers are preparing the land for mountain rice and corn and are only awaiting rain to proceed with the planting. All farm work is far behind time on account of the drought, in consequence of which the ground is too hard for plowing. The few and very limited plantations of tobacco seem not to have suffered from the prevailing dryness and gave a fair crop. The mango trees have very few blossoms. At Janiuay a great scarcity of rice made itself felt, so much so that people were forced to procure their supply of this staple from other places. Said place has also been infested by locusts, and epizoötia has carried off during the month about 20 per cent of the carabaos, hogs, and poultry. Among the horses, cattle, and goats sickness claimed likewise a number of victims.

Bacolod.—Notwithstanding the drought which reigned during the month, the crops have not suffered to any great extent; only some sugar cane dried up which had been planted recently. The sickness which prevails among the animals is of a very virulent character, some of the victims dying within twenty-four hours after showing the first symptoms of infection. At Murcia the loss of animals since the beginning of the year amounts to 200 head of cattle and some farmers are giving up the planting of sugar cane and turning to the cultivation of rice, which requires less work and outlay. In the municipality of Valladolid epizoötia has caused a loss of about 20 per cent among cattle, carabaos, and horses. Maao has suffered likewise from the ravages of sickness among the stock. At Murcia the yield of sugar cane has been greatly diminished by the destruction wrought by locusts and grubs during the preceding months. Thick swarms of these insects infested Valladolid and spread to La Carlota, Bago, Isabela, and the barrios of La Castellana and Maao, without, however, doing great harm. In the place last mentioned a superior quality of hemp is being produced on a great scale, its price being ₱22 to ₱22.50 per picul.

Dapitan.—The farmers living on high ground are preparing their "caingin," while those cultivating low land are occupied with plowing their fields, in which work they have been favored considerably by the weather. In Dapitan nothing has been heard of epizoötia up to the present, while at Oroquieta sickness is reducing the number of animals to a degree that farm work is paralyzed. The variety of papayas introduced from Colombo by a lay brother of the Society of Jesus (Juan Costa) has given excellent results. This fruit is now plentiful here and fifteen sacks of it have lately been sent to Cebu.

Isabela (Basilan).—During the month of April pineapples, bananas, and sugar cane have been harvested. Of hemp only 10 piculs have been produced, which have been shipped to Zamboanga and brought ₱25 per picul. On a tract of land south of the town no less than 3,000 hemp plants have been planted of late. The farmers who dedicate their lands to the raising of corn have them ready prepared for planting, which will be done during May or June. During the month about 20 chickens died of an ailment called "atay."

DISTRICT III.

Legaspi.—Several crops suffered from the scarcity of water which made itself felt during the last two decades of the month. The effect was seen especially on the hemp plants, whose leaves lost their color, at least in places where they were not protected by trees. Many planters say that in case the lack of rain continues during May they will lose at least part of their plantations. The presidents of Tabaco, Libog, Guinobatan, and Tiui report good crops. Neither injurious insects nor sickness among the stock have made themselves felt.

Gubat.—During the last days of March the rice harvest began. Here in Gubat, and likewise in Barcelona and Bulusan, the yield is poor, owing to the havoc wrought by the birds called "maya" and "magabot," and by insects such as the "tayagao" and others whose names I failed to ascertain. The prices obtaining in the market are: Hemp, ₱14.25; Bayambang rice, ₱6.50; Saigon rice, ₱6.75.

Romblon.—Santa Fe had a good crop of tabacco and sweet potatoes, while Cajidiocan reports fairly good crops, especially of tubers. The lack of water has done some slight harm to agricultural products, but was not great enough to impede the planting of new crops. Neither injurious insects nor sickness among the animals have been reported.

Calbayog.—Hemp production continues to improve in this place. There were many rice fields and they showed a much more vigorous growth than in preceding years; nevertheless the crop has been very poor and several farmers have obtained hardly any returns for their work, owing to the ravages of mice which the people call "guta." Entire rice fields have been destroyed by these pests, as also some camote patches. Surra continues among the horses, and several animals have succumbed to it in this city.

DISTRICT IV.

Santo Domingo (Batanes).—The fields planted in uve and sweet potatoes are generally in a very flourishing condition throughout the island; but above all the corn planted during December and January, which is being harvested at present. The small amount of rice sown during February is doing well, as is likewise that sown after the rain at the close of the month. Onions and garlic gave good returns, but not enough to meet the demand, as there was a scarcity of seeds at the time of sowing these products. Among the cattle have occurred a few cases of death, some calves and also half-grown animals dying of dysentery. This is ascribed to the fact that the pastures were very dry, since no rain fell until the close of the month.

Aparri.—During this month no work has been done in the fields, as they are too dry and hard, owing to the lack of rain. In the market there is a great abundance of squash, garden balsamine, eggplant, cabbage, tomatoes, and other vegetables; likewise of fruit gathered here and in the interior. There is no sickness among the animals, nor insect pest in the fields.

Tuguegarao.—As was stated last month, the tobacco and corn crops are a complete failure in this province. As regards the rice, there seems to be some hope, but in view of the great heat and lack of rain which prevail, it may happen that this too will end in disappointment. The market offers plenty of green mangoes, of watermelons, cucumbers, melons, and other fruit of the season, as also of tomatoes. After people have not tasted bananas for several months, a few bunches of this fruit have again appeared on the market, but they are of poor quality and very dear. It is said that the neighboring Province of Isabela has a good tobacco crop and it is quite likely that the agents of the various houses dealing in this product who are now stationed in this province will go to Isabela in order to buy said crop. There is no sickness among the stock or poultry.

Vigan.—Owing to the drought nothing has been sown during this month in the municipality of Vigan, but maguey, sincamas, cotton, mangoes, etc., have been harvested in fair quantities. It rained only once, on the 24th, when 47.7 millimeters (1.88 inches) fell within about an hour. Sickness has carried off one horse during the month. At Lapog the state of the crops is as follows: Maguey is pretty abundant; corn is doing well; sugar cane, middling good; sweet potatoes, rather poor; indigo, scarce. Epizoötia is disappearing from this neighborhood. In the municipalities of Santa and Magsingal agricultural conditions are about the same as in those mentioned, with the exception that Santa has lost some carabaos, cattle, and hogs through sickness, though in smaller numbers than during the preceding month. On the other hand, Narvacan has suffered severely, the loss of animals reaching about 10 per cent.

Candon.—During this month the harvesting of the sugar crop and the planting of new cane have been nearly finished. The price of sugar is ₱1.80 per picul delivered at the warehouse. Cocoanuts are very scarce, and cost ₱7.50 per hundred delivered at the beach. The drought has made itself felt in the growth of the crops, and the winds have somewhat injured the fruit trees, especially mangoes and prunes.

San Fernando, Union.—People are chiefly occupied in harvesting their tobacco, which gives very satisfactory results. It is estimated that the crop will reach 80,000 to 90,000 quintals (1 quintal = 46 kilos). The present prices are as follows: First quality, ₱8 to ₱9 per quintal; second quality, ₱4 to ₱6; third quality, ₱2 to ₱3. Hence it is seen that the prices could hardly be better. The condition of the other crops is likewise good, and mangoes are abundant. In this region no cases of epizoötia have occurred, but rumor has it that in a municipality in the southern part of the province a few horses have died; nothing, however, is said concerning the cause of death.

Bolinao.—The yield of the few agricultural products which have been harvested during April has been fairly good, except that of the various fruit trees, which has been rather small, owing to the squally winds during the past year. The very small rainfall was insufficient for a vigorous growth of the sugar cane. At Alaminos a few carabaos fell sick, but the ailment does not seem to be of an epidemic character. The other towns have been free from sickness among the stock.

Baler.—At present rice, corn, and tubers are being harvested. The latter promise good returns but the yield of rice will be only middling good. No drought has been felt; nor were there any injurious insects or sickness among the animals.

Tarlac.—Mangoes are plentiful, while the crop of other fruits is fair. The state of sugar cane, gabe, sweet potatoes, tobacco, etc., is good, notwithstanding the fact that some of these plants have been harmed to some extent by the prevailing drought. Epizoötia has caused some losses among carabaos and other domestic animals. At the capital the price of rice is ₱5 per picul.

San Isidro.—The farmers are hurrying their preparations for the planting of corn, which is to be effected as soon as the first rains fall. The products harvested during the month are sitao, patola, tomatoes, balsamine, etc., all of which are very dear in the market. Although hardly any mangoes have been gathered here, they are very cheap, owing to the large quantities which are being brought to this town from other places. The drought caused several plants, such as melons, tomatoes, and sitao, to wither, at least partially. Epidemic disease has appeared again among the animals, carrying off about 15 per cent of the hogs and 20 to 30 per cent of the poultry.

Arayat.—The farmers have nearly finished the planting of sugar cane and have prepared their land for the planting of corn, awaiting only the advent of the necessary rain. The price of palay (unhulled rice) is ₱2.20 per cavan and shows a tendency to rise. In the municipality of Arayat 25 carabaos have died, in that of Santa Ana 15, all victims of epizoötia.

Porac (Dolores).—Toward the end of the month the planting of corn and the digging of sweet potatoes have begun. The rain which fell on the 28th came very timely for the rice and sugar cane. There is sickness among the poultry, the losses amounting to about 10 per cent.

Olongapo.—The farmers are preparing their rice fields for sowing. Mangoes and bananas are plentiful. Although rain has been scarce the vegetation has not suffered seriously from the lack of water. Rinderpest has caused the death of about 40 carabaos.

Malolos.—The drought has damaged various crops to some extent and has likewise impeded the planting of corn in several places. Nevertheless, the actual state of the crops is generally fair.. There is an abundance of mangoes, but corn and tubers are scarce, at least in the capital. Sickness is responsible for the death of several hogs at Malolos, of one carabao at Baliuag, of 3 carabaos and about 100 hogs at Bulacan. The municipality of Santa Maria has likewise suffered severely from the same cause.

Balanga.—The amount of rice harvested is fairly satisfactory in general, though some people claim that they had too much refuse. The yield of sweet potatoes, watermelons, and tomatoes is likewise fair; but sugar cane has suffered from the lack of water. Rinderpest caused the loss of 5 carabaos in the beginning of the month, but since the 10th no new cases have occurred.

Silang.—The farm work of this month consisted in the preparation of the ground for rice, hemp, and corn. The rain which fell came very timely. The crops of sugar cane, hemp, and tobacco are fair. The price of rice is at present ₱6 per cavan, that of hemp ₱26 per picul.

San Antonio.—The farmers are busy preparing the higher lying fields for rice, hemp, and vegetables. Sugar cane is at present still growing, while tomatoes, watermelons, cucumbers, and squash are the products which are being gathered. The excessive heat of these days and the dryness have done harm in the fields, especially to the lowland rice. Mice and birds are likewise diminishing the rice crop, while wild hogs and monkeys are creating havoc in the other plantations.

Atimonan.—Owing to the great heat and drought which prevailed during this month, the crops have suffered severely; the cocos trees are everywhere dropping their leaves and newly formed fruit. The quantity of rice harvested is fairly good, though in some localities the stalks withered before the ears were ripe. Pineapples and bananas are at present plentiful, but the supply of watermelons is small. Copra is scarce; its price and that of hemp are the same as during the preceding months.

Batangas.—Taal has had an abundant crop of onions, Tanauan of garlic, and Batangas of sweet potatoes. Considerable quantities of these products have been shipped to Manila. Mangoes, prunes, lomboy, and nanca are now ripening and a few appear already in the market. The sugar cane is thus far doing well, but the drought affects it, and here and there its leaves are withering. The farmers are preparing the ground in order to be ready for the sowing of rice as soon as the rains begin. In several municipalities of this province, especially at Lobo, some hogs have died of sickness.

ESTADO GENERAL DE LAS COSECHAS.

Los productos que se cosechan durante el mes de Abril han dado en general buenos resultados. En la costa oriental de Sámar la cosecha de arroz ha llenado las esperanzas que se abrigaban en los meses precedentes. Del norte de Mindanao y del este de Luzón se asegura tienen razón de estar satisfechos del rendimiento de las sementeras de arroz. En la isla de Bohol en cambio un 50 por ciento de la cosecha de este cereal fué destruída por los insectos y ratones. También se sabe de otras determinadas regiones donde se ha perdido en todo ó en parte la cosecha de arroz, debido á los insectos ó á los roedores, ó á ambas plagas á la vez; así ha sucedido en los distritos de Caraga, Legaspi y Gubat. En el resto del Archipiélago la cosecha osciló entre mediana y buena.

El tabaco se perdió por completo, según ya se temía, en la parte media del valle de Cagayán. En la parte superior del valle, ó sea en la Provincia de la Isabela, la cosecha fué buena. Excepto en la mencionada región, puede decirse que el tabaco dió, en todas las regiones del Archipiélago donde se cultiva, buenos rendimientos. La Provincia de la Unión, por ejemplo, está de enhorabuena tanto por la cantidad como por la calidad de este producto, y sobre todo, por los buenos precios corrientes.

Los cocos han sido escasos en el Norte, vendiéndose á ₱7.50 el ciento en Ilocos Sur. También cuesta caro el maíz en el Sur, por haberse en general cosechado poco. El precio del azúcar está mejorando á lo menos para los vendedores.

El beneficio del abacá puede decirse que ha estado paralizado este mes, por razón de tener que ocuparse los labradores en la recolección de sus cosechas y en la preparación de los terrenos para la siembra del palay de secano, maíz y tabaco.

Casi en todo el Archipiélago se sufre ya de escasez de lluvia. En la parte norte de Cebú la cantidad de agua caída es inferior á la normal en el norte de Mindanao y en la costa occidental de Luzón, comprendida entre 14° 30′ y 16° 30′ latitud N., tan solo ha caído el agua suficiente para no sufrir los efectos de la sequía, los cuales estaba ya sufriendo la caña-dulce en Bataan y también en Bulacán. La sequía ha causado pérdidas de consideración en la parte sur de Cebú, en la isla de Panay, en Tayabas y en el extremo norte de Luzón. En todas esas regiones está paralizado el laboreo de los campos.

La langosta continúa infestando la Provincia de Antique, y ha aparecido asimismo en Janiuay, Provincia de Iloílo. También se han visto densas nubes de estos insectos en la costa occidental de Negros, entre Valladolid é Isabela. Hasta la fecha sin embargo es poco el daño que han causado. Más arriba se hizo ya mención de los daños causados en Bohol por los gusanos y orugas.

La epizotia y otras enfermedades continúan haciendo estragos entre toda clase de animales. En la isla de Basilan las aves de corral mueren de la enfermedad llamada "atay." En el norte de Mindanao se lamentan de las pérdidas de carabaos y aves caseras. La costa oriental de Sámar está sufriendo la pérdida casi total de animales, y en menos escala la costa occidental. En la parte norte de Cebú la epidemia lejos de disminuir, continúa haciendo progresos. En la vecina isla de Negros parece adquirir un carácter más virulento, de tal manera, que mata á los animales atacados á veces dentro 24 horas después de los primeros síntomas. En el pueblo de Murcia solamente, son ya 200 las víctimas desde principios del año. La parte sur de Luzón no está tan azotada; mas las provincias del centro y norte, como Zambales, Pampanga, Bulacán, Nueva Écija y Tárlac han sufrido pérdidas considerables.

NOTICIAS PARTICULARES.

DISTRITO I.

Borongan.—En la actualidad se está cosechando el palay en toda esta costa oriental de Sámar. La cosecha es buena y abundante. La actividad en el comercio de cóprax y abacá es poca en estos meses de la cosecha del palay. La epizotia continúa acabando con los pocos carabaos, vacas y caballos que pudieron salvarse en tiempos pasados.

Tacloban.—El estado del abacá, caña-dulce, coco, maíz, tomates y tubérculos en los pueblos situados al este y norte de Leyte es generalmente bueno, pero en Carigara la cosecha del palay ha sido deficiente por haber sufrido falta de agua y por los insectos, cuyo nombre no se ha podido averiguar. La epizotia continúa en el dicho pueblo causando daños con el mismo vigor que en los meses pasados; se avalúa la pérdida total en ₱1,300 aproximadamente. Semejante daño ha sufrido Caibiran. En los últimos días de este mes la zurra ha entrado en varias caballerizas de Tacloban, y otra enfermedad ha causado algunas víctimas entre los cerdos en Alángalan y Barugo. En Hinanungan la langosta ha hecho un poco de daño.

Ormoc.—Hubo regular cosecha de abacá, maíz y cópræx. Las lluvias han sido escasas, y sufren su falta el abacá y el maíz; en cambio, favoreció la preparación de los terrenos llamados "caiñgin," para la siembra del palay. No hubo langostas, y la enfermedad en los ganados apenas se nota.

Tubуran.—Los productos principales de esta región son abacá, tabaco, palay, maíz y caña dulce. Excepto la última, las demás cosechas están todavía creciendo en los campos, siendo el estado del abacá bueno, pero el de tabaco y palay sólo regular. Durante el mes de Abril las lluvias han sido bastante regulares y han favorecido al maíz y tabaco. No ha habido insectos dañinos; en cambio se ha propagado notablemente una enfermedad entre los ganados de labor.

Cebú.—Desde mediados de Marzo reina una verdadera sequía, á causa de la cual las faenas del campo en su mayoría están abandonadas. Debido á la sequía y al calor sofocante, muchas familias son atacadas de trancazo y calenturas malignas. Se ven pocas mangas este año, aunque es posible sea solamente por venir algo tardías; pues se ven bastantes árboles en floración.

Surigao.—Á mediados del mes se principió á cosechar el palay con resultados muy satisfactorios para los agricultores, siendo los rendimientos abundantes y de calidad superior; en todo mucho mejor que la cosecha del año anterior. Además de los trabajos que pide la recolección del palay, muchos están ocupados en el beneficio del abacá y la preparación de los terrenos para la plantación del tabaco. Ha habido algunas lluvias ligeras al principio del mes, por lo cual las plantas no han sufrido de la sequía; pero con todo, el mes ha sido un poco demasiado seco para plantar tubérculos. El beneficio del cópræx va aumentando, poco á poco, pero constantemente.

Tagbilaran.—Hubo cosecha de palay y maíz en Carmen, Vilar, y otros pueblos del centro. En Calape, Tubigon, Inabanga, Talibong, Getafe y Ubay cosecharon tubérculos de varias clases, abundancia de plátanos y algo de palay, pero muy poco maíz. En algunos de estos pueblos se perdió la cosecha en un 50 por ciento, por unos gusanos que no dejaban si no la pura cáscara de los granos. En otros sitios los gusanos y ratones contribuyeron á menguar la tan escasa cosecha. Mientras en Ubay fué perjudicial á las plantas la escasez de lluvia, en Carmen lo fué la cantidad excesiva. De Tagbilaran nada se puede decir en cuanto á cosechas de granos como arroz y maíz; se continúa importando el maíz desde Carcar, Sibonga (Cebú), y varios puntos de la isla de Negros. Se cotiza desde ₱2.60 á ₱3 el caván.

Butúan.—El palay está floreciendo y se espera una buena cosecha, porque la lluvia que ha caído en la primera quincena de este mes ha favorecido mucho el desarrollo del mismo. La enfermedad de las gallinas ha desaparecido por completo. El abacá, cuyo cultivo sigue su curso ordinario, se paga á ₱14.50 el pico. El precio del cópræx es de ₱9 á ₱10 el pico.

Balingasag.—En este mes murieron de varias enfermedades 4 carabaos, 1 vaca y algunas gallinas. Los agricultores están preparando los terrenos para la siembra del maíz, que tendrá lugar cuando empiecen las lluvias.

Caraga.—En este mes se comienza aquí á cosechar el palay temprano, del cual se esperaba una regular cosecha; pero ha sido muy menguada por varias causas, especialmente por los destrozos de las ratas, jabalíes y pájaros. La producción de abacá continúa en el mismo estado que durante el mes próximo pasado. La exportación de este producto durante el mes ha ascendido á más de 1,512 picos, y la de cópræx á más de 88 picos. Las mangas vuelven á echar flores. No se registran casos de enfermedad entre los animales.

Dávao.—Se están preparando los campos para la siembra de palay de sécano. El abacá está en buen desarrollo. Los árboles de manga ya están dando fruto, y hay esperanza de que se podrán exportar algunas cantidades de esta fruta á otras partes. Los demás artículos siguen lo mismo que antes. Durante los tres primeros meses de este año se han exportado los siguientes artículos:

Producto.	Enero.		Febrero.		Marzo.		Suma.	
	Cantidad.	Precio.	Cantidad.	Precio.	Cantidad.	Precio.	Cantidad.	Valor.
Abacá .... picos	1,088	₱24.50	2,833.68	₱24.00	1,375.80	₱23.50	5,297.48	₱126,995.62
Almáciga .... do	498.85	6.00	692.79	6.00	680.83	6.00	1,872.47	11,234.82
Biao .... do	387.57	9.50	363.59	10.50	306.48	10.00	1,057.64	10,564.42
Cuero .... quintales	7.5	40.00	2.5	30.00	2.65	50.00	12.65	507.50
Cópræx .... picos	14	6.50	49.5	7.50	21.13	8.50	84.63	641.85
Cera .... quintales	....	....	1.69	50.00	....	....	1.69	84.50

De donde se sigue que el valor total de productos exportados desde el puerto de Dávao durante estos tres meses ha llegado á ₱150,028.71. Para el mes de Abril los datos correspondientes son: Abacá, 2,665 picos á ₱22.50; almáciga, 590 picos á ₱5.50; biao, 369.76 picos á ₱9.50; y cópræx, 81 picos á ₱8.25; representando un valor total de ₱67,388.40.

DISTRITO II.

Cápiz.—En todos los pueblos de esta provincia se quejan los agricultores de la falta de lluvia. Hasta en las mismas huertas las plantas se secan y no puede la gente ni sembrar ni arar sus terrenos. En todas las iglesias católicas se hacen rogativas con procesiones para obtener lluvia.

San José de Buenavista.—En este mes de Abril, en que los camánchiles suelen dar frutas y las mangas producir flores, han dado aquéllos mucho menos de lo que suelen, y éstas han producido pocas flores y muy atrasadas. Algunos atribuyen esto á las lluvias del mes de Marzo; pero tal vez sea efecto de las persistentes rachas de los meses de Enero y Febrero. En cuanto á los sembrados, se han preparado ahora las tierras para semilleros de palay y para el maíz. Se ha cosechado un poco de maíz y además calabaza blanca, camote, gabe y uve. El precio del arroz es de 16–18 centavos la ganta. Las langostas van de una parte á otra de esta provincia.

Iloílo.—Los labradores están preparando el terreno para palay de secano y maíz, y esperando las lluvias para sembrar. La agricultura está bastante atrasada por la sequía, siendo la tierra demasiado dura para ser arada. Las pocas y muy limitadas siembras de tabaco parece que no han sufrido por falta de agua y la cosecha es regular. Las mangas han dado muy pocas flores. En Janiuay se ha sentido carestía de palay, y la gente se ha visto precisada á proveerse de otros puntos. También ha habido langostas, y la epizotia continúa causando estragos en los animales, habiendo muerto durante este mes un 20 por ciento de carabaos, cerdos y aves de corral. Ha habido asimismo víctimas entre los caballos, el ganado vacuno y las cabras.

Bacólod.—Á pesar de la sequía del mes de Abril, las plantaciones no se han resentido mucho; solamente se han secado algunas cañas-dulces sembradas últimamente. La enfermedad de los animales es fulminante, muriendo algunas de las víctimas en menos de 24 horas. En Murcia llega ya á 200 el número de cabezas de ganado perecidas desde el mes de Enero. Como consecuencia de esto, algunos hacenderos han dejado el cultivo de la caña-dulce y siembran palay por requerir éste menos labor y menos gastos. En el municipio de Valladolid la epizotia ha causado una pérdida de 20 por ciento entre el ganado vacuno, carabaos y caballos. El pueblo de Maao ha sufrido también por razón de enfermedades en el ganado. La cosecha de caña-dulce ha disminuido por los destrozos que han causado en Murcia las langostas y loctones en los meses pasados. Se han visto densas bandas de estos insectos en Valladolid, y se han extendido por los pueblos de La Carlota, Bago, Isabela, y los barrios de la Castellana y Maao, pero sin hacer grandes daños hasta ahora. En este último barrio se beneficia abacá en grande escala y de buena calidad, que se paga á ₱22–22.50 el pico.

Dapitan.—Los agricultores de terrenos altos están ocupados en la preparación de sus "caiñgin," y los de terrenos bajos en la roturación de sus semilleros, habiendo sido favorecidos por el tiempo. En este pueblo no se ha oído nada hasta ahora de casos de epizotia, mientras que en Oroquieta los animales de labor han sido diezmados por la enfermedad hasta tal punto, que las labores agrícolas están paralizadas. La variedad de papayas introducida de Colombo por el Hermano Costa, de la Compañía de Jesús, ha dado muy buenos resultados. Hay abundancia de esta fruta y se han enviado 15 sacos de ella á Cebú.

Isabela de Basilan.—Durante el mes de Abril se han cosechado piñas, plátanos y caña-dulce. De abacá sólo se han beneficiado unos 10 picos que han sido remitidos á Zamboanga á ₱25 el pico. En un terreno al Sur de este pueblo se han plantado no menos de 3,000 plantas de abacá. Los agricultores que se dedican al cultivo del maíz ya tienen sus terrenos preparados para la siembra que se verificará en el mes de Mayo ó Junio. Durante el mes de Abril han muerto unas 20 gallinas de la enfermedad "atay."

DISTRITO III.

Legaspi.—Varias plantas sufrieron por la escasez de agua de las últimas dos décadas del mes, principalmente el abacá, cuyas hojas comenzaron á perder su verdor, á lo menos en sitios donde carecían de la protección de árboles. Si la falta de lluvias continúa el mes entrante, muchos hacenderos aseguran la pérdida de una parte de sus plantaciones. Los señores presidentes municipales de Tabaco, Libog, Guinobatan y Tiui informan que las cosechas han sido buenas. No hubo insectos perjudiciales en los campos, ni enfermedad en el ganado.

Gubat.—En este pueblo comenzaron á cosechar el palay los últimos días del mes de Marzo, y tanto aquí como en Barcelona y Bulusan fué mala la cosecha, debido á los pajaritos llamados "maya" y "magabot" y también á insectos dañinos como "tayagao" y otros. Los precios en el mercado de este pueblo son: abacá, ₱14.25; arroz de Bayambang, ₱6.50; arroz de Saigon, ₱6.75 el pico.

Romblón.—Las cosechas han sido buenas en Santa Fé, y regulares en el pueblo de Cajidiocan. Se ha recolectado tabaco, camote y otros tubérculos. En Santa Fé la escasez de agua ha perjudicado algún tanto los productos agrícolas pero no impidió la siembra. No se han notado ni langostas ni enfermedades de los animales.

Calbáyog.—Continúa mejorando la producción del abacá en ésta población. Del palay, si bien ha habido muchas plantaciones y ha crecido muchísimo mejor que en los años anteriores, su cosecha ha sido muy poca y escasa, debido á los ratones, que los naturales llaman "gutá," los cuales han destrozado sementeras enteras, así como también varias plantaciones de camote. Continúa la enfermedad entre los caballos; de ella han muerto algunos en esta población.

DISTRITO IV.

Santo Domingo, Batanes.—Las siembras de uve y camote se hallan generalmente en muy buen estado en toda la isla, pero sobre todo el maíz sembrado en Diciembre y Enero, el cual se está cosechando actualmente. El poco palay sembrado en Febrero es lozano, así como también el que se plantó después de las lluvias recientes. El primero ya está formando espigas. Las cebollas y los ajos han dado buenos rendimientos, pero esto no obstante, la cantidad recogida no basta, por haber faltado semillas en el tiempo de la siembra. En el ganado vacuno ha habido algunas desgracias, muriendo de disentería algunos animales tanto de los recien nacidos, como de los mayorcitos. Esto se atribuye al hecho de que los pastos están muy secos, por no haber llovido durante el mes de Abril.

Aparri.—En este mes no se ha trabajado en los campos por estar éstos demasiado secos y áridos por falta de lluvia. Hay gran abundancia en el mercado, de calabaza, amargoso, berengena, repollo, tomate y legumbres así como frutas cosechadas en la localidad y en el interior. No ha habido enfermedades en los animales en general, ni plagas de insectos.

Tuguegarao.—La cosecha tanto de tabaco como de maíz en esta provincia es completamente nula, como ya se dijo el mes anterior. Con respecto al palay, parece que algo se puede esperar todavía, por más que los fuertes calores y la escasez de agua hacen temer que se malogren estas esperanzas. En el mercado se venden en abundancia mangas verdes, sandías, pepinos, melones y otras frutas del tiempo, como también grandes cantidades de tomates. Después de varios meses aparecieron en el mercado algunos racimos de plátanos, pero además de ser raquíticos, son muy caros. Según noticias, en la vecina Provincia de la Isabela hay buena cosecha de tabaco y se cree que los empleados de las distintas casas tabacaleras que existen en esta provincia, se trasladarán allá para comprar de dicho artículo. No ha habido ninguna enfermedad epidémica en los ganados y aves de corral.

Vigan.—Debido á la sequía de este mes no se ha sembrado ningún producto agrícola en el municipio de Vigan, pero se han cosechado maguey, síncamas, algodón, mangas, etc., en cantidades regulares. Sólo ha llovido una vez, el día 24, cayendo 47.7 mm. de agua en el espacio de una hora próximamente. De la epizotia sólo ha muerto un caballo durante este mes. En Lapog el estado de las cosechas es el siguiente: maguey, algo abundante; maíz, bueno; caña-dulce, mediana; camote, raquítico; índigo, raro. La epizotia va desapereciendo. En los municipios de Santa y Magsingal el estado de agricultura es semejante al de los anteriores, solamente que en el pueblo de Santa han perecido de epizotia carabaos, vacunos y cerdos, aunque en menor número que el mes anterior. En cambio el municipio de Narvacan ha sufrido severamente, llegando las pérdidas de animales á un 10 por ciento.

Candón.—Está ya para terminarse la cosecha de azúcar, así como también la siembra de caña-dulce. El precio del azúcar es de ₱1.80 el pico puesto en bodega. Los cocos son muy escasos, siendo el precio de ₱7.50 el ciento puestos en la playa. La sequía se ha dejado sentir en los sembrados, y los vientos han perjudicado á los árboles frutales, como mangas y ciruelas.

San Fernando, Unión.—La generalidad de los agricultores continúa en la recolección del tabaco; el resultado es hasta ahora muy satisfactorio. Se calcula que la cantidad recogida llegará á ser de 80,000 á 90,000 quintales. Los precios son los siguientes: primera calidad, ₱8–9 el quintal; segunda, ₱4–6; tercera, ₱2–3. Como se ve, los precios apenas pueden ser mejores. El estado de las demás plantaciones es también bueno y la cosecha de mangas ha sido abundante. Aquí no ha habido casos de epizotia; pero se dice que en un pueblo, en el sur de la provincia, han muerto algunos caballos, sin más información tocante al género de la enfermedad.

Bolinao.—Las cosechas de los pocos productos agrícolas recolectados durante este mes han sido regulares, excepto la de los árboles frutales, que ha sido bastante escasa, debido á las fuertes rachas de viento del año pasado. La poca lluvia de este mes no ha sido bastante para el buen desarollo de la caña-dulce. En Alaminos algunos carabaos se han puesto enfermos, pero no parece ser enfermedad epidémica; los demás pueblos se han visto libres de enfermedad entre el ganado.

Baler.—Se están cosechando palay, maíz y tubérculos; estos últimos prometen buen rendimiento, pero el palay sólo regular. No se ha sentido falta de agua, ni ha habido insectos dañinos ó enfermedades entre los animales.

Tárlac.—Hay abundancia de mangas y cosecha bastante regular de otras frutas. El estado de la caña dulce, gabe, camote, tabaco, etc., es bueno, no obstante que algunas de estas plantas han sufrido algo por la sequía. La epizotia ha causado varias pérdidas de carabaos y otros animales domésticos. El precio del arroz es de ₱5 el pico en la cabecera.

San Isidro.—Los agricultores se apresuran á terminar la preparación del terreno para poder sembrar el maíz en cuanto vengan las primeras lluvias. Los artículos recolectados durante este mes son: patola, tomate, ampalaya (amargoso), batao, batání y otros, los cuales se venden en el mercado al precio sumo. Las mangas, aunque procedentes de otros pueblos, pues aquí apenas se ha cosechado ninguna, abundan y son muy baratas. Debido á la sequía, algunas plantas empezaron á secarse, como la sandía tomates y sitao. Se registra de nuevo la epidemia entre los animales, llegando la pérdida á 15 por ciento en los cerdos y á 20 á 30 por ciento en las aves de corral.

Arayat.—Los agricultores casi han terminado ya la plantación de caña dulce y tienen preparados sus terrenos para sembrar el maíz; solamente esperan las lluvias. El precio del palay es de ₱2.20 el caván y muestra tendencia á subir. En el municipio de Arayat han muerto 25 carabaos de epizotia y en el de Santa Ana, 15.

Porac (Dolores).—Á fines de este mes ha empezado la siembra del maíz y la recolección del camote. La cantidad de agua caída el día 28 ha favorecido mucho las siembras de palay y caña dulce. Hay mortandad de aves de corral, muriendo un 10 por ciento de ellas.

Olongapó.—Los agricultores están preparando los terrenos para la siembra de palay. Se cosechan las mangas y plátanos en abundancia. Las lluvias si bien han sido escasas, la falta de agua no ha perjudicado á ninguna planta. La epizotia ha causado la muerte de unos 40 carabaos.

Malolos.—La sequía ha perjudicado algún tanto á varias plantas é impedido la siembra del maíz en algunos pueblos; pero el estado de las cosechas es regular en general. Hay abundancia de mangas; en cambio maíz y tubérculos escasean, á lo menos en la cabecera. Por enfermedades han muerto: cerdos en Malolos, un carabao en Baliuag, 3 carabaos en Bulacán. Santa María también ha sufrido grandes pérdidas por la misma causa.

Balanga.—El resultado de la cosecha de palay es regular, no obstante que algunos labradores se quejan de haber tenido muchas granzas. El rendimiento de camote, sandía, melón y tomates es también bastante bueno; pero la caña dulce siente la falta de agua. La enfermedad entre los ganados ha causado una pérdida de cinco carabaos al principio del mes; desde el día 10 no han ocurrido nuevos casos.

Silang.—En este pueblo se preparan los terrenos para la siembra de palay, abacá y maíz. Las lluvias caídas han sido muy oportunas. Las cosechas de caña dulce, abacá y tabaco son regulares. El precio del arroz es de ₱6 el caván; el del abacá de ₱26 el pico.

San Antonio, Laguna.—La gente se halla muy ocupada en preparar los terrenos de secano para la siembra de palay, abacá, legumbres y otras plantas. En la actualidad se cultiva la caña dulce y se cosechan tomates, sandías, pepinos y calabazas. El calor excesivo de estos días es nocivo á las plantas sembradas en los terrenos de regadío, especialmente al palay. Los ratones y gorriones perjudican al palay; los jabalíes y monos á otras plantas.

Atimonan.—Por el excesivo calor y la falta de agua de este mes, las plantaciones han sufrido mucho. Los cocos en general vense despojados de sus flores y tiernas frutas. El palay, en algunos puntos, se ha secado, sin poder madurar sus espigas: sin embargo todavía se ha recolectado una cantidad bastante regular. Abundan hoy en la población las piñas y los plátanos. Hay sandías en poca cantidad. El cóprax continúa escaso y tiene el mismo precio que en los meses anteriores; lo mismo se puede decir del abacá.

Batangas.—La cosecha de cebollas en Taal, la de ajos en Tanauan, y la de camote en Batangas ha sido buena, y se han exportado á Manila dichos artículos en bastante cantidad. Las mangas, ciruelas, lomboy y nanca van madurando y se venden ya á menudo en los mercados. Las plantaciones de caña dulce se presentaban lozanas, mas por la escasez de lluvia están padeciendo mucho y en algunas partes empiezan á secarse las hojas. Los labradores se dedican á preparar el terreno para sembrar palay tan pronto como empiecen las lluvias. En varios pueblos de esta provincia, especialmente en Loboó, ha habido mortandad de cerdos y aves de corral.

O

BULLETIN FOR MAY, 1907.

METEOROLOGICAL BULLETIN FOR MAY, 1907.

By Rev. José Coroñas, S. J.,
Assistant Director of the Weather Bureau.

GENERAL WEATHER NOTES.

Pressure and temperature.—The mean pressure for this month throughout the Philippines is higher than that of May of the preceding year, the difference being more pronounced for stations in the northern part of the Archipelago. This is due, no doubt, to the fact that during May, 1906, two typhoons crossed Luzon Island, whereas this year no typhoon has visited the Archipelago during the whole month, and nothing has been observed but a slight influence of some distant depressions or cyclones. Nevertheless, if we compare the mean pressure for the last month, as shown in the following table, with the normal for May, we will find the difference to be rather very small; so in Manila, for instance, it amounts only to + 0.01 millimeter. The greatest barometric readings were registered in almost all of our stations on the 12th; the lowest took place on the 1st in the southern part of the Philippines, and on the 24th in the northern part.

The mean monthly temperatures are somewhat lower in general than those for May, 1906; yet Manila, Dagupan, and San Isidro give us an average a little higher than that of last year. If compared with the normal, the monthly mean for Manila is higher by 0.2° C. The table of meteorological observations for Manila shows that the days 2–9 were the hottest of the whole month, their absolute maximum temperature oscillating between 36° C. and 37.2° C. The latter was registered on the 2d. The absolute maximum temperature of all the second-class stations belongs to San Isidro, where the thermometer recorded on the 10th a reading as high as 40.6° C.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS, MAY, 1907.

Station.	Pressure.						Temperature.					
	Mean.	Departure from May, 1906.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from May, 1906.	Highest.	Day.	Lowest.	Day.
	mm.	*mm.*	*mm.*		*mm.*		°*C.*	°*C.*	°*C.*		°*C.*	
Tagbilaran	758.24	+0.50	759.37	20	757.33	1	27.7	−0.7	34.2	22	22.6	29
Cebu	58.82	+ .83	59.83	12	57.91	1	27.7	− .8	33	24,28	----------	----------
Iloilo	58.19	----------	59.38	20	56.99	1	27.9	----------	35	9,10	23.3	23
Ormoc	58.25	+ .70	59.25	20	57.33	1	26.3	− .8	33.5	5	20.7	6
Tacloban	58.83	+ .74	60.06	12	57.94	23	28	− .1	35.5	25	24.2	7,9
Calbayog	58.92	----------	60.10	12	58.02	1	27.2	----------	36.5	24	21	2,9,22
Legaspi	58.96	+1.19	60.43	12	57.83	24	28.1	0	36.5	24	20.5	31
Atimonan	58.59	+1.09	60.23	12	57.18	23,24	28.8	− .1	36.9	24	22.6	28
Olongapo	58.55	+1.42	60.20	12	57.22	24	27.5	− .7	36.5	5	21.2	27
San Isidro	58.65	+1.59	60.18	5	57.19	24	28.7	+ .6	40.6	10	21.7	28
Dagupan	58.25	+1.55	59.80	12	56.94	23	28.4	+ .2	38.3	9	22.1	4
Vigan	58.73	----------	60.42	12	57.07	24	28.3	----------	----------	----------	21.7	28
Tuguegarao	58.60	----------	60.70	12	56.96	24	28.6	----------	38.8	10	----------	----------
Aparri	58.71	+1.90	61.08	12	56.81	24	27.3	− .2	35	24	21	27

Precipitation.—Although this month was not as dry as last April, yet the rains were by no means so abundant and frequent as they have been in other years, and most especially in May, 1906. A glance at the following table will show that Cebu, Davao, Isabela de Basilan, and Bacolod are the only stations which have reported an amount of rainfall superior to that of the former year. The total monthly precipitation for Manila has been less than the normal by 39.9 millimeters.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF MAY, 1907.

District.	Station.	Total.	Departure from May, 1906.	Rainy days.	Departure from May, 1906.	Greatest rainfall in a single day.	Day.
		mm.	*mm.*			*mm.*	
I	Yap	234.1	—114.7	20	— 7	49	12
I	Davao	222.8	+ 41.9	9	+ 1	48.8	1
I	Caraga	102.7	— 55.1	8	— 6	48.8	13
I	Butuan	91.4	------	13	------	42.2	12
I	Tagbilaran	32.7	— 46.6	10	0	10.4	12
I	Maasin	48	— 84.1	7	0	11.4	4
I	Cebu	101	+ 6.7	10	— 2	34.5	4
I	Tuburan	42.8	— 24.7	8	+ 1	13.5	26
I	Ormoc	93.1	— 50.8	16	+ 6	40.4	21
I	Tacloban	59.5	— 88.9	10	— 4	22.6	13
I	Borongan	94.9	—100.2	13	— 4	15.7	12
II	Isabela, Basilan	121.4	+ 38.9	15	+ 3	17.8	14
II	Zamboanga	38.1	— 45.5	4	— 5	15.2	13
II	Dapitan	30.3	------	10	------	5.3	13
II	Bacolod	154.7	+ 34.4	12	+ 3	73.4	11
II	Iloilo	27.8	------	9	------	16	15
II	S. Jose Buenavista	67	—105.2	8	— 5	13.2	14, 23
II	Cuyo	103.2	— 71.9	10	— 1	26.4	19
III	Sumay, Guam	101.4	+ 88.7	19	+14	17.8	8
III	Calbayog	58.7	—470.5	14	— 2	13	4
III	Palanoc	34.1	— 91.9	9	+ 5	12.7	17
III	Romblon	56.2	------	6	------	23.4	19
III	Gubat	87.8	—158.1	11	0	21.3	20
III	Legaspi	101.3	— 58.6	11	+ 2	31.7	18, 30
III	Nueva Caceres	53.1	------	3	------	29.7	21
IV	Batangas	22.3	------	3	------	18	11
IV	Atimonan	24.5	—421.3	4	— 4	9.1	11
IV	Silang	59.2	—128.8	6	— 2	18.5	19
IV	S. Antonio, Laguna	66.4	—228.4	12	— 1	16.3	20
IV	Corregidor	55.4	—381.2	4	— 7	31	26
IV	Manila	62.2	—296.2	8	— 5	13.2	13
IV	Balanga	16.1	—498.8	7	— 8	3.6	26, 27
IV	Olongapo	89.8	—606.5	12	0	26.2	21
IV	Malolos	30.7	------	9	------	9.1	2
IV	Porac	140.5	—734.7	10	— 5	91.4	11
IV	Arayat	37.6	—410.6	8	— 4	10.9	27
IV	San Isidro	54.5	—464	6	—10	31.7	23
IV	Tarlac	158.2	—320.4	15	+ 1	43	23
IV	Baler	210.7	------	6	------	87.9	5
IV	Dagupan	130.3	—791.5	11	— 5	51.3	24
IV	Bolinao	243	------	15	------	58.7	27
IV	Baguio	400.6	—997.2	18	— 2	68.6	22
IV	Vigan	243.4	------	12	------	96	28
IV	Tuguegarao	68.3	—131.3	11	— 1	29	19
IV	Aparri	46.2	—131.3	8	— 1	17.8	19
IV	Santo Domingo	294.2	—382.8	18	+ 8	52.5	30

DEPRESSIONS AND TYPHOONS.

During this month there has been no typhoon or atmospheric depression of any importance either in the Carolines and Ladrones Islands or in the Philippines. Several distant depressions, originated over the Continent or not far from Formosa or the Meiacosima Group of islands, have exerted a little influence on the winds and barometers of our stations, especially of those of Santo Domingo (Batanes Islands) and northern Luzon. We will only mention three of them, whose path can be easily followed by means of the observations now available from Japan and the Liukiu Islands. A considerable development was acquired by two of these depressions before reaching Japan.

According to the weather maps of the 9th, we see that a depression was forming east of Formosa in the early morning of that day. It advanced rapidly to NE, deepening at the same time, passed near southern Kiusiu during the night, entered the coast of southeastern Japan in the afternoon of the 10th, and moved into the Pacific on the 11th.

The other depression seems to have been formed in the neighborhood of southern Formosa in the early morning of the 16th. Moving northeastward, it traversed the Eastern Sea on the night of the 16th and the morning of the 17th. The cyclonic center, greatly developed, crossed northern Kiusiu and southwestern Nippon Island on the 17th, and after traveling along the Sea of Japan it passed southern Sakhalin the afternoon of the 19th and moved away into the Okhostk Sea on the 20th.

The third depression originated, it seems, over the Continent on the 22d; it crossed the Eastern Sea on the 23d, moving eastward, and passed into the Pacific the night of the same day.

HAIL ON MAY 30.

For the information of our readers we insert here the following report received from Mr. Pio Santos, the meteorological observer at Calbayog, Samar, concerning a shower of hail which fell on May 30 on some heights of said island. This is a phenomenon of extremely rare occurrence in these Islands. The observer writes:

The Rev. Father Rector of St. Vicent de Paul's College, Calbayog, who has just returned from some hamlets in the north, sends me the following note:

"According to my watch, it was 4 p. m. of May 30, 1907, when a cloud charged with hail and rain burst over the heights of Tarabucan and Caybago, in the municipality of Oquendo [20 kilometers northeast of Calbayog]. The hail lasted about three minutes and ended in a deluge of rain. The size and shape of the hailstones were those of small pebbles; some cylindrical, others oblong; some appeared conical, this form resulting from their impact against the ground. The oldest inhabitants of the region aver that they never saw or heard of an occurrence like this. They now refer to the phenomenon as the *stone rain.*"

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[ϕ=14° 34′ 41″ N; λ=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied,—1.72 mm.]

Date.	Pressure, mean.	Temperature. Open air.[2] Mean.	Temperature. Open air.[2] Maximum.	Temperature. Open air.[2] Minimum.	Underground. 0.25 meter. 8 a. m.	Underground. 0.25 meter. 2 p. m.	Underground. 0.50 meter. 8 a. m.	Underground. 0.50 meter. 2 p. m.	Underground. 1.50 meters. 8 a. m.	Underground. 2.50 meters. 8 a. m.	Relative humidity, mean.	Vapor pressure, mean.	Evaporation. Free exposure, total.	Evaporation. Shelter (total).
	mm.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	Per ct.	mm.	mm.	mm.
1	757.42	29.1	34.4	23.7	32.2	35.2	32.8	33.3	29.3	28.2	73.8	21.7	9.4	4.5
2	57.96	30.1	37.2	24.3	32.8	36.1	33	33.8	29.5	28.3	66.3	20.4	10.5	5.5
3	58.82	29.1	36	24	33	35.2	33.1	33.6	29.7	28.4	62.2	18.2	10.2	4.9
4	59.22	29.2	37	22.5	32.1	35	32.9	33.2	29.8	28.1	60.4	17.6	12.2	6.8
5	59.31	30	36.8	23.5	32.1	35.3	32.8	33.4	30	28.6	61	18.8	12.8	5.7
6	58.46	29.4	37	22.3	32.1	35.2	32.8	33.3	29.9	28.5	64.5	19.3	10	5.4
7	58.47	30	36.8	24	32.8	35.7	33	33.3	29.9	28.8	65.3	20.1	10.3	5.3
8	58.40	29.3	36.4	22.7	32.9	35.8	33.1	33.7	30	28.7	64.4	19	9.6	4.8
9	57.88	29.6	36.8	21.5	32.1	36.2	33	33.9	29.9	28	55.4	16.2	11.1	6
10	58.21	29.5	34.8	23.7	33	35.9	33.2	33.9	30.1	28.8	68.4	20.9	10.7	5.4
11	58.80	30.1	35.9	25.5	33.3	36	33.4	33.9	32	28.8	67.4	21.1	8.9	4.5
12	60.15	27.4	33.4	23.6	33	33.8	33.6	33.7	30.1	28.9	76.1	20.5	7.4	4.2
13	59.68	27.2	33.1	22.6	31.2	33.7	32.7	33	30.1	28.8	77.8	20.7	13.3	7.3
14	58.69	29	34.4	22.7	30.3	33.2	32	32.3	30.2	29	68.3	20.1	9.2	4.4
15	58.40	28.2	33.9	24	31	33.8	32	32.7	30.3	28.8	74.8	21	9.5	5.6
16	57.79	28.9	33.3	23.7	31.3	34.1	32	32.6	30.2	29	74.6	21.8	7.2	3.6
17	57.77	29.3	33.4	24.3	31.7	34.7	32.3	32.9	30.5	29	76.3	22.9	8.2	3.9
18	57.93	28.7	33.5	24.6	32.2	35	32.5	33.2	30.3	29	79.6	23.1	9.3	4.6
19	58.63	27.7	33.6	24	31.6	32.6	32.6	32.6	30.1	29	85.1	23.4	5.2	2.7
20	59.40	28.1	32.1	24.1	30.3	32.4	31.9	32.2	30.3	29	81.5	22.9	5.4	2.6
21	59.46	28.2	32.3	23.5	30.6	33	31.6	32.1	30.4	28.6	78	22	6.8	3.2
22	58.20	28.9	33	24.2	30.9	33.8	31.7	32.3	30.4	29	76.8	22.5	6.9	3.6
23	57.27	29.4	32.7	25.3	31.2	33.6	32	32.3	30.6	29	77.2	23.4	7.8	4
24	57.20	29.3	33.3	25	31.3	33.9	32	32.4	30.2	29.1	76.8	23.1	8.7	4.4
25	58.48	28.7	31.8	24.1	31.3	32.7	32.2	32.3	30.3	29.2	79.4	23	6.9	3.7
26	58.95	27.6	32.3	23.3	30.1	32.2	31.5	31.8	30.3	28.9	80.7	22.1	7.3	3.6
27	58.74	26.9	31.6	22.8	30.1	31.7	31.3	31.6	30.2	29.1	79.7	20.9	7.5	4.3
28	57.91	28.5	32.8	22.7	29.6	32	31	31.4	30.2	29.1	75.8	21.8	6.9	3.4
29	58.06	29.2	32.9	23.9	30.2	32.7	31.2	31.7	30.3	29.1	75.8	22.6	9.2	4.5
30	58.41	29.2	33.9	24.4	30.9	33.2	31.5	31.9	30.2	29.1	73	21.7	10.2	4.9
31	57.62	28.3	33.7	23.8	31.3	33.3	31.9	32.1	30.4	29.2	76	21.5	9.2	4.4
Mean	758.44	28.8	34.2	23.7	31.6	34.1	32.3	32.8	30.2	28.8	72.7	21.1	9	4.6
Total													277.8	141.7
Departure from normal	+0.01	+0.2	+0.8	—0.3							—3.1	—0.7	+41.2	

Date.	Wind. Prevailing direction.	Wind. Total movement.	Wind. Maximum hourly velocity.	Wind. Direction at the time of the maximum velocity.	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Sunshine.	Rainfall.	Miscellaneous.
		Km.	Km.		0–10.			h. m.	mm.	
1	SW	250 5	23.5	SW	5.2	Ci. NW	Cu.	11		≡° a. p. ⟨ p.
2	SE	231	26.5	SE	5.1	Ci. W	Cu. E	9 20		≡° a. p. ⛈° ⟨² p.
3	NW, ENE	246	21.5	SE	6.9	Ci.	Cu. E	10 25		≡° ◯° a.
4	E	219	26.5	SE	4.2	A.-Cu. E by S	Cu. E	10		≡° a.
5	SE	252	22.5	SE	4.8	A.-Cu. NE by N	Cu. ESE	10 25		
6	SE	243	20	SE by S	2.8	A.-Cu.	Cu. ESE	11 10		≡° a.
7	SE, SW	188.5	19.5	WSW	3.7	A.-Cu. E	Cu. E	10 50		≡° a. ⊤ ⟨ ◯° p.
8	SE	201.5	25	SE by S	2.3		Cu. SE, E	11 10		≡° a. ⟨ p.
9	SSE, SE	140.5	17.5	SSE	1.9	Ci.-S.	Cu. E	11		≡° a.
10	SSW	199	23	SW by S	3.2	Ci.-S. E	Cu.	10 50		≡° a. p. ⛈ p.
11	SE, W	198	18.5	SE	6.2	Ci.-S. E	Cu. SE, SW	8 30		≡° ◯ a. ⊤ ⟨ p
12	Variable	81	20	N	7.6	Ci.-S. ENE	Cu. E by N	4 25	4.8	≡° ◯° ⛈° ●
13	ESE	131	17	E	8.1	Ci.-S. WNW	Cu. E	7 35	13.2	≡° a. ⊤ ↙ ● ⟨ p.
14	SE, W	144.5	14	W	5.6	Ci.-S. N, E	Cu.	10 20		≡° a. ⊕ ⟨ p.
15	WNW	168	22	ENE	5.2	Ci. N	Cu. NNE	9		≡° a. ⛈ d. p.
16	SW	230.5	24	SW	3.8	Ci. E	Cu. S by E	10 05		≡° a. p. ⟨ p.
17	WSW	272	30	sw by w	7.3	Ci.-S. NE	Cu.	9 20		≡° ⊕ ◯° a. ⟨ p.
18	SW	242.5	29.5	SW	7.4	Ci.-S. NE	Cu.	8 25	13.1	≡° ◯° ⛈ ↙ ●
19	NNE, NW	140.5	17	NW	9.4	Ci.-S. E	Cu.-N.	0 45	5.2	≡° a. ⛈ ● p.
20	W	144	20	W	8.4	Ci.-S. NE	Cu. SE by E	8 05		≡° a. p. ⛈ ◡ p.
21	E, SW	213.5	21.5	SW	7.7	Ci.-S. E by S	Cu. E	6 45		≡° a. ⛈ p.
22	WSW, SW	303.5	29	SW by W	7.2	Ci.-S. N	Cu. SW by W	9 20		≡° ◯ a. ⛈ ◡ p.
23	WSW	336	32.5	SW	4.5	Ci.-S. SW by W	Cu. W	9 45	9.2	≡° ● ◠ ⛈ ⊕
24	WSW	308	33	WSW	8.2	Ci. NE by N	Cu. W	8		≡° a. ⛈ ◠ p.
25	WSW	316.5	29	WSW	9.7	Ci.-S. NE by E	Cu. S, SW	4 05	5.5	≡° ● a. ◯ ⛈ p.
26	WSW	347	38.5	WNW	7.1	Ci.-S. S by W	Cu	6 50	10.3	≡° ● a.
27	WSW, WNW	208	24	WNW	8.4	Ci.-S. ENE	Cu. SW	5 05		≡° a. ⛈° ◡ ◡ p.
28	WSW	330	32.5	WSW	8	Ci.-S. N by E	Cu.	7 25		≡° a. ⛈ ◯ p.
29	WSW	372	34	WSW	7.3	Ci.-S. N	Cu. SW by W	9 15		≡° a. ⛈° ◯ p.
30	W	273.5	28	WSW	7.4	Ci. N by E	Cu. SW by W	8 20	0.9	≡° ● ◯° a. ⟨ p.
31	SE	203	21	WSW	9.1	Ci.-S. N	Cu. S by E	7 20		≡° a. ◯ ⛈ d p.
Mean		230.1	24.5		6.2			8 33		
Total								264 50	62.2	
Departure from normal		—2.6			+0.7			+27 07	—39.9	

[1] All the mean values given in this table are deduced from hourly observations.
[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

TAGBILARAN.

[ϕ=9° 38′ N; λ=123° 53′ E; barometer above sea, 21.8 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.					Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.		Lower.			
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.					mm.	
1	757.33	27.5	31	23.3	76	SE	1.3	2.7	Ci.-S.		Cu.	E	------	
2	57.47	27.9	31.5	24.5	75.2	SE	1.8	3.8	Ci.-S.		S.-Cu.	N	------	
3	58.05	27.4	30.9	22.8	73.3	SE	1.7	3.8	Ci.-S.		Cu.	N, E	------	
4	58.03	26.8	32.1	23.8	78.5	NNE	1	6.3	Ci.-S.		Variable		3.1	●° a. ⌈↯ p.
5	58.64	27.6	34.1	23	75.7	N	1.7	4.3	Ci.		Cu.-N.	E, NE	------	⊤° p.
6	58.14	27.6	32.9	23.1	77	NNE, SW	1	2.3	Ci.-S.		Cu.	E	------	
7	58.12	27.8	34	23.1	72.8	SE	1.2	2.3	Ci.-S.		Cu.	E	------	
8	57.90	28.1	32.5	23.9	72.2	SE	1.2	5.2	Ci.-S.		Cu.	E, NE	------	
9	57.45	28	33.8	23	72.8	N, SE	1.3	5.2	Ci.-S.		Cu.	E	------	↯° p.
10	57.97	28.3	32.6	24.1	75.2	SE	2.2	6.7	Ci.-S.	NE	Cu.	E	5.7	● p.
11	58.26	27.7	30.5	24.2	80.2	NNE	1.3	6.2	Ci.-S.		S.-Cu.	NE	------	↯° p.
12	59.20	27.3	32.1	24.4	80.5	SE	1.2	7.3	Ci.-S.		Cu.-N.	E	10.4	●° a. ⌈↯^{2} p.
13	58.74	27.9	32.2	23.8	77.2	N	1.2	8.2	Ci.-S.		Cu.-N.	E	------	↯ p.
14	58.24	27.6	31.5	24.2	76.8	NNE, SE	1	8.3	Ci.-S.		Cu.-N.	E	------	
15	57.96	27.5	30.5	24	79	SE	1.2	7.2	Ci.-S.	NE	Cu.	NE	.5	⌈↯ p.
16	57.66	27.8	31.5	23.8	81.6	NNE, SE	1.2	7.7	Ci.-S.		Cu.-N.	NE	1.8	⌈↯ p.
17	57.98	27.5	30.1	24.8	81.3	SE	1	8.8	Ci.-S.		Cu.-N.	NE, E	7.6	⌈↯ a. ↯ p.
18	58.14	27.8	31.4	24.2	80	SE	1.2	6.5	Ci.-S.		Cu.	NE	------	↯° p.
19	58.53	27.2	31.7	24.2	83.4	NNE	1.2	7.8	Ci.-S.	N	Cu.-N.	NE	.1	d° a. ↯ p.
20	59.37	27.5	33.5	23.2	80.8	SE	1.5	7.2	Ci.-S.		Cu.-N.	NE	2.3	⌈↯ a. ↯° p.
21	59.31	27.4	33.8	24.4	80.3	NNE	1	6.2	Ci.-S.		Cu.-N.	NE	1	d p. ◡°
22	58.26	26.9	34.2	24.3	82.8	NNE, SE	1.3	6.5	Ci.-S.		Cu.-N.	NE	------	⊤° ↯ p. ◡^{2}
23	57.56	27.6	30.8	24	79.7	SE	1.3	6.3	Ci.-S.		Cu.-N.	NE	.2	d a. ⊤ ↯ p. ◡°
24	57.40	28.4	31.5	24.6	78.5	NNE, SE	1.3	7	Ci.-S.		Cu -N.	NE	------	↯ a.
25	58.96	27.8	29.6	23.4	81.1	SE, NNE	1.3	6.8	Ci.-S.		Cu.-N.	E, SW	------	◡
26	59.10	28.5	30.8	24	76.3	SE	1.3	6	A.-Cu.		Cu.-N.	NE	------	↯ p.
27	58.82	28.5	31	24	73.4	SE	1.2	5.7	Ci.-S.		Cu.	WSW	------	↯ a. ◡
28	58.18	28	33.3	23.7	76.9	NNE, SE	1.3	4.5	Ci.-S.	N	Cu.	WSW	------	
29	58.45	27.9	33.4	22.6	78.3	NNE, SE	1	5.5	Ci.-S.		Cu.-N	SW, ENE	------	⊤° p. ◡
30	58.43	27.8	30.7	23.6	77.2	NNE, SE	1	7.8	Ci.-S.		Cu.-N.	NE	------	⊤° a. ↯ p.
31	57.79	28	33.5	24	75.3	NNE, SE	1.2	5.5	Variable		Cu.-N.	E	------	↯ a. ⊤° p.
Mean	758.24	27.7	32	23.8	77.7	------	1.3	6	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		32.7	

CEBU.

[ϕ=10° 18′ N; λ=123° 54′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temp. mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind prevailing direction.	Force (mean).	Clouds amount (mean).	Upper.	Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.				mm.	
1	757.91	28	32	23.8	77.5	Variable	0.7	3.3	Ci.	Cu.	NNE	------	≡ a.
2	58	28.4	31.4	25.9	77.7	ENE	.3	3.8	Ci.	Cu.	E, N	------	
3	58.66	27.9	31	24.9	77.9	E	.3	3.7	Ci.	Cu.	NE	0.5	≡ p a. ↯ p.
4	58.86	26.5	29.5	23.6	84	E, NE	.5	6.2	Ci.-S.	Cu.-N.	E	34.5	Ω ≡ ●^{2} a.
5	59.31	28	30.6	25.5?	77.2	E	.7	3.2	Ci.	Cu.	E	------	Ω^2 ≡ a. ∞ p.
6	58.77	27.5	31.2	23.9	78.2	E	.5	2.7	Ci.	Cu.	E	------	Ω^2 ≡ a. ∞ p.
7	58.66	27.9	31.5	24.5	77.2	E	.5	2.8	Ci.	Cu.	NE	------	Ω ≡ a. ∞ ↯ p.
8	58.68	27.9	31.9	24.9	79	Variable	.5	3.2	Ci.	Cu.	E	------	Ω ≡ a.
9	58.16	28.2	31.8	24	75	E	.5	3.3	Ci.	Cu.	E	------	Ω ≡ a.
10	58.50	28.2	32	23.9	79.5	ENE	.5	5.7	Ci.	Cu.	E	------	Ω ≡ a. ⌈↯ p.
11	59.05	27.9	32.5	23.9	79.8	ENE	.7	5.5	Ci.-S.	Cu.	E	------	≡ ⌈↯ a. ↯ p.
12	59.83	28.8	31.9	25.9	77	E	.5	5	Ci.-S.	Cu.	E	------	Ω ≡ a. ↯ p.
13	59.71	28.2	31.6	24.6	77.8	ENE	.7	5.3	Ci.	Cu.	E	------	Ω ≡ a ↯ p.
14	58.86	27.6	31.4	24.5	79.7	E	.3	4.8	Ci.-S.	Cu.	ENE	------	≡ ○ a. ↯ p.
15	58.46	27.8	31.9	24.5	79.1	SE	.2	6	Ci.	Cu.	ENE	------	≡ a. ⊤ ↯ p.
16	58.28	28	32.4	24.6	82.5	S	.2	6.8	Ci.	Cu.	SSW	3	≡ ↯ a. ⌈↯ p.
17	58.49	27.1	29.9	25	86.2	S	.4	7.2	Ci.-S.	Cu.-N.	SW	1.5	≡ a. ⌈↯ p.
18	58.59	26.6	32	23.7?	84.5	SE	.2	4.3	Ci.	Cu.	N	16.3	Ω ≡ a. ⌈↯ p.
19	59.04	27.4	32.2	23?	82.8	S, SW	.3	5.7	Ci.-S.	Cu.	NNE	------	Ω^2 ≡ a. ∞ ↯ p.
20	59.78	27.2	32	25.1?	86	S	.5	6.3	Ci.-S.	Cu.		18.5	≡ ⊤ ↯ a. ⌈↯ p.
21	59.73	27.2	31.9	23.2	84.5	Variable	.7	5.3	Ci.	Cu.		------	Ω^2 ≡ a. ⊤ ↯ p.
22	58.76	27.2	32.5	23.8	81	Variable	.5	6.3	Ci.-S.	Cu.-N.	N, WSW	4.3	Ω ≡ a. ⌈↯ p.
23	58.10	27.3	31.5	24	84.2	S	.2	4.8	Ci.-S.	Cu.	N	------	Ω^2 ≡ a. ⊤ ↯ p.
24	58.04	27.9	33	23.9	80.8	SW quad.	.5	3.8	Ci.	Cu.	SE	------	Ω ≡ ⊤ a. ↯ p.
25	59.33	28.1	30.9	24.4	81.2	SSW	.6	5	Ci.-S.	Cu.	S	11.2	≡ ○ a. ⌈↯ p.
26	59.54	27.3	32	23.8	83	SW quad.	.5	4.5	Ci.	Cu.		------	≡ ⊤ ↯ a. p.
27	59.25	27.8	32.3	24.2	81.6	S	.3	4.7	Ci.-S.	Cu.	W	------	Ω^2 ≡ a. ◡
28	58.72	28.3	33	25	80.7	S, SE	.3	3.7	Ci.	Cu.		------	Ω ≡ a.
29	58.92	28.2	32.9	25	80	S	.3	4.7	Ci.-S.	Cu.		7.9	Ω ≡ ⌈↯ a.
30	59	28.4	32	25.3	78.2	E	.2	5	Ci.	Cu.	E	------	Ω ≡ a. ↯ p.
31	58.37	27.3	31.5	23.6	79.8	NE, E	.5	4	Ci.	Cu.	E	3.3	≡ ⌈↯ a.
Mean	758.82	27.7	31.7	24.4	80.4	------	.4	4.7	------	------		------	
Total	------	------	------	------	------	------	------	------	------	------		101	

[1] All the mean values given in these tables are deduced from six daily observations.

METEOROLOGICAL DATA, ETC.—Continued.

ILOILO.

[ϕ=10° 41′ N; λ=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.					mm.	
1	756.99	28.5	34.4	24.5	72.5	SW	0.8	1.7	Ci.		Cu.			
2	57.30	28.3	33.9	24.9	72.2	N, NE	1.3	3.3	Ci.		Cu.		------	
3	57.88	28.5	33.4	25	71	N, NE	1.8	2.5	Ci.		Cu.		------	
4	58.08	27.7	32	24.9	76.3	N, NE	1.3	4.8	A.-Cu.		S.-Cu.	NE	0.3	d. a. ⊤ ϟ p.
5	58.22	28.7	33.7	24.5	72	N, NE	1.5	2.8	Ci.		S.-Cu.		------	
6	57.99	28.9	34.9	25.1	71.3	N, NE	1.2	2.8	Ci.		S.-Cu.		------	d° a.
7	57.98	28.4	34.8	25.1	74.6	N	.7	3.8	A -Cu.		S.-Cu.		------	d° a. ϟ p.
8	57.79	28.5	34	24	72.3	NE	.8	3.2	Ci.		S.-Cu.		------	⊤ p.
9	57.43	29.1	35	25.3	70.3	N, NE	1.3	2.3	A.-Cu.		S.-Cu.		------	⊤ p.
10	57.99	27.5	35	24.6	77.8	SW	1	5.2	Ci.		Cu.		.3	d. ⊤ ϟ ⌒ p.
11	58.39	27.3	33.5	24.1	76.7	N, NE	.8	7.7	A.-Cu.		S.-Cu.		.3	⊤ d° p.
12	59.02	28.8	33.4	25	72.3	N, E	1.5	4.5	Ci.		Cu.		------	ϟ p.
13	58.84	28.1	33.6	25.6	76.1	N, NE	1.5	6.3	A.-Cu.		S.-Cu.	NE	------	⊤ ϟ p.
14	58.16	28.7	33.6	25	71.6	N, NE	1.7	5.5	Ci.-S.		S.-Cu.		------	ϟ p.
15	57.95	27.8	34.9	25.2	77.2	NE	.7	5	A.-Cu.		Cu.-N.		16	⌈ϟ p.
16	57.61	27.5	31	24	82.2	SW	1.2	7.2	A.-Cu.		Cu.			d. a. ϟ p.
17	57.82	27.5	31	24.7	82.7	SW	1.5	6.5	A.-Cu.		Cu.		------	ϟ a. p d.
18	57.97	27.5	31.5	24.8	82.7	SW	1	7.2	Variable		Cu.		4.8	⌈ϟ p.
19	58.57	27	30.8	24	83.5	SW	.8	7	A.-Cu.		S.-Cu.		------	⊤ ϟ p. ∪
20	59.38	27.4	30.9	24.7	79.2	SW	1.3	8	A.-Cu.	NE	S.-Cu.		1.5	⌈ϟ a. ⊕
21	59.28	26.8	31.9	24.1	82.2	SW	.5	5.8	Ci.		S.-Cu.		3.6	⌈ϟ p. ⊕
22	58.29	27	31.7	23.6	79.7	SW	.8	7.8	Ci.-S.		S.-Cu.		.5	⊤ d° ϟ p
23	57.49	27.4	31.3	23.3	79.1	SW	.8	6.3	Ci.-S.		S.-Cu.		------	ϟ p. ∪
24	57.71	27.9	31.1	24.8	78	SW	1	6	------		S.-Cu.	NE	------	ϟ p. ∪
25	58.78	27.6	31.1	24.6	81	SW	1.2	5	Ci.-S.		S.-Cu.		.5	⌈ϟ a. ⊕
26	59.24	28	31.1	25.5	77.3	SW	1	6.5	Ci.-S.		S.-Cu.			ϟ p. ⊕
27	58.89	27.7	31.5	24.5	78.2	SW	1	5.8	Ci.-S.		Cu.		------	⊤ p. ∪
28	58.21	27.4	32	24.1	77.7	SW	1	4.7	Ci.		S.-Cu.	SW	------	⊕
29	58.39	27.4	31.3	23.6	77.7	SW	.8	4.8	Ci.		S.-Cu.		------	⊕
30	58.38	27.7	32	24.1	77.2	SW	1	6.2	Ci.-S.		S.-Cu.		------	ϟ p.
31	57.82	27.9	34	24.1	76.5	Variable	.5	5.5	Variable		Cu.		------	⊤ ϟ p. ⊕
Mean	758.19	27.9	32.7	24.6	76.7	------	1.1	5.2	------		------			
Total	------	------	------	------	------	------	------	------	------		------		27.8	

ORMOC.

[ϕ=11° 00′ N; λ=124° 36′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.83 mm.]

	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.					mm.	
1	757.33	26.4	30.6	21.8	82.8	Variable	0.7	6.3	Ci.		Cu.	ENE	2.8	⌈ϟ p.
2	57.49	26.1	31.2	21.1	79.7	Variable	.5	2.8	Ci.		Cu.	NE	------	Ω a.
3	58.35	25.6	31.9	21.9	79.2	NE	.7	4	Ci.-S.		Cu.		3.3	⌈ϟ p.
4	58.16	26.5	30.1	22.9	79	Variable	.7	6.2	Ci.-S.		Cu.	ENE	4.1	● a. ϟ d. p.
5	58.61	26.6	33.5	21.5	72.2	Variable	.7	1.7	Ci.		Cu.	E SE		Ω d° a.
6	58.20	25.9	30.6	20.7	78.5	S	.3	3.7	Ci.-S.		Cu.	ESE	1.5	Ω d. a. ● ϟ p.
7	58.10	26.4	31.5	21	78.7	S quad.	.7	3.3	Ci.		Cu.	NE	------	Ω a.
8	57.97	26.6	31.5	21.3	74.8	NE	.8	2.8	Ci.		Cu.	ENE	------	Ω a. ϟ p.
9	57.57	26.3	32.6	20.3	79.3	Variable	.5	3	Ci.		Cu.		6.4	Ω a. ⌈ϟ p.
10	57.97	25.7	32.6	21.8	86.5	N quad.	.5	4.3	Ci.-S.		Cu.		7.6	Ω ⌈ϟ p.
11	58.51	26.8	30.9	22.9	80.5	NE	.3	5.5	Ci.-S.		Cu.	ENE	------	p m. d. ϟ
12	59.22	26.2	32.5	22.3	82	Variable	.3	4.2	Ci.		Cu.	ESE, ENE	3.3	Ω ⌈ϟ a. ϟ p.
13	58.99	26.3	31.2	22.5	80.8	Variable	.3	7	Ci.-S.		Cu.	ENE	.8	⌈ϟ° a. ϟ p.
14	58.18	26.7	32.2	21.7	78.3	Variable	.5	5.3	Ci.	E	Cu.	ENE	------	Ω a. ϟ p.
15	57.92	25.8	30	21.7	85	S by W	.2	7.3	Ci.-S.		Cu.		1.8	Ω a. ⌈ϟ p.
16	57.54	26.9	30.2	22.9	85.2	S	.5	7	Ci.-S.		Cu.-N.	WSW	------	⊤ ϟ p.
17	58	26.2	29.5	23.7	87.3	S	.3	8	Ci.-S.		Cu.-N.	SSW	------	ϟ a. p. d
18	58.13	26	30.6	22.6	87.8	S	.5	4.5	Ci.		Cu.		1	Ω a. ⌈ϟ p.
19	58.51	25.6	30.1	22.4	89.5	S	.3	5.5	Ci.		Cu.	ENE	4.1	Ω ⊤ ϟ a. ⌈ϟ p.
20	59.25	26.1	31	22.5	89	S	.5	6.3	Ci.-S.		Cu.-N.	NE	8.4	Ω ϟ a. ⌈ϟ p.
21	59.06	26.2	30.9	23	87.5	S	.5	4.8	Ci.-S.		Cu.-N.	N	40.4	Ω ϟ a. ⌈ϟ² p.
22	58.10	25.5	30.5	21.8	88.2	N	.5	6.3	Ci.-S.		Cu.-N.	NNW	1	ϟ a. p. ⌈ϟ° m. d.
23	57.71	26.2	30.7	22.8	86.4	S	.2	7.3	Ci.-S.	E	Cu.		------	ϟ a. p. ○
24	57.54	27.2	30.9	22.7	82	S	.5	5.5	Ci.-S.		Cu.	SSE	------	ϟ a. p.
25	58.76	26.6	31	22.6	81.8	S, SE	.5	6.2	Ci.-S.		Cu.		------	ϟ a. p. ○
26	59.04	26.8	30.8	23	82.3	S	.7	5	Ci.	ENE	Cu.		3	⌈ϟ a. ϟ p.
27	58.65	26.5	30.6	22.7	82.3	S	.3	7.2	Ci.		Cu.		------	ϟ a. p. ∪
28	58.20	26.7	31.3	22.2	81.2	S	.5	4.3	Ci.	ESE	Cu.		------	Ω ϟ a.
29	58.39	26.7	31	22.2	83.3	N, S	.5	3.3	Ci.	NE	Cu.		------	Ω a.
30	58.52	26	30.9	22	85.8	N, S	.3	5.5	Ci.	ESE	Cu.		3.6	Ω ⌈ϟ a. ϟ p.
31	57.85	26.7	31.2	21.4	78.5	E	.3	5	Ci.		Cu.	ENE	------	Ω ϟ a. p.
Mean	758.25	26.3	31.1	22.1	82.4	------	.5	5.1	------		------			
Total	------	------	------	------	------	------	------	------	------		------		93.1	

METEOROLOGICAL DATA, ETC.—Continued.

TACLOBAN.

[ϕ=11° 15′ N; λ=125° 00′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.					Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction.					
									Upper.		Lower.			
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.					mm.	
1	758.03	27.8	33.5	25.3	77.3	SE quad.	0.8	5.2	Ci.		Cu.		0.3	p a. ⊤ p.
2	58.39	27.9	33.5	24.5	74.1	SE	1	4	Ci.		Cu.		------	d° p.
3	59.05	26.6	33.5	24.7	79.8	Variable	.6	5	Variable		S.-Cu.	NE	12.7	● a. ⊤ d p.
4	58.93	27.3	32	24.5	81.2	E	1.2	5.2	Ci.		Fr.-N.	E	3.3	↙ ●° a. p. ⌒
5	59.47	28.1	32	25.4	74.3	Variable	1.2	2.6	Ci.		Cu.-N.		------	Ω a. ⊤ p p.
6	58.94	27.5	33.5	24.5	78.8	SSE	.8	4	Ci.		S.-Cu.	ESE	------	
7	58.94	27.8	33.1	24.2	77.1	SSE	1	2.4	Ci.	WNW	Cu.		------	Ω° a.
8	58.86	28	34	24.5	75	SE	1	4.2	Ci.-S.		Cu.		------	Ω a. ⊤° p.
9	58.41	27.8	33.5	24.2	78.8	SE	.6	3.8	Ci.		Cu.		------	Ω° a. ⊤ p.
10	58.64	28.1	33.5	25.1	78.2	Variable	.8	4	Ci.-Cu	SSW	Cu.		.1	⌈↯° a. p. ⊕
11	59.20	27.9	34	25.5	80.2	SE quad.	.8	6	A.-S		Cu.		------	⊤ ↯ d° p.
12	60.06	27.8	33.1	24.9	78.7	NE	1	6	Ci.	S	Cu.		3.8	Ω ● a. ↯ p.
13	59.68	26.8	32.5	23.8	86	WNW	1	7.8	Variable		Fr.-N.		22.6	● ⌒ a. ↙ ⊤ p. ●
14	58.84	27.6	34.5	24.6	81.4	Variable	1	6	Ci.-S.		Cu.		------	⊤ p. ○ ⊕
15	58.45	27.4	33.4	25	83	Variable	.8	9.2	A.-S.		Variable		------	Ω a. ⊤ p. ⊕
16	58.02	27 8	33	24.9	83.3	E	.8	7	Ci.		Fr.-N.		------	⊤ p° p.
17	58.25	27.3	33	25	82.6	SE	.8	6.4	Ci.		Fr.-N.		------	d° a. ⊤ p.
18	58.34	27.8	35	24.5	82	NNW	1	6.6	Ci.-S.		Cu.		.2	Ω a. ⌈↯ p.
19	59.06	27.2	33	25.1	83.3	WNW	.6	5.4	Ci.		S.-Cu.		------	⌈↯ p.
20	59.73	28.1	34.5	25	80.5	WNW	1	8	Ci.		Fr.-N.		------	Ω ≡ a. d p.
21	59.59	28.4	34.5	25.4	76.7	Variable	.8	3.4	Ci.		Cu.		------	↯ p.
22	58.46	28.3	35	24.6	77.2	WNW	1	5.2	Ci.		Cu.		------	Ω a. ↯ p. ∪ Φ
23	57.94	28.4	34.6	25	79.5	Variable	.8	7.8	Ci.-S.		Cu.		------	⊤° ↯ p.
24	57.98	29	34.5	25.6	77.2	SE	1	3.2	Ci.		Cu.		------	○° ⊕ Φ°
25	59.16	29	35.5	25.8	77.7	Variable	.8	4	Ci.		Fr.-Cu.	S	------	⊤ p.
26	59.24	29.1	35	25.5	75.4	SE	.6	3.4	Ci.		Cu.		------	⊤ a.
27	59.98	28.8	35	25.8	76.3	SE	.2	8	Ci.-S.		Variable		10.9	⌈↯ p.
28	58.56	28.4	35	25	79.3	SE	.6	4.2	Ci.		Cu.		.8	⌈↯ p.
29	58.96	28.1	34	25.5	80.6	SE, SW	.6	4.8	Ci.		Cu.		------	↯ p. Φ
30	58.98	28.4	33.4	25.4	79	SSE	.8	8.6	Ci.-S.	NNE	Cu.		------	Ω ⊤ a. ↯ p. ⊕
31	58.53	28	33	24.7	78.3	SE	1	3.4	Ci.		Cu.		4.8	● ⌒ a. ↯ p.
Mean	758.83	28	33.8	25	79.1	------------	.8	5.3	------------		------------		------	
Total	-------	------	------	------	------	------------	------	------	------------		------------		59.5	

CALBAYOG.

[ϕ=12° 04′ N; λ=124° 36′ E; barometer above sea, 4.1 meters; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Force (mean).	Clouds. Amount (mean).	Upper.		Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.					mm.	
1	758.02	27.4	35.1	22.6	83	N	1	4.3	Ci.		S.-Cu.		8.1	● ⊤ ↯ p.
2	58.68	27	33.5	21	83.8	N	1	3.8	Ci.		S.-Cu.	NE	------	↯ p.
3	59.26	26.6	33.5	21.2	81.8	N, NE	1	4.5	A.-Cu.		S.-Cu.	NE	------	p° ↯ p.
4	59	26.4	32.8	22.2	88.5	N	1	5.2	A.-Cu.		S.-Cu.	NE	13	● a. p. ↯
5	59.70	26.7	33.8	21.8	84.8	N, SW	1	4.8	Variable		S.-Cu.	NE	6.1	● ↯ p.
6	59.98	27.2	33.7	21.5	83.3	N	1	4.2	A.-Cu.		S.-Cu.	NE	.3	p ↯ p.
7	59.09	27.2	34	21.4	83.5	N	1	5.2	A.-Cu.		S.-Cu.	NE	------	
8	59.04	27	34.8	22	85.3	N	1	5.2	A.-Cu.		S.-Cu.	NE	4.8	⌈↯ p.
9	58.42	26.8	34.5	21	83.7	N, SW	.8	4.5	A.-Cu.		S.-Cu.		------	p° ⊤ p.
10	58.60	26.2	33.8	22	84.8	N	1	5	A.-Cu.		S.-Cu.	N	------	
11	59.20	25.7	33.8	22	89.7	N	1	7.2	Ci.-S		S.-Cu.		10.9	⌈↯ p.
12	60.10	27	32.6	21.4	84.5	N	1	5.5	A.-Cu.		S.-Cu.	NE	------	p ↯ p.
13	59.87	25.9	30.8	21.8	86.5	N	1.2	6.7	A.-Cu.		S.-Cu.	NE	2	d a. p.
14	59.09	27	34.2	21.2	83.3	N	1.2	5	Ci.		S.-Cu.	NE	.3	d a. ↯ p.
15	58.53	26.2	33.2	22	88.3	N	1	7.2	A.-Cu.		S.-Cu.	NE	.8	d ⌒ ↯ p.
16	58.09	27.4	34.2	22	85.3	N	1	5.7	Ci.		S.-Cu.		3.8	● a. ⊤ ↯ p.
17	58.18	26.9	33.8	23.2	86.8	N	1	6	A.-Cu.		S.-Cu.	W	.5	↙ ●° ⌒ ↯ p.
18	58.61	26.6	34.2	22.2	86.5	N	1	5.2	A.-Cu.		S.-Cu.	N	------	
19	58.90	26.7	34	22	87.8	N, WSW	1	7.5	Ci.		S.-Cu.		------	p ∪° p.
20	59.61	27.1	34	22	87	N	.8	5.7	Ci.-S		S.-Cu.		.8	p ⊤ ↯ p. Φ°
21	59.66	26.6	35	21.4	85.3	N	1	5.3	Ci.		S.-Cu.		6.8	⌈↯ p.
22	58.47	27.4	35	21	83.8	N, W	1	6	Ci.		S.-Cu.		------	d° p.
23	58.09	28	35.2	21.5	83.5	N	1	7.2	Ci.		S.-Cu.		------	↯ p.
24	58.14	28.5	36.5	22.6	80	N, SSW	.8	5.7	A.-Cu.		S.-Cu.	S	------	⊤ a. ↯ p.
25	59.08	28.8	35.4	23.5	80.2	N	1	5.7	Ci.		S.-Cu.	NE	------	↯ p.
26	59.13	28.2	35.9	23	81.2	N	1	5.2	Ci.		S.-Cu.		------	
27	59.12	28.3	35.9	23.8	81.8	N, W	.8	6.8	Ci.-S.		S.-Cu.	W	------	
28	58.56	28.8	36	22.2	79.2	N, W	1	5.7	Ci.		S.-Cu.		------	
29	58.74	28.6	36.2	22.5	78.8	N, SW	1	5.2	A.-Cu.		S.-Cu.	S	------	
30	59.04	27.2	35	22.4	84.8	N, W	1	5.8	Ci.		S.-Cu.		.5	●° p.
31	58.54	27	34.5	21.7	81.8	N	1	5.3	Ci.		S.-Cu.		------	⊤ ↯ p.
Mean	758.92	27.2	34.4	22	84.1	------------	1	5.6	------------		------------		------	
Total	-------	------	------	------	------	------------	------	------	------------		------------		58.7	

METEOROLOGICAL DATA, ETC.—Continued.

LEGASPI.

[ϕ=13° 09′ N; λ=123° 45′ E; barometer above sea, 4.3 meters; gravity correction not applied, —1.77 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	758.17	28.2	32	22.5	77.5	ENE	0.7	2.2	Ci.	Cu.	------	ζ p.
2	58.80	28.8	32	25.5	72.2	E	.8	1.7	Ci.	Cu.	------	
3	59.50	28	32	24.2	73.8	NE quad.	1	2.3	Ci. SW	Cu. ENE	0.8	p p.
4	59.58	27.8	31.3	23.4	78.8	NE quad.	1	4.3	------	Cu. E	15	● a. p. ζ
5	59.85	28.3	31.6	24.9	76.8	E	1	2.5	------	Cu. E	3	● a.
6	59.29	28.4	31.5	24.5	75.9	ENE	1	1.5	------	Cu.	2.7	● a. ζ° p.
7	59.14	28.2	32	23.5	77.8	ENE	1	2.5	Ci. W	Cu.	6.4	● a. ζ° p.
8	59.24	28.4	31.7	24.5	74.4	NE	1	1.7	Ci.	Cu. E	------	d° a.
9	58.55	28.2	32.5	24	74.8	E	.8	.8	A.-Cu. SE	Cu.	------	
10	58.80	28.1	32.5	22.4	77.8	E	.7	1	Ci. W	Cu.	------	ζ° p.
11	59.41	28.5	33	23	76.8	E	.7	2.3	Ci.	Cu.	------	ζ° p. ○
12	60.43	28	31.8	24.2	81	ENE	1	4.8	A.-Cu.	Cu. E	8.4	⌈ζ a. ζ p.
13	60.26	28.2	32.1	25	77.3	NE	.8	4	Ci.	Cu. ENE	------	⌒ ζ p.
14	59.52	28.6	32.3	23	75.8	E	.7	2.3	Ci.	Cu. NE	.4	ζ° p.
15	58.58	28.7	32.1	24.6	76.1	ENE	1	1.3	Ci.	Cu. E	------	ζ p.
16	58.31	28.7	32.5	23.4	77.2	E	.5	3.7	Ci.	Cu.	------	⊤ ζ p. ○
17	58.09	28.2	33.5	22.1	79.7	E	.3	3	Ci.	Cu. SW	.5	⌈ζ p.
18	58.44	27.1	35.2	23.2	85.2	SW	.3	6.7	Ci.-S	Cu.-N. NW	31.7	⌈ζ a. ζ p.
19	58.91	28.1	33	22.4	80.8	E	.5	5.2	Ci. NE	Cu. E	------	⊤ ζ p.
20	59.68	27.9	32.7	22.4	80.8	E	.5	2.8	Ci. NW	Cu.	------	ζ p.
21	59.86	27.1	32.7	21.8	79.8	ESE	.5	1.8	Ci. NW	Cu. SE	------	ζ p.
22	58.66	27.4	33	21.5	80	E	.5	6.3	Ci. NW	Cu.-N. S	------	ζ p.
23	57.91	28.1	34.1	22	77.4	Variable	.5	4.3	Ci.	Cu. W	------	ζ a. d ⊤ p.
24	57.83	28.8	36.5	23.1	75.3	SW	.7	1.7	------	Cu. SW	------	ζ° p.
25	58.96	29	36	22.4	72.7	WSW	.7	3.3	Ci.	Cu. SW	------	ζ p. ∪
26	59.14	29.3	35.5	23.4	72.7	SW	.8	5.3	Ci.	Cu. SW	------	ζ p. ○
27	58.78	28.1	33.5	22.2	75.2	W	.8	7.5	Ci.-S N	Cu. SW	------	p° a. ζ p.
28	58.32	28.3	35.6	22	77.2	SW, W	.3	3.2	Ci.	Cu. SW	.7	● a.
29	58.50	28.5	36	22.1	76.7	SSW, WSW	.7	2.3	Ci.	Cu. SW	------	ζ° p.
30	58.75	26.9	34.4	21.7	84	SW, E	.3	5.2	Ci. NW	Cu. SW	31.7	⌈ζ² p.
31	58.56	26.7	32.4	20.5	82.7	SW, E	.5	4.5	Ci.	Cu.-N. S	------	d ζ p.
Mean	758.96	28.1	33.1	23.1	77.6	------	.7	3.3	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	101.3	

ATIMONAN.

[ϕ=14° 00′ N; λ=121° 55′ E; barometer above sea, 7.8 meters; gravity correction not applied, —1.74 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	757.38	29.2	35.6	24.5	78.3	SW	0.8	6.5	Ci.	Cu.-N NE	------	ζ° p. ϖ°
2	58.19	29.1	34.3	24.6	79.2	SW, NE	1.8	3.5	Ci.	Cu.	------	ζ° a. p. ϖ²
3	59.10	29.3	34.4	25.3	76.5	NE	2.5	6.5	Ci.	Cu. NE	3	p a.
4	59.60	28.1	33.9	25.5	80.8	NE	2.7	5.8	Ci.-S.	Cu. N	5.3	●° a. p. ϖ°
5	59.65	28.3	34	23.7	79.8	N	1.5	3.3	Ci.	Cu. NE	------	⊤° d p. ϖ°
6	59.08	28.7	33	25.4	76.8	NE, N	1.7	2.2	Ci.	Cu. E, NE	------	
7	58.94	29.2	33.4	25.2	73.3	NNE	1.7	1	Ci.-S.	Cu. NE	------	ζ° p.
8	58.86	28.9	33.3	26	76.2	NE	1.8	1	Ci.	Cu. NE	------	ζ° p.
9	58.38	28.6	32.9	26.1	74.8	NE	1.5	1.8	Ci.	Cu. NE	------	
10	58.41	28.6	34.4	23.1	77.4	Variable	1.3	2.7	Variable	Cu.	------	ζ° p.
11	59.18	28.1	32.6	24.3	85.7	Variable	1.8	6.3	Ci.	Cu. N	9.1	⌈ζ° a. ζ° p.
12	60.23	29	33.9	25	79.8	NNE	1.8	5.3	Ci. NNE	Cu. NE	------	ζ p.
13	59.99	29.2	34.6	25.4	80.2	NNE	1.5	4.8	Ci. N	Cu. NE	------	⊤° ζ° p.
14	59.30	28.6	32.6	25.9	79.2	NE	2.3	5.3	Ci.	S.-Cu. NE	------	
15	58.70	28.7	33.4	24.4	83.2	NNW	.8	3	Ci.	Cu.	------	ζ° p.
16	58	28.6	34.5	23.8	81.3	SW	1.5	1.8	Ci. NW	Cu.	------	⌂ ζ° a. p.
17	57.64	29.4	36	24.3	80	SW	1.2	5.8	Ci. NE	Cu. W	------	≡ ζ° a. p. ϖ²
18	57.78	29.3	35.6	23.6	79	SW, NE	1.3	7.2	Ci. E, NNE	Cu. N	------	ζ° a. p.
19	58.66	28.3	33.6	24	85.6	SW	1.3	8	Ci.-S.	Cu. W	7.1	ζ° a. ⌈ζ p.
20	59.58	28.2	32.7	23.1	84.5	NE	1.8	8.7	Ci. N	Cu. S	------	d° ζ° a. p.
21	59.57	28.6	34.2	24.4	82.8	WSW, NE	1.3	5.8	Ci. N	Cu.	------	≡° ⌂ a. ζ° p. ϖ° ∪°
22	58.29	28.4	34.5	24.3	83.3	SW, W	1.2	6	Ci.	Cu.	------	ζ° p.
23	57.18	29.4	35.9	24.4	78.7	SW	1.7	6	Ci. N	Cu. SW	------	ζ° a. ⊤° d p.
24	57.18	30	36.9	25.4	78.2	SW	1.3	6.8	Ci.	Cu. S	------	ζ° p.
25	58.40	29.4	35.9	24.2	80	SW	1.2	6.8	Ci. NNE	Cu. SW	------	ϖ²
26	58.69	28.8	34.4	24.4	82.2	SW	1.7	7.8	Ci. N	Cu. W	------	ζ° d° a. ∪°
27	58.58	27	34.8	23.5	83.8	SW	1.3	5.5	Ci.	Cu. W	------	d p. ϖ° ∪
28	57.93	28.8	35.6	22.6	80.3	SW	1.2	4.3	Ci. N	Cu. SW	------	ϖ°
29	57.99	29	36	23.7	78.3	SW	1.5	5	Ci. N	Cu. SW	------	ζ° p. ϖ°
30	58.16	29.6	36.6	23.4	74.2	SW	1.7	6.7	Ci. N	Cu. S	------	⌒ ζ° p. ϖ°
31	57.76	28.8	34.6	24.2	81.2	SW	1.2	7.8	Ci. NNE	S.-Cu. S	------	ζ° p.
Mean	758.59	28.8	34.4	24.4	79.8	------	1.5	5.1	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	24.5	

METEOROLOGICAL DATA, ETC.—Continued.

OLONGAPO.

[ϕ=14° 49′ N; λ=120° 15′ E; barometer above sea, 3.5 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force. (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Prevailing form and its direction. Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0-12	0-10.			mm.	
1	757.68	26.8	32.4	22.3	86	N, SW	0.6	4.5	Ci.-S.	Cu.	------	≡ a. ϟ p.
2	58.31	28.1	35.7	24.3	84	Variable	.6	6.8	A.-Cu. E	Cu.-N.	7.6	≡ a. ∞ ⌈ϟ p.
3	58.90	28.3	34.8	22.6	74.1	NE quad.	.5	5	Ci.-S.	Cu.	------	≡^{2} p a.
4	59.34	29	36.4	22.3	72.3	ENE	.6	3.3	Ci.-S.	Cu. SE	------	≡ a. ∞ p.
5	59.47	29.5	36.5	24.6	72.2	E	.4	6.2	A.-Cu. E	Cu. E	------	≡^{2} a.
6	58.89	29	36	25.2	74.8	N	.5	3.3	Ci.-S.	Cu.	------	
7	58.71	27.7	32.4	24.3	77.7	SW, N	.7	5	Ci.-S.	Cu.-N.	------	≡ a. ϟ p.
8	58.60	28.2	34.9	23.7	71.6	Variable	.6	2.3	Ci.-S.	Cu.	------	≡ a.
9	58.22	28.1	34.6	23.7	73.2	N	.7	1.8	Ci.-S.	Cu. E	------	≡ a.
10	58.41	27.7	33.2	23.6	77.2	Variable	.6	3.7	Ci.-S.	Cu.	------	≡ a. ϟ p.
11	59.04	28.9	33.4	25	68.1	Variable	.5	6.7	Ci.-S.	Cu. SSE	------	≡ a. ∞ ⊤° ϟ p.
12	60.20	27.5	35.9	23.5	74.2	N	.3	6.5	Ci.-S.	Cu.	------	⊤ p.
13	59.67	27.8	35	22.5	79.4	Variable	.2	7.7	Ci.-S.	Cu. NE	10.2	≡ ⌈ϟ p.
14	58.96	28.1	35.2	23	73.7	N	.8	5.3	Ci.-S.	Cu.	------	ϟ p.
15	58.60	27.8	31.9	25	73.7	N	.4	7.3	Ci.-S.	Cu.-N. S	------	⊤° a. ∞ p.
16	58.17	27.4	34.2	23.1	80.9	N	.3	4.2	Ci.-S.	Cu.	------	
17	57.94	27.4	31.3	23	81	Variable	.5	7.2	Ci.-S. NE	Cu.-N. W	------	≡ a. ϟ p. ○^{2} ⊕
18	58.15	27.8	33.8	23	80.6	N	.6	8.3	Ci.-S.	Cu. W	------	ϟ p.
19	58.74	27.9	33.5	24.5	83.8	N quad.	.3	8.8	Ci.-S.	Cu.-N.	------	⊤ a.
20	59.44	27.2	29.9	24.5	86.2	N, SSW	.3	10	Ci.-S.	Cu.-N. S	5.1	⌈ϟ ● a. ⊤ ∞ p.
21	59.56	26.6	28.9	24	90	SW	.3	7.8	Ci.-S. N	Cu.-N. ESE	26.2	⌈ϟ^2 ≡^{2} a. d ∞^{2} p.
22	58.04	27	30.5	23	86.7	Variable	.4	7.8	Ci.-S. E	Cu.	------	≡ a. ∞ ϟ p. ◡°
23	57.37	27.4	29.8	23.7	87.7	Variable	.4	7.8	Ci.-S.	Cu. SW	7.7	● a. ϟ p.
24	57.22	27	29.8	24.2	88.7	SW	.4	8.8	Ci.-S. E	Cu.-N. SW	5.3	≡^{2} ⌈ϟ ∞ p.
25	58.45	26.5	29	24	90.2	SW, SSE	.2	10	Ci.-S. S	Cu.-N. SW	3.9	↙ ●° ≡^{2} a. ⌈ϟ p. ◡^{2}
26	58.76	26.2	29.6	23.5	89.2	Variable	1	9.8	Ci.-S.	Cu.-N. SW	7.6	↙ ● ≡ a. p. ◡^{2}
27	58.65	24.6	28.4	21.2	92	N, SW	.2	8.8	Ci.-S. SW, NW	Cu.-N. W	5.9	{≡ ⊤ ⌒ a. ● ∞ p. ◡^{2}
28	57.81	26.4	30.1	22.5	88.2	NW	.3	9.5	Ci.-S.	Cu.-N. WSW	3.9	≡ ↙ ● a. ○
29	57.97	27.3	29.5	24.1	83.6	N, WNW	.6	9.3	Ci.-S.	Cu.-N. SW	1.8	≡ d a. p. ○^{2}
30	58.25	26.5	29.6	23.1	85.5	SW	.3	6.8	Ci.-S.	Cu.	4.6	≡ a. ⌈ϟ ↙ ● p.
31	57.46	26.4	29.2	22.8	85.8	SW	.2	9	Ci.-S. N	Cu.	------	ϟ p. ◡
Mean	758.55	27.5	32.4	23.5	81	------------	.5	6.8	----------------	----------------	------	
Total	--------	------	------	------	------	------------	------	--------	----------------	----------------	89.8	

SAN ISIDRO.

[ϕ=15° 22′ N; λ=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force. (mean).	Clouds. Amount (mean).	Clouds. Upper.	Clouds. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	757.82	29.7	38.8	23	65.5	Variable	0.3	7	Ci.	Cu. SSW	------	Ω^2 ≡ a. ⊤ ϟ p.
2	58.50	30.3	38.7	23	63.2	E	.2	8.7	A.-Cu. E	Cu.-N. E	------	ϟ p.
3	59.74	29	35.8	22.5	66	E	.3	7	Ci.	Cu. E	------	ϟ p.
4	59.94	28.6	36.5	21.9	62.3	E	.3	5.3	Ci.	Fr.-Cu. E	------	Ω^2 a. ϟ p.
5	60.18	28.7	35.6	23.9	67.2	E	.5	6.3	A.-Cu. ESE	Fr.-Cu. E	------	
6	59.13	29.4	38.5	21.9	65.4	ESE	.3	5.8	A.-Cu. E	Cu. ESE	------	ϟ p.
7	58.30	28.6	38.5	22.9	67.8	E	.5	7.7	A.-Cu. E, SE	Cu. ENE	------	Ω^2 a. ⊤ ϟ d p.
8	58.28	29.4	38.2	22.8	63.3	ESE	.5	5.2	Ci.	Fr.-Cu. ESE	------	Ω^2 ≡ a. ϟ p.
9	57.70	29.7	38.5	23.1	60.2	E	.5	5.5	Ci.	Fr.-S.	------	
10	57.97	30.8	40.6	23.6	58.4	N quad.	.3	4.7	A.-Cu. NNE, W	Cu. W	------	⊤ ϟ p.
11	58.78	29	38.6	23.3	67.2	ESE	.5	8	A.-Cu. Var.	Cu. E	------	Ω^2 ≡ a. ⊤ ϟ p.
12	60.17	28.6	36.7	22.4	69.8	ENE	.5	7.5	A.-Cu. SE	Cu.-N. SE	------	≡ a. ⊤ ϟ p.
13	59.96	29.2	37.5	22.9	66.8	E quad.	.7	8.2	A.-Cu. ENE	Cu. NE	------	⊤ ϟ p.
14	58.50	30.1	39.5	23.6	61.8	Variable	.3	7.2	A.-Cu. E, S	Cu. E, SW	------	⊤ ϟ p.
15	58.43	29.1	38.5	23.9	68.6	Variable	.2	8.2	A.-Cu. E	Cu.-N. E	------	⊤ ϟ a. p. ≡
16	57.81	30.3	39.5	23.7	63.5	ESE	.2	8.2	A.-Cu. E	Cu.-N. ESE	------	
17	57.77	29.3	39.5	24.2	71.8	WNW	.2	8.7	A.-Cu. W	Cu.-N. W	------	d° ⊤ ϟ p.
18	57.91	29.1	39	24.3	72.5	W	.2	9	A.-Cu. NE, W	Cu.-N. WNW	0.5	⊤ ϟ p.
19	58.65	28.5	37.5	24.5	73.9	Variable	.7	8.7	A.-Cu. E	Cu.-N. S	------	⊤ a. p. d°
20	59.89	28.4	37	23.1	74	W	.2	8.8	A.-Cu. S	Cu.-N. ESE	------	ϟ p.
21	59.65	28.4	37.5	23.1	72.8	E quad.	.3	7.7	A.-Cu. ESE	Cu. E	------	Ω^2 a. ⊤ ϟ p.
22	58.22	28.9	38.3	23.9	71.2	WNW, E	.3	9.2	A.-Cu. SE	Cu.-N. WNW	5.8	ϟ a. ⌈ϟ p.
23	57.35	28.3	37.3	22.9	73.5	S, NNE	.5	7.8	A.-Cu. W, SE	Variable	31.7	⌈ϟ a. p.
24	57.19	29	37	22.5	71.8	S	.5	8	A.-Cu. S	Variable	------	Ω^2 ⊤ a. p. d
25	58.73	27.2	34.5	23.7	79.2	E, SW	.8	8.2	A.-Cu. WNW, ESE	Variable	1.8	Ω^2 ≡ a. ⌈ϟ p. ◡ ⊍
26	59.33	27.3	35.5	22.6	77.8	W	.3	9	A.-Cu. SW, N	Cu.-N. W	------	Ω^2 a. d° p. ◡
27	59.28	25.6	35	22.3	84.8	Variable	.2	8.8	A.-Cu. S	Cu.	7.6	⌈ϟ Ω^2 p.
28	58.45	26.5	34	21.7	82.2	E	0	8.3	A.-Cu. NW, ESE	Fr.-Cu.	------	Ω^2 ◡ ⊍
29	58.14	27.7	33.2	23.2	76.7	WSW	.2	7.5	A.-Cu. W	Cu.-N. W	------	⊍
30	58.50	28.4	37.5	22.6	71.6	SW	.3	7.8	A.-Cu. W	Cu. S, SW	------	≡ a. ϟ p.
31	57.89	27.9	34.5	22.8	75.5	SW	.3	8.5	A.-Cu. SE	Cu.-N. SW	7.1	⌈ϟ
Mean	758.65	28.7	37.3	23.1	69.9	------------	.4	7.6	----------------	----------------	------	
Total	--------	------	------	------	------	------------	------	--------	----------------	----------------	54.5	

METEOROLOGICAL DATA, ETC.—Continued.

DAGUPAN.

[ϕ=16° 03′ N; λ=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied,—1.6 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Force (mean).	Clouds. Amount (mean).	Prevailing form and its direction. Upper.	Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	757.49	28.2	33.2	23.8	75.7	NW	1.5	4	Ci. W, NW	Cu.	------	⚡ p. ≡ ∞ Ω° Φ
2	57.96	27.8	37.8	23.8	78	Variable	.8	7.3	Ci.	Cu. E by S	21.8	⌈⚡ p. ≡° ∞²
3	58.46	28.8	36.4	23.2	71	S	1.3	5.8	Ci. W	Cu.	.8	≡ a. ∞² ⚡ p. Φ
4	58.91	28.1	37.1	22.1	64.2	SE	1.3	.2	------	Cu.	------	∞ p.
5	59.08	29.5	37.9	23.8	66.3	SE	1.2	4.8	Ci.-S. ESE	S.-Cu. ESE	------	⊤ p.
6	58.32	29.5	38.1	23.8	68.3	SE, NW	1.5	1.5	Ci.-S. NE	Cu.	------	≡° ∞²
7	58.04	29.3	35.6	25.8	72.9	NW, SE	1.5	6.2	A.-Cu. NNE	S.-Cu. ENE	------	∞ ⚡ p.
8	58.22	29.4	38.3	24.4	70	SE, W	1.7	4.5	A.-Cu. ESE	Cu.	------	∞ ⊤ ⚡ p.
9	57.65	29.5	36.5	24.7	69.9	S, NW	1.7	2.8	Ci. NNE	Cu.	------	⊤ ⚡ a. ∞ p.
10	58.07	29.2	33.4	26.4	72.5	NW	2	1.5	Ci.	Cu.	------	∞ ⚡ p.
11	58.82	29.2	33.6	26.2	72.4	NW	1.7	3.3	A.-Cu. SSE	Cu.	------	⚡ a. p. ∞
12	59.80	28.7	37.4	24.3	69.2	SSE	1.5	4	Ci. NNE	Cu.	14.2	∞ ⌈⚡ p.
13	59.36	28.5	36.7	22.6	75.7	SE, S	.8	2	Ci.	Cu.	------	Ω ≡² ∞° ⊤ ⚡ ⌒
14	58.57	29.4	38.1	24.7	71.8	NW	1.3	3	A.-Cu. SSW	Cu.	------	∞ ⊤ ⚡ p.
15	58.16	28.8	35.4	25	75.3	SE	1.2	5.5	Ci. NNE	S.-Cu.	1	∞ ⌈⚡ p.
16	57.72	29	34.9	24	74.8	SE, NW	1.5	2.5	Ci. N	Cu.	1.3	≡² Ω a. ∞ ⚡ p.
17	57.63	28.9	35	23.8	74.2	Variable	1.3	5.8	Ci. N	Cu.	------	≡² Ω a. ∞ ⚡ p.
18	57.90	29.1	33.8	25.4	76.8	Variable	1	5.5	Ci. NE	Cu.	------	≡ Ω a. ⚡ p. Φ
19	58.31	28.6	37	25	80.2	S, SE	1	6.7	Ci. NNE	Cu.-N.	14.2	≡ Ω a. ⌈⚡ p. ○ ⊕
20	59.24	27.3	35.1	23.4	79.8	S, SE	1.2	6.8	Variable	S.-Cu. NE	4.1	≡° Ω° a. ⊤ d° p. Φ ᴗ°
21	59.23	28.4	34.6	23.8	79	Variable	1.3	4.3	A.-S.	Cu.-N.	------	≡ Ω a. ⊤° ⚡ p. Φ²
22	58.01	29.5	35.8	24.7	71.3	Variable	.5	6.8	Variable	Cu.	------	⌒ a. ⊤ ⚡ ∞ p.
23	56.94	29.6	35.6	24.1	70.2	SSE	1	5.2	Ci.	Cu.	------	≡ Ω a. d° ⊤ ⚡ p. Φ² ᴗ°
24	56.97	27	36.7	23.6	82.4	SE	1	6.7	Ci. NE	Cu.	51.3	≡ Ω a. ●² ⚡ p. Φ²
25	58.33	26.2	35.1	24	86.8	SE	1	9	A.-S.	Cu.	9.9	≡ Ω ⚡ a. ⌈⚡ p. Φ² ᴗ
26	58.88	26.3	33	22.3	86	SE, S	1.2	8	Variable	Cu.	5.1	≡ d a. ⌈⚡° p.
27	58.59	25	30.9	22.5	90.2	SE	.7	9.7	A.-S.	S.-Cu. W	6.6	d a. p.
28	57.66	27	30.9	23.4	83.5	SE	.7	9.7	A.-S.	S.-Cu. W	------	≡² Ω a.
29	57.81	27.6	34	23.8	81.2	ESE	.8	9	A.-S.	S.-Cu. SW	------	⊤° a. d° p. Φ² ᴗ
30	58.10	28.7	35.6	23.4	73.7	SE	.8	6.2	Ci. NNW	Cu. SW	------	≡² Ω a. ○ ⊕ Φ
31	57.52	28.3	35.7	22.8	74.8	SE	.8	7.3	Ci.-S NNW	Cu.	------	≡ Ω a. ⚡ p. Φ
Mean	758.25	28.4	35.5	24	75.4	------	1.2	5.3	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	130.3	

VIGAN.

[ϕ=17° 34′ N; λ=120° 23′ E; barometer above sea, 24 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Force (mean).	Clouds. Amount (mean).	Prevailing form and its direction. Upper.	Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	758.14	28.3	------	------	75.5	Variable	1	1.7	Ci. W by N	Cu.	------	⚡° p.
2	58.45	28.7	------	------	74.1	WNW	1.2	1.3	Ci. W by N	Cu.	------	⚡° p.
3	58.95	29	------	------	74.5	W	.7	1.8	A.-Cu.	Cu.	------	⊤° p.
4	59.60	28.7	------	------	78.3	Variable	.8	.8	A.-Cu.	Cu.	------	⊤° p.
5	59.76	29	------	------	78.8	Variable	1.2	.2	Ci. N	Cu.	------	
6	59.09	29.1	------	------	76.2	NW quad.	.7	.5	Ci.-S.	Cu.	------	
7	58.69	29	------	------	73.9	N	2	------	Ci.-S.	Cu.	------	⚡° p.
8	58.73	29.5	------	------	75.2	SW	.8	.8	Ci.-S. SSE	Cu.	------	
9	58.30	29.1	------	------	77.2	Variable	1	.3	Ci.-S.	Cu.	------	⚡° p.
10	58.87	28.9	------	------	76.1	Variable	1.3	.2	Ci. NW	Cu.	------	⚡° p.
11	59.40	28.2	------	------	76.2	NNW	.8	1	Ci. NNW	Cu.	------	⚡° p.
12	60.42	29.2	------	------	74.8	Variable	.5	3.2	Ci. NW by N	S.-Cu.	------	⚡° p. ○°
13	59.92	29.5	------	------	74.8	Variable	.5	.3	Ci.	Cu.	------	⚡° p.
14	59.27	29.8	------	------	77.8	Variable	.7	1.3	A.-Cu. SSE	Cu.	------	⚡° p.
15	58.61	29.6	------	------	73.7	NW quad.	.7	.8	Ci.	Cu.	------	⚡° p.
16	58.20	29.7	------	------	74.3	Variable	1.2	3.2	Ci.-S. NW by N	Cu.	------	⚡ p. Φ°
17	58.06	29.1	------	------	83.7	SSW	.5	9	Ci.-S.	Cu.-N. SW by W	9.1	⌈⚡ a. p. ⌒
18	58.33	28.7	------	------	82.8	SE quad.	.7	6.2	Ci.-S.	Cu.	.8	⌈⚡ a. ⚡ p. ⌒
19	58.80	29.3	------	------	81.2	Variable	1	3.5	Ci. WSW	Cu. SSE	------	⚡° p.
20	59.81	28.9	------	------	79.3	ESE	1.5	2	Ci.	Cu. SW by S	.8	⌈⚡ p. ⌒ Φ
21	59.82	28.7	------	------	77.5	E	1	2	Ci.-S.	Cu.	------	⚡ ⌒ p. Φ
22	58.29	29.4	------	------	78.4	SSW	1.3	5	Ci.-S.	Cu.	.8	⌈⚡° a. p. Φ ᴗ°
23	57.28	29.6	------	------	80.7	S	2	6.3	Ci.-S.	Cu. S by W	1.3	⌈⚡° ⌒ a. p. Φ° ᴗ°
24	57.07	28.5	------	------	85	SSE	1.8	7.7	Ci.-S. NE	Cu.	3.8	⊤ a. ● ⚡ p.
25	58.54	25.9	------	------	96.3	SE	1.2	9.3	Ci.-S.	Cu.-N. SW by W	11.2	⌈⚡ a. p
26	59.22	25.2	------	------	94.7	S	.7	9.2	Ci. SW	N. SSW	39.1	● a. p.
27	58.87	23.9	------	------	94	SE quad.	.7	10	------	N.	51	↙ ● a. p.
28	58	25.8	------	------	85	SE	1.5	9	Ci.-S.	S.-Cu. SSW	96	↙ ● a. Φ
29	58.26	25.4	------	------	88.3	ESE	1.2	9.7	A.-Cu.	N.	29	↙ ● a. p. ⊤°
30	58.37	27.3	------	------	78	SE quad.	1	6.3	Ci.-S. SSW, NW	Cu.	.5	d a. p. ⚡° ○°
13	57.52	27.3	------	------	79.2	ESE	1.5	7.7	Ci.-S. NW	Cu.	------	⚡° p.
Mean	758.73	28.3	------	------	79.9	------	1.1	3.9	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	243.4	

METEOROLOGICAL DATA, ETC.—Continued.

TUGUEGARAO.

[ϕ=17° 35′ N; λ=121° 39′ E; barometer above sea, 33 meters; gravity correction not applied,—1.59 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Prevailing form and its direction. Lower.		
	mm.	°C.	°C.	°C.	P. ct.		0-12	0-10.			mm.	
1	757.63	28.7	37.7	------	73.8	N	0.5	4.5	Ci. N	Cu. NW	------	Ω a. T ζ p.
2	58.92	28.3	37	------	76.8	SE, NW	.7	4.8	Ci. S	Cu. SE	------	Ω a. ⌈ζ° p.
3	59.74	28.9	37	------	67.8	SSE	.5	5	Ci. N	Cu. S	------	Ω ⊕² a.
4	60.14	28.5	36.5	------	66	S	.3	.2	A.-Cu. NE	Cu.	------	Ω² a.
5	59.67	28.9	37.4	------	66.5	S	.3	1.7	Ci.-S.	Cu.	------	Ω a
6	58.83	30	38.3	------	66.5	Variable	1.3	1.5	------	Cu.	------	Ω a.
7	58.88	29.6	38.5	------	65.5	NW	1.3	2.7	------	Cu. NW	------	Ω a.
8	58.79	29.4	37.8	------	67	S	.5	2.7	------	Cu. SSE	------	Ω a. ζ p.
9	58.01	30.2	38.5	------	64	N	1.5	1.2	------	S.-Cu. NW	------	Ω a. ζ p.
10	58.45	30.1	38.8	------	64.7	NW quad.	.7	6.7	------	Cu.-N. SW	1.5	⌈ζ p. ⌒
11	59.51	29.8	38	------	68.3	N	.8	6.7	Ci.	Cu. S, NW	------	T ζ p.
12	60.70	29	38.1	------	73	Variable	.8	7	Ci.	Cu. SW	------	⌈ζ° ⌒² p.
13	60.65	28.2	35.8	------	74.5	E, NW	.3	7.8	------	Cu. NW, SE	------	T ζ p.
14	59.23	29	37.3	------	71.3	SE	1	6.3	Ci. NW	Cu. SE	------	T ζ p.
15	58.59	28.8	37.7	------	74.3	SW, N	.8	6.5	Ci.	N. S	2	●° a.
16	57.86	29.1	38	------	69.6	NW	.8	3.7	Ci.	Fr.-Cu. S, NW	------	Ω² ≡² a. ζ p.
17	57	30.2	38.2	------	64.5	Calm	------	7.7	Ci.	Cu.	------	ζ p. ᗜ
18	57.69	28.8	38.6	------	71.8	N	.3	7.7	Ci.	Variable	1	ζ a. ⌈ζ p. ⌒
19	59.17	27.5	36.3	------	77.3	SE	.3	6.7	Ci.	Cu. S	29	Ω ζ a. ⌈ζ p.
20	59.92	27.6	36	------	78	S, NW	.8	6.2	Ci.	Cu. S	------	T ζ ⌒° p. ᗜ
21	59.86	27.5	36.3	------	81	Variable	.5	4	------	Variable	1.8	Ω a. T ● p.
22	58.01	28	36.8	------	76.3	S	1	3.3	Ci.	Cu. SE	1.5	⌈ζ p.
23	57.04	28.7	37.6	------	73.3	S, NE	.5	3.7	------	Variable	------	⌈ζ° p.
24	56.96	28.9	37	------	70.8	S, NW	1	7.2	Ci.	N. NW	9.4	Ω² ≡° a. ⌈ζ p.
25	58.09	27.5	35.6	------	83.8	S	.3	8.2	Ci. ESE	N. SE	8.1	d a. ⌈ζ p.
26	58.48	27	34.3	------	86.2	NW	.2	8.8	A.-S.	N. N, NW	2.8	●° p. ᗜ
27	58.28	26.6	32.2	------	83.9	SW, NW	.3	10	A.-S.	N.	1	d a. p.
28	57.61	27.4	33.6	------	78.2	S, SE	.3	9	A.-S.	S.-Cu. SE	------	d° a. p.
29	57.34	28.1	33.4	------	79.3	SE	.8	8	Ci.-S.	S. S	------	Ω a.
30	58.21	27.1	35.7	------	81.9	NW	1	7.7	Ci.	Cu. SE, S	10.2	Ω a. ⌈ζ p.
31	57.25	28	34.7	------	80.5	SE	.7	6.8	Ci.-S.	Cu. E, SW	------	d° a. ζ p.
Mean	758.60	28.6	36.7	------	73.4	------	.6	5.6	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	68.3	

APARRI.

[ϕ=18° 22′ N; λ=121° 34′ E; barometer above sea, 5 meters; gravity correction not applied, —1.59 mm.]

Day	Pressure (mean)	Temp. mean	Maximum	Minimum	Relative humidity	Wind direction	Force	Cloud amount	Upper	Lower	Rainfall	Miscellaneous
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	758.21	27.6	31.4	23.4	83.3	SW, E	0.7	3.8	Ci. W	Cu. S	------	ζ p.
2	58.89	27.5	31.6	24	86	S	1.2	2.5	Ci.-S.	Cu.-N.	------	T p.
3	59.63	27.7	32.6	23.5	77	S	1.3	2.5	Ci. SW	Cu.-N. S	------	
4	60.20	27.5	32.4	22.9	77.8	S	1	.2	A.-Cu.	------	------	
5	59.84	28.1	32.6	23.6	80.7	S, NE	1.5	.3	Ci.	Cu.-N.	------	
6	59	27.6	32.6	24	82.5	S	1.2	.3	------	S.-Cu.	------	
7	59.51	27.3	31.3	23.2	81.7	SW, NE	.5	.7	------	Cu.-N. NE	------	Ω
8	59.09	27.4	31.5	23	81.8	Variable	1	.3	------	Cu.-N. S	------	Ω
9	58.18	28	31.7	23.5	81.2	Variable	1	1.3	Ci.-S.	S.-Cu.	------	T ζ p.
10	58.85	28.2	31.7	25	81.5	N	.7	.8	------	Cu.	------	ζ p.
11	60.07	27.6	31.4	24.5	80.8	ENE	1.5	7.3	Ci.-S. N	S.-Cu.	------	ζ p.
12	61.08	27.1	31.6	24	86.5	SW	1.2	3.8	Ci.-S. W	Cu.-N. S	------	T ζ ⌒ p.
13	61	27	31	23	83.3	ENE	1.2	6.3	Ci.-S.	Cu.-N. E	4.1	p p.
14	59.43	27.1	32.7	24	83	SW	1.3	5.2	Ci.-S. W	S.-Cu.	------	T ζ p.
15	58.65	27.6	32.4	24	84.5	SE, NE	1.3	6.8	Ci.-S. N, W	S.-Cu. SW, W	------	ζ p.
16	57.88	27.7	33.5	23.6	82.7	S	1.2	4.3	Ci.-S.	S.-Cu.	------	T ζ p.
17	57.25	27.5	31.6	24	82.3	Variable	.7	9.8	Ci.-S. W	S.-Cu.	------	ζ p.
18	57.99	28.1	32.8	24	81.5	NE	.8	8.7	Ci.-S. W	S.-Cu. NE	4	⌈ζ p.
19	59.29	26.6	32.2	24	89.1	S	1.5	6.5	Ci.-S. W	Variable	17.8	⌈ζ p.
20	59.80	26.8	32.4	23.6	84.7	S	1.3	2.7	Ci. W	Cu.-N. NW	2.8	⌈ζ p.
21	59.59	27.4	33.2	22.6	85.2	S	1.3	2	Ci.-S.	S.-Cu. N	------	T ζ p.
22	58.12	27.3	32.7	23.9	82.5	SW	1.2	2	Ci.-S.	S.-Cu. W	------	T ζ p.
23	56.85	27.9	33.6	23.7	82.8	S	1.2	3.7	------	Cu.-N. W	------	T ζ p.
24	56.81	27.1	35	23.6	84.2	S	1.7	7.5	Ci.-S.	S.-Cu. SW	6.6	⌈ζ p.
25	58.03	26.5	33.6	23.5	85.4	S	1.2	8.7	Ci.-S. W	S.-Cu.	2.3	⌈ζ p.
26	58.58	25.8	29	23	88.7	S	1.3	10	------	S.-Cu. SW	5.6	● p.
27	58.41	25.8	27.4	21	91.3	S	.8	10	------	S.-Cu. SW	3	d a. p.
28	57.39	26.5	28.9	23	85	S	1	10	------	S.-Cu. SW	------	
29	57.28	27.7	31.2	23.4	79.2	S	.5	9.7	Ci.-S. SW	S.-Cu. SW	------	ζ p.
30	57.89	27.6	32.5	23.1	86.7	Variable	.8	9.2	Ci.-S. W	S.-Cu. W	------	T ζ p.
31	57.22	26.8	30.7	22.5	87.7	S	1.3	7.5	Ci.-S.	S.-Cu.	------	ζ p.
Mean	758.71	27.3	31.9	23.5	83.6	------	1.1	5	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	46.2	

METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

ISABELA, BASILAN.

[ϕ=6° 43′ N ; λ=121° 57′ E]

Day.	Temperature.		Relative humidity, 2 p. m.	Wind, 2 p. m.		Rainfall.	Miscellaneous.
	Maximum.	Minimum.		Direction.	Force.		
	°C.	°C.	P. ct.		0-12.	mm.	
1	32	21.9	73	W			Ω ≡° a. ↯ p.
2	30.7	22.4	72	W			Ω a. ⊤ p.
3	34.5	21.9	88	NE			Ω ≡° a. ↯ p.
4	30.5	22	77	Calm		6.6	Ω ⊤ ●° a. ● p.
5	30	22	91	NE		15.2	Ω a. ● p.
6	32.5	21.2	77	W			Ω ≡° a.
7	32.6	22	84	Calm		12.4	Ω ≡° a. ● p.
8	30.1	22	77	W			Ω ≡° a. ●° p.
9	30.5	22	89	Calm		8.6	Ω ≡° a. ● ⊤ ⌒ ↯ p.
10	30.5	23	93	S		5.8	Ω ≡° a. ● ↯ p.
11	30.4	22.5	81	NW			Ω ≡° a. ↯ p.
12	33.5	22	76	W		2.5	Ω ≡° a. ↙ ●° ↯ p.
13	33.5	23	78	NE		16.5	Ω ≡° a. ⌈↯ ↙ ● p.
14	29.5	22.5	79	W		17.8	Ω ≡° a. ● p.
15	30	22.8	90	W		4.3	Ω ≡° a. ●° a. p.
16	31	22	72	W			Ω ≡° a.
17	31.5	22.5	75	W			Ω ≡° a.
18	31.4	22.5	73	W			Ω ≡° a.
19	30.5	22.5	80	Calm		2	●° a. ⌈↯ ↙ ●° p.
20	30.9	23	80	W			Ω a. ●° ⊤ p.
21	31	22.2	68	W			Ω ≡° ⊤ a.
22	32	22.5	80	W		1	●° a.
23	32.2	22.4	76	W			Ω ≡° a.
24	32	22.5	89	Calm		15	Ω ≡° ● ⌈↯ a.
25	32.4	22	81	Calm		1.5	Ω ≡° ⊤ a. ●° ⌒ p.
26	32	21	68	Calm		10.2	Ω ≡° a. ● p.
27	33.7	22	78	W			Ω a. ⊤ p.
28	32.5	22	70	Calm			Ω a. ↯ p.
29	32.5	21.9	71	Calm			Ω ≡° a.
30	32	22.8	66	Calm			Ω ≡° d° a.
31	32	23	65	NE		2	●° a.
Mean	31.6	22.3	78				
Total						121.4	

ZAMBOANGA.

[ϕ=6° 54′ N ; λ=122° 05′ E]

Day.	Temperature.		Relative humidity, 2 p. m.	Wind, 2 p. m.		Rainfall.	Miscellaneous.
	Maximum.	Minimum.		Direction.	Force.		
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.6	23	76	W by S	2		
2	29.4	24.4	81	W	3		
3	33	22.5	67	ESE	1		
4	30	22.4	81	SE	1		
5	31.1	23	68	ESE	1		
6	31.5	23.5	71	SE	1		
7	31.5	22.9	69	ESE	1		
8	31.1	23	66	W	1		
9	30	23.5	80	W by S	1		⌈↯ p.
10	29.8	23.4	80	W	1		●° a.
11	32	24.5	74	ESE	2		
12	30.1	24.5	77	W	1	7.1	● ⌈↯ p.
13	31.6	21.8	75	SE	2	15.2	● a.
14	29.7	22.4	78	W	1		
15	28.7	23.6	80	W	1	6.9	● a.
16	30.1	23	79	W	2		
17	30.2	24.5	74	W	3		
18	30	24.4	78	W	2		
19	31	24	92	W	2		
20	30.6	23	92	W	2		●° p.
21	29.5	22	83	W	1		
22	30	24.5	78	W	2		
23	30.4	23.1	76	SE	1		
24	30.8	22.9	70	E	1		
25	30.8	23	72	Calm			
26	31.8	23	74	SE	2		
27	30.9	23.5	77	SSE	1		
28	31	23.4	73	SE	2		
29	32	23.9	61	ESE	1		
30	29.7	23.4	84	Calm		8.9	● a.
31	29.4	23.5	75	ESE	2		
Mean	30.6	23.3	76.2		1.4		
Total						38.1	

DAVAO.

[ϕ=7° 01′ N ; λ=125° 35′ E]

Day.	Temperature.		Relative humidity, 2 p. m.	Wind, 2 p. m.		Rainfall.	Miscellaneous.
	Maximum.	Minimum.		Direction.	Force.		
	°C.	°C.	P. ct.		0-12.	mm.	
1	33.4	23.8	60			48.8	● ⊤ a.
2	33.3	23.4	60				⌈↯ p.
3		22.6	60			25.4	⊤ ● p.
4	33	23.2	59				
5		23.3	61				↯ p.
6		22.9	60			26.7	● p.
7	33.1	23.1	61				
8	32.9	23.1	56			13.7	● p.
9	33.8	23.2	54				
10	32	22.5	57			8.4	⊤ ● p.
11		22.7	54				
12	33.4	23	52				⌈↯ p.
13	33.6	23.1	54				
14		22.4	60			15.7	● p.
15	33.1	23.4	56				
16	33.2	22.4	65	SSE	2		
17	33.7	22.6	67	WSW	3		⌈↯ p.
18	33.1	23.1	63	Calm			
19	33.1	23.4	62	Calm			
20	33	22.7	62	SSW	1	43.7	● ⌈↯ p.
21	33	23.3	59	Calm			
22	33.2	23	55	Calm		21.1	● p.
23	32.9		58	NNW	1		
24		23.7	49	Calm			⌓ p.
25	33.1	23.5	56	ESE	1		
26	31.9	22.7	65	E	2		⌈↯ p.
27	32.1	22.8	55	NW	2		
28	31.8	22.1	69	Calm		19.3	● p.
29		23	62	S	2		
30	32	22.5	64	Calm			
31	33.8	23.6	68	Calm			
Mean	33	23	59.5				
Total						222.8	

CARAGA.

[ϕ=7° 30′ N ; λ=126° 32′ E]

Day.	Temperature.		Relative humidity, 2 p. m.	Wind, 2 p. m.		Rainfall.	Miscellaneous.
	Maximum.	Minimum.		Direction.	Force.		
	°C.	°C.	P. ct.		0-12.	mm.	
1	31.6	22.8	76	Calm			↯ p.
2	30.4	22.3	76	NE	3	17.8	↙° a. p. ● p.
3	30.5	20.2	73	NE	2		
4	30.8	21.9	71	Calm		1.8	↙ ●° p.
5	31.2	21.5	68	Calm		1.3	∞ ●° p.
6	31.3	22.1	73	Calm			≡ p.
7	31.3	22.7	75	NE	1		≡ ↯ p.
8	31.3	23	74	Calm			
9	31.2	23	74	Calm			
10	31.3	22.9	73	Calm		2.8	● ⌈↯ p.
11	29.6	22.3	78	Calm		3.8	● a ⊕ p.
12	31.1	22.6	77	Calm		3	d° a. ↯ ● p.
13	28.9	22.9	97	Calm		48.8	● a. p.
14	30.8	21.8	80	NE	1		
15	30.1	21.8	78	Calm			∞ ↯ p.
16	30.6	22.8	75	Calm			⌈↯ p.
17	30.6	22.8	81	Calm			⊤ ●° ↯ p.
18	30.6	23.4	74	Calm			⌈↯ a. ↯ p.
19	30.5	23.3	78	Calm			⌈↯ p.
20	31.2	22.7	79	N	2		⌈↯ p.
21	31.5	22.4	72	Calm			↯ ◡ p.
22	32.5	22.8	78	Calm			⌈↯ p.
23	31.5	22.8	75	Calm			⊤ p.
24	33.5	23	72	Calm			⊤ a. ↯ p.
25	32.7	22.8	70	Calm			⌈↯ ∞ p.
26	31.5	23.1	71	Calm			
27	31.2	23.2	75	Calm			⊤ a. ⌈↯ p.
28	33	23	73	E	1		
29	33.5	23	66	Calm			⊤ a. ⌈↯ p.
30	30.6	21.8	86	Calm		23.4	● ⊤ a. ∞ ↯ p.
31	30.8	21.9	81	Calm			↯ p.
Mean	31.2	22.5	75.8		.3		
Total						102.7	

METEOROLOGICAL DATA, ETC.—Continued.

DAPITAN.
[ϕ=8° 38′ N; λ=123° 23′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	------	23.6	76	NE	2	------	Ω a.
2	------	24.1	79	N	2	------	d° a.
3	------	23.6	78	N	2	------	
4	------	23.9	68	E	2	2.5	● a. ☈ p.
5	------	22.4	84	E	2	------	ϟ p.
6	------	24.9	81	E	2	------	ϟ p.
7	------	24.6	78	W	1	------	ϟ p.
8	------	23	79	E	2	1.8	● a.
9	------	23.1	78	N	2	2.8	● ☈ a. ϟ p.
10	------	23.4	80	Calm	------	3.6	Ω a. ● ☈ p.
11	------	23.4	75	N	2	------	ϟ p.
12	------	23.4	76	N	2	4.6	●° a. ϟ ↙ ● ⊤ p.
13	------	23.6	83	N	2	5.3	● a. ϟ p.
14	------	23.4	86	N	2	------	
15	------	23.1	79	E	2	------	Ω a. ϟ p.
16	------	23.1	84	W	2	------	ϟ p.
17	------	24.4	77	W	2	------	ϟ a. p. ⊤ p.
18	------	23.4	76	W	3	1	●° p.
19	------	23.5	78	W	2	------	⌒ a. d° ϟ p.
20	------	24	83	W	3	2.3	● a. ☈ p.
21	------	23.1	77	W	2	------	ϟ p.
22	------	23.9	71	W	3	------	ϟ ϖ p.
23	------	23.6	74	N	2	------	ϟ a. p. ϖ ⊍ p.
24	------	23.8	74	S	3	------	☈ ⊍ p.
25	------	23.8	74	S	2	5.1	● a. p. ⊤ p.
26	------	23.4	77	W	2	------	≡² a.
27	------	23.1	77	W	2	------	⊤ ⌒ ϖ p.
28	------	23.5	77	W	2	------	ϟ p.
29	------	23.5	79	W	2	------	☈ p.
30	------	23.4	76	W	2	------	ϟ Ω a.
31	------	23.1	79	W	2	1.3	● ⌒ a. ϟ p.
Mean	------	23.6	77.8	------------	2	------	
Total	------	------	------	------------	------	30.3	

BALINGASAG.
[ϕ=8° 45′ N; λ=124° 44′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33.9	20.6	61	W	2	------	
2	34.1	20.5	52	W	3	------	
3	36.8	20.6	46	W	1	------	
4	34.6	20.7	57	WNW	2	------	●° p.
5	34.2	20	68	WSW	2	1.5	●° p.
6	34.7	20.1	60	W	1	------	
7	35.3	20.6	56	NW	2	------	
8	34	22	62	NW	3	------	
9	34.7	21.2	64	W	1	------	
10	31.8	21.3	78	W by S	1	------	●° ⊤ p.
11	34.7	20.5	59	W	1	2.5	●° ⌒ p.
12	32.5	21	65	W	1	.8	●° p.
13	30.7	20.8	67	WSW	2	4.6	●° p.
14	32.5	20	68	W	2	5.8	●° ⌒ p.
15	31.8	21	70	W	1	------	●° p.
16	34	21.3	62	NW	2	------	
17	33.4	22.5	63	NW	2	22.4	● ☈ ↙° p.
18	32	19.5	73	W	1	4.8	● ☈ p.
19	34.2	21.2	65	WNW	2	1.5	●° ☈ p.
20	32.5	21.1	72	W	2	13.2	↙ ● ☈ p.
21	33	21.4	70	W	1	14	● ⌒ ☈ p.
22	33.4	20.8	70	W	1	7.4	● p.
23	32	22.2	69	W	1	------	
24	32.8	22.8	66	W	1	------	☈ p.
25	30.8	20.4	75	W by S	1		●² a.
26	33.2	20.9	68	W by S	1	------	
27	33.4	21.5	66	W	1	------	
28	34	20.1	69	NW	2	29.5	● a.
29	32.8	20.5	70	W by S	1	------	
30	32.2	21.5	71	NW	2	1.5	●° ⊤ p.
31	34	20.5	66	NW	2	2.3	●° p.
Mean	33.4	20.9	65.4	------------	1.5	------	
Total	------	------	------	------------	------	------	

BUTUAN.
[ϕ=8° 55′ N; λ=125° 31′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33.9	22	------	N	2	------	Ω ≡ a. ⊤ ϟ p.
2	32.6	23	------	NW	2	------	Ω ∞ a. ϟ p.
3	32.9	23.5	------	NNW	2	1	● ∞ a. ϟ p.
4	32.5	23.6	------	NNE	1	3.6	Ω ≡° a. ● ⊤ p.
5	31.6	23.1	------	N	1	2.3	Ω ≡ p. ● p.
6	33.5	22.5	------	NW	1	------	Ω ≡° a. ●° ⌒ p.
7	34	23	------	NW	2	------	Ω ≡ a.
8	34.4	24	------	NW	2	2	Ω ≡ a. ☈ p.
9	33.9	23.6	------	N	1	7.6	Ω ≡° ↙ ● ⊤
10	32.4	24	------	S	1	------	Ω ∞ a. ☈ p.
11	34.3	22.6	------	S	1	20.8	≡° a. ☈ ● p.
12	34.2	22.6	------	SW	1	42.2	●² ☈ p.
13	29.6	22.8	------	S	2	4.4	Ω ≡° a. ●° a. p.
14	33	21.8	------	S	1	1.8	Ω ≡ ●° ⌒ ⊤
15	32.5	23	------	NW	1	------	Ω ∞ a. ☈ p.
16	32.3	22.9	------	NW	2	.1	Ω ∞ a. ☈ ●° p.
17	32.2	24.5	------	NNW	2	------	Ω ∞ a. ⊤ p.
18	32.1	23.5	------	NW	1	------	Ω a. ⊤ p.
19	32.4	23.5	------	N	2	------	Ω ≡ a. ⊤ d p.
20	31.6	23.5	------	NW	1	------	Ω ≡ a. d° p.
21	31.7	23.6	------	NW	1	------	Ω ∞ a.
22	31.3	23	------	NNW	2	------	Ω ⊤ a. ϖ p.
23	32.4	23.5	------	N	2	------	Ω a. ⊤ d° ϟ p.
24	34	23.1	------	NNW	1	2.3	Ω ≡° ☈ ϖ ⊍
25	33.4	24.6	------	NNW	2	2.8	Ω ≡° ⌒ ⊕ ☈
26	33.9	22.6	------	N	2	------	Ω ≡° a. ϟ p.
27	33	23.5	------	NNW	1	------	≡° a. ⊍ ϟ p.
28	33.5	23.5	------	N	2	------	Ω a. ⊤ ⌒ ϟ p.
29	35	24	------	SW	1	------	Ω a. ☈ d° ⌒ p.
30	35	24	------	S	2	------	⊍ Ω ≡° d° ϟ
31	34	23	------	SSE	1	.5	Ω ≡° a. ☈ ●° p.
Mean	33	23.3	------	------------	1.5	------	
Total	------	------	------	------------	------	91.4	

YAP (Western Carolines).
[ϕ=9° 29′ N; λ=138° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32.4	23.2	84	NE	2	------	
2	30.1	24.2	86	NE	3	------	
3	31	23.3	84	NE	3	1	
4	31.7	24.5	65	NE	3	------	
5	33	25	63	NE	2	------	
6	31.3	25.1	72	NE	3	.3	
7	33.4	24	66	NE	1	10.7	
8	32.5	22.7	68	ESE	1	13.5	
9	29.4	22.4	72	NE	3	------	
10	29.1	22.6	76	NE	6	2.3	
11	29.5	22.7	78	NE	4	2	
12	29	23.4	83	NE	3	49	
13	29.8	23.2	79	N	2	27.9	
14	30.5	23.3	73	NE	4	5.8	
15	30.3	24.5	84	N	2	2	
16	32.2	24.7	70	NE	3	29.2	
17	30.6	24.4	80	NE	2	------	
18	30.1	23.2	76	NE	1	26.2	
19	32	24	82	NE	2	1	
20	32.5	24	75	NE	3	------	
21	31.9	24.3	78	NE	3	4.8	
22	33.7	23.7	62	NE	1	.8	
23	31.7	24.4	67	NE	1	------	
24	31.7	25	70	NE	3	------	
25	31.7	23.7	63	NNE	3	.5	
26	32.7	24.5	65	NE	3	------	
27	33	24.3	69	NE	3	2.5	
28	32.2	24	70	ESE	3	3.8	
29	32.8	24.4	82	E	5	------	
30	32	23.7	61	E	3	42.7	
31	28.9	22.7	84	E	4	8.1	
Mean	31.4	23.8	73.8	------------	2.7	------	
Total	------	------	------	------------	------	234.1	

METEOROLOGICAL DATA, ETC.—Continued.

MAASIN.
[ϕ=10° 08′ N; λ=124° 50′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	31.5	23.1	71	SW	1	------	
2	32.1	23	70	W	2	------	⚡ p.
3	33.9	24.5	54	E	5	------	↙ a. p.
4	29.7	23.6	78	N	1	11.4	● a. ⚡ p.
5	33.1	24	60	E	4	------	
6	31.3	23.4	70	SE	4	------	↙ a. p.
7	34	23	61	S	2	------	⚡ p.
8	32.6	23.2	72	SW	2	------	↙ a. ⚡ p.
9	31.5	23.1	67	W	3	------	
10	31.2	24.4	73	SE	1	------	○ ⚡ p.
11	32.7	24.5	74	SE	6	------	☈ a. p. ↙ p.
12	33.1	25.2	66	W	3	------	↙ ⚡ d p.
13	33.6	23.9	51	E	6	------	↙ a. ⌒ p. ⚡ a. p.
14	30.2	23.6	71	W	3	------	⚡ a. p.
15	30	23.5	67	E	1	------	⚡ a. p. ☈ d p.
16	31.5	23.8	68	S	1	3.3	● a. ☈ p.
17	31.5	25.3	70	NW	1	------	⚡ a. ⊤ a. p.
18	33.3	24.5	75	S	2	------	⊤ a. p. ⚡ p.
19	31	24.8	81	SE	2	8.4	⊤ a. ● p. ⚡ a. p.
20	34.4	24.2	72	W	2	2.5	●° ⚡ a. p.
21	31.7	24.1	84	SW	1	8.4	⚡ a. ⊤ ● p.
22	28.8	24	80	SSW	1	------	d a. ⊤ ⚡ ⌽ p.
23	33	24.4	74	S	2	------	⚡ ⊤ a. ⌽ a. p.
24	33	24.1	69	S	2	------	⌽ a.
25	32.6	24.4	76	S	3	------	⚡ p.
26	35.7	24.5	73	SSE	3	5.1	⚡ a. ☈ ● p.
27	31.6	22	76	SE	2	8.9	● a. ⌽ p.
28	33.9	24.3	67	SE	2	------	⌽ p.
29	32	23.4	74	SE	2	------	⌽ a. p.
30	30.6	24.5	71	SE	2	------	⚡ ⌽ a. p.
31	33.3	24.1	64	S	3	------	⚡ a. p.
Mean	32.2	23.9	70.3	------------	2.4	------	
Total	------	------	------	------------	------	48	

BACOLOD.
[ϕ=10° 41′ N; λ=122° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33.5	23.8	61	N	4	------	≡^{2} a. ⊤ ⚡ p.
2	33.1	23.8	53	NNE	5	------	↙° p.
3	33.4	24	71	N	6	------	↙° p.
4	30.8	23.9	80	SE	2	19.3	⊤ a. ☈^{2}. p. ● a. p.
5	32.4	23.3	69	N	5	------	↙° ○^{2} p.
6	32.2	23	65	N by W	4	------	
7	33.2	22.9	63	N by W	4	------	⊕° a. ⚡ p.
8	33.7	23.8	53	NE	3	------	●° ○° a. ⊤° p.
9	32.3	23	62	N by W	4	8.4	⊤° a. p. ● p.
10	33.8	23	82	SE	3	1	≡^{2} a. ●° ☈ p.
11	30.8	23.3	91	SSE	1	73.4	○^{2} ●^{2} ☈^{2} a. ⚡ p.
12	31.9	23.5	74	N by E	3	.3	●° ⊤ a. ○° ☈ p.
13	30.8	24.4	78	NNE	4	------	○° ⊤° a. ⚡ p.
14	31.3	23.5	67	N	5	------	○° a. ⚡ p.
15	32.5	23.3	90	ENE	4	3.6	☈° a. ●° ⊤ ⚡ p.
16	33	24	71	SW	3	------	○° a. ☈° p.
17	31.4	24.4	67	S	3	------	○° ☈ d° p.
18	32.8	23.9	77	SW	3	4.8	●° ☈ p.
19	32.3	22.9	83	SSE	2	.3	○° ⊤ ⌒° ⍦° ☈°
20	32.1	22.8	66	WSW	3	42.5	☈^{2} ●^{2} ○^{2} ●° ☈°
21	32.5	23.1	74	ESE	2	------	⊤° d° a. p. ⚡ ⍦° d.
22	33.8	22.6	64	W	3	.3	○° ↙ ●° ⍦° ☈°
23	33.6	23.2	68	W	3	.5	○° ⌽° ⍦° ☈° ●°
24	33.1	24	63	SW	3	.3	⊤° a. p. ●° ⚡ p.
25	32.2	24	82	SE	2	------	⊤ a. p. ⌒ ⚡ p.
26	33	23.9	64	WSW	3	------	○° a. ☈° p.
27	32.2	24.3	61	SW	3	------	○° a. p. ⊤ ⍦° p.
28	33.7	22.9	51	SW	3	------	○° a. ⚡ ⌽° p.
29	32.6	23	65	SW	2	------	○° a. ⊤° ⚡ p.
30	33.6	23.3	75	SE	3	------	○° a. d° ☈° p.
31	32.7	23	69	N	4	------	⊤° a. p. ⚡ p.
Mean	32.6	23.5	69.6	------------	3.3	------	
Total	------	------	------	------------	------	154.7	

SAN JOSE BUENAVISTA.
[ϕ=10° 44′ N; λ=121° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33.5	24.6	64	SSW	1	------	
2	34.2	24.1	59	W	1	------	⌒ p.
3	34.4	22.8	53	N	2	------	⚲ p.
4	34.3	23.9	57	NW	1	4.3	⊤ ● ⚡ p.
5	34.4	22.9	56	N	1	------	⌓ a. ⌒ d° p.
6	34	23.4	58	NW	1	------	●° p.
7	33	23.3	75	SE	1	------	●° p.
8	33.8	23	60	N	1	2.5	☈ ⌒ ●° p.
9	34.3	23.1	61	NNW	1	------	☈ d° p.
10	34	24.3	64	SW	1	------	⊤ a. ☈ d° p.
11	33.3	23.8	79	N	1	9.9	● ☈ p.
12	33.9	22.7	61	NNW	1	10.2	⌓ a. ○ ● ☈ p.
13	33.2	23.1	65	WSW	1	------	⊤ d° ⚡ p.
14	33.8	22.9	60	WSW	1	13.2	⊤ ⌒ ● ⚡ p.
15	32.7	22.9	70	W	1	------	⌓ a. d° ⊤ ⚡ p.
16	33.2	24.4	63	WSW	2	------	⊤ ⚡ p.
17	31.9	24.7	73	NNW	1	------	⌓ ⊤ ↙° a. ☈ p
18	33.3	24.2	72	NW	1	------	⊤ ⚡ p.
19	33.5	23.8	67	W	1	------	☈ d° p.
20	31.8	23.2	65	W	1	9.9	☈ ● ↙° a.
21	32.5	23.4	70	NW	1	------	⊤° ⊕ d° ⌒ ⚡ p.
22	32.9	23.3	61	N	1	------	⊕ ⌽° ⚡ p.
23	32.8	23.4	65	Calm	------	13.2	⌒ a. ⍦° ☈ p. ●
24	32.4	24	71	SW	1	------	⊤ ⚡ ⍦° p.
25	32.6	24.2	77	S	1	------	⊤ a.
26	32.7	23.8	72	SSW	1	3.8	⍦ ● p.
27	32.3	23.8	66	SW	1	------	⊕ p.
28	33.2	23.4	62	S	1	------	
29	33	23.4	68	SW	1	------	↙° p.
30	33.3	23.9	67	S	1	------	⚡ p..
31	33.8	23.3	56	NW	1	------	☈ p.
Mean	33.3	23.6	65.1	------------	1	------	
Total	------	------	------	------------	------	67	

TUBURAN.
[ϕ=10° 44′ N; λ=123° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33.2	22.9	62	Calm	------	------	≡^{2} a. ☈^{2} p.
2	33.5	24.1	58	N by W	2	------	≡° a.
3	35.1	24.1	38	NE	3	------	≡° a.
4	30.5	23	68	N	3	1.5	⌒^{2} ●° a. ☈^{2} p.
5	32.7	22.4	64	N by W	2	------	
6	32.4	22.2	62	N	1	------	≡^{2} a. ⚡° p.
7	33	23.4	62	Calm	------	------	≡^{2} a. ⚡^{2} p.
8	32.8	23.5	61	Calm	------	------	≡^{2} a. ☈° p.
9	32.8	23.4	67	N by W	1	------	≡^{2} a.
10	33	23.6	68	Calm	------	9.7	≡^{2} a. ●° ☈^{2} p.
11	32.3	23.7	77	Calm	------	------	●° ☈^{2} a. ⚡^{2} p.
12	32.7	23.8	66	N	2	------	●° ○° ⚡^{2} p.
13	34.6	23.4	69	NE	3	------	d° a. ⚡^{2} p.
14	32.5	23.4	63	N by E	2	------	○^{2} a. ○° ⚡^{2} p.
5	33.1	23.7	68	Calm	------	------	≡° ⚡^{2} a. ⊤^{2} p.
16	33.1	24.5	65	N	1	------	☈° a. ⊤° ⚡^{2} p.
17	33.2	25.4	58	Calm	------	------	☈^{2} a. p. ○° p.
18	33.7	23.9	64	N	1	------	⊤^{2} ⚡^{2} p.
19	32.4	23.9	74	Calm	------	3.1	≡° ⊤ ☈^{2} ●°
20	32.9	24.5	64	N	1	------	☈° a.
21	32.3	23.6	68	N by W	1	------	⌒^{2} ●° a. ☈° p.
22	33.6	23.8	61	N	1	------	⊤^{2} a. ☈^{2} ⍦^{2} p.
23	32.4	24.7	64	Calm	------	------	☈^{2} ○^{2} ⌒ ⍦^{2} ⌽^{2}
24	33.5	24.1	64	Calm	------	3.6	⊤° ●° ⊤^{2} ⌒^{2} ⚡^{2}
25	32.8	24.2	67	Calm	------	8.1	☈° ⊤ ⌒° ⚡^{2} ●°
26	34.4	23.9	55	Calm	------	13.5	⊤^{2} a. ☈^{2} ●^{2} p.
27	33.3	23.2	58	Calm	------	------	○^{2} ⍦^{2} ⌽^{2} ☈°
28	33.3	24.1	63	N	1	------	⊤° a. ⚡° p.
29	32.1	24.4	72	Calm	------	1.3	⊤^{2} ●° ⚡^{2} p.
30	32.8	24.3	61	Calm	------	2	⊤^{2} a. ●° ☈^{2} p.
31	32.4	23.8	64	Calm	------	------	●° a. ⚡^{2} p.
Mean	33	23.8	63.7	------------	.8	------	
Total	------	------	------	------------	------	42.8	

METEOROLOGICAL DATA, ETC.—Continued.

BORONGAN.
[ϕ=11° 42′ N; λ=125° 25′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33.6	23.9	71	NE	2	------	☈ p.
2	33.7	22.2	70	SE	1	1	⌓ a. ⇙ ●° p.
3	32.3	22.3	90	E	3	12.7	⇙ ● a. p.
4	32.7	23.6	70	ESE	4	10.7	⇙ ● a. p.
5	32.2	23.5	60	ESE	2	9.4	⇙ ●° a. p.
6	32.4	22.9	67	SE	1	2.5	● a. p.
7	32.7	22.7	65	E	1	------	⌓ a.
8	33.1	22.5	70	SE	1	------	⌓ a.
9	32.1	22.1	77	Calm	------	------	⌓ a. ☈ p.
10	33	23.2	78	S	1	------	●° a. ☈ p.
11	33.1	23.5	76	SE	1	------	☈ a. ⊤ p.
12	33.3	23.4	69	NNE	2	15.7	●° a. ⇙ ●² p.
13	33.2	24.6	76	ENE	2	2	⇙ ●° a.
14	33.2	23.8	70	NE	1	1.8	⇙ ●° a. ●° ⊤ ϟ p.
15	30.2	23.7	78	SE	1	12.4	⌓ ○ a. ☈² ● p.
16	33.1	23.1	71	E	2	------	⌓ ○ a. ☈² p.
17	31.7	24	83	Calm	------	13	⌓ ● a. ϟ p.
18	33.2	22.3	71	ENE	1	------	⌓ ≡ a. ϟ p.
19	33.3	23.7	73	SE	1	------	☈ a. ϟ p.
20	33.4	23.4	63	SE	2	------	⌓ a. ϟ p.
21	33.7	22.8	68	SE	1	------	⌓ a. ϟ p.
22	33.9	22.9	64	SSE	1	------	⌓ a. ϟ ⊍ p.
23	34	23.1	66	SSE	1	------	⌓ a. ϟ ⊍ p.
24	33.9	23.4	66	SE	3	------	⌓ a. ⇙ ϟ p.
25	34	23.1	66	SE	2	------	⌓ a. ϟ p.
26	34.2	23.2	68	SSE	1	.5	⌓ a. ☈ ●° p.
27	34.3	23.7	68	SE	1	1	☈ ● ⌒ ⊍ p.
28	34.1	22.8	68	S	2	------	≡ a. ϟ p.
29	34.3	23.6	69	W	1	12.2	⌓ ⊤ a. ☈ ⇙ ● p.
30	32.6	23.4	70	S	1	------	≡ a.
31	33.8	22.7	71	E	2	------	⌓ a.
Mean	33.2	23.2	70.7	------	1.5	------	
Total	------	------	------	------	------	94.9	

ROMBLON.
[ϕ=12° 35′ N; λ=122° 16′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	------	------	------	------	------	------	
2	------	------	------	------	------	------	
3	32.5	24.4	65	NNE	1	------	●° p.
4	33.4	------	64	N	1	3.3	●° p.
5	33.1	26.9	66	NE	1	------	
6	33.4	26.7	60	NE	1	------	
7	33.7	26	54	N	1	------	
8	34.4	25.6	62	NE	1	6.4	● p.
9	34.4	26.5	59	NE	1	------	
10	35	25	63	NE	1	------	
11	33.4	25.6	62	NE	1	------	☈° p.
12	34.1	27.5	59	E	1	9.4	☈° ● p.
13	34.1	27	71	NE	1	------	ϟ ●° p.
14	32.6	25.4	62	NE	1	------	ϟ ●° p.
15	33.6	26.1	55	E	1	------	
16	34.5	25.2	68	NW	1	6.1	ϟ ● p.
17	33.6	25.3	61	Calm	------	------	ϟ ⊍ p.
18	33.6	26.8	65	NW	1	------	ϟ ⊍ p.
19	33.1	26.7	64	WNW	1	23.4	●° a. ☈° ● ⊍ p.
20	33.3	23.4	66	NW	1	------	ϟ p.
21	32.2	25	67	NW	1	------	⊤ a. ϟ p.
22	35.5	24.5	68	W	1	------	⊍ ϟ p.
23	34.5	25.5	65	W	1	------	ϟ ⊍ p.
24	34.5	25.7	54	S	1	------	☈° p.
25	34.6	26.4	63	S	1	------	ϟ p.
26	33.8	27.6	60	S	1	------	
27	32.6	27.1	62	S	2	------	
28	34.2	26.3	57	WNW	1	------	⊍ a.
29	34.2	27.3	59	W	1	------	ϟ ⊍ p.
30	34.9	26.6	61	W	1	------	ϟ p.
31	32.3	25.1	71	NNW	1	7.6	●° a. ϟ ⊍ p.
Mean	33.8	26	62.5	------	1	------	
Total	------	------	------	------	------	56.2	

GUBAT.
[ϕ=12° 55′ N; λ=124° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	35.8	25.9	------	NE	1	------	
2	35.1	25.5	------	NE	1	------	
3	33.2	24	------	E	1	9.4	● a. ●° p.
4	33.3	24.8	------	E	2	12.2	● a. ●° p.
5	33.8	24.6	------	E	1	------	
6	34	26.4	------	E	1	------	
7	34.3	24.8	------	E	1	------	
8	34.4	25.3	------	E	1	------	●° a.
9	34.6	25.8	------	E	1	------	
10	36.5	23.6	------	E	1	------	⊤ a. ϟ p.
11	35.6	23.4	------	NE	1	------	
12	34.2	25.5	------	E	1	7.6	⇙ ● a.
13	34.2	26.5	------	E	1	14.2	● ϟ p.
14	34	22.6	------	E	1	1.8	●° ⌒ a.
15	34.3	23.7	------	E	2	2.8	●° a ● ϟ p.
16	34.4	24.2	------	E	1	1.5	⊤ ϟ p. ●
17	34.7	24.3	------	SSE	1	------	☈ p.
18	34.2	24	------	SSE	2	------	⊤ ϟ p.
19	35.1	23.3	------	SSE	1	------	⊤ ϟ p.
20	34.3	23.4	------	SE	1	21.3	● ⌒ a. ϟ p.
21	34.7	22.8	------	NE	2	12.7	● ☈ a. ϟ p.
22	34.4	23.5	------	SE	1	------	⊤ ϟ p.
23	34.6	23.7	------	S	2	------	⊤ ϟ p.
24	34.7	23.4	------	S	1	------	●° a.
25	34.5	24	------	S	1	------	●° ϟ ⊍ p.
26	34.7	24.5	------	W	2	1.3	●° a. ϟ ⊍ p.
27	33.5	24	------	W	1	------	ϟ p.
28	34.3	22.8	------	S	1	------	
29	34	22.6	------	S	1	3	●° a. p. ☈ p.
30	34.3	22.8	------	SSE	2	------	⊤ ○ ϟ p.
31	35	22.5	------	SE	1	------	
Mean	34.5	24.1	------	------	1.2	------	
Total	------	------	------	------	------	87.8	

SUMAY, GUAM (Ladrones Islands).
[ϕ=13° 22′ N; λ=144° 45′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	28.2	24.4	92	NE	2	14	
2	29	24.4	76	NE	4	------	
3	28.4	24.4	77	NE	4	------	
4	28	25	76	ENE	4	------	
5	28.2	25.6	84	NE	2	5.1	
6	30.8	23.3	75	S	3	7.6	
7	31.4	23.9	69	SW	1	1.3	
8	30.4	23.3	74	NNE	2	17.8	
9	29.4	24.4	81	ENE	1	12.7	
10	31	25.6	67	SE	3	1.3	
11	29.8	25	72	NE	3	------	
12	31	25	72	NE	3	------	
13	31.4	24.7	59	SE	2	------	
14	30.6	25.6	62	NE	3	2.5	
15	29	24.4	87	NE	1	5.1	
16	30.4	25	66	E	3	2.5	
17	29.6	24.4	72	E	3	------	
18	30	24.4	76	E	3	------	
19	30	23.9	76	E	2	5.1	
20	29.4	25.6	78	NE	3	1.3	
21	29.6	25.3	79	NE	3	1.3	
22	29.8	25.3	72	NE	3	5.1	
23	30.4	22.8	68	NE	2	------	
24	30.4	22.2	69	NE	3	3	
25	31	22.8	65	NE	1	.5	
26	29.6	22.8	71	NNE	1	------	
27	30.4	22.5	87	NW	1	11.4	
28	30.4	23.1	70	SW	1	------	
29	32.2	25	74	E	2	------	
30	30.6	25.8	78	NE	4	1.3	
31	31.2	26.1	67	SE	3	2.5	
Mean	30.1	24.4	73.9	------	2.5	------	
Total	------	------	------	------	------	101.4	

METEOROLOGICAL DATA, ETC.—Continued.

NUEVA CACERES.
[ϕ=13° 38′ N; λ=123° 12′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	34	21	55	Calm	------	------	
2	33.6	21.6	57	N	3	------	
3	34	20.5	65	NNW	2	------	
4	33.5	20	76	N	4	------	
5	31.4	21	64	N	4	------	
6	34	20.5	63	N	2	10.2	● a.
7	34	20	56	N	3	------	
8	34	20.5	56	N	3	------	
9	35	21	57	N	2	------	
10	35.4	21.5	52	N	3	------	
11	35.8	21.8	52	N	4	------	
12	35.5	21.8	61	N	2	------	
13	35	21.5	52	N	3	------	
14	35.5	21.3	57	N	3	------	
15	35.3	21	59	N	3	------	
16	35	22	60	N	3	------	⊤ p.
17	34	23.4	68	S	2	------	
18	35	24	60	S	2	------	⊤ ●° p.
19	34.5	23	85	Calm	------	------	●° p.
20	33	22.5	74	Calm	------	------	
21	34.5	21.8	58	S	1	29.7	≡ a. ● p.
22	35	22.5	66	S	2	------	
23	35.3	23	56	S	2	------	
24	36	23.3	61	S	2	------	
25	------	23.5	62	S	2	------	
26	34	------	------	------	------	------	
27	34.5	23.6	60	S	2	13.2	● p.
28	33	22.5	61	W	2	------	
29	33.8	23.6	64	S	2	------	
30	33.5	23	62	W	2	------	
31	33.5	22.5	81	ENE	1	------	●° p.
Mean	34.4	22	62	------	2.2	------	
Total	------	------	------	------	------	53.1	

BATANGAS.
[ϕ=13° 45′ N; λ=121° 03′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	39.1	22.8	44	NE	2	------	⊤ p.
2	37.6	24.3	48	SE	2	------	☇ p.
3	36.8	23	42	E	2	------	
4	37.9	25	38	NE	2	------	
5	37.2	23.7	47	S	2	------	
6	37.1	24.8	43	S	2	------	
7	37.8	23.2	46	S	3	------	
8	39.4	22.8	40	SE	2	------	
9	39.7	22.8	40	SSW	2	------	
10	38.8	23.4	41	SW	1	------	⊤ p.
11	40	24.8	41	W	2	18	☈^{2} ●^{2} p.
12	37.8	23.4	45	SSE	2	------	⊤ p.
13	36.9	23.5	43	NE	2	------	⊤ p.
14	35.3	23.8	43	S	2	------	
15	38.7	23.6	57	NE	1	------	⊤ p.
16	39	23	45	W	1	------	☈ p.
17	38.9	23.6	46	W	1	------	☈ a.
18	38	24.6	53	W	2	------	⊤ ◡ p
19	38.5	24.1	60	WSW	1	------	☈ p.
20	38.5	24.7	60	W	1	1	● a. ⊤ p.
21	36.4	25	69	SW	1	------	d° a. ◡ p.
22	38.5	23.3	45	SW	2	------	○ p.
23	38.8	24.4	43	W	1	------	
24	39	25.1	56	W	2	------	⊤ a. p. ⊕ p.
25	39.1	25	56	W	2	------	
26	39.7	23.8	51	SW	2	3.3	●^{2} p.
27	36.8	23	50	SW	2	------	
28	38.8	23	44	SW	2	------	
29	39.5	22.8	43	WSW	2	------	☇ p.
30	39	23.8	63	SW	1	------	
31	38.8	23.2	54	W	1	------	
Mean	38.3	23.8	48.3	------	1.7	------	
Total	------	------	------	------	------	22.3	

SILANG.
[ϕ=14° 14′ N; λ=120° 58′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32.6	20.2	65	NE	2	------	
2	33	20.5	63	NE	3	------	
3	32.6	20.1	65	NE	3	------	↙° p.
4	33	20	65	E	2	------	⌂ a.
5	32.8	20.2	65	E	2	------	⌂ a. ↙° p.
6	32.6	20.1	64	NE	3	------	
7	33	20	66	E	3	------	↙° p.
8	33.2	20.4	65	E	2	------	≡ a. ↙° p.
9	33 5	21	65	E	3	------	↙° p.
10	33.5	21.3	65	NE	3	------	⌂ ≡ a.
11	33.2	21.2	68	E	3	------	≡ a. ⊤ p.
12	33.6	21	65	E	3	------	⌂ ≡ a. ↙° p.
13	33.8	21.5	64	E	3	------	↙° p.
14	33.8	21.3	65	E	3	------	⌂ ≡ a. ⊤ ↙° p.
15	33.2	21.7	63	E	2	6.6	⌂ ≡ a. ● ⊤ p.
16	33	21.5	65	W	2	------	≡ a. ↙° p.
17	33.5	21.6	65	W	2	------	⌂ ≡ a. ⊤ p.
18	33	21.2	65	SW	3	------	↙° p.
19	33.2	21.7	70	W	3	18.5	⌂ a. ● ⊤^{2} p.
20	32.6	21	69	W	2	4.6	●° a. ● ⊤^{2} p.
21	32.2	21	65	W	2	------	⊤ p.
22	33	20	73	W	3	3.8	⌂ ≡ a. ● p.
23	32.6	20.5	65	W	1	------	⌂ a. ⊤ p.
24	32.6	20.8	67	W	1	------	●° p.
25	32.2	20.5	68	W	3	------	⌂ ≡ a. ↙° p.
26	33	20.5	69	W	2	------	⊤ a. ↙° p.
27	33	20.8	65	W	2	------	⌂ a.
28	33.1	20.7	67	SW	3	------	⌂ a. ⊤^{2} p.
29	33.5	20.9	66	W	1	------	⌂ ≡ ●° a.
30	34	21	68	W	3	17.8	● p.
31	30.7	21.3	67	W	2	7.9	⌂ a. ● p.
Mean	33	20.8	66	------	2.4	------	
Total	------	------	------	------	------	59.2	

SAN ANTONIO.
[ϕ=14° 23′ N; λ=121° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	35	19.5	56	SW	2	------	
2	32.5	19.9	51	E	2	------	
3	30.5	22.4	61	NE	4	2.5	↙° p. ●
4	30.5	22.5	62	NE	4	3	↙° p. ●
5	31	22.1	61	E	4	4.8	⌒ a. ↙° p. ●
6	31	22	62	E	2	------	⌒ a.
7	32.5	20	47	E	3	------	
8	31.5	19.2	57	E	2	------	
9	32.2	17.9	49	E	2	------	
10	35.4	17.8	38	NW	1	------	
11	32	19	64	E	3	1.3	●
12	30.8	21.6	74	NE	3	1.5	●
13	32	22.1	76	E	3	------	
14	31.1	21.9	60	E	3	------	
15	32.5	20.4	60	E	2	------	
16	34.5	20.1	64	SW	1	------	
17	32.5	19.9	58	W	3	------	⌒ p.
18	33.6	20.6	54	W	1	8.9	●
19	31	22.4	70	SE	1	11.9	●
20	30.5	21.4	69	SW	1	16.3	●
21	32.5	21.5	70	SW	2	------	
22	33.5	19.2	82	SW	6	------	↙ p.
23	33	19.2	62	W	2	5.8	⌒ p. ●
24	32.5	22.5	76	W	3	------	
25	32	22	74	W	2	------	
26	32.5	22	58	W	2	------	
27	32.4	21.8	97	W	6	4.1	↙ p. ●
28	31.9	21.5	66	W	3	------	
29	32.9	20	65	W	3	------	⌒ p.
30	33.4	19.4	65	SW	2	2	●
31	32.5	18.8	73	SW	1	4.3	●
Mean	32.3	20.7	63.9	------	2.5	------	
Total	------	------	------	------	------	66.4	

METEOROLOGICAL DATA, ETC.—Continued.

CORREGIDOR.
[ϕ=14° 23′ N; λ=120° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	35	22.8	50	W	2	------	
2	35.5	25.8	58	N	2	------	
3	35	25.5	58	NE	2	------	
4	35	24.8	62	N	2	------	
5	33	23.5	56	N	2	------	
6	33.3	24.7	55	N	2	------	
7	33.5	25	52	NE	2	------	
8	33.7	24.5	56	N	2	------	
9	34.3	23.8	49	N	2	------	
10	35.7	24.4	47	W	1	------	
11	35.3	25	63	N	2	------	
12	33.4	25.2	55	N	2	------	
13	33.5	24.6	52	N	2	------	
14	34.8	24.9	52	N	2	------	
15	35.1	24	49	Calm	------	------	d a.
16	34.7	24.7	58	W	2	------	
17	34.5	25.3	57	W	2	------	
18	34	25.3	61	W	2	------	
19	34.8	24.5	85	Calm	------	------	○ p.
20	32.2	23.5	67	W	1	------	
21	34.4	24.8	85	SW	1	------	⊤ a.
22	33.8	25	57	W	2	------	
23	34	24.4	69	SW	2	2.8	● a.
24	34.7	25	57	SW	2	------	
25	34.7	22.7	65	SW	1	14.2	⛈ a. ● a. p.
26	33.4	23.6	64	SW	2	31	● a. ⛈ p.
27	31	23.7	74	SW	2	------	
28	34.8	23.5	59	SW	2	------	
29	34.5	24	57	SW	2	------	
30	32.5	22.8	67	SW	2	7.4	● a.
31	33.6	24	57	SW	2	------	
Mean	34.1	24.4	59.8	------------	1.7	------	
Total	------	------	------	------------	------	55.4	

BALANGA.
[ϕ=14° 41′ N; λ=120° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	36.7	22.6	48	SW	2	------	⚡ p.
2	37.1	23.8	46	NE	1	------	⛈ ●° p.
3	35.7	23.5	56	NE	2	------	
4	37	22.4	44	SE	1	------	
5	36.2	24	54	SE	1	------	
6	37.4	24.2	48	E	1	------	
7	37.4	24.4	51	SE	1	------	⚡ p.
8	36.7	25.4	48	SE	1	------	⚡ p.
9	37	23.5	46	SE	2	------	
10	37	24	52	NE	2	------	⚡ p.
11	37.1	24	50	SE	1	0.5	● a. ⊤ a. p. ⚡ p.
12	36.3	23.5	57	SE	1	------	⊤ p.
13	37.2	24.1	53	SE	2	------	⊤ ⚡ p.
14	36.5	23.6	51	NE	2	------	⚡ p.
15	35.5	25.2	72	SW	2	2.8	● a.
16	35	23.6	54	SW	2	.3	●° a. ⚡ p.
17	36	24.1	44	SW	4	------	↙° ⚡ p.
18	36.5	24.4	47	SW	4	------	↙° ⚡ p.
19	35	25.1	57	NE	2	3	⊤ a. ⛈ ● p.
20	33.5	24.1	67	SW	2	------	⊤ a. ●° p.
21	35.5	24.9	54	SW	2	------	⊤ a. ⚡ p.
22	35.5	24.3	53	SW	3	------	⚡ p.
23	35.9	24.6	51	SW	4	------	↙° ⚡ p.
24	35.8	24.6	54	SW	4	------	↙° ⚡ p.
25	32.5	24	63	SW	3	2.3	● a. ⌣ p.
26	34.4	24.5	55	SW	3	3.6	●° a. ● ⛈ p.
27	31.1	22	86	SW	3	3.6	● a. ⌣° p.
28	31.5	22.4	71	SW	2	------	●° p.
29	34	24	63	SW	3	------	⚡ p.
30	34.5	23.2	50	SW	3	------	⚡ p.
31	34.6	23.3	56	SW	2	------	⚡ p.
Mean	35.6	23.9	54.9	------------	2.2	------	
Total	------	------	------	------------	------	16.1	

MALOLOS.
[ϕ=14° 52′ N; λ=120° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	36.6	22.2	47	SSW	1	------	⚡ p.
2	35.8	23.5	47	S	1	9.1	●² ⛈° p.
3	34.6	22	44	ENE	3	------	⚡ p.
4	36.2	20.8	47	E	1	.8	● p.
5	35.5	22.1	48	WSW	1	------	≡ a.
6	36	22.7	47	S	1	------	
7	35.8	23	50	S	1	5.6	● ⛈² p.
8	35.8	21.8	48	SSE	1	------	⚡ p.
9	35.3	21.2	46	WSW	1	------	
10	36.8	23.7	47	SW	1	1	≡² a. ● ⛈° p.
11	35.8	23	57	SW	1	------	⛈ p.
12	34.7	22.8	73	SE	1	.5	●° ⊤ p.
13	33.5	22	78	SSE	4	8.1	●² ⛈² p.
14	35.8	23	45	S	1	------	⚡ p.
15	35.8	21.8	46	SW	1	------	⛈ p.
16	35.8	22.5	48	S	1	------	⚡ p.
17	35.5	23.2	51	SSW	1	------	⚡ p.
18	35.8	23.8	58	SW	1	------	⚡ p.
19	33.7	23.4	59	SE	1	3.3	● ⛈² p.
20	34.8	23.8	53	SW	1	------	⛈ ⌣² ⌓² p.
21	35.8	23.7	63	SSW	1	------	⊤ ⌣ ⌓ p.
22	35.4	23.8	60	SW	1	------	⌣ ⌓ p.
23	35.3	23	56	SW	1	------	⚡ ⌣² p.
24	35.8	24.2	51	WSW	1	------	⚡ ⌣ p.
25	35.1	24	60	W	1	------	○² ⌣ ⚡ p.
26	34.7	22.7	52	SW	1	.5	●° ⚡ p.
27	32.7	21.5	78	SW	1	1.8	≡² a. ● p.
28	34.5	21.3	66	SW	2	------	≡² a.
29	34.7	22.5	65	WSW	1	------	⚡ p.
30	34.3	22.1	63	SSW	1	------	⚡ p.
31	35.2	22.2	61	WSW	1	------	○² p.
Mean	35.3	22.7	55.3	------------	1.2	------	
Total	------	------	------	------------	------	30.7	

PORAC.
[ϕ=15° 05′ N; λ=120° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	37.9	22.4	41	Calm	------	2.5	●° a. p. ⊤ ⚡ p.
2	38.3	22.7	52	Calm	------	10.4	● a. p. ⊤ p.
3	33.4	23	54	NE by E	1	------	●° p.
4	35.5	22	44	SE by E	2	------	⌒ p.
5	35.3	23.5	52	Calm	------	------	●° a.
6	39.1	22.5	37	SE	0	------	●° p.
7	37.4	23.8	48	Calm	------	------	⛈ p.
8	38.3	22.7	42	Calm	------	------	
9	38.9	23.6	41	SE	2	------	
10	38.4	23.5	49	Calm	------	3.6	⛈ ● p.
11	38.1	23	43	ESE	0	91.4	⛈ ● p.
12	34.5	21.5	64	ESE	2	------	⛈ p.
13	34.4	23.1	53	SE	2	------	
14	35.1	23.7	47	Calm	------	2.3	● ⚡ p.
15	33.6	23.5	78	W by S	0	9.9	● a. ⚡ p.
16	35.5	22.2	36	Calm	------	------	⚡ p.
17	35.6	23.5	56	Calm	------	------	⛈ p.
18	36.2	22.7	63	W	3	7.9	● ⊤ p.
19	34.3	23.5	63	W	0	------	⛈ p.
20	33.9	24.1	64	Calm	------	------	⊤ a.
21	35.9	24.1	52	SSW	0	------	⛈ p.
22	34.8	23.5	65	Calm	------	------	⛈ p.
23	36.9	22.9	51	WSW	1	------	⛈ p.
24	36.5	22.7	52	SW	2	------	⊤ a. ⚡ p.
25	32.8	23.4	61	WSW	2	------	⊤ p.
26	34.5	22.5	65	WSW	2	6.4	● ⚡ p.
27	30.2	21.2	90	Calm	------	1.5	●° p.
28	32.2	22.4	72	E	0	------	⛈ a.
29	32.9	22.5	62	SW	2	4.6	● ⚡ p.
30	35.4	21.7	55	SSE	1	------	⛈ p.
31	34.3	21.9	61	S	0	------	⚡ p.
Mean	35.5	22.9	55.3	------------	.7	------	
Total	------	------	------	------------	------	140.5	

METEOROLOGICAL DATA, ETC.—Continued.

ARAYAT.
[ϕ=15° 08′ N; λ=120° 46′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	38.4	24.5	35	W	1	------	⊤ d p.
2	38.1	24.5	38	NNW	1	4.3	⊤ ● p.
3	34.4	23.2	43	E	2	------	
4	35.6	22.7	37	ESE	2	------	d ⌒ p.
5	34.1	23.5	50	E	1	6.6	● a.
6	37.9	22.5	35	SSW	1	1.8	● p.
7	37.9	23.5	42	W	1	------	⊤ d ⩽ p.
8	35.9	22.4	42	Calm	------	------	⩽ p.
9	36.9	23.1	42	W	1	------	
10	38.4	24.2	35	SE	2	------	d ⊤ a.
11	37.7	24.4	40	Calm.	------	6.1	⊏ ● p.
12	30.2	23.5	77	SW	1	4.1	● ⊤ p.
13	34.7	23.6	46	S	1	------	⊤ d p.
14	36.7	24.3	39	SW	1	------	⊤ ⩽ p.
15	33.9	25	54	SW	2	------	⊤ p.
16	37.4	24	41	SW	1	------	⊏ p.
17	37.9	25	40	Calm.	------	------	⊤ ⩽ p.
18	38	24	40	SW	1	------	⊤ d ⩽ p.
19	34.9	24.7	53	WSW	1	------	⊏ p.
20	36.4	24.2	49	WSW	1	------	⊤ a.
21	36.6	24	46	WSW	2	------	⊏ d p.
22	37.1	24.4	40	SW	2	------	
23	36.7	24	45	SW	2	------	⊤ p.
24	36.4	24.5	46	SW	3	------	
25	33.6	24.3	55	WSW	4	------	⊤ d p.
26	36	23.5	49	SW	2	2.5	↙° ⊤ ● p.
27	26.4	22.6	88	W	1	10.9	⊤ ● p.
28	29.9	22.3	77	SW	1	1.3	≡² a. ↙ ● p.
29	33.5	23.6	50	SW	2	------	
30	35.8	22.6	41	S	1	------	
31	34.9	23.8	45	WSW	1	------	
Mean	35.6	23.8	47.1	------------	1.4	------	
Total	------	------	------	------------	------	37.6	

TARLAC.
[ϕ=15° 31′ N; λ=120° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	38.9	21.5	45	N	1	------	Ω ≡° a. ↙° ⊤ p.
2	37.9	23.1	44	ESE	1	------	Ω ≡ a. ⩽² p.
3	36.9	22.5	50	SE	2	------	Ω ≡ a.
4	38.9	19.8	36	SE	1	------	Ω ≡ a.
5	36.7	22.6	53	SSE	1	------	
6	40.2	21.5	37	S by W	1	------	⊤° p.
7	41.2	23.7	36	SSE	1	33.3	⊏ ↙° p.
8	36.8	22.8	49	SSE	1	------	≡ a.
9	38.1	23	39	S by E	1	------	≡ a.
10	39	24.1	43	NNE	1	1	Ω° ≡° a. ⩽° ●° p.
11	39	24.5	43	NE by E	1	------	∞ p.
12	38.5	22.6	44	S	1	.8	⊏ ↙° p.
13	38.6	23.1	40	WNW	1	------	d° p.
14	39.6	23.6	38	SSE	1	------	Ω a. ⊏ p.
15	38.2	24.5	64	WSW	3	------	⊏ d° p.
16	38.2	22.8	47	N	1	------	≡° a. ∞ ⊤ p.
17	38	24.1	47	E	1	6.4	●° ⊤ p.
18	37.6	23.3	65	NNW	5	9.1	⊏² p.
19	36	23.5	61	SW	1	.8	●° ⩽° ⊤ p.
20	35	22.8	78	N	1	.5	●° ⊏ p.
21	37.6	23.1	46	E	1	32	≡° ●° ⊤ a. ⊏² p.
22	36.1	23.8	60	SSE	1	.8	⊏ p.
23	35.8	23	58	SSE	1	43	●° a. ⊏ ⊍ p.
24	35.2	22.7	86	WSW	0	3.8	⊏° ⊍² ⊕² p.
25	32.1	22.8	88	SSW	1	7.6	⊏ ↙° ⊍ ⊕ p.
26	34	22.3	85	NE by N	0	5.6	⊏ ↙° p.
27	30 9	21.6	73	NW by N	1	.5	≡² a. ●° ⊍ p.
28	33	22	87	ENE	1	13	⊏² ↙ p.
29	33.7	22.9	60	SSW	1	------	
30	35.7	22.2	54	SSE	1	------	Ω a. ⊤ p.
31	34.7	22.3	63	SSE	1	------	Ω a. d° ⊤° p.
Mean	36.8	22.8	55.5	------------	1.2	------	
Total	------	------	------	------------	------	158.2	

BALER.
[ϕ=15° 47′ N; λ=121° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33.4	23.5	------	NE	2	49.5	↙ ● ⩽ ⊤
2	31	23.2	------	NE	2	------	
3	30.4	24	------	NE	2	26.4	↙ ●
4	30.8	22.5	------	E	1	------	
5	28.3	23	------	E	1	87.9	●
6	31.6	22.4	------	E	1	------	
7	32.4	24	------	E	1	------	
8	31.8	23	------	E	2	------	
9	32.5	21.8	------	E	1	------	
10	33.8	22.5	------	NE	1	------	
11	32.2	24.2	------	NE	1	------	
12	32.5	23	------	E	1	------	
13	30	24.2	------	E	2	11.4	↙ ●
14	31.5	22.8	------	NE	1	------	
15	32	24.6	------	E	1	------	
16	33.5	22.5	------	E	1	------	
17	35.6	24.2	------	W	2	------	
18	34	25	------	NE	2	21.8	↙ ● ⩽ ⊤
19	33	24	------	E	1	------	
20	32.6	23	------	E	1	------	
21	33	22.6	------	E	1	------	
22	34.5	24.5	------	NE	2	------	
23	35.2	23.5	------	NE	2	------	
24	35	24	------	NE	2	13.7	↙ ● ⩽ ⊤
25	35.4	24.2	------	E	1	------	
26	34.8	23.5	------	W	2	------	
27	34	22.6	------	W	3	------	
28	32	23.2	------	W	4	------	
29	32.4	24	------	W	1	------	
30	35.6	23	------	NE	1	------	
31	34.4	22.5	------	E	1	------	
Mean	32.9	23.4	------	------------	1.5	------	
Total	------	------	------	------------	------	210.7	

BOLINAO.
[ϕ=16° 24′ N; λ=119° 53′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	34.8	24.3	68	NNW	1	------	⩽ p.
2	33.5	23.5	63	NNW	2	27.9	↙ ●² ⊏ p.
3	34.2	23	61	WNW	1	------	⊤° ⩽ p.
4	33.6	23.6	60	NNW	2	------	↙° p.
5	34.1	24.6	54	E	2	.5	●° a. ↙° ⊤° p.
6	34.8	25.8	56	WNW	1	------	↙° ⩽ p.
7	33.9	26.7	66	N	2	------	
8	33.9	25.7	59	WNW	1	------	⊤° a. ⩽° p.
9	33.8	25.8	57	Calm	------	------	
10	34.2	26.5	64	NNW	1	------	⩽ p.
11	33.7	27.3	65	NNW	3	------	↙° ⩽ p.
12	34	26.2	67	Calm	------	------	⊤ ⩽ p.
13	34.3	25.3	64	NW	2	------	⊤ ⩽ p.
14	33.9	25.3	62	NW	3	------	⊤ ⩽ p.
15	34.4	25.6	60	NW	1	------	
16	34.1	24.4	64	WNW	4	.5	●° a. ↙° a. p.
17	33.2	25.2	63	WNW	1	.3	●° a. ⩽ p.
18	33.6	25.7	65	W	3	------	⊏ a.
19	33.9	25.1	64	WNW	2	.8	d° a. ⊤ ⌒ ↙ ●° p.
20	34.3	24.7	78	Calm	------	35	⊤° ↙° a. ● a p.
21	32.6	24.1	71	WNW	1	3.8	● ⊤² a. ⊏ p.
22	31.8	25.1	74	WNW	1	2.3	● ⩽ p.
23	31.9	24.8	65	W by S	2	.3	●° a. ⩽ p.
24	32.8	25.4	65	WSW	4	------	↙° p.
25	32.6	24.8	80	Calm	------	.5	↙° a. ●° p. ⊤ a. p.
26	31.7	23.6	92	W by N	2	44.2	● a. p. ↙° p.
27	29.8	22.8	96	SW	1	58.7	↙ ● a. ●° p.
28	26.8	23.5	91	SSW	1	34.2	●² a. ●° p.
29	28.4	24.1	80	SW	1	9.1	●° a. p. ⊤° p.
30	31.5	23	63	SW	4	24.9	● a. ⩽ p.
31	32.2	24.2	71	SSW	2	------	
Mean	33	24.8	68	------------	1.6	------	
Total	------	------	------	------------	------	243	

METEOROLOGICAL DATA, ETC.—Continued.

BAGUIO.
[ϕ=16° 35′ N; λ=120° 43′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct		0–12.	mm.	
1	22	13	77	SW	0	------	≡ a.
2	23	13	95	SW	0	0.8	●° p.
3	21.6	14.5	87	WSW	0	------	
4	25	11	59	WSW	0	------	
5	26.4	15	69	W	0	------	
6	25.3	13.8	75	WSW	1	1	≡ a. ●° p.
7	23.8	16	89	SW	0	16.3	● ⊤ p.
8	23.2	14.1	83	WSW	0	6.1	●° p.
9	24	15.6	79	WSW	0	1.5	●° ⊓ p.
10	24.7	14	78	W	1	------	
11	25	13	64	SW	0	------	
12	24	14.1	80	S	0	29.2	● p.
13	23.5	13.6	95	Calm	------	19	● p.
14	22.7	15.5	80	Calm	------	31.7	● p.
15	23.7	14.5	74	W	0	1	●° p.
16	23.8	12.5	67	WSW	1	------	
17	23.6	12.4	74	SW	0	------	
18	23.7	14.6	93	SW	0	29.2	● p.
19	23	15.3	92	W	0	13	● a. ⊤ p.
20	23.1	14	97	Calm	------	24.6	● p.
21	23.4	14.5	82	WSW	1	------	⌒ p.
22	23	15.9	78	WSW	0	68.6	≡ a. ●^{2} p.
23	23.6	15.4	83	WSW	0	17.8	● p.
24	23.3	14.4	80	Calm	------	36.1	● ⊤ p.
25	23.2	15.2	93	Calm	------	54.4	●^{2} p.
26	21.7	15	84	W	0	------	●° p.
27	17	14.4	98	WSW	1	33.3	● a. p.
28	19.7	15	75	WSW	0	------	●° p.
29	21	15.2	86	WSW	0	17	●° a. p.
30	24.1	15	59	WSW	1	------	
31	23.9	14.4	58	SSW	1	------	
Mean	23.2	14.3	80.1	------------	.2	------	
Total	------	------	------	------------	------	400.6	

SAN FERNANDO UNION.
[ϕ=16° 37′ N; λ=120° 18′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32	23.4	70	W	2	------	< p.
2	33.4	23	67	N	3	50.8	⊓^{2} ●^{2} p.
3	32.4	23.2	60	SE	2	------	
4	33	22.6	65	W	2	------	
5	34	23.4	56	SW	2	------	
6	33.8	24.2	53	N	2	------	⊤ p.
7	32.2	24.3	66	W	2	------	
8	35.2	23.4	61	W	2	------	⊤ d. p.
9	34	24	61	W	3	------	⊤ < p.
10	31.8	23.2	71	SW	3	------	< p.
11	32.4	22	61	NW	3	------	< p.
12	33	24.2	65	NW	2	------	< p.
13	34	21.4	52	NW	2	------	< p.
14	34.8	24.2	56	NE	2	------	< p.
15	33.6	23.6	71	W	3	------	
16	35	24	63	W	3	------	< p.
17	33	24.3	63	SW	2	------	d. < ∪ p.
18	34.6	24.4	58	W	3	------	< p.
19	33.8	24.4	71	SW	2	1.8	●° p.
20	34	23	65	W	4	3.3	● ⌒ p.
21	34.2	23.4	68	W	2	------	
22	32.8	23.2	65	W	2	49.8	⊓^{2} ● a.
23	34.5	24	64	W	3	------	⊤ p.
24	34.6	24.2	72	SW	2	------	●° p.
25	34.5	24.4	68	SW	3	13.5	● p.
26	32.2	21	92	N	2	22.1	●° a. p.
27	36	21.4	96	NNW	2	20.8	●° a. p.
28	29.2	22.3	85	SW	2	2.5	●° a. p.
29	30.5	22	75	SE	2	36.6	⊓ ●^{2} a.
30	32.6	22.2	68	SW	2	?	d. ⊤ a. ↙° ⊓ ●^{2} p.
31	31.8	21.3	63	SE	2	------	
Mean	33.3	23.2	66.8	------------	2.4	------	
Total	------	------	------	------------	------	------	

CANDON.
[ϕ=17° 12′ N; λ=120° 26′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.4	24.5	57	NW	3	------	↙° a. < p.
2	32.5	24.7	60	W	2	------	⊤° < p.
3	32.5	24.8	61	WSW	3	------	↙° a.
4	32.5	25	62	NW	2	------	⊤° p.
5	32.2	25.9	63	W	3	------	↙° a. ⊤° < p.
6	32.2	24.6	68	W	4	------	Ω° ↙° a.
7	32.7	25.5	55	NW	4	------	↙° ⊤° p.
8	32.5	25.5	64	S	1	------	⊤° p.
9	32.4	25.2	65	WSW	3	------	↙° ⊤° p.
10	32.8	25.5	54	NW	2	------	Ω a. < p.
11	32.5	24.4	58	NNW	2	------	< p.
12	31.9	24.9	63	NNW	1	------	< p.
13	32.8	25.5	60	W	2	------	⊓° p.
14	33.1	27.2	61	WSW	1	------	⊤° < p.
15	33.5	26	54	W	2	------	< p.
16	32.5	25.4	60	SW	2	------	○ a. ↙° < p.
17	31	26.2	67	W	1	1	⌒° ⊤ a. ●° ⊓° p.
18	32.5	26.1	65	W	2	------	↙° a. ⊤ a. p. < p.
19	32.9	25.1	61	NW	2	?	⊤ < ↙ ● p.
20	32.5	25.4	68	SSW	5	5.1	↙° ⊤ ●° ⌒ p.
21	32.4	24.1	68	W	1	------	⊤ ⌒ d. ∪ p.
22	32.2	25.5	67	SW	1	6.4	⊤ a. ●° a. p. ⊓° p.
23	32	26.6	70	SSW	3	5.3	⊤° ●° a. ⊓ °p.
24	32.9	26	68	SSW	5	5.6	⊤ ↙° a. < ●° p.
25	31.5	26	71	SW	6	25.4	↙° a. p. ●^{2} ⊓ p.
26	29.8	24.4	86	Calm	------	77.7	↙° a. ●^{2} a. p.
27	26.1	23.9	90	SSE	1	14.2	↙° ● a.
28	28.2	23.6	84	SSE	1	5.4	●° a. p. ↙° p.
29	29.2	24.5	78	S	1	22.9	● ⊤° ↙° a. ⊤^{2} p.
30	30.7	24.1	78	SW	3	------	↙° < p.
31	30.2	24.1	75	S	1	------	< p.
Mean	31.8	25.2	66.5	------------	2.3	------	
Total	------	------	------	------------	------	------	

SANTO DOMINGO.
[ϕ=20° 28′ N; λ=121° 59′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.2	24.3	84	SW	2	------	Ω^2 a. ≡ ●° < p.
2	29.8	23	78	NE	1	0.5	Ω° a.
3	30	23.4	75	ESE	4	------	↙° p.
4	30.5	24.4	72	ESE	4	------	↙° a. p. ≡ p.
5	30.6	24.4	72	SE	3	------	↙° a.
6	31.4	24.5	79	SSW	2	------	≡ p.
7	30.4	21.3	85	NW	1	.5	Ω^2 a. ●° p.
8	29.3	22.9	81	N	1	.5	●° a. ≡ p.
9	31.3	21	72	ESE	1	------	Ω^2 a. ≡ < p.
10	30.9	23.5	77	WNW	2	------	Ω° a. ≡ ●° <° p.
11	28.1	21.7	73	N	2	.6	⌒ a. ●° a. p.
12	28.1	21	74	E	3	45.9	● a. ↙° p.
13	28.8	22.6	69	ENE	3	------	↙° a. p.
14	30.1	23.4	83	E	3	------	≡ ↙° < p.
15	30.1	24.7	79	SW	2	------	↙° d° p.
16	30.6	22.7	78	SW	2	------	Ω^2 a. < p.
17	29.2	25.4	89	WSW	4	.5	d° a. <^{2} ↙ ●^{2} ⊤ p.
18	28.5	22.7	85	NE	1	19.3	●° a. ∪ < p.
19	29.2	22.2	80	NE	2	------	d° < p.
20	31	24	79	S	1	------	⊤ a. p. ⌒ p.
21	31.2	24.5	78	ESE	2	1.5	●° ⊤ ⌒ <^{2} p.
22	31.2	23.3	75	WSW	2	2.5	Ω^2 a. ⊓ ↙ ●° p.
23	30.8	24	78	SW	3	4.3	Ω° ⌒ a. ⊓ p.
24	32.3	24	75	SSW	3	4.3	↙ ● ⊤° p.
25	30.7	21	97	WSW	4	39.2	↙ ●^{2} ⊓ p.
26	25	22.4	89	ENE	1	44.1	● a. p.
27	27.3	22.1	69	NNE	1	6.8	●° a.
28	27.7	22.1	86	ESE	2	13.3	⊓° ●° a. p.
29	29.7	22.5	90	W	1	29.7	↙ ● p.
30	28.3	22.6	81	SW	1	52.5	●^{2} a. ⊓ ↙ ● p.
31	28.3	21.2	89	SSE	3	28.2	●° a. ↙ ● < p.
Mean	29.7	23	79.7	------------	2.2	------	
Total	------	------	------	------------	------	294.2	

NOTAS GENERALES DEL TIEMPO.

Presión y temperatura.—La media mensual de la presión atmosférica resulta en todas las estaciones superior á la de Mayo del año pasado, siendo esta diferencia más pronunciada en la región septentrional de nuestro Archipiélago. Esto debe sin duda atribuirse á la influencia de dos tifones que el año pasado atravesaron el centro de la Isla de Luzón, cuando este año sólo se ha sentido algo la influencia de algunos centros ciclónicos ó depresiones lejanas. Con todo, si se compara dicha presión media con la normal de Mayo, hallaremos ser muy poca la diferencia: en Manila no pasa de $+$ 0.01 mm. Las mayores presiones tuvieron lugar generalmente el día 12: las menores, el día 1.º en el Sur de Filipinas, y el 24 en el Norte.

Según se ve en el cuadro que acompaña el texto inglés, la temperatura media mensual es en general algo inferior á la de Mayo, 1906: sin embargo Manila, Dagupan y S. Isidro nos la dan algo mayor. La media de Manila se diferencia de la normal en $+$ 0.2. En el cuadro de observaciones de Manila resaltan por sus máximas temperaturas absolutas, los días 2–9, oscilando todas ellas entre 36.0 °C. y 37.2 °C.; esta última se registró el día 2. La máxima de todas las estaciones de segunda clase corresponde á S. Isidro, donde subió el termómetro el día 10 hasta 40.6 °C.

Precipitación acuosa.—Aunque ha habido este mes algunas lluvias, han sido poco abundantes y frecuentes, si se comparan con las de Mayo de otros años, especialmente del año próximo pasado. Sólo las estaciones de Cebú, Dávao, Isabela de Basilan y Bacólod han registrado un total de lluvia mayor al de Mayo 1906. La cantidad de agua recogida en Manila se diferencia de la normal en — 39.9 mm.

DEPRESIONES Y TIFONES.

Este mes, lo mismo que el anterior, se ha distinguido por la ausencia absoluta de depresión atmosférica de importancia, tanto en Carolinas y Marianas como en Filipinas. Varias depresiones lejanas, formadas bien en el Continente, bien en los alrededores de Formosa ó de Meiacosima, han ejercido alguna influencia en los vientos y barómetros especialmente del Norte de Luzón y de Sto. Domingo (Islas Batanes). Sólo mencionaremos tres de ellas, por haber adquirido bastante intensidad antes de llegar al Japón, y ser fácil seguir su trayectoria con la ayuda de las observaciones de las Islas Liukiu y del Japón.

Teniendo á la vista los mapas diarios del día 9, hallamos que una de ellas aparece en formación la madrugada de dicho día hacia el E. de Formosa; muévese rápidamente hacia el NE adquiriendo al propio tiempo mayor intensidad, cruza la noche del mismo día muy cerca del S de Kiusiu, penetra en la costa SE del Japón la tarde del 10, y sale de nuevo al Pacífico la madrugada del 11.

La otra depresión parece haber tenido su origen la madrugada del 16 en los alrededores del Sur de Formosa; movióse en dirección al NE, y atravesó el Mar del Este la noche del 16 al 17, desarrollándose considerablemente. El 17 cruzó el norte de la Isla Kiusiu y el extremo SW de Nippon, y del 17 al 19 atravesó el Mar del Japón, penetrando en el Sur de Sakhalin poco después de mediodía del 19.

La tercera depresión parece haber procedido del centro de China, cruzó el 23 el Mar del Este, moviéndose en dirección al E, y, después de atravesar el grupo de las Islas Liukiu, penetró en el Pacífico la noche del mismo día.

GRANIZADA DEL 30 DE MAYO.

Copiamos aquí para información de nuestros lectores la siguiente relación que nos remitió el observador de Calbáyog (Sámar), D. Pío Santos, sobre una granizada que descargó el 30 de Mayo sobre algunos montes de aquella isla. Es este un hecho rarísimas veces observado en estas Islas. Dice así el citado observador:

El Rev. P. Rector del Colegio de S. Vicente de Paúl, Calbáyog, Sámar, que acaba de llegar de unos barrios de la parte norte de esta isla, me comunica la siguiente nota:

"Eran las cuatro de la tarde de mi reloj del día 30 de Mayo de 1907, cuando una nube cargada de granizo y agua desfogó sobre los montes de Tarabucan de Caybago, comprensión del municipio de Oquendo [20 kilómetros al NE. de Calbáyog]. Duró como unos tres minutos, convirtiéndose en un gran chaparrón de agua. La dimensión y forma del granizo eran como de peladillas unas, cilíndricas, prolongadas otras, pudiéndose observar otras de forma cónica, efecto del golpe que recibían al caer. Los más ancianos de estos lugares dicen no haber visto ni oído cosa semejante. Hoy le llaman al suceso, *lluvia de piedras.*"

SEISMOLOGICAL BULLETIN FOR MAY, 1907.

By Rev. Miguel Saderra Masó, S. J.
Assistant Director of the Weather Bureau.

EARTHQUAKES FELT IN THE PHILIPPINES.[1]

1–14. **Camarines.** According to the reports of the meteorological station at Nueva Caceres, light earthquakes and aftershocks were felt almost daily during the first half of May in the meizoseismal region of the April earthquakes. These disturbances rarely reached force III. The dates of their occurrence were: 1, 4, 7, 8, 9, 11, 12, 13, and 14. May 4 and 11 were the days of maximum frequency, three shocks being felt on each, some of them reaching force III. The total number of preceptible shocks during the period mentioned was sixteen, of which nine took place before and seven after noon. From the 15th to the end of the month complete tranquillity appears to have reigned.

2, 13^h 27^m. **Borongan** (E of Samar). Trembling shock; intensity II.

4, 2^h 30^m. **Legaspi** (SE of Luzon). Shock of intensity II.

4, 4^h 19^m. **Tuguegarao** (N of Luzon). Oscillatory quake; intensity II.

4, 4^h 35^m 57^s.* **Northern Luzon.** Earthquake of intensity III, which was felt in all the provinces of northern Luzon as far as parallel 17° N lat. Repetitions of less intensity occurred at 5^h 17^m 37^s, 6^h 35^m 53^s, and 22^h 0^m 1^s.

5, 1^h 22^m. **Iloilo** (E of Panay). Oscillatory shock. Direction ENE–WSW; intensity II; duration 7^s.

7, 1^h 27^m. **Legaspi** (SE of Luzon). Oscillatory shock. Direction WNW–ESE; intensity II; duration 10^s.

7, 8^h 26^m. **Santo Domingo (Batanes Islands).** Oscillatory shock; direction NW–SE; intensity II; duration short. Repetition of somewhat greater intensity at 14^h 50^m.

10, 11^h 53^m 25^s.* **Northwestern Luzon.** Earthquake of small intensity and short duration. It was felt only along the coasts of the China Sea between the Gulf of Lingayen and Cape Bojeador. Its center was apparently under the sea, some 500 kilometers NW of Manila.

11. 0^h 40^m 43^s.* **Aparri** (NE of Luzon). Oscillatory shock; direction N–S; intensity II; duration 5^s.

11, 10^h 35^m. **Santo Domingo (Batanes Islands)**. Oscillatory quake; direction E–W; intensity II; with subterraneous rumblings.

16, 16^h 5^m. **Borongan** (E of Samar). Earthquake of force III, lasting 8^s. Repetitions of same force at 16^h 10^m and 16^h 22^m.

17, 14^h 6^m 45^s.* **Leyte.** Earthquake of intensity II, lasting 10^s. Perceptible only in the southern part of the island.

19, 12^h 45^m 44^s.* **Leyte and NE Mindanao.** Earthquake of intensity II; duration 20^s. Although of less intensity than the preceding, it was felt over a much wider area.

[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

20, $15^h\ 49^m\ 10^s$.* **Leyte, Cebu, and NE Mindanao.** Earthquake of intensity VII in the southeastern extremity of Leyte and well perceptible throughout the region indicated. It was followed by several less violent repetitions. At $16^h\ 3^m\ 30^s$ a second earthquake took place which was slightly less intense than the first. Further on will be found a special paragraph on these disturbances.

25, $23^h\ 40^m$. **Leyte.** Shock of intensity III.

25, $23^h\ 52^m\ 25^s$.* **Northern Luzon.** Earthquake of intensity VII, perceptible throughout nearly the whole island. See special note further on.

26, $9^h\ 58^m\ 44^s$.* **Legaspi** (SE of Luzon). Oscillatory shock; direction N–S; intensity II; duration 5^s.

27, $3^h\ 40^m$. **Aparri** (NE of Luzon). Oscillatory shock; direction W–E; force II.

27, $11^h\ 4^m$. **Tacloban** (NE of Leyte). Oscillatory shock of intensity I and very short duration.

28, $18^h\ 55^m$. **Aparri** (NE of Luzon). Oscillatory shock of intensity II.

THE EARTHQUAKES OF LEYTE, MAY 17-25.

The scanty informations furnished by the observers stationed at Ormoc and Maasin seem to indicate that the center of the disturbances which were experienced in the Island of Leyte during the period May 17–25 was situated some 30 kilometers to the northeast of Maasin, underneath the kind of peninsula formed by the southeastern part of said island. The meizoseismal region, within which the shocks were repeated with great frequency from the 17th to the end of the month, and where the two principal earthquakes of May 20 developed great violence, appears to have been limited to this peninsula, and hence to have measured hardly 10 kilometers in diameter.

In a letter dated May 20, Mr. Ramon E. Escaño writes from Cabalian, a town situated in the extreme southeast of said peninsula, as follows:

> Some of the more violent quakes have caused landslides in the mountains of this neighborhood. Since the 17th, the date of the first disturbances, fifty well perceptible quakes have been counted thus far, at intervals sometimes of hours, sometimes of minutes only.

In a second letter, under date of May 25, he adds that the shocks continue and their number exceeds sixty. Mr. Arceaga, writing from the same place, says that on the 20th earthquakes were so frequent that people experienced difficulties in cooking their meals. He also assures us that in a hamlet in the western part of the peninsula the oscillations were so violent as to cause the collapse of several nipa houses, whose upright posts gave way under the strain. Finally he states the conviction of the people that the continual commotions are due to one of the volcanoes or solfataras existing near Cabalian whose activities have increased of late. The temperature of some thermal springs in said neighborhood is said to have likewise vastly increased. These facts and the landslides which have occurred in the mountains fill the inhabitants of Cabalian and other towns of southern Leyte with fear and trembling lest a volcanic eruption be imminent.

It can not be doubted that these earthquakes, besides having a very small meizoseismal region—only about 10 kilometers in diameter—must have proceeded from a center situated at a very shallow depth. The latter is demonstrated by the fact that out of more than sixty shocks experienced in the epicentral region only eight were perceptible at Maasin, at a distance of 30 kilometers, and four in the extreme northeast of Mindanao, distant 60 kilometers. Hence these disturbances exhibited some of the characteristics of earthquakes due to volcanic action as well as of those which are caused by the subsidence of the roofs of subterranean caverns.

The seismographs of the Observatory registered five of these earthquakes, to wit, on May 17, 19, 20, and 25. The resulting seismograms seem to indicate that the strongest disturbances were those which took place during the afternoon of the 20th. The shock which occurred at $15^h\ 49^m\ 10^s$ of said day was registered at Zikawei—that is, at a distance of 2,000 kilometers. The last quake of some importance in this part of Leyte occurred on May 25, about eleven minutes and a half before another violent disturbance in the north of the Archipelago which we shall discuss in the following paragraph.

THE EARTHQUAKES IN NORTHERN LUZON, MAY 4 AND 25.

On May 4 four distinct earthquakes shook the northernmost provinces of Luzon. Three of these occurred before noon, within the space of two hours, the last during the night. The notes received from our observers at Aparri, Tuguegarao, and Vigan assign force II to three of them and force III to one. From the directions which are attributed to the seismic waves in said communication, it follows that the point of their origin was between the Provinces of Ilocos Norte and Cagayan, closer to the former than to the latter. The records of the seismographs at the Observatory, for these disturbances as well as for those which were felt on the 25th, agree perfectly with this conclusion: All of them indicate that the origin was situated within the island, slightly more than 350 kilometers north of Manila. It is therefore very probable that it was between Tuguegarao and Laoag, not far from 121° east longitude and 18° north latitude. This same center was likewise responsible for the earthquake of May 25, which was of intensity VII at Tuguegarao and VIII at Laoag. It has not been possible to obtain data from the districts east and southeast of the capital of Ilocos Norte, where undoubtedly the shocks were of greater force. However, the damage done there must have been practically nil, since the whole region of the central cordillera is either uninhabited or peopled by non-Christian tribes, who live in miserable huts constructed of wood and grass. Judging from the direction and intensity of the seismic waves as observed at the stations mentioned, we must conclude that the meizoseismal area extended from the western coast of Luzon toward east-southeast across the central cordillera for a distance of about 100 kilometers, forming a rather elongated ellipse. Within this region were felt some very feeble repetitions in the early hours of the morning of the 26th and two small earthquakes of intensity II on the 27th and 28th, with which closed this period of seismic activity in the north of Luzon.

The earthquake which took place shortly before midnight of the 25th did considerable damage to the stone buildings in Ilocos Norte and also cracked some walls at Tuguegarao. It was quite perceptible throughout the part of the island north of parallel 14° north latitude. We do not believe that these disturbances belonged to the class of tectonic earthquakes, both on account of their limited meizoseismal area and of the small distance to which the imperceptible seismic waves were propagated. As to the latter, only one of them was registered by the seismographs at Zikawei, at a distance of only about 1,500 kilometers from the epicenter.

RECORDS OF THE MICROSEISMOGRAPHS.

[Time of the one hundred and twentieth meridian east of Greenwich. Midnight = 0^h.]

No.	Date.	Component.	Beginning.			Maximum range of motion.			End.	Instrument.	Remarks.
			First preliminary tremors.	Second preliminary tremors.	Principal portion.	Hour.	Amplitude (2 a.).	Period.			
			h. m. s.	h. m. s.	h. m. s.	h. m. s.	mm.	s.	h. m. s.		
82	3	WSW-ENE	11 16 14	-----	11 16 30	11 16 38	0.03	2.4	11 20 00	V. M.	
83	4	NNW-SSE	4 35 57	-----	4 36 51	4 37 19	1.60	2	4 54 00	V. M.	Vertical component; amplitude, 0.65 mm. Earthquake in north of Luzon and at Nueva Caceres (SE of Luzon).
		NNW-SSE	4 36 03	4 36 44	4 37 45	4 38 26	1.92	6.2	5 00 00	H. P.	
84	4	WSW-ENE	5 17 37	5 18 20	5 19 11	5 19 37	.58	2.4	5 27 00	V. M.	Vertical component; amplitude, 0.33 mm. Earthquake in north of Luzon.
		WSW-ENE	5 17 48	-----	5 18 32	5 19 22	.14	5.4	5 33 00	H. P.	
		NNW-SSE	5 17 46	-----	5 18 27	5 18 38	.12	3.9	5 29 00	H. P.	
85	4	WSW-ENE	6 35 53	-----	6 36 01	6 36 08	.05	2.8	6 38 00	V. M.	Vertical component; amplitude, 0.03 mm. Earthquake at Aparri (NE of Luzon).
86	4	NNW-SSE	13 58 08	14 03 24	14 08 04	14 10 01	.01	8.8	14 45 00	V. M	
		WSW-ENE	13 58 16	14 03 13	14 08 30	14 09 21	.12	6.6	14 46 00	H. P.	
87	4	WSW-ENE	16 41 39	16 46 59	16 52 29	16 55 57	.02	9.6	17 44 00	V. M.	
		NNW-SSE	16 41 49	16 46 47	16 52 09	16 54 58	.04	9	17 37 00	H. P.	
88	4	WSW-ENE	18 45 39	-----	18 46 05	18 46 12	.07	2.4	18 52 00	V. M.	Earthquake at Nueva Caceres (SE of Luzon).
89	4	WSW-ENE	22 00 01	-----	22 00 46	22 01 39	.04	2.8	22 06 00	V. M.	Earthquake in north of Luzon.
90	7	WSW-ENE	2 57 35	-----	-----	-----	-----	-----	3 12 00	V. M.	
		NNW-SSE	2 57 44	-----	-----	-----	-----	-----	3 18 00	H. P.	
91	7	NNW-SSE	12 51 37	-----	-----	-----	-----	-----	13 42 00	V. M.	
		WSW-ENE	12 51 46	-----	-----	-----	-----	-----	13 43 00	H. P.	
92	7	WSW-ENE	18 21 53	18 26 02	18 29 28	18 37 46	.09	9.6	20 06 00	V. M.	
		NNW-SSE	18 22 14	18 26 42	18 29 51	18 39 09	2.20	8.2	19 47 00	H. P.	
93	8	WSW-ENE	1 18 46	-----	1 19 28	1 19 44	.24	2.4	1 25 00	V. M.	Vertical component; amplitude, 0.12 mm. Earthquake at Legaspi (SE of Luzon).
		NNW-SSE	1 18 55	-----	1 19 32	1 20 02	.10	6.6	1 25 00	H. P.	
94	8	WSW-ENE	-----	-----	2 18 54	2 19 00	.03	3.2	2 20 00	V. M.	
95	9	NNW-SSE	17 05 39	-----	17 06 18	17 06 26	.16	2.6	17 11 00	V. M.	
96	10	WSW-ENE	11 53 25	-----	11 54 10	11 54 34	.29	2.4	12 03 00	V. M.	Vertical component; amplitude, 0.20 mm. Earthquake, intensity III, in north of Luzon.
		WSW-ENE	11 53 31	-----	11 54 08	11 54 57	.10	4.5	12 04 00	H. P.	
97	11	WSW-ENE	0 40 43	-----	0 41 29	0 41 36	.11	2.8	0 47 00	V. M.	Earthquake at Aparri (NE of Luzon).
98	13	WSW-ENE	-----	-----	0 04 00	0 04 05	.02	1.6	0 06 00	V. M.	Earthquake at Nueva Caceres (SE of Luzon).
99	14	WSW-ENE	2 51 31	-----	2 51 52	2 52 02	.04	2.4	2 56 00	V. M.	Earthquake at Nueva Caceres (SE of Luzon).
100	14	WSW-ENE	5 07 49	5 11 57	5 16 10	5 18 24	.01	8.8	5 49 00	V. M.	
		WSW-ENE	5 07 57	5 12 01	5 16 57	5 18 50	.05	6.6	5 56 00	H. P.	
101	15	WSW-ENE	18 28 03	-----	18 28 50	18 29 15	.06	2.4	18 35 00	V. M.	
102	17	WSW-ENE	14 06 45	-----	-----	-----	-----	-----	14 17 00	V. M.	Earthquake in Leyte island.
		WSW-ENE	14 06 58	-----	14 09 56	14 10 37	.04	6	14 23 00	H. P.	
103	18	WSW-ENE	-----	-----	13 03 50	-----	-----	-----	13 05 00	V. M.	
104	19	WSW-ENE	6 16 21	-----	6 16 38	6 16 43	.04	2.4	6 20 00	V. M.	
105	19	WSW-ENE	12 45 44	-----	12 46 55	12 47 21	.04	2	13 08 00	V. M.	Earthquake in Leyte and NE of Mindanao.
		WSW-ENE	12 45 53	-----	12 46 54	12 50 07	.12	6	13 08 00	H. P.	
106	20	WSW-ENE	15 49 10	15 51 03	15 52 02	15 53 51	.04	5.6	-----	V. M.	Earthquake in Leyte and NE of Mindanao.
		WSW-ENE	15 49 13	15 51 16	15 52 09	15 53 03	1.36	6.6	-----	H. P.	
		NNW-SSE	15 49 09	15 51 01	15 52 38	15 54 10	.04	4.8	-----	V. M.	
		NNW-SSE	15 49 13	15 51 10	15 53 30	15 55 45	.75	8.1	-----	H. P.	
107	20	WSW-ENE	16 03 30	16 05 08	16 07 05	16 07 59	.08	3.2	16 55 00	V. M.	Second earthquake in Leyte, Cebu and NE of Mindanao.
		WSW-ENE	16 03 32	16 06 11	16 08 56	16 09 38	.55	6.8	17 11 00	H. P.	
		NNW-SSE	16 03 30	16 05 08	16 07 05	16 08 17	.04	2.8	16 59 00	V. M.	
		NNW-SSE	16 03 35	16 05 43	16 09 00	16 09 32	.45	7	16 58 00	H. P.	
108	25	WSW-ENE	19 54 02	19 56 50	20 00 50	20 05 31	.02	10.4	-----	V. M.	First shock.
		NNW-SSE	19 54 05	19 56 55	-----	-----	-----	-----	-----	H. P.	
109	25	WSW-ENE	20 06 49	-----	20 12 38	20 13 46	.01	9.2	20 37 00	V. M.	Second shock.
		NNW-SSE	20 06 56	-----	-----	-----	-----	-----	20 39 00	H. P.	
110	25	WSW-ENE	22 09 29	22 15 14	22 18 33	22 19 08	.04	2.4	22 42 00	V. M.	
111	25	WSW-ENE	23 52 35	-----	23 53 16	-----	-----	-----	24 33 00	V. M.	Vertical component; amplitude, 0.60 mm. Origin in north of Luzon; perceptible to the 14° north latitude.
		WSW-ENE	23 52 38	-----	23 53 50	-----	-----	-----	24 28 00	H. P.	
112	26	NNW-SSE	9 58 44	-----	9 59 30	9 59 42	.09	1.6	10 03 00	V. M.	Vertical component; amplitude, 0.07 mm. Earthquake at Legaspi (SE of Luzon).
		WSW-ENE	9 58 49	-----	10 00 38	10 02 42	.04	6.6	10 12 00	H. P.	
113	27	WSW-ENE	9 49 01	-----	9 49 29	9 49 42	.04	2.4	9 52 00	V. M.	
114	29	NNW-SSE	-----	-----	0 40 15	0 40 41	.07	2.4	-----	V. M.	
115	29	NNW-SSE	-----	-----	0 42 44	0 43 08	.10	2.4	0 46 00	V. M.	
116	31	WSW-ENE	20 54 14	-----	-----	-----	-----	-----	21 40 00	V. M.	Very small movements and not distinct, Earthquake, intensity VI, in Tonga I.
		WSW-ENE	20 54 16	-----	-----	-----	-----	-----	21 42 00	H. P.	

Instrumental constants.—Vicentini microseismograph (V. M.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record: NNW–SSE component, 50 times; WSW–ENE component, 50 times.

Horizontal Pendulums (H. P.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation, NNW–SSE pendulum, T=7 seconds; WSW–ENE pendulum, T=6.4 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

Foundation and location.—The instruments are mounted against a solid cut-stone pier measuring 5×5 meters at its base and 3.30×3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above the sea level, while the Horizontal Pendulums stand at 1.50 meters above the ground and 2.50 above the sea level.

Geological structure.—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.

1–14. **Camarines.** Según las notas recibidas de la estación de Nueva Cáceres, durante la primera mitad de este mes continuaron sintiéndose casi diariamente en la región meizoséismica de los terremotos del mes de Abril, temblorcitos ó *aftershocks* que raras veces llegaron á fuerza III. Las fechas en que occurrieron son: 1, 4, 7, 8, 9, 11, 12, 13, y 14. El 4 y el 11 fueron los días en que se experimentó mayor número de sacudidas: se contaron tres, y alguna de intensidad III. El número total de este período fué 16; 9 por la mañana y 7 por la tarde. Desde el 15 hasta el fin del mes la calma parece haber sido completa.

2, $13^h\ 27^m$. **Borongan** (E de Sámar). Temblor susultorio; intensidad II.

4, $2^h\ 30^m$. **Legaspi** (SE de Luzón). Temblor de intensidad II.

4, $4^h\ 19^m$. **Tuguegarao** (N de Luzón). Temblor oscilatorio; intensidad II.

4, $4^h\ 35^m\ 57^s$.* **Norte de Luzón.** Temblor de tierra de intensidad III, sentido en todas las provincias del Norte de Luzón hasta el paralelo 17° N. Repitió luego con menos intensidad á $5^h\ 17^m\ 37^s$, $6^h\ 35^m\ 53^s$, y $22^h\ 0^m\ 1^s$.

5, $1^h\ 22^m$. **Iloílo** (E de Panay). Temblor oscilatorio. Dirección ENE–WSW; intensidad II; duración 7^s.

7, $1^h\ 27^m$. **Legaspi** (SE de Luzón). Temblor oscilatorio. Dirección WNW–ESE; intensidad II; duración 10^s.

7, $8^h\ 26^m$. **Santo Domingo (Islas Batanes).** Temblor oscilatorio. Dirección NW–SE; intensidad II; duración corta. Repitió con alguna mayor intensidad á $14^h\ 50^m$.

10, $11^h\ 53^m\ 25^s$.* **NW de Luzón.** Temblor de tierra de poca intensidad y duración. Sintióse tan solo en las costas del mar de la China, desde el golfo de Lingayén hasta el cabo Bojeador. Parece que el centro se hallaba dentro del mar, á unos 500 kilómetros al NW de Manila.

11, $0^h\ 40^m\ 43^s$.* **Aparri** (NE de Luzón). Temblor oscilatorio. Dirección N–S; intensidad II; duración 5^s.

11, $10^h\ 35^m$. **Santo Domingo (Islas Batanes).** Temblor oscilatorio. Dirección E–W; intensidad II; con ruido subterráneo.

16, $16^h\ 5^m$. **Borongan** (E de Sámar). Temblor de intensidad III, duración 8^s. Repitió con la misma fuerza á $16^h\ 10^m$ y $16^h\ 22^m$.

17, $14^h\ 6^m\ 45^s$.* **Leyte.** Temblor de intensidad II, duración 10^s. Fué perceptible solamente en la parte sur de la isla.

19, $12^h\ 45^m\ 44^s$.* **Leyte y NE de Mindanao.** Temblor de intensidad II, duración 20^s. Aunque de menos intensidad que el anterior, fué sin embargo perceptible en un área mucho más extensa.

20, $15^h\ 49^m\ 10^s$.* **Leyte, Cebú y NE de Mindanao.** Temblor de intensidad VII en el extremo SE de Leyte y bien perceptible en la región indicada. Siguieron varias repeticiones menos intensas. Á $16^h\ 3^m\ 30^s$ se experimentó un segundo terremoto algo menos fuerte que el primero. Véase más abajo un párrafo especial sobre estos terremotos.

25, $23^h\ 40^m$. **Leyte.** Temblor de intensidad III.

25, $23^h\ 52^m\ 25^s$.* **Norte de Luzón.** Terremoto de intensidad VII; perceptible en casi toda la isla. Véase más abajo una nota especial.

[1] La intensidad de los terremotos se indica conforme á la conocida escala de Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120 E. de Greenwich.

26, 9^h 58^m 44^s.* **Legaspi** (SE de Luzón). Temblor oscilatoric. Dirección N–S; intensidad II; duración 5^s.

27, 3^h 40^m. **Aparri** (NE de Luzón). Temblor oscilatorio. Dirección W–E; intensidad II.

27, 11^h 4^m. **Tacloban** (NE de Leyte). Temblor de intensidad I, duración cortísima.

28, 18^h 55^m. **Aparri** (NE de Luzón). Temblor oscilatorio de intensidad II.

LOS TERREMOTOS DE LEYTE (17-25 DE MAYO).

El origen de los terremotos experimentados en la isla de Leyte durante el período 17–25, según los informes no muy completos que agradecemos á los observadores de Ormoc y de Maasin, parece se halla á unos 30 kilómetros al NE de la estación de Maasin, en la especie de península que forma la parte SE de la isla. La región meizoséismica, donde los terremotos se repitieron con gran frecuencia desde el 17 hasta fines de Mayo y desarrollaron mucha violencia los principales del día 20, estaba al parecer limitada dentro de dicha península, de manera que á penas llegaría á tener 10 kilómetros de diámetro.

En una carta fechada el 20 en Cabalían, población situada en el extremo SE de esta península, dice D. Ramón E. Escaño:

Algunos de los terremotos más fuertes han causado derrumbamientos en los montes cercanos al pueblo. Desde el 17 en que se sintió el primero, se han contado ya 50 bién preceptibles, á intervalos de horas y á veces de minutos solamente.

En otra carta, fechada el 25, añade que continúan los terremotos y que van ya contados más de 60. El Sr. D. Arceaga, escribiendo desde el mismo pueblo dice, que los temblores de tierra fueron tan frecuentes el día 20 que la gente tuvo dificultad en cocinar los alimentos. Asegura además que en un barrio situado al W de la península, la fuerza de los vaivenes hizo caer varias casas de nipa, rompiéndose los harigues ó postes que las sostenían. Por último añade que la persuasión de la gente es que la causa de tan continuados terremotos está en uno de los volcanes ó solfataras vecinas á Cabalían, de las cuales se dice que están en mayor actividad, y que unas aguas termales que allí cerca brotan han aumentado excesivamente su temperatura. Ésto y los muchos desprendimientos de terreno en los montes tenían á los habitantes de Cabalían y de los demás pueblos del S de Leyte en gran temor de que sobreviniese alguna erupción volcánica.

Es cierto que estos terremotos además de tener un área meizoséismica muy reducida—unos 10 kilómetros de diámetro—debían proceder de un centro muy poco profundo, puesto que de más de 60 sacudidas experimentadas en el epicentro desde el 17 al 25, solo 8 fueron perceptibles en Maasin, distante 30 kilómetros, y 4 en el extremo NE de Mindanao, que dista 60 kilómetros. Revistieron por consiguiente los caracteres tanto de los terremotos volcánicos como de los originados por hundimientos de cavernas.

Los seismógrafos del Observatorio registraron cinco de estos terremotos, el 17, 19, 20 y 25. De los seismogramas parece poder deducirse que los más fuertes fueron los que tuvieron lugar la tarde del 20. El que ocurrió á 15^h 49^m 10^s de este día fué también registrado por los seismógrafos de Zikawei, ó sea á 2,000 kilómetros de distancia. El último terremoto de alguna importancia ocurrido en esta parte de Leyte tuvo lugar el 25, unos once minutos y medio antes de otro violento en el Norte del Archipiélago y del que se habla á continuación.

TERREMOTOS DEL NORTE DE LUZÓN (4 y 25 DE MAYO).

El día 4 se experimentaron en las provincias extremas del N de Luzón cuatro diferentes temblores de tierra, tres por la mañana, en el intervalo de dos horas, y otro por la noche. En las notas recibidas de las estaciones de Aparri, Tuguegarao y Vigan, tres se califican de intensidad II y uno de intensidad III. De las direcciones que en dichas notas se dan á las ondas séismicas se deduce que el origen se hallaba entre las provincias de Ilocos Norte y de Cagayán, pero más cerca de la de Ilocos que de esta última. Los registros de los seismógrafos del Observatorio, tanto de estos temblores como de los que se sintieron el día 25, concuerdan perfectamente con esta suposición: todos ellos indican que el origen se hallaba dentro de la isla á poco más de 350 kilómetros hacia el Norte de Manila. Es por consiguiente muy probable que estuviese entre Tuguegarao y Laoag, no lejos de los 121° Long. E y 18° Lat. N. De este mismo centro procedió el terremoto del día 25, el cual tuvo fuerza VII en Tuguegarao y VIII en Laoag. No nos ha sido posible obtener datos de los pueblos del E y SE de la capital de Ilocos Norte, donde seguramente tuvo mayor violencia; si bién los daños causados serían prácticamente nulos, por estar toda esa región de la cordillera central ó desierta ó habitada tan solo por tribus infieles que viven en miserables chozas de madera y paja. El área meizoséismica donde el terremoto tuvo mayor violencia, á juzgar por la dirección é intensidad de las ondas séismicas en las expresadas estaciones, se extendía unos 100 kilómetros desde la costa occidental de Luzón hacia el ESE á través de la cordillera central, afectando una elipse prolongada. Dentro de ella se sintieron durante la madrugada del 26 algunas repeticiones muy débiles, y el 27 y 28 dos temblorcitos de intensidad II, con que terminó este período de actividad séismica del Norte de Luzón.

El terremoto de la noche del 25 causó bastante daño en los edificios de mampostería de Ilocos Norte y algunas grietas en los de Tuguegarao. Fué bién perceptible en toda la isla hasta el paralelo 14° Lat. N. Creemos que tampoco estos terremotos deben pertenecer á los tectónicos, ya por la pequeñez de su área meizoséismica, ya también por la corta distancia á que se propagaron las ondas séismicas imperceptibles, puesto que tan solo uno fué debilmente registrado por los seismógrafos de Zikawei, que dista unos 1,500 kilómetros del epicentro.

REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

CROP BULLETIN FOR MAY, 1907.

By Rev. George M. Zwack, S. J.,
Secretary of the Weather Bureau.

GENERAL NOTES.

The average yield of the various agricultural products, viz, rice, hemp, copra, tobacco, sugar, tubers, and fruits, was good. As to rice, Calbayog is the only station which reports local failures in the district, but these were due to the ravages of rodents, and not to climatological factors. All the rest state that the rice crop was fair to abundant. The price varied from ₱5 per cavan at Tarlac to ₱7.50 in Tagbilaran. The production of hemp has slightly fallen off in some places, owing to the press of other work. But as regards the Province of Sorsogon, the observer at Gubat attributes the diminution to the difficulty of disposing of the product, which latter he ascribes to the bad quality of the fiber. In Mindanao the enthusiasm for hemp cultivation continues; likewise on other islands of the south. Thus Bohol is producing large quantities, and in the neighborhood of Isabela, Basilan, no less than 28,000 abacá plants have been set out during the single month of May. In Laguna Province frequent fires in the hemp plantations caused aggregate loss of at least ₱25,000. The price of hemp fell somewhat during the month, but nevertheless ₱25 to ₱25.50 per picul were paid in the district of Butuan. In the copra market was little movement. The price ranged from ₱7.50 to ₱9.50 and even ₱10, the latter prices being paid at Butuan. The tobacco crop is reported to have been good by all the stations. Even in the middle Cagayan Valley some of the plants revived on the advent of rain, and the amount thus produced, though small, is said to be greatly improved in quality. Sugar has given good returns, especially in Ilocos and Bohol. Tubers and fruit, the latter with the exception of mangos, are plentiful nearly everywhere. Of mangos there is great abundance north of parallel 14°; so much so that at Malolos, notwithstanding its being situated on the railroad and only a short distance from Manila, they could be bought for ₱0.50 per hundred. A similar abundance is found on the Island of Basilan. But in the intervening zone the mango crop was small to nil, though in several places other fruit was plentiful, as, for instance, on the west coast of Panay. The scarcity of corn mentioned last month as prevailing rather generally in the south continues.

The drought which during April afflicted almost the whole Archipelago has nearly everywhere been relieved by a little rain, which enabled the farmers to commence work in the fields. As a rule, however, the rains fell rather late in the month, and the lack of water did considerable harm to plant life during the first half. Up to the end of the month the rainfall had generally been just enough to permit the farmers to take up most of their much-retarded work, but not sufficient for irrigation rice. Tacloban and Isabela (Basilan), however, report regular amounts, and Bacolod even abundant rain. On the other hand, Aparri complains that the drought still impeded farm work.

Owing to the rains, the state of the crops was good at the close of the month, though several had suffered considerably, as stated. It is consoling to learn that in the hard-stricken valley of the middle Cagayan River the newly planted corn is thriving and promising a good crop.

Locusts have been reported as doing considerable harm in the Province of Iloilo and the north of Occidental Negros, likewise in the district of Davao. They have infested Tablas Island, without much damage so far, and are threatening the Province of Antique and the neighborhood of Atimonan. Wild hogs and rodents have impaired the crops in several localities.

As to rinderpest and other animal diseases the situation has improved decidedly. Five stations report that the sicknesses have disappeared or are doing so. In most places which are still afflicted the evil is restricted to chickens, or appears only in isolidated cases, as in Leyte, Cebu, and Surigao. It continues, however, to a more serious extent on the east coast of Samar south of Borongan, in Iloilo, Occidental Negros, Sorsogon, Bataan, Bulacan, Pampanga, and Nueva Ecija. The heaviest losses during May have been reported from Paombong, Bulacan, where 14 horses died during May, while 17 more were still sick on the last day of the month; Orani, Bataan, 10 carabaos dead; and Santa Ana, Pampanga, where 5 carabaos died. Surra has appeared on the southeast coast of Bohol and glanders are said to occur in the interior of said island. At Kawayan (Almeria), on the island of Biliran, 33 hogs have died of hog cholera.

SPECIAL NOTES.

DISTRICT I.

Borongan.—The quantity of copra and hemp produced during May continued to be small, as most people were still occupied in harvesting their rice. Epizoötia continues its ravages among horses, carabaos, and other cattle, the number of victims carried off by sickness being now quite considerable. The towns north of Borongan are as yet free from this plague.

Tacloban.—Hemp, cocoanuts, sweet potatoes, sugar cane, rice, gabe, and vegetables continue to give good returns, and the state of the crops growing in the fields is good, as it was likewise during the preceding months. Rains fell pretty regularly during May, and were a boon, especially to the hemp plantations situated on the slopes of the mountains near Tacloban. At Kawayan (formerly Almeria), however, the hemp, corn, and rice fields suffered from lack of rain. In the same region locusts have appeared, without thus far doing any harm. According to information furnished by the president of said municipality, 53 hogs have died of cholera. At Carigara worms attacked the rice fields, and the loss of hogs, carabaos, and chickens caused by disease is estimated at about ₱200.

Ormoc.—This month's crop of hemp, corn, bananas, sweet potatoes, and gabe has been smaller than that of the preceding. The rainfall remained below the average. The heat made itself felt considerably, but without damaging vegetation. The sickness which prevailed among the stock is disappearing. The price of hemp has fallen notably during the month.

Tuburan.—Crops have suffered heavily from lack of water. Bogo had no rain during March, April, and the first half of May. At length the 14th of this month brought relief, which was needed especially by the sugar cane and corn. Tabogon reports a very bad state of the crops which are growing at present, due to the drought, which is so severe that most of the plants have withered. This latter place is also afflicted with sickness among the animals, though thus far only one carabao has succumbed to it. Bogo is free from animal diseases, but sees its fields of sugar cane attacked by worms.

Cebu.—Since the middle of April considerable dearth of rain is felt, which circumstance appears to be largely responsible for the prevalence of fever, some forms of which are of the malignant type. The corn and sugar cane fields are few and handicapped by the scarcity of water. Only small quantities of tubers and greens appear in the market, but there is plenty of poultry, which sells at very reasonable prices. Mangos are still scarce and consequently high priced.

Surigao.—During the whole month the farmers were occupied in harvesting rice, the crop being satisfactory, one might almost call it abundant. The price of palay (unhulled rice) is ₱2.50 per cavan (75 liters). Some people are still busy with preparing the ground for the planting of corn, which can not take place until some rain has fallen. Hemp stripping and the making of copra continue uninterruptedly throughout the province. Bananas, pineapples, and other fruit of the season are plentiful. A few cases of death due to sickness among hogs and poultry have been registered.

Tagbilaran.—Guindulman, Duero, Jagna, Villar, Carmen, and Sevilla had an abundant crop of rice. The three first named are this year likewise producing a large amount of hemp and copra. Once or twice a month a steamer calls to gather these products and carry them to Cebu. It has been figured out that Duero alone ships every month 500 piculs of hemp and an equal amount of copra.

The rice crop has been fair, but not abundant, at Inabanga, Calape, and Tubigon. These towns cultivate also considerable plantations of sugar cane, generally with good success, since they are the heaviest exporters of sugar destined for the port of Cebu. The municipalities of Loboc, Dimiao, Garcia Hernandez, Anda, and others in the interior of the island are likewise growing sugar cane.

Of bananas and sweet potatoes the whole Province of Bohol has had the greatest abundance. Thanks to this plenty, and with the assistance of tapioca and uve, famine has been averted. At the capital corn is rather scarce and its price rises; the latest quotation is 13 centavos per ganta (3 liters). The same is true of the price of rice, which has risen from ₱6 to ₱7.50 per cavan.

Surra is claiming victims among the equines in the municipalities of Candijay, Guindulman, and Duero. Rumor has it that in the interior of the island glanders are doing mischief. Owing probably to the heat, there is a prevalence of fever, generally accompanied by catarrh; but luckily the sickness is not as malignant here as it is in Cebu, where it is causing many deaths.

Butuan.—The rice harvest has begun and gives fair results. Thanks be to God, that the locusts have not put in their appearance, as some feared they would, giving as the reason for their dread the drought which prevailed during the second half of the month. Of the farming population of this region some dedicate themselves to hemp culture, others to the production of copra. Sweet potatoes, etc., are planted merely for home consumption. There is a disease among the poultry which is called *tabocao.*

Balingasag.—The planting of corn is finished. As to rice, some are already transplanting it, while others are only sowing it in the seed beds. On May 23 appeared a swarm of locusts, but they passed on toward the mountains.

Caraga.—The outcome of the rice harvest of this month appears to be rather small, owing to the ravages of wild animals coming down from the mountains and also to some other mishaps. Rain has been scarce, but the relative dryness did no harm and rather favored the rice harvest. The crops growing at present are in good condition. A small quantity of tobacco is being gathered. Of hemp, 273 piculs at ₱25 to ₱25.50 were exported; of copra, more than 18 piculs, at prices oscillating between ₱9.50 and ₱10.

Davao.—The rain which fell in this district during the month of May and the fresh winds have been of a distinct benefit to the various farm labors. On the 12th appeared in this neighborhood a rather large number of locusts, which remained until the 20th, doing considerable damage to the recently sown rice on some of the *caingin.* They left behind them an immense number of eggs, and a few days later appeared the grubs. God grant that these pests do not still greater harm.

DISTRICT II.

San Jose Buenavista.—As stated last month, the mango trees are far behind time. The strangest thing is that after they had formed the few fruits which they bear they commenced to blossom a new, even the small twigs growing out of the trunks, which the first time had not shown a single flower. This second flowering was much more abundant than the first. It is, however, doubtful whether any fruit will result, since now the rainy period is due. At any rate, mangos and camanchiles will be much less plentiful than in other years. On the other hand, the lomboy trees have borne abundant fruit and there are plenty of prunes and nanca. During this month the people living along the shore have removed their fish corrals, lest they be destroyed by the southern squalls. At present are being planted early rice of the variety called *calubad,* corn, patola, balsamine, coffee, cacao, cocoanut trees, sweet potatoes, gabe, uve, hemp, and sitao, while tobacco, eggplant and some tomatoes are being harvested. Rain has been scarce, and the consequences of this are felt by nearly all the plants. The damage done to the early rice and to the seedlings of the variety called *macan* is especially noticeable. Some people had to sow the latter kind of rice a second time, since the seedlings resulting from the first sowing had been killed by the drought.

There is no sickness among the stock, but the chicken disease mentioned last month continues and is even increasing. The locusts are leaving their eggs at various points of the province lest the latter might ever get rid of them. Between locusts and drought, God alone knows what is going to happen. Rice, whose price was 16 to 18 centavos per ganta during April, is now sold at 20 to 25 centavos.

Iloilo.—The yield of tobacco, garden products, sweet potatoes, and other tubers has been generally good in the municipality of Janiuay; but the scarcity of corn mentioned in the report for April continues in said district. Locusts are doing plenty of harm. The mortality among animals especially horses, hogs, and poultry, is continuing, the loss reaching about 20 per cent. In the municipalities of Cabatuan and Santa Barbara the fields are being prepared for rice. The mango crop is an almost complete failure.

Bacolod.—Thanks to the abundant rains during May, the farmers who had their land in readiness have sowed their mountain rice and also the seeds beds for irrigation rice. But the sickness prevailing among the draft animals has hindered them to some extent. The crops growing at present are vigorous, but locusts are spreading all over the province, doing great harm.

Dapitan.—The fields situated on high ground are ready prepared and some people have already sown theirs with rice, the staple article of food in this region. The irrigated fields are likewise ready for the transplanting of rice, which is usually done from June to August, though generally it is not postponed so late unless there are some mishaps. If nothing untoward occurs, a large rice crop may be expected this year. Hemp plantations are multiplying day by day throughout this whole region. There is hardly anybody who has not some hemp. No other product proves so attractive and satisfactory.

Zamboanga.—Hemp growing is increasing, especially in the northwest of this district. The fiber produced at the San Ramon farm is especially known for its superior quality. The mango trees do not bear a good crop this year, while the juani (an allied species) are covered with fruit. White squashes are scarce; beans and sweet potatoes are not as plentiful as usual and gabe still less so; but of tomatoes and cabbage there is a goodly supply, though the price remains somewhat high. Copra sells for ₱7.50 per picul.

Isabela, Basilan.—Thanks to the rain which fell during the month of May, corn and rice could be planted and some 25,000 hemp plants set out. The same is true of San Pedro, Lamitan, where 3,000 hemp shoots have been planted. At Isabela 25 piculs of hemp and 20 piculs of copra have been produced during the month. On Malamauy Island, north of this town, 24 piculs of copra have been made. All these products have been shipped to Zamboanga. Of fruit, such as bananas, pineapples, and prunes, there is plenty, likewise of sugar cane. In the Moro rancheria Tapiantana the abundance of mangos and juani is so great that 400 mangos or 200 juani can be bought for one peso.

DISTRICT III.

Legaspi.—The dearth of rain notwithstanding, some have begun to till their fields. Legaspi, Albay, and Daraga had fair crops of hemp and likewise of bananas, sweet potatoes, gabe, and corn. At Libog all these crops and also the rice suffered somewhat from the lack of water, nevertheless the yield of bananas and sweet potatoes has been good, likewise that of sampaloc, macopa, and guayabas. At Tabaco, Tiui, and Guinobatan the crops of hemp, cocoanuts, corn, and sweet potatoes were below the average yield.

Gubat.—The rice crop has been generally satisfactory throughout the Province of Sorsogon, especially here in Gubat, where most of the people are still occupied in bringing in the rest of the grain as it ripens in the field. Hemp has been affected considerably by the dryness reigning during the past months. There is little demand for the fiber in the markets, due to the bad quality produced and the consequent difficulty of selling it to the dealers. Up to date continue to occur cases of epizoötia among the cattle and hogs, but very few among the horses. As to the latter, native animals and those imported by some dealers suffer alike.

Romblon.—Ground is being prepared for rice and corn, while tobacco and bananas are being harvested and mountain rice is growing. Rain has been so scarce that the latter could hardly be sown, but at present it is in good condition. The locusts have invaded Tablas Island; they have done no serious harm thus far, but grave fears are being entertained.

Calbayog.—According to informations furnished by several dealers, the production of hemp has been less during May than in the preceding months. The heat is remarkable and several wells within this town have dried up. The little rain which fell on several days of this month was insufficient to permit work on the preparation of the seed beds of rice. The crop of said cereal has been almost nil at La Granja and Lavezares, since the rats called *gutta* had devoured nearly everything. There are many cocoanut trees in this region, but people use the nuts only for making oil and very few trade in them or prepare copra. Nothing has been heard of sickness among the work animals.

DISTRICT IV.

Santo Domingo, Batanes Islands.—Rice, sweet potatoes, and uve now growing are in a fine condition. Corn of very good quality and rice, planted at the end of February, are being harvested. At San Vicente and San Jose, on this Island, people have commenced to sow rice during the last days of May. There is no sickness among the animals.

Aparri.—As in the preceding month, so also during May, the lack of rain has made farm work impracticable. There is at present an abundance of fruit, especially of mangos; greens and vegetables are likewise plentiful. Neither sickness among the stock or poultry, nor injurious insects have made an appearance.

Tuguegarao.—Owing to the frequent afternoon rains, many tobacco plants have revived, and although the quantity is very small the quality of the tobacco thus produced is greatly improved. Corn has been planted anew and the young plants are vigorous, hence a good crop may be expected from them unless unlucky accidents frustrate the hopes of the planters. At Peñablanca and Boggao good tobacco has been grown and thither flock the buyers.

Vigan.—During May have been planted maguey, corn, patola, red squash, and balsamine. The harvest consists of mangos, prunes, lomboy, and maguey, the yield of these products being fair. In the beginning of the month drought made sowing and planting impracticable, but toward the end some timely rains made it possible to finish the seed beds for rice. Epizoötia has disappeared from this district.

Candon.—During this month the work of making sugar was finished. It is estimated that 15,000 piculs have been produced at Santa Lucia and some 10,000 piculs at Santa Cruz. At present mangos, prunes, mongo, sitao, and vegetables are being gathered. The actual state of the growing crops is good enough, but during the first half of the month the drought did much harm to the sugar cane and other plants. The rains of the second half of the month have greatly facilitated the preparation of the rice fields. There was some sickness among the poultry.

San Fernando, Union.—The extraordinary dryness of the preceding months has greatly retarded the sowing of rice in the seed beds. Owing to the rain which fell between May 19 and 29, the farmers could begin this work. The same cause is responsible for the delay in picking the secondary leaves of the tobacco plants. The sickness which prevailed among the animals during the preceding months has disappeared completely.

Baguio.—The rice and sweet potato fields look well. At present cabbage, peas, eggplant, and tubers are being gathered. Nothing is known of sickness among the stock, or of harmful insects.

Bolinao.—After the rain of May 3 the farmers commenced sowing rice and planting tubers and corn. The present state of the crops is fairly good, thanks to said rain. Wild hogs, crows, and rats are causing havoc in the corn and maguey fields. Cases of dengue fever were rather frequent in this neighborhood during the month of May.

Baler.—The principal crop of this month consisted in various kinds of tubers. The condition of the growing crops is good and no drought has made itself felt. There was no sickness among the animals, nor were there any injurious insects.

Tarlac.—The sugar plantations and cornfields are thriving and promise a good harvest. Mangos were abundant and bananas cost hardly anything. At present peanuts, corn, gabe, and rice are being planted. There is sickness among the poultry, but, thanks be to God, the horses have not suffered. The price of palay is ₱2.10, that of rice ₱5 per cavan.

San Isidro.—The planting of corn may be considered as finished, likewise that of patola, sitao, balsamine, etc. Growing at present are tugui, uve, sweet potatoes, and cucumbers. People begin to prepare the seed beds for rice. Some localities are slightly infested by worms, which attack the stalks and shoots of the corn. Sickness among the animals, including work animals, continues.

Arayat.—While they are waiting for sufficient rain which will enable them to begin work in the fields, many people devote their time to the cutting of rattan in the mountains and of buri in the brook which flows by this place. Vegetables are suffering from lack of water. Arayat has been free from animal disease, but at Santa Ana 5 carabaos have died of rinderpest.

Porac (Dolores).—Though the rain which fell on several days during May was very little, corn, patola, balsamine, squash, etc., could be planted. The thrashing of rice is nearly finished. The mortality among the chickens continues, causing a loss of about 25 per cent.

Olongapo.—Owing to the scarcity of rain, the development of the rice and corn which had been planted was greatly retarded. Mangos, brought to this town from settlements in the north, are plentiful in the market. The pineapple plants promise an abundance of this fruit. Neither diseases among the animals nor injurious insects have appeared.

Malolos.—Thanks to the rains which fell during this month, though they were but light, the plants, nearly killed by the drought of the preceding months, have recovered their vitality. People are waiting impatiently for sufficient rain to work in the rice seed beds. Mangos are exceedingly abundant; price, ₱0.50 per hundred. Corn, sugar cane, and rice are growing and in a flourishing condition after having suffered somewhat from lack of water. At the capital, epizoötia has spread to the large cattle. At Paombong the disease reigned among the horses, of which 14 died and 17 were sick at the close of the month. Angat and Bocaue were free from the scourge.

Balanga.—People are occupied in preparing the seed beds for rice. The state of the growing crops is fairly good, but the growth of the sugar cane has been hindered to some extent by the drought. Mangos are abundant. At Orani 10 carabaos have fallen victims to rinderpest.

Silang.—Of sugar cane and sweet potatoes only a small quantity has been harvested, but a considerable amount of mangos and pineapples. Mangos are so plentiful that their present price is ₱1 per hundred, while in other years it used not to fall below ₱2. A fair amount of hemp has been produced. The few rains which fell came very timely.

San Antonio, Laguna.—Everybody is occupied in sowing mountain rice and planting cocoanut trees, hemp, and vegetables. Some work is likewise done on the irrigation rice fields, but the lack of water makes itself felt. In comparison with preceding years, the crop just harvested is small. Since May 1 fires in the hemp plantations, both those ready for cutting and the less fully developed ones, are common occurrences. The loss amounts already to at least ₱25,000.

Atimonan.—During this month the irrigation fields lay fallow; no planting, etc., has been done there. But on the *caingin* corn, eggplant, ayap, etc., have been planted. Cocoanuts and hemp are stationary. News has been received that at some distance from this municipality locusts are devastating the fields, and an invasion of this district is feared.

Batangas.—Owing to the rain of May 11, the fields of sugar cane, which had begun to dry up, have regained their vigor. The farmers are busy sowing rice, an operation much delayed by the prolonged absence of rain. The fruits of this month are mangos, prunes, lomboy, santol, and nanca. They are not as abundant as usual. Rinderpest has disappeared entirely.

ESTADO GENERAL DE LAS COSECHAS.

Por término medio puede decirse que ha sido bueno este mes el rendimiento de los varios productos agrícolas, como arroz, cóprax, tabaco, azúcar, tubérculos y frutas. Cuanto el arroz, Calbáyog es la única estación que da cuenta de algunas pérdidas casi completas en varios puntos de aquel distrito; mas éstas fueron debidas, no á condiciones climatológicas, sino á la acción destructora de los roedores: todas las demás estaciones califican la cosecha de este artículo de buena, regular ó abundante. La producción del abacá ha decaído algo en algunas partes por hallarse la gente agobiada con otros trabajos. Sin embargo, por lo que toca á la Provincia de Sorsogón, el observador de Gúbat cree deber atribuirse esto á la mala calidad de la fibra, la cual hace ser difícil disponer de ella. En cambio, en Mindanao y otras islas del Sur continúa el entusiasmo por este producto: así Bohol lo produce en grandes cantidades; y en los alrededores de Isabela de Basilan se han plantado no menos de 28,000 plantas de abacá en el solo mes de Mayo. En la Provincia de La Laguna incendios que han ocurrido con frecuencia en las plantaciones de abacá han causado una pérdida de ₱25,000 cuando menos. El precio de este artículo ha bajado algo durante el mes: con todo en el distrito de Butúan se vendía á ₱25 y ₱25.50 el pico.—Poco movimiento se ha notado este mes en el comercio del cóprax: su precio ha oscilado entre ₱7.50 y ₱9.50 ó ₱10 el pico. En Butúan ha sido donde se han conseguido los últimos precios más crecidos.—La cosecha del tabaco informan todas las estaciones que ha sido buena en todas partes. Aun en el valle de Cagayán algunas de las plantas revivieron con la llegada de las primeras lluvias, y la cantidad así producida, aunque pequeña, se dice ser de mucho mejor calidad.—El azúcar ha dado buenos resultados, especialmente en Ilocos y Bohol.—Los tubérculos y las frutas, á excepción de las mangas, abundan casi en todas partes. De mangas es verdad que ha habido mucha abundancia en la Isla de Basilan y en Luzón al Norte del paralelo 14°, pudiéndose comprar á ₱0.50 el ciento hasta en Malolos, pueblo situado junto á la línea férrea, no lejos de la capital: mas en la zona intermedia la cosecha de mangas ha sido muy pobre y casi nula, por más que en varios lugares, como por ejemplo en la costa occidental de Panay, ha habido abundancia de otras frutas.—La escasez de maíz, de que se habló el mes pasado como reinante en general en el Sur del Archipiélago, ha continuado todavía durante este mes.

La sequía que durante el mes de Abril se dejaba sentir en casi todo el Archipiélago, ha tenido algún alivio con las pocas lluvias que casi en todas partes han permitido á los agricultores empezar á trabajar en los campos. Por regla general, sin embargo, estas lluvias han ocurrido ya muy adelantado el mes y de ahí que la falta de agua haya perjudicado considerablemente á las plantas durante la primera parte del mes. Al terminar éste, las lluvias, hablando en general, no habían sido más que suficientes para que los agricultores hubiesen podido emprender gran parte de las faenas atrasadas del campo; pero en ninguna manera bastantes para el arroz de ragadío. Con todo, en Tacloban é Isabela de Basilan fué casi regular la cantidad de agua caída, y en Bacólod llegó á ser abundante. Por el contrario, en Aparri se quejan todavía de que la sequía ha impedido las trabajos agrícolas.

Gracias á las lluvias de que acabamos de hablar, era bueno el estado de las cosechas hacia el fin del mes, á pesar de lo que habían sufrido en varias partes durante la primera mitad del mismo. Es consolador saber que en el valle de Cagayán tan castigado por pasadas calamidades, crece con vigor y promete buena cosecha el maíz recientemente plantado en aquella región.

Las langostas han venido haciendo daño considerable en la Provincia de Iloílo, en el Norte de Negros Occidental y asimismo en el distrito de Davao. Han infestado además la Isla de Tablas, aunque sin haber causado mucho daño hasta el presente, y están amenazando la Provincia de Antique y los alrededores de Atimonan. Jabalíes y roedores han sido causa que se resentiesen las cosechas en varias localidades.

Por la que toca á la epizotia y otras enfermedades de los animales, la situación ha mejorado decididamente. Cinco estaciones nos informan que han desaparecido ya ó van desapareciendo semejantes calamidades. En la mayoría de los lugares donde todavía dura el mal, es éste limitado á las gallinas ú ocurren sólo algunos casos aislados: así sucede en Leyte, Cebú y Surigao. Sin embargo, continúan las enfermedades, aún en el ganado mayor, en la costa oriental de Sámar al Sur de Borongan, en Iloílo, Negros Occidental, Sorsogón, Bataan, Bulacán, Pampanga y Nueva Écija. Las pérdidas de más consideración sé tuvieron que lamentar en Paombong, Bulacán, donde murieron durante el mes, 14 caballos y además 17 estaban todavía enfermos el 31 de Mayo; en Orani, Bataán, y en Santa Ana, Pampanga, donde murieron 10 y 5 carabaos respectivamente. La zurra ha hecho su aparición en la costa sudeste de Bohol, y casos de muermo se dice haber sido registrados en el interior de aquella isla. En Kawayan (Almería), en la Isla de Biliran, murieron de cólera 53 cerdos.

NOTAS PARTICULARES.

DISTRITO I.

Borongan.—Las cosechas del cóprax y abacá han seguido siendo el mes de Mayo bastante reducidas por hallarse la generalidad de la gente ocupada en recoger el palay. La epizotia sigue cebándose en los carabaos, vacas y caballos, siendo ya considerable el número de víctimas de dicha enfermedad. Los pueblos al Norte de Borongan se hallan libres aún de esta peste.

Tacloban.—La bondad de las cosechas de abacá, coco, camote, caña-dulce, palay, gabe y demás vegetales, así como la del crecimiento de los mismos, observada desde los meses pasados, continúa hasta el presente. Las lluvias caídas casi periódicamente durante el mes han favorecido á las plantaciones de abacá situadas en las laderas de las montañas de Tacloban. En Kawayan, antes Almería, han sufrido falta de agua los sembrados de abacá, maíz y palay. Ha reaparecido la plaga de langostas, aunque sin hacer daño hasta ahora, y se han registrado también 53 cerdos muertos de cólera, según comunicación del Sr. McFarland, presidente de aquel pueblo. En Carigara hubo gusanos que perjudicaron las siembras de palay, y los cerdos, carabaos y gallinas muertos de epizotia se avalúan en unos 200 pesos.

Ormoc.—La cosecha de abacá, maíz, plátanos, camote y gabe ha sido inferior á la del mes anterior. Las lluvias han sido menos que regulares. El calor se ha dejado sentir algo, pero no ha perjudicado ninguna siembra. La enfermedad entre los ganados va desapareciendo. Ha habido este mes una notable bajada en el precio del abacá.

Tuburan.—Las cosechas han sufrido muchísimo por la falta de agua. En este municipio no llovió durante los meses de Marzo, Abril y los primeros días de Mayo, hasta que el 14 de este mes trajo el alivio de que tenían tanta necesidad especialmente la caña-dulce y el maíz. De Tabogon informan que el estado de las cosechas que crecen actualmente en los campos es malísimo, efecto de la sequía, por la cual las plantas se van secando en su mayor parte. Este último pueblo es afligido además por enfermedad de ganados, aunque hasta ahora no ha muerto más que un solo carabao. El municipio de Bogó está libre de enfermedades entre los animales; pero, en cambio, tiene que lamentar sus sementeras de caña-dulce atacadas por gusanillos.

Cebú.—Desde mediados del mes de Abril se nota bastante escasez de lluvia, lo cual parece contribuir no poco al desarrollo de las calenturas, algunas de ellas malignas. Las plantaciones de maíz y caña-dulce son pocas y no se desarrollan bien por falta de agua. Los tubérculos y verduras escasean en el mercado, pero en cambio hay abundancia de aves de corral, algo baratas. Las mangas continúan escasas y caras.

Surigao.—Durante todo este mes los campesinos han estado recolectando el palay, resultando la cosecha satisfactoria y casi abundante. El precio del palay es de ₱2.50 el caván. Algunos labradores están todavía preparando los terrenos para la siembra de maíz, la cual no se puede verificar hasta que llegue un poco de lluvia. El beneficio del abacá y del cóprax continúa en todas partes sin interrupción. Abundan plátanos, piñas y otras frutas propias de estos meses. Se han registrado algunos casos de muertes por enfermedad de cerdos y gallinas.

Tagbilaran.—Colectarán bastante arroz los pueblos de Guindulman, Jagna, Duero, Vilar, Carmen y Sevilla. Los primeros tres también están cosechando este año mucho abacá y no poco cóprax. Una ó dos veces al mes recoge un vapor estos productos para exportarlos á Cebú. En el solo pueblo de Duero se calcula que cada mes se exportan unos 500 picos de abacá y otros tantos de cóprax. La cosecha de maíz ha sido buena, pero no abundante, en Inabanga, Calape y Tubigon. En dichos pueblos se beneficia además la caña-dulce, regularmente con buenos rendimientos, siendo los pueblos que hacen exportación de azúcar á Cebú. Al mismo cultivo de la caña-dulce se dedican también las poblaciones de Loboc, Dimiao, García Hernandez, Anda y otras en el interior de esta isla. De plátanos y camotes ha habido suma abundancia en toda la Provincia de Bohol, durante el mes de Mayo. Gracias á esto y á la tapioca y uve, no se nota aún el hambre. En esta cabecera va escaseando el maíz y subiendo su precio: á 13 centavos la ganta se cotiza últimamente. Lo mismo puede decirse del arroz que estaba antes á ₱6 y ahora 7.50 el caván. La zurra está causando víctimas en el ganado caballar por los pueblos de Candijay, Guindulman y Duero. Se dice también que el muermo está haciendo estragos en el interior. Á causa tal vez de los calores, hay muchos casos de fiebres acompañadas las más con catarros; pero afortunadamente no son tan malignas como en Cebú, donde causan muchas defunciones.

Butúan.—Ya está comenzando la cosecha del palay, la cual da rendimientos regulares. Gracias á Dios que no ha llegado la langosta como algunos temían por razón de la sequía aquí experimentada en la segunda quincena de este mes. De los agricultores de esta región unos se dedican al beneficio del cóprax, otros al del abacá. Camote, etc., sólo se plantan para el consumo local. Hay enfermedad entre las gallinas llamada *tabocao.*

Balingasag.—Se siembra el maíz. Algunos ya tienen semilla de palay y siguen poniendo ó sembrando otros sus semilleros. El 23 de Mayo se presentó una bandada de langostas, pero huyeron hacia el monte.

Caraga.—El resultado de la recolección del palay durante este mes parece pobre á causa de los destrozos de los animales del monte y algunos otros contratiempos. La lluvia ha sido poca; sin embargo la sequía relativa no ha causado daño, antes bien ha favorecido á los cosecheros de palay. El estado de las cosechas aún crecientes en los campos es bueno. El tabaco se recolecta actualmente en pequeñas cantidades. De abacá se han exportado durante este mes 273 picos y 22 cates de ₱25 á ₱25.50 el pico; y de cóprax más de 18 picos, oscilando el precio entre ₱9.50 y ₱10 el pico.

Dávao.—La cantidad de lluvia que ha caído en esta comarca y los vientos fresquitos del mes de Mayo, han sido oportunos á todos los trabajos agrícolas. El día 12 apareció en esta localidad un gran número de langostas, que permanecieron casi 20 días con gran perjuicio de una parte de los caingin de palay recientemente sembrados. Dejaron un sin número de huevos. Algunos días después aparecieron los loctones, y quiera Dios que estos animalitos no hagan más daño.

DISTRITO II.

San José de Buenavista.—Como dijimos el mes pasado, las mangas están atrasadas. Pero lo raro es, que después de haber formado las pocas frutas que han dado, empezaron de nuevo á florecer, inclusos los ramitos salientes del tronco, que no habían mostrado siquiera una flor la primera vez. Esta floresencia ha sido mucho más abundante que la antecedente. Pero lo dudoso es si llegarán á producir fruta, pues este mes empieza la época de las lluvias. De todas maneras habrá este año mucho menos mangas y camanchiles que en los anteriores. En cambio el lomboy ha dado fruta en abundancia: también hay muchísimas ciruelas y nancas. En este mes los costeros han quitado sus corrales de pesca, porque las rachas del Sur los hubieran desbaratado. Se siembra por ahora palay temprano, que llaman *calubad*, maíz, patola, amargoso, café, cacao, coco, camote, gabe, uve, abacá y sitao. Se ha cosechado tabaco, berengenas y algunos pocos tomates. La lluvia ha sido escasa, y por falta de ella sufren casi todas plantas. El daño que hace esta sequía al palay temprano y á las semillas del palay llamado *macan* es considerable; y algunos tuvieron que sembrar el último por otra vez, habiéndose muerto el ya sembrado. No se ha registrado enfermedad ninguna entre el ganado, pero entre las gallinas ha seguido el mal mencionado el mes de Abril y ha ido aún creciendo. Las langostas, por no abandonar la provincia, dejan crías en varios puntos, de modo que con la sequía y los loctones Dios sabe lo que sucederá. El arroz cuyo precio ha sido de 16 á 18 centavos durante el mes de Abril, ahora se vende de 20 á 25 centavos por ganta.

Iloílo.—Las cosechas de tabaco, hortalizas, camote y otros tubérculos han sido generalmente buenas en Janiuay. Continúa en dicho municipio la carestía de palay mencionada el mes anterior. La langosta ha hecho bastante daño. La mortandad de animales continúa haciendo estragos, particularmente entre la cría caraballar, cerdos y aves de corral, siendo las pérdidas de unos 20 por ciento. En Cabatúan y Santa Bárbara se preparan los campos para la siembra de palay. La cosecha de mangas es casi nula este año.

Bacólod.—Gracias á las lluvias abundantes del mes de Mayo, los agricultores que tenían preparados sus terrenos ya han sembrado palay de secano y echado semilleros para el de regadío; pero algunos se han retrasado por la enfermedad reinante, en los animales de labor. Las plantaciones son lozanas, pero se teme á las langostas que están extendiéndose por la provincia, causando estragos en los campos.

Dapitan.—Los terrenos altos están preparados, y algunos de los caingin sembrados ya de palay, que es el alimento principal de estos habitantes. Los terrenos bajos están también listos para la trasplantación del palay, la cual suele hacerse de Junio á Agosto, aunque generalmente no se atrasa hasta este último plazo, á no ser que haya algún contratiempo. Si no ocurre novedad, puede esperarse este año buena cosecha de palay. Las plantaciones de abacá van aumentando de día en día en todas estas regiones. Apenas hay quien carezca de este producto, que es el que parece dar mejores resultados.

Zamboanga.—El cultivo del abacá va creciendo, principalmente en la parte noroeste de esta región, siendo de superior calidad el de San Ramón Farm. Las mangas no dan buena cosecha este año. En cambio el juaní se ve cubierto de frutas. Escasean las calabazas blancas; frijoles y camotes no son abundantes como suelen, y mucho menos al gabe; pero de tomates y repollos hay bastante, aunque á precio algo subido. El precio del cóprax es de ₱7.50 el pico.

Isabela de Basilan.—Gracias á las lluvias caídas durante el mes de Mayo, se han comenzado á sembrar maíz y palay y se han plantado unos 25,000 plantas de abacá. Lo mismo ha sucedido en la visita de San Pedro

(Lamitan) donde se han plantado unos 3,000 ponos de abacá. Las cosechas de este mes consisten en 25 picos de abacá y 20 picos de cóprax. En la Isla de Malamauy, hacia el Norte de esta población, se han cosechado 24 picos de cóprax. Todo esto ha sido exportado á Zamboanga. Frutas como plátanos, piñas, ciruelas, etc. hay en abundancia, lo mismo que caña-dulce. En la ranchería de moros de Tapiantana, hacia el Sur de esta población, tienen mangas y juaní en tal abundancia que pueden conseguirse 400 mangas por un peso, y asimismo 200 juaní por el mismo precio.

DISTRITO III.

Legaspi.—Á pesar de la poca lluvia de este mes, algunos han empezado ya á labrar sus sementeras. Legaspi, Albay y Daraga han conseguido regular cosecha de abacá, así como también de plátanos, camote, gabe, uve y maíz. En Libog todas estas cosechas y también la siembra del palay sufrieron por falta de agua; pero esto no obstante, las cosechas de plátanos, camote, sampaloc, macopa y guayaba han sido buenas. En Tabaco, Tiui y Guinobatan han sido pobres las de abacá, maíz, coco y camote.

Gúbat.—La cosecha del palay ha sido generalmente satisfactoria en toda la Provincia de Sorsogón, en especial en este pueblo de Gubat, donde la mayor parte de sus habitantes sigue ocupándose en la recolección del que aún se encuentra sazonando en los campos. El abacá se ha resentido bastante de los calores sufocantes de los meses pasados, y además hay poca demanda de este producto en casi todos mercados de aquí, por ser de mala calidad y por consiguiente poco aceptable en las casas de comercio. Hasta la fecha siguen registrándose casos de epizotia en los vacunos y cerdos, y muy pocos en los caballos, tanto en los naturales de este pueblo, como en los importados de otros puntos por algunos comerciantes.

Romblón.—Se prepara el terreno para la siembra del palay y maíz, mientras están cosechándose el tabaco y plátanos, y crece en los campos el palay de secano. Hasta el presente el estado de las cosechas es regular. Como las lluvias han sido escasas, apenas se ha podido sembrar el palay de secano, pero á pesar de la falta de agua no ha muerto el que ya estaba sembrado. Una plaga de langostas invadió la Isla de Tablas, la cual no ha causado aún ningún daño; pero se teme que lo causará en adelante.

Calbáyog.—Durante el mes de Mayo la producción de abacá ha sido menor que la de los meses anteriores, según noticias recibidas de varios comerciantes y agricultores. Es notable el calor que ha reinado en el presente mes, por lo cual se han secado varios pozos existentes dentro de la población. La lluvia que ha caído en algunos días no ha sido suficiente para que los labradores pudiesen preparar sus semilleros de palay. La cosecha de este grano en los pueblos de La Granja y Lavezares ha sido muy poca ó casi nula, por habérselo comido los ratones, que llaman *gutá*. En esta población, si bien existen en abundancia plantaciones de coco, sus frutos sólo se usan para hacer aceite, y muy pocos son los naturales que se dedican á venderlos ó bien á hacer cóprax. Durante el mes de Mayo no se ha oído nada de enfermedad alguna notable en los animales de labor.

DISTRITO VI.

Santo Domingo, Islas Batanes.—Las siembras de uve, palay y camote están en muy buen estado. Se está cosechando maíz de buena calidad y un poco de palay, sembrados en los últimos de Febrero. En los distritos de San Vicente y San José de esta Isla empezaron á sembrar palay en los últimos días de Mayo. En los ganados no se nota al presente ninguna enfermedad.

Aparri.—Este mes como el anterior no hay faenas en los campos, debido á la falta de lluvias. Hay abundancia de frutas, en especial de mangas, así como también de verduras y legumbres. No hay enfermedad en el ganado en general, ni en las aves de corral; ni tampoco plaga de insectos.

Tuguegarao.—Efecto de las frecuentes lluvias que han caído por las tardes han reverdecido muchas plantas de tabaco, y aunque su cantidad es muy poca, la calidad ha mejorado muchísimo. Se ha sembrado de nuevo el maíz y las semillas tienen buen aspecto; si no ocurre ningún accidente que venga á frustrar las esperanzas de los agricultores, se espera buena cosecha. En Peñablaca y Baggao hay buen tabaco, y á dichos puntos se dirigen los compradores. El arroz ha bajado un poco el precio.

Vigan.—En este mes de Mayo se han sembrado maguey, maíz, patola, calabaza morada y amargoso. Se están cosechando mangas, ciruelas, lomboy y maguey, siendo los rendimientos regulares. Al principio del mes la sequía impidió la siembra de varios productos agrícolas. Algunas lluvias muy oportunas de fines del mes han hecho posible á los agricultores acabar con la preparación de los semilleros de palay. La epizotia ha desaparecido de esta región.

Candón.—En este mes ha terminado la cosecha de azúcar, la cual, según cálculos llega á 15,000 picos en Santa Lucía y 10,000 picos en Santa Cruz. Actualmente se cosechan mangas, ciruelas, mongos, sitao y hortalizas. El estado de las cosechas es bastante bueno por ahora; pero en la primera quincena de este mes la sequía perjudicó mucho á las plantaciones de caña-dulce y algunas otras. Las lluvias caídas durante la segunda quincena han favorecido mucho la preparación de terrenos para la siembra de maíz. Ha habido enfermedad entre las aves de corral.

San Fernando, Unión.—La extraordinaria sequía de los meses anteriores ha retrasado muchísimo la siembra de los semilleros. Gracias á las lluvias ocurridas del 19 al 29, han podido los labradores emprender al fin este trabajo. La misma causa ha retrasado la recolección del retoño ó sea de las hojas secundarias del tabaco. La enfermedad que ha habido en los animales durante los meses pasados ha desaparecido por completo.

Baguio.—Los sembrados, tanto de palay como camote, se presentan lozanos. Actualmente se cosechan repollo, guisantes, berengenas y tubérculos. No hay noticia de enfermedades notables entre los animales, ni de insectos perjudiciales.

Bolinao.—Después de la lluvia del día 3, los agricultores comenzaron la siembra del palay, maíz y tubérculos. El estado de las cosechas es bastante bueno, gracias á dicha lluvia. Los jabalíes, cuervos y ratones causan destrozos en las plantaciones de maguey y maíz. Durante este mes ha habido muchos casos de trancazo en esta vecindad.

Baler.—La cosecha principal de este mes ha sido de varias clases de tubérculos. El estado de las cosechas es bueno, y no se ha sentido la sequía en su desarrollo. No ha habido ni enfermedad en los animales, ni insectos dañinos.

Tárlac.—Las plantaciones de caña-dulce y del maíz son lozanas y prometen buena cosecha. Las mangas han sido abundantes y los plátanos eran poco menos que regalados. Actualmente se siembran maní, maíz, gabe y palay. Hay enfermedad en las aves de corral; pero, gracias á Dios, el ganado caballar no ha sufrido nada. El precio del palay es de ₱2.10 y del arroz ₱5 el caván.

San Isidro.—Puede darse por terminada la siembra del maíz y de hortalizas, como patola, sitao y amargoso. En el campo crecen además de lo dicho el tugui, uve, camote y pepino. Es superior el estado en que se encuentran los sembrados, máxime los de maíz. Los agricultores comienzan á preparar los semilleros de palay. En algunas partes de esta región se encuentran gusanos que dañan á los troncos y tallos del maíz, pero son pocos. Continúan las enfermedades entre los animales domésticos, inclusos los de labor.

Aráyat.—Mientras se espera lluvia suficiente para empezar los trabajos en el campo, muchos labradores de aquí se dedican á recoger bejucos en el monte y á cortar burí en el río de este pueblo. Las legumbres están sufriendo por falta de agua. No ha habido aquí enfermedad entre los animales; pero en Santa Ana han muerto 5 carabaos de epizotia.

Porac (Dolores).—Gracias á la lluvia caída en diferentes días del mes de Mayo, aunque escasa, se ha podido sembrar maíz, patola, amargoso, calabaza y otras legumbres. Toca á su término la trilla del palay llamado *palacaya*. Continúa la mortandad de gallinas, causando una pérdida de 25 por ciento.

Olongapó.—Por la escasez de la lluvia se ha atrasado el crecimiento de las semillas del palay y maíz. Abundan las mangas en el mercado, procedentes de los pueblos del Norte. Las plantas de piñas prometen dar buenos rendimientos. No ha aparecido ningún insecto dañino, ni enfermedad en los ganados.

Malolos.—Las lluvias, aunque pocas, que ha habido durante este mes, han hecho reverdecer las plantas agostadas por la sequía de los meses precedentes. La gente está esperando con impaciencia el tiempo oportuno para los semilleros de palay. Las mangas son abundantísimas; su precio ₱0.50 el ciento. Están creciendo en el campo maíz, caña-dulce y palay, siendo su estado actual bastante bueno, después de haber sufrido algo por falta de agua. En la cabecera la epizotia se ha extendido al ganado mayor: en Paombong ha reinado la enfermedad en el ganado caballar, habiendo muerto 14 caballos, mientras otros 17 estaban enfermos al fin de mes. Los municipios de Angat y Bocaue se han encontrado enteramente libres de este azote.

Balanga.—La gente se ocupa en la preparación de los semilleros de palay. El estado de las cosechas crecientes es regular, pero los sembrados de caña-dulce han sido algo perjudicados por la sequía. Las mangas abundan. En Orani 10 carabaos han caído víctimas de la epizotia.

Silang.—Se ha cosechado una pequeña cantidad de caña-dulce y camote, pero bastante de mongo y piña. La cosecha de mangas es tan abundante que el precio actual de esta fruta es de ₱1 el ciento, cuando otros años no solía bajar de ₱2. Del abacá se ha beneficiado una cantidad regular. Ha habido algunas lluvias muy oportunas.

San Antonio, Laguna.—Todos los agricultores están sembrando palay en los terrenos secanos y plantando coco, abacá y legumbres. También trabajan en los terrenos de regadío, pero todavía hay falta de agua. La cosecha pasada ha sido escasa comparada con la de otros años. Desde el 1.º de Mayo ha habido continuamente incendios en los abacales ya beneficiables, así como en los que no lo son. Las pérdidas llegan ya á ₱25,000 cuando lo menos.

Atimonan.—En este mes los terrenos playeros han estado en reposo: nada de siembra se ha practicado en ellos. No es así en los caingin, en donde se han sembrado maíz, berengena, ayap, etc. Los cocos estacionarios; el abacá lo mismo. Recíbense noticias de langostas en algunos puntos lejanos, haciendo estragos en las plantaciones. Témese una invasión en la jurisdicción de este pueblo.

Batangas.—Con las lluvias del día 11 de Mayo volvieron á reverdecer las plantaciones de caña-dulce que en parte ya empezaban á secarse. Los agricultores se dedican á la siembra del palay que es bastante atrasada por haber venido tarde el agua. Las frutas del mes que se producen en esta provincia son mangas, ciruelas, lomboy, santol y nanca: no son tan abundantes como en años anteriores. Ha desaparecido la peste de animales domésticos.

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BULLETIN FOR JUNE, 1907.

METEOROLOGICAL BULLETIN FOR JUNE, 1907.

By Rev. José Coronas, S. J.
Assistant Director of the Weather Bureau.

GENERAL WEATHER NOTES.

Pressure and temperature.—Throughout the Archipelago the mean atmospheric pressure of this month was considerably lower than that of June, 1906, and likewise lower than the normal pressure for the month, as deduced from several years' observations. Thus, for instance, the mean for Manila was 0.93 millimeter below the normal mean and 1.26 mm. lower than the corresponding value for June, 1906. This result is due mainly to the prolonged period of low pressure which occurred during the last third of the month and will be discussed further on. The minima of pressure have been observed on the 23d, 24th, and 25th. At Manila the absolute minimum of the month was 751.65 mm. and took place during the afternoon of June 24.

Generally speaking, the mean temperature of the month is a little higher than that of June of the preceding year for the stations in the central and southern portions of the Philippines, while for those in the northern parts it is slightly lower. The mean temperature for Manila differs from the normal mean and from that for the same month of 1906—which happened to be identical with the normal—by only 0.1° C. As may be seen in the table which gives the observations made at Manila, the hottest days for the capital were the 2d and 3d of June, the absolute maxima of which days were 36.5° C., while the daily means were respectively 29.9° C. and 30.2° C. The absolute minimum of the month at Manila was 22.7° C. and was registered on the 10th, 22d, and 29th.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS, JUNE, 1907.

Station.	Pressure.						Temperature.					
	Mean.	Departure from June, 1906.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from June, 1906.	Highest.	Day.	Lowest.	Day.
	mm.	*mm.*	*mm.*		*mm.*		°*C.*	°*C.*	°*C.*		°*C.*	
Tagbilaran	757.42	—0.85	758.92	28	755.53	24	27.6	+0.5	33.6	3	22	30
Surigao	57.72	— .67	59.25	28	55.59	23	27.6	+ .2	34.5	27,28	21	5
Cebu	57.85	— .70	59.37	28	55.38	24	27.4	— .1	[1]32.5	28	22.5	15
Iloilo	57.23	— .76	58.80	30	54.94	24	27.3	+ .3	34.5	5	22.4	24
Ormoc	57.34	— .76	58.92	28	55.20	23	26.8	+ .7	33.5	3,10	21.2	1
Tacloban	57.72	— .97	59.08	4	55.05	23	27.5	+ .5	35	10,13, 16,19	23	30
Capiz[2]	57.44	—1.34	59.11	30	54.64	24	27.5	+ .3	34.3	27	20.8	13
Calbayog	57.85	------	59.45	4	54.98	24	27.2	------	35.6	13,28	20	10
Legaspi	57.62	— .98	59.22	28	54.12	24	27.8	+ .2	35.6	17	21.5	6
Atimonan	57.02	—1.26	58.57	3,30	52.89	24	28.3	+ .2	36.7	6	22.8	22
Olongapo	56.77	—1.31	58.42	30	52.46	24	26.8	— .9	34.9	2	18.8	26
San Isidro[3]	57.80	— .63	59.08	9	56.13	13	27.2	— .8	36.5	17	21.8	10
Dagupan	56.62	—1.28	58.37	30	52.11	24	27.8	— .6	38	2	22.5	8
Vigan	56.86	—1.64	59.03	30	51.49	25	27.6	- .7	32.6	11,16	22.1	5
Tuguegarao	56.59	------	59.73	10	50.86	25	28.9	------	39.4?	19	------	------
Aparri	56.75	—1.22	59.83	10	50.65	25	28.1	0	34.9	20	22.4	6

[1] 29 days. [2] 24 days. [3] 18 days.

Precipitation.—Although the drought of the preceding months had passed and the rains were, in general, sufficient, they were by no means abundant. Thus, for instance, the total amount of water collected at Manila falls 100.1 mm. short of the normal amount for June. Nevertheless, a few stations report somewhat heavy rains, especially on single days, as, for instance, the Batanes Islands on the 24th, 25th, and 26th.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF JUNE, 1907.

District.	Station.	Total.	Departure from June, 1906.	Rainy days.	Departure from June, 1906.	Greatest rainfall in a single day.	Day.
	Yap	455.1		23		119.4	30
	Davao	251.7	+ 17.1	8	— 6	42.4	11, 20
	Caraga	172.8	+ 18.5	16	— 3	29.5	3
	Balingasag	74.6	—170.5	19	+ 2	11.2	14
	Butuan	72.1?		13?		17.8?	10?
	Tagbilaran	67.9	—209.5	11	—11	25.7	10
I	Surigao	209.8	+151.8	9	0	58.9	21
	Maasin	129.2	— 63.1	10	— 9	57.4	14
	Cebu	178.1	— 41.7	15	— 6	86.9	14
	Tuburan	80.1	— 35	9	— 2	25.7	4
	Ormoc	180.3	— 19	17	— 6	33	13
	Tacloban	91	—118.8	19	— 1	31	1
	Borongan	113	—224.6	14	— 6	35.1	9
	Isabela, Basilan	182.9	—182.1	20	— 1	40.6	16
	Zamboanga	72.1	—108.8	9	— 6	25.1	13
	Dapitan	21.3	— 14.4	9	0	3.8	24
	Bacolod	231.4	+ 16.7	18	— 5	133.1	23
II	Iloilo	252	+ 57.7	14	— 7	57.1	24
	S. Jose Buenavista	409.5	+158.4	21	— 2	75.9	21
	Cuyo	293.9	— 4.6	21	+ 1	80	15
	Culion	199.6		12		45.7	22
	Sumay, Guam	130.2	+ 24.2	15	— 3	27.9	23
	Calbayog	106.2	— 88.2	18	+ 2	23.1	16
	Palanoc	147.1	+ 45	17	+ 4	33	29
III	Romblon	198.2?		12?		37.6	24
	Gubat	94	+ 45.7	10	+ 4	27.2	8
	Legaspi	168.9	— 89.6	14	— 3	51.6	3
	Nueva Caceres	153	— 2.9	10	+ 2	58.9	14
	Batangas	102.2		12		41.1	25
	Atimonan	130.7	— 3.8	14	+2	27.9	12
	Silang	180	— 64.4	10	—5	33.5	24
	S. Antonio, Laguna	140.4	—107.6	15	0	26.7	24
	Corregidor	294.4	+149.2	9	—1	86.4	24
	Manila	146.7	— 8.2	14	—4	42.8	24
	Balanga	246	+ 12.9	14	—1	89.9	25
	Olongapo	383.8	+ 85.1	19	+1	89.9	24
	Malolos	313.9		16		75.7	24
	Porac	267.8	+136.3	13	—1	87.9	25
	Arayat	289.3	+168.8	14	+8	74.2	8
IV	Tarlac	169.2		19		43.2	26
	Baler	193.1		13		37.1	11
	Dagupan	314.3	— 16.1	15	+1	59.5	26
	Bolinao	311.6		18		104.9	26
	Baguio	325.2	— 16.5	17	—4	100.6	26
	S. Fernando, Union	273.5	+ 7.9	15	+1	65.8	27
	Candon	183.1	— 51.3	16	0	42.2	22
	Vigan	214.7	—108.6	13	—2	78	26
	Tuguegarao	67.9	0	9	+1	20.3	6
	Aparri	63.2	—155.5	10	0	19	28
	Santo Domingo	619.3	+529.2	16	+3	144	26

DEPRESSIONS AND TYPHOONS.

In the morning of June 1, the existence of two depressions was recognized, which, however, exercised hardly any influence upon the Philippines in general, or even the northernmost station thereof, Santo Domingo de Basco. One of these was at the time situated to the north of Formosa; the other, southeast of the same island. The former had formed during the night of May 30 in the northern part of the China Sea, southwest of Formosa, traveled in a northeast direction, and, to judge from the daily weather maps of Tokio Observatory, filled up on June 1 in the Eastern Sea. Manila Observatory announced the existence of this depression as probable in the ordinary daily weather note of May 31 in the following words:

> There is probably a distant depression over the northern part of the China Sea.

The other depression probably formed during the night of May 31 to June 1, east of the Bashi Channel and southeast of Formosa. It moved likewise toward northeast, across the Meiacosima group and west of the Loochoos Islands, until during the afternoon of the 2d it passed into the Pacific, after having crossed close to Oshima. Once in the Pacific Ocean, the storm took an easterly direction and passed north of the Bonin Islands on June 3.

Prescinding from a few other depressions which during the first and second decade of the month traveled in high latitudes and were of little or no consequence to the Philippines, we will now turn our attention to a period of real atmospheric perturbation, which was comprised between the dates June 22 and 27.

This period, especially notable for its duration, offers a striking example of atmospheric complications, such as present themselves rather frequently during the typhoon season and serve admirably for the purpose of exercising the patience of the forecaster, who is expected to point out, with the utmost precision possible, the position and direction of the storms. In such circumstances *he* will naturally be the most successful and accurate in his notes and warnings who can gather the greatest number of observations coming from stations distributed on both sides of the typhoons or depressions, which are supposed to exist simultaneously and in close proximity, or even forming perhaps as one system of atmospheric disturbances.

How difficult a task it was to form a correct judgment of the abnormal distribution of pressure which prevailed over the China Sea and the Pacific Ocean during the interval June 22 to 27, will be clearly understood if we compare with each other the weather notes which were issued during those days by the central observatories of Tokio and Zikawei, Hongkong and Manila. We insert here only those parts of said weather notes which bear on our subject, since they refer to the positions and movements of the various cyclonic centers which during those days were observed in the seas of the Far East.

TOKIO.

24. A new center of atmospheric disturbance has appeared to the southwest of the Yaeyama Group.

25. A new depression has appeared near the Yaeyama Group and is expected to move northeastward.

26. The typhoon has moved toward northeast and lies now to the SE of the Okinawa Group.

27. The typhoon now lies to the southeast of Miyazaki, continuing its northeastward motion. There seems to be another typhoon following in the same track with the former.

28. The typhoon which was off our south coast yesterday moved toward NE, crossed over Japan in the neighboring districts of Lake Biwa last night, and now lies to the north of the Sado Island. The typhoon has lost its energy, and is rapidly filling up. The typhoon off southern Formosa moved over the Formosa Channel, and now lies to NW of Taihoku, apparently moving toward NE.

ZIKAWEI.

23. Belt of low readings extending along the twentieth parallel with a center in process of formation to the south of Formosa.

24. A typhoon seems to be originating in the low-pressure system to the SE of Formosa and is slowly progressing toward the island.

25. In the afternoon the center of the typhoon was located to the east of Formosa.

26. The typhoon seems to have been divided into two centers, of which one traveled northeastward south of the Loochoos, while the other advanced W toward the Pratas.

27. The center of the Loochoos has advanced near the south of Japan, while the hollow of SW Formosa continues its westward progression over the northern portion of the China Sea.

28. The depression of the Formosa Channel recurved NE and shifted away over the S of the Eastern Sea. Southerly gale was experienced at the Meiacosima Group.

HONGKONG.

21. Pressure is relatively low in a trough lying over the S coast of China.

22. The low-pressure trough now lies off the S. coast of China.

MANILA.

21. Rough weather prevails in the Formosa Channel, where the atmospheric pressure is rather low.

22. There appears a depression this morning over the northern part of the China Sea, SW of Formosa Channel, which is probably deepening at present.

23. A circular depression appears to be developing, probably to the ENE of Paracels, in the low-pressure trough lying across the N part of the China Sea.

24. The low-pressure trough still lies over the N part of the China Sea, probably in about 19° lat. A depression may be forming in the trough in the neighborhood of the Balintang Channel.

25. The depression, which is probably becoming deeper, appears to be situated to the SE of Formosa and to be moving slowly toward NW.

26. The depression appears to be moving slowly northward to the SE of Meiacosima.

27. The depression moving toward NNE passed to the E of the Loochoos last night and is this morning situated to the SE of Kiusiu. The low-pressure trough still lies over the N part of the China Sea, probably in about 19° lat. A circular depression may have formed or may be forming in it to the SE of Hongkong.

28. The China Sea depression, which appears to be shallow, moved up the Formosa Channel last night, and is this morning situated off the coast in the neighborhood of Foochow. The other depression is moving to the NE over SE Japan.

23. The depression seems to be almost stationary in the northern part of the China Sea, covering a large extension between south China and Luzon.

5.50 p. m.: Besides the depression almost stationary in the China Sea, there are signs of another depression E of Luzon.

24. The depression in the China Sea remains almost stationary. There are still signs of another depression east of Luzon, moving probably northward.

5 p. m.: The depression east of northern Luzon is a typhoon and seems to move at present WNW.

25. The depression in the China Sea seems to be moving northward. The typhoon in the Pacific appears to be inclining its course toward the north; hence it is not dangerous for northern Luzon.

7 p. m.: Typhoon now east of Bashi or Balintang Channels, probably recurving.

26. The typhoon in the Pacific has been recurving since yesterday east of Bashi or Balintang Channels and it will move probably northeastward. The other depression in the China Sea, NW of Manila, continues to move northward very slowly.

27. The typhoon of the Pacific has been moving northeastward and it appears on this morning's weather map as approaching south Japan. The other depression in the China Sea is either advancing very slowly northward or tending to fill up.

After having given, on July 2, a résumé of the typhoon of the Pacific which, as we shall see later, traversed Japan on June 27, Tokio Observatory on July 3 and 4 issued the following notes, which we suppose have been written in the light of information received after the daily weather maps for June 27–29 had been published.

Typhoon (27–28) from the southern Sea of Formosa. Appeared to the southern Sea of Formosa on the 27th, moved toward NW and crossed over the Formosa Channel on the 28th. A furious storm occurred in southern Formosa; a great deal of damage was caused in several prefectures.

Depression (28–29) from the Formosa Channel. Came from the south of the Formosa Channel on the 28th, moved northeast and arrived on the 29th to the western part of Shikoku, where it was filled up.

The depression of the China Sea.—In the first place we may be permitted to establish the fact that, as given out by the observatories of Hongkong and Manila, there really existed a depression in the China Sea on and after June 23. The data given below, which were kindly furnished by the captains of the steamers *Kaiphong*, *Loongsang*, and *Zafiro,* are excellent for the purpose of proving the existence of a center of atmospheric disturbance in the northern part of the China Sea, probably between parallels 18 and 20. The winds from the second quadrant observed on board of said vessels appear to leave no doubt as to the correctness of the supposition.

METEOROLOGICAL OBSERVATIONS MADE ON BOARD S. S. "KAIPHONG," JUNE 22 TO 24, 1907.

[Captain, Mr. E. Finlayson.]

Day and hour.	Latitude, north.		Longitude, east.		Barometer.	Wind.		Weather.	Remarks.
						Direction.	Force, 0–12.		
June 22:	°	′	°	′	*mm.*				
8 a m					753.86	SSE	5	o.	Moderate S. swell.
Noon	20	10	115	49	53.10	S	4	p.	Do.
4 p. m					51.57	SE	2	b.	Do.
8 p. m					53.35	ESE	4	b.	Do.
Midnight					53.35	ESE	4	b.	Do.
June 23:									
4 a. m					51.32	SE	2	p.	Do.
8 a. m					52.33	ESE	4	b.	Do.
Noon	17	25	117	47	52.08	SE	4	p.	Do.
4 p. m					50.05	SSE	4	p.	Do.
8 p. m					50.81	SSE	4	p.	Do.
Midnight					51.57	SSE	5	p.	Do.
June 24:									
4 a. m					50.05	SSE	5	p.	Do.
8 a. m					51.32	SE	5	o. p.	Do.
Noon	14	39	119	56	51.57	SW	5	p.	Rough SW sea.
4 p. m					50.30	SSW	5	q.	Moderate sea.

METEOROLOGICAL OBSERVATIONS MADE ON BOARD S. S. "LOONGSANG," JUNE 22 TO 24, 1907.

[Captain, Mr. Frank Wheeler.]

Day and hour.	Latitude, north.		Longitude, east.		Barometer.	Wind.		Remarks.
						Direction.	Force, 0–12.	
June 22:	°	′	°	′	*mm.*			
10 a. m	20	3	115	57	755.38	SE	2	Southerly swell.
Noon	19	48	116	9	54.87	SE	2	Do.
4 p. m	19	16	116	33	53.10			SSW swell.
10 p. m	18	25	117	8	53.86			Do.
June 23:								
4 a. m	17	34	117	43	51.83	SE	3	Showery; SSW swell.
10 a. m	16	51	118	20	53.10			
Noon	16	38	118	36	52.84			Fine weather.
4 p. m	16	51	118	59	51.32			Do.
10 p. m	15	14	119	32	52.84	SE by S	4	Rain squalls; SW swell.
June 24:								
4 a. m	14	40	120	4	51.57			Do.
10 a. m	Manila Bay				53.10	SSW	3	

METEOROLOGICAL OBSERVATIONS MADE ON BOARD S. S. "ZAFIRO," JUNE 22 TO 24, 1907.

[Captain, Mr. A. Fraser.]

Day and hour.	Latitude, north.		Longitude, east.		Barometer.	Wind.		Weather.	Remarks.
						Direction.	Force, 0–12.		
June 22:	°	′	°	′	*mm.*				
Noon					754.37	ENE	3	b. p.	Clear; thundershowers.
June 23:									
Noon	19	39	116	27	51.83	ESE	3	b.	Moderate breeze; rough, broken sea.
June 24:									
Noon	16	45	118	48	50.05	SSE	6	u.	Very heavy squalls.
10.30 p. m	15	5	119	32	49.03	S	9	w.	Rain continued throughout the night.

We regret not having at our disposal a sufficient number of observations made at different points of the vast expanse of the China Sea which separates the Philippines from the Asiatic Continent to enable us to give the precise location of the center of this depression and the track followed by the same prior to its penetrating into the Formosa Channel. However, the observations made during the period in question along the western coast of Luzon, at the stations of Vigan, San Fernando (Union), Dagupan, Bolinao, Olongapo, and Manila, seem to prove clearly that even after the 24th and 25th the depression in the northern part of the China Sea remained entirely distinct from the simultaneous typhoon in the Pacific, of which we shall speak hereafter. The observations mentioned are embodied in the following table:

Day and hour.	Vigan.					San Fernando.					Bolinao.				
	Pressure.	Wind.		Rainfall.	Weather.	Pressure.	Wind.		Rainfall.	Weather.	Pressure.	Wind.		Rainfall.	Weather.
		Direction.	Force.				Direction.	Force.				Direction.	Force.		
June 22:	mm.		0–12.	mm.		mm.		0–12	mm.		mm.		0–12	mm.	
6 a. m	756.13	Calm			o.	755.17	S	2		c.	755.98	SSE	3		o.
10 a. m	55.94	S	1		c.										
2 p. m	54.30	SW	1		b.	53.57	SW	3		c.	54.78	SW	1		o.
6 p. m	54.25	SSW	1	7.6	o.									19.3	
June 23:															
6 a. m	53.63	Calm			b.	53.42	S	2		b.	53.36	ESE	1		b.
10 a. m	54.02	NbyW	1		c.										
2 p. m	52.	NNW	2		c.	50.85	W	2		c.	52.24	NNW	1		o.
6 p. m	51.75	NWbyN	1	4.1	d.				38.6						
June 24:															
6 a. m	51.64	S	1		c.	51.11	SE	2		c.	51.24	SE	1		o.
10 a. m	52.63	SSE	1		o.										
2 p. m	51.50	W	1		o.	51.37	S	3		c.	50.28	WSW	1		d.
6 p. m	51.98	SW	1	2.5	d.									5.1	
June 25:															
6 a. m	50.93	SSW	6		o.	51.34	SE	2		r.	50.35	Calm			r.
10 a. m	53.05	SW	2		r.										
2 p. m	51.13	SWbyS	4	51.1	r.	51.42	SE	2	35.3	r.	51.18	SSW	6	25.9	r.
June 26:															
6 a. m	51.78	SSW	6		q.	51.11	SE	5		r.	51.98	SW	1		r.
10 a. m	53.55	S	4		q.										
2 p. m	51.58	SSW	7	78	q.	51.29	SE	2	41.4	c.	51.75	SSW	1	104.9	r
June 27:															
6 a. m	53.01	SSW	10		d.	53.71	ESE	5		o.	53.26	SSE	2		r.
10 a. m	54.17	S	6		ct.										
2 p. m	53.94	SSW	9	2.3	o.	54.39	S	4	65.8	r.	53.92	SbyE	1	63.8	r.

Day and hour.	Dagupan.					Olongapo.					Manila.				
June 22:															
6 a. m	755.62	S	1		o.	756.12	Calm			o.	756.37	Calm			o.
10 a. m	56.04	SE	2		c.	56.32	Calm			o.	57.03	SSW	3		o.
2 p. m	54.14	SW	2		t.	54.87	SSW	1		d.	55.11	WSW	1		o.
6 p. m	53.83	SE		6.6	o.	54.60	SW	1	53.6	r.	54.85	SSW	2	4.7	o.
June 23:															
6 a. m	53.42	SE	2		c.	53.65	Calm			d.	54.07	SSE			c.
10 a. m	53.93	SE	2		o.	54.17	Calm			d.	54.33	SSW	1		o.
2 p. m	51.37	SSW	1		o.	52.35	Calm			o.	52.26	W	2		o.
6 p. m	51.35	SW		4.7	o.	52.08	S		41.6	d.	52.26	SSW	3	1.8	u.
June 24:															
6 a. m	51.73	SE	1		c.	51.87	Calm			d.	52.41	ESE			o.
10 a. m	52.54	ESE	1		o.	52.91	Calm			r.	53.05	SSW	3		o.
2 p. m	51.74	SE	1		dt.	51.64	SSW	2		o.	52.34	SbyW	4		q.
6 p. m	51.72	E		54.8	d.	52.02	SSW		89.9	d.	52.71	SbyW	2	42.8	q.
June 25:															
6 a. m	51.79	ESE	1		d.	51.63	SSW	4		d.	52.67	SbyW	4		o.
10 a. m	53.01	E	2		o.	52.91	SSW	1		q.	53.76	SSW	4		q.
2 p. m	52.02	ESE	1	38	o.	52.48	SSW	2	29	q.	52.63	SSW	1	23.3	o.
June 26:															
6 a. m	52.07	SE	1		r.	52.37	S	3		d.	53.28	SE	1		d.
10 a. m	54.28	E	2		r.	53.85	S	3		t.	54.86	SbyW	2		o.
2 p. m	52.37	ESE	2	59.5	dt.	52.80	S	3	29.7	q.	53.24	SbyW	3	4.8	o.
June 27:															
6 a. m	54.48	ESE	1		d.	54.67	S	4		o.	55.79	SbyW	3		o.
10 a. m	55.37	EbyS	2		o.	56.11	S	1		o.	56.75	SbyW	3		o.
2 p. m	54.65	SE	1	24.7	o.	55.87	SSW	2	29.7	r.	55.73	WSW	2	.9	o.

A cursory inspection of the winds observed at these stations will suffice to convince anyone at all conversant with meteorological matters that the depression which existed in the China Sea on June 23 and 24 remained in the said sea until the 27th, inclusively, without ever for a moment becoming entangled with the other depression or typhoon which during these same days followed its course to the east of the Channels of Bashi and Balintang, and passed successively south and east of the Loochoos Islands. Only a few of the many winds contained in the said table obeyed the typhoon in the Pacific, or perhaps may be considered as the resultants of the combined influences of the two cyclonic centers.

We beg to call attention to the extraordinary force which the south-southwest winds acquired at Vigan on June 27 and part of the 26th, at a time when the barometers were already rising and the depression, after having remained stationary, or at least moved very slowly, during so many days, seemed to gain decided headway in the direction of the Formosa Channel. The observer at Vigan describes some of the wind squalls as violent, or even of hurricane force. Something similar occurred in southern Formosa, with this difference, that there the barometer was falling, since the typhoon center was at the time approaching the point of its nearest distance from the island. Hence the gales must have been even harder than at Vigan.

We do not know whether Tokio Observatory had any other reason in addition to this extraordinary force of the winds for supposing, as stated before, that besides the depression which crossed the Formosa Channel in a northeasterly direction during the night of June 27–28, a second typhoon traversed the same channel at practically the same time from southeast to northwest, after having passed pretty closely to the southern end of Formosa during the afternoon of the 27th. (See the tracks of these cyclonic centers in the Journal of the Meteorological Society of Japan, July, 1907.)

We consider the existence of this second typhoon as very doubtful, so much the more, as neither the Observatory of Zikawei nor that of Hongkong mention it in their respective weather notes. Moreover, comparing the observations made at Breaker Point (116° 30′ E; 22° 56′ N), Chapel Island (118° 13′ E; 24° 10′ N), and Middle Dog (119° 59′ E; 25° 58′ N), we find that the barometric minimum occurred at the first-mentioned station during the afternoon of the 27th, at the second during the night of the 27th to the 28th, and at the third in the morning of the 28th, a fact which clearly shows the northeastward advance of the cyclonic center of the China Sea, from its entrance into the Formosa Channel to the east of Breaker Point, as far as the Eastern Sea, to a point east of Middle Dog.

We are therefore of the opinion that only one depression existed, which appears to have been a true typhoon and well developed on June 26 and 27, but to have lost some of its intensity while crossing the Formosa Channel in a northeasterly direction. In the morning of the 28th the center of this depression lay west of the northernmost point of Formosa; on the 28th and 29th it traversed the Eastern Sea and Kiusiu Island; and finally filled up during the afternoon of the 29th while in the western part of Shikoku Island.

The typhoon of the Pacific.—To judge from the observations made at Yap (Western Carolines) and Guam (Marianas), this typhoon belonged to the class of those which form at no great distance east of the Philippines without betraying their existence by their influence on the stations mentioned. Hence they can not be forecast so many days ahead, nor be followed—at least in their first stages—with such certainty as those which either traverse one of the aforementioned groups or at least have their place of origin close to one or the other of them.

To prove the existence of this typhoon we adduce here the observations of some of the stations within the Philippines east of meridian 121°.

Day and hour.	Surigao.					Iloilo.					Calbayog.				
	Pressure.	Wind. Direction.	Wind. Force.	Rainfall.	Weather.	Pressure.	Wind. Direction.	Wind. Force.	Rainfall.	Weather.	Pressure.	Wind. Direction.	Wind. Force.	Rainfall.	Weather.
	mm.		*0-12.*	*mm.*		*mm.*		*0-12.*	*mm.*		*mm.*		*0-12.*	*mm.*	
June 22:															
6 a. m	757.31	SW	2		o	757.43	SW	1		o	757.36	NW	1		c
10 a. m	57.83	SW	2		o	57.80	SW	3		p	57.34	W	2		c
2 p. m	55.62	SW	3		o	55.80	SW	2		c	55.58	W	3		o
6 p. m	56.21	SW	4		o	56.01	SW	2	1	o	56.41	W	2	0.8	p t
June 23:															
6 a. m	55.58	SW	3		o	54.82	SW	4		o	55.86	WSW	3		o
10 a. m	56.27	SW	3		o	55.33	WSW	1		q	55.90	WSW	3		o
2 p. m	54.74	SW	3		o	54.11	SW	3		q	53.71	WSW	3		o
6 p. m	55.14	SW	1		o	55.31	WSW	4	55.1	q	54.16	WSW	2	1	p
June 24:															
6 a. m	55.48	Calm	0		o	53.84	SW	3		q	54.43	SW	2		o
10 a. m	56.09	E	1		o	55.72	SW	4		q	55.31	SW	3		c
2 p. m	55.20	W	2		o	54.20	SW	2		d	54.46	SW	2		p
6 p. m	55.30	Calm	0		o	55.33	WSW	4	57.1	q	54.71	WSW	1	.3	o
June 25:															
6 a. m	56.51	Calm	0		o	55.04	SW	3		o	55.98	SW	3		c
2 p. m	55.54	Calm	0		o	55.64	SW	4		d	54.87	SW	3		o
6 p. m	56.62	Calm	0		o	55.13	SW	2	21.6	o	56.42	SW	4	8.9	c
June 26:															
6 a. m	56.55	Calm	0		c	55.90	S	1		p	56.60	SW	2		c
2 p. m	56.36	NE	1		o	56.21	SW	2		p	56.15	SW	2		o
6 p. m	56.69	Calm	0		o	55.61	SW	1	23.9	o	56.44	WSW	1		c
June 27:															
6 a. m	58.18	Calm	0		c	57.12	Calm	0		o	57.93	E	1		c
2 p. m	57.88	Calm	0		o	57.13	W	2		c	58.02	SW	1		c
6 p. m	58.46	E	1		o	57.60	SW	1		o	58.14	Calm	0		c
	Legaspi.					Aparri.					Santo Domingo.				
June 22:															
6 a. m	757.16	SSW	1		c	756.81	SSW	1		o	756.15	Calm	0		r
10 a. m	56.88	SSW	1		d	56.39	NE	1		b					
2 p. m	55.48	SSW	1		d	54.54	NE	2		t	54.56	ESE	2	20.8	o
6 p. m	55.52	WSW	1	11.9	c	53.70	ENE	1	16	o					
June 23:															
6 a. m	54.62	WSW	1		d	54.08	WSW	1		b	54.14	E	1		d
10 a. m	55	W	1		r	54.49	N	0		c					
2 p. m	53.44	SW	1		r	52.62	NE	2		b	52.64	NNE	2	1.4	c
6 p. m	53.42	Calm	0	39	t	51.99	ENE	1		o					
June 24:															
6 a. m	53.91	WSW	1		d	51.77	S	1		o	50.91	NNE	3		r t
10 a. m	54.20	SW	1		p	52.37	NNW	1		o					
2 p. m	53.33	SW	2		d	50.96	NNW	3		o	50.10	NE	2	80	r t
6 p. m	53.85	WSW	1	21.6	r	50.38	SSW	2		o					
June 25:															
6 a. m	54.89	SW	1		o	50.33	S	2		o	48.49	SW	1		d
2 p. m	54.42	SW	1		d	50.43	S	1		o	48.61	SW	4	76.7	o
6 p. m	55	SSW	1	6.3	o	50.33	W by S	1	.8	o					
June 26:															
6 a. m	55.79	SW	1		o	50.93	SW	2		d	49.71	SSW	2		r
2 p. m	54.96	SW	1		d	51.34	S	2		d	51.27	W	1	144	r
6 p. m	55.86	WSW	1	3	b	51.86	S	2	5.3	o					
June 27:															
6 a. m	57.42	SW	1		b	52.57	S	1		o	51.90	ESE	3		o
2 p. m	56.44	SW	1		c	52.56	S	2		c	53.15	S	2	72.4	r
6 p. m	57.98	SW	1		b	53.75	NNW	1		o					

Regarding these observations, it may suffice to make the following remarks: (*a*) The wind directions observed in northeastern Mindanao, and generally in the Visayas, obeyed so clearly a cyclonic center situated in the Pacific, east of Luzon, that the existence of the other center in the China Sea could by no means have been suspected, had it not been for the observations received from other points. (*b*) The minimum occurred in the southeast of the Archipelago, for instance, at Surigao, Calbayog, etc., on the 23d, in the southeast of Luzon on the 24th, and in the northeast of Luzon and at Santo Domingo on the 25th. (*c*) Though some of the winds at Aparri did not fully obey the typhoon in the Pacific, nevertheless those of the 24th seemed to indicate well the passage of a cyclonic center east of the station. (*d*) At Santo Domingo the winds blew from northeast and north-northeast on the 24th, but from southwest on the 25th, the observer remarking that during the night of June 24 to 25 the wind backed from the first to the fourth quadrant and finally to west.

From the foregoing facts it seems to follow that this typhoon formed in the Pacific, east of Luzon, on the 22d, and, moving in a northwesterly direction, passed to the east of Aparri on the 24th, and during the night of the 24th to the 25th to the east of Santo Domingo. On the 25th it recurved east of the Bashi Channel and took the direction toward Japan, as we shall see presently.

In the following table we give the valuable observations for which we are indebted to Mr. F. Fabregas, captain of the steamer *Ban-Yek,* who during those days was near the southern coast of Luzon and experienced a good deal of the storm's fury on the 24th, 25th, and 26th. We beg to remark, however, that the hurricane winds during the afternoon of the 26th, when the steamer was homeward bound) between Luzon and the Visayan Islands, were due chiefly to the typhoon in the China Sea:

METEOROLOGICAL OBSERVATIONS MADE ON BOARD OF SS. "BAN-YEK" JUNE 21 TO 27, 1907

[Captain, Mr. F. Fabregas.]

Day and hour.	Position.	Pressure.	Wind.		Remarks.
			Direction.	Force.	
June 21:		*mm.*		*0-12.*	
4 a. m	N of Sisiran	757.5	Variable		Smooth sea.
10 a. m	Daet	56.3	Variable		Do.
4 p.m	Nueva Cáceres	57.3	S		
June 22:					
4 p. m	do	54.2	SW quad.		Overcast.
10 p. m	do	54.5	SW quad.		Lunar halo.
June 23:					
4 a. m	do	54.3	SW	4	Squalls.
10 a. m	do	54.2	SW	4	Do.
4 p. m	Leaving Nueva Cáceres for San Miguel Bay.	52.2	SW	4	Do.
9.30 p. m	San Miguel Bay	52.7	SW	4	Do.
June 24:					
4 a. m	Canimo I	51.5	SW	6	Passing showers from SW.
10 a. m	Daet	52	SW	6	Do.
3 p. m	do	51.7	SW	10	Do.
6.40 p. m	N of Botabanan I	52	S	10	Do.
9 p. m	N of Sisiran	54.5	SSE, SE		Smooth sea.
June 25:					
4 a. m	E. of Rapu-Rapu I	53.4	SW	8	SW swell.
9.30 a. m	Gubat	54.7	SW	8	Do.
4 p. m	do	54			
9.30 p. m	do	55			
June 26:					
4 a. m	Between S of Bulan and S of Burias.	55	SW	6	Moderate sea from SW.
10 a. m	do	55.1	SW	6	Do.
4 p. m	Between Bondoc Pt. and Tres Reyes Is.	54.1	SW	10	Hurricane winds.
9 p. m	do	54.1	SW	10	Do.
June 27:					
4 a. m	Malabrigo	54.4			
10 a. m	Corregidor	55.4			Rough sea from NW and W.

The further track of the typhoon from the time of its recurving east of the Bashi Channel until it entered the Sea of Japan is easily followed by means of the observations made on the Loochoos Islands and in Japan, and of the daily weather maps of the Far East for June 26, 27, and 28. By way of a recapitulation we may state briefly that the center of this typhoon passed on the 26th successively south and east of the Loochoos Islands, having first an east-northeast and afterwards a northeast and north-northeast direction, until it entered the Island of Shikoku during the afternoon of the 27th. Resuming its northeast direction, it crossed Nippon Island and a part of the Japan Sea, hugging the western coast of said island, and finally disappeared in the neighborhood of the district of Tsugaru, northern extremity of Nippon Island, during the afternoon of June 28.

On the weather map of this Observatory for 6 a. m. of the 28th we marked the typhoon center in the Sea of Japan, northwest of Nippon Island, in spite of the fact that the reports received from Japan gave for Tokio fresh winds from northwest which would suppose the disturbance to the southeast of said island. We considered this wind doubtful, and entirely prescinded from it in tracing the map. But as we were not perfectly sure that the wind direction for Tokio was erroneous, we thought it to be preferable not to make any mention in the weather note of the typhoon which the preceding day we had located close to the southern coasts of Japan. When later on the Japanese weather maps arrived, we found that at 6 a. m. of the 28th the wind at Tokio had been from southeast instead of northwest and that, consequently, we had been justified in tracing the map without regard for the direction received by cable.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[ϕ=14° 34′ 41″ N; λ=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied,—1.72 mm.]

Date.	Pressure, mean.	Temperature. Open air.[2] Mean.	Open air. Maximum.	Open air. Minimum.	Underground. 0.25 meter. 8 a. m.	0.25 meter. 2 p. m.	0.50 meter. 8 a. m.	0.50 meter. 2 p. m.	1.50 meters. 8 a. m.	2.50 meters. 8 a. m.	Relative humidity, mean.	Vapor pressure, mean.	Evaporation. Free exposure, total.	Evaporation. Shelter (total).
	mm.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	Per ct.	mm.	mm.	mm.
1	757.67	28.3	34.9	23.5	31	33	31.8	32.1	30.4	29.2	78.5	22.1	6.3	3.2
2	58.10	29.9	36.5	23.6	30.8	33.8	31.7	32.3	30.2	28.8	66	20.1	8.4	4.2
3	58.27	30.2	36.5	24.4	31.7	34.2	32	32.7	30.2	29.1	65.6	20.5	10.2	5.1
4	58.50	29.6	34.5	24	32	34.6	32.2	32.8	30.3	29.1	73.5	22.4	8.6	4.5
5	57.51	29.3	33.9	24.7	32.1	34.9	32.7	33.1	30.3	29.2	73.6	22	8.5	5
6	57.20	29.7	33.2	25.2	32.2	34.9	32.5	33.4	30.1	29	74.2	22.9	8.9	5
7	57.19	28.8	34	24.7	32.5	35	33.1	33.5	30.4	29.2	75.7	22.1	8.5	4.4
8	57.65	26.6	32.8	23.7	32.2	33.9	33.1	33.4	30.5	29.2	84.4	21.6	5.6	3.2
9	58.27	26.3	33.1	23.1	31	32.2	32.4	32.6	30.2	29.1	85.2	21.5	2.9	1.4
10	58.23	26.9	31.6	22.7	30.1	31.2	31.9	31.8	30.4	29.2	81.8	21.5	4	2.1
11	57.54	26.4	31.2	23.6	29.1	31.2	31.1	31.4	30.6	29.2	84.6	21.5	3.5	2
12	56.48	27.2	32.5	23.1	29.1	31.1	30.9	31.0	30.6	29.2	80.5	21.4	4.4	2
13	56.02	28.6	33.6	22.9	29.2	32.6	30.8	31.4	30.7	29.2	76.7	22.1	7.2	3.1
14	56.54	28.4	32.6	24.6	30.7	32.8	31.5	31.8	30.8	29.2	81.1	23.1	8.6	3.9
15	57.03	27.6	31.2	24.2	30.6	31.7	31.6	31.6	30.6	29.1	83	22.7	5.9	2.8
16	57.48	27.5	33.1	23.8	29.9	32.1	31.1	31.2	30.3	29	86	23.3	3.8	3.1
17	58.01	28.2	34.1	23.8	29.5	31.9	30.9	31.2	30.4	29.1	82.9	23.4	4.5	2.3
18	57.85	28.9	32.7	24.7	30.3	32.2	31.1	31.4	30.2	29.2	78.2	22.9	6.9	3.8
19	57.66	28.7	32.8	24.4	30.4	32.5	31.1	31.6	30.3	29.3	79.2	22.9	7.5	4.3
20	57.91	27.8	30.8	24.6	30.7	31.3	31.2	31.3	30.4	29.3	81.2	22.4	5.9	3.4
21	57.59	26.8	30.3	23.2	29.8	30.9	30.9	31.0	30.2	29.3	83.6	21.8	6	3.2
22	55.92	26.4	29.8	22.7	29.3	29.9	30.5	30.5	30.3	29.3	85.1	21.7	2.9	1.9
23	53.55	27.2	31.6	23.1	28.8	30.1	30	30.4	30.2	29.4	80.4	21.5	5.8	2.9
24	52.91	26.1	29.8	23.7	29.1	29.8	30.1	30.2	30.1	29.3	88.8	22.3	2.4	1.9
25	53.13	26	28.7	23.5	28.4	28.2	29.8	29.6	30.1	29.3	90.9	22.7	1.3	1
26	53.94	27.6	31.3	23.7	27.9	29	29.2	29.4	30.1	29.2	78.7	21.4	6.5	3.6
27	56.37	27.6	31.3	24.4	28.1	29.7	29.2	29.5	30	29.3	81	22.1	5.7	3.5
28	58.14	28	32.8	22.9	28.4	30.6	29.3	29.8	30.1	29.4	77	21.3	6.7	3.6
29	58.31	27.8	32.3	22.7	28.8	30.8	29.4	30	30	29.2	79.6	21.9	7.7	4
30	58.58	28	32	23.5	29.1	31.1	29.8	30.1	29.9	29.3	81	22.5	5.5	3
Mean	756.98	27.9	32.5	23.8	30.1	31.9	31.1	31.4	30.3	29.2	79.9	22.1	6	3.2
Total													180.6	
Departure from normal	—.93	—.1	+.3	—.2							—1.2	—.4	+8.1	

Date.	Wind. Prevailing direction.	Wind. Total movement.	Wind. Maximum hourly velocity.	Wind. Direction at the time of the maximum velocity.	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Sunshine.	Rainfall.	Miscellaneous.
		Km.	Km.		0–10.			h. m.	mm.	
1	ESE, SE	149	14	SW	9.6	Ci.-S. NE by N	Cu. SSE	5 00		≡° ○ a. ⌈↯ p.
2	ESE	212.5	21.5	SE	6.4	Ci.-S. E	Cu. ESE	10 30		≡° a. ⊤° ⚡° p.
3	ESE, SE	191	16.5	ESE	7	Ci.-S. E by N	Cu. SE by E	10 05		≡° a. ○° a. p.
4	WSW	278.5	25	SW	5	Ci.	Cu. SE by S	9 10		≡° a. ⌈↯ d² p.
5	SW	241.5	26.5	SW	5.4	Ci. NE	Cu.	7 55		≡° Ω a. ⌈↯° p.
6	WSW	320.5	29.5	WSW	5.2	Ci. N	Cu. W by S	10 00		≡° a. ⌈↯° p.
7	Variable	225.5	22.5	SW	8.4	Ci. NNE	Cu. SW	7 10		≡° ○° a. ⌈↯ p.
8	ENE, W	147.5	17	W	7.3	Ci. NE	Cu.	5 35	1.9	≡° a. ⌈↯² ●° p.
9	Variable	125	17	ESE	8 6	Ci.-S. E	Fr.-N. E	3 30	1.5	≡° Ω a. ⌈↯° p.d
10	NE	112.5	12	NNW	9	Ci.-S. E	Cu.-N. E	4 30		≡° d° a. ⚡ p.
11	Variable	45	8	NW	9.8	Ci.-S.	Cu.-N. ENE	1 10	2.5	≡° ●° a. d° p.
12	Variable	63.5	11	NNW	8.8	Ci.-S. SSE	Cu.-N. SE	1 15		≡° ○° a. ○ ⚡ p.
13	WSW, WNW	234	25	SW	6.9	Ci. SE by E	Cu. ESE	9 20	13	≡° a. ⌈↯° ● p.
14	WSW, NNE	283	29.5	NNW	5.9	Ci.-S. E	Cu. NE	8 50		≡° a. ⌈↯° p.
15	Variable	191.5	26	SW by W	9.2	Ci.-S. SW by W	Cu. ESE	1 00		≡° ○ a. ⌈↯² d° p.
16	W	99.5	13	N	8	Ci.-S. WSW	Cu. SE	5 35	22.2	≡° a. ⌈↯ ●² p.
17	S	171.5	17.5	SSW	7.7	Ci.-S. NW by N	Cu. SE	7 00		≡° ○ a. ⌈↯ ⊥ p.
18	WSW, SE	322.5	35	WSW	7	Ci. E by S	Cu. S by E	8 55	2.4	≡° Ω a. ● ⌈↯ p.
19	S, WSW	318.5	34	SW	6.5	Ci.-S. NE	Cu. WSW	7 10		≡° ○° a. ⌈↯° p.
20	WSW	389	32	WSW	8.1	Ci. NE by E	Cu.	7 10	10.6	≡° ⌈↯ ● a. ○°
21	WSW, SE	270.5	30	WSW	9.8	Ci.-S. E	Cu. SW by S	3 15	14.3	≡° ●² a. ○
22	ESE, S	186	20.5	WSW	9.7	Ci.-S.	N.-cf. SW by S	2 40	4.7	≡° Ω ↙ ●° ⊤° a. d
23	SSW, SSE	236	32	SSW	9	Ci.-S. ENE	Cu.-N. SW	4 10	1.8	≡° ⊕ ○ a. ⌈↯ ●° p
24	SSW	342.5	27	S by E	9.9	Ci.-S.	Cu.-N. SW by W	2 30	42.8	◠ a. ↙ ● p. ●
25	SSW, S	448	28.5	S by W	10	Ci.-S.	Cu.-N. SW by S	0 00	23.3	↙ ●° a ⊤ p. ● d°
26	SSW	401.5	27	SSW	10	Ci.-S.	Cu. SW	0 55	4.8	● ○ a. p. ⚡ ↙ ● p
27	SSW	351	23.5	S by W	9.3	A.-Cu. SW by S	Cu SW	5 25	.9	d. a. p.
28	S, SSW	215	32	SW by W	8.2	Ci.-S. ENE	Cu. SSW	7 50		≡° a. ○ a. p.
29	W, SW	198	27	SW by W	7	Ci.-S. E	Cu. SSE	7 50		≡° a. ○ ⚡ p.
30	SW	181.5	24	SW	7.7	Ci.-S. E by S	Cu. SE by S	6 55		≡° a. ○ ⌈↯° d° p.
Mean		231.7	23.5		8			5 45		
Total								172 20	146.7	
Departure form normal		—7.7			+1.1			—2 57	—100.1	

[1] All the mean values given in this table are deduced from hourly observations.

[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

TAGBILARAN.

[ϕ=9° 38′ N; λ=123° 53′ E; barometer above sea, 21.8 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	757.62	27.9	31.3	24	74.8	NNE, SE	1.3	6.7	Ci.-S.	Cu. E	------	⊤² d° ϟ p.
2	57.60	27.5	31.5	24	76.2	SE	1	7.5	A.-S.	S.-Cu. E	------	ϟ p.
3	58	28	33.6	23.5	72	NNE, SE	1.3	5	A.-Cu.	Cu. E	------	ϟ p.
4	58.53	27.9	32.8	24.4	76.2	WNW	1	7.2	Ci.-S. ENE	Cu.-N. E	------	d° ⊤° ϟ
5	57.61	27.9	33.4	23.5	75.8	NNW	1.5	5.3	Ci.-S.	Cu. ENE	------	⊤° p.
6	57.43	27.7	31	22.9	75.4	SE	1.7	5.7	A.-S. SE	Cu. E	------	⊤ p.
7	57	28	31.4	23.5	77.4	SE	1	6.5	Ci.-S.	Cu.-N. E	1.3	[ϟ° p.
8	56.74	27.7	30.7	24	77.8	NNE, SE	1.3	6.5	Ci.-S.	Cu.-N. E	------	⊤ ϟ² p. ○
9	57.29	27.6	31.4	24.7	75	NNE	1	8	Ci.-S.	Cu.-N. E	5.1	d. ⊤ a. ϟ p.
10	56.86	26.8	31.6	23.4	79.8	N,NW	1.3	7.7	Variable	Cu.-N. E	25.7	[ϟ p.
11	56.09	26.9	32	23.6	79.1	NNE	1.2	9.2	A.-S.	S.-Cu. E	1	[ϟ° p.
12	55.89	27.8	30.5	24.6	77.8	SE	1	8	A.-Cu. E	Cu.-N. E	------	⊤° m. d.
13	56.18	27.8	31.3	23.9	80.3	SE	1.3	9.2	Ci.-S. SE, NE	Cu.-N. E	.5	[ϟ° p.
14	57.10	27.8	31.3	25.5	76	SE, WSW	1.7	10	Ci.-S. ESE	Cu.-N. SW	------	
15	57.30	28.1	31.1	25.4	74.1	SE	1.3	9	Variable	Cu. SW	------	ϟ p.
16	57.96	28.3	30.4	25.4	74	SE	2.2	9	A.-S. ENE	Cu.-N. SW, E	------	ϟ p.
17	58.87	27.4	29.8	24.4	79.3	SE	1.5	10	A.-S. E	N. E	4.8	●° a. [ϟ p.
18	58.33	27.3	32	23.4	79.8	SE, NNE	1	9.5	Ci.-S. SE	Cu. E	------	ϟ p. ○² ⊍²
19	58.10	27.8	30.3	23.9	80.2	SE, WSW	1.3	8.8	Ci.-S.	Cu. E, SW	------	ϟ p.
20	58.12	28.3	31.6	24.1	75.3	N, S	1.3	9.2	Ci.-S.	Cu. WSW	------	⊤ ϟ p. ⊍²
21	57.96	27.8	33.4	24.3	73.2	SE	2.3	8.3	Ci.-S. SE	Variable	------	↙ ⊤ d° p.
22	57.19	27.2	31.2	24.7	71.5	SW quad.	2.5	9.7	Ci.-S.	Variable	1.3	↙ ● p.
23	55.75	27.2	30.3	24.5	73.3	SW	3.5	10	A.-S.	N. W	6.6	↙ ● p.
24	55.53	27	29.5	24.2	76.7	SE	2.5	9.5	A.-S. NE	S.-Cu. SW	2	↙ ● a. ○°
25	56.54	26.8	29.5	22.9	78.2	SW	1.3	9.7	A.-S.	Cu SW	2.8	↙ ● a. ⊍° p.
26	56.96	27.5	30.5	24.5	75.1	SE	1.2	9.7	Ci.-S. NE	S.-Cu. SW	------	○²
27	58.05	27.9	30.5	23.4	77.3	SE	1.3	8.8	Ci.-S. E	Cu. SE	------	
28	58.92	27.4	31.2	23.6	75.7	N	1.2	7.5	Ci.-S. NE	Cu. E	------	ϟ p.
29	58.47	26.7	29.9	22.1	80.3	NNE, SE	1.2	8.8	A.-S. E	N. SW	16.8	[ϟ a. p.
30	58.70	26.9	31.9	22	79.5	SE	1.3	8.2	A.-S. SE	Cu. E		d° a. ϟ p.
Mean	757.42	27.6	31.2	23.9	76.6	------	1.5	8.3	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	67.9	

SURIGAO.

[ϕ=9° 48′ N; λ=125° 29′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	758.09	26.7	31.4	23	90.5	NNE	.3	7	Ci.-S.	Cu.	17.8	[ϟ a. p ϟ p.
2	58.36	26.9	30.5	23.2	89.7	NE	1.3	8.3	Ci.-S.	Variable	5.6	● a. p° p.
3	58.69	28	32.4	23.5	83.2	NE	1.2	6.8	Ci.-S.	Cu. NE	------	ϟ p.
4	58.89	27.6	33.5	22.5	86.7	E, N	.3	6.7	Ci.-S. SE	Cu.	2.8	●° a.
5	57.98	27.7	32.5	21	85.7	NE	.5	4.7	Ci.-S.	Cu.	------	⌓ a.
6	57.81	27.5	32.5	22.2	85.9	NE	.4	8.2	Ci.-S.	Cu.	------	p° a.
7	57.64	28	32.4	22.5	85.8	NE	.8	3.8	Ci.	Cu.	------	ϟ p.
8	57.34	28.2	32	23.5	84.5	NE	.7	3.8	Ci.	Cu.	------	ϟ p.
9	57.99	25.5	26.8	23.4	94.5	E	.8	8.7	------	Fr.-N.	48	● a. p.
10	57.32	26.7	34	23	89.5	N	1	6.7	Ci.	Cu. E	57.1	↙ ●² p.
11	56.60	26.2	29.5	22.2	89.8	E	.7	9.2	------	Fr.-N.	14.5	d. a. ϟ ● p.
12	56.22	27.7	30.5	23	84	NE	.5	4.3	Ci. SE	Cu. E	------	ϟ a.
13	56.37	28	32.2	22	85.2	Variable	.5	7.3	Ci.-S. E	Cu.	------	d° ϟ p.
14	57.17	27.6	32.8	22.5	84	W	.8	8	Ci.-Cu. SE	Cu. SW	------	
15	57.84	28.3	33.3	23	79.5	SW, W	.7	5.8	Ci.-Cu. S	Cu.-N. WSW	------	d° ⊤ ϟ p.
16	58.31	27.5	33.9	23	86	E	.2	6.8	Ci.-S.	Cu.	------	⊕ ⊍
17	59	27.5	34.2	23	87.4	W	.8	5.2	Ci.	Cu.	3.8	p p.
18	58.49	27.5	33.6	22.5	85.9	W, NW	.3	7.2	Ci.-S. ENE	Cu.	------	⌓ a. ⊕ ⊍
19	58.10	28.3	34	23	83.2	NW, SW	.5	6.7	Ci.	Cu.	------	ϟ p.
20	58.38	27.9	32.5	23	83.7	W	1.2	6.8	Ci.	Cu.	------	⊤ a. p. ϟ
21	58.05	27.9	31.9	22.3	84.4	SW	1.3	9	Ci.-S.	Cu. SW	58.9	●² a. p. ↙
22	56.90	27.1	29	23	82.2	SW	3	10	------	Fr.-N. SW	------	⊍ ↙ p.
23	55.59	28.7	31.2	23.6	69.5	SW	2.3	10	Ci.-S.	Fr.-S. SW	------	↙
24	55.82	28.2	33.2	24.4	81.	E, W	.6	10	Ci.-S. N	Variable	------	⊍
25	56.65	27.5	34	24	87.2	Calm	.0	10	Ci.-S.	S.-Cu.	------	
26	57.02	28.1	33.5	23.4	84.4	NE	.3	8.3	Ci.-S.	Cu.	------	⌓ a. ⊍
27	58.40	28.1	34.5	23.3	86.5	E	.2	7	A-Cu. E	Cu.	------	
28	59.25	28.2	34.5	22.5	84.5	NE, E	.3	3.7	Ci.Cu. E	Cu.	1.3	⌓ a. ●° p.
29	58.59	27	33	23	90.5	NE	.2	7.8	A-Cu.	Cu.	------	d° p.
30	58.83	27.2	33.5	23	84.7	W	.7	2.3	Ci.	Cu. SW	------	ϟ p.
Mean	757.72	27.6	32.4	22.9	85.3	------	.7	7	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	209.8	

[1] All the mean values given in these tables are deduced from six daily observations.

METEOROLOGICAL DATA, ETC.—Continued.

CEBU.

[ϕ=10° 18′ N; λ=123° 54′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.					mm.	
1	758.31	27.8	30.6	24.8	81	ENE	0.5	4.8	Ci.-S.		Cu.	E	0.3	Ω² ≡ p. ϟ
2	58.39	27.3	30.2	24.7	80.9	ENE	.8	7.3	Ci.-S.		Cu.-N.	E	------	Ω ≡ ϟ a.
3	58.67	28.6	------	25.5	76.1	E	.8	4.5	Ci.		S.-Cu.		------	Ω ≡ a. ⌈ϟ p.
4	59.08	27.6	31.5	24	80.4	E	.5	5.7	Ci.-S.		Cu.	E	1.8	Ω ≡ d. ϟ
5	57.96	28	32	24	84.5	ENE	.2	3.5	Ci.-S.		Cu.		------	Ω ≡ a.
6	57.96	28.7	31.4	24.9	75.4	E	.4	5	Ci.-S.		Cu.	E	------	
7	57.64	28.1	32	24.3	78	E	.2	5.3	Ci.-S.		Cu.	E	------	Ω ≡ a. ⊤ ϟ p.
8	57.40	28	32	25	80.2	ENE	.5	5.5	Ci.-S.		Cu.	E	------	Ω ≡ a. ϟ p.
9	58.03	27.6	30.6	25	82.8	E	.3	6.7	Ci.-S.		Variable		------	Ω ≡ a. ϟ p. ○
10	57.57	28.2	32.1	24.5	76.2	E	.7	3.5	Ci.		Cu.	E	------	Ω ≡ a. ϟ p.
11	56.69	27.8	30.8	25.5	80	ENE	.5	8	Ci.-S.		S.-Cu.	ENE	.5	Ω ≡ ϟ p. ○
12	56.27	28.2	31.4	24.7	78.2	E	.4	5.4	Ci.		Cu.	E	11.7	≡ ● a. ϟ p. ○
13	56.58	28	31.5	24.6	79.2	S	.5	6.7	Ci.		Cu.	ENE	------	Ω ≡ ⊤ ϟ
14	57.69	25.8	29.4	23.5	87.8	SW	.5	8.8	Ci.-S.		Cu.-N.	SSW	86.9	≡ ↙ ⌈ϟ a. p.
15	57.85	26.4	30.5	22.5	84.8	SW	.3	6.5	Ci.-S.		Cu.	SW	18	Ω² ≡ ↙ ⌈ϟ
16	58.41	27.1	30.9	23.5	82.2	SW	.5	6.8	Ci.-S.		Cu.	SW	------	Ω² ≡ a. ϟ p.
17	59.11	27.4	30.4	25.8	83.7	SW	.5	6	Ci.-S.		Cu.	SW	------	Ω ≡ ϟ
18	58.60	28	32	24.6	80.2	SE, S	.3	4.8	Ci.-S.		Cu.	S	.8	Ω² ≡ d. ○ ψ
19	58.43	27.4	31.5	24.9	82.5	S	.2	5.7	Ci.-S.		Cu.	S	------	Ω ≡ ⊤ ϟ ○
20	58.65	26.7	31.5	24.5	83.8	SSW	.2	6.5	Ci.-S.		Cu.	SSW	9.6	Ω ≡ ⊤ ϟ ⌈ϟ
21	58.33	27.4	31.1	23.6	76	W	.6	6.4	Ci.-S.		Cu.-N.	NW	------	≡ a. ⊤ p.
22	57.16	27.5	30.4	25.1	75.4	SW	1.2	8.3	Ci.-S.		Cu.	W	2.3	Ω ≡ ↙ ●° ○
23	55.66	26.3	29.9	24.5	85.2	SW	1.2	8.7	Ci.-S.		Cu.-N.	WSW	6.1	Ω ≡ p. ↙ ⌈ϟ
24	55.38	26.6	29.1	23	80.2	SW	1	7.8	Ci.-S.		Cu.-N.	SW	13.5	≡ a. ↙ ● ⊤ ϟ
25	56.66	25.6	29	23.5	84.2	SW	.7	9	Ci.-S.		N.-Cf.	SW	18.5	Ω ≡ ↙ ● ⊤ ϟ
26	57.10	26.4	30.5	23.3	84.5	WSW	.5	7	Ci.-S.		Cu.	SW	------	Ω ≡ a. ○ ψ
27	58.50	27.7	31.5	23.4	79.3	S	.3	6.2	Ci.-S.		Cu.	SW	------	Ω² ≡ ∞ ψ
28	59.37	27	32.5	23.4	83.5	S, W	.3	4.3	Ci.		Cu.	SW, NE	1	Ω ≡ a. ↙ ⌈ϟ p.
29	58.74	27.2	31	23.8	80.8	S	.2	6.8	Ci.-S.		Cu.	N	5.6	≡ a. ⌈ϟ ↙ p.
30	59.20	26.4	31	23.4	85.7	SE	.2	5.8	Ci.		Cu.-N.	ENE	1.5	Ω² ≡ p. d. ⊤ ϟ
Mean	757.85	27.4	31	24.3	81.1	------------	.5	6.2	------------		------------		------	
Total	------	------	------	------	------	------------	------	------	------------		------------		178.1	

ILOILO.

[ϕ=10° 41′ N; λ=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.		Clouds. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.					mm.	
1	757.35	28.8	34.2	24.5	75.5	E	.8	5.8	Ci.		S.-Cu.		------	ϟ p.
2	57.63	27.9	31.7	24.7	77.2	N, NE	1.2	6	Ci.-S.		S.-Cu.		------	ϟ ⊤ p.
3	58	28.6	33	25	69.7	SW	1.2	4	Ci.		S.-Cu.		------	ϟ ⊤ p.
4	58.60	27.3	31.1	25	78.7	Variable	.8	7.8	A.-Cu.		S.-Cu.	WNW	5.1	ϟ p. a.
5	57.49	27.8	34.5	23.4	74.4	E	.5	5.3	Ci.-S.	S	S.-Cu.		------	⊤ ϟ p.
6	57.43	27.4	32.5	23.1	77.3	SW	.7	4.8	Ci.-S.		Cu.		------	ϟ ⊤ a. p.
7	57.07	27.6	34	24.1	78.4	Variable	.8	4.2	Variable		Cu.		9.9	⌈ϟ p.
8	56.92	27.9	33.1	24.1	77.3	Variable	.7	9	Ci.-S.		S.-Cu.		11.7	⌈ϟ p.
9	57.01	27.8	33	24.2	78.6	NE	1.5	6.8	A -Cu.		S.-Cu.	NE	------	⌈ϟ p.
10	56.98	29.1	33.4	24.8	68.2	N, NE	1.5	4.5	Ci.-S.		S.-Cu.		------	ϟ p.
11	56.09	28.6	33.6	25.2	75	NNE	1.5	7.3	A.-Cu.	E	S.-Cu.	NE	10.2	⌈ϟ p.
12	55.82	27	32.1	23.6	79.2	N	.8	8.7	A.-Cu.		S.-Cu.		.5	d. a. ⌈ϟ p.
13	56.15	27	31	23.5	79.7	SW	.8	6.5	A.-Cu.		S.-Cu.		------	d° ⊤ ϟ p.
14	56.88	27.2	29.8	25.2	79.2	S, SW	1.5	8.5	A.-Cu.		S.-Cu.	SW	------	d° a. ϟ p.
15	57.10	26.8	29.5	24.1	82.2	SW, S	1.7	9	A.-Cu.		N.	SW	12.7	● ⊤ ϟ ⌒
16	57.82	26.9	29.9	24.5	83.5	SW	1.3	7.5	A.-Cu.		S.-Cu.	SW	------	d° a. ϟ p.
17	58.42	27.1	30	23.9	78.8	S, SW	1.3	7.5	Ci.-S.	NE	S.-Cu.		7.6	p. a. ϟ p. ψ
18	57.84	27.9	31.4	25.3	78.5	SW	.8	7.3	Ci.-S.		S.-Cu.	SW, ESE	1.8	p. ⌒ a. ϟ p.
19	57.78	27.7	31.4	23.7	78.2	SW	1	6	Ci.-S.	NE	S.-Cu.		------	⊤ ϟ p. ψ
20	58.20	27.8	31.9	24.5	74.3	W, SW	1.5	7	Ci.-S.	NNE	S.-Cu.	W	----	↙ ϟ p.
21	57.79	28	32.1	26.2	73.6	SW	1.7	6.3	A.-Cu.		S.-Cu.		------	⊤ ϟ a. p. ψ
22	56.96	27.2	30.5	24.9	79.7	SW	1.7	8.2	A.-Cu.	E	S.-Cu.	W	.1	p. p.
23	55.10	25.1	27.9	23.1	90.5	SW	3	10	A.-Cu.		N.	SW	55.1	↙ ● a. p. ⊤
24	54.94	25.3	27.8	22.4	89.2	SW	3.2	10	A.-Cu.		N.	SW	57.1	↙ ● a. p. ⊤ ϟ
25	55.69	25.9	29	24.8	86.7	SW	2.5	9.8	A.-Cu.		N.	SW	21.6	↙ ● a. d. p. ψ
26	56.29	26.1	28.3	23	82.8	S, SW	1.3	9.3	A.-Cu.		N.	SW	23.9	● a. p.
27	57.61	27.2	30.8	23.5	80.3	SW	.8	6.3	Ci.-S.	NE by E	S.-Cu.		------	ψ
28	58.73	27.3	30.4	25	82.2	SW	1	7.3	Ci.-S.		S.-Cu.	SW	------	d° a. ϟ p.
29	58.47	26	30.5	22.5	84	SW	.7	6.5	Ci.		Cu.		33.8	⌈ϟ p.
30	58.80	26.2	30.1	23	82.8	S, SW	1.2	8	A.-Cu.	E	S.-Cu.		------	⊤ ϟ p.
Mean	757.23	27.3	31.3	24.2	79.2	------------	1.3	7.2	------------		------------		------	
Total	------	------	------	------	------	------------	------	------	------------		------------		252	

METEOROLOGICAL DATA, ETC.—Continued.

ORMOC.

[ϕ=11° 00′ N; λ=124° 36′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.					mm.	
1	757.80	26.3	31.1	21.2	80.2	Variable	0.7	6.8	Ci.	ENE	Cu.		------	⊤ a. d ☇ p,
2	57.92	26.6	30.2	23	81	Variable	.3	8.5	Ci.-S.		Cu.		1.8	● ☇ p.
3	58.06	27.8	33.5	22.1	75.2	Variable	.7	3.7	Ci.		Cu.	ESE	------	⊤ ☇ p.
4	58.64	25.3	30.7	23	86	N	.3	5.5	Ci.-S.		Cu.	ENE	3	☇ d a. ⌈◁ p.
5	57.47	25.6	33	21.6	76.2	Variable	.5	1.7	Ci.		Cu.		------	Ω² a. ☇ p.
6	57.39	27.1	33.1	21.5	74.4	N, SSE	.5	3.8	Ci.	SW	Cu.	ENE	------	Ω a. ☇ p.
7	57.15	27.4	32.9	23	74.2	S	.5	5	Ci.-S.	SW	Cu.	SE	------	⊤ ☇ p.
8	57.02	26.0	31.8	22.4	83	N	.7	5.2	Ci.-S.		Cu.		------	⊤ ☇ a. p.
9	57.51	26.3	29.8	24	81.4	N, SE	.7	8.2	Ci.-S.		Cu.		.8	⌈◁° d° ☇
10	57.05	27.6	33.5	22.4	73.5	N, NE	.8	5.2	Ci.		Cu.	ENE	------	Ω° d° ⊤ ☇
11	56.36	26.6	31.8	24	79.8	NE	.3	8.7	Ci.-S.		Cu.	E	6.9	⌈◁ a. ☇ p.
12	55.83	26.6	32.7	22.6	80.8	N, S	.3	5.5	Ci.	E	Cu.	NE	------	Ω d ⊤ ☇ ○
13	56.01	26.6	33	22.8	81.8	N	.7	5.3	Ci.-S.		Cu.	NNE	33	☇ a. ⌈◁ p.
14	56.98	26.9	30.6	24.5	80.3	SSE	1	9.3	Ci.-S.		Cu.		2	● ☇
15	57.10	26.8	31.5	23.5	82.8	SE	1	8.2	Ci.-S.		Cu.	SE	5.8	⌈◁ a. p.
16	57.84	27.4	31.6	24.5	81.3	SSE	.5	8.3	Ci.-S.	N	Cu.	SSE	14.2	● ⌒ a. ☇ p.
17	58.61	27.1	30.7	24.8	79.8	Variable	.7	6.8	Ci.	ESE	Cu.		31.7	●² a. ⊤
18	58.07	27.2	32.1	23.2	80.3	Variable	.3	5.5	Ci.	E	Cu.		------	⩊
19	57.94	27.4	32.5	24.3	82.8	S, SE	.2	7	Ci.-S.		Cu.-N	W, E	------	⊤ a. p. d ☇
20	58.21	26.3	30.2	24	85.3	NE quad.	.3	8.8	Ci.-S.		Cu.		8.1	⌈◁ a. p.
21	57.64	26.8	32.7	23.4	84.7	Variable	.5	7.2	Ci.	SW, SE	Cu.	W	21.6	≡ a. ⌈◁ p.
22	56.54	26.5	29.8	23.2	84	Variable	.5	9.3	Ci.-S.		Cu.	WSW	2.8	● a. ☇ p.
23	55.17	27.5	30.4	25.2	76.2	SSW	2.5	9.8	Ci.-S.		Cu.	SW	11.9	↙ ● ⊤ p.
24	55.24	26.8	30	25.2	80.1	SSE	2.7	9.8	Ci.-S.		Cu.	SW	4.3	↙ ● ⌈◁ p.
25	56.29	25.9	29.7	24.2	86.2	E	1.2	9.5	Ci.-S.		Cu.	S	27.4	↙ ● p. ○° ⩊
26	56.64	27.8	31	24.2	77.5	E, SSE	1.3	8.8	Ci.-S.		Cu.	S, SE	------	○°
27	57.89	27.8	33	24	76.3	SSE	.3	8	Ci.-S.		Cu.		------	○ ⩊
28	58.92	25.9	31.8	21.9	85.2	NNE	.5	6.5	Ci.-S.		Cu.	E	2.5	Ω a. ⌈◁ p.
29	58.31	25,8	30.7	22.5	85.2	N	.3	8.3	Ci.-S.		Cu.	NE	2.5	Ω a. ⌈◁ p.
30	58.58	26.4	31	22.7	83.9	Variable	.3	6.3	Ci.	NE	Cu.	N	------	☇ p. ○ ⊕
Mean	757.34	26.8	31.5	23.3	80.6	------	.7	7	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		180.3	

TACLOBAN.

[ϕ=11° 15′ N; λ=125° 00′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.					mm.	
1	758.41	27.5	32.1	24.9	80.3	Variable	.8	8	Ci.-S.		Fr.-N.	ESE	31	⌈◁ a. p. ⊕
2	58.72	26.8	31.5	25	84.5	SE by E	.4	8.4	Ci.-S.		Fr.-N.		.5	d° a. p.
3	58.94	28.1	33.3	25.1	78.3	SE	.6	5.8	Ci.		Fr.-N.	SE	3.3	d² ⌒ a. ⌈◁ p.
4	59.08	26.8	33	24.1	84.7	W	1	5.8	Variable		S.-Cu.		------	⊤ p.
5	57.91	27.9	34	24	79	SE quad.	1	1.4	Ci.-S.		Cu.		------	Ω² a. ☇ p.
6	57.88	28.3	33.2	24.7	76.5	SSE	1	6.2	Ci.-S.		Cu.		------	Ω a.
7	57.77	27.9	33	25.2	80	WNW	.6	6.8	Ci.-S.	SW	Fr.-N.	N	3.3	Ω ● ⊤ ☇ ⊕
8	57.75	27.5	32.6	25.5	84.3	Variable	1	7.2	Ci.-S.		Cu.		.8	●° a. ⊤ ☇ p.
9	58.26	26.5	30.9	24.9	83.8	ESE	.8	7.6	A.-S.		Fr.-N.		1.5	●° a. ☇ p. ⊕²
10	57.76	28.4	35	24.5	73.7	NNE	.6	3.2	Ci.		Cu.		------	Ω p° ☇ d°
11	56.96	27.2	34	24.5	82.2	SSE	.6	8.2	A.-S.		Variable		4.6	p a. ☇ p.
12	56.20	27.9	34.5	24.5	79.5	SSE	.8	5.2	Ci.-S.	NE	Cu.		------	Ω² p° ⌒ ○° ⊕
13	56.28	28.1	35	25	78.5	SE	.6	5.6	Ci.		Cu.		.3	Ω a. d ☇ p.
14	57.05	26.8	32.5	25	84.3	Variable	.4	9.6	A.-S.		Fr.-N.		5.6	●° a. p. ☇ ⊕
15	57.25	27.5	34	24.5	81.8	Variable	.8	7.8	Ci.	NE, ESE	Cu.		2.8	⊤ a. ☇ ● p.
16	58.15	27.7	35	24.5	79.5	SSE	.8	7.6	Ci.-S.	NE	Cu.		------	⊤ p. ⊕
17	58.78	28.1	34	24.8	77	ENE	.8	7.6	Ci.-S.		Cu.		.5	Ω a. ☇ p p. ⦶
18	58.45	28.4	33.6	24.9	73.3	SE quad.	1	7.2	Ci.		Cu.		------	○ ⊕ ⩊ ⦶
19	58.10	28.2	35	25	77.5	Variable	.6	8.2	Ci.-S.		Fr.-N.		3	Ω° a. ⌈◁ p.
20	58.34	27.8	34.5	24.5	80.8	Variable	.6	7.6	A.-S.		Fr.-Cu.	NNW	3.3	⌈◁ p.
21	57.81	27.9	33.8	25	76.8	Variable	1	7.4	Ci.		Fr.-N.		------	⊤° p. ⦶
22	56.51	27.4	33.5	25	76.8	NW	.6	9.8	A.-S.		Fr.-N.		------	⊕
23	55.05	27.2	33	25	76	S	1	9.8	A.-S.		Fr.-N.	SW by W	5.3	↙ ● p. ⊕
24	55.37	26.2	33	24.3	78.8	S	1.8	10	A.-S.		Fr.-N.	SW	2.3	d° a. ↙ ●° p.
25	56.43	26.4	32.5	24.1	80.4	S	1.4	10	A.-S.		N	SW	7.1	↙ ●° ⊤ ⊕ ⦶²
26	56.83	27.6	32.5	24.1	79.4	SSE	.8	9.6	Ci.-S.	NNE	Fr.-N.		------	☇ p. ○° ⊕
27	58.28	28.1	33	25	77.7	SSE	1	9.4	Ci.-S.		Cu.		------	Ω a.
28	59.30	27.8	34	24.5	80.2	SE quad.	.8	7.6	Ci.-S.		S.-Cu.	SE by E	.3	⌈◁° p.
29	58.84	25.5	32	24	86.5	N quad.	.4	8.8	Ci.-S.		N		7.6	⊤ a. ● p.
30	59.04	26.9	33.5	23	82.2	NNE	.4	9.2	Ci.-S.		Fr.-N		7.9	⌈◁ p. ○ ⊕²
Mean	757.72	27.5	33.4	24.6	79.8	------	.8	7.6	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		91	

METEOROLOGICAL DATA, ETC.—Continued.

CAPIZ.

[ϕ = 11° 35′ N ; λ = 122° 45′ E ; barometer above sea, 6 meters ; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	------	------	------	------	------	------	------	------	------	------	------	
2	------	------	------	------	------	------	------	------	------	------	------	
3	------	------	------	------	------	------	------	------	------	------	------	
4	------	------	------	------	------	------	------	------	------	------	------	
5	------	------	------	------	------	------	------	------	------	------	------	
6	------	------	------	------	------	------	------	------	------	------	------	
7	757.57	28	32.6	21.9	85.2	Variable	0.3	4.5	Ci.	Variable	------	
8	57.56	28	33	22.4	83	Variable	.5	7.8	Ci.-S.	Cu.-N. E	2.8	
9	58.03	28.8	33.1	23.6	81.5	E	.8	6.7	Ci.-S.	Cu.-N. E, SE	------	
10	58.04	28.9	32.9	22.4	79.8	ENE	.7	6.7	Ci.	N. E	11.9	
11	57.21	28.2	32	22.9	81.7	NNE	.7	7.3	Ci.-S.	Cu.-N. NE	1.5	●° a. ϟ p.
12	56.45	28.1	31.9	23.1	84	NE	.5	5.7	Ci.	Cu.-N. NE	------	d° a. ϟ p.
13	56.68	27.2	32.3	20.8	83.6	NE	.3	4	Ci.	S.-Cu. E	------	Ω^2 ≡° a. ϟ p.
14	57.33	27.4	32.2	22.3	86	SSW	.3	9.5	Ci.-S.	N. SE, SW	14.2	☈ p.
15	57.78	26.5	29.5	21.8	89.5	WNW, SW	.2	9	Ci.-S.	N. SW	2.5	● ϟ p.
16	58.20	26.9	33.4	22	88.7	Variable	.3	7.5	Ci.	N.	72.6	●^{2} ϟ p.
17	59.05	27.4	33.5	21.9	86.5	S, N	.3	7.5	Ci.	N. SE, NW	22.1	☈ p.
18	58.76	27.3	32.3	22.1	84.5	Variable	.5	7.2	Ci.-S.	Cu.-N. SW, NE	57.4	☈ p. ⌒
19	58.42	27.5	32.2	21.4	84.2	Variable	.3	5.7	Ci.	Cu.-N. SW	------	⊤ ϟ p.
20	58.22	28.4	32.5	21.9	79.5	Variable	.5	5.2	Ci.	S.-Cu. SW	------	Ω° ⊤ ϟ°
21	58.08	27.2	32.7	21.4	81.3	SSW	.7	6.7	Ci.-S.	Variable	------	Ω° a. ϟ p. ◡° ⊕°
22	56.96	27.3	32.5	21.5	78.8	Variable	.7	8.2	Ci.-S.	Cu.-N. SW	------	
23	54.85	27.2	32.7	21.8	81	SW	.8	9.3	Ci.-S.	Cu.-N. SW	3.3	d p.
24	54.64	26.2	28.1	22.4	85.8	SW	1.5	10	Ci.-S.	N. SW	32.8	↙ ● ϟ
25	54.85	27.1	32	22.2	80.3	SW	2.5	9.7	Ci.-S.	N. SW	------	↙ a. p. ◡° ⊕°
26	55.51	27.4	32	22.2	81	SW	1.8	9	Ci.-S.	N. SW	------	
27	57.37	28.5	34.3	22.2	77.4	SW	.7	8.2	Ci.-S.	Cu.-N. SW	------	⊕°
28	59	27	34	20.9	83.8	S	.5	6.5	Ci.-S.	Cu.-N. SW	------	☈°
29	58.77	27.3	32	21	81.8	SE	.5	7.3	Ci.-S.	Cu.-N. NE	44.9	Ω° a. ● ϟ° p.
30	59.11	26.5	31.3	21	85.3	Variable	.5	8.5	Ci.-S.	N. SW	5.8	☈ p.
Mean	757.44	27.5	32.3	22	83.1	------	.7	7.4	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	------	

CALBAYOG.

[ϕ=12° 04′ N ; λ=124° 36′ E ; barometer above sea, 4.1 meters ; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temp. Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind prevailing direction.	Force (mean).	Clouds amount (mean).	Upper.	Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	758.54	26.7	33	21.7	82.8	N	1	6.5	Ci.	S.-Cu.	6.1	● ϟ p.
2	58.99	26.2	33.1	22	84.2	N, S	1.2	7	A.-Cu.	S.-Cu.	1	d a. p.
3	59.18	26.3	32.8	21.4	86.2	N, SW	1	5.8	A.-Cu.	S.-Cu.	2.8	●° ϟ p.
4	59.45	25.8	32.9	21.9	87	N	1	5.2	Ci.	S.-Cu.	------	d° ϟ p.
5	58.22	27.4	33.8	21	77.5	N, SW	1	5	A.-Cu.	S.-Cu.	------	⌒ d° ϟ p.
6	57.87	28	35.1	22	80.8	N, W	1	5.5	Ci.	S.-Cu.	------	⌒° p.
7	57.89	27.3	33.2	22.8	85.7	N	1	5.5	A.-Cu.	S.-Cu.	------	ϟ p.
8	57.86	25	31.8	22	90.3	N, NE	1.2	6	Ci.	S.-Cu.	20.6	● ϟ p.
9	58.36	26.6	30.6	22	87	N, ENE	1	7.7	A.-Cu.	S.-Cu. NE	6.1	↙ ●° a. ϟ p.
10	58.10	27.1	33.2	20	80.3	N, NE	1	4.2	Ci.	S.-Cu. NE	------	ϟ p.
11	57.36	26.4	29.9	22.2	86.8	N, NE	1	7.8	Ci.-S	Cu.-N. NE	7.4	p a. ●° ϟ p.
12	56.42	26.6	33.8	21.6	83.5	N	1	6.2	Ci.	S.-Cu. N	.3	d ϟ p.
13	56.39	27.4	35.6	22.2	84.5	N	1	6.3	Ci.	S.-Cu.	5.1	● ⌒° ϟ p.
14	57.13	26.3	30	22.2	86.3	N, W	1	8.2	Ci.-S.	Cu.-N. W	.5	p a. ϟ p.
15	57.46	28	33.9	23.5	83.8	W	1	7.2	Ci.	S.-Cu. W	10.7	●^{2} a. p. ϟ
16	58.26	27.7	33.9	23	82.8	N, W	1	7.7	A.-Cu.	S.-Cu.	23.1	●^{2} a. ϟ p. ◯°
17	58.96	27.5	34.6	22.8	83.2	N	1	7.2	Ci.	S.-Cu.	------	d° ϟ p.
18	58.55	27.7	34.5	22	80.3	N, W	1	5.3	Ci.	S.-Cu.	------	ϟ p.
19	58.26	28.3	35	23	80.3	N, W	1	6.7	Ci.	S.-Cu.	------	⌒° a. p. ⊤
20	58.44	28.3	34	24	81.7	N, WNW	1	6.8	Ci.	S.-Cu. W	2.3	● a. ϟ p. ⊕°
21	58.08	27.9	34	22.2	81.3	N, W	1	6.7	A.-Cu.	S.-Cu. W	------	⊤° a. ϟ p. ◡^{2}
22	56.80	28.5	32.2	24	77.5	W	2	8.3	Ci.-S.	Cu.-N. W	.8	☈ p.
23	55.25	28.1	31.9	24	77.8	WSW	2.7	9.2	Ci.-S.	Cu.-N. W	1	d^2 a. p p.
24	54.98	28.1	30.4	24.5	77.2	SW	2.2	9	Ci.-S.	Cu.-N. SW	.3	p a. p. ϟ
25	56	28.2	31.2	24.5	73.2	SW	3	8.3	A.-Cu.	Cu.-N. SW	8.9	● a. p.
26	56.85	28	32.5	23	77	SW	1.7	7.8	A.-Cu.	S.-Cu. SW	------	ϟ p.
27	58.30	28.6	33.9	22.5	79.3	Variable	.8	6.7	Ci.	S.-Cu. S	------	◯°
28	59.37	27	35.6	22.5	81.3	N, SW	1	7.2	Ci.	S.-Cu.	------	ϟ p.
29	58.98	25.3	33.4	21.5	89.5	N, NE	1	7.2	A.-Cu.	Cu.-N. E	8.4	☈ p.
30	59.07	26.5	32.6	22	88	N	.8	8.2	A.-Cu.	S.-Cu.	.8	ϟ p. ◯^{2}
Mean	757.85	27.2	33.1	22.5	82.6	------	1.2	6.9	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	106.2	

METEOROLOGICAL DATA, ETC.—Continued.

LEGASPI.

[ϕ=13° 09′ N; λ=123° 45′ E; barometer above sea, 4.3 meters; gravity correction not applied, —1.77 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.					Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction.					
									Upper.		Lower.			
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.					mm.	
1	758.54	28.2	32.1	21.6	75.9	E	0.7	4	Ci.	NW	Cu.		------	ϟ p.
2	58.75	28.6	31.8	24.5	77	E	1	3.3	Ci.		Cu.		------	ϟ p.
3	59.13	27.8	33.5	22.6	81.3	NE	.7	2	Ci.		Cu.	SSE	51.6	☈² p.
4	59.19	28	32.2	22	80.2	E	.5	1	A.-Cu.		Cu.	S	------	
5	58.11	28.1	32.5	21.9	78.8	ENE	.7	.5	------		Cu.		------	ϟ p.
6	57.72	27.9	34.6	21.5	80.3	Variable	.8	1.7	Ci.-S.	NNE	Cu.	WSW	------	
7	57.78	28.2	33.1	22.1	80	E	.7	1.3	Ci.		Cu.		------	⊤ ϟ p.
8	57.92	28	32.8	21.9	74.5	ENE	.5	5.5	Ci.		Cu.	SSE	9.1	☈ p.
9	58.73	27.5	32.2	21.9	77.3	ENE	1	5.5	Variable		Cu.-N.	E	4.4	d a. ● ϟ p.
10	58.27	28.6	32.4	22.8	75.2	ENE	.8	1.8	Ci.		Cu.	E, NE	1.6	⌒ a. ϟ p.
11	57.57	27	29.3	22.3	83.3	NNE	1	7	Ci.-S.		Cu.-N.		9.4	● a. ϟ p.
12	56.52	29	32.9	22	70	Variable	.5	1	Ci.		Cu.		------	ϟ p.
13	56.39	28.7	32.6	21.9	72.7	ENE	.5	1.2	Ci.	NE	Cu.		------	ϟ p.
14	56.90	28.3	33.5	22	77.2	Variable	.7	5.3	Ci.-S.		Cu.-N.	W	------	⊤ ϟ d p.
15	57.40	27.4	33.5	22.9	81.4	WSW	.8	7.7	Ci.-S.		Cu.	SW	1.5	●° a. ⊤ ϟ p.
16	57.86	28.2	34.3	22.2	78.2	SSW	.5	3	Ci.		Cu.	S	------	p a. ϟ p.
17	58.67	28.8	35.6	22.9	75.1	SSW	.8	2.3	Ci.		Cu.	S	------	p° ⌒ ⊤ ϟ p.
18	58.38	28.8	35.5	22.9	76.3	Variable	.5	1.5	Ci.		Cu.	S	------	ϟ p.
19	57.93	29.1	35.3	22	75	WSW	.5	1.5	Ci.	ENE	Cu.	W	------	⊤ ϟ p.
20	58.18	27.9	34.9	22.8	78.8	WSW	.7	3	Ci.	ENE	Cu.	WSW	2.8	d a. ☈ p.
21	57.90	28.6	34.5	22.6	73.2	WSW	1	3.3	Ci.		Cu.	WNW	.3	☈° p.
22	56.40	27.3	32.6	22.9	80.3	SSW	1	7.2	Ci.-S.	ENE	Cu.-N.	SW	11.9	d a. ● p.
23	54.43	25.7	29.8	22.9	89.3	WSW	.8	10	Ci.-S.		Cu.-N.	WSW	39	● a. ☈ p.
24	54.12	25.7	29.7	22.1	89.3	SW	1.2	10	Ci.-S.		Cu.-N.	SW	21.6	● a. p.
25	55	26.2	30	21.9	84	SW	1	10	Ci.-S.		Cu.-N.	SW	6.3	d a. ● p. ⊕
26	56.06	26.9	31.3	22.3	80.6	SW	1	8.5	Ci.-S.		Cu.-N.	SW	3	● p.
27	57.63	28.5	33.6	22.9	72.7	SW	.8	3.8	Ci.-S.	NNE	Cu.	SW	------	○
28	59.22	28.5	33.3	23.5	76.7	WSW	1	2.7	Ci.		Cu.	S	------	ϟ p.
29	58.75	27.9	32.6	22	73.6	E	.7	2	Ci.	ENE	Cu.		------	⊤ ϟ p.
30	59.08	25.6	29.7	22.3	90.8	Calm	--------	7.2	Ci.		Variable		6.4	☈ a.
Mean	757.62	27.8	32.7	22.4	78.6	------------	.8	4.2	------------		------------		------	
Total	-------	------	------	------	------	------------	--------	--------	------------		------------		168.9	

ATIMONAN.

[ϕ = 14° 00′ N; λ = 121° 55′ E; barometer above sea, 7.8 meters; gravity correction not applied, —1.74 mm.]

Day.	Pressure (mean).	Temp. Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind: Prevailing direction.	Force (mean).	Clouds: Amount (mean).	Upper.		Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.					mm.	
1	757.87	27.5	34.4	24.	84.9	S	1	9.5	Ci.		Cu.		22.9	ϟ° a. ☈° p.
2	58.32	28.8	33.7	23.9	81.8	SW, N	1.3	6.8	Ci.	N	Cu.	NE	------	ϟ° Ω ≡° a.
3	58.57	29.3	34.3	25.1	83.2	SW	1	5.8	Ci.	E	Cu.	SE	2.5	d ϟ° ⌒° ⊕°
4	58.56	28.9	34.5	24.1	83.2	SW	1	3.8	Ci.		Cu.	S	------	d° ϟ ⊕°
5	57.46	29.4	35.7	24	79.3	SW, W	1	3.5	Ci.	N, NE	Cu.	S	------	ϟ p.
6	57.07	29.7	36.7	24.5	75.9	WSW	1.3	3	Ci.	NE	Cu.	W	------	⊤° ϟ° p.
7	57.17	28.6	35.2	23.9	79.8	SW	1.2	6.3	Ci.	NNE	Cu.	S	1.5	●° ϟ² ○²
8	57.62	28	32.8	24.4	83.5	NNW	1	7.8	Ci.-S,		Cu.-N.	E	------	Ω ⊤ ⌒° ϟ°
9	58.40	27.2	33.8	24.3	85.8	SW, NE	.8	7.7	Ci.-S.	E	Cu.	E	4.1	Ω a. ☈ p.
10	58.30	28.6	31.8	24.3	82.7	NE	1.7	7	Ci.	E	Cu.	NE	------	d° ⊤ ϟ° p.
11	57.73	27.7	32.8	26	84.7	NE	1.5	9	Ci.-S.		S.-Cu.	NE	5.8	☈° a. ϟ p.
12	56.46	27.4	31.4	23.7	89.2	N	1.3	8.3	Ci.		S.-Cu.	NE	27.9	●² a. ϟ p.
13	56.39	28.7	33.2	25.3	83.8	NNW	1	4.3	Ci.	NE	Cu.	ENE	------	ϟ p.
14	56.70	29.6	34.5	25.3	79.0	SW	1	8.8	Ci.		Cu.	SW	------	☈ a. ϟ p.
15	57.18	28.5	32.9	24.9	80.7	SW	1	8.8	Ci.-S.		S.-Cu.		2.5	☈° a. p.
16	57.56	26.9	31.6	23.5	90.5	SW	.7	8.5	Ci.		Cu.		20.6	☈ a. ϟ p.
17	58.23	27.5	33.2	23.5	87.7	SW	.7	7	Ci.	W	Cu.	S	2	d a. ϟ p.
18	57.75	28.8	34.6	24.5	82.2	SW	.8	6.2	Ci.	N	Cu.	SE, S	------	Ω° ϟ° d°
19	57.62	28.9	35.5	23.5	79.2	SW	1	5.2	Ci.	NE	Variable		------	Ω° ⊤ ϟ° ⊕°
20	57.38	29.2	35.9	23.6	76.8	SW	.7	6	Ci.	NE	Cu.	S, WSW	------	⊍°
21	57.44	28.3	34.9	24	81.8	SW	.8	7.8	Ci.-S.	E	Cu.		------	ϟ° ⊤ d° ⊕²
22	55.91	27.3	34	22.8	85.3	SW	.8	8.7	Ci.		Cu.	SW	2	d ϟ° p.
23	53.47	27	32.1	23.4	87.2	Variable	.7	10	Ci.-S.		Cu.	S	14	☈° p. ○²
24	52.89	26.8	30.7	23.5	87.8	SW	1	10	Ci.-S.		S.-Cu.	SW	7.9	d a. p.
25	53.14	27.8	31.8	24	82.1	SSW	1.7	10	Ci.-S.		Cu.	SW	3	d a. p.
26	54.06	28.8	31.6	26.4	77.2	SW	2.2	10	Ci.-S.		S.-Cu.	SW	------	d° a. ⊕°
27	56.29	29.6	34	26.9	77.6	S	1.8	8.2	Ci.		Cu.	SSW	------	⊍°
28	58.19	29.7	34.5	26.6	77.2	SSW	1.3	6	Ci.	E	Cu.	SW	------	○° ⊕° ⊍°
29	58.22	28.2	34.6	23.5	83.7	SW	1.2	4	Ci.		Cu.	SSE	------	ϟ p. ○° ⊕²
30	58.57	26.9	31.9	24.1	90.8	SW	.8	9	Ci.	E	Variable		14	d° a. ☈° p.
Mean	757.02	28.3	33.6	24.4	82.8	------------	1.1	7.2	------------		------------		------	
Total	-------	------	------	------	------	------------	--------	--------	------------		------------		130.7	

METEOROLOGICAL DATA, ETC.—Continued.

OLONGAPO.

[ϕ=14° 49′ N; λ=120° 15′ E; barometer above sea, 3.5 meters; gravity correction not applied, —1.70 mm.].

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force. (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12	0-10.			mm.	
1	757.47	26.6	30	22.8	86.2	Variable	0.2	9	Ci.-S. NE	Cu.		≡ p. ϟ ○° ⌣°
2	57.90	28.7	34.9	24.2	76.1	Variable	.3	6.7	Ci.-S.	Cu. E		≡ a. ϟ p. ○°
3	57.95	29.1	34.4	23.5	73	N	.4	6.7	Ci.-S.	Cu. E		○°
4	58.33	27.6	30.5	24.6	82.5	SW quad.	.5	5.5	Ci.-S.	Cu. S		≡ a. ϟ p.
5	57.60	27.2	30.5	23.6	82.9	SSW	.6	6.3	Ci.-S. E	Cu. S		≡ a. ϟ p. ○°
6	57.22	27	30.1	23.6	87	SW	.3	7.2	Ci.-S.	Cu.-N. W	11.4	● a. p. ⊤ ○
7	57.02	26.9	30.1	23.5	82.7	Variable	.3	8.7	Ci.-S. NW	Cu.		≡ ⊤ a. ϟ p. ○
8	57.30	26.6	30.8	22.9	81.7	Variable	.2	6.8	Ci.-S.	Cu.	1	⛈ a. ≡ p.
9	58.03	26.7	31.6	22.6	78.3	Variable	.3	8.2	Ci.-S.	Cu. E	1.8	ϟ ≡ d
10	57.83	26.5	31.6	22.5	79.7	NE quad.	.5	8.8	Ci.-S.	Cu.	.3	≡ ϟ d p.
11	57.28	26.8	30	24.2	81.3	NE	.2	9.3	Ci.-S.	Cu.-N. E	.8	d ≡ a.
12	56.18	27.5	33.6	23	77.8	NE quad.	.4	8.5	Ci.-S.	Cu.		⊤ ϟ p. ○²
13	56.08	27.2	30.3	22.8	80.8	WSW	.3	7.5	Ci.-S.	Cu.		ϟ p. ○°
14	56.49	27.3	31.9	24.3	85	Variable	.7	7.8	Ci.-S.	Cu.		ϟ p.
15	56.94	26.6	28.9	23.6	89.7	SW	.3	9.8	Ci.-S. W	Cu.-N.	3.3	≡ ⛈ p. ○°
16	57.34	27	29.6	23.6	88.8	Variable	.3	9.2	Ci.-S. NW	Cu.-N.	.8	⊤ ϟ ⌒ d ≡
17	57.78	27.2	30.4	24.1	87.5	SW	.5	9.7	Ci.-S. N	Cu.-N. E	.3	≡² d° ⛈
18	57.78	27.2	29.3	24.5	87	SW	.5	8.2	Ci.-S. SE	Cu.-N. SE	1	≡ a. ●° ϟ p.
19	57.61	26.3	29.5	23.6	89.6	SW	.3	8.8	Ci.-S.	Cu.-N. W	4.6	ϟ a. ● ✓ p.
20	57.88	25.5	28	23.6	93.5	SSW	.4	9.5	Ci.-S.	Cu.-N. W	41.6	⛈ a. p. ✓ ●
21	57.57	25.4	27.6	23.2	91.7	SSW, N	.2	9.7	Ci.-S.	Cu.-N. S	41.4	● a. p. ✓ ⌒ ≡
22	55.72	25.2	28.2	23.3	92.2	SW	.4	10	Ci.-S. S	Cu.	53.6	● a. p. ≡ ○²
23	53.24	25.1	27.8	23.2	95.1	S	.1	10	Ci.-S.	N. SW	41.6	● a. p.
24	52.46	26	27.8	20.2	91.8	SSW	.8	10	Ci.-S.	Cu.-N. SW	89.9	● a. p.
25	52.51	26.6	27.9	23	90.7	SSW	2.8	10	Ci.-S.	Cu.-N. SW	29	✓ ● a p.
26	53.26	26.6	28.5	18.8	87.8	S	3	10	Ci.-S.	N. S	29.7	✓ ● a p. ⊤
27	55.83	25.9	28.5	22	89.5	S	2.2	10	Ci.-S.	N. SW	29.7	✓ ● a p.
28	57.97	27.8	29.4	23.5	76.7	S	.9	8.5	Ci.-S.	Cu.-N. SSW	2	✓ ●° p.
29	58.22	26.3	28.9	23.1	86.2	SW	.2	8	Ci.-S. NE	Cu.		≡ a. ϟ p. ○°
30	58.42	26.4	30.4	22.4	84.4	SSW, NW	.2	8.5	Ci.-S. E	Cu.		≡ a. ϟ p. ⌣²
Mean	756.77	26.8	30	23.1	85.2		.6	8.6				
Total											383.8	

SAN ISIDRO.

[ϕ=15° 22′ N; λ=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force. (mean).	Clouds. Amount (mean).	Clouds. Upper.	Clouds. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	758.15	26.9	37	22.8	80	Variable	0.5	9	A.-Cu. S	Variable	66.3	ϟ ≡ a. ⛈ p.
2	58.46	28.3	35.4	22.3	74.5	E quad.	.3	8.5	A.-Cu. E	Cu. E		⊤ ϟ
3	58.74	27.6	32.8	23	76.5	E	.3	7.7	A.-Cu. E	S.-Cu.		Ω² ≡ a. ϟ p.
4												
5												
6	57.32	26.6	35.5	23.7	83.3	SW, W	.0	7.8	A.-Cu. S, W	Fr.-Cu. S	20.8	≡ a. ⛈ p.
7	57.36	27.2	36.2	23.5	79.2	Variable	.2	9.2	A.-Cu. E, SW	Variable	7.4	Ω² a. ⛈ p.
8	57.90	26.4	35	22.3	79.5	Variable	.3	6.5	Ci.-Cu.	Cu.-N. E		Ω² ≡ a. ϟ p.
9	59.08	25.3	31	22.4	84.8	ENE	.3	8.5	A.-Cu. E	Cu.-N. E		≡ d° a. ϟ p.
10	58.91	26.3	33	21.8	80.8	WNW	.0	7.8	A.-Cu. E	Cu.-N. E		Ω² ≡ a. ϟ p.
11	58.31	25.2	28.2	23.4	89.2	E	.5	9	Ci.	Cu.-N. E	9.6	Ω² d ϟ
12	56.92	25.6	30.5	22.4	82.5	Calm	.0	7.7	Ci.	Cu.-N.	.8	Ω² ≡ d ϟ
13	56.13	26.7	35.5	22.3	79.8	E	.3	7.8	Ci. ENE	Fr.-Cu. NE	34.8	≡ a. ⛈ p.
14	56.78	27.7	36.4	22.1	76.7	E	.3	8.3	A.-Cu. E	Fr.-Cu.	5.3	≡ ⛈
15	56.95	27.4	34.8	23.8	79	ENE	.5	9.3	A.-Cu. E	Cu.-N. E	9.4	⛈ ≡
16	57.55	27.6	34.2	22.5	79.4	S, E	.3	6.5	A.-Cu. SE	Variable		Ω² ≡ ⊤ ϟ
17	58.24	28.3	36.5	23.4	76	S	.5	6	Ci.	Fr.-Cu. E		Ω² ≡ ⊤ ϟ
18	57.99	28.7	35.7	24	73.8	S	.2	6.7	A.-Cu. SE	Cu. SE		Ω² ≡ ⊤ ϟ
19	57.64	29	35.5	24	73.3	S	.3	6.8	A.-Cu. S	Cu.		⊤ p. ⌓
20	57.97	28.2	35.4	24	75.8	S	.3	7.8	A.-Cu. S	Fr.-Cu. S		≡ ⊤ ϟ d
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
Mean	757.80	27.2	34.4	23	79.1		.3	7.8				
Total												

METEOROLOGICAL DATA, ETC.—Continued.

DAGUPAN.

[ϕ=16° 03′ N ; λ=120° 20′ E ; barometer above sea, 2.7 meters ; gravity correction not applied, —1.67 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Prevailing form and its direction. Lower.		
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	757.52	28.7	36.4	23.5	75.5	S, NW	1	4.3	Ci. ENE, N	Cu.	------	Ω ≡ ∞ ⊤ ϟ
2	58.08	29.7	38	24	73.6	S	1.3	3.2	Ci. E	Cu.	------	≡ a. ∞° p.
3	58.04	30.5	37.2	24.7	67.5	SE	1.2	3.7	Ci. ENE, ESE	Cu.	------	Ω ≡ a. ∞ ϟ p.
4	58.21	29.2	37.3	24.3	74.2	Variable	1.5	4.2	Ci.	Cu. S	------	ϟ a. p. ⊤
5	57.29	29.6	34.6	24.1	74.8	WNW	1.3	4.2	Ci. NNE	Cu. SW, S	------	Ω ≡ ⊤ ϟ Φ
6	56.89	29.6	35.7	24.6	71	SSE	1.2	4.2	Ci. NW, NE	Cu. SW	------	≡ ϟ d° ⊤
7	57.22	26.7	36.8	23.5	83.2	Variable	1.3	6.8	Ci. NNW	Cu.	25.9	ϟ a. ⛈ p.
8	57.55	26.4	33.2	23.2	82.4	SW, S	1.2	6.5	Variable	Cu.-N.	14.5	≡ Ω ↙ ● ⊤°
9	58.34	27.4	33.8	22.5	77.2	SE, S	.8	6.5	Variable	Cu., S-Cu.	------	≡ Ω ϟ d°
10	58.04	28.3	33.3	23.2	74	SE, NW	.8	4.5	Ci. ESE	Cu.	.3	ϟ p.
11	57.33	28.1	33.3	24.7	77.5	SE	1	4.8	Ci. ENE	S.-Cu. E, N by E	------	⊤° d° p.
12	56.39	28	33.9	23.5	79.1	SE	.8	4.7	Variable	S.-Cu. SE, E	------	≡ a. ⊤ p.
13	55.98	28.5	33.8	23.7	77.8	S, NW	1.2	4.7	Ci. E, NW	Cu.	------	≡ a. ϟ p. ○ ⊕
14	56.54	29.2	33.9	24.9	77.2	NW, W	2	3.5	Ci. WNW	Cu. SSE	------	ϟ ∞ a. p.
15	56.74	28.9	32.9	25.2	76.7	NW	1.5	5.8	A.-Cu. E, N	Cu.	------	ϟ a. p. ∞
16	57.14	28.8	35.4	24.6	79.4	S	1.2	4.3	Ci. WNW	Cu.-N. ESE	10.8	≡ ϟ a. ⛈ ⌒ p.
17	57.60	28.6	35.6	23.8	83.5	S, N	1.7	4.5	Ci.	Cu. SE	------	Ω a. ⊤ ϟ p.
18	57.46	29.2	36.9	23.9	77.2	S	1.5	6.2	Ci. E, N	Cu. SE	2	⛈° a. p. ∞
19	57.26	27.9	34.8	24.6	80.2	SE	1.3	7.2	Ci. NE	Cu.	20.1	≡ a. ⛈ p. Φ²
20	57.46	26.5	34.2	24	84.7	SE	1.3	8.2	Variable	Cu. ESE	5.1	⛈ p. Φ°
21	56.90	27.2	33.7	23.6	84	SE, S	.7	8.2	A.-S.	S.-Cu. NE, SW	32.9	≡ a. ⛈ ↙ p.
22	55.22	26.8	33.4	23.4	85.6	SE	1.2	9.2	Variable	Variable	6.6	⛈ ↙ p.
23	52.86	27.2	33.6	23	84.8	SE	1.3	7.3	Ci. ESE	Variable	4.7	● ⌒ p.
24	52.11	25.3	33.4	23.1	91.2	SE	1	8.7	Variable	Cu.-N. SE	54.8	● a. ⛈ p.
25	52.18	24.8	26.4	23.5	96.5	ESE	1.3	10	------------------	N. SW	38	d a. ● p.
26	52.89	24.8	26.6	23.4	97	SE	1.5	10	------------------	N. SW, SE	59.5	● ⊤ a. p.
27	55.25	26.1	32	23.5	93.8	E by S	1.5	10	Ci.-S. W	N. SE, S	24.7	d a. ● p.
28	57.70	26.7	32.4	23.6	88.3	E, S	.5	9.2	Ci.-S. NE	Cu.-N. ESE, S	14.4	d a. ● p.
29	58.11	28	33.4	23	79.4	Variable	.7	6.5	Ci. E	Cu.	------	≡ Ω a. ○ ⊕
30	58.37	28.1	33.5	23.7	81	W	.8	8	Ci.-S. ENE	S.-Cu. S, SSE	------	≡ Ω ∞ Φ ⊍
Mean	756.62	27.8	34	23.8	80.9	------------	1.2	6.3	------------------	------------------	------	
Total	--------	------	------	------	------	------------	--------	--------	------------------	------------------	314.3	

VIGAN.

[ϕ=17° 34′ N ; λ=120° 23′ E ; barometer above sea, 24 meters ; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.	Clouds. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	757.97	27.8	31.7	26	80.8	E	0.8	6.3	Ci.-S. NW by N	Cu.	------	ϟ° p.
2	58.86	28.2	32	24	74.7	NNW	1	1.8	Ci. NE by N	Cu.	------	ϟ p.
3	58.58	28.5	32.1	25	77	Variable	.7	.7	Ci.	Cu.	------	ϟ p.
4	58.76	27.9	32	26	79.3	Variable	.7	2.2	Ci.	Cu. SW	19.6	⛈ p. ↙
5	57.82	27.6	31	22.1	82.3	S quad.	1	1.2	Ci.-S. NW	Cu. SSW	------	d a. ϟ p. ↙
6	57.36	27.1	30.2	24.5	87.2	Variable	1.7	7.5	Ci. NW by N	Cu.-N.	12.7	⛈ a. p. ↙
7	57.34	26.6	31.1	24.2	83.8	S quad.	1.2	5.5	Ci.-S. N by W	Cu.	27.7	● a. ⛈ p.
8	58.14	26.6	31.6	22.8	81.5	Variable	.8	5.7	A.-Cu. SSW	Cu.		⌒ a. ⛈° p
9	58.87	27.1	32.5	24.2	78.9	ESE, NW	.5	3.8	A.-Cu. SE by S	Cu.	------	⛈° p.
10	58.68	27.6	31.2	24.3	80.2	NW	.8	2.3	Ci.	Cu. NE	------	ϟ p.
11	57.54	29.1	32.6	25.2	75	Variable	1	1.3	Ci.	Cu.	------	
12	56.55	28.4	32.4	26.4	78.7	SE, W	.8	3.8	A.-Cu. SSE	Cu. SSW	------	ϟ° a. d p.
13	56.54	28.2	32	25	77.5	Variable	1	1.5	Ci. NW	Cu.	------	ϟ p. ○
14	57.04	28.5	32	26	77.7	Variable	.7	1.8	Ci.-S.	Cu. NW by W	------	ϟ p.
15	57.21	28.2	32.2	24.9	76.6	N	.8	.5	Ci.	Cu.	------	ϟ p.
16	57.58	28.2	32.6	25.7	78.8	SE	.8	2.2	Ci.-S.	Cu.	------	d² ϟ p.
17	58.17	28.1	32.4	25	77.8	SE	.8	1.7	Ci.	Cu.	------	d° ϟ p. Φ
18	57.96	28	32.4	25	80.3	Variable	.8	3.3	Ci.	Cu.	.5	⛈° p.
19	57.47	27.8	31.4	25.5	80.1	SSW	1	4.7	Ci.-S. E by N	Cu.	1.5	⛈° p.
20	57.34	28.1	31.4	25.9	79	Variable	1.5	6.7	Ci. ENE	Cu. SSW	------	⛈° p. ⌒ Φ
21	57.04	27.4	31.1	25	81.3	SE	1.2	9.2	Ci.-S. ENE	Cu.	6.6	⛈ p.
22	55.36	27	31	24.4	83.2	SSW	.7	7.7	Ci.-S. E	Cu. SW by S	7.6	⛈ p. ○ Φ
23	53.13	27.2	31.1	24.2	86.8	NNW	.8	5.8	Ci.-S. SE	Cu. NE by N	4.1	⛈ p. ○ Φ
24	52.07	27	31.1	25.6	86.5	S	.8	9.2	Ci.-S. ESE	Cu.	2.5	●° ⊍° Φ
25	51.49	25.6	27.7	24.1	92.2	SSW	3.5	10	------------------	N. S	51.1	↙ ● a. p.
26	52.10	26.1	28.9	23.7	90.7	S	5.8	10	Ci.-S.	N.	78	↙ ●² ⊤ a. p.
27	54.06	28	29.2	25.4	82.2	SSW	6.5	8.5	Ci.-S.	N. SSW	2.3	↙ d ⌒ ⊍°
28	57.32	28.3	29.8	25.7	81.7	SSW	3.7	9.7	Ci.-S. NE by N	Cu.	------	d° ϟ p.
29	58.46	27.5	30.5	25	83.3	SW	.8	5.2	Ci.-S. E	Cu. S by W	------	ϟ p. ○
30	59.03	26.7	30.9	25	89.8	SW	.3	5.8	Ci. E	N. S by W	.5	d° a. ⛈ p.
Mean	756.86	27.6	31.3	24.9	81.5	------------	1.4	4.9	------------------	------------------	------	
Total	--------	------	------	------	------	------------	--------	--------	------------------	------------------	214.7	

METEOROLOGICAL DATA, ETC.—Continued.

TUGUEGARAO.

[ϕ=17° 35′ N; λ=121° 39′ E; barometer above sea, 33 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12	0-10.			mm.	
1	757.41	29.1	37	------	72.2	SW	0.7	6	Ci.	N. SW	5.1	Ω a. ● p.
2	58.90	29	36.7	------	74	Variable	.8	5	Ci.	Cu.	------	⊤ < p.
3	58.57	30	36.8	------	70.3	Variable	.8	5.2	Ci.	S.	------	Ω a.
4	58.20	30	39	------	68.2	Variable	.8	4.7	Ci.	Cu.-N. NW	------	Ω a. ⊤ <² p.
5	57	29.2	38	------	72.7	Variable	1	5.6	Ci.	Variable	------	Ω a. ⊤ < p.
6	56.28	28.9	38.4	------	76.1	Variable	.7	5.8	Ci.	Variable	------	Ω < ↙ ○²
7	57.52	28.5	37.7	------	74.1	SE	1.5	6.8	Ci.	Variable	20.3	Ω < a. ⌈< p.
8	58.44	25.8	35	------	82.7	NW	.2	8.5	A.-Cu. S	Cu.-N.	1	d° < a. p. ⊤
9	59.43	27.2	32.6	------	80	SE	.3	6.8	Ci.	Variable	1	< a. p. ●°
10	59.73	27.8	34.3	------	79.7	Calm	.0	5	Variable	Variable	------	Ω a. < p.
11	58.45	29.3	36.5	------	73	E	.2	6.2	------	Cu. NE	------	Ω a. < p.
12	56.82	29.2	37	------	74.2	ESE, N	.3	3.3	Ci.-S.	S.-Cu.	------	Ω a.
13	55.94	29.4	38.4	------	75.3	N	.7	3.8	Ci.	Fr.-Cu. S	------	Ω a. < p.
14	56.40	30.1	38.2	------	69.7	N	1	3.2	Ci.	Variable	------	⊤ < p.
15	56.76	30.4	37.3	------	73	NE	.5	3.7	Ci.	Fr.-Cu.	------	⊤ p.
16	57.33	30	39.3	------	73	Variable	.5	5.2	------	Variable	------	d° ⌒ < p.
17	57.80	30.2	38.8	------	72.1	S, N	.8	5.2	Ci. SW	Fr.-Cu. N	------	< a. p.
18	57.56	30	39	------	71.2	Variable	1.5	5.2	Ci.	Fr.-Cu. SE	------	Ω d° ↙ <
19	57.16	29.2	39.4?	------	71.3	Variable	1.2	7	Ci. N	Cu. S	------	Ω a. < p. ○°
20	56.86	29	38.5	------	75.2	SE	1	6.7	Ci.	Cu.	7.1	⌈< p. ○²
21	56.52	28.4	37.7?	------	77.8	Variable	.5	7.8	Ci. NW	Cu.	19.8	● ⊤ p.
22	55.48	28.4	34.7	------	78	SE	.5	8.7	A.-S.	Cu.	1.5	● ⌒ ⊤ ψ
23	53.34	28.8	36.4	------	75.2	NW, N	.3	7	Ci.	Cu.	------	< Ω ⌒ d°
24	51.72	27.9	35.4	------	80	N	.7	8.5	Ci.	S.-Cu. NE	------	
25	50.86	27.2	32.3	------	78.3	SE	1.2	9.2	A.-S. N	------	5.3	● p.
26	51.62	26.9	29.3	------	86	SE, S	1.3	9	------	Variable	6.8	●° a. p.
27	53.09	30.3	36.8	------	66.3	S	5.2	5.6	Ci.	Cu.	------	↙ a. p.
28	56.39	29.6	35.8	------	67.2	SE	2.5	6	A.-S.	S.-Cu.	------	↙ a. < p. Φ
29	57.91	29.6	36	------	66.8	SW, SE	1.2	8.2	Ci.-S.	Cu.	------	< a. ○²
30	58.14	28.7	37.5	------	77.2	Variable	1	6	Ci.	Variable	------	Ω < a. ⊤ p.
Mean	756.59	28.9	36.7?	------	74.4	------	1	6.3	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	67.9	

APARRI.

[ϕ=18° 22′ N; λ=121° 34′ E; barometer above sea, 5 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.	Clouds. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	757.74	28.4	33.1	24	79.2	S, NNE	1.2	6	A.-Cu. W	S.-Cu.	------	⊤ < p.
2	59.01	28.6	34.5	24.5	84	S, NW	1.3	5.7	Ci. N, NE	Cu.-N.	------	⊤ < p.
3	58.51	29	34.6	24	79.7	S	1.2	1.2	Ci.	Cu.	------	
4	58.48	28.2	33.6	24.7	83.3	SSW, N	.8	5	Ci. E	Cu.-N.	------	∞ ⊤ < p.
5	57.34	28.8	33.5	24.5	79.7	SSW, ENE	1.5	.7	Ci.	Cu.-N.	------	⊤ < p.
6	56.40	27.8	33.2	22.4	81.5	S	1.3	6.2	Ci.-S. E	Variable	13	⌈< ⌒ p.
7	57.04	26.6	32.5	23.4	86.5	Variable	1.5	7.2	Ci. W	Variable	6.6	⌈< p.
8	58.48	26	32	22.5	84.5	S	1.3	9.8	A.-Cu. SW	S.-Cu.	.8	d ⊤ < p.
9	59.45	26.8	31.6	23	84	S	1.3	9	Ci.-S.	S.-Cu. SE, S	1.3	p a.
10	59.83	27.4	31.5	24	83.3	S, ENE	.8	5.8	Ci.-S.	S.-Cu. E	.2	d ⊤ md.
11	58.65	28.6	32.6	24	81	SW, NE	1.2	3	Ci. SW	Cu.-N. E	------	
12	57.09	28.3	32.4	24	81.2	SW, ENE	1.5	2	Ci.-S.	Cu.-N.	------	
13	56.36	28.6	32.4	24.2	81.5	N	1.2	.5	Ci.-S.	S.-Cu.	------	⊤° < p.
14	56.86	28.5	31.8	25.2	83.8	NNW	1.3	2.5	Ci. SE	Cu.-N. SW	------	⊤° < p.
15	57.29	28.8	32.8	24.8	79.7	N	.8	1.8	------	S.-Cu. NNW	------	⊤° < p.
16	57.67	29.1	33	24.5	80.5	N E	1.2	1.8	Ci.	Cu.-N. N	------	⊤° < p.
17	57.94	28.9	34.4	25.4	83.5	SW	1.5	2.7	------	Cu.-N. N, E	------	⊤° < p.
18	57.64	28.9	32.8	24.1	81.3	SW, N	1.2	3	Ci.	Cu.-N. N	.2	⌈<° p.
19	57.23	28.4	33.4	25	82.5	S	1.2	7.7	Ci.-S. E	S.-Cu. W	------	⊤ < a.
20	56.86	27.9	34.9	24.5	83.7	S	1.5	4.5	Ci.-S.	S.-Cu. E	------	< a. p. ⌒
21	56.74	28.2	33.1	24.5	83	SSW	1	8.3	Ci.-S. N	S.-Cu.	------	⊤ < a.
22	55.56	28.3	33.1	22.5	82.8	SSW, NE	1.2	8.2	A.-Cu. W	S.-Cu.	16	⌈< a. p. Φ
23	53.44	28.1	33.1	24	85.5	Variable	.8	4.2	Ci.-S. E	Cu.-N.	------	⌒ p. ψ
24	51.52	27	29.2	24.5	85.2	NNW	1.7	10	Ci.-S.	S.-Cu. E	------	
25	50.65	26.7	29.8	24.5	87.2	S	1.8	10	A.-S.	S.-Cu. E	.8	d° a. p.
26	51.66	26.5	28	24.5	88.5	S	1.7	10	Ci.-S.	S.-Cu. SW	5.3	●° a. p.
27	53.40	29.5	34	24.9	75.7	S	1.3	6.8	A.-Cu. S	S.-Cu.	------	< p.
28	57.08	29.4	33.4	26.6	80	S	1.3	9.8	Ci. E	S.-Cu.	19	⌈< p. ψ
29	58.20	28.3	32	24.1	82.5	Variable	1.2	8	Ci.-S. E	Cu. S	------	< p.
30	58.46	28.4	32	24.4	83	NE	.8	4.3	Ci. E	Cu.-N.	------	< p.
Mean	756.75	28.1	32.6	24.2	82.6	------	1.2	5.5	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	63.2	

METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

ISABELA, BASILAN.

[ϕ=6° 43′ N; λ=121° 57′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33	21.8	92	W		2.5	Ω ≡° a. ●° ⌒ p.
2	32.5	22.5	64	NE		6.1	Ω a. ● T p.
3	33	22.5	83	W		11.7	≡° a. ● ⌒ p.
4	30	23	88	NE		10.4	●° a. p.
5	31	22.5	71	NE			Ω ≡° a.
6	29.5	22.5	70	W		3	≡° ●° a.
7	31.5	22.5	82	W		2	Ω a. ●° p.
8	31	23	94	W		18.8	≡° a. ● T p.
9	32.5	22.4	66	NE			●° a.
10	32.2	22.4	70	W		1.5	Ω a. ●° p.
11	31.5	23	82	Calm		2.5	≡° ● a.
12	30	22.5	83	W			Ω a.
13	28.5	23.5	81	Calm		6.1	●° a. p.
14	30.6	23	83	W			≡° a. ●° p.
15	31	21.5	77	W			Ω a. ●° p.
16	30	22	92	W		40.6	Ω a. ↙ ●² p.
17	31.5	22.4	66	W		3.3	●° a. p.
18	30	22	71	W		1	●° a.
19	30.1	21.5	64	W			Ω ≡° a. ≺ p.
20	32.5	23	74	W			Ω a. ↙ ●° p.
21	29.5	23.2	86	W		.5	●° a. p.
22	31.4	23	81	W		13.7	Ω a. ↙ ● p.
23	30.5	20.6	77	NE		6.1	● a.
24	31.6	22.5	60	NW			Ω a.
25	32	23	84	Calm		2.5	Ω a. ●° p.
26	32.8	22	65	E			Ω a.
27	31.2	22.1	88	Calm		7.9	Ω ≡° a. ● T p.
28	30.5	23	70	W		6.6	T a. ● p.
29	31.6	22.5	78	Calm		36.1	Ω ≡° a. ●² p.
30	32.5	22.2	73	W			Ω a.
Mean	31.2	22.5	77.2				
Total						182.9	

ZAMBOANGA.

[ϕ=6° 54′ N; λ=122° 05′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.4	23.5	75	SE	1		
2	30.5	23.5	63	WSW	1		
3	31.5	23	61	E	2	11.4	● p.
4	30.5	23	78	SE	1		d a.
5	29.8	23.4	76	W	1		
6	29	24.5	81	W	1		
7	31.4	23.4	78	SE	2		
8	31.1	23.6	66	ESE	2		
9	30.5	23.9	76	SSE	1		
10	31.9	23.5	74	SE	2		
11	31	23.4	82	W	2	3.8	● a.
12	30	23	77	W	2		
13	27	23.9	98	W	1	25.1	● a. p.
14	29	23.5	77	SSW	1	1.8	● p.
15	31.4	23	82	W	1	4.1	↙ ● p.
16	29	22	78	W	3		
17	29.2	23.4	80	SW	1	11.9	● a. p.
18	29	22.9	77	W	2		
19	29.4	23	80	W	2		
20	29.5	23.9	79	W	2		
21	27.8	23	81	WSW	2	2.8	● a.
22	29.5	22.9	74	Calm			
23	30	21.1	67	Calm		6.6	● a.
24	32.1	23.5	63	Calm			
25	30.5	24.5	74	SSE	1		
26	30.4	23.4	72	E	3		
27	30.5	24	77	E	2		
28	31	24.4	71	SE	1		
29	30.1	23.5	72	SE	1	4.6	● a.
30	30.4	22.5	71	W	1		
Mean	30.1	23.3	75.3		1.4		
Total						72.1	

DAVAO.

[ϕ=7° 01′ N; λ=125° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32.1	23.2	69	SW	3		
2	34.2	23.1	66	Calm			
3	32.7	23	70	WNW	2		
4	29.8	22.6	71	NW	1	38.6	● T p.
5	31.2	23.2	69	Calm		23.4	● T p.
6	32.2	23.3	65	SW	2		
7	31.9	23.7	67	Calm		15.7	● T p.
8	32.8	23.6	60	SE	1		
9	31.6	23.9	65	SW	2	23.9	● p.
10	32.5	23.5	59	Calm			
11	32	24.2	65	WNW	2	42.4	● p.
12		23.2	63	SW	1		T p.
13	31.6	23	66	Calm			≺ p.
14	32.1	22.2	62	WSW	1		T p.
15	33.2	22.1	64	Calm			
16		22.3	55	Calm			T p.
17	33.5	23.1	56	WSW	1		
18	31.9	22.4	70	Calm			⊓ p.
19		23	57	WSW	1		
20	33.2	23.5	55	Calm		42.4	● T p.
21		23.6	60	NE	1		
22	32	22.7	61	Calm			
23		23.2	71	NW	1		
24	31.8	23.4	68	Calm			
25	32.6	23.1	65	WNW	2	25.7	● p.
26	32.9	23.8	62	WSW	1		
27		22.5	65	WNW	1	39.6	● T p.
28	32.6	23.8	66	Calm			
29	33	23.1	64	SW	2		
30	32.6	23.2	65	Calm			
Mean	32.3	23.2	64		.8		
Total						251.7	

CARAGA.

[ϕ=7° 30′ N; λ=126° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.5	22.6	72	Calm		14	T ●° a. p. ≺ p.
2	29.1	22.1	82	Calm		20.6	● a. p. ≡ ⊓ p.
3	30.2	22	85	Calm		29.5	T ● a. p.
4	30.1	21.9	76	Calm			T a.
5	30.6	22.3	77	NE	2		≺ p.
6	30.6	22.5	88	Calm			T d. p.
7	30.4	22.5	78	Calm			d° a.
8	30.9	22.5	77	Calm		17	● p.
9	27.9	22.5	84	NE	1	19	● T a. p.
10	31.1	22.4	76	NE	1	19.8	T ↙ ● p.
11	30.4	22.3	80	Calm			≺ p.
12	30.9	22.8	78	Calm			≺ p.
13	30.4	22.9	79	Calm		23.4	↙ ● T p.
14	30.7	21.9	74	Calm			
15	30.1	22.5	76	Calm		5.1	● ≺ T p.
16	28.9	21.6	87	Calm		1.5	●° a. ≺ p.
17	30.2	23	81	Calm		8.6	● p.
18	30.1	22.2	77	Calm			⊕ ◡ p.
19	30.4	22	68	Calm			◡ p.
20	30.6	23.4	78	Calm		2.3	T a. ⊓ ● p.
21	29.6	22.4	71	Calm		1.3	●° ≺ p.
22	29.5	22.7	76	Calm		1.3	● a.
23	31.5	22.8	67	S	3		⊓ a. ↙° p.
24	31.1	24.4	75	S	3		⊓ a. p. ↙° ◡ p.
25	30	24.4	74	S	3	1	⊓ ●° a. ↙ ◡ p.
26	31.5	24.2	73	Calm		4.8	●° a. p.
27	31	22.6	76	SE	2		T a.
28	30.1	22.5	70	Calm		3.6	●° a. p. ≺ p.
29	28.8	22.2	76	Calm			
30	30.2	22.8	75	S	1		≺ p.
Mean	30.2	22.6	76.9		.5		
Total						172.8	

METEOROLOGICAL DATA, ETC.—Continued.

DAPITAN.
[ϕ=8° 38′ N; λ=123° 23′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1		23	76	S	2	2.3	● a. ϟ a. p.
2		23.2	87	E	1	1.8	⊤ ⌒ ● p.
3		22.4	77	E	2	1.3	ϟ ● p.
4		23.5	73	W	1	1.5	● ⊤ a.
5		23.7	89	W	2		
6		23.6	80	NE	2		ϟ p.
7		23.5	86	NE	1		d° a. ϟ p.
8		23.5	85	NE	1		
9		22.8	89	NE	2		
10		22.8	92	NE	3		
11		22.8	88	S	1		Ω a.
12		24.1	92	SW	1		
13		23.4	85	SW	3		
14		22.8	91	SW	1		
15		22.8	89	SW	2		
16		22.7	89	SW	2		⊤ p.
17		22	84	W	2		ϟ p.
18		22	72	W	4		
19		22.7	80	SW	2		
20		22.7	76	SW	3		ϟ p.
21		23.1	94	W	4	3.6	●° a. p. ϟ p.
22		21.9	88	SW	2		⇙ ●° a. p. ϟ p.
23		21.2	66	W	3	3	⇙ ●° a. p. ϟ p.
24		23.4	79	W	1	3.8	⇙ ● a. ϟ p.
25		23.7	61	W	2		⇙ ●° a.
26		23.4	60	SW	3		
27		23.2	78	S	2	1.5	● a.
28		22.5	75	E	2		ϟ p.
29		22.8	79	S	2	2.5	● a. ϟ p.
30		23	79	SW	2		d° a. ϟ p.
Mean		22.9	81.3		2		
Total						21.3	

BALINGASAG.
[ϕ=8° 45′ N; λ=124° 44′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.4	20	84	Calm		0.8	●° p.
2	30.1	20.2	80	W by S	1		
3	31.1	20.4	70	W	1	1.5	●° ⊤ p.
4	32	20.5	70	NNW	1	2.5	● p.
5	34.4	20.5	62	W by S	1		ϟ p.
6	30.8	22	75	W	1		
7	33.2	21.3	66	W by N	1	1	●° ϟ ⊤ p.
8	34	22	67	W	1		⌒ p.
9	31.3	21.8	73	W	1	2	⌒ ϟ ⊤ ●° p.
10	33.1	22.5	66	WSW	1	9.7	● ϟ ⊤ p.
11	31.4	21.1	60	WSW	1	2.8	● ϟ ⊤ p.
12	32	21.4	65	WSW	1	4.8	● ϟ ⊤ p.
13	31.1	21	74	W	1	6.4	● p.
14	32.2	21.5	65	W	2	11.2	d a. ● p.
15	32.3	21.2	70	W	1	1.3	●° a. p.
16	30.9	21.5	72	W by S	1	5.6	● ϟ ⊤ p.
17	29.9	21	75	Calm		8.6	● p.
18	31	20	72	W	1		
19	33.1	21.2	65	W	1	1	ϟ ⊤ ●° p.
20	32.9	22.6	59	W by S	1		⇙ ϟ ⊤ d p.
21	32.5	21.9	63	W	1	5.3	● ⇙ p.
22	29.6	21.9	70	W by S	1		d a. p.
23	32.6	21.2	66	W	2		
24	32.5	21.9	80	W	3		d p.
25	32.6	21.8	70	W	2		d° p.
26	32.2	20.6	69	W	1		
27	31.5	20.9	74	W	1	1	●° p.
28	33.2	20.5	70	Calm		3	● ϟ ⊤ p.
29	32.5	22	69	W	1	4.1	● ϟ p.
30	31.5	21	64	W by S	2	2	● a.
Mean	32	21.2	69.5		1.1		
Total						74.6	

BUTUAN.
[ϕ=8° 55′ N; λ=125° 31′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33.1	23.5		N	1	10.4	● a. p.
2	30	24		SE	1	.5	●° a.
3	32.5	24		S	1		Ω a.
4	33.7	23.5		NNW	2		d a.
5	32	22.4		SE	1		Ω ≡° a. d ⊤ p.
6	32.9	23.5		NW	1		∞ a.
7	33.1	23		SSW	1	13	≡ a. ⌐ ● p.
8	34.5	24		ESE	1	.6	Ω d a. ● p.
9	33.1	23.8		SE	1	.5	●° a. p.
10	31.9	22.7		NW	1	17.8	Ω a. ● p.
11	32	23		S	1	7.6	● a.
12	32.5	21.5		NW	1		
13	29	24		NE	2		
14	32.2	23.5		N	2		
15	32.4	23		N	2		
16	32.8	22.4		S	1	.3	Ω ∞ a. ●° p.
17	34	22		Calm		1.6	Ω ∞ a. ●° a. p.
18	32.5	23.7		Calm		.8	Ω ≡° a. ● p.
19	31.8	21.5		NW	2		Ω ≡ a.
20	33.6	22.7		NW	2	1.5	● ⊤ a.
21	32.7	21.8		SW	3		Ω a.
22	32.5	23		NW	1	5.1	⊤ ● ⌒ p.
23	31.1	22.1		WNW	1	?	● a.
24	32.9	23.9		W	1		Ω ∞ a.
25	34	23		WNW	1		Ω ∞ a.
26	33.9	21.9		W	1		Ω ∞ a.
27	32.9	21.8		NW	1		
28	35.8	19.8		Calm		?	● p.
29	34.9	20.9		Calm		12.4	Ω ∞ a. ● p.
30	32.6	20.4		Calm			Ω a.
Mean	32.8	22.7			1.1		
Total							

YAP (Western Carolines).
[ϕ=9° 29′ N; λ=138° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.4	24.7	81	NE	6	1.8	
2	31.6	25	75	NE	1	24.9	
3	31.7	22.5	90	N	1	14.7	
4	30.6	25.2	75	E	4	19.3	
5	30.5	24.5	85	NE	1	9.7	
6	31.9	24.3	87	E	2	19.8	
7	30.2	23.1	80	E	3	3	
8	31.8	24.6	78	NE	5	2.5	
9	30.2	25.3	87	ENE	3	19.1	
10	27.5	22.8	83	E	3	65.5	
11	31.9	23.5	85	NE	3	15	
12	31.8	23.6	84	NE	1	23.1	
13	31.8	23	85	E	1	5.3	
14	31	22.9	74	E	3	.5	
15	33	24	70	E	3		
16	33	24	72	NE	3		
17	31.6	23.6	78	NE	3	10.2	
18	32.8	23.9	76	S	2		
19	33.5	23.6	70	SW	2	50.8	
20	30.9	24.1	86	SW	3	3.8	
21	29.9	22.5	82	NE	2	8.6	
22	29.8	23.2	87	SW	6	5.3	
23	31.7	24	75	E	1	16.8	
24	30	22.5	78	E	4		
25	31.3	24.7	71	E	3		
26	30	23.5	79	NE	5	6.6	
27	31	23.7	78	NE	5		
28	31.7	23.7	80	E	2		
29	32	24.9	78	S	2	9.4	
30	32.7	23.5	76	E	1	119.4	
Mean	31.3	23.8	79.5		2.8		
Total						455.1	

METEOROLOGICAL DATA, ETC.—Continued.

MAASIN.

[ϕ=10° 08′ N; λ=124° 50′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	31.5	24.9	------	S	1	------	⊤ ●° a. ↙° ϟ p.
2	30.6	24.6	------	E	1	------	↙ a. ϟ p.
3	31.4	24.1	------	SE	5	------	↙ ϟ p.
4	31	25.1	------	SW	2	------	ϟ a.
5	32.9	23.5	------	SE	6	------	d ☈ a. ↙ ϟ p.
6	31.8	23.9	------	SE	2	------	ϟ p.
7	33.3	24.4	------	SE	5	------	↙ ϟ p.
8	33.3	24.5	------	SE	5	------	ϟ a. p. ↙ p.
9	28.6	24	------	E	3	------	d a. ϟ ↙ p.
10	31.8	23.4	------	W	3	0.8	⌒ ●° a. ↙ ϟ p.
11	31	24	------	E	2	3	↙° a. ●° a. p. ϟ
12	33.7	24	------	SE	4	------	ϟ a. ↙° p.
13	33.5	24.3	------	SE	4	25.1	↙ ● ☈ p.
14	29	23.5	------	S	1	57.4	↙ ● a. ●° ϟ p.
15	31.1	24.5	------	S	4	2.5	●° a. ϟ p.
16	31.8	24.5	------	SE	4	------	ϟ a. p. ⌒ a. ⊍
17	32.2	24.5	------	SE	2	10.2	⌒ ⊤ ⊍ ●°
18	31.6	24.1	------	SE	1	------	⊖ ⊍ ϟ p.
19	33.3	24.4	------	S	2	------	ϟ ⊤ a.
20	31	24.7	------	SE	2	------	↙ ⊖ ⊍ ☈
21	30	24.5	------	S	2	19.8	⊤ a. ☈ ↙ ● p.
22	28.5	23.8	------	SW	7	------	ϟ d a. p. ↙ p.
23	30.4	25.1	------	SW	5	------	d a. ⊖ p. ϟ
24	30	24	------	SW	2	2.5	ϟ ↙ ● a. ↙ ⊖
25	31.6	25.2	------	SW	6	------	⊖ p.
26	31.5	25.4	------	SE	2	------	⊖ ⊍ p.
27	33.1	24.5	------	E	1	------	
28	34.2	24	------	SE	2	3.8	● ⊤ ⊍ p.
29	30.2	23.5	------	S	1	4.1	☈ ●° a. p.
30	32	23.4	------	S	1	------	●° a. ⊤ a. p. ϟ
Mean	31.5	24.3	------	------	2.9	------	
Total	------	------	------	------	------	129.2	

BACOLOD.

[ϕ=10° 41′ N; λ=122° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33.1	23	73	NNW	4	------	○° ●° ⊤° ϟ p.
2	31.6	23.7	64	E	3	------	ϟ p.
3	34	24	65	N	3	9.4	●° a. ● ☈ p.
4	29.6	23.8	78	NNW	2	3.3	●° ⊤° a. ϟ p.
5	32.1	22.9	69	NNW	2	18	○^{2} a. ● ☈ p.
6	33.2	22.6	68	SE	4	------	☈ p.
7	33.1	23.3	72	ESE	2	1	●° ☈ p.
8	32.8	23.9	66	NW	2	------	○° a ●° ☈ p.
9	33.6	22.6	67	NW	2	1.5	○° ●° a. ☈ p.
10	32.4	24.2	63	NE by N	5	------	↙ ϟ p.
11	33.2	24.2	74	N by W	5	------	d° ⊤° ϟ p.
12	31.9	24.5	82	NE	2	4	●° a. p. ☈° p.
13	32.3	22.4	86	ESE	3	.3	●° a. ☈° p.
14	29.9	23.1	74	SW	4	3.8	☈ ●° p.
15	29.8	22.8	92	SW	3	2.5	⌒ a. ○° ●° ☈
16	31.5	22	76	SSW	3	.3	○° a. ●° ☈ p.
17	30.7	23.4	73	SSW	3	------	○° a. ☈ p.
18	33.9	23.2	65	W	4	------	○° a. p. ☈° p.
19	32.3	23.9	70	SSW	4	------	○° a. ☈ ⊍ ●°
20	32.9	23.5	64	SW	4	------	○^{2} a. ☈ p.
21	32.4	23.3	67	SW	4	.5	○° ● ⊍° ⊖ ☈
22	31.4	22.4	65	SW	4	4.8	○° a. ↙ ● ⊍° p.
23	27.1	22.6	97	SW	4	133.1	☈ a. ↙ ●^{2} a. p.
24	27.2	22.2	80	SSW	3	26.2	● a. ☈ ↙ ●^{2} p.
25	30.8	22.1	80	SW	8	5.8	○^{2} ↙ ● ↙^{2} ⊍°
26	28.2	22.9	85	SSW	3	6.9	● a. p. ⊖^{2} p.
27	32	21.3	71	SW	3	------	○° p.
28	32	22.6	71	WSW	3	------	●° ⊤° ϟ p.
29	32.4	22.3	70	W	3	9.7	○° ● ☈ p.
30	30.9	23	79	E	1	.3	●° a. ⊤ ϟ p.
Mean	31.6	23.1	73.5	------	3.3	------	
Total	------	------	------	------	------	231.4	

SAN JOSE BUENAVISTA.

[ϕ=10° 44′ N; λ=121° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	34.8	23.7	58	SW	1	2.8	● ☈ p.
2	34.2	23.3	63	N	1	------	d ⊤ ϟ p.
3	33.2	23.3	66	S	3	1.3	⊤ ⌒ ↙ ●° ϟ
4	30.6	23.8	71	NW	1	13	☈ ● a.
5	33	23	58	SW	1	------	⊤ p.
6	33.1	23.1	67	SW	1	------	☈ a. p.
7	33.9	23.7	62	SW	1	30.5	↙ ● ☈^{2} p.
8	32.3	24	75	Calm	------	------	d ☈ p.
9	32.7	24.2	93	Calm	------	5.1	↙ ● ☈ p.
10	33	23.3	67	W	1	------	Ω a. ϟ p.
11	33.3	23.5	64	SW	1	7.9	⌒ ● ☈ ↙ p.
12	32	23.5	79	NE	5	6.6	☈ ↙ ● p.
13	31.1	23.3	76	Calm	------	2	● a. p. ↙ p.
14	30.6	24.1	90	W	1	9.9	● ⊤ p.
15	28.1	23.2	84	Calm	------	47.5	● a. ●° ☈ p.
16	30	23.9	81	Calm	------	20.3	Ω ● ⊕ ⌒ ϟ
17	29.7	23	77	Calm	------	------	⊕ ⊖ p.
18	31.1	23.9	72	SW	1	------	
19	32.4	24.8	70	SW	1	33.5	● ☈ p.
20	31.2	23.2	72	WSW	1	3	● ϟ ⊍° p.
21	29	23.5	95	Calm	------	75.9	●^{2} a. ● p.
22	28.7	23	80	Calm	------	34	d a. ● p.
23	28	22.9	89	SW	3	57.4	↙ ● a. p.
24	28.2	24	84	SSW	4	3.6	↙ ●° a. p. ☈
25	29	23.2	84	SSW	4	35.8	↙ ● a. p.
26	28.9	23.5	80	SSW	3	14.3	↙ ● a. p.
27	30.8	23.9	83	SSE	1	1.8	↙ ●° p.
28	31	23.5	76	SW	1	------	
29	31.4	23	72	WSW	1	3.3	☈ ●° ⊖° p.
30	30.3	22.4	72	SW	1	------	⊕ p.
Mean	31.2	23.5	75.3	------	1.3	------	
Total	------	------	------	------	------	409.5	

TUBURAN.

[ϕ=10° 44′ N; λ=123° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32.4	23.4	57	Calm	------	------	○^{2} ⊤° ϟ^{2} p.
2	30.8	24	67	Calm	------	------	d ○^{2} ϟ^{2} p.
3	34.1	22.9	64	Calm	------	------	ϟ^{2} p.
4	30.7	24.4	68	Calm	------	25.7	●^{2} a. ⊤^{2} ϟ^{2} p.
5	32.3	23.6	65	Calm	------	------	○° ϟ^{2} p.
6	32.3	23.5	70	Calm	------	------	○° ϟ^{2} p.
7	32.3	23.6	66	Calm	------	------	☈° a. ϟ^{2} p.
8	32.4	23.6	68	Calm	------	------	☈^{2} d p.
9	32.8	24	59	Calm	------	------	○^{2} a. p. ϟ^{2} p.
10	32.7	22.9	68	N	3	------	d ϟ^{2} p.
11	33.5	23.9	70	N	2	------	⊤ a. ϟ^{2} p.
12	33.5	23.9	64	Calm	------	------	d° ○° ϟ^{2} p.
13	32.7	24.1	64	Calm	------	------	⊤° ⌒° ϟ^{2} p.
14	32	24.5	70	Calm	------	5.6	● a. ○° ϟ^{2} p.
15	32.7	24	65	Calm	------	6.4	☈° ● p.
16	31.1	23.1	76	Calm	------	1.3	●° a. ○^{2} ϟ^{2} ⊍^{2}
17	31.8	23.4	79	Calm	------	13.5	○^{2} ⊤^{2} ●^{2} p.
18	31.7	23.1	69	Calm	------	------	○^{2} a. ϟ^{2} ⊍^{2} p.
19	31.8	24.4	72	Calm	------	------	○^{2} a. ⊤^{2} ϟ^{2} p.
20	32.9	24.4	59	Calm	------	------	⊤^{2} ϟ^{2} ⊍^{2} p.
21	33.6	24.4	60	Calm	------	------	⊤^{2} ϟ^{2} ⊍^{2} p.
22	32	24	56	WSW	3	------	↙ a ⊕^{2} ⊍^{2} p.
23	32.5	23.6	88	SSW	2	12.4	↙ ● a. p. ⊤° p.
24	31	23.7	68	ESE	2	9.9	↙ a. ☈° ●^{2} p.
25	32.9	22.9	62	ESE	2	3.	↙ ● ⊍^{2} p.
26	30.7	22.1	73	Calm	------	------	○^{2} a. ⊖° p.
27	34.9	22.4	47	Calm	------	------	○^{2} a. ⊖° p.
28	32.3	23.3	70	Calm	------	------	d° a. ☈° p.
29	31.4	23.4	86	Calm	------	------	d° a. p. ☈^{2} p.
30	30.2	23.6	77	Calm	------	2.3	● a. ○° ⊤° ϟ^{2}
Mean	32.3	23.6	67.6	------	.5	------	
Total	------	------	------	------	------	80.1	

METEOROLOGICAL DATA, ETC.—Continued.

BORONGAN.

[ϕ=11° 42′ N; λ=125° 25′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.1	23.1	80	E	1	22.9	↙ ● a. p. ⊤ p.
2	31.7	22.4	98	Calm	------	15.5	[ϟ a. ↙ ● a. p.
3	32.1	22.7	68	SSE	1	4.1	↙ ●° a. p.
4	32.9	22.8	68	SSE	1	.3	Ω ↙ ●° a. [ϟ p.
5	33.2	22.6	68	SE	2	------	Ω a. ϟ p.
6	33.4	22.7	67	SE	2	------	Ω ⊕ a. [ϟ p.
7	33	23.4	73	SSE	1	------	[ϟ a. p.
8	33.2	23.2	82	SE	2	------	Ω a. ○ [ϟ p.
9	28.7	22.7	80	SE	1	35.1	[ϟ ↙ ● a. ● ϟ
10	32.7	22.4	71	ENE	3	7.1	● a. [ϟ ↙ ●° p.
11	30.1	23.8	75	Calm	------	3.3	[ϟ ● a. ○ ϟ p.
12	32.8	22.3	69	ENE	2	------	Ω a. ○ p.
13	33.2	22.4	71	E	1	------	
14	28.8	23.7	80	Calm	------	7.1	● a. ϟ p.
15	32.9	23.3	67	Calm	------	3.3	↙ ●° a. p. ϟ p.
16	32.5	23.4	87	W	1	1.8	↙ ●° a. p. ϟ p.
17	32.8	23.1	79	SW	1	------	Ω a. [ϟ a. p. ⍦
18	33.2	22.6	66	SE	2	------	Ω ○ a. [ϟ ⍦ p.
19	33.4	22.9	64	SE	2	------	Ω a. ○ ⊤ p.
20	33.7	24.6	67	SE	1	.8	●° ⊤ a. p. ϟ p.
21	33.5	22.9	81	NW	1	.5	●° [ϟ ⍦ p.
22	32.1	23.7	78	W	2	------	↙ p.
23	31.4	24.3	77	W	2	3.8	↙ ● p.
24	31.9	23.8	70	SW	3	------	↙ a. p. ⍦ p.
25	32	22.8	68	SSW	2	------	●° ○ a. ↙ ⊕ p.
26	32.5	23.1	67	SSW	2	------	⍦ p.
27	33.2	22.9	71	SSE	1	------	Ω ⊕ a.
28	33.4	22.8	71	SE	1	------	Ω a.
29	32.6	22.7	84	ESE	2	7.4	Ω a. ● p.
30	32.2	21.7	68	SE	1	------	●° a.
Mean	32.4	23	73.8	------------	1.4	------	
Total	------	------	------	------------	------	113.0	

ROMBLON.

[ϕ=12° 35′ N; λ=122° 16′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33.4	25	64	NW	1	------	ϟ p.
2	33.4	26.8	69	N	1	------	
3	31.7	26.3	67	E	1	------	[ϟ° p.
4	32.5	25	53	S	2	------	
5	35.6	24.1	64	SW	1	------	ϟ p.
6	36	24.2	62	NW	2	------	
7	35.5	24.4	62	NE	1	------	d a.
8	32.6	25.7	74	Calm	------	14	● a. d [ϟ° p.
9	34	24.8	66	NE	2	24.4	● [ϟ° p.
10	32.4	25.2	71	N	1	?	● a.
11	31.1	27.5	74	N	1	29	● a. p. ϟ p.
12	31.3	25	64	NNE	1	------	
13	32.9	24.7	71	NNW	1	------	
14	31.4	25.3	72	Calm	------	2.5	●° a.
15	31.4	23.9	68	Calm	------	10.2	ϟ ● a.
16	31	25.4	75	WSW	1	------	d a. p. ϟ p.
17	32	25.6	71	S	1	11.9	● p.
18	31.1	25.5	71	S	1	2.5	●° a. ϟ p.
19	34.8	25.4	77	SSW	1	3.6	●° a.
20	32.6	26.9	70	S	2	------	ϟ p.
21	32.8	26.5	69	S	1	------	ϟ p.
22	31	26.4	75	WSW	1	------	ϟ p.
23	31.1	26	83	S	3	12.7	● ϟ p.
24	29.5	24	84	SW	4	37.6	↙ ● a. p.
25	30.2	24	78	SSW	3	37.1	↙ ● a. p.
26	30.5	24	76	SW	4	12.7	↙ ● a.
27	33	26.2	66	SW	2	------	
28	33.1	25.1	68	S	1	------	
29	33.2	25.9	75	NE	1	------	ϟ p.
30	31.5	25.5	75	S	1	------	ϟ p.
Mean	32.4	25.3	70.5	------------	1.4	------	
Total	------	------	------	------------	------	198.2[1]	

GUBAT.

[ϕ=12° 55′ N; λ=124° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	35.5	22.3	60	SE	2	------	⊤ d p.
2	35.2	23	65	E	2	------	⊤ d p.
3	36.2	24.4	59	SE	2	0.8	↙ ●° ϟ p.
4	35.7	22.7	56	E	1	------	
5	35.8	22.4	54	ESE	1	------	
6	35	22.5	63	SE	2	------	
7	36.5	23.1	54	SE	1	------	⊤ ϟ p.
8	36.2	22.5	64	E	2	27.2	●² ↙ [ϟ p.
9	32	23.2	76	ESE	2	16.5	↙ ● a. p.
10	34.6	24	64	E	2	6.4	● a.
11	32.6	23.6	71	E	1	20.6	● a. d p.
12	34	22.7	65	E	1	------	ϟ p.
13	33.8	22.5	63	E	1	------	ϟ p.
14	33.1	23	65	WSW	1	------	ϟ p.
15	32.3	24.6	72	S	1	------	⊤ a. ϟ p.
16	33.4	23.1	72	SE	1	------	d p.
17	33.5	23.2	69	SE	2	------	ϟ p.
18	33.3	22.8	66	SE	2	------	d a. ϟ p.
19	34	23	64	SE	1	------	⌒ [ϟ p.
20	34.3	24.3	82	S	2	8.1	● ϟ p.
21	34.6	24.5	69	W	2	------	⊤ ϟ p.
22	33.4	24	70	W	3	------	d ⊤ ϟ p.
23	31.1	24	72	W	1	6.9	● [ϟ a.
24	30.1	24.9	70	SW	3	2.5	↙ ● p.
25	32.4	25.7	64	SW	2	2	↙ a. ●° p.
26	32	24.8	62	SW	3	------	
27	32.3	22.6	64	SSE	2	------	⍦ a.
28	34.2	21.5	64	S	2	------	
29	34.4	22.1	59	SE	1	------	d p.
30	31	23.8	78	W	1	3	● ⊤ a.
Mean	33.8	23.4	65.9	------------	1.7	------	
Total	------	------	------	------------	------	94	

SUMAY, GUAM (Ladrones Islands).

[ϕ=13° 22′ N; λ=144° 45′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.4	25	57	E	3	------	
2	32	24.4	61	E	2	------	
3	30	26.1	72	NE	4	0.8	
4	31.6	25.8	64	SE	3	------	
5	32	25.8	59	SE	4	.5	
6	32.6	25.6	57	E	3	------	
7	30.8	25.8	67	NE	4	------	
8	31	25.8	65	NE	4	------	
9	32.4	26.1	61	E	3	------	
10	31.6	25	56	E	3	------	
11	32.6	26.1	71	SE	4	------	
12	29	24.4	87	S	1	5.6	
13	32	23.3	61	N	2	------	
14	32.6	25	58	E	2	------	
15	30.8	26.2	72	NE	4	------	
16	30.6	26.6	74	NE	4	------	
17	30.2	24.4	87	SE	3	1.3	
18	31.2	23.4	65	S	1	------	
19	31.2	24	66	SE	2	10.2	
20	30.6	24.4	66	SE	3	3.8	
21	31.4	24.8	65	SE	3	------	
22	31.2	23.4	81	SE	4	7.6	
23	29.4	24.2	89	SW	1	27.9	
24	30.6	23.8	75	NE	3	5.1	
25	31.4	24.2	68	E	3	1.3	
26	31.4	25	70	SSE	3	10.2	
27	31	23.8	77	NE	3	1.3	
28	29.8	24.6	80	NE	2	5.1	
29	30	24	80	SW	1	24.1	
30	29	24.2	95	S	1	25.4	
Mean	31.1	24.8	70.2	------------	2.8	------	
Total	------	------	------	------------	------	130.2	

[1] 29 days of observation.

METEOROLOGICAL DATA, ETC.—Continued.

NUEVA CACERES.

[ϕ=13° 38′ N; λ=123° 12′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	34	22.8	62	SE	2	------	
2	34	23	61	SE	2	------	
3	34.5	22.5	60	SE	2	14.5	● p.
4	34	22.5	62	S	2	------	
5	34.5	22.5	54	S	2	------	
6	35	23.4	55	S	2	------	
7	35	23	55	S	2	------	
8	35	22	89	E	1	4.3	● p.
9	35	22	61	E	4	------	
10	32	22.5	64	NE	3	------	
11	32	23.5	80	NE	2	------	
12	33.5	23.5	52	NNE	2	------	≡ a. ⊤ d p.
13	34	22	64	S	2	------	≡ a.
14	33	23.8	67	NE	2	58.9	● a. p.
15	34	22.5	78	E	1	------	
16	32.5	24	62	S	2	2	● p.
17	32.2	23.6	66	S	2	------	
18	32.5	24.2	63	S	2	------	
19	32.6	24.5	59	S	2	------	
20	32.5	24	75	WSW	1	------	
21	32.2	23.5	68	WSW	2	6.1	● a.
22	32.6	24	73	WSW	2	8.1	● a.
23	32.5	23.5	69	SW	2	------	
24	29.5	24.5	83	S	3	21.3	● a. ●° p.
25	29	24.5	77	SSE	4	18.5	●° a. ● p.
26	30	24.4	74	SSE	4	7.9	● a.
27	34	24.4	62	SE	4	------	
28	34	23.8	60	S	2	------	
29	34	23.5	85	S	2	11.4	● p.
30	33	24	79	S	2	------	≡ a.
Mean	33.1	23.4	67.3	------------	2.2	------	
Total	------	------	------	------------	------	153	

BATANGAS.

[ϕ=13° 45′ N; λ=121° 03′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	37.4	23	52	WSW	1	------	⋜ p.
2	37.5	23	56	SSE	3	------	↙ ⋜ p.
3	38	25.1	48	S	3	------	d p.
4	39.5	24	48	SW	1	------	d a.
5	38.8	23.8	58	SW	2	------	⊤ p.
6	39.5	23.4	49	W	2	2.3	● p.
7	39.3	24.1	56	SSW	1	------	⊤ ⋜ p.
8	36.4	23.6	69	W	1	.3	●° a. p.
9	37	23.2	54	SE	2	.5	⊤ ⌒ a. ↙ ●° p.
10	35	22.8	57	NE	2	------	
11	35.5	23.9	85	ENE	3	1.5	● ↙ p.
12	38.9	23.2	52	N	3	4.8	⌒ a. ↙ ● ⌐⋜ p.
13	38.2	22.3	48	SW	2	------	
14	38.5	25.2	48	SW	2	------	≡° a. ⊤ ○ p.
15	36.3	24.6	50	SW	2	------	
16	36.2	23.4	79	W	2	2	●° a. p. ⊤ ⋜ p.
17	37.5	23.7	70	SW	2	18.5	● a. p.
18	37.7	23.3	52	W	2	5.8	● p.
19	38	23	47	WNW	2	------	≡° a. ⌒ p.
20	38.2	23	54	SW	2	------	⊍ p.
21	37	24.4	68	SW	2	------	⊎ p.
22	34.5	22.5	66	W	2	5.3	⌒ a. ●° a. p.
23	36.2	23.5	60	SW	2	------	
24	30.5	23.6	84	SW	3	19.6	● a. p.
25	30	23.4	72	SW	3	41.1	↙ ● a. p.
26	34.5	23.8	59	SSW	1	------	
27	37.5	23.5	47	W	1	------	
28	37.6	23.4	50	W	2	------	
29	37.5	22.4	52	W	2	------	
30	37.6	22.5	60	WSW	2	.5	● ⊤ p.
Mean	36.9	23.5	58.3	------------	2	------	
Total	------	------	------	------------	------	102.2	

SILANG.

[ϕ=14° 14′ N; λ=120° 58′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.2	20	68	W	4	33.3	♎ ≡ a. ● ⊤ p.
2	32	20.6	64	W	2	------	≡ a. ⊤ p.
3	32.5	20.1	63	W	3	------	≡ a. ↙° p.
4	32	20.5	65	W	2	------	♎ ≡ a. ↙° p.
5	32.2	19.6	67	W	4	9.4	♎ ≡ a. ● ⊤^{2}
6	32.2	20	67	W	2	------	♎ d a. ⊤ p.
7	32	20.1	68	W	3	------	↙° ⊤ p.
8	33	19.6	70	SW	5	20.8	↙ ● ⊤^{2} p.
9	32	19.2	70	W	2	------	●° a. ● p.
10	32	19.5	69	W	3	------	d a.
11	32.2	19.2	74	NE	6	------	♎ ≡ a. d p.
12	30.5	19.8	67	NE	2	------	♎ a. ⊤ p.
13	30	19.5	73	W	2	3.8	♎ a. ● p.
14	30.1	19.2	73	W	3	------	♎ ≡ a. d p.
15	30.5	19.1	73	W	3	6.9	♎ a. ● p.
16	30.3	20.2	75	W	2	------	♎ ≡ a. d ⊤ p.
17	30.5	20	74	W	3	2.5	● ⊤ p.
18	30.8	20.2	70	W	3	------	♎ ≡ a. ⊤ p.
19	31	20.5	70	W	3	------	♎ a. ↙° p.
20	30.6	20.5	74	W	3	------	↙° p.
21	30.2	20.2	70	W	2	------	↙° p.
22	30.8	20	71	W	3	21.6	♎ ≡ ● a.
23	30	20.5	72	W	3	------	↙° ⊤ p.
24	30	20	77	SW	6	33.5	● a. ↙ ●^{2} p.
25	29.3	20	82	SW	7	27.9	● a. ↙ p.
26	30.2	20.2	68	SW	6	------	↙ a. p.
27	30.6	20.5	66	SW	6	20.3	↙ a. p. ● p.
28	30.6	20	65	SW	3	------	↙° p.
29	31.5	20.2	67	W	3	------	↙° p.
30	31.5	20.4	66	W	3	------	↙° p.
Mean	31.1	20	69.9	------------	3.4	------	
Total	------	------	------	------------	------	180	

SAN ANTONIO.

[ϕ=14° 23′ N; λ=121° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32	20.5	68	SW	1	0.5	●°
2	32	20.4	74	E	2	8.4	⌒ p. ●
3	32	21.6	67	SE	5	------	↙ p.
4	31.8	21	90	Calm	------	------	⌒ p.
5	32.7	21.2	65	SW	2	------	
6	31.7	20.5	64	W	3	------	↙° p.
7	34	23	80	NE	1	------	
8	32.8	20.4	69	SW	2	------	
9	30.1	21.7	75	E	3	6.6	↙° ⌒ p. ●
10	28.5	20.5	81	E	1	14.7	⌒ p. ●
11	26.6	21.4	93	E	2	19.8	⌒ a. ●
12	29	21.5	74	E	3	10.4	↙° p. ●
13	33	20.5	69	W	2	------	
14	33.5	21	55	W	1	1	●°
15	30.5	21.5	69	SW	1	9.1	●
16	33.5	20.4	75	SE	1	------	
17	31.2	20.5	66	W	1	------	⌒ p.
18	32.2	20.2	59	W	1	6.1	●
19	31	20.6	67	W	1	------	
20	30	21.4	75	W	2	------	⌒ a.
21	29.2	22	78	W	3	------	↙° p.
22	29.9	18.8	74	W	2	1.3	●°
23	33.5	19.4	76	W	1	4.3	●
24	28	22.2	96	W	2	26.7	●
25	28.2	21.4	87	W	1	8.9	●
26	30.5	21.9	66	W	2	------	
27	31	20.4	68	W	2	------	
28	31.6	20.5	62	SW	1	------	
29	31	19.4	67	W	3	18.8	↙° p. ●
30	30.5	19.4	91	SW	1	3.8	●
Mean	31	20.8	73.3	------------	1.8	------	
Total	------	------	------	------------	------	140.4	

METEOROLOGICAL DATA, ETC.—Continued.

CORREGIDOR.
[ϕ=14° 23′ N; λ=120° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.8	24.7	65	SW.	1	------	⊤ ϟ p.
2	34	24.8	55	N	2	------	
3	33.3	25.8	59	N	2	------	
4	34	24.7	54	SW	2	------	
5	34	25	56	W	2	------	d p.
6	33.2	24.8	63	W	2	15	● a.
7	33.8	24.5	63	W	2	------	ϟ p.
8	34.7	24.8	52	SW	2	------	ϟ p.
9	30.5	24.7	72	NE	2	31.2	● Гϟ p.
10	30.1	21.7	79	NE	4	------	
11	29.8	24.6	69	NE	4	------	
12	30.8	24.5	65	NE	4	------	
13	34.5	24.7	58	W	1	------	
14	34.7	25.1	59	SW	2	------	
15	32.7	24.7	68	SW	2	------	⊤ d p.
16	33.5	24.7	65	S	2	------	d a. p. ⊤ p.
17	34	24.7	60	W	1	------	⊤ p.
18	33.3	24.7	56	W	1	------	
19	34	24.8	60	W	1	------	
20	31	23.2	71	SW	2	33.5	⊤ a. ● a. p.
21	30.1	23	70	SW	1	------	
22	29	22.9	77	SW	4	47	● a. p.
23	31.1	23.7	66	SW	3	17.3	● p.
24	29	23.3	79	SW	3	86.4	●² p.
25	28.3	21.6	80	SW	4	50	● a. p.
26	30.2	22.1	65	SW	5	6.9	● a.
27	30.3	22.9	68	SW	5	7.1	● a.
28	32.7	25	56	SW	1	------	
29	33	24.2	60	W	2	------	
30	32.3	24.1	62	W	2	------	
Mean	32.2	24.1	64.4	------------	2.4	------	
Total	------	------	------	------------	------	294.4	

BALANGA.
[ϕ=14° 41′ N; λ=120° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	34.5	23.1	62	W	1	------	⊤ a. p. ϟ p.
2	36.4	25	47	SE	2	------	Гϟ p.
3	35.8	24.3	48	SE	2	------	ϟ p.
4	36.2	24.5	47	SW	3	------	⊤ ϟ p.
5	36.1	24	52	SW	3	------	ϟ p.
6	35.9	25	63	SW	3	------	ϟ p.
7	34	24	63	SW	3	8.1	● ⊤ a. Гϟ p.
8	36.5	23.5	63	SW	2	------	⊤ a. p. d ϟ p.
9	30.6	22.5	69	N	2	9.7	● Гϟ p.
10	30.5	22.1	76	N	2	------	ϟ p.
11	30.1	24.3	75	N	2	1.8	●° a. ϟ p.
12	33.1	23	63	N	2	------	⊤° a. ϟ p.
13	36.3	23.1	54	SSE	2	------	ϟ p.
14	36.4	24.5	54	SW	3	2.3	●° a. ⊤ p.
15	33.5	24.5	72	SW	3	------	⊤ ϟ p.
16	35.9	23.9	49	SE	2	2.3	⊤ a. p. ●° p.
17	34.1	24.3	68	SW	3	.3	⊤ ●° ϟ p.
18	35	24.5	58	SW	3	------	⊤ a. p. ↙ ϟ p.
19	34.3	24.7	62	SW	4	------	↙ p.
20	31.6	23.7	72	SW	4	3.3	↙ ϟ ∪ ● p.
21	31.5	23.1	77	SW	2	5.6	● a. ●° p.
22	30	23.4	79	SW	3	25.9	● a. p.
23	30.7	22.5	75	Calm	------	12.7	⌒ a. ● a. p.
24	27.6	23.4	84	S	3	43.7	↙ ● a. p.
25	30	23.1	92	S	1	89.9	● a. p. ↙ ⊤ ϟ
26	29.6	23	76	S	2	29.7	↙ ● a. p. Гϟ p.
27	30.5	23.8	78	SW	3	10.7	↙ a. p. ● p.
28	32.5	23.2	66	S	2	------	d° p.
29	32.7	22.7	64	SW	2	------	ϟ p.
30	32.9	22.9	60	SW	3	------	
Mean	33.2	23.7	65.6	------------	2.4	------	
Total	------	------	------	------------	------	246	

MALOLOS.
[ϕ=14° 52′ N; λ=120° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	34	22.2	59	SW	1	------	○² ϟ p.
2	36.5	22.7	59	SW	1	------	ϟ p.
3	35.7	23	58	W	1	------	
4	35.9	23.3	54	SSW	1	------	
5	35.8	23.6	57	S	1	------	ϟ p.
6	35.7	24.8	57	W	2	------	⊤ p.
7	35.8	22.7	61	W	1	------	Гϟ p.
8	37.1	22.2	52	SSW	1	0.8	● p.
9	30.7	21.8	73	NNW	1	.8	●° a. p.
10	31.5	21	77	N	1	1.3	●° a. p.
11	30.2	23.6	75	NE	1	3.8	● a. ⌒ p.
12	30.9	22.2	65	NE	1	------	○² p.
13	35.7	22.3	51	WSW	1	------	≡² a. ϟ p.
14	35.2	23.2	51	SW	1	43.9	●² Гϟ² p.
15	33.8	22.7	58	SW	1	1.3	●° ϟ p.
16	33.7	22.7	62	Calm	------	------	ϟ p.
17	34.5	23	58	SE	1	------	ϟ p.
18	34.6	24.2	56	SSW	1	1.3	●° Гϟ² ⌒ a. ϟ
19	34.3	24.1	65	SW	1	1.8	● ⊤ p.
20	33.7	23.6	53	S	1	5.1	⊤ a. ϟ p. ●
21	32.7	22	69	S	1	2	●° a. p.
22	29.6	23.5	77	SSE	2	22.4	● a. p.
23	30.9	22.3	66	S	2	16	● a.
24	29.8	22.7	86	SSW	1	75.7	● a. ●² p.
25	28	22	96	W	3	69.6	↙° a. ↙●² p.
26	31.5	23.2	69	SSE	4	65.8	↙ ●² a. p.
27	31.7	23.8	72	S	2	2.3	↙ a. p. ● ϟ p.
28	32.8	22.7	58	WSW	1	------	
29	33.8	22.7	56	WSW	1	------	
30	32.9	23	56	WSW	1	------	
Mean	33.3	22.9	63.5	------------	1.3	------	
Total	------	------	------	------------	------	313.9	

PORAC.
[ϕ=15° 05′ N; λ=120° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	35.3	21.7	55	Calm	------	------	Гϟ a.
2	35.8	23.7	56	ESE	1	12.2	Гϟ ● p.
3	32.9	22.9	67	NNE	1	------	
4	34.9	23.5	73	W by S	2	------	Гϟ p.
5	36.9	22	55	WSW	0	------	⊕ a. ⌒ ϟ p.
6	34.5	22.8	71	WSW	0	1.3	●° ⌒ p.
7	35.7	22	54	S	3	------	Гϟ ⌒ p.
8	36.7	22.8	52	E	0	13	Гϟ ● p.
9	29.2	22.7	86	NNE	2	------	d a. p. ϟ p.
10	31.3	22.4	67	Calm	------	------	ϟ p.
11	28.9	23.7	75	E	0	1.5	●° a.
12	32.8	22.7	71	Calm	------	------	ϟ p.
13	36.1	21.9	79	E	1	10.9	Гϟ ● p.
14	36.1	24.3	63	Calm	------	------	Гϟ p.
15	33.2	23	62	Calm	------	6.4	Гϟ ● p.
16	33.9	23.6	69	ESE	2	4.6	Гϟ ● p.
17	34.6	23.2	64	Calm	------	------	Гϟ p.
18	35	23.6	63	SW	2	------	ϟ p.
19	36.2	22.4	58	WSW	3	------	Гϟ p.
20	33.4	22.8	64	S	1	8.6	● p.
21	33.9	23	60	SW	2	------	
22	31.2	22.6	75	SW	1	------	
23	28.4	23.4	84	Calm	------	8.6	● a. d ϟ p.
24	27.8	23.4	97	S	1	49.5	● a. p.
25	27.3	23.1	96	SSW	2	87.9	● a. p. Гϟ p.
26	26.9	22.5	89	SSW	3	52.6	● a. p. ↙ Гϟ p.
27	29.9	23.3	81	SSW	4	10.7	●° ↙ a. p.
28	32.1	22.6	68	SSW	2	------	
29	33.1	21.5	64	SW	1	------	ϟ p.
30	33.6	22	61	SW	0	------	
Mean	32.9	22.8	69.3	------------	1.1	------	
Total	------	------	------	------------	------	267.8	

METEOROLOGICAL DATA, ETC.—Continued.

ARAYAT.
[ϕ=15° 08′ N; λ=120° 46′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	35.6	23.5	49	SW	1		⊤ ↯ p.
2	36.2	24	45	N	2	1.8	⊤ ● p.
3	33	24.6	56	NNW	1		
4	37	23.8	41	WSW	1		⊤ ↯ p.
5	37.2	23.5	43	S	2		⊤ ↯ p.
6	34.1	24	60	W	3		d a. p. ⊤ p.
7	36	24	49	WSW	2		⊤ p.
8	37.2	22.6	43	SW	2	74.2	●^{2} ⌈↯ p.
9	29.4	22.5	84	NNE	2	8.4	● a. p. ⊤ p.
10	30.5	22.1	68	NNE	1		⊤ p.
11	28.2	23.6	74	ENE	2	2.5	● a.
12	28.4	22.5	84	SE	1		d a.
13	35.6	22.6	54	NE	1	4.6	≡^{2} a. ⊤ ↯ ● p.
14	35.4	24.6	59	SSW	1	8.4	● ⌈↯ p.
15	33.5	23.6	50	SW	1	3.6	● ⌈↯ p.
16	31.9	23.6	88	SW	1	14.8	⊤ ● p.
17	34.3	24.2	55	W	1		⊤ p.
18	33.5	24.2	56	WSW	1		⊤ a.
19	34.2	23.7	53	SW	2		⊤ p.
20	32.5	24.5	57	SW	2		⊤ a. d p.
21	32.9	24.2	55	SSW	3		d a. p.
22	29.9	23.1	68	SSW	2	19	● a. p.
23	27.6	23.5	87	SW	2	9.1	● ⊤ a. p.
24	25.9	24	91	SW	1	54.1	● a. p.
25	26.7	23.5	86	SSW	2	62.7	●° a. ●^{2} p.
26	28.5	23.4	74	SW	3	21.3	↙° ● a. p. ⊤ p.
27	29.2	24.6	74	SW	2	4.8	↙° a. ● a. p.
28	31.5	23	60	SSW	2		d a.
29	33	22.8	56	SW	1		⊤ p.
30	33	24.2	56	SSW	1		⊤ p.
Mean	32.4	23.6	62.5		1.6		
Total						289.3	

TARLAC.
[ϕ=15° 31′ N; λ=120° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	35.5	22.2	61	SE	2	2.5	Ω ≡ a. ∞^{2} ⊤ ●
2	35.8	23	51	SE by E	1	6.1	● ≡ a.
3	33.9	23	63	ESE	1		⊤ p.
4	36.8	22.8	50	SW	1		Ω ≡ a. ⊤ p.
5	36.7	23.1	54	ESE	1	5.1	Ω ≡ a. ● ⊤ p.
6	35.8	22.8	63	WNW	1		↙° a. ⌈↯ p.
7	36.7	22.8	52	SSE	1		⌈↯ p.
8	37.2	22.6	42	WNW	1	27.9	Ω ≡° a. ⌈↯ ● p.
9	30.5	22.6	78	S	1	.5	●° p.
10	31.9	22.1	64	E by S	2		≡° a. ◯^{2} ↯° p.
11	29.7	23.4	76	SSE	1	.3	●° a.
12	33.5	22.1	75	SE by S	1	1.3	≡ ●° a.
13	36.2	22.4	52	NW	1		Ω ≡° a. ⌈↯ p.
14	37	24.4	55	NE by N	1		Ω^2 ≡° ◯^{2} a. ⌈↯°
15	36.5	23.2	60	SW	1	.8	Ω ≡° a. ⌈↯ ●°
16	37.2	23.7	59	SE	1	2.5	●° ⌈↯° p.
17	36.4	23.6	56	S by W	1	6.6	≡ a. ⌈↯° ● p.
18	35.2	24.1	54	SSE	1		↯° p.
19	36.3	23.2	55	SW	3		Ω a. ↙° ⊍ ↯°
20	33.8	23.2	64	WSW	1	1.5	⌒ ↙ ● a. ⊤ p.
21	34.4	23.3	60	SSE	2		d a. ↙° p.
22	32.4	22.4	65	SSE	3	1.3	Ω^2 ≡° a. ◯^{2} ↙ ●
23	32.5	23.2	69	SE by S	1	.3	●° ◯ ⊤ ⊖^{2} ⊍^{2} ↯
24	32.7	23.3	94	SSE	1	25.4	↙ ● a. p,
25	29.5	23.5	94	SW	1	38.4	● a. ⊤° ↙ ● p.
26	26.6	23	97	SE	1	43.2	↙ ● a. p. ⌈↯ p.
27	30.7	23.4	73	SSW	3	4.1	↙ ●° a. p. ⊍^{2} p.
28	32.7	22.3	63	SSE	2	1.1	≡° a. ↙ ●° ⊍^{2} ↯
29	34.4	22.4	58	S by E	1		Ω^2 ≡ a. ↯ p.
30	35.8	23	54	SSE	1	.3	Ω ≡° a. ∞ ●° ↯°
Mean	34.1	23	63.7		1.3		
Total						169.2	

BALER.
[ϕ=15° 47′ N; λ=121° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	34	22		E			
2	33.8	22.4		E		11.2	↙ ● ↯ ⊤
3	32.4	24		E			
4	36	22.4		E			
5	35.8	23.5		NE		34.5	↙ ● ↯ ⊤
6	34	25.4		W			
7	34.4	24.8		E			
8	33.6	21.9		ENE		3.9	≡ ●
9	33.6	21.9		WNW		15.3	↙ ●
10	33.5	24		NE		24.2	↙ ●
11	33.6	21		NE		37.1	↙ ● ⊤ ⌒
12	33.3	25.6		NE		7.9	≡ ●
13	33.5	23.4		NE			
14	33.5	25		NE		2.6	⌈↯ ●°
15	33.5	25		NE		24.2	↙ ● ↯
16	33.5	24.3		NE			
17	33.5	23.5		NE			
18	33.3	25		NE			⊤
19	34.5	25		WNW			⌒ ⊤
20	34.2	24		WNW			
21	34.2	25		WNW			
22	34.2	25		NE			
23	34	20		NE			
24	32.7	25		WNW		2.6	↙ ●°
25	30	20		WNW		4.1	↙ ●°
26	30.5	25		WNW		21.6	↙ ●
27	30.5	25		WNW		3.9	●
28	32.7	20		WNW			
29	32	22.3		ENE			
30	31.5	24		NNE			↯
Mean	33.3	23.5					
Total						193.1	

BOLINAO.
[ϕ=16° 24′ N; λ=119° 53′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.5	24.9	74	NW	2		⊤° p.
2	32.8	24.5	68	Calm			≡° a. ↯ p.
3	32.9	25.5	65	NNE	2		↙° ↯ p.
4	33.3	24.9	61	SW	2		↯ p.
5	33.2	24.6	70	NW	3	0.5	●° a. ↙° ↯ p.
6	32.5	24.1	66	SSW	3	5.3	● p.
7	32.4	24.7	70	W by S	5	1.5	●° a. ⊤° p.
8	31.9	24.6	73	NW by W	2	.3	●° a.
9	31.9	24.6	72	E	3	.5	●° p.
10	31.8	24.4	71	N by W	1		
11	32.3	24.1	67	NW	1		≡° a.
12	32.4	23.4	60	WNW	2		⊤ p.
13	33.2	22.8	63	NW by W	1		⊤° p.
14	33.3	23.7	65	Calm			⊤ p.
15	33.2	24.6	63	N by W	1		⊤° p.
16	33.8	25.7	69	Calm		19.6	⌒ ●^{2} ⊤^{2} p.
17	33	24.7	76	SW	1	.5	●° ⊤° ↯ p.
18	32.1	24.9	69	SW	1		⊤° p.
19	32.5	24.3	62	SW	4	1.1	●° a. p. ↙° p.
20	32.3	24.9	71	SSW	5	18.3	⊤ a. ↙° ● p.
21	32.2	23.7	70	S	2	5.3	● ↯ p.
22	30.8	24.2	70	SW	1	19.3	●^{2} p.
23	32.2	23.6	76	NNW	1		
24	32.7	24.3	84	WSW	1	5.1	● p.
25	30.6	23.2	94	SSW	6	25.9	● a. p.
26	28.5	23.3	96	SSW	1	104.9	↙ ●^{2} a. p.
27	27.2	23.2	93	S by E	1	63.8	↙ ●^{2} a. ● p.
28	29.6	22.8	74	SSW	6	36.3	● a. ↙ p.
29	29.8	23.6	83	SW	1	2.3	● a. d p.
30	30.8	23.8	85	SW	4	1.1	↙ a. ⊤ ●° p.
Mean	32	24.2	72.7		2.1		
Total						311.6	

METEOROLOGICAL DATA, ETC.—Continued.

BAGUIO.
[ϕ=16° 35′ N; λ=120° 43′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	23	15	70	WSW	1		
2	24.7	15.9	76	SW	0	5.6	●° p.
3	24.2	14.5	74	Calm			
4	25.6	15.5	79	W	1		
5	24	15.1	81	W	1		≡ a.
6	23.4	13.5	74	W	2		≡ a.
7	23.1	14.4	89	WSW	1	27.9	● p.
8	22.5	15.4	83	W	1	7.6	● p.
9	24.6	14.8	63	SE	0		≡ ⛈ p.
10	24.9	15.2	89	W	1		≡ p.
11	24.5	15.4	91	E	2		≡ p.
12	23.4	14.9	90	W	0	6.6	⌒ a. ●° p.
13	22.9	15.2	88	WSW	0	2	●° ⊤ p.
14	24	16.4	98	W	2		≡ p.
15	22.2	15	84	WSW	0	3.3	●° a. p.
16	24.2	15.8	90	NNW	0	3	●° p.
17	24.4	15.2	91	WSW	1	3.3	●° ≡ ⊤ p.
18	25.6	15	76	W	0		≡ p.
19	24.3	15.7	85	WSW	1	27.9	● p.
20	23.7	15.5	98	WSW.	0	12.2	● ≡ p.
21	23.4	15.2	74	Calm		5.3	● p.
22	23.5	16.1	66	NE	0	2.3	●° p.
23	23.6	15.4	84	WSW	0		≡ a.
24	22.3	15.4	96	WSW	1	32.3	● a. p.
25	18.2	15.6	99	WSW	1	30	● a. p. ≡ p.
26	19.7	14.7	92	SW	2	100.6	●² a. p.
27	22.2	16.7	86	WSW	0	52.8	● a. p.
28	20.8	16.3	84	S	1	2.5	● p.
29	22	15.3	79	W	0		
30	22.8	15.7	81	Calm			
Mean	23.3	15.3	83.7		.6		
Total						325.2	

SAN FERNANDO UNION.
[ϕ=16° 37′ N; λ=120° 18′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33	22	72	SE	3		
2	33.2	23	68	N	2		
3	33.3	23	64	N.	3		
4	34.2	24	67	NW	3	3.3	⛈² ●° p.
5	34.6	24.2	71	N	3		
6	33	24	74	SW	3	5.1	⛈² ● a.
7	33.8	23.1	67	W	3		↙² ⛈² p.
8	32.4	23	72	SE	2	1.8	⛈ ●° p.
9	32.8	22.8	66	SW	2	1.5	⛈ ●° p.
10	33.4	22.6	72	SW	2		
11	32	22.6	72	N	2		
12	32.5	23.6	73	N	2	1.3	●° p.
13	32.4	23.1	77	NW	3	5.6	● p.
14	32.6	22.4	71	N	3		
15	32.4	23	70	N	3		⊤ a. ϟ p.
16	33.2	23	70	N	2		⊤ d° p.
17	34.4	23.3	71	NW	2	2	⛈ ● p.
18	34	23	62	W	3	33	⛈ ●² p.
19	33.5	24	66	SW	2		
20	33.6	22.6	62	W	3	24.1	● ϟ p.
21	31	22.2	76	W	2	9.4	↙ ● a.
22	32.6	22	67	SW	3		
23	32.5	24.4	70	W	2	38.6	⛈² ●² p.
24	31.4	22	76	S	3		
25	27.4	22	90	SE	2	35.3	↙² ● a. p.
26	27	21.4	87	SE	2	41.4	↙² ● a. p.
27	28.8	20	92	S	4	65.8	●² a. p.
28	30	20	79	S	2		↙² d ϟ p.
29	31	22.3	69	S	2		
30	31.8	22.4	79	NW	2	5.3	⊤ ● p.
Mean	32.3	22.7	72.4		2.5		
Total						273.5	

CANDON.
[ϕ=17° 12′ N; λ=120° 26′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.5	25.5	76	WSW	1		ϟ p.
2	31.5	25.2	72	NW	1		Ω² a. ⊤° ϟ p.
3	32	25.4	72	W	1		Ω² a. ⊤° d ϟ p.
4	32	26	75	SW	1	6.1	Ω² a. ⌒° ⛈² ●
5	31.5	26	75	SSW	2	1	● ϟ p.
6	32	26	74	S	3	6.4	↙ a. ⛈ ●² p.
7	31	25.7	76	SSW	4	23.9	↙ ● a. p. ⊤° ϟ
8	31	24.5	74	W	1		⊤° ϟ p.
9	31.1	25.4	74	W	1		⊤° d ϟ p.
10	31.5	24.8	79	W	1	8.1	⊤° ● ϟ p.
11	32.	26	73	NNW	1		ϟ p.
12	31.1	27.5	79	W	1		⊤² d. p.
13	31.6	24.6	79	W	1		Ω a. ϟ p.
14	31.9	26.2	75	NW	2		Ω² a. ⌒° ϟ p.
15	32.2	25.1	75	NW	1		Ω² a. ϟ p.
16	32	25.1	75	W	1		⛈° d p.
17	31.7	25	78	SSW	1		Ω² a. ⊤ ° ϟ p.
18	31.2	25.4	82	W	2	18.5	↙ ● ⛈ p.
19	30.8	25.1	82	S	1	2.5	⊤ ● ϟ p.
20	31.9	25.4	77	S	4	1	↙ a. ⊤ ● ϟ p.
21	31	24.9	70	S	2	5.1	↙ a. ϟ ● ⊤ p.
22	30.5	25.2	70	S	1	42.2	●² ⛈ p.
23	30.5	24.8	76	W	1	2.8	● ⛈° p.
24	30.7	25.5	75	SW	3	4.3	↙ ● p.
25	27.4	25	86	S	3	21.3	● a. p. ↙° p.
26	27.1	24.5	86	S	4	26.7	↙ ●° a. p.
27	28.5	25.5	83	S	7	11.2	↙ ●° a. p.
28	30.5	25.5	75	S	3		↙ a.
29	30.5	24.5	70	S	2		ϟ p.
30	30.5	24.6	74	SW	1	2	d a. ⊤ ● ϟ p.
Mean	30.9	25.3	76.2		1.9		
Total						183.1	

SANTO DOMINGO.
[ϕ=20° 28′ N; λ=121° 59′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.1	24	84	SW	2	6.4	↙ ● a. p. ϟ p.
2	32	21.8	79	SSW	1	2.3	Ω² ≡ a. ●
3	32.3	22.5	77	S	1		Ω² ≡ a.
4	30.2	23	75	SW	2		Ω² a. ≡ ϟ p.
5	31.8	23.3	70	SW	4		Ω² a. ≡ ⌒ ϟ p.
6	29.7	24.5	84	WSW	4	5.7	↙ ● a. p. ϟ p.
7	29.8	21.6	95	SSW	1	58.1	●² ⛈ a. p.
8	29.6	21.5	81	SSE	1	57.9	●² ⛈ p.
9	30.4	21.6	80	SE	3	40.9	↙° ↙ ●° p.
10	30.7	24.3	86	E	3	3.8	↙° a. p. ●
11	30.7	25.3	76	E	2		↙° a. p. ≡ p.
12	31	24.4	77	ESE	3		↙° a. p. ≡ p.
13	31.8	24.9	80	W	2		↙° a. ≡ p.
14	31.2	23.1	81	W	2		Ω° a. ≡ ϟ p.
15	30.6	23.6	74	NW	2		Ω° a. ≡ ϟ p.
16	30.8	21.5	77	WNW	1		Ω² ϟ p.
17	31.9	22	79	W	2		Ω² a.
18	31.6	21.6	75	W	3		Ω² a. ϟ p.
19	31.5	25.2	75	SW	4		≡ ↙° ϟ d p.
20	33.3	25.1	71	WSW	3		≡ ↙° a. ϟ² p.
21	31	23.4	78	E	1	10.6	⊤° d° a. ●
22	31.2	22.4	73	ESE	2	20.8	↙° p. ●
23	32	22.7	73	NNE	2	1.4	⌒ d° ↙° a. ⩛ p.
24	28	23.6	94	NE	2	80	●² ⊤ a. p. ϟ² p.
25	27.8	22.6	84	SW	4	76.7	●² a. ↙ p.
26	27	22.4	96	W	1	144	●² a. p.
27	31.3	22.2	81	S	2	72.4	ϟ² ●² ⊤° p.
28	31.3	24	81	SE	3	21.3	≡° a. p. ● ϟ ⊤° p.
29	31.8	23.5	76	S	3	17	● a. ↙ ϟ p.
30	30.8	23.3	77	WSW	2		Ω² a. ≡ p.
Mean	30.8	23.2	79.6		2.3		
Total						619.3	

NOTAS GENERALES DEL TIEMPO.

Presión y temperatura.—La presión atmosférica media de este mes ha sido en todo el Archipiélago bastante inferior á la de Junio, 1906, y á la normal deducida de varios años de observación. Así, la media de Manila, p. ej., es inferior á la normal en 0.93 mm. y á la media de Junio del año pasado en 1.26 mm. Este resultado es debido principalmente al período de baja presión notablemente largo de la última década del mes de que hablaremos más abajo. Las mínimas presiones fueron observadas los días 23, 24 y 25. La mínima absoluta de todo el mes en Manila ha sido 751.65 mm. registrada la tarde del día 24.

Hablando en general, la temperatura media resulta algo mayor que la de Junio, 1906, en las estaciones de la región central y meridional de Filipinas y algo menor en las de la región septentrional. La media de Manila se diferencia, tanto de la normal, como de la media del año pasado, que fué idéntica á aquélla, en sólo-0.1° C. Según puede verse en el cuadro de observaciones de Manila, los días de más calor en la Capital fueron el 2 y el 3; las máximas absolutas de ambos días fueron 36.5° C. y las medias diarias 29.9 C. y 30.2° C. respectivamente. La mínima absoluta de todo el mes ha sido para Manila 22.7° C. y fué registrada los días 10, 22 y 29.

Precipitación acuosa.—Aunque ha cesado ya la sequía de los meses anteriores y las lluvias han sido este mes bastante regulares, con todo no se pueden llamar aún abundantes. El total de agua recogida en Manila, p. ej., se diferencia de la normal de Junio en—100.1 mm. Sin embargo, en alguna que otra estación se dice que las lluvias fueron algo excesivas, sobre todo en algunos días determinados, como fué en las Islas Batanes los días 24, 25 y 26.

DEPRESIONES Y TIFONES.

Dos depresiones pueden distinguirse en el mapa del tiempo de la madrugada del día 1.° de este mes, las cuales, sin embargo, apenas ejercieron influencia en Filipinas, ni siquiera en Santo Domingo (Islas Batanes), estación la más septentrional del Archipiélago. La una se hallaba hacia el N de Formosa y la otra al SE de la misma Isla. Formada la primera la noche del 30 de Mayo en la parte norte del Mar de China, al SW de Formosa, se movió en dirección al NE desapareciendo el 1.° de Junio en el Mar del Este, según parece deducirse de los mapas diarios del tiempo del Observatorio de Tokio. Nuestro Observatorio anunció la existencia probable de esta depresión en la nota ordinaria del tiempo del 31 de Mayo en estos términos:

Existe probablemente una depresión lejana en la parte N. del Mar de China.

La otra depresión se formó probablemente al E del Canal de Bashi y SE de Formosa la noche del 31 de Mayo al 1.° de Junio; se movió hacia el NE á través del grupo de Meiacosima y por el W de las Islas Liukiu, hasta que la tarde del 2 penetró en el Pacífico después de haber cruzado cerca de Oshima; una vez en el Pacífico se dirigió al E viniendo á pasar por el N de las Islas Bonin la noche del día 3.

Prescindiendo de algunas otras depresiones, que corrieron por altos paralelos, durante la 1ª y 2ª década del mes, y que fueron de muy poca ó ninguna importancia para Filipinas, fijaremos ahora nuestra atención en el período de verdadera perturbación atmosférica de los días 22–27.

Este período, notable por su duración, nos ofrece un ejemplo de esas complicaciones atmosféricas que suelen presentarse con bastante frecuencia durante la época de tifones y que sirven admirablemente para probar la paciencia de los que están encargados de anunciar los tifones precisando en cuanto sea posible su posición y dirección. En casos semejantes, aquél será naturalmente más afortunado y exacto en sus anuncios ó pronósticos que cuente con más número de observaciones reunidas de estaciones situadas á ambos lados de los diferentes tifones ó depresiones que se suponen existir simultáneamente á no mucha distancia uno de otro, si ya no es que forman juntos como un solo sistema de perturbación atmosférica.

Se echará de ver cuán difícil era formarse un juicio exacto del estado anormal de la presión á través del Mar de China y del Pacífico en los citados días 22–27, si comparamos entre sí las notas del tiempo dadas en dichos días por los Observatorios centrales de Tokio y Zikawei, Hongkong y Manila. Damos á continuación la parte de dichas notas que hacen á nuestro propósito por referirse á la posición y dirección de los varios centros ciclónicos que en aquellos días se observaron en los mares del Extremo Oriente.

TOKIO.

24. Ha aparecido un nuevo centro de perturbación atmosférica hacia el SW de las islas Yaeyama.

25. Ha aparecido una nueva depresión cerca de Yaeyama y es de esperar que se mueva hacia el NE.

26. El tifón se ha movido hacia el NE y se halla actualmente al SE de Okinawa.

27. El tifón se halla al presente al SE de Miyazaki y continúa moviéndose hacia el NE. Parece existir otro tifón que sigue la misma trayectoria que el anterior.

28. El tifón, que se hallaba ayer lejos de nuestras costas meridionales, se movió hacia el NE., cruzó el Japón en los alrededores del Lago Biwa la noche pasada, y se halla ahora al N de la isla Sado. El tifón ha perdido su intensidad y se está rellenando rápidamente. El tifón del S de Formosa ha subido por el canal de Formosa, y se encuentra actualmente al NW de Taihoku, moviéndose aparentemente hacia el NE.

ZIKAWEI.

23. Una faja de bajas presiones se extiende á lo largo del paralelo 20° N con un centro en formación al S de Formosa.

24. Parece formarse un tifón dentro del área de baja presión al SE de Formosa, moviéndose lentamente hacia aquella isla.

25. El centro del tifón se hallaba ayer tarde al E de Formosa.

26. El tifón parece haberse dividido en dos centros, uno de los cuales se ha dirigido hacia el NE, al S de Liukiu, al paso que el otro avanzó al W dirigiéndose á Pratas.

27. El centro que se hallaba al S de Liukiu se ha dirigido hacia el S de Japón, mientras la depresión dilatada del SW de Formosa continúa moviéndose al W á través de la parte norte del Mar de China.

28. La depresión del canal de Formosa recurvó al NE y avanzó hacia el S del Mar del Este. Se experimentaron en Meiacosima vientos galenos de la parte del S.

HONGKONG.

21. La presión atmosférica está relativamente baja en un área prolongada sobre la costa meridional de China.

22. El área prolongada de baja presión se halla ahora lejos, al S de la costa de China.

23. Parece desarrollarse un centro ciclónico, probablemente hacia el ENE de Paracels, en el área de baja presión que se halla en la parte septentrional del Mar de China.

24. El área exentedida de baja presión todavía se encuentra en la parte septentrional del Mar de China, probablemente en los alrededores del paralelo 19°, Lat. N. Es probable que se esté formando una depresión dentro de dicha área en los alrededores del canal de Balintang.

25. La depresión, que está probablemente desarrollándose, parece hallarse al SE de Formosa y moverse lentamente hacia el NW.

MANILA.

21. Reina mal tiempo á lo largo del canal de Formosa, donde la presión atmosférica se conserva relativamente baja.

22. Existe esta mañana una depresión en la parte N del Mar de China, al SW del Canal de Formosa, la cual parece estar desarrollándose al presente.

23. La depresión parece hallarse casi estacionaria en la parte norte del Mar de China, cubriendo una grande extensión entre el S de China y Luzón.

5.50 p. m.: Además de la depresión casi estacionaria en el Mar de China, existen señales de otra al E de Luzón.

24. La depresión del Mar de China aparece aún casi estacionaria. Hay aún indicios de otra depresión al E de Luzón moviéndose probablemente hacia el N.

5 p. m.: La depresión al E del norte de Luzón es un verdadero tifón y parece moverse, al presente, al WNW.

25. La depresión en el Mar de China parece dirigirse hacia el N. El tifón del Pacífico parece inclinar su trayectoria hacia el N, por lo que ha cesado, al presente, el peligro para el N de Luzón.

26. La depresión parece moverse con lentitud hacia el N, al SE de Meiacosima.

27. La depresión que se mueve hacia el NNE pasó por el E de Liukiu la noche pasada y se halla esta mañana al SE de Kiusiu. El área de baja presión todavía persiste en la parte septentrional del Mar de China, probablemente en los alrededores del paralelo 19° Lat. N. Es posible que se haya formado ó esté formándose dentro de ella un centro ciclónico al SE de Hongkong.

28. La depresión del Mar de China, que parece ser dilatada, atravesó anoche el canal de Formosa, y se halla esta mañana algo lejos de la costa en los alrededores de Foochow. La otra depresión está moviéndose hacia el NE, al SE de Japón.

7 p. m.: El tifón se halla actualmente al E de los canales Bashi y Balintang recurvando probablemente.

26. El baguio del Pacífico está recurvando desde ayer al E de los canales Bashi y Balintang y se dirigirá probablemente hacia el NE. La otra depresión en el Mar de China, al NW de Manila, continúa avanzando muy lentamente hacia el N.

27. El baguio del Pacífico se ha dirigido hacia el NE y, según se echa de ver en el mapa del tiempo de esta mañana, se halla próximo á la región meridional del Japón. La otra depresión del Mar de China continúa avanzando muy lentamente hacia el N ó tiende á rellenarse.

El Observatorio de Tokio, después de haber resumido el día dos de Julio la trayectoria del tifón del Pacífico que atravesó el Japón el día 27, dice lo siguiente los días 3 y 4, á la luz, suponemos, de datos recibidos posteriormente á la publicación de los mapas diarios del tiempo de 27–29 de Junio:

Tifón (27–28) procedente de los mares al Sur de Formosa. Apareció en los mares al Sur de Formosa, el día 27; movióse al NW y cruzó el canal de Formoza el 28. Fuerte tempestad ocurrió en el Sur de Formosa, que causó no pequeños perjuicios en varias prefecturas.

Depresión (28–29) procedente del canal de Formosa. Subió del Sur del canal de Formosa el 28, se movió al NE, y llegó el 29 á la parte occidental de Shikoku, donde se deshizo.

Depresión del Mar de China.—Veamos ante todo cómo, según anunció este Observatorio y el Observatorio de Hongkong, existía ya desde el día 23 una depresión en el Mar de China. Los siguientes datos, que nos remitieron los capitanes de los vapores *Loonsang, Kaiphong* y *Zafiro,* sirven admirablemente para confirmar la existencia de un centro de perturbación atmosférica en la parte norte del Mar de China, probablemente entre los paralelos 18° y 20°. Los vientos del 2° cuadrante observados á bordo de estos barcos parecen dejar fuera de toda duda la verdad de esta suposición.

Sentimos no tener suficiente número de observaciones hechas en la grande extensión del Mar de China que separa las Filipinas del Continente Asiático para poder precisar más la posición del centro de la depresión que nos ocupa y la trayectoria por ella seguida hasta internarse en el canal de Formosa. Sin embargo, las observaciones hechas á lo largo de la costa occidental de Luzón en las estaciones de Vigan, S. Fernando, Dagupan, Bolinao, Olongapó y Manila, durante todo el período 22–27, parecen probar con bastante claridad que aun después del 24 y 25 permaneció la tal depresión en la parte norte del Mar de China, como enteramente distinta del otro tifón simultáneo del Pacífico de que hablaremos luego. Pueden verse dichas observaciones en la tabla que acompaña el texto inglés.

Una sencilla ojeada á los vientos observados en todas estas estaciones bastará para persuadir á cualquiera, medianamente versado en Meteorología, que la depresión que existía en el Mar de China el 23 y 24, permaneció en el mismo mar hasta el día 27 inclusive, sin confundirse con la otra depresión ó tifón que por aquellos mismos días corrió sucesivamente por el E de los canales Balingtan y Bashi y S y E de las Islas Liukiu. Sólo unos pocos vientos de los muchos que damos en dicha tabla obedecían al tifón del Pacífico, ó podían tal vez considerarse como resultante de las direcciones debidas á ambos centros ciclónicos.

Llamamos aquí la atención sobre la fuerza extraordinaria que adquirieron los vientos del SSW en Vigan, el día 27 y parte del 26, cuando ya subían los barómetros, y la depresión, después de haber permanecido tantos días casi estacionaria y con muy poco movimiento de traslación, parecía moverse decididamente hacia el canal de Formosa. El observador de Vigan calificó algunas rachas, de violentas y aun huracanadas. Lo mismo sucedió en el Sur de Formosa: solo que allí el barómetro más bien bajaba, porque el centro del tifón se acercaba á la menor distancia de Formosa; y por lo tanto los vientos debieron de ser más fuertes aún que en Vigan.

No sabemos si el Observatorio de Tokio tuvo más fundamento que esta fuerza extraordinaria de los vientos para suponer, según queda arriba indicado, que, además de la depresión ó tifón que atravesó el canal de Formosa en dirección al NE la noche del 27 al 28, otro tifón cruzó el mismo canal casi al mismo tiempo de SE á NW después de haber pasado bastante cerca del extremo sur de Formosa la tarde del 27. (Véase la trayectoria de estos dos centros ciclónicos en el "Journal of the Meteorological Society of Japan, July, 1907").

Nosotros tenemos este segundo tifón como muy dudoso, mayormente que ni el Observatorio de Zikawei, ni el de Hongkong hicieron mención alguna de él en sus notas del tiempo respectivas. Además, comparando entre sí las observaciones hechas en Breaker Point (116° 30′ E, 22° 56′ N), Chapel Island (118° 13′ E, 24° 10′ N) y Middle Dog (119° 59′ E, 25° 58′ N), hallamos que la mínima barométrica se observó en la primera, la tarde del 27, en la segunda, la noche del 27 al 28, y en la tercera la mañana del 28, indicando perfectamente el avance hacia el NE del centro ciclónico del Mar de China, desde la entrada del canal de Formosa al E de Breaker Point hasta el Mar del Este, al E de Middle Dog.

Creemos, pues, que no hubo más que una depresión, la cual el 26 y 27 parecía ser un verdadero tifón bien desarrollado, perdiendo algo de su intensidad al atravesar el canal de Formosa en dirección al NE. La madrugada del 28 se hallaba el centro de la depresión al W de la extremidad norte de Formosa: del 28 al 29 atravesó el Mar del Este y la Isla Kiusiu, viniendo á deshacerse la tarde del 29 en la parte oeste de la Isla Shikoku.

El Tifón del Pacífico.—Á juzgar por las observaciones de Yap (Carolinas Occidentales) y Guam (Islas Marianas), pertenece este tifón á la clase de los que se forman no muy lejos al E de Filipinas, sin ejercer apenas influencia ni en Carolinas, ni en Marianas. De ahí que no se le pudiese predecir con tanta anticipación, ni seguirle, al menos en sus principios, con tanta seguridad como se suele con los que atraviesan alguno de aquellos dos Archipiélagos ó tienen su origen cerca de ellos.

Para probar la existencia de este tifón nos serviremos de las observaciones verificadas en algunas de las estaciones de Filipinas establecidas al este del meridiano 121°, las cuales pueden verse en el texto inglés.

Sobre ellas bastará observar: a) que los vientos observados en el NE de Mindanao y, en general, en el grupo de Islas Visayas, obedecían tan perfectamente á un centro ciclónico situado en el Pacífico hacia el E de Luzón, que á no haber contado con observaciones de otros puntos, hubiera sido imposible ni siquiera sospechar la existencia del otro centro del Mar de China; b) que la mínima tuvo lugar en el SE del Archipiélago, como en Surigao, Calbáyog, etc., el día 23, en el SE de Luzón el 24, y en el NE de Luzón y en Santo Domingo, el 25; c) que algunos vientos de Aparri no obedecían libremente al tifón del Pacífico; con todo, los del día 24 parecían estar bien entablados indicando el paso del centro ciclónico por el E de la estación; d) en Santo Domingo soplaron vientos del NE y NNE el 24 y del SW el 25, haciendo notar el observador en sus observaciones particulares que durante la noche del 24 al 25 fué cuando se observó que el viento rolaba del 1° al 4° cuadrante y al W.

De lo dicho parece deducirse que este tifón, formado en el Pacífico al E de Luzón, el día 22, se movió en un principio hacia el NW, pasó el 24 por el E de Aparri, la noche del 24 al 25 por el E de Santo Domingo, y recurvó el 25 al E del canal de Bashi para dirigirse luego al Japón, según veremos luego.

En el texto inglés damos las preciosas observaciones que debemos á la amabilidad del Capitán del vapor *Ban-Yek,* Sr. F. Fábregas, que se hallaba por aquellos días cerca de la costa SE de Luzón

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y sintió bastante la fuerza del temporal los días 24, 25 y 26. Nótese que los vientos huracanados de la tarde del 26, cuando el barco se hallaba de vuelta entre Luzón y las Islas Visayas, eran más bien debidos al tifón del Mar de China.

El curso ulterior del tifón desde que recurvó al E del canal de Bashi hasta que llegó al Mar del Japón se puede seguir fácilmente, teniendo á la vista las observaciones de las Islas Liukiu y del Japón y los mapas del tiempo diarios del Extremo Oriente de los días 26, 27 y 28. Resumiendo, pues, diremos brevemente que el centro de este tifón avanzó el 26 por el S y E de las Islas Liukiu moviéndose primero al ENE y al NE y NNE después, hasta que penetró en la Isla Shikoku la tarde del 27. Siguió luego su curso á través de la Isla Nippon inclinándose de nuevo al NE, cruzó parte del Mar del Japón cerca de la costa occidental de dicha Isla, y el 28 por la tarde desapareció en los alrededores del distrito de Tsugaru (extremidad norte de la Isla Nippon).

En el mapa del tiempo de este Observatorio de 6 a. m. del 28 situamos el centro del tifón en el Mar del Japón, al NW de Nippon, á pesar de que los reports telegráficos que recibimos de Japón nos dieron para Tokio vientos frescos del NW, lo cual suponía mas bien el tifón al SE de aquella Isla. Nosotros consideramos tal viento como *dudoso*, y así prescindimos por completo de él al trazar el mapa del tiempo de aquel día. Sin embargo, como no nos constaba con certeza que el viento recibido de Tokio estaba equivocado, al redactar la nota del tiempo correspondiente, preferimos no hacer más mención del tifón que habíamos dejado el día anterior cerca de las costas meridionales del Japón. Al recibir más tarde los mapas del tiempo de Japón, vimos en efecto que el viento en Tokio á 6 a. m. del 28 era SE en vez de NW, y por consiguiente habíamos acertado en prescindir de él al trazar nuestro mapa del tiempo.

SEISMOLOGICAL BULLETIN FOR JUNE, 1907.

By Rev. Miguel Saderra Masó, S. J.
Assistant Director of the Weather Bureau.

EARTHQUAKES FELT IN THE PHILIPPINES.[1]

3, 22^h 30^m. **Zamboanga** (W of Mindanao). Earthquake of intensity II; duration, 3^s.

5, 1^h 8^m 23^s.* **Iloilo** (E of Panay). Oscillatory quake; direction ENE–WSW; intensity II; duration 7^s.

5, 2^h 23^m. **Borongan** (E of Samar). Earthquake of intensity III; duration 4^s.

5, 23^h 21^m. **Aparri** (NE of Luzon). Oscillatory quake; direction W–E; intensity II; duration 4^s.

7, 8^h 38^m 39^s. **Manila.** Local earthquake of intensity II. Within an interval of 30^s two well-distinguishable shocks, having a total duration of 10 seconds, were felt. The principal oscillations registered by the seismographs had a SSW–NNE direction. The vertical component had a large amplitude, indicating an origin very close to the city. It is not known whether the shocks were felt in the neighboring provinces.

9, 18^h 30^m. **Zamboanga** (W of Mindanao). Earthquake of intensity II and short duration.

11, 11^h 12^m 48^s.* **Aparri** (NE of Luzon). Oscillatory earthquake; direction NW-SW; intensity II; duration 19^s. This disturbance was registered by the microseismographs of Manila and Zikawei; its center lay probably in the direction of the Babuyanes Islands.

13, 12^h 19^m 43^s.* **Mindanao.** The reports received from Butuan, Caraga, and Balingasag lead us to believe that the center of this earthquake is to be sought within the Island of Mindanao, in the region of the Agusan River. It is very probable that within the epicentral region it was of more than ordinary intensity, since at Butuan—distant about 100 kilometers from the supposed center—the shocks were of intensity III, and at the other two stations, whose distances are far greater, of intensity II.

13, 16^h 34^m. **San José de Buenavista** (W of Panay). Undulatory earthquake; direction E–W; intensity II; duration 4^s.

13, 23^h 56^m. **Caraga** (E of Mindanao). Undulatory quake of intensity II and short duration.

14, 11^h 29^m. **Maasin** (S of Leyte). Earthquake of intensity I.

15, 16^h 14^m 33^s.* **Southern Mindanao.** Earthquake of intensity IV, and accompanied by subterranean rumblings at Cotabato; but only of force II at Zamboanga. The fact that this disturbance has not been felt at any other station in Mindanao seems to indicate that its origin lay underneath the sea, south of Illana Bay, where a very active center is situated.

22, 14^h 30^m. **Davao** (S of Mindanao). Earthquake of intensity I.

[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

23, 2^h 10^m. **Davao** (S of Mindanao). Earthquake; intensity I; duration 9^s.

25, 7^h 29^m. **Legaspi** (SE of Luzon). Undulatory earthquake; direction NW–SE; intensity II; duration short.

26, 1^h 57^m 55^s.* **Cotabato** (S of Mindanao.) Earthquake of intensity III; duration 15^s. The records of this earthquake as traced by the seismographs of the Central Observatory indicate that its center was at a greater distance than that of the shock experienced on June 14. Doubtless it must be sought beyond the southern limits of the Archipelago, in the direction of the Celebes Sea. The resulting agitations of the Vicentini and the horizontal-pendulum seismographs lasted an hour and a half, the amplitude of the movements showing that the earthquake had great intensity in the neighborhood of the center. The curves, moreover, clearly show a second, less intense disturbance at 2^h 10^m. At Batavia (Java) the seismographs began to register the "Celebes earthquake" two minutes later than those at Manila, and the microseismic perturbation lasted 1^h 40^m. Hence the origin must have been closer to Manila than to Batavia.

28, 0^h 28^m. **Cotabato** (S of Mindanao). Earthquake of intensity II and short duration.

RECORDS OF THE MICROSEISMOGRAPHS.

[Time of the one hundred and twentieth meridian east of Greenwich. Midnight = 0^h.]

No.	Date.	Component.	Beginning.			Maximum range of motion.			End.	Instrument.	Remarks.
			First preliminary tremors.	Second preliminary tremors.	Principal portion.	Hour.	Amplitude (2 *a*).	Period.			
			h. m. s.	*h. m. s.*	*h. m. s.*	*h. m. s.*	*mm.*	*s.*	*h. m. s.*		
117	2	WSW-ENE	6 25 19	----------	6 25 40	6 26 03	0.08	6.4	6 34 00	H. P.	
		NNW-SSE	6 25 20	----------	6 25 40	6 25 51	.11	6.4	6 34 00	H. P.	
118	2	WSW-ENE	7 32 44	----------	7 33 28	7 33 44	.20	7.2	7 41 00	H. P.	
		NNW-SSE	7 32 44	----------	7 33 28	7 33 51	.21	6	7 41 00	H. P.	
119	4	WSW-ENE	----------	----------	17 31 51	----------	------	------	17 33 00	V. M.	
120	5	WSW-ENE	1 08 23	----------	1 09 21	1 09 40	.03	2.4	1 15 00	V. M.	
		NNW-SSE	1 08 23	----------	1 09 21	1 09 38	.02	2.2	1 14 00	V. M.	
121	7	WSW-ENE	8 38 17	----------	8 38 30	8 38 49	1.79	2	8 47 00	V. M.	Vertical component; amplitude, 1.54 mm.
		WSW-ENE	8 38 26	----------	8 38 40	8 38 58	.44	6	8 51 00	H. P.	
		NNW-SSE	8 38 17	----------	8 38 34	----------	------	------	8 47 00	V. M.	
		NNW-SSE	8 38 26	----------	8 38 41	8 38 42	.62	4.6	8 49 00	H. P.	
122	9	WSW-ENE	23 04 41	----------	23 05 19	23 05 27	.12	2.2	23 10 00	V. M.	Vertical component; amplitude, 0.07 mm.
123	10	WSW-ENE	2 57 56	----------	2 58 33	2 58 45	.11	2.4	3 03 00	V. M.	Vertical component; amplitude, 0.06 mm.
124	10	WSW-ENE	4 00 04	----------	4 00 32	4 00 38	.06	2.6	4 05 00	V. M.	
		WSW-ENE	4 00 24	----------	----------	----------	------	------	4 06 00	H. P.	
125	11	WSW-ENE	11 12 48	----------	11 13 37	11 15 25	.56	2.8	11 40 00	V. M.	Vertical component; amplitude, 0.24 mm. Earthquake at Aparri (NE of Luzon).
		WSW-ENE	11 12 56	11 13 55	11 14 49	11 15 12	1.04	6.4	11 48 00	H. P.	
		NNW-SSE	11 12 47	----------	11 13 47	11 14 05	.34	2.8	11 33 00	V. M.	
		NNW-SSE	11 12 56	11 13 59	11 14 59	11 16 38	1.49	7.5	11 36 00	H. P.	
126	13	WSW-ENE	----------	----------	12 09 43	----------	------	------	12 25 00	V. M.	Earthquake in eastern and central Mindanao.
127	13	WSW-ENE	17 38 04	----------		----------	------	------	18 10 00	V. M.	The record is very obscure.
128	15	WSW-ENE	----------	----------	14 35 32	----------	------	------	14 37 00	V. M.	
129	15	WSW-ENE	16 14 33	----------	----------	----------	------	------	16 32 00	V. M.	Earthquake, intensity IV, in south Mindanao.
		WSW-ENE	16 14 38	----------	----------	----------	------	------	16 35 00	H. P.	
130	15	NNW-SSE	18 20 56	----------	18 21 16	18 21 28	.05	2.8	18 24 00	V. M.	
131	22	WSW-ENE	23 14 55	----------	23 15 25	23 15 27	.05	2.4	23 18 00	V. M.	
132	24	WSW-ENE	11 39 14	----------	11 41 57	11 43 28	.28	2.4	12 07 00	V. M.	Vertical component; amplitude, 0.65 mm.
		WSW-ENE	11 39 18	----------	11 42 01	11 44 20	.47	6.6	12 09 00	H. P.	
		NNW-SSE	11 39 13	----------	11 41 59	11 43 37	.34	2.4	12 08 00	V. M.	
		NNW-SSE	11 39 18	----------	11 41 56	11 43 45	.49	6.2	12 08 00	H. P.	
133	26	WSW-ENE	1 57 55	2 03 41	2 06 22	2 07 06	.10	4	3 25 00	V. M.	
		WSW-ENE	1 57 56	----------	----------	----------	------	------	3 28 00	H. P.	
		NNW-SSE	1 57 56	2 03 30	2 06 02	2 06 43	.09	4.6	3 15 00	V. M.	

Instrumental constants.—Vicentini microseismograph (V. M.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record: NNW–SSE component, 50 times; WSW–ENE component, 50 times.

Horizontal Pendulums (H. P.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation, NNW–SSE pendulum, T=7 seconds; WSW–ENE pendulum, T=6.4 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

Foundation and location.—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above the sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above the sea level.

Geological structure.—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters, which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

3, 22^h 30^m. **Zamboanga** (W de Mindanao.) Temblor de tierra; intensidad II; duración 3^s.

5, 1^h 8^m 23^s.* **Iloílo** (E de Panay). Temblor oscilatorio; dirección ENE–WSW; intensidad II; duración 7^s.

5, 2^h 23^m. **Borongan** (E de Sámar). Temblor de tierra; intensidad III; duración 4^s.

5, 23^h 21^m. **Aparri** (NE de Luzón). Temblor oscilatorio; dirección W–E; intensidad II; duración 4^s.

7, 8^h 38^m 39^s. **Manila.** Temblor local; intensidad II. En el intervalo de 30^s se percibieron dos choques bien distintos con duración total de 10^s. Las principales oscilaciones registradas por los seismógrafos fueron en la dirección SSW–NNE. La componente vertical tuvo grande amplitud, indicando un origen muy cercano; no se sabe fuese perceptible en las provincias vecinas.

9, 18^h 30^m. **Zamboanga** (W de Mindanao). Temblor de tierra; intensidad II; duración corta.

11, 11^h 12^m 48^s.* **Aparri** (NE de Luzón). Temblor de tierra; dirección NW–SE; intensidad II; duración 19^s. Este temblor fué registrado por los microseismógrafos de Manila y de Zikawei; probablemente el origen se hallaba hacia las Islas Babuyanes.

13, 12^h 19^m 43^s.* **Mindanao.** Las notas recibidas de Butuan, Caraga y Balingasag inducen á colocar el origen de este terremoto dentro de la Isla de Mindanao en la región del Río Agusan. Es muy probable que en el epicentro tuviese más que regular intensidad; en la estación de Butuan, que dista unos 100 kilómetros, se distinguieron oscilaciones de intensidad III y en las otras dos, mucho más lejanas, de intensidad II.

13, 16^h 34^m. **San José de Buenavista** (W de Panay). Temblor ondulatorio; dirección E–W; intensidad II; duración 4^s.

13, 23^h 56^m. **Caraga** (E de Mindanao). Temblor ondulatorio; intensidad II; duración corta.

14, 11^h 29^m. **Maasin** (S de Leyte). Temblor de tierra; intensidad I.

15, 16^h 14^m 33^s.* **S de Mindanao.** Temblor de tierra de intensidad IV, y acompañado de ruido subterráneo, en Cotabato; de intensidad II en Zamboanga. El no haber sido perceptible en ninguna otra estación de Mindanao induce á colocar el origen de este temblor en el mar del Sur de la Bahía Illana donde existe un centro muy activo.

22, 14^h 30^m. **Dávao** (S de Mindanao). Temblor de tierra; intensidad I.

23, 2^h 10^m. **Dávao** (S de Mindanao). Temblor de tierra; intensidad I; duración 9^s.

25, 7^h 29^m. **Legaspi** (SE de Luzón). Temblor ondulatorio; dirección NW–SE; intensidad II; duración corta.

26, 1^h 57^m 55^s.* **Cotabato** (S de Mindanao). Temblor de tierra; intensidad III; duración 15^s. Este terremoto fué registrado por los seismógrafos del Observatorio como de origen más lejano que el día 14; sin duda se hallaba fuera de los límites meridionales del Archipiélago hacia el mar de Célebes. La perturbación producida en el microseismógrafo Vicentini y en otro de péndulos horizontales duró una hora y media; la amplitud de los movimientos indica que el terremoto en el origen tuvo mucha intensidad: además en los registros se distingue perfectamente á 2^h 10^m un segundo choque ó sacudida menos intensa que las primeras. En Batavia (Java) se comenzó á registrar este terremoto de Célebes dos minutos después que en Manila, y la perturbación microséismica duró 1^h 40^m; el origen por consiguiente se hallaba mucho más cerca de Manila que de Batavia.

28, 0^h 28^m. **Cotabato** (S de Mindanao). Temblor de tierra; intensidad II; duración corta.

REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

[1] La intensidad de los terremotos se indica conforme á la conocida escala de Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120 E de Greenwich.

CROP BULLETIN FOR JUNE, 1907.

By Rev. George M. Zwack, S. J., *Secretary of the Weather Bureau.*

GENERAL NOTES.

The crops harvested during June have been—in general—above the average. Within a territory showing the great variety of climatological conditions prevailing simultaneously in its various parts, as we find it in the Philippine Archipelago, no one expects equality of results. Thus the northwest of Mindanao, the east coast of Samar, Biliran Island, and the north of Luzon report excellent returns, while *fair* to *good* are the ordinary designations used in describing the crops. But the southeast of Mindanao, the southwest of Leyte, and the Province of Albay were less fortunate. Tuburan tells of an extraordinary yield of tobacco (276,000 kilos), while Maasin collected only a small amount.

As to the state of the agricultural products which at the close of the month were still growing, it is almost unanimously described as highly promising. The one dissenting voice comes from Laguna Province, where the plants had not yet fully recovered from the effects of the preceding heat and drought. The flourishing condition of the fields is due to the rains, which—though not very copious—were, as a rule, sufficient. No cases of drought have been reported as existing at the end of the month. At Cotabato the rainfall was slightly excessive, and at San Vicente and San Jose, both on Batan Island, the heavy rains of June 24 and 26 have caused landslides, which did considerable harm.

Throughout the greater part of the Archipelago people were occupied chiefly in transplanting irrigation rice or with the preparations for this task. The lack of draft animals continues to handicap agricultural work. Unfortunately there is no prospect of an early return to better conditions, as epizoötia is still prevalent at several points, especially on Luzon. Though the epidemic is not very severe, nevertheless the losses reached 10 to 15 per cent at Aparri. Surra continued near Tacloban, where glanders has likewise done considerable harm. Deaths of hogs and chickens occurred in many places.

Grasshoppers have been reported from Leyte and northern Mindanao; locusts from the districts of Davao and Cotabato in Mindanao, from the Islands of Biliran and Tablas, from Occidental Negros, Tayabas, and Iloilo. In most cases the rice crop has suffered more or less severely from the ravages of these insects. Antique has had a plague of grubs which did some harm.

The prices of the usual commercial products were generally somewhat low; that of resins even so low as to paralyze the industry of gathering them. However, the hemp raised in the district of Davao brought as much as ₱24.50 to ₱25.50 per picul.

SPECIAL NOTES.

DISTRICT I.

Borongan.—The rice harvest has been brought to a close on the whole east coast of Samar. The crop is abundant and has been gathered without any untoward incidents. At present the work of making copra is being resumed with renewed vigor; hence there is well-grounded hope that the amount produced will surpass that of the preceding months, during which the cocoanut groves yielded, it is said, but little fruit, as they were still suffering from the effects of the typhoon of January 10, 1907. But this excuse for the small quantity of copra made must be qualified to some extent. The truth is that the indolence of the people is just as much responsible for the decline in the output as the scarcity of cocoanuts. Hemp is improving in quantity and quality, since people can now devote their labors to its cultivation without any fear or risk. Epizoötia has passed off, after strewing the country with its victims.

Tacloban.—Surra, which, as reported, appeared in this region at the end of May, has killed several horses and mules at Tacloban. At Naval 22 horses and 6 carabaos died during May and June. Said municipality is likewise infested by grasshoppers, which are doing some harm to the growing crops. The yield of hemp and sugar cane is good. Kawayan has harvested large quantities of hemp, cocoanuts, and tobacco. The same is true of Caibiran, which likewise during May had excellent crops of corn, sweet potatoes, and other tubers, in addition to the articles mentioned. Locusts have spread from Isidro as a center, but have done no damage thus far.

Ormoc.—The products harvested during the month of June are hemp, sweet potatoes, gabe, tomatoes, cabbage, pineapples, and others of smaller importance. The sowing of rice has begun. The rains have been a blessing to vegetation. No animal diseases have been reported. The price of hemp continues to be low. During this month large quantities of rice have been imported from Manila and Cebu, which is sold at ₱6.20 per sack.

Tuburan.—The tobacco growers are heartily contented with the abundant crop of this article and the price paid for same. The latter is on the average ₱5 per quintal (46 kilos) between first, second, and third quality, refuse excluded. The amount of leaves gathered is estimated to be at least 6,000 quintals. The crops still growing are corn, sugar cane, hemp, and maguey. They are in a flourishing condition and promise an abundant crop, provided nothing occurs which will thwart expectations. There were no harmful insects, but a disease which is here called *bati*, and attacking hogs and poultry, continued to carry off four or five animals per day.

Cebu.—During the second half of May and the first days of June several copious showers of rain have fallen, which have not only cooled the air but also proved very beneficial to the fields. Hence it became possible to plant many cornfields, whose present state raises expectations of fair returns. Vegetables and fruits of the season—for instance, mangoes, pineapples, ate, prunes, etc.—are plentiful.

Maasin.—The cutting of sugar cane continues, but the fields are so small that the sugar produced will suffice merely for local consumption. Some planters have harvested very small quantities of corn and tobacco. On the other hand, there is considerable abundance of fruit, such as oranges, santol, chicos, bananas, and others; likewise of greens, which are brought to town from the neighboring settlements. About the middle of the month everybody began the sowing of rice, which is now growing vigorously. Tubers are likewise doing well. In the beginning of the month many cases of fever and dengue occurred in this neighborhood.

Surigao.—In the beginning of June corn and tubers such as sweet potatoes, uve, gabe, bagong, etc., have been planted. The hemp and cocoanut plantations continue spreading, since everybody is taking up the cultivation of these plants. Some go so far as to believe that within a few years these products will constitute the only resources of the province. The chicken sickness does not abate and the horses have been attacked by a kind of smallpox, but with one exception all have been cured by means of frequent baths.

Butuan.—This month witnessed a very satisfactory rice crop. What a pity that so many people had nothing to reap, since owing to the lack of draft animals they had not sown any of this cereal. These, however, helped their more fortunate neighbors in the work of harvesting and thus secured a share in the crop, according to custom. It seems that interest in cocoanut trees is reviving, these once forming the riches of this province, before their cultivation was abandoned. The prices of hemp and copra having fallen in this district, some people resorted to the expedient of bringing their products to Bohol in order to sell them there to better advantage. At Nasipit the cacao crop has been a complete failure.

Balingasag.—Some farmers have begun to transplant their rice seedlings, but the majority will do so during the month of July, as in several places there is not yet sufficient water available. The growing corn appears to be vigorous. Ever since June 14 grasshoppers have been infesting these districts, but up to the present they have not done very great harm, thanks to the activity of the people. Wild geese are doing considerable damage to some of the rice seed beds during the nights. The prevailing prices are: Rice, ₱7 per cavan (75 liters); hemp, ₱12 per picul (63.25 kilos); and copra, ₱8 per picul.

Caraga.—The rice harvest is not yet finished, yield generally poor; but tobacco, which is likewise being picked at present, gives a fair crop. The mangoes are almost ripe. Of hemp, slightly more than 236 piculs have been shipped at prices ranging from ₱24.50 to ₱25.50 per picul.

Cotabato.—Cocoanuts and some juani are being gathered; besides, people are occupied in transplanting rice. Though the rains are somewhat excessive, they can not damage either the rice or the sugar cane, which are the crops now growing. But the locusts are causing great harm in these fields and also in those planted in corn, notwithstanding the efforts of the inhabitants at frightening them off to regions which are not under cultivation.

Davao.—The locusts continue to infest this region. The cultivation of hemp is making gigantic strides. The mango trees are laden with fruit. In one of the hamlets belonging to this municipality a few carabaos have died of an unknown ailment which caused death in a few minutes (poison ?).

DISTRICT II.

Capiz.—The fields have recovered to some extent from the effects of the drought, thanks to the rains which fell toward the end of the month. Some farmers have begun plowing, while others maintain that the water is not yet sufficient for this purpose. At Calivo hemp and copra are rising in price and there is great demand for the various textiles produced in that region, such as jusi, piña, birang, etc. It is said that at Tapas *paeol,* which is a low-grade hemp, commands better prices than during preceding years.

San Jose Buenavista.—As an effect of the drought of the preceding months there is at present much complaining among the farming population because of the lack of rice seedlings, they having been killed in the seed beds by the dryness; also of the many grubs which infest this region. The corn standing in the fields was thriving and would have given an abundant crop had not these grubs put in their appearance and harmed it. At Bugson no difficulty was experienced in planting the irrigated fields. Unfortunately the corn crop of said region has been brought below the average by the ravages of locusts. Sibalom and the whole district along the cordillera have been fortunate in the matter of rain and are far ahead of San Jose in the planting of rice.

Iloilo.—Light rains during the first half of the month greatly facilitated the plowing of the rice fields and were of great benefit to the sugar cane and corn, which are doing well. Some farmers have transplanted their rice, while others are still occupied with the seed beds. Nearly everywhere the dearth of work animals is felt severely. At Cabatuan some carabaos have died and at Janiuay other domestic animals and poultry as well. In the latter municipality the amount of tobacco actually harvested reaches only one-half of last year's crop, as the fields planted were of very limited extent. A great part of the rice crop, both on irrigated fields and on high ground, has been destroyed by locusts and their grubs. Mangoes and other fruits are by no means plentiful.

Bacolod.—The work of preparing the rice fields for the transplanting of the seedlings is hindered considerably by the continued sickness among the draft animals. To the east of this town the locusts have deposited their eggs after having devastated almost completely a few rice and corn fields. Sugar cane has suffered only slightly by their inroads. The strong squalls of June 25 have thrown down many banana plants and destroyed most of the fish weirs. A few mangoes are brought to this place from Iloilo Province; they cost 2 to 5 centavos apiece.

Dapitan.—The second crop of corn at present growing is flourishing and, unless something untoward happens, a copious yield may be expected. The crops growing on the caiñgin are in excellent condition. The entire region above Haya is covered with rice fields and hemp plantations. The rains which fell have been beneficial, notwithstanding the storm which passed through this region June 22 to 24.

Isabela, Basilan.—The planting of rice and corn was finished during this month and some 25,000 hemp plants have been set out. The crops of marang and santol are fair; of hemp 20 piculs have been produced, and of copra 19. The rains, although abundant, have done no harm; but the violent winds of June 20 to 22 have damaged somewhat the corn which had been planted during April and May. A few chickens have died of *atay-atay.*

Jolo.—The crops of rice, hemp, sweet potatoes, and fruits have been fair. At present people are occupied in harvesting corn, which appears to give better results than last year, and in preparing for the transplanting of rice. Neither injurious insects nor diseases among the animals have occurred.

DISTRICT III.

Nueva Caceres.—In the rice fields of this municipality preparations are in progress for the transplanting of rice, which is soon to take place. Those who still possess a few carabaos perform this work by means of them; the majority, who have no draft animals left, by means of the hoe. The returns of sweet potatoes, bananas, gabe, eggplant, sugar cane, mangoes, and tubers—all for local consumption only—have been fair. Notwithstanding the scarcity of hemp, its price is only ₱11 to ₱12 per picul and shows a tendency to fall further. Hence the owners rest from the work of cultivating their hillside plantations. On the other hand, the price of rice is rising, Saigon rice being quoted at ₱6.50, native at ₱6.20 per cavan (75 liters).

Legaspi.—The farmers of Legaspi, Albay, and Daraga hold their fields in readiness for the transplanting of rice and only wait for the advent of showers favorable to the task. Fair quantities of hemp, pineapples, cocoanuts, bananas, santol, sweet potatoes, gabe, and squash have been gathered, but sugar cane, oranges, lemons, and prunes are scarce. At Albay 5 carabaos have died of sickness, and at Legaspi a few head of other cattle.

Gubat.—The rice harvest is over throughout Sorsogon Province. Bacon, Gubat, Barcelona, Irocin, and Bulasan have commenced to plant corn, sweet potatoes, and gabe, this being the best time of the year for these plants. The whole attention of the well-to-do people of this province is concentrated upon the cultivation of hemp. In the local market the fiber brings at present ₱2.75 per arroba (11.5 kilos; hence ₱15.12 per picul). The price of Saigon rice is ₱6.50 per picul.

Romblon.—Tobacco picking is finished; yield fair. Rice, sweet potatoes, and other tubers are at present growing in the fields. The lack of sufficient water delayed the preparation of the seed beds for rice until the latter part of the month. On Tablas Island the locusts are very numerous and have caused great damage to the mountain rice, nor has irrigation rice entirely escaped their ravages.

Calbayog.—According to information furnished by various hemp dealers the production of this fiber has been fairly good during June. The price oscillated between ₱23 and ₱25 per picul, current quality. Thanks to the timely rains, most of the farmers could plant rice and sow other seeds. The strong southwest winds and consequent heavy seas which prevailed during some days have been disastrous to the fishermen, since they have destroyed all the fish weirs constructed in the sea. There is sickness among the poultry which carries off many of the birds.

DISTRICT IV.

Santo Domingo, Batanes Islands.—The state of rice and uve is generally good. Some have already dug up a few of the tubers as samples and are highly satisfied with their size and quality. In some uve patches, however, the plant diseases called, respectively, *totong* and *rachi*, have appeared. The former causes a number of black spots to appear on the leaves, as if they had been scorched, while in case of the latter the spots are yellow. If these spots cover too large a part of the leaves, the development of the plant and its tubers is impeded. This affliction appear every year, more or less pronounced according to meteorological conditions, and is said to acquire its greatest extent when the rainfall or the heat is excessive. In the districts of San Vicente and San José landslides occurred on June 24 and 26 in consequence of heavy downpours of rain. The former ruined approximately one-tenth of the uve fields, the second a number of sweet-potato patches.

Aparri.—The occasional thundershowers during the afternoon hours were not sufficient even for preparing the rice fields for sowing. The towns in the interior had a very good crop of corn as to both quantity and quality. Cases of epizoötia have occurred among the cattle and horses, causing a loss of 10 to 15 per cent.

Tuguegarao.—The second crop of corn, growing at present, looks splendidly, thanks to frequent drizzles and one or the other real rain. The prospects for a good harvest are bright, and provided neither floods nor typhoons or other misfortunes come to ruin the fields this hard-stricken province will escape famine. Similarly good news has been received from the other municipalities comprised within this region.

Vigan.—During the month of June were growing in the fields rice, corn, sugar cane, maguey, and sitao. Owing to the rains brought by the typhoon of the 25th all these plants are now in splendid condition and promise a good crop, especially rice and sugar cane; unless, indeed, drought or floods spoil the prospects. At present corn, indigo, maguey, nanca, and bananas are being harvested in satisfactory quantities. Nothing has been heard of any disastrous effects of the aforementioned typhoon; on the contrary, it has been a benefit to the farmers. At Vigan two carabaos have died of rinderpest, and two horses of glanders.

Candon.—The rains have come very timely for all classes of plants, in consequence of which the fields present a fine appearance. Corn, sugar cane, tobacco, maguey, cocoanuts, and other products of smaller importance are being harvested. The crops are good at Candon, but only middling good in the municipality of Santa Lucia. Cocoanuts are being quoted at ₱6 per hundred. At Candon sickness is prevalent among hogs and poultry.

San Fernando, Union.—The chief occupation of the farmers during June has been the cultivation of the seed beds for tobacco. The seedlings of the latter have been slightly damaged by the rains which accompanied the typhoon of the close of the month. The corn crop has been excellent.

Baguio.—People are beginning to harvest their rice, while the corn just commences to produce ears. There are neither locusts nor other injurious insects, nor is there any sickness among the stock.

Bolinao.—Thanks to some rain, the farmers could plant rice, corn, maguey, and various kinds of tubers, all of which are growing well. The municipality of Anda has had an epidemic among the domestic animals, of which some horses, carabaos, and other cattle have died.

Dagupan.—During June rice, corn, pineapples, cacao, guayabas, oranges, lemons, ate, etc., have been harvested, all of which gave fair returns. Neither animal diseases nor insects have caused any losses.

Tarlac.—People have been gathering fair quantities of corn, pineapples, guayabas, santol, Chinese oranges, and other fruit. The ilang-ilang trees planted in 1904 are now beginning to blossom. Most of the farmers are at present preparing the ground for the planting of rice. Between carabaos, hogs, and chickens the loss caused by sickness amounts to about 5 per cent. The violent squalls which accompanied the thunderstorm of June 26 have destroyed five houses of light materials at Alvendia, a village belonging to the municipality of Tarlac; while at San Jose, in the municipality of Paniqui, on the same occasion, lightning struck two persons, killing one and rendering the other deaf.

Arayat.—The rain which fell made it possible to plant sugar cane, corn, gabe, and other tubers, all of which are developing vigorously. At Arayat the rice has been transplanted. The people of Santa Ana have their fields ready for the same task; but on the higher ground work is not advanced so far, since the rainfall is not yet quite sufficient. These high-lying plots are there called *aventureros* (*adventurers!*). At Arayat sickness is reigning among the poultry, at Santa Ana among chickens and hogs, besides at the latter place two carabaos have died of rinderpest.

Porac (Dolores).—The rain enabled people to sow mountain rice, which is doing well. The same is true of sugar cane, corn, and vegetables; but unfortunately many banana plants have been thrown down by the strong squalls of June 26 and 27. Disease is killing nearly all the chickens.

Olongapo.—The rains of this month have come very opportunely for the various crops, especially for the mountain rice and corn. The rice seedlings are ready to be transplanted.

Malolos.—Owing to the rains which fell at intervals during the month, there is considerable animation and activity among the farming population of Malolos. The various kinds of tubers have been planted and the transplanting of rice is in progress. But at San Miguel de Mayumo and Meycauayan the water is still insufficient for rice and corn. Besides, the former township is afflicted by rinderpest, and the latter has likewise lost two carabaos and one horse. In the market of Malolos is to be found an abundance of mangoes and pineapples, which are brought thither from the surrounding places.

Balanga.—The farmers were occupied in preparing the rice fields. The rains fell very opportunely, and the winds of June 25 and 26, though rather strong, have done no harm to the plants.

Silang.—During June mangoes have been gathered in great abundance. Their price is still ₱0.50 per hundred, and immense quantities are being sent to Manila and neighboring towns. Notwithstanding the fact that the roads are miserable, from 50 to 60 carts loaded with the fruit make the journey twice a week. Very little hemp has been stripped, since people were occupied in the rice fields. The ground devoted to the cultivation of sugar cane is very limited in extent, as not enough animals are available for the necessary plowing. The crop of pineapples, lomboy, nanca, and prunes is small.

San Antonio, Laguna.—Throughout this province the irrigated rice is being harvested, yielding a good crop. The sowing of mountain rice is finished. The state of the crops at present growing—chiefly gabe and sweet potatoes—is not quite satisfactory, owing to the heat during the preceding months. For the same reason the output of hemp is likewise below the average. The price of this fiber is ₱15 per picul.

Atimonan.—The work in the seed beds of irrigated rice, which is one of the tasks to be performed during the month of June, is progressing well, thanks to the rains which, though not copious, were very helpful. The products planted during May, such as corn, eggplant, ayap, etc., are thriving and could hardly be in finer condition, were it not for the locusts. The latter are at present devastating the cocoanut groves. The prevailing prices per picul are: Copra, ₱7.50 to ₱8; No. 3 hemp, ₱12; No. 2, ₱14. From Calauag comes the lament that the hope of a rich harvest of cocoanuts has been destroyed by the strong earthquakes of last April. The cocos trees have suffered severely; a great number of them are down and others, which were to have ripe fruit in December, are still falling. The gathering of resins, products in which the province abounds, is completely paralyzed, owing to the very low prices which they command in the Manila market.

Batangas.—The crop of prunes, lomboy, and mangoes has been middling. Owing to the rains during the second half of the month the fields of sugar cane are now in a flourishing state. They made it likewise possible to plant rice. At Lipa and Cuenca hemp stripping is going on as usual.

ESTADO GENERAL DE LAS COSECHAS.

Las cosechas recogidas durante el mes de Junio, han sido, por regla general, más que regulares. Por supuesto que en un país en donde existen á un mismo tiempo condiciones climatológicas tan variadas como las que observamos en las diversas regiones del Archipiélago Filipino, nadie espera uniformidad en los rendimientos agrícolas. Así el noroeste de Mindanao, la costa oriental de Sámar, la Isla de Biliran, y el norte de Luzón han tenido cosechas excelentes, siendo *regular* ó *bueno* el predicado con que generalmente se describe el carácter de los rendimientos. Empero el sudeste de Mindanao, el sudeste de Leyte, y la Provincia de Albay han sido menos favorecidos. Tuburan informa que la cosecha de tabaco ha sido extraordinaria (276,000 kilogr.), mientras Maasin ha recolectado solo una pequeña cantidad.

Por lo que toca al estado de los productos que estaban aún creciendo al fin del mes, se asegura casi unánimemente que da muy buenas esperanzas. La única voz disonante nos ha llegado de la Provincia de La Laguna, donde las plantas todavía no se habían repuesto plenamente de los calores y sequía de los meses pasados. El estado lozano de los campos se debe á las lluvias que, sin llegar á ser abundantes, han sido suficientes, al menos hablando en general. Aunque no han faltado algunas excepciones, con todo no ha habido casos de sequía al fin del mes. En Cotabato las lluvias han sido un tanto excesivas, y en los distritos de San Vicente y San José, Isla de Batán, los aguaceros del 24 y 26 de Junio han causado desprendimientos de terreno con bastantes pérdidas en las sementeras.

En la mayor parte del Archipiélago la ocupación principal de la gente ha consistido en la trasplantación del palay de regadío ó en los preparativos para esta tarea. La falta de animales de labor continúa impidiendo las faenas agrícolas, y no hay esperanza de que mejoren pronto las condiciones, pues la epizotia reina todavía en algunas regiones, sobre todo en la Isla de Luzón. Á pesar de no haber sido la epidemia muy severa, las pérdidas han llegado á ser en Aparri de 10 á 15 por ciento. La zurra continúa en Tacloban y su territorio, donde también el muermo ha causado bastantes desgracias. Muertes de cerdos y aves de corral han ocurrido en muchos lugares.

Saltones han aparecido en Leyte y en el norte de Mindanao, y langostas en los distritos de Dávao y Cotabato, en Negros Occidental, Tayabas é Iloílo. En la mayor parte de los casos el palay ha sufrido más ó menos severamente por la voracidad de estos insectos. Antique ha tenido una plaga de loctones, que han causado algún daño.

Los precios de los productos comerciales más comunes han sido algo bajos en general: el de resinas especialmente lo ha sido tanto, que se ha paralizado el trabajo de recolectarlas. En cambio el abacá del distrito de Dávao se ha pagado á ₱24.50 y hasta ₱25.50 el pico.

NOTICIAS PARTICULARES.

DISTRITO I.

Borongan.—La cosecha del palay ha terminado felizmente en toda esta costa oriental de Sámar. Ha sido abundante y se ha recogido en paz. En la actualidad principió ya la recolección del cóprax, la que promete ser mejor que en los últimos meses. En el pasado dieron los cocoteros poca fruta, debido al baguio del 10 de Enero último: á éste se atribuye generalmente su poco rendimiento; pero puede con verdad decirse que la indolencia de la gente tuvo también parte en la pobreza de este producto. El abacá mejora asimismo en cantidad y calidad, dedicándose la gente á su cultivo sin miedo y sin cuidado alguno. La epizotia desapareció, pero después de haber causado muchas víctimas.

Tacloban.—La zurra registrada en Tacloban á fines de Mayo, ha tomado incremento causando la muerte de varios caballos y mulos. En Naval han muerto durante los meses de Mayo y Junio 22 caballos y 6 carabaos;

en el mismo pueblo, reaparecieron saltones sin dejar de hacer algún perjuicio en los campos sembrados de palay. La cosecha de abacá y caña-dulce es buena. Kawayan disfruta también de buena recolección de abacá, coco y tabaco. Asimismo Caibiran, en el mes de Mayo, tuvo excelente cosecha de abacá, coco, maíz, camote, y otros tubérculos. Hay langostas procedentes de San Isidro, pero aún no han causado daño.

Ormoc.—Los productos de este mes son: abacá, camote, gabe, tomates, repollos, rábanos, pimientos, y piñas. Se ha empezado la siembra de palay. Las lluvias han favorecido á toda clase de plantas. No se ha observado ninguna enfermedad en los ganados. Continúa bajo el precio del abacá. Este mes se han importado de Manila y Cebú grandes cantidades de arroz que se han vendido á ₱6.20 el saco.

Taburan.—Los cosecheros de tabaco están muy contentos tanto por la abundancia como por el precio de este artículo, siendo éste por término medio de ₱5 el quintal, entre 1.ª, 2.ª y 3.ª clase, sin excluir los desechos. Se calcula que la cantidad recogida llegará á lo menos á unos 6,000 quintales. Las cosechas que aún están creciendo son maíz, caña-dulce, abacá y maguey: su estado es bastante bueno y promete buena cosecha si no ocurren contratiempos. No ha habido insectos dañinos, pero la enfermedad que llaman aquí *bati* ó peste de los cerdos y gallinas, continúa haciendo estragos, muriendo diariamente 4 ó 5 animales.

Cebú.—Desde la última quincena de Mayo y primeros de Junio, han empezado á descargar algunos chubascos de importancia, que no sólo han contribuído á refrescar el ambiente, sino también á favorecer al campo. Con esto se han podido sembrar muchas sementeras de maíz, siendo de esperar buen resultado. Hay bastantes verduras y frutas de la presente estación, entre ellas mangas, piñas, ates y ciruelas.

Maasin.—Continúa la cosecha de caña-dulce, pero en tan poca cantidad, que sólo bastará para el consumo local. Algunos hacenderos han recogido muy poco de maíz y tabaco. En cambio, hay bastante abundancia de frutas, como son naranjas, santol, chicos, plátanos etc., y también de verduras procedentes de los pueblos limítrofes. Á mediados de Junio todo el mundo ha empezado á sembrar palay, que por ahora es lozano, así como también los tubérculos. Al principio de este mes hubo en esta región muchos casos de fiebre y trancazo.

Surigao.—Al principio de este mes se han sembrado maíz y tubérculos como camote, uve, gabe, bagong, etc. La plantación de abacá y cocos está progresando, dedicándose á esto todos los labradores. Hay quienes creen que dentro de pocos años estos productos serán los únicos recursos de esta provincia. Continúa la enfermedad de las gallinas, y los caballos han sido atacados de una especie de viruelas; pero, á excepción de uno, todos han sido curados con frecuentes baños.

Butúan.—En este mes se ha recolectado una cosecha muy satisfactoria de palay. Lástima que mucha gente no ha tenido que cosechar por no haber plantado nada, pues no contaban con animales de labor. Con todo ayudando á los demás en el trabajo de cosechar han tenido su parte, según costumbre, en el buen éxito de la cosecha. Parece despertarse de nuevo el interés por los cocos, los cuales fueron la riqueza de esta provincia antes que se abandonara su cultivo. Los precios del abacá y del cóprax han disminuído aquí, por lo cual algunos labradores han conducido su cóprax á la Isla de Bohol para venderlo allí. Nasipit no ha obtenido cosecha alguna de sus plantaciones de cacao.

Balingasag.—Algunos están ya trasplantando el palay, pero la mayoría lo hará el mes entrante, porque todavía no hay bastante agua en algunos lugares. El maíz que está creciendo presenta buen aspecto. Desde el 14 de Junio los saltones siguen revoloteando por este distrito, pero hasta ahora no han causado gran daño, gracias á la actividad de la gente en ahuyentarlos. Los patos de monte hacen bastantes estragos en algunos semilleros de palay, durante la noche. Los precios actuales son: arroz ₱7 el caván; abacá ₱12 el pico; y cóprax ₱8 el pico.

Caraga.—La cosecha de palay no se ha terminado aún del todo, y es generalmente mala, mientras que la de tabaco, que también tiene lugar al presente, es regular. Las mangas están próximamente para madurar. De abacá se han exportado un poco más de 236 picos, oscilando su precio entre ₱24.50 y ₱25.50.

Cotabato.—Se cosechan cocos y un poco de juani. La gente está ocupada además en transplantar el palay. Aunque las lluvias son algo excesivas, no pueden perjudicar ni al palay ni á la caña-dulce que están creciendo. Empero las langostas hacen gran daño á estos sembrados, como también al maíz, á pesar de los esfuerzos de los habitantes para ahuyentarlas á puntos no cultivados.

Dávao.—Las langostas continúan infestando esta región. El beneficio del abacá sigue su curso á pasos de gigante. Las mangas están dando frutas en abundancia. En uno de los barrios de esta municipalidad ha habido muertes de carabaos sin que se pueda precisar el género de enfermedad, pues mueren á los pocos minutos.

DISTRITO II.

Cápiz.—Los campos han refrescado algo con la lluvia que ha caído estos últimos días. Algunos agricultores han empezado ya á arar; pero otros piensan que todavía no son suficientes las aguas. En Calivo el abacá y el cóprax están en alza; y los tejidos, como jusi, piña, birang, y otros, tienen mucha demanda. Se dice que en Tapas el *paeol,* ó sea el abacá de baja calidad, tiene mejor precio que en años anteriores.

San José de Buenavista.—Son muchos los labradores que se quejan, ya de la falta de semillas de palay, debida á la sequía del mes pasado que secó los sembrados de los semilleros, ya de los loctones que abundan en esta comarca. El maíz que actualmente crece en los campos es lozano y hubiera dado buena cosecha si los loctones no lo hubieran perjudicado. En Bugason todos los terrenos de regadío se han sembrado de palay sin dificultad ninguna. La cantidad de maíz aquí recogida no llega á ser regular, por los daños causados por las langostas. En Sibalom y toda la parte contigua á la cordillera la gente favorecida por la lluvia se ha adelantado en sembrar palay á los agricultores de San José.

Iloílo.—Las ligeras lluvias de la primera quincena del mes favorecieron la roturación de los campos para la siembra del palay, y los sembrados de caña-dulce y maíz que están en estado regular. Algunos propietarios han terminado ya la trasplantación de las semillas, mientras otros están todavía ocupados en los semilleros. Generalmente se siente mucho la escasez de animales de labor. En Cabatúan ha habido mortandad de carabaos, y en Janiuay además, de otros animales domésticos y aves de corral. En esta última municipalidad la cosecha de tabaco ha llegado sólo á un 50 por ciento de la del año precedente por haber sido muy reducidas las plantaciones; y la mayor parte de los sembrados de palay tanto en los caiñgin como en los terrenos de regadío ha sido destrozada por langostas y loctones. Mangas y otras frutas no son abundantes.

Bacólod.—Los trabajos de preparación de terrenos para el trasplante del palay tropiezan siempre con las dificultades causadas por la enfermedad que continúa entre los ganados. Hacia el este de esta localidad las langostas han depuesto sus huevos después de haber devorado casi por completo algunas siembras de palay y maíz; la caña-dulce se ha resentido poco de esta plaga. Por efecto de los fuertes chubascos del cuadrante del SW que desfogaron el 25 de Junio se tumbaron muchos plátanos y la mayor parte de los corrales de pesca quedaron destruídos. En pequeña escala vienen mangas de Iloílo, que cuestan de dos á cinco centavos cada uno.

Dapitan.—El maíz de la segunda cosecha está muy lozano, y, si no viene contratiempo, son de esperar buenos rendimientos de este artículo. El camote se presenta también lozano y ya hay quienes empiezan á cosecharlo. Las sementeras en los caiñgin tienen aspecto excelente. Toda la región arriba de Haya está cubierta de sementeras tanto de palay como especialmente de abacá. Las lluvias caídas han sido beneficiosas, á pesar del temporal que se ha sentido en este distrito del 22 al 24 de este mes.

Isabela de Basilan.—En el presente mes se han terminado las siembras de palay y maíz y se han plantado unas 25,000 plantas de abacá. Las cosechas de marang y santol son regulares; de abacá se han beneficiado 20 picos, de cóprax 19 picos. Las lluvias, aunque abundantes, no han hecho daño; en cambio los vientos fuertes de los días 20–22 han perjudicado algo al maíz plantado en los meses de Abril y Mayo. Durante el mes han muerto algunas gallinas de la enfermedad *atay-atay*.

Joló.—Las cosechas de abacá, palay, camote, y frutas han sido regulares. Actualmente la gente está ocupada en la recolección del maíz, el cual presenta mejor aspecto que el año pasado, y en los preparativos para la trasplantación del palay. No ha habido, ni insectos dañinos, ni enfermedad en los animales.

DISTRITO III.

Nueva Cáceres.—En los terrenos palayeros de este municipio se hacen los preparativos para la próxima trasplantación de las semillas. Para ello se sirven de carabaos los pocos agricultores á quienes todavía quedan algunos de estos animales; y de azadas, los demás que no cuentan con animales de labor. Las cosechas de camote, plátanos, gabe, berengenas, caña-dulce, mangas, y tubérculos—todo para consumo local—han sido regulares. Á pesar de la escasez del abacá, se cotiza en esta plaza de ₱11 á ₱12 el pico, con tendencia á la baja; por lo cual los propietarios dejan de beneficiar sus plantaciones. En cambio el arroz está subiendo, cotizándose el de Saigón á ₱6.50 el caván, y el del país á ₱6.20.

Legaspi.—Los agricultores de Legaspi, Albay, y Daraga tienen sus terrenos listos para el trasplante del palay y sólo aguardan algunas lluvias que favorezcan la tarea. Se han recogido cantidades regulares de abacá, piñas, cocos, plátanos, santol, camote, gabe, y calabazas. Escasean la caña-dulce, las naranjas, limones, y ciruelas. En Albay murieron cinco carabaos de epizotia y en Legaspi algunos vacunos.

Gúbat.—Ha terminado ya la cosecha del palay en todos los pueblos de esta Provincia de Sorsogón; y en los municipios de Bacon, Gúbat, Barcelona, Irocín, y Bulusan empiezan la siembra del maíz, camote, y gabe, pues este es el tiempo más á propósito para dichas plantas. Toda la atención de la gente acomodada en esta Provincia está en el cultivo del abacá, el cual se cotiza hoy en plaza á ₱2.75 la arroba. El arroz de Saigón está á ₱6.50 el pico.

Romblón.—Se ha terminado la cosecha del tabaco, la cual ha sido regular. Palay, camote, y otros tubérculos crecen en los campos. La falta de lluvias impidió la preparación de los semilleros de palay, tanto, que no se pudieron acabar hasta últimos del mes de Junio. Hay muchas langostas en toda la Isla de Tablas, las cuales han causado ya mucho daño en los sembrados de palay en terrenos secanos, y también han perjudicado algo al palay de regadío.

Calbáyog.—La producción del abacá, durante el mes de Junio, ha sido bastante buena, según noticias adquiridas de varios comerciantes compradores de dicho artículo. El precio por pico ha oscilado entre ₱23 y ₱25. Con la lluvia caída este mes, la mayor parte de los labradores han podido sembrar sus semillas de palay, como también otros granos. Las grandes marejadas y los fuertes vientos del SW que han reinado algunos días, han sido perjudiciales á la gente pescadora, destrozando todos los corrales de pesca del mar. Entre las gallinas reina cierta enfermedad, pues se mueren muchas de ellas.

DISTRITO IV.

Santo Domingo, Islas Batanes.—El estado del palay y uve es bueno en general. De este último algunos han sacado ya unos pocos tubérculos para prueba, y están muy contentos con su tamaño y su buena calidad. Empero en algunas parcelas del mismo producto han aparecido las enfermedades que los habitantes llaman *totong* y *rachi*. Con la primera las hojas muestran unas manchitas negras como si hubiesen sido quemadas, mientras con la segunda las manchas son amarillas. Cuando estas manchas adquieren demasiada extensión, impiden que la planta se desarrolle y dé fruto. Este mal suele aparecer cada año, más ó menos según las condiciones meteorológicas: y se dice que adquiere mayores proporciones con excesiva lluvia ó gran calor. En los distritos de San Vicente y de San José ha habido desprendimientos de terreno los días 24 y 26 de Junio, causados por aguaceros. En el primero se echó á perder, según calculan, una décima parte de la siembra de uve; en el segundo han sido arruinados unos cuantos camotales.

Aparri.—Las lluvias de turbonada que algunas tardes descargan sobre los campos no son suficientes aún para poner los terrenos palayeros en condiciones para la siembra. La cosecha del maíz en los pueblos del interior es abundante y de buena calidad. Se registran casos de epizotia en el ganado vacuno y caraballar, causando una mortandad de 10 á 15 por ciento.

Tuguegarao.—La segunda semilla de maíz sembrada se presenta muy hermosa, efecto de las frecuentes lloviznas y alguna que otra lluvia. La cosecha promete ser abundantísima; y si no vienen avenidas, temporal ú otro accidente que aniquile las sementeras, esta tan castigada provincia se salvará del hambre. Las mismas noticias han llegado de los demás pueblos que comprende esta comarca.

Vigan.—En este mes de Junio han estado creciendo en los campos el palay, maíz, caña-dulce, maguey y sitao. Gracias á las oportunas lluvias causadas por el baguio del 25, todas estas plantas están lozanas y hay que esperar una cosecha satisfactoria de estos productos, especialmente de palay y caña-dulce, á no ser que sobrevenga sequía ó excesiva lluvia. Se cosechan maíz, añil, maguey, nanca y plátanos en cantidades regulares. No se tienen noticias de efectos lamentables del mencionado baguio; al contrario, favoreció á los agricultores. En Vigan dos carabaos han muerto de la epizotia, y dos caballos, del muermo.

Candón.—Las lluvias han sido muy beneficiales á toda clase de plantas, siendo por consiguiente el estado de las cosechas regular. Se cosechan maíz, caña-dulce, tabaco, maguey, cocos y otros productos de menos importancia. Los rendimientos son regulares en Candón; pero solamente medianos en el municipio de Santa Lucía. Los cocos se cotizan á ₱6 el ciento. En Candón se ha propagado la enfermedad de cerdos y aves de corral.

San Fernando, Unión.—La ocupación principal de los agricultores durante este mes ha sido la preparación de los semilleros para el tabaco, los cuales han sido algo perjudicados por las lluvias que acompañaron el baguio del fin del mes. La cosecha de maíz ha sido excelente.

Baguio.—Actualmente comienza la gente la cosecha del palay. El maíz empieza á dar mazorcas. No hay langosta, ni insectos perjudiciales, ni enfermedad notable entre el ganado.

Bolinao.—Gracias á las lluvias caídas, los labradores han podido sembrar palay, maíz, maguey y varios tubérculos, todo lo cual se ha desarrollado bien. En el municipio de Anda ha habido una epidemia entre los animales, y han muerto algunos caballos, carabaos y vacunos.

Dagupan.—En este distrito se ha cosechado palay, maíz, piña, cacao, guayabas, naranjas, limones, ates y algunos otros productos de importancia secundaria, siendo los rendimientos regulares. Ni enfermedad de los animales, ni insectos perjudiciales han hecho ningún daño.

Tárlac.—La gente va recolectando cantidades regulares de maíz, piña, guayabas, santol, cajel, y otras frutas. Empiezan á florecer los ylang-ylang plantados el año 1904. Actualmente la mayoría de los labradores está preparando los terrenos para la siembra del palay. La epizotia se ha llevado un 5 por ciento de los animales entre carabaos, vacunos, cerdos y aves de corral. Los chubascos que acompañaron la turbonada del 26 de este mes derrumbaron cinco casas de materiales ligeros en Alvendia, barrio de Tárlac; y en la misma ocasión, en San José, barrio de Paniqui, dos hombres heridos por un rayo quedaron el uno muerto y el otro completamente sordo.

Arayat.—Con la ayuda de las lluvias se han podido sembrar caña-dulce, maíz, gabe, y otros tubérculos, cuyo estado actual es lozano. También se ha trasplantado en Arayat el palay de regadío. En Santa Ana el terreno está listo para esta tarea; pero el trabajo en los terrenos altos, los cuales llaman aquí *aventureros*, no está tan avanzado por falta de suficiente agua. En Arayat hay enfermedad entre las aves de corral; en Santa Ana la hay también entre los cerdos, y han muerto además dos carabaos, de epizotia.

Porac (Dolores).—Con las lluvias de este mes se ha podido sembrar el palay de secano, que está en buen estado. Lo mismo puede decirse de la caña-dulce, maíz y legumbres; pero muchos plátanos han sido derrumbados por los vientos fuertes de los días 26 y 27 de este mes. La enfermedad de las gallinas las mata casi todas.

Olongapó.—Las lluvias caídas durante este mes han sido muy oportunas para toda clase de cosechas, principalmente para el palay de secano y el maíz. Las semillas de palay ya están listas para ser trasplantadas.

Malolos.—Merced á las lluvias abundantes caídas á intervalos durante el mes, hay bastante animación y actividad entre los labradores de esta municipalidad. Tienen ya sembrados los tubérculos y están trasplantando las semillas de palay. Al contrario, en las municipalidades de San Miguel de Mayumo y de Meycauayan todavía no basta el agua para la plantación del palay y maíz. Además, aquélla ha tenido casos de epizotia, y ésta ha registrado también la pérdida de dos carabaos y un caballo. En el mercado de esta capital hay abundancia de mangas y piñas procedentes de pueblos cercanos.

Balanga.—Los labradores han trabajado en la preparación de los campos para la siembra del palay. Las lluvias han sido muy oportunas y los vientos de los días 25 y 26, aunque fuertes, no han hecho daño á las plantas.

Silang.—Durante todo el mes de Junio, se han cosechado mangas en gran abundancia, que se venden á ₱0.50 el cien. Grandes cantidades de esta fruta han sido enviadas á Manila y pueblos limítrofes en carretones, los cuales en número de 50 á 60 hacen sus viajes dos veces cada semana, á pesar de estar malísimos los caminos. De abacá se ha beneficiado muy poco, por estar la gente ocupada en la siembra del palay. Los terrenos destinados al cultivo de la caña-dulce son limitados, pues faltan animales para la roturación. Se han cosechado pequeñas cantidades de piña, lomboy, nanca y ciruelas.

San Antonio, Laguna.—En esta provincia se está recogiendo el palay de regadío con resultados muy regulares. La siembra del palay de secano está terminada. El estado de las cosechas aún crecientes, como gabe y camote, no es del todo satisfactorio por causa de los calores de los meses anteriores. Por la misma causa la cosecha del abacá es algún tanto inferior. El precio de este artículo es de ₱15 el pico.

Atimonan.—Las plantas sembradas el pasado Mayo, como son maíz, berengenas, ayap, etc. se presentan hoy lozanas é inmejorables, al parecer; aunque por la invasión de langostas se teme que sean víctimas de esta terrible plaga. Ésta está causando actualmente destrozos en los cocos. El pico del cóprax se cotiza de ₱7.50 á ₱8; el del abacá á ₱12 y ₱14, tercera y segunda clase respectivamente. En Calauag se lamentan de que las esperanzas de una abundante cosecha de cóprax han sido frustradas por los fuertes temblores de Abril último. Las plantas se han resentido mucho, gran número de cocos han caído y siguen cayendo otros que habían de dar fruto en Diciembre. La recolección de resinas, tan abundantes en esta región, está completamente paralizada, por no tener precio este producto en el mercado de Manila.

Batangas.—La cosecha de ciruelas, lomboy y manga ha sido mediana. Gracias á las lluvias caídas en la segunda quincena de Junio, hoy se presentan lozanas las plantaciones de caña-dulce y han podido sembrar palay los agricultores. Sigue la recolección ordinaria del abacá en Lipa y Cuenca.

O

BULLETIN FOR JULY, 1907.

METEOROLOGICAL BULLETIN FOR JULY, 1907.

By Rev. José Coronas, S. J.,
Assistant Director of the Weather Bureau.

GENERAL WEATHER NOTES.

Pressure and temperature.—The mean atmospheric pressure of this month has been everywhere throughout the Philippines higher than that of July, 1906. Yet it is somewhat lower than the normal. Thus in Manila the monthly average for this month is 757.04 mm., whereas the normal of July for the same place is 757.33 mm., and the mean for July of the preceding year was 756.40 mm. Outside of a long period of low pressures which lasted from the 16th to the 23d, the oscillations of the atmospheric pressure were not very pronounced, although it remained much higher during the first week of the month than during the last. The highest pressures of the whole month were observed on the 3d almost in all stations of the Weather Bureau, and the lowest were registered, with very few exceptions, either on the 17th or on the 22d.

The monthly average of temperature has been somewhat lower than the mean for July, 1906. That of Manila is lower than the normal for this month by 0.3° C. The highest and lowest temperatures for Manila were 33° C. and 22.3° C., both being registered on the 8th. The minimum value of 22.3° was likewise reached by the thermometers of the Observatory on the 4th and 9th.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS, JULY, 1907.

Station.	Pressure.						Temperature.					
	Mean.	Departure from July, 1906.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from July, 1906.	Highest.	Day.	Lowest.	Day.
	mm.	*mm.*	*mm.*		*mm.*		°*C.*	°*C.*	°*C.*		°*C.*	
Tagbilaran	757.50	+0.21	759.28	3	755.90	17	27.4	—0.1	33.5	2,6	21.9	3
Surigao	57.65	+ .34	59.40	1	56.07	17	27.3	— .4	35.3	2	22	8
Cebu	57.83	+ .49	59.81	3	56.12	17	26.6	— .7	31.9	11,15	22	4
Iloilo	57.39	+ .52	59.06	3	55.82	17	26.3	— .4	32.1	7	22.4	10
Ormoc	57.32	+ .40	59.08	3	55.64	17	26.2	— .4	33	6	21.2	4,5,9,10
Tacloban	57.50	+ .26	59.22	1	55.59	17	27	— .4	34.9	17	22.5	12,15
Capiz	57.34	+ .53	59.34	3	55.44	21	26.8	— .6	33.4	18		
Calbayog	57.69		59.32	1	55.69	17	26.8		34.9	5	20.5	13
Legaspi	57.46	+ .75	59.39	4	55.04	21	27.1	— .3	34.1	12	20.8	4
Atimonan	56.92	+ .65	59.01	3	54.18	21	27.6	— .5	35	26	22	14
Olongapo	56.89	+ .74	58.91	3	53.54	22					22.1	17
San Isidro	57.16	+1.18	59.59	3	54.02	22	26.4	— .8	36.4	6	21.4	9
Dagupan	56.76	+ .90	59.06	3	53.37	22	27.4	— .3	36.5	5	22.1	4
Vigan	57.01	+ .77	59.45	3	53.17	22	27	—1.1	32.4	13,14	22.2	31
Aparri	56.68	+1.31	59.37	2	53	17	28	— .7	34.6	19	22.5	5,22,23

Precipitation.—Only 13 stations of the Archipelago give a total amount of rainfall inferior to that of July, 1906. The amount for Manila is greater than the normal by 112.5 mm. and than that of last year by 193.8 mm. In several places, especially in the north of Luzon, there has been a lack of rain during the first half of the month.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF JULY, 1907.

District.	Station.	Total.	Departure from July, 1906.	Rainy days.	Departure from July, 1906.	Greatest rainfall in a single day.	Day.
		mm.	mm.			mm.	
I	Yap	274.7	— 34.7	23	— 1	49	12
	Davao	304	+ 20.5	11	— 1	62.5	23
	Cotabato	172.8	—127.3	14	— 5	45.7	2
	Caraga	155.6	— 71.5	14	— 3	66.3	22
	Balingasag	246.5	— 9.6	18	+ 4	54.1	19
	Butuan	94.5	— 76.1	12	— 5	33	27
	Tagbilaran	163.8	+ 68.6	13	+ 1	43.2	2
	Surigao	155.7	+ 53.1	11	+ 2	50.8	13
	Maasin	162.6?	—123.3	12?	— 1	27.9?	20?
	Cebu	191.9	+ 63.8	20	+ 4	48.5	8
	Tuburan	164.4	+ 33.4	14	+ 6	66.3	3
	Ormoc	355.3	+178.5	19	+ 1	58.7	21
	Tacloban	216.9	+104.7	18	+ 5	47	15
	Borongan	142.6	+ 43.6	21	+10	26.2	13
II	Jolo	204.9	+122.8	14	+ 6	45	15
	Isabela, Basilan	270.6	+125.2	17	+ 2	52.8	19
	Zamboanga	27.5	— 75.2	7	— 6	17.3	21
	Dapitan	138.2?	———	20	———	30.2?	17?
	Bacolod	233.3	—181.8	23	+ 5	42.2	22
	Iloilo	217.3	—364.7	21	+ 2	37.6	30
	S. Jose Buenavista	595.7	+ 28.8	23	+ 1	98	22
	Cuyo	275.5	+134.5	22	— 1	45.2	30
	Capiz	452	+215.2	15	— 5	80.5	12
	Culion	67.1?	———	20	———	7.2?	18?
III	Sumay, Guam	511.9	+213.2	26	—1	213.4	13
	Calbayog	213.7	+ 30.3	21	+ 7	71.1	12
	Palanoc	254.8	+ 69.1	20	+12	74.9	30
	Romblon	139.4	———	12	———	27.9	30
	Gubat	160.7	+ 39.2	11	+ 3	53.3	28
	Legaspi	287.3	+ 27.9	18	— 1	110.9	30

District.	Station.	Total.	Departure from July, 1906.	Rainy days.	Departure from July, 1906.	Greatest rainfall in a single day.	Day.
		mm.	mm.			mm.	
IV	Batangas	168.3	———	20	———	26.2	3
	Atimonan	88.4	— 17.8	14	+ 4	22.3	28
	Silang	351	+ 67.1	17	0	43.2	26
	S. Antonio, Laguna	228.9	+ 30.3	16	+ 2	43.2	29
	Corregidor	629	+324.8	18	+ 7	95.8	19
	Manila	504	+193.8	23	+ 2	141.9	29
	Balanga	401.3	— 61.9	22	+ 3	56.9	17
	Olongapo	877.8	+467.8	22	+ 4	180.6	30
	Malolos	327.2	— 35.9	24	+ 5	78.7	28
	Porac	341.2	+ 12.8	25	+10	77.5	19
	Arayat	211.9	— 80.9	16	+ 5	36.8	31
	San Isidro	296.3	+105.8	20	+ 6	51.5	7
	Tarlac	352.7	+129.1	23	+ 2	63.5	27
	Baler	98.7	———	15	———	31.7	27
	Dagupan	387.4	+172.2	20	0	65	23
	Bolinao	399.7	———	19	———	68.6	20
	Baguio	515.7	+161.6	26	+ 1	95.8	17
	S. Fernando, Union	419.4	+137.6	14	— 1	89.2	17
	Vigan	303.8	— 37.5	18	+ 1	49.3	18
	Tuguegarao	365.8	+246.5	13	+ 1	96.5	21
	Aparri	165.8	+113.3	11	0	82.3	30
	Santo Domingo	276.2	+ 74.2	14	+ 5	55.1	19

DEPRESSIONS AND TYPHOONS.

Leaving aside all the depressions or low-pressure areas which exercised little or no influence on the Philippines, we shall consider only those which seem to merit the designation of true baguios or typhoons.

One of these formed in the China Sea, and the rest in the Pacific Ocean. Though some of these considerably affected the Archipelago, especially the Visayas and Luzon, none of them crossed the Islands, but they all passed at quite a distance.

THE TYPHOON OF JULY 11–19.

Manila Observatory sent to Tokio, Zikawei (Shanghai), Taihoku (Formosa), Hongkong, and Phulien (Indo-China) the following warnings in connection with this typhoon:

July 12, 10 a. m. Cyclone forming since yesterday east of Ladrones Islands.

July 13, 8.30 a. m. Cyclone has crossed Ladrones Islands north of Guam, moving probably WNW.

July 15, 1 p. m. The cyclone that crossed Ladrones Islands on the 12th is approaching now Meiacosima Islands. It continues to be moving WNW.

After the 15th it was impossible to follow the march of this typhoon, owing to a break in the cable between Nagasaki and Shanghai.

That this storm came from beyond the Marianas and crossed the said group of islands on the 12th, passing north of Guam, is easily seen by examining the table containing the observations made at our station at Sumay, in the northwestern part of said island. They show that the center passed north of Guam during the afternoon of the 12th, since then the wind backed from the NW to the SW quadrant.

METEOROLOGICAL OBSERVATIONS AT SUMAY, GUAM.

[Barometer corrected and reduced to sea level, but not to standard gravity. Gravity correction—1.77 mm.]

Date and hour.	Pressure.	Wind.		Cloudiness.	Rainfall.	Remarks.
		Direction.	Force.			
July 10:	*mm.*		*0-12.*	*0-10.*	*mm.*	
6 a. m	758.01	NE	1	3		
2 p. m	57.22	N	1	8	2.5	
6 p. m	56.94	W	1	9		
July 11:						
6 a. m	56.96	S	3	3		
2 p. m	55.17	N	2	3	6.4	
6 p. m	55.09	NNW	1	7		
July 12:						
6 a. m	55.61	WNW	2	10		
2 p. m	54.19	NNW	1	10	5.1	
6 p. m	55.01	SSW	3	10		Raining very heavily in the evening.
July 13:						
6 a. m	56.06	SW	3	10		Slight swell.
2 p. m	56.11	SW	3	10	213.4	Moderate swell.
6 p. m	57.49	SSW	4	10		Do.
July 14:						
6 a. m	58.29	SW	4	10		Do.
2 p. m	57.34	SW	4	10	38.1	Do.
6 p. m	57.54	WSW	3	10		Do.

Though we lack the data necessary for an exact determination of the path followed by this typhoon from the Marianas until it appeared to the southeast of the Loochoos Islands, it may be said with a fair degree of probability that its direction was west-northwest from the 11th until the 15th, on which latter date it began to incline toward northwest. Owing to this deflection of its path, the storm, instead of striking the Meiacosima group, reached Okinawa Islands, which it crossed in the early morning of the 17th. At Naha (127° 41′ E long.; 26° 13′ N lat.) the barometer fell to 739.9 mm. (not corrected for gravity) at 5 a. m. of that day, and the wind velocity observed there at 6 a. m. was 27 meters per second.

After crossing the Loochoos, the typhoon followed its course across the Eastern Sea and the Yellow Sea in a northwest and north-northwest direction, gradually losing its intensity. About noon of the 19th it reached the Shantung Peninsula, where it recurved, taking a northeasterly direction and passing Liantung during the night of the same day. (See the Weather Charts of Tokyo and Journal of the Meteorological Society of Japan, August, 1907.)

THE TYPHOON OF JULY 15-21.

Of at least equal intensity with the preceding disturbance was the typhoon which between July 15 and 16 appeared south of the Bonin Islands, in the neighborhood of the northern part of the Marianas Islands. To this was, no doubt, due the very slight descent of the barometer observed during these days at Guam, while at the same time the winds veered toward west-southwest and west instead of continuing to back toward south. By means of the Japanese daily weather charts the path of this typhoon is easily followed. From the moment when it appeared south of the Bonins until after it had traversed Japan, it followed a tract nearly parallel to that of the typhoon discusssed in the preceding paragraph, advancing in a northwest or northwest-by-north direction. On the 17th it was observed passing west of the Bonin group, and in the evening of the 18th it crossed the western extremities of Shikoku and Nippon Islands, penetrating into the Sea of Japan during the night of July 18 to 19. After this the path appeared very much inclined toward west, so much so that, moving in an approximately west-by-northwest direction, the typhoon crossed southern

Korea on the 19th and the Yellow Sea and Shantung Peninsula on the 20th. Having traversed the latter, the storm resumed its northwestern direction and reached Tientsing in the morning of the 21st. The lowest barometer observed in Japan during the passage of this typhoon was 733.8 mm. (not corrected for gravity).

THE DEPRESSION OR DEPRESSIONS OF JULY 20–26.

The daily weather charts covering the period July 22–26 show the successive passages of two centers of atmospheric depressions by the east of the Loochoos Islands and the south of Japan. These two depressions may easily be conceived as forming but one system of atmospheric disturbance, and, possibly, there was in the beginning only one cyclonic center, which subsequently split up into two partially developed ones while recurving south of the Loochoos Islands and east of the Bashi and Balintang Channels.

However this may be, it seems to be quite probable that this depression—respectively, these depressions—formed on the 19th to 20th east of the Philippines, and recurved toward northeast on the 21st or 22d while approximately east of the Bashi Channel and of southern Formosa.

One of these centers was in the neighborhood of the Loochoos Islands at noon of the 22d. Thence it moved toward northeast and reached a position south of Shikoku on the 23d. Inclining toward east, it passed south of Hachijo Island in the morning of the 25th. A day later the other center of depression crossed likewise south of Hachijo, where the barometer fell to 747.8 mm. (not corrected for gravity).

Although the ordinary daily weather note of Manila Observatory mentioned the passage of a depression or typhoon in the Pacific to the east of the Bashi and Balintang Channels and of the Loochoos Islands, the highly complicated atmospheric conditions which at the time prevailed over the Pacific Ocean rendered it impossible to recognize the existence of more than one center of disturbance and likewise to give the exact position of any of them.

THE DEPRESSION OR TYPHOON OF JULY 22–26.

Beginning with July 20, Manila Observatory mentioned in its daily weather notes the existence of a depression in the northern part of the China Sea, and on July 26 it asserted that said depression had crossed the Gulf of Tongking. We insert here the notices concerning this disturbance issued by Hongkong Observatory, which had more ample means than we of following the progressive movement of the storm as it advanced toward Indo-China.

July 22, 11.45 a. m. A second center may develop to the south of Hongkong, in the low-pressure trough lying over the N part of the China Sea.

July 23, 11.45 a. m. A circular depression appears to have formed or to be forming over the China Sea to the southward of Hongkong, probably in from 18° to 20° lat.

July 24, 12.10 a. m. The depression is still lying to the southward of Hongkong, probably in about 19° to 20° lat. It appears to be moving very slowly toward WNW or NW.

July 24, 3 p. m. The depression to the SW of Hongkong appears to be moving toward the neighborhood of Hainan Straits.

July 25, 12.05 p. m. The depression has probably moved into the Gulf of Tongking.

July 26, 11.55 a. m. Yesterday afternoon the depression was approaching the neighborhood of Haiphong.

We have but little to add concerning this typhoon or depression, as the meteorological data for determining its path are lacking. It appears to have formed during the 21st and 22d near the parallel 18° N, to the south or south-southeast of Hongkong. Its path must have been very much inclined toward west, because we see it crossed Hainan Island south of Lamko light-house (Kiungchow District, north of Hainan) during the night of July 24 to 25. In the afternoon or evening of the 25th it had already reached the neighborhood of Haiphong in northern Indo-China.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[ϕ=14° 34′ 41″ N; λ=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

Date.	Pressure, mean.	Temperature.										Relative humidity, mean.	Vapor pressure, mean.	Evaporation.	
		Open air.[2]			Underground.										
		Mean.	Maximum.	Minimum.	0.25 meter.		0.50 meter.		1.50 meters.	2.50 meters.				Free exposure, total.	Shelter, total.
					8 a. m.	2 p. m.	8 a. m.	2 p. m.	8 a. m.	8 a. m.					
	mm.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.		*Per ct.*	*mm.*	*mm.*	*mm.*
1	758.86	28.1	32.4	24.3	29.5	31.2	30.2	30.2	29.9	29.4		80.7	22.6	6.4	3.3
2	59.01	27.6	32.6	23.2	29.4	31.4	30	30.4	29.7	29.2		80.4	21.8	6.5	3.5
3	59.20	25.9	32.1	22.7	29.7	31.5	30.2	30.4	29.8	29.2		86.7	21.5	5	2.8
4	58.93	27.2	32.4	22.3	29.2	31	30	30.4	29.7	29.4		79.7	21.1	4.9	2.5
5	58.61	27.2	32.4	23.8	29.6	31	30.2	30.3	29.7	29.1		82.9	22	5.2	2.1
6	58.44	27	32.9	23	29.5	31.1	30.3	30.3	29.7	29.3		80.4	21.1	5.2	3.4
7	57.84	27	32.9	22.7	29.3	31.2	30.1	30.3	30	29.2		81.2	21.4	4.5	2.5
8	57.87	27.2	33	22.3	29.3	31.1	30.1	30.4	29.7	29.3		81.3	21.6	5	2.5
9	58.90	26.5	31.8	22.3	29.3	30.3	30.2	30.3	29.7	29.2		84.1	21.5	3.4	2.1
10	58.51	27.7	32	23.5	29.6	30.9	30.1	30.3	29.7	29.2		79.1	21.6	5.9	2.9
11	57.28	26.8	31.6	23.5	29.6	30.7	30.2	30.3	29.7	29.2		86	22.4	3.5	2.1
12	56.07	26.9	31.8	23.3	29.3	30.9	30.1	30.3	29.8	29.2		81.5	21.3	4.8	2.5
13	57.13	26.9	32.2	22.7	29.3	31.1	30.2	30.4	29.7	29.2		81.6	21.3	5.4	3
14	57.86	27.4	32.4	22.6	29.3	31.4	30	30.4	29.8	29		81.9	22.1	4.7	2.5
15	57.10	28.3	32.2	23.7	29.8	31.6	30.3	30.6	29.7	29.3		77.4	21.9	8.2	3.8
16	55.31	27.5	29.9	23.7	30.1	30.6	30.5	30.5	29.7	29.2		82.5	22.4	8.3	5
17	55.23	26.5	30	23.6	29.2	29.8	30.1	30	29.7	29.2		87.4	22.5	4.5	2.5
18	55.96	26.9	29.7	23.7	28.7	29.3	29.7	29.7	29.7	29.1		85.1	22.4	3.9	2.8
19	56.55	25.5	27.6	23.5	28.4	28.3	29.4	29.3	29.6	29.1		92.3	22.3	1.6	1.6
20	55.27	26	28.6	23.8	27.7	28.3	29	29	29.5	28.9		89.5	22.2	1.8	1.6
21	54.20	26.4	30.8	23.7	27.6	28.9	28.7	28.9	29.6	29		89.9	23	1.3	1.6
22	54.11	26.4	29.2	23.5	27.9	28.6	28.6	28.7	29.6	29.2		87.4	22.3	1.9	1.7
23	55.50	27	31.4	23.8	27.9	29.6	28.6	29	29.5	29		83.4	22.1	5.1	2.7
24	56.75	27.2	31.7	23.3	28.3	30	28.8	29.1	29.4	29.2		80	21.4	7.1	3.4
25	57.09	27.8	31.6	23	28.6	30.3	29.1	29.6	29.4	29.3		81.4	22.4	7	3.4
26	56.51	28.1	32.2	24.3	29.2	30.9	29.4	29.7	29.4	29.2		81.6	22.8	5.7	3.2
27	56.16	28	32.2	24.2	29.3	31	29.5	29.8	29.4	29.3		83.4	23.4	5.2	2.6
28	56.86	26.8	30.8	24.2	29.2	30.7	29.7	29.9	29.3	29.2		87.8	23	4.3	2.4
29	56.90	25.7	28.4	22.5	28.7	28.9	29.6	29.5	29.3	29		92	22.6	1.7	1.5
30	56.69	24.9	27.3	22.8	26.2	27.1	28.3	28.5	29.3	28.9		93	21.7	.5	.7
31	57.40	26.7	30.9	22.7	27.2	28.6	28.3	28.4	29.3	29.1		85.9	22.2	2.9	1.7
Mean	757.04	26.9	31.2	23.3	28.9	30.2	29.7	29.8	29.6	29.2		84.1	22.1	4.6	2.6
Total														141.4	
Departure from normal	—0.29	—0.3	+0.4	—0.4								—0.5	—0.4	+0.8	

Date.	Wind.				Clouds.					Sunshine.		Rainfall.	Miscellaneous.
	Prevailing direction.	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Amount, mean.	Prevailing form and its direction.							
						Upper.		Lower.					
		Km.	*Km.*		*0–10.*					*h.*	*m.*	*mm.*	
1	sw quadrant	146	16	S	8.2	Ci.-S.	E	Cu.	SW by W	8	30		≡° a. ○a. p. < p.
2	W	187.5	27	NNW	6.3	Ci.-S.	E	Cu.	SW by W	7	10	0.4	≡° a. ⊤° < ●° p.
3	N	130.5	20	N	8.5	Ci.-S.	E	Cu.	N by E	6	55	3.2	≡° ○² a. ☈ ● p.
4	WNW	112.5	14	WNW	4.9	Ci.	NE	Cu.	E	9	35		≡° a. ☈° < p.
5	WNW	132.5	19.5	NNW	7	Ci.-S.	NE by E	Cu.	SE	6	00	12.7	≡° a. ☈ ● p. ○
6	WNW	123	16.5	WNW	7.2	Ci.-S.	SSW	Cu.	E by S	7	30		≡° Ω ○ a. ☈° p.
7	W	118.5	13	W	5.1	Ci.	E	Cu.	ESE	8	45	1.3	≡° Ω a. ☈² ● ⌒ p.
8	WNW	113	17.5	NNW	5.8	Ci.-S.	S by E	Cu.	E by S	9	30	15.1	≡° a. ☈ ● p.
9	NNE	113	14.5	NNW	8.2	Ci.-S.		Cu.	E by S	4	15	8	≡° a. ⌒ < p. ● ○
10	WNW	114.5	17	WNW	7.4	Ci.-S.	E	Cu.		8	15	6.5	≡° a. ☈ p. ● a. p.
11	W, NNW	135	13.5	W by S	9.3	Ci.-S.		Cu.-N.	SW	4	05	7.7	≡° a. ☈² ● p.
12	W	122	12	WSW	8 6	Ci.	SW	Cu.	N	7	45	2	≡° a. ○ ☈ ● p.
13	SE, SW	110	24	SW by W	5.8	Ci.-S.		Cu.		8	10		≡° a. ☈ p.
14	WSW	209	25.5	WSW	5.3	Ci.-S.	SE	Cu.	S	9	35	.4	≡° a. ●° p.
15	wsw, wnw	274.5	27	W by S	7.6	Ci	ENE	Cu.		8	15		☈ ○ p.
16	SW	453.5	32.5	SW by W	8.8	Ci.-S.		Cu.-N.	W by N	3	15	18.6	≡° ⌒ ○ ⊤ a. ↙ ●
17	WSW	456.5	37	SW	9.3	A.-Cu.	WNW	Cu.-N.	WSW	1	50	18.3	● ○° a. ↙ ● ⊕ p.
18	WSW	436	32.5	SW by W	9.8	Ci.-S.		Cu.	W by S	1	00	1.2	●° a. < p.
19	WSW, SSW	200	19	WSW	10	Ci.-S.		N.	SW by W	0	00	55.1	↙ ● a. p.
20	WSW	328.5	29	SW	10	Ci.-S.		Cu.-N.	W by S	1	20	69.1	≡° ○ a. ● a. p.
21	SSW	308	28.5	NNW	8.8	Ci.-S.	NE by N	N.-cf.	WSW	3	30	47.2	↙ ● a. p.
22	SSW	376.5	35.5	SW by S	10	Ci.-S.		Cu.-N.	SW by W	1	40	7.9	●° a. ↙ ●° ϖ p.
23	WSW, SSW	359.5	40.5	SW	8.4	A.-Cu.	SSW	Cu.	SW	7	00	.4	≡° ●° a. d. p.
24	WSW	284.5	38	SW	7.2	Ci.	ENE	Cu.	W by S	10	10		≡° a. ⊕ p.
25	SW	236.5	23	SW	5.2	Ci.	E	Cu.	WSW	10	45		≡° Ω a. ○° ᴗ p.
26	WSW	221.5	21	SW by W	6.1	Ci.	E	Cu.	N	8	30		≡° Ω ○ a ☈ ●° p.
27	S, SW	210	24	SW	7.8	Ci.	E	Cu.		9	10	.2	≡° a. ☈ d ⌒ p. ○
28	SW	249.5	22	SW	8.5	Ci.-S		Cu.	E	5	20	16.6	⌒ a. ☈ ● a. p.
29	WSW	202.5	24.5	SW	10	Ci.-S.		Cu.-N.	WSW	1	25	141.9	≡° a. ☈ p. ●² a. p.
30	S	156.5	14	S	10	Ci.-S.		Fr.-N.	SW	0	00	59.3	● a. p.
31	WSW	206	28.5	W	8.1	Ci.-S.	N by E	Cu.	WSW	6	00	10.9	⌒ ≡° a. ⊤ p. ● ○
Mean		220.2	23.4		7.8					5	58		
Total										185	10	504	
Departure from normal		—56.6			+0.2					+28	24	+112.5	

[1] All the mean values given in this table are deduced from hourly observations.
[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

TAGBILARAN.

[ϕ=9° 38′ N; λ=123° 53′ E; barometer above sea, 21.8 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	758.98	28	32.2	23.4	75.4	NW	1	6.7	A.-S. E	Cu. SW	0.2	●° ϟ°
2	58.76	26.8	33.5	22.4	82	N, SE	1	6.8	A.-S.	Cu.-N. SW, N	43.2	⌈ϟ^{2} ↙ ●^{2}
3	59.28	25.5	30.2	21.9	82.8	SE, NW	1.3	8.8	Ci.-S. NE	N. ESE, W	13	●^{2} ◯^{2}
4	59	27.1	29.7	22.7	78.6	NNE, SE	1.2	6	Ci.-S.	Cu.-N. W, E	------	
5	58.26	27.4	32.5	23	80	N, SE	1.3	4.3	A.-S., Ci.-S.	Cu.-N. E, W	------	⊤ ϟ^{2}
6	57.73	27.6	33.5	24.5	80	Variable	1.3	7	Ci.-S. SE	Cu. SW	------	⊤ ϟ
7	57.59	26.3	31.9	23	83.5	N	1.2	8.5	Ci.-S. NE	N. NE, E	18.3	⌈ϟ ↙ ●^{2}
8	57.88	26.9	31.2	23.3	81.3	N	1	8.5	Ci.-S., A.-S.	Cu.-N. E	6.1	● ⊤ ϟ ↙
9	58.37	27.3	29.6	23.5	79.5	SE	1.3	5.7	Ci.-S., A.-S. ENE	Cu. E	------	
10	58.51	28	32.1	23.9	78.8	SE	1.2	6.6	A.-S., Ci.-S. NE	Variable	.2	d°
11	57.25	28	31.4	25	77.2	SW, NNE	1.8	7.2	A.-S.	Cu.-N. SW, W	------	
12	56.48	28.2	31.9	25	75	SSW	1.5	7.7	A.-S. NE	Cu.-N. W	1.3	●° ϟ^{2}
13	57.33	27.8	32.7	23.2	75.8	SSE	1.8	9.5	A.-S., Ci.-S.	Cu. W	------	ϟ^{2} ⊤
14	57.92	28	30.9	24.4	77	SE	1	9.3	A.-S., A.-Cu.	Cu. W	------	⊤
15	57.83	27.9	31	23.4	76.3	SE, NW	2	8.7	A.-S.	N., Cu. W	1.5	⌈ϟ
16	56.43	28.5	31.7	23	73.8	SSW	2.5	6.7	Ci.-S.	Cu. W, SW	------	
17	55.90	28.9	31.4	26.3	73	SE	1.3	5.2	A.-S. E	Cu. W, SW	------	ϟ°
18	56.57	28.8	31.5	25.6	72.8	SE, SW	1.8	8.7	A.-S. E	Cu. SW, W	------	
19	56.88	28.6	32.5	25.3	72.7	SSW	2.2	9	Ci.-S.	Cu. SW, W	------	↙
20	56.40	28.2	31	24.4	73.7	SSE	1.7	8.8	A.-S.	Cu. SW, W	11.7	⌈ϟ^{2}
21	56.08	27.6	30.6	24.1	74.3	SW quad.	2.3	9.3	A.-S.	Cu. W	------	⌒° ψ°
22	56.72	27.7	30.1	25.2	73.2	WSW	2.5	9.5	A.-S. SE	S.-Cu.	------	↙
23	57.20	27.6	30.5	24.7	74.3	SSW, SE	2	9.2	Ci.-S., A.-S. E	Variable	------	◯^{2} ψ^{2}
24	57.30	27.6	29	25.2	77.8	SE	1.2	10	A.-S. E	N.	------	d°
25	57.52	26.4	26.7	23.4	82.3	SE	1.2	10	A.-S.	N. SW, E	10.4	●
26	56.55	26.5	31.9	22.9	82.5	SE	1.2	8.8	Ci.-S., A.-S. E	S.-Cu.	16.8	●^{2}
27	56.75	27	30.3	23.4	80.8	N, SE	1.2	8.3	A.-S.	Variable	------	d° ◯° ϟ ψ°
28	57.71	25.5	27.7	23.9	88.7	SW	1.7	9.7	A.-S.	N. SW, W	3.8	●°
29	57.55	27.1	30	23	81.5	SE	1.2	8.2	A.-S. ENE	Cu.-N., Cu. SW	37.3	⌒ ⌈ϟ^{2}
30	57.63	26.7	30.4	23	79.2	SW	1.3	9.7	Ci.-S., A.-S.	Cu. SW, W	------	◯° ↙
31	58.04	27.4	30.1	22.9	79.4	SE	1.7	8.7	A.-Cu.	Cu., S.-Cu. W	------	d°
Mean	757.50	27.4	31	23.8	78.2	------	1.5	8.1	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	163.8	

SURIGAO.

[ϕ=9° 48′ N; λ=125° 29′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.	Clouds. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	759.40	27.9	34.1	23	85	NW, NE	0.3	2.8	Ci.	Cu.	------	Ω a. ⊤ ϟ p.
2	58.82	27.1	35.3	23.2	88.2	Variable	.5	5.5	Ci. ESE	Cu.	6.4	Ω a. ● p.
3	59.36	26.1	31	23	87.5	SW	1	6.5	A-Cu.	Cu.	------	p° a.
4	59.19	27.4	34	22.5	83.5	SW, NW	.5	2	Ci. ENE, E	Cu.	------	Ω a.
5	58.61	28.4	35	23	82.8	NE	.5	1.3	Ci.	Cu.	------	Ω a. ϟ p.
6	57.94	28	34	23	85	NW	.8	3.7	Ci.	Cu.	------	Ω a. ϟ p.
7	57.98	25.7	29.9	23.8	90.3	Variable	.7	8.2	Ci.-S.	Fr.-S.	4.3	● a. ϟ p.
8	58.14	27	34.6	22	86.5	NE	.2	5	A.-Cu.	Variable	------	Ω p° ϟ p.
9	58.41	27.2	32.2	22.6	84.9	WNW, NW	.7	1.8	Ci.	Cu.	4.8	Ω a.
10	58.48	28	33.6	24	81.2	W	.8	2	Ci.	Cu.	------	Ω a.
11	57.28	28.1	32.5	23	81.7	SW, WSW	.7	7.2	Ci. SSE	Cu.	16.8	p^{2} a. ● p.
12	56.83	26.2	31.3	22.2	90.2	WSW, W	.5	7.7	Ci.-S., Ci.	N., Cu.	23.4	⌈ϟ a. ϟ p.
13	57.33	27.9	32.5	23.5	84.3	SW	.7	6.7	Ci.	Cu.	50.8	Ω a. ●^{2} p.
14	58.25	27	32	22.5	86.7	NE, W	.3	5.2	Ci.	Cu.	7.6	● a. ϟ p.
15	57.97	27.6	33.2	23	81.5	SW, WSW	.5	5.3	Ci. SE by E	Cu. SW	------	⌈ϟ° ⌒ a.
16	56.61	28.9	34.5	24	75.3	Calm	0	2.8	Ci.	Cu.	------	Ω a.
17	56.07	28	34.5	24	80.2	SW, W	.3	4.3	Ci., Ci.-S.	Cu.	------	Ω a. ϟ p.
18	56.77	27.3	34.7	23	86.2	Calm	0	6.2	Ci.-S. E	Cu. SW	3	p ⌒ p.
19	56.85	27.6	33.3	23.5	84.8	WNW	.3	7.3	Ci.-S.	Cu.	16.8	p^{2} ⊤ p.
20	56.81	27.6	33.2	23	82.7	Variable	.5	7	Ci. NE	Cu.	------	ϟ p.
21	56.50	28.6	35	24	78.5	SW	1.2	5.2	Ci.-S.	Cu. SW	------	ψ
22	56.82	27.8	32.5	25	78.2	SW	2.8	6.7	Variable	Cu.	------	d° a.
23	57.16	28	34	25	78.6	SW	1	7.7	Ci.-S.	Cu. SW	------	
24	57.28	27.4	34	24	82.2	SW	1.8	9.2	A.-Cu. E	Fr.-S.	------	↙ ●° p.
25	57.52	25.2	28.1	22.5	93.3	NW	.2	9.2	Ci.	Fr.-N.	6.6	●° a.
26	56.82	26.3	32.5	23	88.7	SW	.7	9	A-Cu.	Cu.	------	Ω a. d° p.
27	56.76	27.4	32.3	22.5	86.4	SW	.5	8.3	Ci.-S.	Cu. SW	------	Ω a. ●° ϟ p.
28	57.80	25.7	29.7	22.5	93.2	Calm	0	10	A.-S.	Variable	15.2	● a. d p.
29	57.68	27	32.8	23.2	87	SW, WSW	.5	7.2	A.-S.	Cu.	------	
30	57.71	27.1	33.3	22.2	87.1	N, NW	.5	6.3	A.-Cu., Ci.-S. sw	Cu.	------	Ω a. d° p.
31	58.06	27.3	32.8	22.6	85.5	W, SW	.5	8.2	A.-Cu.	Variable	------	Ω d° a.
Mean	757.65	27.3	33	23.2	84.7	------	.6	6	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	155.7	

[1] All the mean values given in these tables are deduced from six daily observations.

METEOROLOGICAL DATA, ETC.—Continued.

CEBU.

[ϕ=10° 18′ N; λ=123° 54′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Prevailing form and its direction. Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	759.70	25.5	30.5	23.2	88.4	Variable	0.5	4.3	Ci.	Cu. WSW	19.8	Ω² ⚡ ≡ ↙ ● ⊤
2	59.17	26.2	31	23.1	85	S	.5	5.6	Ci.	Cu.	11.4	Ω² ≡ ⌈⚡
3	59.81	24.5	28.6	22.6	87.2	Variable	.5	8.5	Ci.-S.	N. WNW	29.5	↙ ● ⊤ ⚡ ≡²
4	59.47	26.3	30.2	22	79.5	E quad	.5	3	Ci.	Cu. S	------	Ω² ≡
5	58.79	27.5	31.2	24	79.1	E	.7	3.3	Ci.-S.	Cu. E	------	Ω² ≡ ⚡
6	58.36	26.5	31.1	23.6	85.8	S, N	.3	5.7	Ci.-S.	Cu. NNE	15.2	Ω ⚡ ↙ ● ≡
7	58.08	25.9	30.5	23.5	85.3	E	.3	6.3	Ci.-S.	Cu. NE	2.5	Ω ⚡ ≡ ● ⊤
8	58.31	26.1	31	22.7	84.5	Variable	.5	6.5	Ci.	Cu.	48.5	Ω ≡ ⌈⚡²
9	58.95	26.2	30.5	22.4	85.7	SE, S	.3	4.7	Ci.-S.	Cu. SSW	9.1	⚡ ≡
10	58.94	26.6	30.5	23.9	87.2	S, NE	.4	4.6	Ci.	Cu.	9.4	≡ ⌈⚡ Ω
11	57.73	26.2	31.9	23.7	86.2	SSW	.3	6.7	Ci.-S.	Cu.-N. SW	2.8	Ω² ≡ ⌈⚡
12	56.74	26.5	30.6	23.5	84.5	W	.5	6.3	Ci.-S.	Cu.-N. W	.5	Ω² p ⚡
13	57.77	26.6	30.4	23.8	86.3	SW quad	.7	8	Ci.-S.	Cu.-N. SW	1.8	Ω² ≡ p ⊤ ⚡
14	58.32	27.4	31.2	24.4	83.7	SW	.7	6.3	Ci.-S.	Cu. WSW	------	Ω ≡ ⚡
15	58.15	26.7	31.9	24	82.8	SW	.5	6.2	Ci.-S.	Cu. SW	1.8	Ω² ≡ d ⚡
16	56.55	27.6	31	24.5	80.2	SW	.8	5	Ci.-S.	Cu. SW	------	Ω² ≡ ⚡
17	56.12	28.2	31.1	24.7	74.9	SW	.8	3.5	Ci.	Cu. SW	------	Ω ≡ ∞ ⚡
18	56.79	27.7	31.5	25.2	89.7	SW quad	.7	6.7	Ci.-S.	Cu. SW	------	Ω ≡ ○² ⌣
19	57.13	27.4	30.9	24	80.7	SW	.3	6.7	Ci.-S.	Cu.-N. SW	.8	Ω ≡ p° ⊤ ⚡
20	56.63	27.5	30.5	25	78.6	SW	.5	6.8	Ci.-S.	Cu. SW	2	Ω ≡ ● ⚡
21	56.19	27.9	31.4	25.5	77.8	SSW	1	7.3	Ci.-S.	Cu. WSW	------	Ω ≡ p° ⚡
22	56.72	27.5	30.6	25.9	76.6	SW	1.5	8.2	Ci.-S.	Cu. WSW	------	Ω ≡
23	57.29	26.6	30.5	22.1	79.5	SW quad	.8	6.3	Ci.-S.	Cu. SW	------	Ω ≡ ○
24	57.59	26.4	30.6	24.7	82.5	SSW	.5	8.7	Ci.-S. SE	S.-Cu.	4.3	Ω ≡ ●° ⊤
25	57.85	25.3	27	24.1	90.5	SE, SW	.3	9.8	Ci.-S.	N.-Cf. WNW	5.6	d. ≡
26	56.87	25.6	30	23.2	88.3	SSW, NNW	.3	8	Ci.-S.	Cu. N	10.7	Ω ≡ ●
27	56.95	26.7	30	23.4	83.7	SSW	.3	6.8	Ci.-S.	Cu. NNE	4.6	d. ≡
28	58.01	26.2	29	24	87.7	SW	.7	9.2	Ci.-S.	Cu.-N. WSW	4.8	Ω ⚡ ⊤ ↙ ●
29	57.64	26.4	30.4	23.9	83.8	SW quad	.5	7.3	A.-Cu.	Cu.-N. W	6.8	Ω ≡ ⚡ ●
30	57.86	25.7	30	22.9	83.4	S	.2	6.5	Ci.-S.	Cu.-N. W	------	Ω ≡ ⚡
31	58.36	26.6	30.1	22.9	84.8	S	.3	6.8	Ci.-S.	Cu. SW	------	Ω ≡ ⊤°
Mean	757.83	26.6	30.5	23.8	83.7	------	.5	6.4	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	191.9	

ILOILO.

[ϕ=10° 41′ N; λ=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Force (mean).	Clouds. Amount (mean).	Upper.	Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	759.01	26.3	29.7	23.5	82.2	SW	0.7	6.5	A.-Cu.	S.-Cu., Cu.	------	⚡ p.
2	58.70	26.3	30	23.1	80.2	SW	.7	4.5	A.-Cu. E	S.-Cu., Cu.	------	⚡ p.
3	59.06	25.2	26.6	23.4	86.5	S	.8	9.2	A.-Cu.	S.-Cu., N. NE	5.3	d a. p.
4	58.72	26.8	31.9	22.7	80	SE, E	.3	4.8	A.-Cu.	S.-Cu., Cu.	------	⚡ p.
5	58.48	27	30.7	24.1	81	SW	.5	4.8	A.-Cu.	S.-Cu., Cu.	------	d° ⊤ ⌒ p.
6	58.12	27	30.8	24.4	80.7	Variable	.7	6	A.-Cu.	S.-Cu., Cu.	.2	⌈⚡° p.
7	57.86	26.5	32.1	23.7	80.5	Variable	.7	5.5	Ci.-S., A.-Cu.	Cu. NNE	16.5	⌈⚡ p.
8	57.77	26.1	31.9	22.8	84	Variable	.7	7	Variable	Variable	3	p p.
9	58.52	25.3	29.5	23.3	87.3	N	.8	6.8	A.-Cu.	S.-Cu.	2.3	⌈⚡° p.
10	58.49	26.4	30.1	22.4	82.5	SW	.7	4.8	A.-Cu.	Cu.	------	
11	57.47	26.6	30.1	23.8	82.5	SW	.7	6.7	A.-Cu.	S.-Cu.	.5	d° ⚡ p.
12	56.35	26.4	29.5	24.3	84.2	SW	1	7.8	Ci.-S. SE	S.-Cu.	.5	d° ⚡ p. ○
13	57.32	25.8	29.4	23.7	86.8	SW	1.3	9.2	A.-Cu.	S.-Cu. SW, SSW	11.4	● ⊤ p.
14	57.75	26.7	29.7	23	84.2	SW	1.3	7	A.-Cu.	S.-Cu., Cu.	------	⚡ p.
15	57.60	27.4	29.9	24.2	82.3	SW	1.7	6	A.-Cu. E	S.-Cu.	------	⚡ p.
16	56.18	27.9	29.9	24.6	79.5	SW	1.5	8.7	Ci.-S. NE	S.-Cu. WSW, SW	9.9	p a. p.
17	55.82	26.4	28.8	23.1	81.8	SW	1.7	8.7	A.-Cu.	N. SW, WSW	28.4	● a. p. ⚡
18	56.46	26.7	28.8	24.9	84.5	SW	1.2	8.3	A.-Cu.	N., S.-Cu. SW	2	d° a. p.
19	56.93	25.8	28.5	24.7	86.5	W, SW	1.3	9.3	A.-Cu.	N., S.-Cu. SW	23.9	●° a. p.
20	56.38	27.1	29.9	25.1	81.5	SW	1.7	8.3	A.-Cu. N	S.-Cu. SW	.8	d° ⌣ p.
21	55.99	26.7	28.5	24.5	80.5	SW	2	8.7	A.-Cu.	S.-Cu.	10.7	p a. p.
22	56.23	26	28	23.5	82.8	SW	1.5	9.7	A.-Cu.	N. WSW	24.4	● a. p.
23	56.82	26.1	28.8	23.4	83.2	SW	1.7	8.8	A.-Cu.	S.-Cu. SW	1	p a. ⌣
24	57.14	26.4	29	24.1	82.8	SW	1.7	8.5	A.-Cu. SE	S.-Cu. SW	------	d° p.
25	57.20	26.4	29.9	24.4	85.3	SW	.3	8.7	A.-Cu.	S.-Cu.	------	⚡ p.
26	56.72	26	29	23.3	84.8	Variable	.7	8.8	A.-Cu.	S.-Cu.	.8	d° p.
27	56.36	26	28.1	24.2	86.1	S, W	.7	8.8	A.-Cu. SE	S.-Cu.	12.7	d° a. p² ⚡ p.
28	57.42	25.2	27	23.6	90	S, SW	1.5	10	A.-Cu.	N.	23.4	● a. p.
29	57.25	26.5	29.3	24.3	85	SW	1.3	8	A.-Cu.	Cu.	2	d a. ●° p.
30	57.37	24.4	26.3	22.7	89.7	SW, S	1.3	9.8	A.-Cu.	N. SW	37.6	●² a. p.
31	57.74	26.9	30.1	24.7	81.6	S, SW	1.2	7.8	A.-Cu. E, ESE	S.-Cu.	------	⚡ p.
Mean	757.39	26.3	29.4	23.8	83.6	------	1.1	7.7	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	217.3	

METEOROLOGICAL DATA, ETC.—Continued.

ORMOC.

[ϕ=11° 00′ N; λ=124° 36′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Prevailing form and its direction. Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.	Ci. SE		mm.	
1	759.06	27.2	32.8	22.8	80	Variable	0.7	4.7	Ci. E	Cu. NW	------	Ω ϟ a. T p.
2	58.70	25.1	32	22.5	85.7	Variable	.3	5.8	Ci.-S.	Cu.-N.	7.4	Ω ϟ a. ⛈ p.
3	59.08	25.2	29.3	23	87.6	Variable	.5	9.2	Ci. NE	Variable	20.6	● ϟ ○°
4	58.75	25.8	31.9	21.2	82.2	Variable	.5	3.2	Ci.	Cu.	------	Ω ϟ
5	58.29	25.3	32.2	21.2	80.6	Variable	.5	2.8	Ci. SW, WSW	Cu.	------	Ω T ϟ
6	57.65	26.2	33	21.9	85	NNE	.3	5.2	Ci.-S. E	Cu. NE	19.3	Ω ○° ⛈
7	57.42	24.6	30.1	21.5	87.6	N, SSW	0	6	Ci.-S.	Cu. NE	------	Ω ϟ ○ d
8	57.64	25.9	32.1	21.4	83.2	N, SSE	.3	5.8	Ci. E, NE	Cu. ENE, E	4.3	Ω ○° ⛈
9	58.32	25.8	31.6	21.2	85.2	N	.3	5.6	Ci. ENE	Cu.	------	Ω² d ϟ
10	58.29	26.5	31.7	21.2	83	Variable	.3	4.5	Ci.-S.	Cu.	------	Ω T ϟ
11	57.27	26.2	30.6	23.2	83.5	Variable	.2	7.3	Ci. E, NNW	Cu. W	------	Ω ϟ T d
12	56.48	26.6	31.6	22.8	81.3	N	.7	8.5	Ci., Ci.-S NE	Cu. W	1.5	ϟ T d
13	57.32	25.1	30.8	23.2	89.2	NNW	.5	7.5	A.-Cu., Ci. SW	Cu. SW	1	●° ϟ
14	57.88	27.2	32.6	23	79.3	Variable	.7	7	Ci.-S.	Cu. SSE	3.3	⛈ p.
15	57.72	25.8	30.6	23	88.2	ESE	.7	7.7	Ci.	Cu.	16.2	⛈ p.
16	56.18	26	31.6	23.2	85.3	Variable	.8	5.8	Ci. E	Cu. SW, SSW	4.3	⛈ p.
17	55.64	27.6	32.8	23.1	80.3	Variable	.3	4	Ci. NNE, N	Cu. S	------	Ω ϟ
18	66.47	28.1	32.7	24.7	77.2	Variable	.7	6.5	Ci.-S.	Cu.	------	ϟ T ψ
19	56.71	27	30.8	24.2	84.6	SE	.7	9.8	Ci.-S.	Cu. S	23.6	● ○° ⛈
20	56.18	27.6	32	24	82.2	Variable	.5	8.5	Ci.-S.	Cu. S	10.2	● ⛈
21	55.84	26.6	31.5	23.5	84.7	ENE	1.3	9.2	Ci.-S.	Cu. S, WSW	58.7	⛈
22	56.24	27.8	30.8	25.4	77.1	ESE, S	1.3	9	Ci., Ci.-S. E	Cu. SW	5.1	↙ ●° ϟ
23	56.85	27.4	32	23.4	75.8	SE quad.	.5	7	Ci.-S. E	Cu.	1	○ ↙ ●°
24	57.17	26.3	30.8	23.5	83	SSE, S	.5	8.8	Ci.-S.	Cu. NW	5.1	●° T
25	57.11	25.3	28.2	23.5	89.7	ESE, SE	.2	10	Ci.-S.	Cu. W	------	d ψ
26	56.43	24.9	29.7	22.7	91.5	NNE, ESE	.2	9.7	Ci.-S.	Cu. NW	38.6	○° ⛈
27	56.41	26	30.7	22.5	88.8	SE	.2	8.8	Ci.-S.	Cu WSW, ESE	------	∞ ϟ
28	57.45	25.1	28.5	23.6	91.7	SE	.7	10	Ci.-S., Ci. NE	Cu.-N., Cu. SSW	50.8	⛈ a. p.
29	57.39	26.6	31.8	23.5	83.3	SSE	.3	8.8	Ci.-S.	Cu	46.7	d a. ⛈ p.
30	57.35	25.1	30.5	22.8	89	SSE	.5	9.5	Ci.	Cu. SSW	37.6	⛈ p.
31	57.74	26.3	32.1	22.4	83.8	S	.3	8.7		Cu.	------	ϟ p.
Mean	757.32	26.2	31.3	22.9	84.2	------	.5	7.3	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	355.3	

TACLOBAN.

[ϕ=11° 15′ N; λ=125° 00′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.	Clouds. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	759.22	27.9	33	24.1	80	E quad.	0.8	6.6	Ci.-S. NE by N	Cu.	------	d° p.
2	58.97	27.4	33.4	24.6	81.2	Variable	1.2	6.8	Variable	Fr.-N.	3	T ● p.
3	59.16	26.5	31.8	24	83.9	Variable	.8	7.4	A.-S.	N	2.8	● a. d p. ○ ⊕
4	59.20	27.7	32.2	24	78.3	SE quad.	.8	4.8	Ci.-S.	Cu.	------	Ω a. T° p.
5	58.65	28	34	24.7	79.8	Variable	.8	3.4	Ci.	Cu.	------	Ω° a. T ϟ p.
6	58.11	27.9	33.8	24.5	80.7	NW by N	1.4	6.6	Ci.-S.	Cu.	------	Ω a. T ϟ p.
7	57.85	27	31.5	24.5	81	Variable	.4	8.6	Ci.-S. NE by E	Fr.-N.	------	Ω ⊕ ○ T d ϟ
8	58.04	26.9	33.6	24.1	83.5	Variable	.6	7.2	Ci.-S.	Cu.	.8	Ω ⊕ ○ T d ϟ
9	58.67	27.1	34	23.9	81.7	W	.8	5.6	Ci.-S.	Variable	5.1	● a. T d p.
10	58.50	27.8	34.5	24	79.4	N	.8	5.8	A.-S.	Fr.-N.	------	Ω² d° ϟ
11	57.26	27	32.8	24.6	81.7	Variable	.4	8.4	Variable	Fr.-N. WNW	5.1	Ω T ●
12	56.68	25.8	33.5	22.5	84.8	NW	1.2	9.4	Variable	Fr.-N. NW	20.8	●² ϟ p.
13	57.54	25.8	32.8	23.5	88.7	W, NE	.4	7.4	Ci. NW	Variable	38.4	●² T° ϟ p.
14	58.05	26.2	33.3	24.1	89	NW	.2	7.6	A.-Cu.	N	40.4	●² T° ϟ p.
15	57.84	26.2	31.9	22.5	87.7	W, S.	.4	8.8	A.-S.	Fr.-N.	47	●² ↙ ϟ
16	56.14	26.7	33	22.6	84.5	Variable	.8	7.4	Ci.-S.	Fr.-N. WSW	------	
17	55.59	28.7	34.9	24.2	75.2	W quad.	.8	6.2	Ci.-S.	Cu.	------	Ω a. ϟ p.
18	56.51	28.3	33	25.1	79.3	NNE	.6	8.2	Ci.-S.	S.-Cu.	------	ϟ a. Φ
19	56.78	27.3	32	25.1	81.3	Variable	.8	10	A.-S.	Fr.-N.	1	● T ϟ ⊕
20	56.29	27.6	31.6	25.1	80.5	Variable	.6	8.4	A.-S.	Fr.-N.	------	⊕ ○ ϟ d°
21	55.66	27.6	34	24.5	80.2	SE, NE	.4	9.4	A.-S.	S.-Cu. WSW	2.8	⊕ ○ ● T
22	56.20	27.7	33.5	25	78.1	W	.8	8.2	A.-Cu. SW by S	S.-Cu.	------	d² Φ
23	56.90	28.1	33.5	24.8	76.8	NW	.4	9	Ci.-S.	Fr.-Cu.	------	Ω ⊕ ψ Φ
24	57.27	27.6	34.4	25	79	W by S	.8	9.8	Ci.-S.	Fr.-N.	5.8	⊕ ⛈° p.
25	57.44	25.9	31	24.5	88.7	WS, W	.8	10	A.-S.	N	6.4	●° a. p. ψ Φ
26	56.69	25.8	31.1	24.2	88.7	NW quad.	.8	9.8	A.-Cu. E by N	N	8.4	⛈ p. ⊕
27	56.58	26.7	33	24.2	86	NE quad.	.4	8.2	A.-S.	Fr.-N.	3	● a. ⛈° p.
28	57.56	26.2	30.9	24.7	87.2	Variable	.6	9.8	Ci.-S.	Fr.-N.	1.8	d² a. p.
29	57.58	25.8	32.7	23.7	87.3	ENE, W	.4	9.8	Ci.-S.	Fr.-N.	8.6	d a. ϟ ● p.
30	57.66	25	30.5	23.1	87.9	W	1	10	Ci.-S.	N, S.-Cu.	15.7	● p.
31	57.99	27	33.4	23.1	81.5	Variable	.8	8.8	A.-Cu.	S.-Cu.	------	T ϟ p. ⊕
Mean	757.50	27	32.9	24.1	82.7	------	.7	8	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	216.9	

METEOROLOGICAL DATA, ETC.—Continued.

CAPIZ.

[ϕ = 11° 35′ N; λ = 122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°*C.*	°*C.*	°*C.*	*Per ct.*		*0–12.*	*0–10.*			*mm.*	
1	759.23	27.1	32.2	------	84.7	Variable	0.2	6.7	Ci.	Cu.-N. NE	------	⊤ p.
2	58.81	26.9	31.5	------	83.3	N	.5	5.8	Ci.	Cu.-N. NE	------	⌓ a.
3	59.34	25.5	28	------	92.3	SW	.3	8.8	Ci.-S.	N. NW	34.8	● a. p, ϟ°
4	58.89	26.6	31.2	------	84.7	NE	.3	5.8	Ci.	Cu. W, NE	------	⌓ a. ϟ° p.
5	58.24	27.4	32.2	------	85.7	NE quad.	.3	5.8	Ci.	Cu.-N. E, NE	------	ϟ° a. p.
6	58.16	27.3	31.2	------	85.3	NE	.5	7.3	Ci.	Cu.-N. N, NE	34.3	[ϟ a. d° ϟ° p.
7	57.74	27.4	31.2	------	85	Variable	.5	7	A.-Cu. SW, NE	Cu.-N. NE	------	⌒° a. ϟ° p.
8	57.89	27	31.1	------	86.2	NNE	.5	6.7	Ci.	Cu.-N. NE	3.3	⌓ a. [ϟ p.
9	58.46	26.6	31	------	85.7	Variable	.3	6.5	Ci.-S.	Cu.-N. NW	1.5	d° a. p. ϟ°
10	58.23	27.1	31.8	------	78.3	Variable	.3	5.8	Ci., Ci.-S.	Cu.-N. NE, NW	------	⌓ a. ϟ° p.
11	57.28	26.4	30.4	------	84.7	WNW, NNW	.3	9.8	Ci.-S.	Cu.-N. NW	2	⌓ a. [ϟ° p.
12	56.52	26	33	------	87.8	Variable	.3	8.7	Ci.-S.	Cu.-N. SE, SW	80.5	[ϟ² p.
13	57.41	25.6	30.5	------	87	Variable	.3	8.8	Ci.-S.	Cu.-N. SE, NW	52.6	≡° ●² ⌒² ϟ
14	58.08	26.6	31.1	------	86	Variable	.5	6.2	Ci.	Cu.-N. NE, NW	------	⊤° ϟ° p.
15	57.68	26.9	31.8	------	85.3	Variable	.2	7	Ci.	Variable	------	⌓° a. ϟ² p.
16	56.22	26.8	31.9	------	83.5	Variable	.2	7	Ci.-S.	Cu.-N. NW	------	⌓° ⊤ p.
17	55.66	26.7	33.1	------	88.5	SW, SE	.3	7	Variable	Cu.-N. SW	28.2	⌓° a. ● p.
18	56.11	27	33.4	------	85.2	NE	.3	8.8	Variable	Cu.-N., N. NW, NE	78.7	[ϟ² p.
19	56.56	27.1	31.4	------	88.8	WSW, SSE	.2	8.8	Variable	N.	16.5	[ϟ p.
20	56.06	27.1	32.2	------	86.2	SW	.5	8.8	Ci.-S., Ci.	Cu.-N., N. SW, NW	------	[ϟ° p. ° ∪Φ°
21	55.44	27	32.8	------	85.2	Variable	.3	8.5	Ci.-S.	Cu.-N. SW	10.2	⌒° a. p p. ∪ Φ
22	55.99	27	32.4	------	83.5	WSW	.5	9	Ci.-S.	Cu.-N. SW	1.5	d° p.
23	56.73	26.9	31.4	------	83.9	SW, SSW	1	9.3	Ci.	Cu.-N. SW	------	d° p. ∪° Φ
24	57.10	27.2	32.4	------	82.7	SSW	.7	8.7	Ci.-S.	N., Cu.-N. SW	------	⌓ a.
25	57.02	27.6	30.9	------	80.3	NW	.3	9.5	Ci.-S.	N. SW, NW	------	
26	56.61	27	30	------	86.3	N	.5	9	Ci.-S.	Cu.-N. NE, NW	------	ϟ° p.
27	56.52	27.1	30.7	------	85	Variable	.2	9.8	Ci.-S.	N. NW	1.5	d a. ⊤ ϟ° p.
28	57.34	25.5	29.4	------	92.7	SW	.5	9.7	Ci.-S.	N. SW	59.4	d a. ●² p.
29	57.35	26.1	31.6	------	89.5	SSW, NNE	.3	9.5	Ci.-S.	Cu.-N. SW, NE	47	●² a. ↙ ●° p.
30	57.27	26.1	30.7	------	87.3	W	.5	9.5	Ci.-S.	Cu.-N. SW, NW	------	
31	57.64	27.4	31.7	------	80.2	Variable	.7	8	Ci.-Cu.	Cu.-N. SW NE	------	
Mean	757.34	26.8	31.4	------	85.5	------	.4	8	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	452	

CALBAYOG.

[ϕ = 12° 04′ N; λ = 124° 36′ E; barometer above sea, 4.1 meters; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°*C.*	°*C.*	°*C.*	*Per ct.*		*0–12.*	*0–10.*			*mm.*	
1	759.32	26.8	32.9	21.2	83.2	N	1	6.5	A.-Cu.	S.-Cu.	31	[ϟ a. ϟ p.
2	59.04	26.1	34.8	22	86.7	N	1	5	A.-Cu.	Cu.-N. W	4.1	[ϟ p.
3	59.29	25.2	29.6	21.5	87.7	N	1	8.2	Ci.-S	S.-Cu., Cu.-N.	1.3	p ϟ p.
4	59.22	26.8	33	21.5	84.5	N	1	5.7	Ci.	S.-Cu.	------	○° ϟ p.
5	59.10	26.6	34.9	21	84.5	N	1	4.5	A.-Cu.	S.-Cu.	10.2	● ⌒° p.
6	58.56	25.8	32.8	21.5	84.5	N	1	6.8	Ci.-S.	S.-Cu. NE	------	⊤ ϟ p.
7	58.11	24.6	31.4	21	91.5	N	1	6.8	Ci.	S.-Cu., Cu.-N.	3.6	↙ ●° a. d ϟ p.
8	58.32	25.5	32	21.4	89.5	N	.8	7.5	Ci., Ci.-S.	Cu.-N. NE, E	1	p p.
9	58.90	26.3	33.6	22	86.3	N	1	7.2	A.-Cu.	S.-Cu. E	8.1	● a. ϟ p.
10	58.98	25.5	34	21	91.7	N, W	1	4.7	Ci., A.-Cu.	S.-Cu.	------	⊤ ϟ p.
11	57.69	26.1	33	21.4	85.8	N, NW	1	7.7	Ci.-S.	S.-Cu. W	.2	p ϟ p.
12	56.88	25.7	34	21.4	88.3	N, W	1	8	Ci.-S.	S.-Cu., Cu.-N. W	71.1	↙ ● ϟ p. ○°
13	57.75	26.1	34	20.5	84	N, W	1	6.2	A.-Cu.	S.-Cu. W	.2	d a. p.
14	58.29	26.9	32	21.5	84.8	N; W	1	6.5	A.-Cu.	Cu.-N. W	------	d° a.
15	57.99	28	33.2	24.5	83.8	W	1	7.3	A.-Cu.	S.-Cu. W	3.8	● a. p. p.
16	56.14	28.9	31.8	26.2	80.8	WSW, W	1.3	7.5	Ci.	S.-Cu. SW	------	p ∪° p.
17	55.69	29.2	33.3	26.4	77.8	WSW	1.8	6.3	Ci. SW	S.-Cu. SW	1	p a.
18	56.62	29.6	34	26.2	73.8	WSW	1.2	6.8	A.-Cu.	S.-Cu. SW	------	ϟ p.
19	57.08	27.5	34	23.9	84	WSW, W	1.3	8.2	A.-Cu., Ci.-S.	S.-Cu. Cu.-N. sw	.2	p° a. ●° ϟ p.
20	56.34	28.7	33.5	23.4	77	W	1	7.5	A.-Cu.	S.-Cu. SW	3.8	↙ ● a. ∪²
21	55.88	28.8	33.6	24	80.3	WSW	2	7.3	A.-Cu. SW	S.-Cu. SW	6.1	p a. ● p.
22	56.16	27.7	32	25	83.8	WSW	1.5	7.3	A.-Cu. N	S.-Cu. SW	1	d p. ○² Φ°
23	57.04	28.5	34	23.6	76.7	WSW	1	6.7	Ci., A.-Cu.	S.-Cu. SW	------	○° ∪²
24	57.46	28.2	34.8	23	79.8	W	.7	6.8	A.-Cu.	S.-Cu.	------	d° a.
25	57.36	25.4	30	22.5	92.5	NW quad.	.8	8.3	Ci.-S.	Cu.-N. W, S	22.6	⊤ a. [ϟ p.
26	56.85	26.2	31	21.5	86.8	W	.7	7.3	Ci.-S.	S.-Cu. W	------	d ⌒° ϟ
27	56.86	26.4	32.9	22	89.2	N, W	1	6.7	Ci., Ci.-S.	S.-Cu.	------	⌒° d° p.
28	57.65	24.6	28	22.8	94	N	1	8.3	Ci.-S.	Cu.-N. W	29.7	● a. d p.
29	57.62	26.4	31	22.4	85.7	N	.7	7.5	Ci.-S.	Cu.-N. S.-Cu. W	6.1	●° a.
30	57.97	24.7	30.1	22	91.8	N, W	1	8	Ci.-S.	S.-Cu. Cu.-N. sw	8.4	p° a. ● p.
31	58.20	26.5	33.2	20.9	85.5	N, W	1	7	A.-Cu.	S.-Cu.	.2	
Mean	757.69	26.8	32.7	22.6	85	------	1.1	7	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	213.7	

METEOROLOGICAL DATA, ETC.—Continued.

LEGASPI.

[ϕ=13° 09′ N; λ=123° 45′ E; barometer above sea, 4.3 meters; gravity correction not applied, —1.77 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	759.34	27.1	32.9	21.5	83	Variable	0.5	4.3	Ci. E	Cu. W	------	p° ↯ p.
2	59.22	27.3	32.9	22.4	81.7	NE	.2	2.3	Ci.	Cu. SSW	------	⊤ ↯ p.
3	59.21	26	30.7	22.3	87.2	ESE, W	.3	5.8	Variable	Cu. E, SE	1.8	⛈ a.
4	59.39	27.4	31.9	20.8	79.7	E quad.	.5	1.5	Ci. NE	Cu.	------	↯ p.
5	58.96	28.4	32.6	22.1	77.1	E	.7	1.2	Ci.	Cu.	------	↯ p.
6	58.78	26.8	32.1	22.9	79.3	NNE	1	4.3	Ci.-S.	Cu.	.5	⊤ d m. d.
7	58.28	27.6	32.9	21.8	77.3	ENE	.5	2.8	Ci. W	Cu.	.8	↯ p.
8	58.33	27	32.2	21	80.7	E	.8	3.5	Ci.	Cu.	------	d° ↯ p.
9	59.07	28.1	31.8	22.4	78.5	Variable	.8	5.6	Ci.-S. ESE	Cu.	.2	↯ p.
10	58.67	27.8	32.6	21.9	80.8	SSE, E	.3	2.5	Ci. ENE	Cu.	2	↯ p.
11	57.54	26.4	33	22.5	84.5	Variable	.5	8.2	Ci.-S.	Cu.-N. NW	.5	⛈° p. ○
12	56.69	25.6	34.1	22.2	88.8	SW	.2	8.2	Ci.-S.	Cu. SW	58.9	⛈ p.
13	57.56	26	33.5	21	83.5	Variable	.5	3.8	Ci.	Variable	------	d° ↯° p.
14	58.02	27	32.1	22.5	82.5	E	.2	3.5	Ci.	Cu.-N. SW	3.8	d a. ● p.
15	57.35	28	33	24.1	81.3	SW quad.	.5	5	Ci. E	Cu.-N. W	2.5	d a. p. ↯ p.
16	55.72	27.4	32.4	24.4	85.3	WSW	.5	5.3	Ci.-S.	Cu. WSW	21.6	● a. p. ↯³ ○
17	55.34	28.1	32.8	25	78.2	SW	.7	2.5	Ci. E	Cu. SW	------	↯ a. p. ○
18	56.09	27.6	33.1	24.2	80.4	WSW	1	7	A.-Cu.	Cu.-N. WSW	11.4	● a.
19	56.52	26.9	30.4	24.6	82.4	WSW, W	1	7.5	Ci.-S.	Cu.-N. W	8.8	● a.
20	55.98	27.9	33.5	24.9	76.5	SW quad.	.7	7	A.-Cu. W	Cu. WSW	------	d° p. ⊍
21	55.04	27	32.5	24.1	34.5	WSW	1	5.8	A.-Cu. W	Cu.-N. WSW	6.2	● a. d p.
22	55.47	26.9	31.1	23.2	84.1	WSW	.8	7.3	Ci.-S.	Cu.-N. SW	23.6	● a. d p.
23	56.55	28	33	24.5	77.7	WSW	1	5.7	Ci. ENE	Cu. WSW	------	⊍
24	57.14	27.8	33.2	23.5	75.2	W, WSW	1	3.7	Ci. ENE	Cu. W	------	○
25	57.19	27.8	33.4	24	79.7	W	.8	6	Ci, Ci.-S. E	Cu.	------	⊤° ↯° ⊍°
26	56.74	27.8	32.5	24.1	80.3	Calm	0	6	A.-Cu. ESE, NE	Cu. NE	------	⊤ ↯ p.
27	56.59	27.5	33	23.2	81.2	W	.5	5.7	Ci.	Cu. S	1.3	≡ a. p ↯ p.
28	57.40	25.4	29	23.9	90.5	W	.2	10	Ci.-S.	N.	9.6	● a. d p.
29	57.47	25.2	28.3	23.1	90.2	W	.5	10	Ci.-S.	N.	22.9	● a. p.
30	57.54	24.1	28.5	22.7	93.8	WSW	.2	10	------	N.	110.9	● a. p.
31	57.94	27.6	33.5	23	78.7	SW	.5	6.7	A.-Cu.	Cu. SW	------	↯° p.
Mean	757.46	27.1	32.2	23	82.1	------	.6	5.4	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	287.3	

ATIMONAN.

[ϕ = 14° 00′ N; λ = 121° 55′ E; barometer above sea, 7.8 meters; gravity correction not applied, —1.74 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	758.80	27	32.7	23.5	89.3	SW, WSW	1	6.3	Ci. E	Cu. W	------	d ↯° p.
2	58.77	26.9	33.1	23.5	87	SW	1	6.2	Ci.	Cu. S	3.6	Ω° ϖ° a. ●° p.
3	59.01	25.6	30.9	22.3	91.3	SW, SSE	1.2	7.5	Ci.-S.	Fr.-N. NE	4.5	ϖ° Ω° ●°
4	58.90	26.9	32.6	23	89.2	SW	.8	6.3	Ci. NNE	Cu. NE, E	10.2	ϖ° ≡° ●° ↯°
5	58.75	28	32.9	22.1	85.3	SW, NNE	1.7	4.8	Ci.	Cu. E	------	ϖ° Ω° ↯°
6	58.32	28.3	33	24.5	85	NNW	1	7.7	Ci.-S. E	Cu.	------	Ω° a. ↯° p.
7	57.94	27.7	32.8	23.1	84.8	Variable	1.2	3.7	Ci.-S.	Cu.-N.	------	d ○² a. ↯° p.
8	58.10	27.8	33.2	23.4	84.8	SW, NNE	1.3	6.5	Ci.-S.	Cu. NE	------	d° p.
9	58.86	27.9	31.5	24.6	86	NNW	1.7	8	Ci.-S. SE, NE	Cu. NNW, N	6.4	Ω ○° ↯° ●°
10	58.68	27.6	32.3	23.4	87.3	Variable	1.2	5.5	Ci.	Cu. E, N	2	●° ○° ⌒° ↯°
11	57.36	27.5	31.7	23.4	87.3	SW	.8	9.7	Ci.-S. N	Cu. N, W	5.1	⛈° p.
12	56.22	27	33.4	23.1	84.7	WSW	1.2	9	Ci.-S.	Cu.-N.	3.8	⛈° p.
13	57.17	26.6	33	22.3	86.7	SW	1.2	3.3	Ci.	Cu.-N.	1.8	Ω° d ↯°
14	57.84	27.4	33.8	22	85.5	SW	1.2	6.5	Ci. E	Cu. SW	------	Ω ≡ ↯°
15	56.87	28.2	33.4	23.9	83.3	WSW	1.2	5.3	Ci. ESE, E	Cu. WSW	------	Ω d° ↯°
16	55.07	28.9	33.9	25.1	79.5	SW quad.	2.2	7.2	Ci.	Fr.-Cu. wsw, sw	------	↯° p.
17	54.72	28.6	33.5	25.7	79.1	SW quad.	2.2	7.8	Ci.	Cu. NNW, SW	------	d ↯°
18	55.63	28.5	32	26	78.8	SW quad.	1.7	10	Ci.-S. WSW	Fr.-Cu. SW	------	Ω° d
19	55.94	27.7	32	23.9	90	WSW, W	1.7	10	Ci.-S. E	Cu. SW	------	d p.
20	55.08	28.1	33.2	24.5	79.5	W, SW	2	9.8	Ci.-S.	Cu. SW	------	d p.
21	54.18	27.8	34.2	24.5	83.5	SW quad.	2	7.3	Ci.-S.	Cu. WSW	5.6	d a. ●° p.
22	54.19	27.3	30	24.3	84.2	SW quad.	1.7	10	Ci.-S.	S.-Cu. SW	6.1	d a. p.
23	55.21	28.4	34	23.1	82.5	SW, WSW	1.7	7.8	Ci. ENE	Cu. SW	3.8	●° ϖ² p.
24	56.28	28	34.4	23.3	81	SW quad.	1.7	5.7	Ci. NE	Cu. SW, NNW	------	ϖ² ⊍°
25	56.72	27.8	33.5	22.1	81.5	SW	1.7	3.3	Ci.	Cu. SW	------	Ω° ϖ° ⊍°
26	56.32	28.7	35	23.4	82.7	SW, WSW	.8	5.2	Ci.-S. E	Cu.	10.4	⛈° p. ϖ°
27	56.08	28.2	34	23.5	87.5	SW, NNE	1.2	6.5	Ci. E	Cu.-N., Cu.	2.8	●° ↯° p.
28	56.98	26.8	31.1	23.5	89.8	WSW, SW	1.2	7.8	Ci.-S, Ci.	Cu. SW, S	22.3	⛈ p.
29	56.74	25.6	30.5	23.5	92.7	SW, WSW	1.2	10	Ci.-S.	Cu.-N.	------	d° a. p. ↯°
30	56.54	26.2	29.8	23.5	88.2	SW	.7	10	Ci.-S.	Cu. SW	------	d a. p.
31	57.14	28.2	34	23.9	83.7	Variable	1.5	7.7	Ci. NE	Cu. SW	------	ϖ° ⊤° ↯° p.
Mean	756.92	27.6	32.8	23.6	84.9	------	1.4	7.2	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	88.4	

METEOROLOGICAL DATA, ETC.—Continued.

OLONGAPO.

[ϕ=14° 49′ N; λ=120° 15′ E; barometer above sea, 3.5 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force. (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Prevailing form and its direction. Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	758.75	------	------	22.5	------	SW, WSW	0.2	9	Ci.-S. E	Cu., Cu.-N.	------	♀° ☇
2	58.90	------	------	22.4	------	W, N	.2	8	Ci.-S. N, S	Cu., Cu.-N.	------	⊤ a. ☇ p.
3	58.91	------	------	23.1	------	Variable	.4	8.5	Ci.-S.	Cu.	6.4	⌣² ○ ● p.
4	58.71	------	------	22.2	------	Variable	.2	9	A.-Cu., Ci.-S. E	Cu. E	------	≡ a. ☇ p.
5	58.45	------	------	22.8	------	N	.4	7.5	Ci.-S. E	Cu. SE	------	☇ a. ○
6	58.41	------	------	24.1	------	Variable	.2	8.3	Ci.-S.	Cu.	11.2	⊤ ● ☇
7	57.78	------	------	23.2	------	NNW, N	.2	6.5	Ci.-S.	Cu.-N.	3.8	● ☇ p.
8	57.71	------	------	22.2	------	NE	.4	6	Ci.-S.	Cu.	5.8	☈ p.
9	58.66	------	------	23	------	ENE, N	.5	8.5	Ci.-S. S	Cu.	2.5	☇ ●° ○ ⊤
10	58.27	------	------	22.8	------	Variable	.3	9	Ci.-S. SE	Cu. E	------	○ ◠ ☇
11	57.39	------	------	22.5	------	Variable	.3	9.7	Ci.-S. NE	Cu.-N., Cu. N	6.4	☈ p.
12	56.02	------	------	22.6	------	W, N	.2	9.5	Ci.-S. N, NW	Cu.-N., Cu. N	6.6	≡ a. ☈ p.
13	57.10	------	------	22.3	------	NW	.1	7.2	Ci.-S. S	Cu., Cu.-N.	2	≡² a. ☈ p.
14	57.67	------	------	22.3	------	SSW, N	.2	7.7	Ci.-S.	Cu.	------	☇ ⊤° p.
15	57.14	------	------	23.8	------	NNW	.2	8.3	Ci.-S.	Cu. W	------	≡² ○ d
16	55.58	------	------	22.6	------	SW, SSW	.2	8.8	Ci.-S.	Cu., Cu.-N. w, sw	74.2	≡² ● a. p.
17	55.36	------	------	22.1	------	SW	.5	10	Ci.-S.	N. W	91.2	↙ ● ⊤
18	55.93	------	------	22.7	------	SW	.6	9.8	Ci.-S.	N.	35.6	● a. p.
19	56.28	------	------	23.1	------	Variable	.6	10	Ci.-S.	N. SW	117.6	↙ ● a. p.
20	55.04	------	------	22.7	------	S quad.	.7	10	Ci.-S.	N., Cu.-N.	33.5	● a. p.
21	54.02	------	------	23.2	------	W, SW	.4	10	Ci.-S.	N. W	62.2	● a. p. ◠
22	53.54	------	------	23.5	------	SW	.8	10	Ci.-S.	N. SW	33.8	● a. p. ≡²
23	55.07	------	------	23	------	S quad.	.4	10	A.-Cu.	N. SW	51.3	↙ ● a. p.
24	56.12	------	------	23.5	------	S	.8	9.8	A.-Cu.	N., Cu.-N. S, SW	3.8	●° ≡
25	57.06	------	------	23	------	SSW	.4	8.7	Ci.-S.	Cu.	1.5	d ≡² ⌣²
26	56.34	------	------	22.6	------	Variable	.3	8.3	Ci.-S. NE	Cu. W	------	≡ a. ☇ p.
27	56.06	------	------	23.7	------	W, SSW	.2	8.7	Ci.-S.	Cu. E	------	
28	56.67	------	------	24.2	------	SSW	.7	9.3	Ci.-S.	Cu.-N.	17.8	≡ ⊤ ● p.
29	56.85	------	------	22.7	------	Calm	0	10	Ci.-S.	Cu.-N.	40.1	≡ ● a. p.
30	56.38	------	------	22.5	------	NNW	.1	10	Ci.-S.	N.	180.6	● a. p.
31	57.28	------	------	22.5	------	S	.2	10	Ci.-S.	N. SW	89.9	● a. p. ≡² ☇
Mean	756.89	------	------	22.9	------	------------	.4	8.9	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	877.8	

SAN ISIDRO.

[ϕ=15° 22′ N; λ=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.	Clouds. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	759.20	27.2	34	23	82.8	S	0.2	9.7	Ci.	Cu.-N. S	1.5	⊤ d ☇
2	59.26	26.7	35.5	22.9	83	W	.2	8.7	A.-Cu. SSW, SW	Cu. SW	5.3	Ω² ≡ ⊤ ☇ d
3	59.59	26.7	33.8	23.6	84.7	N, WNW	.3	8.5	A.-Cu. Variable	Cu.-N., Cu. E, NNE	------	⊤ ☇
4	59.15	26.4	35	21.9	86.4	S	.2	8	A.-Cu. N, WNW	Cu.-N., Cu. N, NW	------	≡ ⊤ ☇
5	58.98	------	33.6	22.7	------	NNE, NE	------	------	Ci.-S.	S.-Cu.	------	☇
6	58.70	27.7	36.4	23	77.5	ESE, E	0	5.3	Ci., A.-Cu.	Cu.	13	Ω² ○° ☈
7	58.19	25.2	35.1	21.5	87.7	ESE, NNW	.2	4.5	Ci.	Cu. E	51.5	☈
8	58	26.6	35	21.5	82	E, SE	0	2.8	Ci.-S.	S.-Cu., Cu. E, ESE	25.4	≡² ●² ⊤ ☇
9	59.29	25.5	30.2	21.4	88.3	ENE	0	7.5	Ci.-S.	Cu.	6.3	●² ○° ⊤ ☇
10	58.77	27.1	34.5	22.6	80.3	NE, E	0	4.5	Ci., Ci.-S.	Cu. E, SE	------	≡° ⊤ ☇
11	57.68	26.2	34.2	21.8	84.6	SSE	0	7.5	Ci.-S.	Variable	47	○° ☈²
12	56.34	25.7	32.4	21.7	85.8	Calm	0	8.2	Ci.-S.	S.-Cu.	------	☇
13	57.27	26.8	35.6	22.2	79.6	NNW, SE	0	5.2	Ci.-S.	Cu. NE	1.3	≡° ⊤
14	57.91	27	35.8	22.4	79.8	SSE, SE	0	5.3	Ci.-Cu., Ci.	Cu.	------	≡ ⊤ ☇
15	57.38	26.4	32.6	23.9	83.5	W	0	5.8	Ci.	Cu. NW	------	⊤ ☇ ≡ ○² d
16	55.45	25.9	32.6	23	87.3	WSW, SSW	.2	5.2	Ci., Ci.-S.	Variable	15.8	⊤ ●² ☇
17	55.22	26	31.5	23.4	87.2	SSE, SSW	.2	7.7	Ci.-S.	S.-Cu. SW	24.6	●²
18	55.95	26.4	31.6	23.5	84.8	SSW	.5	8.3	Ci.-S.	Cu. SW	------	
19	56.41	25.5	28.5	24.2	89	SSW	.5	8.8	Ci.-S.	Cu., N. SW	4.6	≡ ●°
20	55.19	26.6	31.1	23.4	84	SW	.3	8.3	Ci.-S.	S.-Cu., Cu. SW, S	------	☇
21	54.15	25.8	31.3	24	90.3	SSE, SSW	.2	7.5	A.-Cu. S	N. SW	5.6	●° ⊤
22	54.02	25.1	28.9	23.5	93.7	SSW	.3	9.7	Ci.-S.	N. SW, SSW	9.4	≡ ●
23	55.27	26.1	30.8	23.1	89.7	SSW	.5	9.2	Ci.-S., A.-Cu. W	Cu., N. SW, SSW	13.2	●²
24	56.80	25.9	29.8	23.5	87.3	SSW, SSE	0	6.3	Ci.	Cu. SW	1	ϖ Ω²
25	57.10	27.4	33.8	22.2	79.5	S	0	4.7	Ci.	Cu. S	------	◠ ⌣² Ω
26	56.50	27.6	35.5	23.9	81.2	SSW, SSE	.2	7	Ci.	Cu. SW, W by S	------	Ω ⌣² ⊤ d°
27	56.27	28	36.2	24.3	82.2	S	.2	7.2	Ci.	Cu. SW, S	19	●² ≡
28	56.70	27.1	33	24.1	86.3	SSW, SSE	.2	8.2	Ci.	Cu. W, SSW	19.8	≡ ☈
29	57	26	31.5	23	87.5	S quad.	.3	9.7	Ci.-S.	Variable	15.7	Ω ≡ ○° ●
30	56.62	25.5	28.9	23.2	89	S quad.	.3	9.7	Ci.-S.	N., Cu. SSW, S	.8	d
31	57.59	25	29	22.5	91.5	SSE, SSW	.2	9	Ci.-S.	N. S	15.5	●² ⊤
Mean	757.16	26.4	32.8	22.9	85.2	------------	.2	7.3	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	296.3	

METEOROLOGICAL DATA, ETC.—Continued.

DAGUPAN.

[ϕ=16° 03′ N ; λ=120° 20′ E ; barometer above sea, 2.7 meters ; gravity correction not applied, —1.67 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Force (mean).	Clouds. Amount (mean).	Prevailing form and its direction. Upper.	Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	758.66	28.7	33.5	24.8	77.3	SE	0.5	8.5	Ci.-S.	Cu. SW	------	≡ Ω ⊤ ↯
2	58.94	28	32.2	23.8	79.2	NW	1	7.2	Ci. N by E, NE	Cu.	------	≡ Ω ○ ⊕ ∞ ↯
3	59.06	27.1	33	23.1	78.4	Variable	.7	6.8	Ci.-S. NE by E	Variable	16.5	∞ ⊏ p.
4	58.87	27	34.1	22.1	81.7	Variable	1.2	6.7	Ci. NE	Cu.-N.	12.7	≡ Ω² ○ ⊕ ⌒ ⊏
5	58.62	27.7	36.5	22.5	84	SE, SW	.5	4.7	Ci.	Cu.	1.3	≡ Ω d ⊤ ↯
6	58.44	28.5	35.6	23.5	78.5	SE, NW	1.3	2.7	Ci. E	Cu.	.5	≡ Ω ⊤ ↯
7	57.68	28.2	32.8	23.2	79.2	SE	1.2	3	Ci.	Cu. S, NNW	------	↯ p.
8	57.78	27.8	34.5	22.9	79	SE	1.2	2.5	Ci.-S.	Cu.	------	≡ Ω d° ↯
9	58.84	27.1	32.7	23.8	83.4	SE	.7	6.8	Ci.-S.	S.-Cu. SE	------	≡ Ω ↯ d
10	58.50	28.8	35.4	23.8	77.5	SE, NW	1.2	5.3	Ci. E	S.-Cu. ESE	------	≡ Ω ⊤ d° ↯
11	57.22	28	32.8	23.7	79.2	SE, NW	1	5.5	Ci. ENE, NE	Cu. WSW	10.2	≡ ⊏
12	56.06	26.7	31.1	22.7	85.2	SE, NW	.7	8.2	Ci.-S.	S.-Cu. NW	------	≡ ∞ ↯
13	56.90	28.4	33.8	23.4	79	SE, NW	1.2	3.7	Ci. SW	Cu.	9.1	≡ Ω ⊏
14	57.61	28	32.9	22.8	82.3	E, NW	1.2	3.5	Ci.	Cu.	------	⊤ d° ↯
15	57.06	27.7	32	23.5	85.7	Variable	.8	4.3	Ci. ENE	Cu. WNW	45.2	↙ ●
16	54.96	27.3	31	24.1	88	Variable	.7	8.3	Variable	S.-Cu. W	19.8	↙ ● ⌒
17	54.85	26.4	32.1	22.8	91.2	S, ESE	.8	9.8	A.-Cu.	Variable	61.7	⊤ ● ⌒
18	55.56	26.9	32.3	23	86.7	S	1	9.8	A.-Cu.	N.-cf. W	1	●° ⊤
19	55.82	27.2	32.4	23.9	89.2	SSE	1	10	A.-Cu., Ci.-S.	S.-Cu. W	4.1	●
20	54.80	27.5	30.9	23.8	84.7	W, SE	.8	10	Variable	N., S.-Cu.	.3	
21	53.57	27.3	31.4	24.3	87.5	S	.5	8.3	Ci., A.-Cu.	S.-Cu. SW	9.7	Ω ≡ ↙ ●²
22	53.37	25.8	31.2	23.5	91.4	SE, NNW	1	10	A.-Cu.	N. S, SW	34.8	↙ ●²
23	54.64	25.8	31.4	23.4	92.4	SE quad.	1.2	10	Ci.-S. E	N. SE	65	↙ ●²
24	56.26	26.6	31.1	23.5	89.3	SE quad.	1.2	9	Ci. S	S.-Cu. SW	7.4	● ≡ ⌣ Ω
25	56.72	28.3	33.8	23	82.8	S, NNW	.8	2.8	Ci.	Cu. SW	------	Ω² ≡ ↯ ⊖°
26	56.39	28.6	32.8	24.5	83.3	NNW	1	4.7	Ci. E	Cu. SW	------	Ω² ≡ ⊖
27	55.97	28.9	33.3	25	83.3	NW	1.3	6.5	Ci. E	Cu., S.-Cu. SE, W	------	Ω² ≡ ↯
28	56.56	27.4	32.7	23.6	87.1	NW, S	.8	8.3	Ci. E	Variable	11.2	≡ ⊏
29	56.64	26.5	32.3	23.6	89.2	S	.7	9	Ci. E by S	N. NW	37.6	⊏
30	56.07	25.2	31.4	23.1	91.5	S	1	9.8	------	S.-Cu., N. SSE, S	6.8	●
31	57.14	25.6	30.2	23.1	93	S, SE	1	9.8	A.-Cu.	N. SE	32.5	●²
Mean	756.76	27.4	32.7	23.5	84.5	------	.9	7	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	387.4	

VIGAN.

[ϕ=17° 34′ N ; λ=120° 23′ E ; barometer above sea, 24 meters ; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Force (mean).	Clouds. Amount (mean).	Prevailing form and its direction. Upper.	Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	759.18	26.7	29.9	24.8	84.3	S quad.	1	5.2	Variable	Cu.	------	⊖° d° ⌒ ↯°
2	59.41	26.9	31.4	24.1	81.5	SSW	1	4.8	Ci. E	Cu. SSW	3.8	⌒ ↯° ●
3	59.45	27.1	31.4	24	82	Variable	.8	1.7	A.-Cu.	Cu.	.8	⊏° p.
4	59.28	27.3	31.1	24	84	Variable	.5	2.2	Ci. NE by E	Cu. NW	------	⊖ d° ↯
5	58.96	27.5	31.5	25.1	82.8	E	.7	2.3	Ci.	Cu. N by W	------	d° ⌒ ↯
6	58.95	27.8	32.3	23.8	77.2	Variable	1	1	A.-Cu. Ci.-S.	Cu.	------	↯
7	58.18	27.6	31.8	24.5	82.2	NW quad.	.7	1.3	Ci. Ci.-S.	Cu. N	------	d ⌒ ↯°
8	58.38	27.4	31.8	24.5	84.8	Variable	.7	2	A.-Cu.	Cu.	.5	⊏° p.
9	59.06	27.5	32	24	82.7	S	.7	1.7	Ci.	Cu.	------	d° ↯
10	59.01	28	31.7	24.5	80	SE	.7	1.7	Ci.	Cu.	------	↯°
11	57.59	28.2	32	25	79.5	SE, W	.8	1.7	Ci. N	Cu.	------	↯° ⌒
12	56.22	27.4	32	25	84.5	SE	.5	6.7	Ci.-S.	Cu.	------	⊤ ↯ d°
13	57.31	27.6	32.4	24.1	78.8	S	1	1.5	Ci.-S. E by S	Cu.	------	d° ⌒ ↯°
14	58.20	27.8	32.4	24	80.5	ESE, NW	.8	1.2	Ci. E by S	Cu.	------	⌒ ↯°
15	57.47	27.7	32	24.4	81.2	W	.8	1.3	Ci. E by S	Cu. SW by W	------	↯°
16	55.04	26.6	29.6	25	87.7	S, SSW	1.3	6.8	A.-Cu.	Cu. W by S	5.6	● ↯° ⊤
17	54.90	24.6	28.2	23.2	95.7	S	1.2	10	------	N. SW by S	42.4	● ⊤ ⌒
18	55.55	25.8	29.9	23	90.4	S	1.5	7.3	A.-Cu. SE	Cu.	49.3	○ ●
19	55.71	26.6	30	23.4	88.9	S	1	6.3	A.-Cu.	Cu. SSW	.8	⌒ ○° d
20	55.13	25.8	30	23.5	93.7	SSW	.8	9.2	Ci.-S.	Cu.	30.5	● ⌒ ○
21	53.75	26.5	29.4	23.5	91.7	SSW	1	9.7	Ci.-S.	Cu. SSW	18.3	● ⌒ ○
22	53.17	26	29.7	23.5	93.2	S	1.5	5.8	Ci.-S.	Cu. SSW	26.7	● p.
23	54.24	26.7	30.1	23.8	90.2	S	1.5	6.8	Ci. A.-Cu. E by S	Cu. SSW, S by W	.8	d
24	56.10	27.4	30.2	25	86.7	SSW	3.5	9.5	Ci.-S.	Cu.	.2	d ○ ⊖
25	57.12	27.5	30.9	24.6	85.3	S, SSW	1	3.8	Ci. ENE	Cu.	5	○ p.
26	56.80	27.4	31.2	24.8	89.3	S, SSW	1	5.5	Ci., Ci.-S. E	Cu. SSW	------	⊖
27	56.40	28.4	32	25.2	85	S	.8	2.3	Ci.-S.	Cu. SSW	13.7	⊏ p.
28	56.79	27.4	31.9	23.5	89.7	SSW, SW	.3	8	Ci.-S. E	Cu., S.-Cu. SW	5.1	⊤ ●° p.
29	56.86	26.9	30.5	25	90.7	S	.7	7.7	Variable	Cu. SW	42.7	● p.
30	56.12	25.1	27.5	23.5	96.8	S quad.	1.2	9.8	Ci.-S.	Variable	35.8	● a. p.
31	56.98	25.3	29.6	22.2	92.3	S	2.2	9.8	Ci.-S.	Cu. S by W	21.8	● a. p.
Mean	757.01	27	30.9	24.1	86.2	------	1	5	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	303.8	

METEOROLOGICAL DATA, ETC.—Continued.

APARRI.

[ϕ=18° 22′ N; λ=121° 34′ E; barometer above sea, 5 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Prevailing form and its direction. Lower.		
	mm.	°*C.*	°*C.*	°*C.*	*P. ct.*		*0-12.*	*0-10.*			*mm.*	
1	758.98	27.6	33.6	24.4	84.5	Variable	1.5	5.8	Ci.-S.	Cu.-N. SE, N	1.5	[ϟ° a. p. ⌒
2	59.37	27.9	31.8	24	82.2	S, NE	1.2	4.8	Ci. E	Cu.-N. NW, N	------	ϟ p.
3	59.36	28.2	32.5	24.4	82.3	Variable	1.5	2.2	------------------	Cu.-N. E	------	ϟ T ⌒ p.
4	59.30	27	32.8	24.2	83.7	S	1.3	.8	Ci.	Cu., Cu.-N. S	------	ϟ T ⌒ p.
5	59.06	27.6	33.5	22.5	81.8	SW, S	1.3	.7	Ci.	Cu.-N. SW	------	ϟ T ⌒ p.
6	58.85	27.8	32.4	23	82	S, N	1.3	2	Ci.-S. E	Cu.-N.	6.8	[ϟ p.
7	58.27	28.5	33	24.1	81.3	SW, S	1	.8	------------------	Cu.-N.	------	ϟ p.
8	58.45	28.2	33	24.4	79	S	1	.5	Ci., Ci.-S.	Cu.-N.	------	ϟ p.
9	59.19	28.8	33.6	23.5	79	S	1.2	.5	Ci.	Cu. S	------	T ϟ p.
10	58.97	29	33.4	25	81.2	S, ENE	1.3	2.5	Ci. NE, E	Cu.-N.	------	T ϟ p.
11	57.36	28.8	33.6	25.5	80.5	S, N	1	6.3	Ci. E	Cu.-N. N	------	T ϟ p.
12	56.35	27.3	33.1	23.7	85.1	S, N	1.3	8.2	Ci.-S. SW	S.-Cu., Cu.-N.	------	T° ϟ p.
13	57.14	28	34.1	23.1	78.1	S, N	1.7	3.8	Ci. E	Variable	------	ϟ p.
14	58	28	32.1	23.4	81.6	S, NNW	1.5	2.5	Ci.	Variable	------	ϟ p.
15	56.24	28.2	33.3	24.4	79.7	SSW	1.3	2.2	Ci. W, SE	Cu.-N.	------	⌒ ϟ p.
16	53.52	29	34.1	24	73.8	SSW	1.3	8	Ci. E	S.-Cu. W	------	
17	53	29.2	33.5	26	75.7	Variable	.8	6.2	A.-Cu. N, S	S.-Cu. W	------	ϟ T° ᗡ p.
18	54.18	28.8	33	24.5	76.8	S	.8	7.3	Ci.-S. NW	S.-Cu. SW	------	ϟ p. ○
19	55.07	28	34.6	23.4	83.2	S	1.3	7.8	Ci. E	Variable	21.6	[ϟ p.
20	54.45	27	31.1	23.4	85.5	Variable	1.2	10	Ci.-S. E, S	S.-Cu	------	ϟ ⊍ p.
21	53.51	27.3	32	24	88	S, NE	.8	9.8	Ci.-S. NE	S.-Cu. S, SE	5.1	[ϟ p.
22	53.20	27.2	32.9	22.5	86.3	S	.8	9	Ci., Ci.-S.	Cu.-N. S, SE	4.6	[ϟ p.
23	54.41	27.3	33.5	22.5	86.7	S, NE	.7	8.7	A.-Cu. SW, S	Cu.-N. SE, W	32.2	[ϟ p.
24	55.89	28	32	24	86.2	Variable	1.2	10	Ci.-S. E	Cu.-N. SW	2	[ϟ° p. ○
25	56.92	29.1	33	25	81	NE	1.3	8.2	Ci. E	S.-Cu.	------	○
26	56.71	28.4	33.2	24.4	85	S	1	7.7	Ci.-S., Ci. E	Cu.-N. N	2.3	ϟ p.
27	56.17	28.6	32.4	25	81.8	S, NNW	1	4.7	Ci. NE	Cu.-N. S, N	------	T ϟ p.
28	56.58	28.9	32.9	24.7	84.2	Variable	1	7.3	Ci.-S. SE	S.-Cu.	------	T° p.
29	56.39	28	32.4	24.8	85.7	N	1	6	Ci., A.-Cu. SE	Cu.-N. E	6.4	[ϟ ⌒ p.
30	55.91	26.2	28.1	23.8	90.3	SW, NW	1.3	9.7	------------------	N. E, W	82.3	[ϟ a. p. ⌒ ○
31	56.41	26.9	32	23.5	86.2	S	1.3	7.8	Ci.-S.	S.-Cu. E	1	T p ϟ p. ○
Mean	756.68	28	32.8	24	82.5	------------	1.2	5.5	------------------	------------------	------	
Total	------	------	------	------	------	------------	------	------	------------------	------------------	165.8	

METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

ISABELA, BASILAN.

[ϕ=6° 43′ N; λ=121° 57′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30	22.3	70	NE	------	0.5	☊ ≡ a. ●° p.
2	31.5	21.5	70	NE	------	------	☊ ≡ a.
3	32.3	22	71	W	------	1	☊ ≡ ●° a.
4	32	22.5	76	W	------	.5	●° a.
5	32.5	22.6	76	W	------	------	☊ ≡ a.
6	31.6	21	65	W	------	------	☊ a. ⊤ p.
7	30.5	22.5	75	Calm	------	3.8	☊ ≡ a. ● p.
8	30.6	22.2	80	W	------	4.6	☊ a. ● a. p.
9	31.5	21.7	81	W	------	------	☊ ≡ a.
10	30.6	21.8	71	W	------	------	☊ ≡ a.
11	32.6	21.4	75	W	------	------	☊ ≡ a.
12	31.5	21.8	69	W	------	------	☊ a.
13	32.5	22.4	70	W	------	------	☊ ≡ a.
14	31.4	22	78	Calm	------	19	☊ ≡ a. ● p.
15	29.8	22.5	83	NE	------	10.4	☊ ≡ a. ● p.
16	29.6	21.7	64	Calm	------	18	☊ ≡ a. ● p.
17	30	21.5	88	W	------	6.6	☊ ≡ a. ● ⌒ p.
18	31.2	22.9	84	Calm	------	50.5	☊ a. r p.
19	30.4	22.2	83	W	------	52.8	☊ a. r p.
20	31	23	76	W	------	1.3	≡ a. ● p.
21	30.2	22	92	W	------	15.7	●° a. ↙ ● p.
22	31.5	22.2	68	W	------	18.8	↙ ● a. p.
23	32	21.6	70	NE	------	------	≡ a.
24	32	22.4	70	W	------	------	☊ ≡ a.
25	30	22	76	W	------	36.1	☊ ≡ a. ↙ ● a. p.
26	29.5	22.5	84	W	------	26.4	↙ ● a.
27	30.1	22.5	72	W	------	------	☊ a.
28	30	22.5	63	NE	------	------	☊ a. ϟ p.
29	32	23.2	70	NE	------	------	☊ a.
30	31.5	22.2	65	NE	------	4.6	☊ a. ● p.
31	30.5	22	71	NE	------	------	☊ a.
Mean	31	22.1	74.4	------	------	------	
Total	------	------	------	------	------	270.6	

ZAMBOANGA.

[ϕ=6° 54′ N; λ=122° 05′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.6	23	68	ESE	1	------	
2	30.6	23.4	69	WSW	1	------	
3	28.1	23.5	79	W	3	1.3	● p.
4	31.4	22.4	73	S	1	------	
5	29.5	22.5	73	W	2	------	
6	30	22	75	W	1	------	
7	29	23.2	84	Calm	------	1.8	●° p.
8	------	22.4	88	WSW	3	------	
9	------	------	------	------	------	------	
10	30	23	75	W	1	------	
11	29.4	23	78	W	3	------	⊤ a.
12	29.5	22.6	76	W	2	------	
13	29.5	23.5	79	W	3	------	
14	30.9	23	74	SSE	1	------	
15	30.5	23.7	81	S	2	------	
16	30	23.1	75	Calm	------	1.3	● p.
17	31.8	23.4	68	SE	1	------	
18	30.4	23.4	73	E	1	3	● a.
19	29.5	24	83	W	2	------	
20	30	23.4	69	W	1	------	
21	27.8	21.4	99	W	3	17.3	↙° ●° a. p.
22	28.5	21.9	69	W	1	2	● p.
23	29.5	21	75	ESE	2	------	
24	29.4	24	76	Calm	------	------	
25	30	23.4	81	S	1	.8	●° p.
26	27.9	21.5	81	W	1	------	
27	28.6	21.5	81	W	2	------	
28	29.1	23.5	75	W	2	------	
29	30.4	23.9	81	SE	1	------	
30	29.6	23	76	SSE	1	------	
31	30.5	22.5	65	E	1	------	
Mean	29.7	22.9	76.6	------	1.5	------	
Total	------	------	------	------	------	27.5	

DAVAO.

[ϕ=7° 01′ N; λ=125° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	------	22.2	60	SW	1	43.9	● ⊤ p.
2	32.1	------	60	Calm	------	41.9	● p.
3	30.5	21.1	75	WNW	1	------	● a.
4	32.2	22	66	SW	2	------	
5	32.1	22.2	70	Calm	------	------	
6	32.8	22.5	65	NW	2	------	
7	------	23.1	68	Calm	------	------	
8	31.9	21.8	72	Calm	------	41.4	● a. p. ⊤ p.
9	31.9	21.9	66	SW	2	------	
10	30	23	73	Calm	------	------	
11	31.6	21.5	68	NNW	2	------	
12	31.8	22.3	70	Calm	------	------	
13	32	22.5	64	Calm	------	------	
14	32.9	23.3	67	Calm	------	------	
15	32.4	22.2	69	NW	2	36.1	● p.
16	31.8	23.1	65	Calm	------	23.9	● p.
17	31.7	22.1	63	NW	1	------	
18	32.4	22.3	64	WSW	1	------	
19	32.7	22.6	60	NW	2	------	
20	32.4	23.2	64	S	2	------	
21	32.6	22.9	65	Calm	------	------	
22	32.7	22.7	61	NW	3	21.8	⊤ a. ● p.
23	27.5	21	78	Calm	------	62.5	● a. p.
24	30.6	22.5	71	SE	2	------	● a.
25	28.1	22.5	80	Calm	------	------	
26	31	21.1	78	WSW	1	------	
27	31.5	23	66	Calm	------	------	
28	------	22.5	61	Calm	------	13.7	● p.
29	32	22.9	61	Calm	------	18.8	● ⊤ p.
30	31.7	22.4	68	Calm	------	------	
31	32.1	21.9	73	SW	1	------	
Mean	31.6	22.3	67.5	------	.8	------	
Total	------	------	------	------	------	304	

COTABATO.

[ϕ=7° 13′ N; λ=124° 12′ E.]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	34	22.7	65	SW	5	------	
2	33.8	21.6	73	W	5	45.7	⌈ϟ ●² p.
3	32	21.2	64	SW	3	2.5	●° a. p.
4	33.7	21.7	56	NW	3	------	≡² a.
5	32.7	21.6	59	W	5	20.3	≡ a. ⌈ϟ ● p.
6	33	21.5	63	NW	5	------	≡² a.
7	33.2	24	69	W	5	8.1	● a. d ⊤ p.
8	30.7	21.9	78	NE	2	32.5	● ⌈ϟ a.
9	33	22.4	71	W	4	------	⌒ p.
10	33.2	22.2	66	W by N	5	------	≡² a.
11	32.2	22	65	W	5	2	≡ a. ●° p.
12	32	22.5	72	W by N	3	------	≡ ⊤ a. ○ p.
13	32.9	22.6	73	W by N	5	------	≡² ☊ a. ⊤ ϟ p.
14	34.8	21.9	63	SW	5	------	≡ a. ⊤ p.
15	34.1	23.6	71	SW	4	------	≡ a.
16	34.2	22.8	71	SW	5	------	≡ a. d ⊤ p.
17	34.1	22.5	63	SW	4	------	⊤° ϟ p.
18	34.1	23.2	69	WNW	4	------	☊ ≡ a. d p.
19	34.5	22	67	W	5	------	☊ a. ⊤ ϟ ∪ p.
20	33.7	22.6	65	W	6	------	≡ a. ○ ↙ d ϟ p.
21	33.7	22.5	59	W.	5	19.1	≡ ⊤° a. ● ↙ p.
22	33	23	74	W	4	29.4	● a. p. ↙ p.
23	32.2	21.6	74	E	2	.5	≡ d a. ●° ↙° p.
24	31.8	23	74	W by S	3	2.5	≡ a. ● ↙° p.
25	30.9	21.9	74	E	2	------	
26	30	22.3	66	SW	2	------	≡ a. ϟ p.
27	32.2	22.3	73	W by N	5	1.3	≡ a. ⊤ ●° p.
28	32.5	23.4	90	SW	3	1	≡² a. ●° a. p.
29	33.7	22.2	63	W by N	3	------	≡² ○ a. ϟ p.
30	32.8	22.1	59	NW	4	6.6	≡ a. ● p.
31	33.8	21.6	75	WNW	4	1.3	≡ a. ● p.
Mean	33	22.3	68.5	------	4	------	
Total	------	------	------	------	------	172.8	

METEOROLOGICAL DATA, ETC.—Continued.

CARAGA.
[ϕ=7° 30′ N; λ=126° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.8	22.4	77	Calm		11.4	☈ ↙ ● p.
2	30.8	21.8	72	Calm		15.7	☈ p. ●
3	29.6	21.7	79	Calm		.3	●° a. ϟ p.
4	29.8	22.5	76	Calm			ϟ p.
5	30.3	22	75	Calm			
6	30.4	21.8	67	Calm		1	☈ ●° p.
7	29.1	23.1	92	Calm		4.8	●° a. p. ⊤ p.
8	29.5	21.9	74	Calm		1.3	⊤ a. ⊕ ☈ ● p.
9	30.7	21.5	78	Calm			⊤ ϟ p.
10	32	22.6	75	Calm		2	● ϟ p.
11	32.3	22	71	Calm		1	ϟ ⊤ ●° p.
12	30.9	22.4	81	Calm			⊤ ϟ p.
13	31.9	22.5	71	Calm			⊤ ϟ p.
14	32.8	23.4	72	S	1		⊤ ϟ p.
15	32.5	21.6	67	SE	2		ϟ p.
16	32.5	22.2	62	SSW	2		⊤ ⌣ ϟ p.
17	32.4	22	67	SW	2		⌣ ϟ p.
18	33.1	22.5	72	Calm			
19	32.5	22	69	SE	1		⌣ p.
20	32	22.9	69	Calm			⊕ ⊤ ⌣ p.
21	32.5	23	71	Calm			⌣ p.
22	32.5	22.5	73	Calm		66.3	⌣ ☈ ↙ ●² p.
23	29.7	22.2	75	Calm		4.3	●° a. p.
24	30	21.6	76	Calm			d a. ↙ ●° ⊤ p.
25	28.2	21.6	81	Calm		23.6	●° a.
26	31.3	22.4	76	Calm		23.1	● ☈ p.
27	29.7	22.4	78	SSW	1		
28	31.7	23.3	73	SSW	1	.8	⊤ d° a. ●° p.
29	28.8	22.2	82	Calm			⊤ d° p.
30	30.6	22.1	73	Calm			ϟ p.
31	30.7	22.3	68	Calm			⊤ ϟ p.
Mean	31.1	22.3	73.9		.3		
Total						155.6	

DAPITAN.
[ϕ=8° 38′ N; λ=123° 23′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1		22.9	78	W	2		
2		22.4	81	W	2		Ω a. ϟ p.
3		21.9	83	W	1	2.3	● a.
4		21.8	81	E	2		d a.
5		21	84	W	1		Ω a. ϟ d p.
6		22.9	82	W	2	2.5	ϟ a. p. ● p.
7		22.2	84	W	1		●° a. ϟ p.
8		22.9	87	W	2	2	● a. p. ⊤ ϟ p.
9		21.9	77	E	1	3.3	● ⌒ p.
10		22.6	77	NW	2		⊤ p.
11		22.6	75	W	3		☈ ●° p.
12		22.5	75	W	3	4.8	☈ ● p.
13		21.8	73	W	3	2.3	☈ ● p.
14		22.1	77	W	2		↙° a. ϟ p.
15		22.4	84	W	2	30	⊤ a. ☈ ● p.
16		22	71	W	2	1.8	⊤ ● p.
17		22.2	73	W	2	30.2	d a. ☈ ● ⌣ p.
18		23	75	W	2	1.5	⊤ ● ⌒ p.
19		22.9	81	W	4	1.3	↙ ● p.
20		22	87	W	3	1.8	⊕ a. ⊤ ↙ ● p.
21		22.9	75	W	3	29.5	↙ ● p.
22		22.6	84	W	2		●° a. ↙ a. p. ⌣ p.
23		22.8	71	W	3	4.3	● ϟ p.
24		23.3	80	W	2		d° p.
25		22.6	85	Calm		?	↙ ● a.
26		22.3	74	W	3	8.2	↙ ● a. ϟ p.
27		22.4	75	W	2	1.5	● ⌒ ☈ p.
28		22.4	82	W	2	5.8	● a. p. ϟ p.
29		21.8	78	W	2	2.3	● ☈ p.
30		22.8	81	W	2	2.8	↙ ● p.
31		23.4	81	W	2		≡ a. ϟ p.
Mean		22.4	79.1		2.1		
Total						138.2[1]	

BALINGASAG.
[ϕ=8° 45′ N; λ=124° 44′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33	21.2	66	W	2		
2	32	20	65	W	1	29	ϟ ⊤ ● p.
3	30	20	74	SW	1	12.7	● a. d p.
4	31.8	19.8	68	WSW	1		
5	32.7	20	71	W	2		
6	34.1	20.9	65	W	1		
7	28.2	20.6	79	W	1	22.4	● a.
8	32.2	20.5	67	W	1		d° p.
9	32.9	19.4	66	W	2		
10	33.5	21	63	W by S	1		
11	32.9	21	64	WNW	1		d° ϟ ⊤ p.
12	33	21.5	61	W by S	1	2	↙ ϟ ⊤ ●° p.
13	33	21.5	66	W by N	1	16.5	↙ ϟ ⊤ ● p.
14	32.3	20.1	70	W by N	2		
15	31	22	75	W	1	2.3	●° p.
16	31.6	21	67	W	1	1	●° p.
17	31.9	20.6	65	NW	2	5.6	ϟ ⊤ ● p.
18	30.9	21.8	76	W by S	1		⌣ p.
19	32.9	21	69	WNW	1	54.1	ϟ ⊤ ●² p.
20	32.7	20.5	73	W by S	1	11.7	ϟ ⊤ ● p.
21	33.9	21.5	64	W by S	1	4.8	ϟ ⊤ ● p.
22	31.6	21.5	55	W by S	1	20.3	↙ ● a.
23	32.7	21.5	48	W by S	1		
24	29	22	71	WSW	1	3.8	●° p.
25	27.4	20.4	83	Calm		7.4	● a. d° p.
26	31.1	19.8	76	W	1	.5	●° p.
27	31.1	20.8	71	W by S	1	16.5	ϟ² ⊤² ● p.
28	29.4	21	75	Calm		28.8	● a. p.
29	33.4	20.2	62	W by N	1		
30	33.3	20.2	65	WSW	2	7.1	↙ ● p.
31	33	19.8	68	W	1		
Mean	31.9	20.7	68		1.1		
Total						246.5	

BUTUAN.
[ϕ=8° 55′ N; λ=125° 31′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1		21.8		NW	2		Ω ∞ a.
2		21.8		Calm		7.9	Ω ∞ a. ☈ ● p.
3		21.4		NW	3		d a.
4		21.6		NW	1		Ω ∞ a.
5		22.6		NW	3		∞ a.
6		22.7		NW	2	7.1	Ω a. ● p.
7		22.2		Calm		5.1	●° a.
8		22		NW	2	6.6	Ω ∞ a. ⊤ ● p.
9		20.9		NW	1		≡ a.
10		21		NW	2		Ω ∞ a.
11		22.1		NW	1		Ω ∞ a.
12		22.5		NW	1		Ω ∞ a.
13		22.7		NW	3	.5	Ω ∞ a. ● p.
14		22.4		W	1		
15		21.9		NW	3		Ω a.
16		21.1		NNW	3		Ω a.
17		21.4		NW	2	3.3	Ω a. ● p.
18		21.6		NW	2		Ω ∞ a.
19		22.2		WNW	1	2	∞ a. ● p.
20		22.5		NW	2		Ω ∞ a.
21		21.9		NW	1		Ω a.
22		21.6		NNW	3		Ω ∞ a.
23		21.6		NW	2	1.5	Ω ∞ a. ● p.
24		21.7		NNW	3		≡ a.
25		21.6		Calm		23.1	● a.
26		21.7		NNW	2		Ω ≡ a.
27		23.7		NW	1	33	∞ a. ☈ ● p.
28		23.5		NW	1	3.6	Ω ≡ a. ● ⊤ p.
29		22.7		Calm		.8	● p.
30		23		NW	1		Ω ∞ a.
31		22.7		N	1		Ω ≡ ⊕ ⊤ ϟ p.
Mean		22.1			1.6		
Total						94.5	

[1] 30 days of observation.

METEOROLOGICAL DATA, ETC.—Continued.

YAP (Western Carolines).

[ϕ=9° 29′ N; λ=138° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.5	21.3	73	SW	1	------	
2	31.2	24.2	71	E	2	3.6	
3	31	23.8	78	NE	1	3.8	
4	32	23	74	NE	2	------	
5	30.5	24.3	68	NE	4	10.2	
6	31.8	23.5	72	NE	3	------	
7	34.2	24.5	74	SW	3	13.2	
8	32.5	22.8	79	SW	1	2.3	
9	33.2	23.2	69	SW	4	------	
10	33	23.8	80	SW	4	------	
11	32.9	24.5	73	SW	6	7.4	
12	30.5	22.5	95	SW	4	49	☈² a.
13	30	22.2	88	SW	1	28.4	● p.
14	32.8	22.8	74	SW	3	.8	
15	32.3	23.2	71	SW	3	------	
16	31.4	23.3	90	SW	2	4.3	
17	32	23.4	92	SW	2	------	
18	30.9	24.6	83	SW	3	.8	
19	31.3	23.5	84	NE	2	3.6	
20	29.3	23.9	79	NE	2	3.6	
21	31	24.5	72	NE	4	5.3	
22	31	22.9	78	NNE	1	9.1	
23	30.3	22.8	74	SW	2	.8	
24	31.5	23.9	83	SW	1	8.6	
25	33	24.3	81	SW	3	34.3	
26	30	22	79	SW	1	.8	
27	29.7	23.6	93	NE	1	32.5	
28	29.7	22.1	91	SW	2	45.7	
29	32	22.2	81	NE	1	6.1	
30	31.4	23.5	80	E	3	.5	
31	31.7	23.7	72	NE	3	------	
Mean	31.5	23.3	79.1	------------	2.4	------	
Total	------	------	------	------------	------	274.7	

MAASIN.

[ϕ=10° 08′ N; λ=124° 50′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33.5	23.6	81	SE	2	------	
2	30.1	24.1	88	S	1	------	☇ a. p. d ☈ p.
3	30	22.6	79	NW	2	5.3	● ↙ a. ☇ p.
4	33.2	23	84	E	2	------	☇ a. p.
5	34	23.4	80	SSE	1	------	☇ a. p. ⊤ ●° p.
6	31.5	24	85	S	1	15.2	● ≡ a. ☈ p.
7	30.1	23.2	84	E	3	------	☇ a. p.
8	31	23.4	91	NW	2	------	⊤ ☇ ↙ d p.
9	32.3	22.7	82	SE	1	------	☇ p.
10	30	23.5	85	S	1	------	☇ a.
11	30.5	24.8	92	W	6	------	☇ ↙ p.
12	31.4	24.1	88	SW	3	2.8	☈ ↙ ⊤ ☇² ↙ ●
13	32	23.8	88	SW	6	3.8	☇² a. ☈ ● ↙ p.
14	31.3	23.6	88	SW	1	------	d a. ☈² ↙ p.
15	33.6	24.4	89	S	2	14	↙ ● ☈² a. p.
16	31.5	24	85	S	3	------	☇² a. p. ↙ p.
17	33.4	25.6	85	S	2	------	☇² a. p. ∪ p.
18	31.5	25.2	89	SE	2	------	⊕ ∪ ⊓ p.
19	31.5	24	84	S	2	15.7	● a. ⊓ ↙ ● ☈²
20	33.1	23.9	78	SE	2	27.9	↙ ● ☈ p.
21	29.9	23	90	SW	7	13.5	d ∪ ↙ ● ☈ p.
22	29	23.8	87	SW	7	------	⊓ ∪ ☇² ↙ p.
23	32.1	23.2	81	S	1	------	☇ a. d p.
24	29.9	24.5	88	S	1	5.1	d ∪ ↙ ● p.
25	26.9	23.6	96	S	1	16.3	d ● a.
26	28.5	23.5	89	E	1	22.9	d ● a. p.
27	31.4	23.8	86	S	1	20.1	● a. ⊓ ∪ ☇ p.
28	29	24.5	77	SW	3	------	∪ ↙ d a. ☇ p.
29	31	24	81	SE	2	------	☇² a. ↙ d ☈ p.
30	32	24.2	84	SW	2	------	☇ a. ●° ↙ p.
31	30.5	24	82	SE	1	------	☇ a. p.
Mean	31.2	23.8	85.4	------------	2.3	------	
Total	------	------	------	------------	------	162.6	

BACOLOD.

[ϕ=10° 41′ N; λ=122° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.3	22.6	65	W	2	------	◯ a. ⊤° ☇ p.
2	32.7	22.2	70	SW	3	------	☈° d° p.
3	27.1	22.3	89	S	2	37.6	● a.
4	31.2	22	65	WNW	3	------	⊤° p.
5	33	22.2	64	WNW	2	------	☈° p.
6	32.9	23.1	70	SSW	2	2.8	◯° ⊤° a. ☈° ● p.
7	32	22.9	81	N by W	3	------	●° ☈° p.
8	31.4	22	88	SE	1	5.4	● ☈° p.
9	32.2	22.5	89	SE	3	2.8	● a. p. ⊤ ☇ p.
10	32.2	21.4	75	S	1	------	Ω² a. ⊤° ☇ p.
11	30.9	22.8	72	SW	3	3.6	Ω° ◯² a. ⊤ ☇ p.
12	30.8	22.8	72	SW	4	3.6	◯° ☈° ● p.
13	29.9	23.2	79	SW	3	19.6	● a. p. ☈ p.
14	31.7	22.8	67	SW	3	.8	●° a. p. ☈ p.
15	31.9	22.8	72	S by W	4	8.2	● ◯° a. ☈° p.
16	31.2	23.8	79	SW	3	.3	◯° ↙ ●° ☈ ∪°
17	31.3	24.4	72	SW	4	7.7	⌒ ⊤ ● a. ◯° p.
18	30.9	24.4	74	SW by S	4	------	⌒ ◯° ☇ ∪° ⊓°
19	30.4	23.7	73	SW	3	3	↙ ●° a. p. ◯° p.
20	31.3	23	70	SW by S	3	.3	⊤ ↙ ●° ∪° p.
21	30.8	23.5	70	SSW	4	10	●° a. ↙ ●² p.
22	28.9	22.4	90	SW	3	42.2	↙ ●° a. ⊤ ●² p.
23	29.7	21.4	76	SSW	3	1	◯° ∪² ↙ ●° p.
24	30.6	22.9	64	SW	3	.3	◯² a. ●° p.
25	30.2	24.1	77	W	2	36.1	◯° ⊤° ●² p.
26	29.9	22.7	74	W by N	3	4.1	◯² a. ●° ☈ p.
27	30	22.6	90	SE by S	1	6.9	◯² a. ☈ ● p.
28	29	22.9	88	SW	5	22.4	● a. p. ☈° p.
29	30.8	22.7	71	SW	3	------	d° a. p. ☇ p.
30	27.6	23.7	82	SW	3	4.4	d a. ● p.
31	31.9	22	59	SW	2	10.2	☈° a. p. ●² p.
Mean	30.9	22.8	75.1	------------	2.8	------	
Total	------	------	------	------------	------	233.3	

SAN JOSE BUENAVISTA.

[ϕ=10° 44′ N; λ=121° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.4	22.9	69	SW	1	------	
2	31.2	23.3	71	WSW	1	------	Ω a.
3	31.1	23.2	85	SSW	3	1.6	● a.
4	31.1	22.4	68	Calm	------	------	Ω a.
5	31.2	23.5	71	WSW	1	------	Ω a. ☇ p.
6	31.9	23.3	70	W	1	------	⊤ p.
7	31.4	23.4	74	Calm	------	.5	⊤ a. ⌒ ●° p.
8	31.9	22.7	75	SW	1	3.6	☈ ● p.
9	31.4	22.7	72	W	1	4.8	● p.
10	31.9	22.2	70	SW	1	------	Ω a.
11	28.6	23.1	81	SE	1	2	☇ ●° p.
12	31.5	23.8	78	SW	2	1	⌒ a. ●° a. p.
13	30.8	23.7	77	S	1	26.9	↙° a. ● a. p.
14	30.7	23.1	72	SSW	1	17.5	⌒ ☈ ● p.
15	31	23.2	78	NE	1	------	⊤ ⌒ a. ☇ p.
16	30.6	23.9	80	WSW	1	21.9	● a. p.
17	25.9	24.1	95	SSE	1	32	↙° ● a. p.
18	32	23.2	75	S	2	------	d° a. ●° ⊤ ☇ p.
19	25.5	24.1	94	Calm	------	47.8	● a. p.
20	30.7	23	89	SSW	3	13.2	↙ ● p.
21	27.3	23	88	Calm	------	83.1	● a. p.
22	25.4	22.8	97	Calm	------	98	● a. p.
23	28.4	22.3	82	Calm	------	19.6	●° a. ⊕ ∪ ↙ ● p.
24	29.9	22.2	75	Calm	------	1.3	⊕ ●° p.
25	30.5	24	69	W	1	.5	⊕ ●° p.
26	27.3	23.9	84	NNE	1	6.6	● a.
27	30.1	23.3	80	Calm	------	24.4	⊤ a. p. ☇ ● p.
28	29.3	23.7	93	Calm	------	37.3	● a. p.
29	30.2	23	75	SSW	1	44.4	d° a. ↙ ● p.
30	24.8	22.9	95	Calm	------	89.7	●² a.
31	30.1	22.7	77	Calm	------	18	☇ ● ↙° p.
Mean	29.8	23.2	79.3	------------	.8	------	
Total	------	------	------	------------	------	595.7	

METEOROLOGICAL DATA, ETC.—Continued.

TUBURAN.
[ϕ=10° 44′ N; λ=123° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.1	23.7	66	NE	2		○° a. ς² p.
2	31.7	22.9	69	Calm			T° d ς² p.
3	29.5	22.4	63	Calm		66.3	●² a. ○² [ζ° p.
4	30.5	22.4	71	Calm			d a. ς² p.
5	31.3	22.4	72	Calm			○° ς² p.
6	31.9	23.5	70	N	2		○² [ζ d p.
7	31.6	23.5	70	Calm		7.6	d° a. ●² [ζ° p.
8	30.6	22.2	74	Calm		7.1	○² a. ●° [ζ² p.
9	30.8	22.8	90	Calm		7.4	● T p.
10	31.9	22.1	64	Calm			T² a. ς² p.
11	32	23.5	65	Calm		2.3	○² a. [ζ² ●° p.
12	31.7	23.4	75	Calm		7.9	○° a. T² ς² ● p.
13	30.2	23.1	69	Calm		1.3	○² a. [ζ° ●° p.
14	32.9	23.7	57	Calm			[ζ° p.
15	33.4	24.5	57	Calm		1.5	●° T° p.
16	33.9	24.5	54	SE	3		○ a. T° ς² ⌣° p.
17	34.5	24.5	50	SE	2		ς² p.
18	33.8	24.6	54	S by E	3		○² a. T² ⌣² p.
19	32.7	23.4	66	Calm			○² a. T² d ς² p.
20	33.8	23.2	54	Calm			○° a. ς² p.
21	33.6	25.1	63	SE	2		○° a. T ⌣° p.
22	33	25.3	52	SSE	4		d ∩ ○² a. ϖ² p.
23	33.3	22	57	SE	4		○² a. ⌣² ϖ² p.
24	31.6	24.4	60	Calm			○² T° p.
25	28.7	23.6	73	Calm		4.3	●° a. ⌣² ϖ² p.
26	30.4	22.9	77	Calm		3	●° a. ○° ς² p
27	29.4	23.4	78	Calm		2.8	●° T a. ς² p.
28	31.4	23.2	65	ESE	2	8.9	○² ● T° ς² p.
29	32.1	22.9	62	Calm		42.7	○° ●² [ζ² p.
30	30.8	22.6	84	Calm		1.3	○° a. ●° ς² p.
31	31.9	21.6	59	Calm			○° ς² p.
Mean	31.8	23.3	65.8		.8		
Total						164.4	

BORONGAN.
[ϕ=11° 42′ N; λ=125° 25′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.9	23.4	78	SW	1	8.9	Ω a. [ζ ⸗ ● p.
2	33.1	22.2	71	SE	2	4.1	Ω a. [ζ ● p.
3	33.2	23.7	66	SE	1	.5	●° a.
4	33.3	22.3	71	SE	2		Ω a. [ζ p.
5	33.6	22.5	69	ENE	2	5.3	Ω a. ⸗ ● p.
6	31.8	22.8	72	NE	1		≡ a. [ζ p.
7	31.3	23	76	ENE	1	1.3	● a. [ζ p.
8	32	22.7	67	Variable	2	6.6	Ω a. ● ς p.
9	32.9	22.8	71	SE	1		≡ a. [ζ p.
10	33.5	23.1	70	SSE	2	3.6	Ω a. [ζ ⸗ ● p.
11	32.7	22.7	94	Calm		12.2	≡ T ○ a. [ζ ● p.
12	31.3	22.3	97	Calm		13.5	≡ a. ● T ς p.
13	32.1	21.3	93	Calm		26.2	≡ a. [ζ ● p.
14	32.5	22.4	76	SE	1	3.3	≡ a. ● p.
15	33	22.9	68	WSW	3		≡ a. ⸗ [ζ p.
16	33.1	23.6	74	SW	2	4.8	Ω a. [ζ ⸗ ● p.
17	33.4	23.5	73	SW	1	.5	≡ a. [ζ ●° p.
18	32.5	23.2	73	SW	2	1.3	[ζ a. p. ● ⌣ p.
19	33.2	23.7	77	Calm			[ζ p.
20	33.6	23.9	64	W	2		⌣ p.
21	33.5	24.2	63	W	1	11.4	○ a. [ζ ⸗ ● p.
22	33.8	22.8	62	W	3		≡ a. ⸗ p.
23	33.6	22.4	76	SSW	1		Ω a. ⌣ p.
24	33.9	23.6	68	SSE	2	7.1	[ζ ● ∩ p.
25	27.1	22.8	96	Calm		8.9	T a. ● a. p.
26	31.7	22.2	76	ENE	3	2.8	T ● a.
27	32	23.4	88	NE	2	13.2	● a. p. [ζ p.
28	32.6	23.6	81	Calm		4.1	● a. p. T p.
29	32.9	23.3	85	SE	1	3	● a. p. ς p.
30	30.8	22.7	77	Calm			[ζ p.
31	32.8	22.1	71	Calm			Ω a.
Mean	32.6	22.9	75.6		1.3		
Total						142.6	

ROMBLON.
[ϕ=12° 35′ N; λ=122° 16′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	34	25.5	66	NNW	1		
2	34.1	24	75	NNW	1		[ζ° p.
3	29.5	25	94	Calm		10.2	● a.
4	31.6	23.4	79	SSW	1		
5	32	23.6	80	NW	1	10.2	ς ● p.
6	33.3	24.4	71	NE	1	11.7	● a.
7	35.6	25	73	NE	1		
8	33.1	24.1	78	N	1	9.1	ς ⸗ ● p.
9	32.6	24.4	73	NE	1		ς p.
10	31.9	24.6	80	NNW	1	7.6	● a.
11	30.9	24.4	75	WNW	1		ς p.
12	31.7	24.6	77	S	1	9.9	[ζ ⸗ ● p.
13	32	21.1	71	NNW	1		
14	34.2	23.8	71	NW	1		
15	33.3	26.5	63	N	2		ς p.
16	32.6	27	66	SW	1		ς p.
17	31.4	26.1	72	S	2		ς p.
18	31.5	24.6	83	Calm		16.3	● a. p.
19	29.1	25	76	WSW	1	14.7	⸗ ● a.
20	32.8	26	80	SW	2	3.6	●° ⸗ p.
21	31	25.1	84	SW	1		d a.
22	30	25	77	SW	3	3	●° a.
23	30.4	26.3	72	S	3		⌣ p.
24	31.5	25.2	69	SW	3		
25	33	25.5	66	W	1		ϖ p.
26	32.8	24.4	77	Calm			d a.
27	30.2	26	78	Calm			d ς p.
28	31.5	25.4	75	SW	2		d p.
29	30	25.2	77	WSW	1	15.2	● p.
30	29.1	24.4	79	SW	2	27.9	⸗ ● a.
31	32	25.6	62	S	1		d p.
Mean	31.9	24.9	74.8		1.2		
Total						139.4	

GUBAT.
[ϕ=12° 55′ N; λ=124° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33.7	22.1	69	SE	1		
2	35.5	23	59	SE	1		T p.
3	31.5	23.6	69	Calm		15.7	● T a.
4	33.8	22.2	61	E	1		○ a.
5	35	24.4	61	E	1		ς p.
6	33	24.2	80	NE	1	20.3	● a.
7	33.8	23.1	77	E	1	1.3	⸗ ●° a. ς p.
8	34	22.8	63	ENE	1		d a. p. ς p.
9	33.4	22.7	69	ENE	1	3.3	● ς p.
10	34	22.6	63	E	1		ς d p.
11	33.5	23.7	75	N	1		[ζ d p.
12	32.5	23.6	79	E	1	2.3	● T p.
13	32.8	22.7	78	SSW	1	3	● ς p.
14	32.5	22.2	74	SE	1	6.1	● ς p.
15	33.2	23.4	77	WNW	1		d ⌣ p.
16	32.8	24.6	64	SW	2		○ d a.
17	34.8	25.1	58	SW	3		d a. p.
18	34	25.1	64	W	2		[ζ p.
19	32.6	25	73	SW	2		d a. p. ⌣ p.
20	33.4	24.4	56	W	3		
21	34.5	24.8	56	SW	3		
22	34	23.6	63	SW	2	2	● a. d T ς p.
23	33.8	23.8	58	SW	2		⌣ p.
24	34.1	23.7	53	W	2		∩ p
25	34.6	24.3	55	SE	1		
26	34.5	23	67	NW	2		d a. ς p.
27	35	23.2	56	SE	1		ς p.
28	30.5	22.9	97	SE	1	53.3	[ζ a. ● a. p.
29	30	23.4	79	SW	1	35.6	● a. p.
30	29.2	22.8	90	W	1	17.8	● a.
31	33	22.5	74	SE	1		d p.
Mean	33.3	23.5	68.3		1.4		
Total						160.7	

METEOROLOGICAL DATA, ETC.—Continued.

SUMAY, GUAM (Ladrones Islands).
[ϕ=13° 22′ N; λ=144° 45′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	31	24	70	SE	3	5.1	
2	31.2	24.6	68	E	2	3.8	
3	30	25.6	70	E	3	1.3	
4	30.4	25.6	71	NE	3	----	
5	30.4	24.6	71	E	3	2.5	
6	29.2	22.8	71	SW	2	----	
7	29.4	22.4	75	SE	3	63.5	
8	28.4	24.2	87	SW	1	25.4	
9	29.4	22.6	76	NNW	1	----	
10	30	23.4	82	N	1	2.5	
11	30.2	24.2	66	N	2	6.4	
12	29	24.4	82	NNW	1	5.1	●² p.
13	27	22.8	86	SW	3	213.4	
14	28	22.8	86	SW	4	38.1	
15	29.8	24.4	83	WSW	4	25.4	
16	29.6	24.2	75	W	3	15.2	
17	29	23.2	71	NE	1	12.7	
18	29.6	23.6	83	NE	3	6.4	
19	28.6	23.4	81	SE	2	27.9	
20	30.2	24.2	74	SSE	2	10.2	
21	31	23.4	73	E	3	11.4	
22	31	26	79	ENE	3	1.3	
23	28.8	23	84	N	1	7.6	
24	29.6	23.6	86	SW	2	7.6	
25	29.4	23.8	80	SW	3	1.3	
26	28	24.4	83	SSW	1	----	
27	29.2	23.6	76	NE	2	6.4	
28	28.4	23.8	84	NE	2	2.5	
29	30.4	26	71	NE	3	----	
30	31	24	78	N	1	2.5	
31	29.8	23.6	85	W	1	6.4	
Mean	29.5	23.9	77.6	----	2.2	----	
Total	----	----	----	----	----	511.9	

NUEVA CACERES.
[ϕ=13° 38′ N; λ=123° 12′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32.5	23	76	Calm			
2	32.5	22	77	W	2	----	≡ a. d° p.
3	33	22	95	W	2	45.7	● p.
4	32.8	21.8	91	W	2	3	● p.
5	32.5	21.5	62	W	1	2.3	● p.
6	33	22.5	69	W	2	2	● p.
7	32.5	21.6	67	W	2	----	
8	32.5	21.5	74	NW	2	----	
9	32	22	76	NW	2	----	⊤ p.
10	33	23	75	NW	1	38.9	● p.
11	31.5	23.5	87	NW	2	31.2	● p.
12	32	22.6	83	WNW	1	24.9	● p.
13	33	22.5	75	NW	2	----	
14	33.5	22	64	NNE	1	----	
15	----	22.3	68	NE	2	----	
16	----	----	----	----	----	----	
17	----	----	----	----	----	----	
18	----	----	----	----	----	----	
19	----	----	----	----	----	----	
20	----	----	----	----	----	----	
21	----	----	----	----	----	----	
22	----	----	----	----	----	----	
23	----	----	----	----	----	----	
24	----	----	----	----	----	----	
25	----	----	----	----	----	----	
26	----	----	----	----	----	----	
27	----	----	----	----	----	----	
28	----	----	----	----	----	----	
29	----	----	----	----	----	----	
30	----	----	----	----	----	----	
31	----	----	----	----	----	----	
Mean	32.6	22.3	75.9	----	1.6	----	
Total	----	----	----	----	----	----	

BATANGAS.
[ϕ=13° 45′ N; λ=121° 03′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	37.9	23.4	48	W	2		
2	37.6	22.7	48	SW	2	25.1	⊤ ↯ ● p.
3	36.7	22.7	54	SW	2	26.2	● a. ↙ ● ⌐↯ p.
4	34.4	21.9	73	WNW	2	2.5	● a. p.
5	36.2	23.5	63	SW	2	2.5	● a. ⊤ p.
6	37.7	23.4	39	SW	2	.8	● ⊤ ↯ p.
7	37.8	23	55	S	2	23.6	⊤ ↙ ● p.
8	36.5	21.5	55	SW	2	22.9	⊤ ⌒ ●² p.
9	37.3	21.7	48	SW	1	----	
10	36.4	24	55	WNW	1	1.1	●° ⌒ a.
11	36.2	23	67	W	2	----	
12	37.6	23.4	52	SW	2	----	
13	37.1	22.5	50	SW	2	----	
14	37.1	23	48	W	2	----	
15	36.6	23.2	48	W	2	3.1	● a.
16	36.6	25.5	56	W	2	.5	●° ⌒ p.
17	33	23.5	71	W	2	3	● a.
18	35.3	23.4	56	W	2	.5	● a.
19	32.8	24.5	70	W	3	9.4	● p.
20	33.7	23.8	66	WSW	2	----	● a.
21	----	25.1	58	W	2	25.9	↙ ● ⌒ p.
22	----	23.4	72	SSW	4	12.5	d a. ↙ ● p.
23	----	23.4	57	SW	2	.5	●° ⌒ a.
24	----	22.7	66	W	3	3	● a. ↙ p.
25	----	22.5	48	W	2	----	
26	----	22.1	62	W	2	----	⌐↯ p.
27	----	22.2	52	W	2	----	⌐↯ p.
28	----	24.5	68	W	2	4.1	● a.
29	----	24.9	56	SW	2	----	
30	----	23.8	72	WNW	2	1.1	● a.
31	----	22.9	61	WSW	2	----	
Mean	36.2	23.3	57.9	----	2.1	----	
Total	----	----	----	----	----	168.3	

SILANG.
[ϕ=14° 14′ N; λ=120° 58′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.7	20.1	70	W	3	29.7	≡ a. ● p.
2	30	20.3	70	W	2	4.6	● p.
3	30	19	70	W	2	----	≡ a. d p.
4	30.2	19	69	W	2	3.8	⌓ a. ● p.
5	30.3	20	68	W	3	----	⌓ ≡ a. ⊤ p.
6	30	19.6	68	W	3	----	⌓ a. d p.
7	30.1	19.6	71	W	3	----	↙° p.
8	30	19.3	70	W	2	27.9	⌓ ● a.
9	30.2	19.5	71	SW	3	3.6	● a. ⊤ p.
10	30.3	19.2	72	W	2	----	≡ a. ↙° p.
11	30.1	19.2	71	W	2	----	↙° p.
12	30.3	19	71	W	3	17.8	⌓ ● a.
13	30.3	19.2	72	W	3	----	d a. ⊤² p.
14	30	19	72	W	3	20.8	● a. p. ⌒ p.
15	31	19.3	72	W	3	----	⌓ a. ⊤ p.
16	31	19.2	70	W	3	29.2	⌓ ≡ ● a. ⊤ p.
17	31.1	19	78	W	4	23.6	d a. ● p.
18	30.3	19	73	W	3	19	⌓ ● a.
19	31.3	18.4	75	SW	3	38.9	● a.
20	31.2	18.2	76	W	5	30.5	d ⌒ a. ● ↙° p.
21	31.6	18.3	78	W	3	29.2	● a. p.
22	31.6	18.5	72	W	2	4.6	● a. ⌒ p.
23	31.3	18.7	72	W	2	----	⌓ a. ↙° p.
24	31.5	18.5	72	W	2	----	⊤ p.
25	31.3	18.8	75	W	3	2.5	⌓ ≡ a. ● p.
26	31.6	18.8	71	W	3	43.2	⌒ a. ●² p.
27	31.3	18.6	73	W	1	----	↙° p.
28	31.3	18.8	75	W	1	----	⌓ ≡ a. ⌒ p.
29	31.5	18.5	73	W	2	----	⌓ ≡ d a.
30	31.3	18.8	74	W	3	----	≡ a. ⊤ a. p.
31	31.6	18.3	73	W	3	22.1	⌓ ● a.
Mean	30.8	19	72.2	----	2.6	----	
Total	----	----	----	----	----	351	

METEOROLOGICAL DATA, ETC.—Continued.

SAN ANTONIO.

[ϕ=14° 23′ N; λ=121° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31	19.9	63	W	3	------	
2	32	19.5	54	W	1	18.8	●
3	29	20	83	NW	1	9.7	●
4	31.2	21	65	E	2	1.3	●
5	31.5	20.9	55	SW	3	1	↙^{0} p. ●^{0}
6	32	21	78	SW	2	------	
7	31.8	19.5	61	E	2	------	⌒ p.
8	31.1	19.2	72	E	2	31.7	●
9	30.4	19.6	72	E	2	25.1	⌒ a. ●
10	30.6	19.8	69	E	2	------	⌒ a.
11	29.5	20.6	85	NW	1	------	
12	31.6	20.6	69	W	1	------	
13	30.6	21.3	64	W	1	------	
14	31.5	18.1	58	W	2	------	
15	30.5	18.2	75	W	2	------	
16	28	22.5	87	W	5	22.1	↙ ⌒ p. ●
17	28.1	22	91	W	6	8.1	↙ p. ●
18	27.5	20.6	85	W	3	------	↙^{0} p.
19	26.5	20.8	87	W	5	3.3	↙ p. ●
20	26.8	21.5	86	W	6	3.3	↙ p. ●
21	28.6	21.6	97	W	2	11.4	●
22	28.8	21.5	80	W	5	------	↙ p.
23	30	21.4	76	W	3	------	↙^{0} ⌒ p.
24	30	20.3	76	W	3	------	↙^{0} p.
25	30.2	20.6	75	W	1	------	
26	31.6	21.9	96	SW	1	19.8	●
27	32	20.6	77	Calm	------	19	●
28	29.6	21.1	82	W	1	------	
29	27.5	22.1	87	W	1	43.2	●
30	25.5	20.5	87	W	1	9.1	●
31	30	19.9	64	W	3	2	↙^{0} p. ●
Mean	29.8	20.6	76	------------	2.4	------	
Total	------	------	------	------------	------	228.9	

CORREGIDOR.

[ϕ=14° 23′ N; λ=120° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.4	23.7	72	W	1	------	
2	------	23.7	72	W	2	27.7	⊤ ⚡ ● p.
3	32.3	21.9	69	Calm	------	11.4	● p.
4	31.5	23.3	70	N	1	7.6	● p.
5	31.6	23.5	65	N	2	------	⊤ p.
6	33.7	23.7	60	Calm	------	------	d p.
7	33.6	24.8	58	N	1	------	↙ p.
8	33.8	24.4	62	N	1	50.8	⊤ ●^{2} p.
9	30.3	21.3	68	N	2	------	
10	33	20.4	64	N	1	------	
11	32.6	20.2	62	W	2	36.8	⊤ ⚡ ● p.
12	33	21.3	67	W	2	2.5	● p.
13	32.3	22.5	65	W	1	------	
14	32.5	24.4	63	W	1	------	d p.
15	32.4	23.2	65	W	2	------	
16	31	23.5	82	W	1	56.6	● a. p.
17	29	22.1	83	SW	4	64.5	● a. p.
18	28	21.2	84	SW	1	22.6	● a. p.
19	27	22.1	89	SW	1	95.8	● a. p.
20	28.6	22.3	78	SW	2	74.7	● a. p.
21	29.5	20.9	73	SW	2	35.8	● p.
22	30	21.3	91	SW	2	14.2	● a.
23	30.5	23	86	SW	2	5.6	● a. d p.
24	31.5	22.8	67	SW	2	------	
25	32	23.3	67	SW	1	------	
26	32	23.9	66	SW	1	------	
27	32.5	23.9	69	W	2	------	⊤ ⚡ p.
28	31	22.8	72	SW	2	3.3	● a. d p.
29	29.1	23.8	77	W	2	58.4	● a. p.
30	27.1	23.3	82	SW	1	38.9	● a.
31	31.5	21.4	69	SW	1	21.8	● p.
Mean	31.2	22.7	71.5	------------	1.5	------	
Total	------	------	------	------------	------	629	

BALANGA.

[ϕ=14° 41′ N; λ=120° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.5	22.5	65	SW	2	------	⊤ a. ⚡ p.
2	33.1	21.6	69	S	2	2.5	⊓ ● p.
3	33.5	23	66	SW	2	25.9	⊓ ● p.
4	33.2	22.1	63	E	1	9.1	⊓ ● p.
5	32.1	23.2	69	NE	2	15.5	⊓ ● p.
6	33.6	24.3	60	Calm	------	------	⊤ ⚡ p.
7	33.7	24	70	SW	2	------	⊓ d p.
8	34	22	58	S	2	19.6	⊓ ● p.
9	31.5	23	72	N	1	------	⊤ ⚡ p.
10	33.5	24.2	64	N	2	3	⊓ ● p.
11	32.7	24	75	Calm	------	13.7	⊓ ● p.
12	31.8	23.3	72	Calm	------	------	⊤ a. ⊓ p.
13	32.4	23	73	SW	2	------	⊤ a. ⚡ p.
14	33.1	22.6	63	SW	2	------	⊓ p.
15	32.9	25	66	SW	2	------	⊤ p.
16	31.6	24.1	81	W	2	2.3	⌒ ● a. ⊤ p.
17	29.7	23.1	87	SW	2	56.9	⊤ a. ● a. p.
18	28.5	22.5	84	SW	2	29.7	● a.
19	26.5	23.5	92	Calm	------	47.5	● a. p.
20	28	23	88	SW	1	20.3	● a.
21	31	23	87	W	1	20.3	⌒ a. ● a. p.
22	29	23.1	88	SW	1	30.2	↙^{0} a. ● a. p.
23	31	23.4	78	SW	2	1.3	●^{0} ↙^{0} ⌒ ϖ^2 p.
24	31.1	23.4	77	SW	3	------	↙ ϖ^2 p.
25	32.4	23	68	NW	2	------	⚡ p.
26	32.5	23.1	67	SW	2	------	⚡ ⊤ p.
27	33.6	23.7	70	SW	2	------	⊓ p.
28	31.3	24.2	75	SW	3	.8	●^{0} ⚡ p.
29	30.3	23.8	84	W	2	15.3	● a. p.
30	26	22.2	92	NW	1	49.1	● a. p.
31	28.4	23	87	SW	3	39.3	● a. p.
Mean	31.4	23.2	74.5	------------	1.6	------	
Total	------	------	------	------------	------	401.3	

MALOLOS.

[ϕ=14° 52′ N; λ=120° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	34.3	23.8	66	W	1	------	
2	33	22.2	60	NW	1	25.4	⌒ ●^{2} ⊓^{2} p.
3	35	22.5	56	SE	1	8.1	● p.
4	33.1	21	60	E	1	1.3	≡^{2} a. ⊓ ϖ^2 p.
5	32.7	22.2	67	W	1	5.1	● ⊓^{0} p.
6	34.6	23	56	SW	1	------	⊓ p.
7	34.8	22.8	59	SW	1	.8	●^{0} ⊓^{0} ↙ p.
8	33.7	21	72	S	1	23.6	●^{2} ⚡ p.
9	31.3	20.8	71	N	1	1.3	●^{0} a. ○^{2} p.
10	33.7	22.5	59	W	1	18.5	●^{2} ⊓ p.
11	32.7	22.2	68	SW	1	6.9	● ⊓^{2} p.
12	32.3	22.8	68	NW	1	------	○^{2} ⊤ ⚡ p.
13	33.7	21.8	62	SW	1	------	⚡ p.
14	33.7	22	62	SSW	1	14.5	● ⊓ p.
15	33.8	22.5	76	NE	2	------	⊤ p.
16	32	22.5	72	W	2	2.5	● ⊤ p.
17	30.5	23	90	SW	3	13.2	● a. p.
18	30.8	22.5	75	SSW	1	2	● a.
19	28.2	22.4	86	S	1	20.6	● a. p.
20	30.9	22.4	66	SW	2	4.8	● a. p.
21	31.2	23	71	SSW	3	19.6	● a. ↙ ● p.
22	28.3	22.7	94	SW	4	8.4	● ↙ a. p.
23	29.9	22.6	74	S	1	11.7	● a. p. ↙ p.
24	31.3	23	69	SW	1	------	
25	32	22.5	71	SSW	1	------	⚡ ϖ^0 p.
26	32.7	22.6	66	SW	1	.8	⌒^{2} ● p.
27	34.2	23.8	60	SSW	1	14.7	≡^{0} a. ⌒^{2} ○^{2} ⚡ p.
28	31.3	23	73	SW	1	78.7	○^{2} ●^{2} p.
29	30	22.8	82	SW	1	7.9	● a. p.
30	27.8	21.6	92	SW	1	14.7	● a. p.
31	29.7	22	82	S	1	22.1	● a. p.
Mean	32	22.4	70.5	------------	1.3	------	
Total	------	------	------	------------	------	327.2	

METEOROLOGICAL DATA, ETC.—Continued.

PORAC.

[ϕ=15° 05′ N; λ=120° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33.4	23	70	SW	1	-----	☈ p.
2	33.9	22.5	66	Calm	-----	5.8	☈ ● p.
3	34.4	22.3	62	Calm	-----	11.9	☈ ● p.
4	33.4	21.4	72	Calm	-----	1.3	☈ ● p.
5	31.2	22.3	72	Calm	-----	-----	< p.
6	34.5	23.2	55	Calm	-----	2	☈ ● p.
7	34.3	22.5	64	ENE	0	6.4	☈ ● p.
8	34.4	21.6	57	Calm	-----	2.5	☈ ● p.
9	34.9	22.5	62	Calm	-----	5.8	● a. ☈ p.
10	34	23.3	63	Calm	-----	1.3	☈ ● p.
11	34.6	23.5	63	NW	0	8.1	☈ ● p.
12	31.6	21.5	75	Calm	-----	-----	☈ p.
13	33.6	22.3	61	Calm	-----	-----	☈° p.
14	34.4	22.5	66	ESE	1	10.2	☈ ● p.
15	30.4	23	79	Calm	-----	.5	●° a. p.
16	31.9	22.2	72	SW	2	4.3	d a. ● p.
17	30.8	23.3	75	W by N	2	13.5	● a. p.
18	32.4	22.8	84	W	2	7.6	●° a. p. < p.
19	26.8	22.5	96	SW	0	77.5	● a. p.
20	28.9	22.1	88	Calm	-----	9.7	● a. p.
21	29.9	22	94	Calm	-----	26.7	● a. p. ⊤ p.
22	28.9	23	90	SW	0	29.5	● p.
23	29	23.1	82	Calm	-----	26.7	● a. p.
24	29.3	23.3	85	SSW	2	6.9	● a.
25	32.8	21.4	69	SW	2	-----	< p.
26	32.7	22	72	Calm	-----	5.3	< ● p.
27	33.9	23.5	65	Calm	-----	-----	☈ p.
28	32.9	24	73	S	1	1	☈ ●° p.
29	31.7	23.6	76	WSW	2	8.9	☈ ● p.
30	26.6	23.1	96	Calm	-----	32.5	● a. p.
31	27.4	22.5	96	Calm	-----	35.3	● a. p.
Mean	31.9	22.6	74.2	-----	.5	-----	
Total	-----	-----	-----	-----	-----	341.2	

ARAYAT.

[ϕ=15° 08′ N; λ=120° 46′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33	24.4	58	W	1	-----	⊤ a. p. d p.
2	33.7	23	50	W	1	10.2	⊤ ● p.
3	33.3	23.5	64	W	1	-----	⊤ d p.
4	31.9	21.5	75	SW	1	20.3	⊤ ● p.
5	29.9	22.8	72	SSW	1	-----	⊤ p.
6	33.9	23.2	50	Calm	-----	-----	⊤ d p.
7	33.9	23	56	Calm	-----	-----	⊤ d < p.
8	34.4	22.1	53	SSW	1	26.7	≡ a. ⊤ ↙ ● p.
9	29.8	23	75	W	1	-----	● a. ⊤ p.
10	33.3	23.1	57	N	1	-----	⊤ < p.
11	31.6	24	66	SW	1	-----	⊤ d p.
12	31.1	22.5	60	NNE	2	-----	⊤ p.
13	33.6	23	52	Calm	-----	-----	d p.
14	33.9	23	54	W	1	-----	⊤ p.
15	30.4	24.5	70	Calm	-----	9.9	● ⊤ p.
16	31.1	23.6	72	WSW	2	16.8	d a. ⊤ ● p.
17	28.5	23.9	76	WSW	3	-----	⊤ d p.
18	30.5	23.5	62	SSW	3	-----	d a.
19	27.9	23.6	81	SW	1	27.9	● a. d p.
20	29.9	23	70	SW	3		
21	26.7	24	89	SW	2	7.1	● a. ⊤ d p.
22	29.9	24	80	SW	2	19.3	● a. p.
23	29.2	24	75	SW	3	2	● a. d p.
24	28.9	23.5	80	WSW	2	6.9	● a.
25	32.4	22.5	66	WSW	1		
26	33.5	23.8	59	WSW	1	3.6	⊤ ● p.
27	33.9	25	58	SSW	1		⊤ < d p.
28	32.3	24.5	60	W	1	4.6	⊤ ● p.
29	28.2	24.1	76	SW	2	8.4	d a. ⊤ ● p.
30	26.6	23.5	80	WSW	3	11.4	d a. ● p.
31	27.5	23.3	82	WSW	2	36.8	● a. p. ⊤ p.
Mean	31.1	23.4	67	-----	1.4	-----	
Total	-----	-----	-----	-----	-----	211.9	

TARLAC.

[ϕ=15° 31′ N; λ=120° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	34	23.5	59	NW	1	-----	◯² ⊤² ●° <° p.
2	35	23.1	56	N by W	1	9.7	≡° a. ● ☈ p.
3	34.9	23.5	64	NW	1	52.1	●² ⊤² ↙° p.
4	34.6	21.3	60	S by E	1	.8	●° ☈ p.
5	34.2	22.7	64	SE	1	-----	◯² < p.
6	35.7	23.1	54	SSW	1	-----	Ω² a.
7	35.8	22.7	52	NW	1	13.2	Ω² ≡ a. ☈ p.
8	34.7	22.1	55	SW	1	7.4	☈ ● p.
9	30.7	22.7	76	NE	1	3.1	◯² a. p. < p.
10	35.7	22.3	62	SSW	1	2.5	Ω ≡ a. ☈ ● p.
11	34.9	23.4	57	NW by W	1	17.5	☈ ● p.
12	30.7	21.7	72	NW	1	-----	≡ a. ◯ ☈ p.
13	35.2	21.9	57	NE	1	-----	Ω² ≡ a. ☈ p.
14	35.1	22.2	59	NE	1	-----	≡ a. ↙° ☈ p.
15	33.5	23.5	71	N	2	5.8	☈ ● p.
16	33.1	21.9	93	SE	1	10.5	☈ ● ⊕² p.
17	32.3	23.3	74	WSW	3	1.1	↙° ☈ ● p.
18	33.6	22.9	60	W by S	1	.5	●° p.
19	30.3	23.5	77	SSE	1	19.6	↙ ● a. ●° p.
20	32.2	22.9	69	W by N	1	.5	⌒ a. ●° p.
21	33.2	22.8	67	SW	2	3.8	⌒ a. ↙° ● p.
22	30.5	23.2	95	SSE	1	23.7	d° a. ↙ ● p.
23	30.8	23.4	78	S by E	1	16.8	● a. ↙ ● p.
24	31	23.3	88	WSW	1	3	↙ ●° a. ∪° ⊕² p.
25	34	21.8	64	SE	1	-----	Ω² ≡² a. ⊕² ⊤ p.
26	35.3	22.8	63	SSE	1	-----	d° ☈° p.
27	35.9	24.3	58	SW	1	63.5	≡° a. ☈² ●² p.
28	34.5	23.5	65	SW	1	50.8	☈ ●² p.
29	33.2	23.3	65	S	1	27.2	●° a. ☈ ● p.
30	29.6	22.8	76	WSW	3	2.3	●° a. d° p.
31	28.2	22.8	86	WSW	1	17.3	● a. p.
Mean	33.3	22.8	67.6	-----	1.2	-----	
Total	-----	-----	-----	-----	-----	352.7	

BALER.

[ϕ=15° 47′ N; λ=121° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.7	23.9	-----	WNW	-----	0.2	< ●°
2	32	23	-----	SW	-----	.2	⊤ ↙ ●°
3	31.3	23.5	-----	NE	-----	15.2	●
4	31	22.5	-----	NE	-----	.1	●°
5	29.7	22.9	-----	N	-----	.1	⊤ ●°
6	31	23	-----	NE	-----	6.9	●
7	31.6	23	-----	WNW	-----		
8	31.5	22.4	-----	NE	-----	12.7	●
9	31.6	22	-----	ENE	-----	3.3	●°
10	31.5	23	-----	ENE	-----	8.9	●
11	32.3	23.5	-----	NE	-----	3	⊤ ●°
12	32.4	21.6	-----	NE	-----	-----	
13	32.4	22.8	-----	NE	-----	-----	
14	33	22.5	-----	NE	-----	6.4	< ●
15	33.5	23.3	-----	WSW	-----	-----	
16	33	25.7	-----	W	-----	-----	
17	33	26	-----	W	-----	-----	
18	33	25.4	-----	W	-----	-----	
19	30.9	25.5	-----	W	-----	-----	
20	31.7	25.4	-----	W	-----	-----	
21	33.5	24.6	-----	W	-----	-----	
22	33.2	24	-----	W	-----	-----	
23	33.5	24.5	-----	WNW	-----	-----	
24	32.5	24.5	-----	WNW	-----	-----	
25	34.5	24.3	-----	WNW	-----	-----	
26	33.3	24.5	-----	NE	-----	.1	< ●°
27	32.5	24.7	-----	NE	-----	31.7	< ●
28	32.7	24.4	-----	NE	-----	9.7	●
29	32	24.4	-----	WNW	-----	.2	●°
30	30	23.5	-----	WNW	-----	-----	
31	31.2	23.5	-----	WNW	-----	-----	⌒
Mean	32.1	23.8	-----	-----	-----	-----	
Total	-----	-----	-----	-----	-----	98.7	

METEOROLOGICAL DATA, ETC.—Continued.

BOLINAO.

[ϕ=16° 24′ N; λ=119° 53′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.2	23.3	65	SW	2	------	
2	31.5	24.7	76	W by N	1	------	⊤° p.
3	30.9	23.3	69	W by N	1	------	⊤° p.
4	31.7	24.3	67	NNW	2	5.1	≡° a. ● p.
5	31.8	24.7	68	SSE	4	------	↙° ⊤° p.
6	32.2	24.7	66	WNW	1	.3	≡° a. ⌈ϟ ●° p.
7	31.8	24.5	66	W	1	------	ϟ p.
8	32.4	24.6	65	Calm	------	------	d° ⊤ p.
9	31.8	24.7	71	NNW	1	------	⌈ϟ p.
10	31.2	23.4	70	NNW	1	------	⊤° p.
11	32.3	25.1	72	WNW	1	4.6	⊤² ● ϟ p.
12	32.8	23.5	75	WNW	1	.3	⊤° ●° p.
13	31.6	24.1	67	NW	1	------	⊤° p.
14	31.8	24.5	70	WSW	2	10.6	⌈ϟ ● p.
15	32.2	24.8	75	Calm	------	5.3	● a. ϟ p.
16	31.2	25.3	73	SW	4	60.2	d a. ↙° ⌈ϟ ●² p.
17	31.7	24	92	SW	1	61.7	● ⊤° a. ↙ ●² p.
18	28.9	22.5	98	SW	1	6.4	● ⊤° p
19	29.8	22.8	74	SW	3	7.6	≡ ⌒ a. ↙° ● p.
20	30.4	23.5	72	WSW	1	68.6	⌈ϟ ●² p.
21	29.3	23.3	89	SW	1	12.4	⌒ a. ● a. p. ↙°
22	28.4	24.2	88	SSW	3	55.4	⌈ϟ a. r a. p. ↙°
23	29.8	23.6	86	SW	5	18.8	r a. p. ↙° p.
24	28.4	23	77	SSE	4	2.3	⊤ ●° ↙° p.
25	30.6	24.4	64	SSW	2	------	
26	31.3	24.7	74	W	2	------	d° a.
27	30.6	25.3	74	WNW	1	1.3	⊤ ● p.
28	31.5	24.7	76	W by N	1	16.3	●° a. ϟ ⊤² ● p.
29	31.6	24.1	80	W by S	1	18.3	⌈ϟ ● p.
30	30.1	23.7	76	SW	3	44.2	● a. p.
31	29.7	23.3	72	SSW	4	------	d° p.
Mean	31	24.1	74.4	------------	1.8	------	
Total	------	------	------	------------	------	399.7	

BAGUIO.

[ϕ=16° 35′ N; λ=120° 43′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	21.4	14.3	95	WSW	0	21.3	● p.
2	21.6	14.8	78	W	0	3.3	●° p.
3	22.2	15	96	Calm	------	20.6	● a. p.
4	23.2	14.2	80	W	1	6.4	● ≡ p.
5	23.2	13.2	68	WSW	1	2	≡ a. p. ⊤ ● p.
6	21.8	14.2	97	WSW	0	3	●° ≡ p.
7	22.5	13.9	76	W	1	10.2	● p.
8	23.2	14.4	88	WSW	1	13.2	● p.
9	23.2	14	84	Calm	------	------	
10	23.7	14.7	92	WSW	0	3.6	≡ ●° p.
11	22.4	14.7	89	W	0	13.2	● p.
12	21.3	12.2	80	W	0	------	
13	22.6	13.6	95	W	0	5.1	● p.
14	22.6	13.5	89	W	0	------	
15	21.6	13.8	91	W	1	25.1	● p.
16	19	15.4	99	W	1	13	● p.
17	18.7	15.8	99	W	1	95.8	≡ ●² a. p.
18	18.3	14.4	98	W	0	40.9	● p.
19	21.5	15.1	91	Calm	------	14.2	≡ a. ● p.
20	21.8	15.4	86	WSW	1	------	
21	20.8	15.2	83	Calm	------	2	●° a. p.
22	21.3	16.2	98	NW	0	27.9	● p.
23	22.6	16.2	86	Calm	------	25.4	● p.
24	22.2	16.3	95	Calm	------	34.3	● a. p.
25	22.4	13.3	90	W	0	------	≡ p.
26	22.3	14.2	85	W	0	2.8	●° p.
27	23.4	16	87	W	1	11.4	● a.
28	21.6	17	84	W	1	10.7	≡ a. ● p.
29	21.8	15.8	99	W	1	57.4	●² p.
30	20.6	15.7	99	Calm	------	6.9	● p.
31	20.4	14.7	95	W	1	46	d a. ● p.
Mean	21.8	14.7	89.4	------------	.4	------	
Total	------	------	------	------------	------	515.7	

SAN FERNANDO UNION.

[ϕ=16° 37′ N; λ=120° 18′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.4	22.5	63	S	2	------	
2	32.4	21.8	62	W	2	------	
3	31.4	22.3	71	N	2	5.1	● ⊤ p.
4	31.6	22	68	N	2	1.5	●° ϟ p.
5	32	23	74	NW	2	------	d p.
6	32.4	23	75	N	2	------	⌒ ϟ p.
7	31.5	22.8	71	NNE	3	------	⌒ d° p.
8	30.8	22	65	N	3	------	d° p.
9	31.8	22.5	71	NE	2	------	
10	32.6	23	68	NE	2	------	d p.
11	32.6	23.2	70	NE	2	------	ϟ p.
12	32	22	72	S	2	------	d° ⌈ϟ p.
13	33.3	23.8	68	SW	3	------	
14	33	22.6	70	SW	3	------	
15	32.2	23.2	70	N	2	------	d a.
16	31.6	23.4	71	W	2	34.3	⌈ϟ² ● p.
17	29.6	22	92	NNW	3	89.2	●² ϟ p.
18	31	22.3	76	SE	2	------	
19	31	22.2	68	SW	3	50.3	●² p.
20	30.8	21.4	83	S	2	------	
21	30.2	21.4	88	SW	2	21.6	d° a. ● p.
22	30.6	22	75	SW	3	11.4	Ω d a. ● p.
23	31.8	22	70	S	3	24.1	● p.
24	31.6	23	84	S	2	5.3	↙ a. ● ∪ p.
25	32.8	21	64	S	3	------	Ω a.
26	31.4	22.3	74	S	2	------	Ω a. ●° ϟ p.
27	32.2	22.4	76	S	2	1.3	●° ϟ p.
28	32	21.4	77	NW	2	10.7	● ⌈ϟ p.
29	31	21.3	85	SE	2	50.8	●² p.
30	32.4	22.4	76	SE	2	52.3	● a. p.
31	31.8	22.3	81	SE	3	61.5	●² p.
Mean	31.7	22.3	73.5	------------	2.3	------	
Total	------	------	------	------------	------	419.4	

SANTO DOMINGO.

[ϕ=20° 28′ N; λ=121° 59′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.8	23	78	SW	2	------	Ω² a. ϟ p.
2	31	22.5	78	WSW	2	------	Ω² a. ≡ ϟ p.
3	31	22	74	WSW	1	------	Ω² a. ≡ ϟ p.
4	31.8	22.3	77	SE	1	2	Ω² d° a. ●° p.
5	32	24.8	76	SE	3	------	d° a. p.
6	32.3	23.4	75	SSE	1	------	v Ω° a. ≡ p.
7	31.4	23	72	W	2	------	Ω² a. ≡ p.
8	31.8	22.8	73	WSW	2	------	Ω² a. ≡ p.
9	31.8	23	72	ESE	2	------	Ω° v a. ≡ ϟ p.
10	32	25.2	71	SE by E	2	------	Ω v a. ↙° p.
11	32.3	24.5	76	SW	1	.1	Ω° ●° a. ⊤ p.
12	31.9	23.3	76	WSW	2	------	⊤ a. ≡ ϟ p.
13	31.9	21.8	74	WSW	2	------	Ω v a. ≡ p.
14	31.7	24.9	71	W by N	2	------	↙° p.
15	31.3	26	74	W	4	2.2	● a. ↙ a. p.
16	29.7	24.2	88	WSW	5	14.2	↙ ● ⊤ a. ↙ ⌈ϟ p.
17	30.2	23.8	88	WSW	4	8.5	● a. p. ϟ p.
18	29.2	23.2	91	WNW	3	27.7	● a. ↙° ϟ p.
19	28.5	22.6	97	WNW	1	55.1	●° ⊤ a. ●² p.
20	30.4	23.8	79	NW	1	------	ϟ° ⊤ p.
21	28.6	24	89	NNW	2	31	● a. p.
22	31.2	23.3	86	N	1	48.8	Ω a. ●² p.
23	30.8	23	82	NNE	1	2.5	●° a. ϟ ∪ p.
24	31.5	23.3	75	WNW	1	------	Ω a. ϟ p.
25	32.2	23.7	82	SSW	1	22.9	Ω ⌒ a. ● p.
26	31.2	23.6	80	SW	2	------	∪² p.
27	31.1	24.8	77	SW	3	------	Ω d° a. ϟ p.
28	31.7	24.4	80	SW	1	3	●° p.
29	32.1	23.3	78	NW	1	------	Ω² a. d° p.
30	31.1	24	72	ESE	3	40.8	●² ⌒² a. ≡ ϟ ●°
31	30.5	22.8	74	NW	1	17.4	● a. p. ⌒² ϟ p.
Mean	31.1	23.6	78.5	------------	1.9	------	
Total	------	------	------	------------	------	276.2	

NOTAS GENERALES DEL TIEMPO.

Presión y temperatura.—La media mensual de la presión atmosférica ha sido en todo el Archipiélago superior á la de Julio de 1906. Sin embargo, resulta algo inferior á la normal: así, en Manila la media mensual de este mes es 757.04 mm., mientras que su normal es 757.33 mm., y la media de Julio del año anterior fué 756.40 mm. Fuera del largo período de bajas presiones que duró desde el 16 hasta el 23, las oscilaciones de la presión atmosférica fueron poco notables: solo que en la primera semana del mes se conservó bastante más alta que en la última. Las más altas presiones tuvieron lugar el día 3 en casi todas las estaciones de Filipinas; y las más bajas, con muy pocas excepciones, el 17 ó 22.

La temperatura media mensual ha sido algo inferior á la de Julio de 1906. La media para Manila se diferencia de la normal en —0.3° C. La máxima y mínima absolutas, también para Manila, fueron 33.0° C. y 22.3° C. respectivamente: ambas fueron registradas el 8. La misma mínima 22.3° C. alcanzaron los termómetros del Observatorio los días 4 y 9.

Precipitación acuosa.—Solamente en 13 estaciones del Archipiélago se registró una cantidad de lluvia inferior á la de Julio de 1906. La de Manila es superior á la normal en 112.5 mm. y á la del año pasado en 193.8 mm. En varias partes, especialmente en el norte de Luzón, se sintió la falta de lluvias durante la primera quincena del mes.

DEPRESIONES Y TIFONES.

Dejando aparte otras depresiones ó áreas de baja presión de poca importancia para Filipinas, nos fijaremos solamente en las únicas que parecen merecer el nombre de verdaderos baguios ó tifones.

Una de ellas se formó en el Mar de China, y las restantes tuvieron su origen en el Pacífico. Aunque las cuatro ejercieron una influencia bien marcada en el Archipiélago, especialmente en Visayas y Luzón, ninguna llegó á cruzar las islas sino que corrieron á regular distancia de las mismas.

TIFÓN DE 11-19 DE JULIO.

El Observatorio de Manila envió á Tokio, Zikawei (Shanghai), Taihoku (Formosa), Hongkong y Phulien (Indochina) los siguientes avisos referentes á este tifón:

Julio 12, 10 a. m. Un tifón se está formando desde ayer al este de las islas Ladrones [Marianas].

Julio 13, 8.30 a. m. El tifón ha cruzado las Ladrones [Marianas] por el N. de Guam, moviéndose probablemente al WNW.

Julio 15, 1 p. m. El tifón que cruzó las islas Ladrones [Marianas] el día 12 se va acercando ahora á las islas Meiacosima. Continúa moviéndose al WNW.

Desde el 15 para adelante fué imposible seguir á este tifón, debido á la interrupción del cable entre Nagasaki y Shanghai.

Que vino este tifón del este de las Marianas y que cruzó dichas islas el día 12 pasando por el norte de la isla Guam se echará de ver fácilmente examinando las observaciones hechas en nuestra estación de Sumay, situada en la parte noroeste de aquella isla. Véanse estas observaciones en la tabla que acompaña el texto inglés. Según ellas, el centro del tifón había ya pasado por el norte de Guam la tarde del día 12 cuando los vientos habían rolado ya del 4.° al 3.^{er} cuadrante.

Aunque nos faltan datos para dar con exactitud la dirección seguida por este baguio desde Marianas hasta que apareció al SE de las islas Liukiu, puede decirse con bastante probabilidad que se movió al WNW desde el 11 hasta el 15, en que empezó á inclinarse al NW. Debido á esta inclinación de la trayectoria, el tifón en vez de dirigirse al grupo de las islas Meiacosima se dirigió al de

Okinawa, el cual atravesó la madrugada del 17. En Naha (Long. 127° 41′ E, Lat. 26° 13′ N) bajó el barómetro hasta 739.9 mm. á 5 a. m. del mismo día, y la velocidad del viento allí observada á 6 a. m. fué de 27 metros p. s.

Una vez cruzadas las islas Liukiu, el tifón siguió su curso á través del Mar del Este y Mar Amarillo moviéndose al NW y NNW, perdiendo gradualmente la intensidad. Á eso de mediodía del 19 llegó á la península de Shantung donde recurvó hacia el NE pasando á Liantung la noche del mismo día. (Véanse los "Weather Charts" de Tokio y el "Journal of the Meteorological Society of Japan, August, 1907.")

TIFÓN DE 15-21 DE JULIO.

Tanto ó más intenso que el anterior fué el tifón que apareció del 15 al 16, al S de las islas Bonin, en los alrededores de la parte norte de las islas Marianas. Efecto sin duda de él fué el ligerísimo descenso que se observó de nuevo aquellos dos días en los barómetros de Guam, al propio tiempo que los vientos en vez de inclinarse más al S volvieron atrás al W y WSW. Teniendo á la vista los mapas diarios del Japón, se puede seguir sin dificultad la trayectoria de este tifón. Desde que hizo su aparición al S de las islas Bonin hasta después de atravesar el Japón, conservó una dirección casi paralela á la del tifón de que hemos hablado arriba, moviéndose al NW ó NW¼N: el 17 se le vió pasar al W de las islas Bonin y la tarde del 18 cruzó las extremidades occidentales de las islas Shikoku y Nippon, penetrando en el Mar del Japón durante la noche del 18 al 19. Desde aquella noche apareció la trayectoria sumamente inclinada al W: de suerte que dirigiéndose el tifón al W¼NW próximamente vino á atravesar el sur de Korea al 19, y el Mar Amarillo y la península de Shantung el 20. Desde dicha península se dirigió de nuevo al NW, llegando á Tientsing la mañana del 21. La mínima barométrica observada en el Japón durante el paso de este tifón fué 733.8 mm.

DEPRESIÓN Ó DEPRESIONES DE 20-26 DE JULIO.

Los mapas diarios del tiempo de los días 22–26 de Julio señalan el paso sucesivo de dos centros de depresión por el este de las islas Liukiu y sur de Japón, los cuales pueden considerarse fácilmente como formando un mismo sistema de perturbación atmosférica si ya no es que no existía en un principio más que un centro ciclónico, el cual se dividió en dos centros parciales al tiempo de recurvar al S de las islas Liukiu y este de los canales Bashi y Balintang.

Sea de esto lo que fuere, parece poder darse como probable que esta ó estas depresiones se formaron del 19 al 20, al este de las Filipinas, recurvando hacia el NE del 21 al 22 cuando se hallaban próximamente al este del canal de Bashi ó de la región meridional de Formosa.

Uno de dichos centros de depresión demoraba á mediodía del 22 en los alrededores de las islas Liukiu, moviéndose desde allí hacia el NE hasta llegar al sur de Shikoku el 23; inclinóse entonces al E viniendo á pasar por el sur de la isla Hachijo la mañana del 25. El otro centro pasó un día más tarde por el sur de la misma isla Hachijo en donde bajó el barómetro hasta 747.8 mm.

Aun cuando el Observatorio de Manila, en las notas ordinarias del tiempo de los días indicados, señaló el paso de una depresión ó tifón por el Pacífico al E de los canales Bashi y Balintang y de las islas Liukiu, con todo, el estado demasiado complicado de la atmósfera en el Pacífico hizo imposible indicar la existencia de más de un centro de perturbación y por ende también dar con exactitud la posición de ninguno de ellos.

DEPRESIÓN Ó TIFÓN DE 22-26 DE JULIO.

El Observatorio de Manila vino anunciando desde el día 20 la existencia de una depresión en la parte norte del Mar de China y dijo el día 26 que dicha depresión había atravesado el golfo de Tongking. Copiaremos aquí los anuncios que sobre esta depresión ó tifón dió el Observatorio de Hongkong, el cual contaba con más medios que nosotros para poder seguirla en su movimiento progresivo hacia el norte de Indochina.

Julio 22, 11.45 a. m. Es probable se desarrolle un segundo centro [ciclónico], al sur de Hongkong, en la baja presión que se extiende sobre la parte norte del Mar de China.

Julio 23, 11.45 a. m. Un centro ciclónico parece haberse formado ó estarse formando en el Mar de China, hacia el sur de Hongkong, problamente entre los paralelos 18° y 20° Lat. N.

Julio 24, 12.10 p. m. La depresión, demora aún, hacia el sur de Hongkong, probablemente cerca del paralelo 19° ó 20° Lat. N. Parece moverse muy lentamente hacia el WNW ó NW.

Julio 24, 3 p. m. La depresión, al SW de Hongkong, parece moverse en dirección á los alrededores del estrecho de Hainán.

Julio 25, 12.05 p. m. El tifón ha penetrado probablemente en el golfo de Tongking.

Julio 26, 11.55 a. m. El tifón se estaba acercando ayer tarde á los alrededores de Haiphong.

Poco es lo que podemos añadir sobre este tifón ó depresión del Mar de China, pues nos faltan observaciones para poder precisar su trayectoria. Formada, según parece, del 21 al 22, en los alrededores de 18° Lat. N, hacia el S ó SSE de Hongkong, hubo de moverse muy inclinada al W, pues la vemos atravesar la isla de Hainán por el sur del Faro Lamko (Distrito de Kiung-chow, N. de Hainán) durante la noche del 24 al 25. La tarde ó noche del 25 se hallaba ya en los alrededores de Haiphong, en el norte de Indochina.

SEISMOLOGICAL BULLETIN FOR JULY, 1907.

By Rev. Miguel Saderra Masó, S. J.,
Assistant Director of the Weather Bureau.

EARTHQUAKES FELT IN THE PHILIPPINES.[1]

7, 19^h 40^m. **Nueva Caceres** (SE of Luzon). Oscillatory earthquake; direction NW-SE; intensity I.

10, 2^h 54^m 56^s.* **Southern Luzon and the Visayan Islands.** An earthquake of intensity V, which was perceptible in the part of Luzon lying south of parallel 14° N, and on the Islands of Samar, Leyte, Cebu, Masbate, Negros, and Panay. The focus of this disturbance lay in the Camarines, not far from that of the shocks which occurred during last April; but its meizoseismal region reached farther to the southeast than on the former occasion. After the principal shocks followed several repetitions or *aftershocks*; thus at 3^h 10^m, 4^h 3^m, 7^h 34^m, and 22^h 2^m. Of these the one at 3^h 10^m was the strongest, reaching force III within the meizoseismal area and being perceptible also outside this region, at Atimonan and Legaspi. Both, the principal earthquake and the aftershoks, were registered by the seismographs of the Observatory. The agitation produced by the former, strengthened by that due to the repetition at 3^h 10^m, lasted over two hours. The microseismographs at Zikawei likewise registered the first quake, the agitation continuing from 2^h 27^m 24^s until 4^h; but it seems that the seismic waves did not propagate themselves as far as Europe, as did those of the earthquake which shook the same region during the month of April.

17, 19^h 8^m. **Legaspi** (SE of Luzon). Earthquake of intensity II; short duration.

18, 3^h 22^m 44^s.* **Islands of Panay and Negros.** Quake of short duration. According to information received it reached intensity V at Bacolod (NW of Negros), and was accompanied by subterranean noises; the principal waves appeared to come from an easterly direction. At the two stations on Panay—Iloilo and Capiz—undulations of force II were felt, coming from SE. There is no doubt that the center of this earthquake lay in northern Negros; probably it stood in some relation to the Volcano Canlaon.

19, 2^h 23^m. **Borongan** (E of Samar). Earthquake; intensity IV; duration 4^s.

19, 15^h 40^m 39^s.* **Aparri** (NE of Luzon). Oscillatory earthquake; direction NE-SW; intensity III; duration 10^s.

20, 13^h 0^m. **Balingasag** (N of Mindanao). Earthquake of intensity III; duration 3^s. Repetition at 15^h.

20, 20^h 40^m. **Jolo.** Earthquake of intensity III and short duration. It was accompanied by a noise similar to that of a wind squall.

20, 21^h 40^m 40^s.* **Mindanao.** Earthquake of intensity V in the southeastern portion of the island. The reports received indicate that the origin lay to the north of Davao, probably on the eastern side of the mountain range which separates the Salug and Agusan Rivers; since in this region exists a seismic center which on other occasions we have called the "seismic center of the Agusan." At Davao strong oscillations were observed, which had a NNE–SSW direction and were followed by strange subterranean rumblings. At Caraga and Baganga, stations situated on the eastern coast of the island and to the east of the center mentioned, the seismic movements were of intensity IV and

[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

showed the two directions WNW–ESE and W–E. It seems that the earthquake waves reached greater distances in the directions N and E than toward W. While they were perceptible at Surigao, a distance of about 250 kilometers, and probably even at Cebu, at a distance of more than 350 kilometers, nothing is known of their having been felt in western Mindanao. The reason for considering it probable that the perceptible waves penetrated as far as Cebu lies in the fact that this city experienced a shock of intensity II at about the same time. This earthquake was registered by the microseismographs of Manila and Zikawei. The perturbation lasted 1^h 36^m 21^s at Manila and 1^h 30^m at Zikawei. There followed a few repetitions of intensities II and III, which were perceptible only at Davao and Caraga, the stations closest to the epicenter. These occurred at 23^h 18^m of the 20th, 2^h 32^m, 3^h 40^m, 23^h 15^m of the 21st, and 5^h 10^m of the 22d.

24, 6^h 12^m 12^s.* **Aparri** (NE of Luzon). Oscillatory earthquake; direction N–S; intensity III; duration 6^s.

26, 21^h 15^m. **Surigao** (NE of Mindanao). Earthquake of intensity IV, with trepidatory and undulatory movements in the direction SE–NW, accompanied by a strange noise resembling the howling of a sudden squall. Duration about 6^s.

27, 20^h 25^m 44^s.* **Luzon Island** (southwestern part). Earthquake of force III, and short duration. It was felt with almost identical intensity throughout the provinces surrounding Manila Bay and in Batangas, Calamianes Island, Mindoro, and northeastern Palawan. The center appears to have been situated to the west-southwest of Manila in the China Sea, but very close to the coast. The agitation produced in the seismographs lasted over 30^m.

29, 4^h 45^m. **Surigao** (NE of Mindanao). Earthquake of intensity III and short duration.

31, 22^h 30^m. **Southeastern Mindanao.** Quake of intensity II, which, according to advices received from Davao and Caraga, was felt only in the extreme southeast of the island.

RECORDS OF THE MICROSEISMOGRAPHS.

[Time of the one hundred and twentieth meridian east of Greenwich. Midnight=0^h.]

No.	Date.	Component.	Beginning. First preliminary tremors.	Beginning. Second preliminary tremors.	Beginning. Principal portion.	Maximum range of motion. Hour.	Maximum range of motion. Amplitude (2 a.).	Maximum range of motion. Period.	End.	Instrument.	Remarks.
			h. m. s.	*h. m. s.*	*h. m. s.*	*h. m. s.*	*mm.*	*s.*	*h. m. s.*		
134	3	NNW-SSE	7 40 05		7 40 28	7 40 54	0.10	1.6	7 44 00	V. M.	Vertical component; amplitude, 0 15 mm.
		WSW-ENE	7 40 09			7 41 04	.03	3.8	7 48 00	H. P.	
135	4	WSW-ENE	17 40 25		17 40 44	17 40 51	.20	2.4	17 46 00	V. M.	Vertical component; amplitude, 0.09 mm.
		WSW-ENE	17 40 28			17 41 57	.03	5.4	17 47 00	H. P.	
136	4	WSW-ENE	21 51 14						21 54 00	V. M.	
137	5	WSW-ENE	23 53 14						24 14 00	V. M.	
		WSW-ENE	23 53 29		23 58 30	24 01 29	.10	6	24 20 00	H. P.	
		NNW-SSE	23 53 14						24 12 00	V. M.	
138	10	WSW-ENE	2 54 56		2 55 24				5 02 00	V. M.	Vertical component; amplitude, 1.57 mm. Earthquake, intensity V, in the southeastern part of Luzon and eastern Visayas.
		WSW-ENE	2 55 02		2 55 50				4 44 00	H. P.	
		NNW-SSE	2 54 58		2 55 37	2 57 08	1.65	1.2	5 02 00	V. M.	
		NNW-SSE	2 54 59		2 55 49	2 56 55	4.93	5.6	4 43 00	H. P.	
139	10	WSW-ENE	7 34 25			7 35 17	.05	2.8	7 38 00	V. M	Earthquake, intensity II, at Nueva Caceres (SE of Luzon).
140	10	WSW-ENE	7 43 12			7 43 22	.02	2	7 47 00	V. M.	
141	12	WSW-ENE	21 23 27			21 23 48	.03	1.6	21 25 00	V. M.	
142	16	WSW-ENE	19 42 52						19 44 00	V. M.	
143	17	WSW-ENE	13 46 39						13 48 00	V. M.	
144	18	WSW-ENE	3 22 44		3 24 28	3 24 46	.05	2.8	3 29 00	V. M.	Earthquake, intensity IV, in Panay and Negros islands.
		WSW-ENE	3 23 11		3 23 49	3 24 13	.08	6	3 33 00	H. P.	
145	19	WSW-ENE	15 40 39			15 42 07	.03	2	15 44 00	V. M.	Earthquake, intensity II, at Aparri (NE of Luzon).
146	20	WSW-ENE	21 40 40	21 43 48	21 46 22	21 47 10	.12	6	23 17 00	V. M.	Vertical component; amplitude, 0.16 mm. Earthquake, intensity V, in the eastern part of Mindanao.
		NNW-SSE	21 40 39	21 43 47	21 46 14	21 47 12	.18	10.4	23 17 00	V. M.	
147	20	WSW-ENE			23 01 25	23 01 29	.04	2.4	23 04 00	V. M.	Vertical component; amplitude, 0.10 mm. Earthquake, intensity II, at Davao and Caraga (SE of Mindanao).
148	21	NNW-SSE	2 32 40						2 43 00	V. M.	Earthquake, intensity III, in the eastern part of Mindanao.
149	24	WSW-ENE	6 12 12		6 12 54	6 13 10	.18	2	6 18 00	V. M.	Earthquake, intensity III, at Aparri (NE of Luzon).
		NNW-SSE	6 12 16		6 12 58	6 13 14	.26	1.6	6 18 00	V. M.	
150	27	NNW-SSE	20 25 44						21 04 00	V. M.	Vertical component; amplitude, 2.62 mm. Earthquake, intensity II, in the southwestern part of Luzon.
151	27	WSW-ENE	23 53 29						24 16 00	V. M.	
152	30	WSW-ENE	3 32 22		3 35 00	3 36 14	.04	4	4 17 00	V. M.	
		WSW-ENE	3 32 29		3 35 54	3 36 43	.63	6	4 22 00	H. P.	
		NNW-SSE	3 32 26		3 35 35	3 36 18	.03	4.8	4 26 00	V. M.	
		NNW-SSE	3 32 28		3 35 41	3 37 02	.35	6.6	4 10 00	H. P.	

Instrumental constants.—Vicentini microseismograph (V. M.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record: NNW–SSE component, 50 times; WSW–ENE component, 50 times.

Horizontal Pendulums (H. P.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation, NNW–SSE pendulum, T=7 seconds; WSW–ENE pendulum, T=6.4 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

Foundation and location.—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above the sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above the sea level.

Geological structure.—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters, which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

TEMBLORES SENTIDOS EN FILIPINAS.[1]

7, 19^h 40^m. **Nueva Cáceres** (SE de Luzón). Temblor oscilatorio; dirección NW–SE; intensidad I.

10, 2^h 54^m 56^s.* **Sur de Luzón é Islas Visayas.** Terremoto de intensidad V. Fué perceptible en la parte S de Luzón, desde el paralelo 14° N, y en las Islas de Sámar, Leyte, Cebú, Masbate, Negros y Panay. El origen de este terremoto se hallaba en Camarines, no lejos del de los terremotos de Abril último. Su área meizoséismica sin embargo se extendió algo más hacia el SE que en aquellos. Después del terremoto principal hubo varias repeticiones ó aftershocks; á 3^h 10^m, 4^h 3^m, 7^h 34^m, y 22^h 2^m. El ocurrido á 3^h 10^m fué el más fuerte de todos; tuvo intensidad III dentro de la región meizoséismica y llegó á ser perceptible fuera de ella en Atimonan y Legaspi. Tanto el primer terremoto como los aftershocks que le siguieron fueron registrados por los seismógrafos del Observatorio. La perturbación correspondiente al primero duró más de dos horas, reforzada por el que tuvo lugar á 3^h 10^m. Los microseismógrafos de Zikawei registraron también el primer terremoto, durando la perturbación desde 2^h 57^m 24^s hasta las 4^h; mas no parece que las ondas se propagasen hasta Europa como las de los terremotos de Abril, sentidos en la misma región.

17, 19^h 8^m. **Legaspi** (SE de Luzón). Temblor de tierra de intensidad II; duración corta.

18, 3^h 22^m 44^s.* **Islas de Panay y Negros.** Temblor de corta duración. Según las notas recibidas tuvo intensidad V en Bacolod (NW de Negros), y fué acompañado de ruidos subterráneos. Las ondas parecían proceder de hacia el E. En las dos estaciones de la Isla de Panay, Iloilo y Capiz, se experimentaron ondulaciones procedentes del SE, de intensidad II. No hay duda de que el origen de este terremoto se hallaba hacia el N de la Isla de Negros, probablemente relacionado con el Volcán Canlaon.

19, 2^h 23^m. **Borongan** (E de Sámar). Temblor de tierra; intensidad IV; duración 4^s.

19, 15^h 40^m 39^s.* **Aparri** (NE de Luzón). Temblor oscilatorio; dirección NE–SW; intensidad III; duración 10^s.

20, 13^h 0^m. **Balingasag** (N de Mindanao). Temblor de tierra de intensidad III; duración 3^s. Repitió á 15^h.

20, 20^h 40^m. **Joló.** Temblor de tierra de intensidad III; duración corta. Acompañado de ruido semejante á una racha de viento.

20, 21^h 40^m 40^s.* **Mindanao.** Temblor de tierra de intensidad V en la parte SE de la isla. De las notas recibidas se deduce que el origen se hallaba hacia el N de Dávao, probablemente hacia la parte oriental de la cordillera que separa los ríos Salug y Agusan, donde existe el centro que en otras ocasiones hemos denominado "Centro Séismico del Agusan". En Dávao se observaron oscilaciones fuertes en la dirección NNE–SSW y les siguió un ruído subterráneo extraño. En Caraga y Baganga, estaciones situadas en la costa oriental de la isla, al E del indicado centro, los movimientos séismicos tuvieron intensidad IV y se observaron las direcciones WNW–ESE y W–E. Las ondas séismicas parece que se propagaron á mayores distancias hacia el N y E que hacia el W. En la primera dirección fueron bien perceptibles en Surigao, distante unos 250 kilómetros, y probablemente en Cebú que dista más de 350 kilómetros, donde se sintió temblor de tierra de intensidad II

[1] La intensidad de los terremotos se indica conforme á la conocida escala de De Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120 E de Greenwich.

hacia las 21^h. En la parte occidental de Mindanao no consta fuese perceptible. Lo registraron los microseismógrafos de Manila y Zikawei. La perturbación duró en Manila 1^h 36^m 21^s y en Zikawei 1^h 30^m. Después hubo algunas repeticiones de intensidad II y III, perceptibles tan solo en las estaciones de Dávao y Caraga, más próximas al epicentro: ocurrieron á 23^h 01^m del 20, á 2^h 32^m, 3^h 40^m, 4^h 16^m, 23^h 15^m del 21, y á 5^h 10^m del 22.

24, 6^h 12^m 12^s.* **Aparri** (NE de Luzón). Temblor oscilatorio; dirección N–S; intensidad III; duración 6^s.

26, 21^h 15^m. **Surigao.** (NE de Mindanao). Temblor de tierra de intensidad IV, con movimientos susultorios y oscilatorios en dirección SE–NW, acompañados de un ruído extraño semejante al de un chubasco repentino; duración unos 6^s.

27, 20^h 25^m 44^s.* **Isla de Luzón** (parte SW). Temblor de tierra de intensidad III y de corta duración. Fué sentido casi con la misma intensidad en todas las provincias que rodean la Bahía de Manila, en la de Batangas, en las Islas Calamianes, Mindoro, y en la parte NE de Palawan. El centro de perturbación parece estaba hacia el WSW de Manila en el mar de China, pero muy cerca de la costa. La perturbación producida en los seismógrafos duró poco más de 30^m.

29, 4^h 45^m. **Surigao** (NE de Mindanao). Temblor de tierra de intensidad III y de corta duración.

31, 22^h 30^m. **SE de Mindanao.** Temblor de tierra de intensidad II; sentido, según las notas de Dávao y Caraga, solo en el extremo SE de la isla.

REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla que contiene una lista completa de estos registros.

CROP BULLETIN FOR JULY, 1907.

By Rev. George M. Zwack, S. J.,
Secretary of the Weather Bureau.

GENERAL NOTES.

The yield of agricultural products gathered during July is almost universally described as fair, in many places as good. There has been considerable activity in the production of hemp, though the prices paid for the fiber were not quite satisfactory to the producers. The amount of copra prepared is increasing as compared with the preceding months and the article brings good prices. Normal conditions are gradually spreading throughout Samar and Leyte, as people can dedicate themselves to the tilling of the soil without fear of losing the fruit of their labors by the raids of outlaws, and possibly of suffering personal harm in addition. The corn crop has been good practically throughout the Islands, especially in the interior of Negros. The same is true of sweet potatoes and other tubers. There has been a general rise in the price of rice. With few exceptions, fruit is plentiful.

If we turn to the crops which at the end of the month were growing in the fields, the picture presented by the reports is gloomy. The Provinces of Cagayan, Ilocos, and Union had another spell of drought during the first half of the month which did very great harm. Though the talk of impending famine will not be taken too seriously by anyone who knows the country and its people, still it shows that the outlook is none too pleasant. The interior of Negros, and the Provinces of Iloilo and Sorsogon likewise, complains of insufficient rainfall. It is needless to say that wherever rain was wanting or scarce, one of the main occupations of the month—namely, the transplanting of rice—was greatly delayed. On the other hand there was a flood in the Haya River, northern Mindanao, and somewhat excessive rains at points of the western coast of Negros. Without having been excessive, rain has done slight damage in southwestern Leyte, on Biliran Island, and in Albay Province.

More serious even than the lack of water were the ravages of insects. Locusts or their grubs have been reported from the districts of Davao and Cotabato, northern Mindanao, Bohol (locally), Leyte, Camote Islands, the Island of Biliran, western Samar, northern Negros, the whole Island of Panay, Masbate, southeastern Luzon, and Nueva Ecija. While in some places they had not done much damage up to the close of the month, they had caused great losses in others, Sorsogon Province and the Islands of Panay and Masbate having suffered especially heavily. It is gratifying to note in several reports that people have been fighting this plague, in several places quite successfully. Other injurious insects have damaged the crops on the Island of Basilan, in Batangas, Bulacan, Tarlac, Zambales, and Isbayat, which latter is an island of the Batanes group.

Animal diseases are far from being a thing of the past. While from the portion of the Archipelago lying south of 10° 30′ nothing more serious has been reported than the loss of chickens, the situation is more distressing north of said parallel. The neighborhood of Maasin suffered from the ravages of epizoötia ever since the beginning of the month. Luckily the loss of cattle was confined to a few localities; but hogs and chickens died everywhere. In northern Negros the sickness carried off many victims; it is maintained that at Bago, a coast town south of Bacolod, 95 per cent of the stock succumbed to the dread disease. The sickness has broken out anew in Batangas and continued its work of desolation in Bulacan, Tarlac, Zambales, and Union, though always local in character. Glanders seems to occur in the interior of Bohol, and the loss of three horses due to this ailment has been reported from Ilocos Sur, where epizoötia has likewise claimed one or the other victim. Surra has broken out on Masbate Island, killing practically every one of the few horses which existed in the part of the island northwest of Masbate. Hog and chicken sicknesses are rather common and locally very severe.

SPECIAL NOTES.

DISTRICT I.

Borongan.—The cocoanut groves and hemp plantations have recovered from the effects of the typhoon of January 10, and there is at present considerable activity in the production of copra and hemp. Equal life manifests itself in other agricultural pursuits, owing to the return to normal conditions, which, it seems, gradually takes place throughout the island.

Tacloban.—All the agricultural products gathered in during this month gave good returns; in Tacloban, especially corn, gabe, tomatoes, and vegetables; in Naval, hemp and sugar cane. The grubs left by the locusts which had attacked the sugar cane during the preceding month have been destroyed completely. Nor has any case of epizoötia occurred. Although the rains have not been excessive on Biliran Island, still they have damaged the corn in the neighborhood of Kawayan, and it is feared that the crop will not be plentiful, especially since the locusts have ruined some of the fields. Since the recent capture of pulajan chiefs, people are returning to their homes throughout the formerly infested districts, in order to take up their ordinary pursuits of life.

Ormoc.—The crops of hemp, corn, cocoanuts, pineapples, and tubers have been fair. Compared with last year, the amount of rice planted this year is small. Some of the rice fields are already in blossom. In a few localities the corn had been damaged slightly by wind and rain, though, on the other hand, the latter greatly benefited the rice. Locusts have appeared on the Camote Islands and it is feared that they will likewise invade Leyte. The price of rice continues high, being at present ₱7 per sack. The mangoes brought hither from Cebu Island sold for from ₱5 to ₱8 per hundred.

Tuburan.—The state of the crops is fair. In the municipality of Toledo about 50 per cent of the hogs and chickens have died, while other towns, at no great distance, are perfectly free from the scourge.

Cebu.—The rains have been tolerably frequent and have brought a sufficient amount of water. Everywhere the eye meets seed beds of rice or ground being prepared. It seems that interest in the cultivation of maguey is awakening. Several tracts of land which had lain fallow and almost abandoned are now planted with this article. The corn harvest has begun and is giving fair results. There is a goodly supply of mangoes, santol, lomboy, etc.

Maasin.—The yield of corn and sweet potatoes has been somewhat poor, owing to the ravages of wild hogs. Worms of the kinds called *piangas* and *baobao* have likewise done some harm. At present the crops of pineapples, macalpa, tambis, santol, and guayabas are being gathered; the farmers are also taking advantage of the rains to plant rice, tobacco, and other crops. Ever since the beginning of the month of July epizoötia reigned in this region. Toward the end of the month as many as eight carabaos died in a single day at Cambuoc, municipality of Maasin, while hogs and poultry are dying everywhere.

Surigao.—The hemp crop has been fair nearly everywhere throughout the province, but especially at Cabarbaran and Tubay. The same holds true of copra, and many farmers are devoting their energies to the cultivation of cocoanut trees. Corn has been planted, some of the more advanced fields presenting a healthy appearance.

Tagbilaran.—Some towns—for instance, Cortes, Antequera, Corella, etc.—have already begun to harvest corn, though the ears are not yet perfectly ripe. This hurry is due to the high price demanded by the Chinese merchants for said product, of which they hold considerable quantities, imported from Carcar and Sibonga (Cebu) and from several places in Oriental Negros. The uve, both white and dark, is growing satisfactorily and within three or four months a good quality of this tuber will be obtainable, though the supply will hardly be abundant. At Ubay have been cultivated during the month corn, rice, bananas, maguey, sugar cane, and all kinds of tubers. Unfortunately the locusts have appeared in said locality. The hemp and maguey plantations in the interior promise to give good returns within a short time. Several thousand cocoanuts have been brought to Tagbilaran from Panglao, whose inhabitants, like those of all the coast towns, largely sell the nuts, without, however, entirely neglecting the making of oil. It seems that during the month deaths from glanders among the horses have occurred in the interior.

Butuan.—During this month the rice harvest has been finished and preparations have been begun for the planting of a new crop of this cereal. It is hoped that the latter will do well, owing to the flooding of the rice fields by the Agusan River. At present corn planting is in progress, but unfortunately few people dedicate themselves to the raising of this product. The people living along the Agusan are raising sweet potatoes and other tubers. Higher up the river they have obtained sweet potatoes of extraordinary size. It is believed that about 50 of them would fill a rice sack.

Balingasag.—The swarms of locusts continue to hover about this vicinity, and notwithstanding the efforts of the people, who, divided into gangs, endeavor to frighten them off, they have cleared almost completely the cornfields in the neighborhood of Salay and Bagacay, and done great harm at Balingasag. The farmers are finishing the planting of the varieties of rice called *calamian* and *binagacay* and take advantage of the abundant rain to plant hemp, cocoanut trees, and other crops. In the region lying between Cagayan, Iponan, and Alubijid the mango crop has been fair, but small at Balingasag. The price of hemp has fallen considerably, being at present ₱12.25 per picul. Copra costs ₱8.25 per picul and rice ₱7.25 per cavan.

Caraga.—The rains have been well distributed throughout the month and greatly benefited the crops. Hemp production is on the increase; the price is ₱22.50 per picul. Mangoes are plentiful.

Cotabato.—During the last days of the month the late rice has been transplanted. Locusts have appeared, but done very little harm thus far.

Davao.—There is great activity in hemp cultivation. The locusts are continuing their work of destruction; some people have sown one and the same caiñgin as often as three times, without any result, owing to these pests. The mango, dulcan, and lanzon trees are laden with fruit.

During the second quarter of this year the following products have been shipped from the port of Davao:

Article.	April.		May.		June.		Total.	
	Quantity.	Price.	Quantity.	Price.	Quantity.	Price.	Quantity.	Value.
Hemp ... piculs	2,665	₱22.50	2,546	₱23	2,824	₱21.50	8,035	₱179,236.52
Gum mastic ... do	590	5.50	991	6.50	662.54	6.00	2,243.54	13,661.74
Biao ... do	369.76	9.50	346	10.00	514	10.00	1,229.76	12,112.72
Copra ... do	81	8.25	64	8.00	28	8.00	137	1,404.25
Wax ... quintals	-----	-----	-----	-----	1.5	38.00	1.5	57.00
Total value	-----	-----	-----	-----	-----	-----	-----	206,472.23

DISTRICT II.

Capiz.—Those farmers in the Province of Capiz who had already transplanted their rice have lost it completely through the voracity of the locusts, which appeared during the first and second decade of the month. Some have planted a second time. The harm done by the same insects at Ilaya and Buruanga is not quite so serious.

San Jose Buenavista.—The farming population utilizes the abundance of rain for the work in the rice fields. On the higher ground the corn harvest is in progress. The fields are infested by great numbers of grubs. The mangoes are being gathered, and it turns out that after all the last are really good. They sell for ₱1 per hundred.

Iloilo.—The rainfall has not been sufficient for work in the fields, hence irrigated rice is generally behind time. On the little of it which had been transplanted, the locusts have fattened themselves, especially at Barotac Nuevo, where it had to be planted anew. Corn held out great promise, but as fast as the ears ripen they are devoured by rats. In this manner the people of Janiuay have lost about 25 per cent of their crop.

Bacolod.—Owing to the rains of the last two months, there is hope that sugar cane, rice, and other crops will give good returns; that is to say, if the locusts, which are spreading, do not destroy them as they have already done with some fields. In the interior of the island people are gathering a good crop of corn, which sells at Bacolod for ₱0.60 per hundred ears. The price of rice has risen to ₱0.30 per ganta (3 liters); that of the mangoes imported from Oton and Guimbal (Iloilo) oscillates between ₱0.80 and ₱1.50 per hundred. From Murcia and Victorias it is reported that there the rainfall did not suffice for the transplanting of rice. At Bago, on the contrary, the rain has been excessive, without, however, doing serious damage. As epizoötia is continuing among the draft animals, farm work is greatly hindered. Several farmers had to hire carabaos from those who still possess such, at ₱0.50 per head a day. There is sickness among the poultry, but it is not malignant. At Silay, Talisay, Saravia, San Carlos, and Bago locusts and their grubs have done considerable harm in the sugar-cane and rice fields. In the last-mentioned town epizoötia has carried off 95 per cent of the horses, carabaos, and other cattle.

Dapitan.—Those farmers whose rice seedlings were sufficiently developed have transplanted them, but their number is not great, since most of them were not in a hurry with their work on the seed beds, fearing lest the experience of former years might be repeated, when the seedlings perished on account of the delay in the advent of the rains. The crops planted on the caiñgin are flourishing, and by the middle of August the rice will be ripe for cutting. On July 30 and 31 there was a flood along the Haya River, which carried away many hemp plants and a considerable amount of sugar cane. Unfortunately two children lost their lives. They were trying to cross the river in a native boat (baroto), but the current swept them downstream and finally overturned the craft.

Zamboanga.—In the fields along the canal (which carries potable water to the city) the rice has been planted during July. At Reus the cocoanut crop has been abundant; nevertheless the nuts sell at Zamboanga for 4 centavos apiece. The price of copra is ₱8.50 per picul, that of rice ₱0.30 the ganta, second quality.

Isabela, Basilan.—During July the corn harvest began. Favored by abundant rains, vegetation is well developed, especially the cocos trees, though a few of these have been attacked by an insect called *bağağan.* Chickens continue to die of *atay-atay*.

Jolo.—The rains of July 19, 20, 25, and 26 have been a blessing for the rice already planted. Some of the fields being not yet planted, this work continues.

DISTRICT III.

Legaspi.—During the last third of the month began the transplanting of rice, the seedlings having developed well, thanks to the rains which fell during the said period. This work will continue well into the month of August. The price of rice imported from northern Luzon has risen. The hemp crop has been fair, but the price of the fiber has fallen. Copra, on the other hand, has reached ₱9.75 per picul, and balate ₱29.50. Sickness continues to carry off some of the cattle imported from China. Libog had good crops of oranges, guayabas, santol, bananas, and sweet potatoes; Tiui and Guinobatan of hemp. In the municipalities of Camalig and Ligao corn, sweet potatoes (though slightly injured by the rain), gabe, sitao, squash, and most of the fruit trees gave good results; ates, however, are scarce. In the region southwest of Camalig the crops were less good. During July appeared many grubs of locusts, but the people did not cease with their efforts until they had destroyed these pests completely.

Gubat.—The fields are infested by swarms of locusts, which are ruining immense tracts of corn, sugar cane, and cocos trees, thus causing great loss to the owners, who had expected especially a rice crop equal to that of the preceding months. The various expedients to which the inhabitants have resorted to drive these pests away were of no avail; the insects merely go from one place to another, without ever leaving the neighborhood. The scanty rain which fell has been a blessing to the hemp, the amount produced during the month being greater and of better quality than previously. The price of current hemp is ₱15 per picul, while ₱25 to ₱26 are being paid for first-class fiber. Saigon rice costs at present ₱6.50 per cavan.

Palanoc, Masbate.—Reliable persons acquainted with the disease report that surra has broken out among the horses at Arroroy and has worked south through Baleno, destroying all the horses in the district, which were not many. But the farther south it goes a greater number of animals come in contact with the disease, and if the herds in the central part of the island, on the ranges west of Masbate and on the ranges of the south—near Cataingan—are to be preserved, radical means for preventing the spread of the sickness must be taken at once. Enormous swarms of grasshoppers have been in and around Palanoc for about twenty days and have practically destroyed all the crops at just the time when the country was recovering from the last visitation of the pest. Recently considerable quantities of copra have been coming in from the trees that had just recovered from previous attacks of locusts. The leaves of these trees have again been stripped and it will probably be a year before the natives will again be able to obtain any kind of a crop unless something is done. The grasshoppers breed extensively in the vast cogon pastures south of Masbate.

Calbayog.—The hemp production continued during July about the same as before. The various kinds of tubers, such as sweet potatoes, palauan, gauay, etc., gave good returns. Of fruits there are at present guayabas, santol, nanca, and others. Several boats have arrived loaded with mangoes grown on the Islands of Cebu and Leyte. These are cheaper than those coming from Manila. The rice planted during June is a total loss, having been devoured by locusts. The farmers are now busy replanting the fields. There is a good deal of sickness among the hogs and chickens.

DISTRICT IV.

Santo Domingo, Batanes Islands.—The fields planted in sweet potatoes were doing well during the month. People from the district of Santa Maria, Isbayat Island, report that on said island the rice is just beginning to produce ears, but that it is in a very poor condition, since the fresh leaves which are closest to the ears are being cut and eaten by small worms. In consequence of this, the other leaves, and even the stalks, suffer likewise and look as if they had been scorched.

Aparri.—Lack of rain had delayed the sowing of rice, and only during this month the thundershowers made it finally possible to prepare the fields and seeds beds. The scarcity of rice becomes more pronounced every day. At present the grain imported from Ilocos and Manila costs ₱7.50 per cavan.

Tuguegarao.—The cornfields offer a sad sight, owing to the period of drought through which the province has passed. The plants had already begun to wither, the leaves turning yellow, when the rains set in. They came very late, and it is well-nigh impossible for the plants to recover. With the exception of the Tabacalera, all the firms dealing in tobacco have transferred their field of operations to Isabela Province, where tobacco is said to be abundant and of good quality, while Cagayan has hardly any tobacco worth mentioning.

Vigan.—Contrary to all expectations, agriculture is at present in a lamentable state, due to the scarcity of rain during the preceding months. All crops have suffered, but most of all the rice. The miserable state of this product is indescribable. Maguey, corn, and vegetables have likewise been hurt severly, and it is said, apparently with reason, that the province is threatened with famine. At Vigan three horses have succumbed to glanders and one cow to rinderpest; at Santa Ana the latter sickness found likewise some victims among carabaos, other cattle, and hogs, but seems to be disappearing.

San Fernando, Union.—The effects of the prevailing scarcity of water have made themselves felt during the earlier part of the month to such extent that the farmers feared that all the rice seedlings would be killed by the drought. But owing to the rains which fell during the second half of July most of the plants have recovered, and those people who had their fields in readiness could begin the work of transplanting. There is some animal disease in the municipality of San Fernando, but it is not of an alarming nature, not a single animal having died of it thus far. But at Bagnotan rinderpest has developed, causing the loss of many carabaos and other cattle. Luckily, the owners themselves applied immediately to the Bureau of Agriculture for a veterinarian, who was sent with the greatest promptitude.

Bolinao.—From this station nothing but wails have been received. Insects called *alabas* have damaged the rice seedlings to some extent in the vicinity of Bolinao, while in the municipality of Infanta they have suffered from lack of water; Alaminos had sickness among the domestic animals, those attacked dying about eight hours after showing the first symptoms of the disease.

Dagupan.—According to the information furnished by their respective municipal presidents, at Asingan and San Quentin the farmers have harvested their corn; at Tayug, besides corn also pineapples and coffee; at San Fabian, coffee, cacao, guayabas, and santol; and at Dagupan, corn, santol, mabolo, and ates. In all these places the planting of rice is still in progress and the state of the crops is generally fair, except at San Quintin, where drought made itself felt, impeding, or at least retarding, the work in the corn and rice fields.

Tarlac.—People are still occupied in the rice fields. Sickness continues among the carabaos and cattle generally, the losses being about the same as during the preceding months.

San Isidro.—The agricultural products being harvested in this region are corn, ates, patola, and eggplant. The yield of corn will not be more than fair. People are working in the rice fields, preparing them for the transplanting of the seedlings, some having begun the latter task during the last days of the month. At Jaen, a town to the north of and quite close to San Isidro, clouds of locusts have appeared, but up to the end of the month they had not yet done much harm.

Arayat.—The state of the growing corn and sugar cane is satisfactory. Thanks to the rain which fell during the second half of the month, the people of Arayat are busy in the rice fields; but at Santa Ana water is still scarce as far as regards the higher lying fields. On irrigated ground the transplanting of rice had been finished, but worms ruined everything. The price of sugar is ₱6 per pilon of first quality, that of palay (unhulled rice) ₱2.55 per cavan.

Porac (Dolores).—The transplanting of rice is beginning. Sweet potatoes, tomatoes, and eggplant constitute the crops growing in the fields at present.

Olongapo.—On the advent of rain began the transplanting of rice, and the whole vegetation has gained new vigor. Some cornfields are already being harvested and the yield promises to be good.

Malolos.—The copious rainfall during July has benefited greatly all the different crops, but especially the corn and sugar cane. When they set in, the farmers hastened to prepare the seed beds for rice. Unfortunately worms have appeared in great numbers and are doing serious damage to the seedlings. Animal diseases are prevalent in several towns of the province.

Balanga.—During the month of July the planting of rice has been effected. The sugar cane, which had suffered from the drought prevalent during April, is now flourishing, thanks to the timely rains of this month. During the last few days the harvesting of corn has been commenced, though not yet generally. The yield is good.

Silang.—The crops of corn, sweet potatoes, bananas, sitao, etc., obtained during this month were good. There is sickness among the hogs and chickens, which has caused the loss of about 10 per cent.

San Antonio, Laguna.—The condition of irrigation rice is excellent. The same may be said of hemp. On the other hand, the fruit trees, such as lanzones, guayabas, santol, etc., do not bear much fruit.

Atimonan.—At the end of the month people were almost in despair and anxiously waited day after day for some rain which would enable them to sow the seed beds of rice a second time, because the seedlings resulting from the first sowing have been ruined completely by drought and locusts. The inhabitants worked hard in fighting this terrible pest of insects, especially the people of Inalig, a village comprised within the municipality of Atimonan, their energies being stimulated by their indefatigable councilman, Sr. Pedro Valladolid. The cocoanut trees are beginning to emerge from their lamentable state, except those which have recently been devasted by the locusts. The price of copra is ₱6.50 to ₱7 per picul. Hemp continues the same as usual, though it has likewise suffered a little from the effects of the drought. The price of second-class fiber is ₱13 to ₱14 per picul.

Batangas.—The condition of the rice planted in May is quite satisfactory, but that planted during June and July is being devoured by worms to such an extent that it is feared that it may become a complete loss. And, as if this were not enough of calamity, rinderpest has broken out again, though it is less virulent than last year. Nevertheless it causes considerable losses among the animals which had escaped then, whose number was already small enough.

ESTADO GENERAL DE LAS COSECHAS.

El resultado de las cosechas de los productos agrícolas de este mes ha sido regular en general y bueno en muchos puntos. Ha habido considerable actividad en la producción del abacá, á pesar de no ser satisfactorios para los productores los precios corrientes en plaza. La cantidad de cóprax preparado va en aumento si se compara con el mes anterior y tiene buen precio. Van normalizándose gradualmente las condiciones en Sámar y Leyte, porque la gente puede ya dedicarse á la labranza del terreno sin miedo de perder el fruto de sus trabajos por las invasiones de los bandidos, y libres de la posibilidad de sufrir por añadidura daños personales. La cosecha de maíz ha resultado buena prácticamente en todas las islas, en especial en el interior de Negros. Lo mismo se puede decir del camote y otros tubérculos. Ha subido en general el precio del arroz. Con pocas exceptiones, las frutas son abundantes.

Si volvemos ahora la vista á las plantas que al fin del mes crecían en los campos, el cuadro que presentan los reports es más bien triste. Las provincias de Cagayan, Ilocos y Unión tuvieron otra tanda de sequía en la primera quincena del mes que hizo muchísimo daño. Aun cuando nadie de los que conocen el país y á los indígenas tomará muy en serio el rumor de hambre inminente, sin embargo, ello demuestra que la perspectiva no es nada agradable. El interior de Negros y las provincias de Iloílo y Sorsogón se quejan también de la insuficiencia de lluvia. No hay para qué decir que donde quiera que hubo falta ó escacez de lluvia, se retardó mucho el trasplante del palay que es una de las ocupaciones ordinarias del mes. Por otra parte, hubo una inundación en el Río Haya, Norte de Mindanao, y lluvias algo excesivas en algunos puntos de la costa occidental de Negros. La lluvia sin llegar á ser excesiva, ha hecho algún daño en el SW. de Leyte, en la isla de Biliran y en la provincia de Albay.

Más graves aún que la falta de lluvia fueron las invasiones de los insectos. Según los reports, las langostas ó sus larvas aparecieron en los distritos de Dávao y Cotabato, Norte de Mindanao, Bohol (localmente), Leyte, islas de Camote, isla de Biliran, W. de Sámar, Norte de Negros, toda la isla de Panay, Masbate, SE. de Luzón y Nueva Écija. Mientras que en algunos puntos no han hecho mucho daño hasta el fin del mes, han causado grandes pérdidas en otros, habiendo sufrido especialmente la provincia de Sorsogón y las islas de Panay y Masbate. Muchos reports dan la nota consoladora de que la gente ha estado combatiendo esta plaga, muy satisfactoriamente en muchos lugares. Otros insectos dañinos han perjudicado las cosechas en la isla de Basilan, en Batangas, en Bulacán, Tárlac, Zambales é Isbayat (una de las islas del grupo de las Batanes).

Las enfermedades de los animales siguen causando víctimas. Aunque en la porción del Archipiélago situada al Sur del paralelo 10° 30′ no hubo más que la pérdida de gallinas, la situación es más triste al N. de dicho paralelo. Los alrededores de Maasim han sufrido la epizotia desde el principio del mes. Afortunadamente la pérdida de ganado quedó limitada á algunas localidades: pero en todas partes hubo pérdidas de cerdos y gallinas. En el N. de Negros el mal causó numerosas víctimas: se afirma que en Bago, un pueblo costero del Sur de Bacolod, el 95 por ciento del ganado sucumbió á esta terrible enfermedad. La enfermedad ha aparecido de nuevo en Batangas y continuado su obra de desolación en Bulacán, Tárlac, Zambales y Unión, aunque siempre con carácter local. Parece que el muermo ha aparecido en el interior de Bohol. De la misma enfermedad han muerto tres caballos en Ilocos Sur, donde también la epizotia ha causado alguna que otra víctima. La zurra ha hecho su aparición en la isla Masbate, matando prácticamente todos los caballos que existían en la parte de la isla situada al NW. de Masbate. Las enfermedades de los cerdos y gallinas son muy comunes y muy severas en algunas localidades.

NOTICIAS PARTICULARES.

DISTRITO I.

Borongan.—Repuestos los cocoteros y abacales de los daños causados por el baguio del 10 de Enero último, se hallan hoy con bastante fruta, y se nota bastante movimiento en la gente por el trabajo del cóprax y abacá. Igual animación se observa en las otras plantaciones, debido todo al estado normal que parece va extendiéndose por toda la isla.

Tacloban.—Todas las cosechas que se han verificado este mes han sido buenas: en Tacloban las de maíz, gabe, tomates, y legumbres; en Naval, las de abacá y caña dulce. Los loctones dejados por las langostas que habían invadido esta última el mes anterior, han sido destruidos. No ha habido ningún caso de epizotia. En Kawayan aunque las lluvias no han sido excesivas, se duda si será buena la cosecha de maíz, por haber sido perjudicado por el agua y las langostas que devastaron algunos campos del mismo. Á raíz de la captura de los jefes pulajanes, la gente concentrada en toda la zona afectada va á volver ya á sus hogares para dedicarse á las faenas de campo,

Ormoc.—Las cosechas de abacá, maíz, cocos, piñas, y tubérculos han sido regulares. El palay sembrado es poco en comparación con el del año anterior; en algunos campos ya está floreciendo. El maíz en algunos sitios ha sido perjudicado, aunque no mucho, por los vientos y lluvias; si bien éstas han favorecido el desarrollo del palay. La langosta está en las Islas Camotes y se teme que invada la provincia. Continúa subido el precio del arroz, ₱7 el saco. Las mangas procedentes de Cebú se vendieron de 5 á 8 pesos el ciento.

Tuburan.—El estado de las cosechas es regular. En el municipio de Toledo han muerto un 50 por ciento entre cerdos y gallinas, mientras otros pueblos no muy lejanos están libres de enfermedades.

Cebú.—Las lluvias han sido bastante frecuentes y regulares. Por todos lados se ven ó semilleros de palay ó terrenos en preparación. Parece que se despierta el interés en el cultivo del maguey. En algunos terrenos antes casi abandonados se ha plantado este artículo. La cosecha del maíz ha empezado, dando resultados regulares. Hay bastantes mangas, santol, lomboy, etc.

Maasin.—Durante este mes, ha sido pobre la cosecha de maíz y camote por causa de los jabalies que han perjudicado estos productos. Hubo también insectos dañinos, gusanos que llaman *piangas* y *baobao*. Actualmente se recogen varias clases de frutas, como piñas, macalpa, tambis, santol, y guayaba. Todos los hacenderos se aprovecharon de las lluvias para plantar palay, tabaco, y otros productos. Desde el principio del mes de Julio reina en esta región la epizotia. Hace poco que en Cambuoc, monte de este pueblo, murieron 8 carabaos en un día; mueren en todas partes muchos cerdos y aves de corral.

Surigao.—La cosecha de abacá ha sido bastante regular casi en toda esta provincia, especialmente en los pueblos de Cabarbaran y Tubay. Lo mismo puede decirse del cóprax, y muchos hacenderos se dan al cultivo de los cocos. Se ha sembrado el maíz, y algunas sementeras de este producto que están más adelantadas, presentan ya buen aspecto.

Tagbilaran.—Algunos pueblos, como Cortes, Antequera, Corella, y otros, anticiparon la cosecha del maíz que ya tenía las mazorcas algo maduras, á causa de lo subido del precio en que vendían los chinos este grano en plaza, siendo dueños de buenas existencias de dicho artículo, importado de los pueblos de Carcar y Siboñga (Cebú) y de algunos de Negros Oriental. Las sementeras del uve, blanco y morado, están en estado satisfactorio, y dentro de tres ó cuatro meses se podrá ya obtener buena clase, si bien no abundante. En Ubay, además del maíz, se dan y cultivan en este mes, palay, maguey, plátanos, caña dulce y toda clase de tubérculos. Apareció nuevamente la langosta. Las siembras de abacá y de maguey prometen asimismo buenos rendimientos dentro de poco tiempo, en los pueblos del interior. De Panglao han sido traídos á esta cabecera algunos millares de cocos. Tanto en este como en otros pueblos playeros la gente se dedica á este comercio, sin excluir la extracción del aceite.—Durante el mes de Julio parece que en el interior hubo alguno que otro caso de caballos muertos de muermo.

Butuan.—Terminó este mes la recolección de palay y se está comenzando nueva plantación, la cual parece prometer mucho, por la favorable avenida del Río Agusan que inundó todas las tierras palayeras. Actualmente se planta maíz; lástima que son pocos los que se dedican al cultivo de dicho grano! En los pueblos del Río Agusan plantan camote y otros tubérculos. Más arriba del río se encuentran camotes de extreña grandeza; se supone que bastan 50 de ellos para llenar un saco.

Balingasag.—Las bandadas de langostas siguen revoloteando en los alrededores de este distrito, y aunque el pueblo dividido en grupos se esfuerza en ahuyentarlas, han destrozado casi por completo los maizales en los pueblos vecinos de Salay y Bagacay, y también han causado gran daño en los de Balingasag. Los agricultores están terminando la siembra de las clases de palay llamadas *calamian* y *binagacay*, y se aprovechan de la abundancia de agua para plantar abacá, cocos, y otras plantas. Cagayán, Iponan, y Alubijid han tenido regular cosecha de mangas; en Balingasag ha habido muy pocas. Ha bajado mucho el precio del abacá, pues solo lo pagan á ₱12.25 el pico. El precio del cóprax es de ₱8.25 el pico, el del arroz ₱7.25 el caván.

Caraga.—Las lluvias bien distribuídas durante el mes han sido muy favorables á todas las cosechas. El beneficio del abacá está aumentado. Su precio es de ₱22.50 el pico. Hay mangas en abundancia.

Cotabato.—Durante los últimos días de Julio se ha trasplantado el palay tardió. Las langostas causaron algun daño á las semillas, pero muy poco.

Davao.—Hay mucha actividad en el cultivo del abacá. Las langostas continúan sus destrozos. Hay labradores que en un mismo caiñgin han sembrado tres veces, sin que hayan obtenido resultado ninguno, á causa de dicha plaga. Los árboles de manga, dulcan, y lanzones están cargados de fruto. Durante el segundo trimestre de este año los siguientes productos han sido exportados desde el puerto de Davao:

Producto.	Abril.		Mayo.		Junio.		Suma.	
	Cantidad.	Precio.	Cantidad.	Precio.	Cantidad.	Precio.	Cantidad.	Valor.
Abacá ---------- picos	2,665	₱22.50	2,546	₱23.00	2,824	₱21.50	8,035	₱179,236.52
Almaciga ---------- do	590	5.50	991	6.50	642.54	6.00	2,243.54	13,651.74
Biao ---------- do	369.76	9.50	346	10.00	514	10.00	1,229.76	12,112.72
Cóprax ---------- do	81	8.25	64	8.00	28	8.00	173	1,404.25
Cera ---------- quintales					1.5	38.00	1.5	57.00
Valor total								206,472.23

DISTRITO II.

Cápiz.—Los agricultores de esta provincia que tenían ya trasplantadas las semillas de palay, han sufrido completa pérdida de ellas por la voracidad de las langostas que aparecieron durante la primera y segunda década de este mes. Algunos de ellos han puesto nuevas semillas. No han sido tantos los daños causados por estos insectos en Ilaya y Buruanga.

San José de Buenavista.—Los labradores se aprovechan de la abundancia de agua para el cultivo del palay. En los terrenos altos se cosecha el maíz. En las sementeras hay un sin número de loctones. Las mangas se están recogiendo: las últimas son efectivamente buenas y se venden á ₱1 el cien.

Iloilo.—La lluvia caída no ha sido bastante para los trabajos agrícolas, por lo cual el cultivo del palay de regadío está generalmente atrasado. En el poco que se había trasplantado se han cebado las langostas, especialmente en Barotac Nuevo, donde fué menester plantar nuevas semillas. El maíz daba buenas esperanzas, pero á medida que van madurando las mazorcas las comen las ratas. De esta manera la gente de Janiuay ha perdido un 25 por ciento de este artículo.

Bacolod.—Por las lluvias caídas en estos meses, se espera que este año darán buenas cosechas la caña dulce, palay, y otros productos, á menos que las langostas y loctones que están apareciendo en toda la provincia, no los destruyan de nuevo como lo han hecho en algunos campos. En el interior ya se principia á recolectar buena cosecha de maíz, el cual cuesta por ahora en esta localidad ₱0.60 las cien mazorcas. El precio del arroz ha subido, cotizándose la ganta á ₱0.30; el de las mangas que vienen de Otón y Guimbal (Iloílo) oscila de ₱0.80 á ₱1.50 el ciento. Se dice que en Murcia, Victoria, y otros pueblos del norte, las lluvias no han sido suficientes para que los agricultores pudieran trasplantar á tiempo las semillas de palay. En cambio, en Bago han caído lluvias excesivas, sin llegar á ser perjudiciales á las plantas, que presentan buen aspecto. Como la epizotia continúa aún entre los ganados, las otras labores agrícolas han quedado paralizadas. Algunos acudieron á los que poseen carabaos, pero mediante un alquiler de ₱0.50 diario. En las aves de corral se nota la peste pero de carácter benigno. En Silay, Talisay, Saravia, San Carlos, y Bago las langostas y loctones han causado destrozos de consideración en los sembrados de caña dulce y palay. En este último pueblo la epizotia se llevó el 95 por ciento entre carabaos, vacunos, y caballos.

Dapitan.—Los agricultores que tenían las semillas de palay bastante desarrolladas, las han trasplantado: pero son muy pocos, porque la mayoría no se habían apresurado en el cultivo de los semilleros por temor que sucediese como en años anteriores en que las semillas perecieron por el atraso de las lluvias. Las sementeras en los caiñgin están lozanas y á mediados de Agosto el palay estará listo para la cosecha—En los días 30 y 31 ha habido avenida en el río de Haya, que ha arrastrado muchas plantas de abacá y bastantes de caña dulce. También dos niños que estaban atravesando el río en un barote fueron arrastrados por la corriente y—zozobrando el baroto—se ahogaron en el agua.

Zamboanga.—Durante el mes de Julio se ha sembrado el palay en los campos adyacentes á la zanja. En los alrededores de Reus hubo abundante cosecha de cocos; pero, esto no obstante, los cocos se venden aquí á 4 centavos cada uno. El precio del cóprax es de ₱8.50 el pico, el del arroz de segunda calidad, 30 centavos la ganta.

Isabela de Basilan.—Se ha principiado la cosecha del maíz. Con las abundantes lluvias se ha desarrollado bien toda clase de plantas, principalmente los cocos, aunque algunos de éstos fueron atacados por el insecto *bağağa*. Sigue la mortandad de gallinas causada por la enfermedad de *atay-atay*.

Joló.—Las lluvias caídas en los días 19, 20, 25, y 26 de este mes de Julio han favorecido bastante la siembra de palay; y como no está completamente sembrado todo el terreno palayero, aún siguen sembrándolo en la actualidad.

DISTRITO III.

Legaspi.—Durante la última década de este mes los labradores comenzaron á trasplantar las semillas de palay en varios municipios de esta provincia, por haberlos favorecido las lluvias en aquellos días. Se continuarán estas operaciones en el próximo mes de Agosto. El precio del arroz procedente de los pueblos del norte de Luzón ha tenido su alza, sucediendo lo contrario con el del abacá, del que ha habido regular cosecha. El cóprax ha alcanzado hasta ₱9.75 por pico, y el balate hasta ₱29.50. Siguen muriéndose algunos vacunos de China por enfermedades. En Libog han sido buenas las cosechas de naranjas, guyabas, santol, plátanos, y camote. En Tiui y Guinobatan ha ido bien la cosecha de abacá y no ha habido pérdida de animales por enfermedades. En los municipios de Camalig y Ligao se ha obtenido regular cosecha de maíz, camote, gabe, sitao, calabazas, y frutas en general, pero ha habido escasez de ates, y las lluvias han perjudicado algo al camote. En cambio, las cosechas fueron algo escasas al SW de Camalig.

Gúbat.—Bandadas de langostas están destruyendo completamente inmensos sembrados de maíz, caña dulce, y cocales, causando considerables pérdidas á los propietarios que esperaban una cosecha casi igual á la que habían tenido de palay en los meses pasados. Á pesar de los muchos medios de que se vale la gente para ahuyendarlas, todavía permanecen en mucha cantidad, cambiándose de un punto á otro dentro de las cercanías de esta población. Las pocas lluvias de este mes han sido una ayuda para el buen desarrollo del abacá, siendo sus rendimientos mejores y más abundantes que en los meses anteriores. Su precio corriente es el de ₱15 el pico, y el de primera clase, de ₱25 á ₱26. El arroz de Saigón se cotiza hoy en plaza á ₱6.50 el pico.

Palanoc, Masbate.—La zurra ha aparecido entre los caballos de Arroroy y se ha propagado hacia el sur, matando los pocos animales que había en esta región. Pero hay muchos de ellos en el interior de la isla, en los montes al W de Masbate y también en los al S de Cataingan, y si se les quiere proteger del contagio, deben tomarse medidas muy prontas y enérgicas.—Enormes bandadas de langostas han infestado las cercanías de Palanoc durante algunos 20 días y han destrozado casi completamente las cosechas, cuando el distrito se estaba recobrando de los efectos de la última visita de esta peste. Ya se beneficiaban regulares cantidades de cóprax, habiendo los árboles recuperado su lozanía; pero ahora están de nuevo despojados de sus hojas, y pasará mucho tiempo hasta que los naturales tengan género alguno de cosecha. En los vastos cogonales al S de Masbate se crian un sin número de saltones.

Calbayog.—La producción del abacá continúa en el mismo estado que el mes anterior. La cosecha de varios tubérculos como camote, palauan, gauay, y otros es bastante regular. De árboles frutales dan frutas hoy guayabas, santol, nanca, etc. Han llegado á este pueblo algunas embarcaciones llenas de mangas, procedentes de Leyte y de Cebú, y se venden más baratas que las que proceden de Manila. Las semillás de palay sembradas el mes de Junio han sido destruídas por las langostas. Los labradores se preparan para hacer nuevas siembras.—Es notable la mortandad que reina entre los cerdos y gallinas.

DISTRITO IV.

Santo Domingo, Islas Batanes.—Toda la siembra de camote del mes de Julio está buena. Refieren algunos vecinos del distrito de Santa María (isla Isbayat), que el palay de dicho distrito comienza á dar espigas, pero se hallan en muy mal estado; porque los gusanillos se comen las hojas verdes que están próximas á la espiga, y las demás hojas hasta el tallo se encuentran raquíticas, apareciendo como si fuesen quemadas.

Aparri.—La falta de lluvias ha retrasado la siembra del palay y solo este mes, que los chubascos de turbonada han sido frecuentes, se preparan los campos y semilleros. Se acentúa cada vez más la escasez del arroz, cotizándose á ₱7.50 el procedente de Ilocos y Manila.

Tuguegarao.—La siembra de maíz se presenta bastante mal por efecto de la gran sequía que ha sufrido esta provincia; el maíz ya ha empezado á secarse poniéndose amarillas sus hojas. Es casi imposible que reverdezcan por haber venido las lluvias muy tardías. Todas las casas compradoras de tabaco á excepción de la Tabacalera, han ido á la Isabela donde, según se dice, abunda dicho artículo y es de buena calidad, al paso que no existe en esta provincia.

Vigan.—Contra toda previsión, el estado de la agricultura es muy lamentable, efecto de la pasada escasez de lluvia. No hay ninguna planta que no haya sufrido, especialmente el palay. Es indescriptible el estado lastimoso de dicha planta. También el maguey, maíz, y las legumbres han sido muy perjudicadas; y se dice con fundamento que la provincia está amenazada por el hambre. En Vigan han muerto del muermo 3 caballos, y una vaca de la epizotia; en Santa Ana hay también epizotia entre carabaos, vacunos, y cerdos, pero parece que va desapareciendo.

San Fernando, Unión.—Durante el mes se han sentido los efectos de la escasez de agua, la cual llegó á tal punto que los labradores creyeron que las semillas de palay se secarían todas. Pero con las lluvias de la segunda quincena, la mayor parte de ellas han reverdecido y los agricultores que tenían sus terrenos listos han podido trasplantar. Hay enfermedad entre los animales en este municipio, pero no es de importancia, y ninguno ha muerto de ella. Empero en el pueblo de Bagnotan se ha desarrollado la epizotia, causando muchas pérdidas de carabaos y vacunos. Afortunadamente los mismos propietarios han recurrido inmediatamente á la Oficina de la Agricultura, pidiendo un veterinario, el cual ha sido enviado con toda prontitud.

Bolinao.—De esta estación no han llegado sino lamentos: en los alrededores de Bolinao los insectos *alabas* han perjudicado algo las semillas de palay, mientras en el municipio de Infanta han sufrido falta de agua. En Alaminos hubo enfermedad entre los animales, muriendo los atacados dentro unas ocho horas después de haber dado muestras de los primeros síntomas del mal.

Dagupan.—Según informe de sus respectivos presidentes, en Asingan y San Quintín se ha cosechado el maíz; en Tayug, además del maíz, la piña y el café; en San Fabián, el café, cacao, guayaba, y santol; y en Dagupan, maíz, santol, mabolo, y ates: en todos estos pueblos se continuó la siembra del palay y es, en general, regular el estado de las cosechas, menos en San Quintín, donde se hizo sentir la sequía, impidiendo ó retrasando las siembras de maíz y palay.

Tárlac.—La gente está todavía ocupada en la siembra del palay. Continúa la enfermedad entre carabaos y otros animales domésticos, siendo las pérdidas causadas las mismas que en los meses anteriores.

San Isidro.—Los productos agrícolas que se cosechan en esta región son maíz, ates, patola, y berengenas. La cosecha del maíz no llegará á ser más que regular. Los labradores se dedican á la preparación de los terrenos palayeros para el trasplante de las semillas, el cual algunos han ya empezado en los últimos días del mes. En Jaén, pueblo cercano al norte de San Isidro, han aparecido nubes de langostas, pero sin hacer mucho daño hasta ahora.

Aráyat.—El estado de la caña dulce y del maíz es satisfactorio. Gracias á las lluvias de la segunda quincena, la gente de este pueblo está ocupada en los palayeros. En Santa Ana hay todavía falta de agua en los terrenos altos. En los terrenos con regadío propio se había ya trasplantado el palay; pero en algunos de ellos, los gusanos han destruído toda la sementera. El precio del azúcar es ₱6 el pilón de 1.ª; el del palay ₱2.55 el caván.

Porac (Dolores).—Se empieza la trasplantación del palay. En los campos están creciendo camote, tomates, y berengenas.

Olongapó.—Con las lluvias se ha empezado el trasplante del palay y todas las plantas se presentan muy lozanas. En algunos campos los propietarios están ya cosechando el maíz, el cual promete buenos rendimientos.

Malolos.—Las abundantes lluvias caídas durante el mes de Julio han sido favorables á toda clase de cultivos, especialmente al maíz y caña dulce. Con estas mismas lluvias los agricultores se apresuraron á poner sus respectivos semilleros del palay. Lástima que han aparecido muchos gusanos, los cuales perjudican estos semilleros. Hay enfermedades entre los animales en algunos pueblos de la provincia.

Balanga.—Se ha realizado en este mes de Julio la siembra del palay. Los sembrados de caña dulce que sufrieron de la sequía en el mes de Abril hoy se presentan lozanos por las lluvias de este mes. En pequeña escala se ha empezado en los últimos días del mes la cosecha de maíz que da buenos resultados.

Silang.—Las cosechas de maíz, plátanos, sitao etc., recogidas este mes han sido buenas. Hay enfermedades entre cerdos y gallinas, que han causado una pérdida de un 10 por ciento.

San Antonio, Laguna.—El estado del palay de regadío es muy bueno; lo mismo puede decirse del abacá. En cambio los árboles frutales, como lanzones, guayabas, santol, etc. no dan mucha fruta.

Atimonan.—Al fin del mes la gente estaba algo desesperada y con ansia esperaba de día en día la caída de lluvia para hacer nuevos semilleros de palay, pues los primeros habían sido completamente aruinados por la excesiva sequía y los destrozos de la langosta. La gente ha trabajado mucho en combatir á esta terrible plaga, especialmente los de Inalig, barrio del municipio de Atimonan, estimulados por su infatigable concejal, Sr. Pedro Valladolid. Los cocos ya empiezan á levantarse de su estado lamentable, con excepción de aquellos que últimamente han sido pasto de langostas. El precio del cóprax es de ₱6.50 á ₱7 el pico. El abacá sigue el mismo camino, aunque también ha tenido que sufrir por la sequía. El precio del pico de segunda clase en la plaza es de ₱13 á ₱14.

Batangas.—El estado del palay sembrado en Mayo es satisfactorio; pero el sembrado en Junio y durante este mes es atacado por gusanos, por lo cual se teme que se echará á perder. Y como si esto no fuese bastante, ha vuelto la epizotia, que, si bien es menos virulenta que la del año anterior, no por esto deja de causar considerables pérdidas en los ya pocos animales que quedan en esta provincia.

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BULLETIN FOR AUGUST, 1907.

METEOROLOGICAL BULLETIN FOR AUGUST, 1907.

By Rev. José Coronas, S. J.,
Assistant Director of the Weather Bureau.

GENERAL WEATHER NOTES.

Pressure and temperature.—The month of August has been truly remarkable for the frequency of atmospheric perturbations. Hence it is not surprising that the monthly mean of pressure has been considerably below the normal mean for this month and also below the mean value for August, 1906, at all the stations in the Philippines. An inspection of the table at the end of this paragraph shows that these differences have been much more pronounced in the northern stations of the Archipelago than in the southern, since the former were much nearer to the cyclonic centers of which we will speak further on. For Manila the monthly mean differs from the normal mean by — 1.49 millimeters, and from the mean for August of the preceding year by — 1.75 millimeters. Throughout the Archipelago the highest pressures were recorded on the 2d and the lowest between the 20th and 23d.

As a rule the monthly mean of temperature has likewise been lower than the normal and the mean for the corresponding month of last year. Remarkable is the absolute maximum at Olongapo which did not exceed 28° C., a fact which evidently is due to the extraordinarily rainy weather prevailing there throughout the month, resulting in the enormous amount shown in the table given below, which surpasses that collected during August, 1906, by 928.5 millimeters.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS, AUGUST, 1907.

Station.	Pressure.						Temperature.					
	Mean.	Departure from July, 1906.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from July, 1906.	Highest.	Day.	Lowest.	Day.
	mm.	*mm.*	*mm.*		*mm.*		°*C.*	°*C.*	°*C.*		°*C.*	
Tagbilaran	757.43	—0.50	759.21	2	755.96	20	26.9	—0.5	34	1	22.3	7
Surigao	57.35	— .75	59.36	2	55.66	20						
Cebu	57.58	— .50	59.65	2	55.60	22	26.7	—1	32.5	1	21.3	5
Iloilo	57.09	— .60	59.02	2	55	22	26.2	— .6	29.6	1	22.1	19
Ormoc	57	— .73	59.06	2	55.30	22	26.7	+ .2	31.3	1	21.5	6
Tacloban	56.92	—1.26	59.22	2	54.84	22	27.4	0	35.7	29	23	6
Capiz	56.78	—1.16	58.86	2	53.76	22	26.6	— .7	33.4	25		
Calbayog	57.10		59.49	2	54.59	22	27.2		33.8	30	21.4	3
Legaspi	56.62	—1.42	59.20	2	53.76	22	26.6	— .9	34.5	1	22.9	6,10
Atimonan	55.81	—1.84	58.66	2	52.11	22	26.9	— .4	34.8	2	21.6	6
Olongapo	55.68	—1.65	58.64	2	50.96	21	25.2	—2.1	28	2	21.6	30,31
San Isidro[1]	55.80	—1.92	58.86	2	51.01	21	25.6	—1.3	33.2	2	22.4	5,6
Dagupan	55.35	—1.91	58.42	2	50.26	21	26.2	—1.1	34.6	3	22.6	13
Vigan	55.26	—2.42	58.66	2	46.50	22	26.2	—1.5	31.7	20	22.5	1
Aparri	55.01	—2.22	58.60	2	47.06	22	27.2	—1.3	33.5	4	20	22

[1] 29 days only.

Precipitation.—Rain may be said to have been general all over the Archipelago during the second decade of the month. The only exceptions were some districts of Cebu and Mindanao. The largest amounts of rainfall during the month have been recorded at the stations of San Jose Buenavista (Panay), Olongapo (west coast of Luzon), and Baguio (interior of northern Luzon, not far from the western coast), the respective amounts being 916 millimeters, 1,463.5 millimeters, and 1,082.9 millimeters.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF AUGUST, 1907.

District.	Station.	Total.	Departure from August, 1906.	Rainy days.	Departure from August, 1906.	Greatest rainfall in a single day.	Day.
		mm.	*mm.*			*mm.*	
I	Yap	775.6	------	21	------	123.4	2
I	Davao	173.4	− 56	8	− 5	40.6	19
I	Cotabato	281.6	− 31.6	23	+ 2	67.1	4
I	Balingasag	225.7	------	18	------	42.9	11
I	Butuan	96.5	− 3	12	+ 3	21.1	22
I	Tagbilaran	108.3	− .8	14	0	29.7	3
I	Surigao	161.5	+ 85.8	6	− 2	62.2	12
I	Maasin	377.5	+272.7	14	− 2	115.6	4
I	Cebu	92.4	− 2.2	18	0	22.9	7
I	Tuburan	65.6	−164.4	11	− 1	28.4	1
I	Ormoc	311	+ 29.3	15	− 4	103.1	11
I	Tacloban	105.1	− 22.9	13	− 3	34.8	11
I	Borongan	100.3	− 50.4	14	− 3	30.7	4
II	Jolo	124.6	−171.5	16	0	23.1	22
II	Isabela, Basilan	240.1	+ 8.5	15	− 7	51.6	19
II	Zamboanga	192.1	+ 27.3	14	− 1	49.6	13
II	Dapitan	131	+ 99	12	+ 3	36.8	3
II	Bacolod	438.8	+ 77.4	27	+ 3	76.4	23
II	Iloilo	590.2	+231.7	26	+ 9	100.3	14
II	S. Jose Buenavista	916	+496.3	28	+ 5	214.4	17
II	Cuyo	455.5	+170.6	29	+ 4	63.8	13
II	Capiz	166.3	−509.1	16	− 2	40.1	13
III	Calbayog	246	+104.9	18	− 4	90.4	17
III	Palanoc	214.6	+105.9	23	+11	49.8	5
III	Legaspi	299	+ 88.9	26	+ 6	93	10
III	Romblon	233.9	------	19	------	35.8	21
IV	Atimonan	243.8	+ 25.5	16	− 2	33.5	22
IV	Silang	559.6	------	19	------	52.6	23
IV	S. Antonio, Laguna	340.8	+ 82	22	+ 2	49	11
IV	Corregidor	829.1	+346.8	24	+ 8	147.6	14
IV	Manila	473.9	+111.5	30	+ 7	56.3	28
IV	Balanga	831.4	+462	28	+ 9	105.9	31
IV	Olongapo	1463.5	+928.5	30	+ 5	203.5	29
IV	Malolos	725.5	+473.3	28	+ 8	120.4	30
IV	San Isidro	343	+182.3	26	+14	69.9	30
IV	Tarlac	748.6	+378.8	29	+ 8	139.2	17
IV	Baler	231.7	------	13	------	50.8	7
IV	Dagupan	522.9	+112.3	30	+ 7	76.7	21
IV	Bolinao	790.9	------	28	------	127.3	21
IV	Baguio	1082.9	+522.5	29	+ 3	230.6	22
IV	S. Fernando, Union	693.1	+284.7	22	+ 3	170.7	5
IV	Vigan	559.2	− 70.4	27	+ 7	148.8	22
IV	Tuguegarao	204.4	+ 62.3	21	+10	51.6	6
IV	Aparri	301.9	+204.4	24	+13	52.3	21
IV	Santo Domingo	408.4	+280.9	20	+ 7	77	23

DEPRESSIONS AND TYPHOONS.

It has already been mentioned that the depressions and typhoons which made themselves felt in the Archipelago during August were quite numerous.

We will discuss briefly the more important of these phenomena, dwelling somewhat more at length upon the one which crossed the northwestern part of Luzon in a northeast direction on August 22. The motives which induce us to treat the latter more extensively consist not only in the circumstance that this disturbance was the most intense of the month as far as the Philippines are concerned, but also in the desire of publishing some of the observations made on the western coast of Luzon, without which the directors of other meteorological centers in the Far East would not be in a position to locate the center of said typhoon and still less to ascertain its path. Manila itself could at the time follow the movements of the storm only until the latter had reached a position to the northwest of Luzon, as at that time telegraphic communication between Manila and the stations nearest to the cyclonic center became interrupted.

DEPRESSION IN THE CHINA SEA AUGUST 1 TO 3, 1907.

Relating to this depression, which appears to have been of but little importance, Manila Observatory issued the following notes:

July 30, 1.30 p. m.: There are signs of a low-pressure area in the China Sea, west of Luzon.

July 31, 11.50 a. m.: The existence of a low-pressure area over the northern part of the China Sea is being confirmed.

August 1, 11.50 a. m.: The depression in the China Sea appears to be now southeast of Hongkong, in about latitude 20° or 21°.

August 2, 11.50 a. m.: The depression of the China Sea is at present nearer to the southern China coast, south or south-southeast of Hongkong.

August 3, 11.50 a. m.: The depression of the northern China Sea has entered, probably, the continent between Hongkong and Amoy, moving northward.

Hongkong Observatory published the following warnings:

August 1, 11.55 a. m.: Pressure is low, apparently, over the N part of the China Sea, and a depression may be developing to the southward of Hongkong in from 18° to 20° latitude.

August 1, 6.30 p. m.: A depression is situated to the south of Hongkong. It does not appear to be of great intensity.

August 2, 11.51 a. m.: The depression to the southward of Hongkong is probably situated in about 20° latitude. It appears to be moving towards NW.

August 3, 11.55 a. m.: The depression, moving northward, entered the coast near Hongkong last night.

The southeast, south, and south-southwest winds which prevailed on the west coast of Luzon on and after July 30, were the principal indication which led Manila Observatory to suspect, at so early a stage, the existence of this depression in the China Sea, west of Luzon. On August 1 there was no longer any doubt possible regarding the correctness of the surmise, since the weather map for 6 a. m. of that day clearly indicated a center of depression in the northern part of the China Sea, in the neighborhood of parallel 19° N. At the same hour of the following day the depression was shown closer to the continent, into which it penetrated during the night of August 2–3, passing not far from Hongkong, as stated in the note issued by the observatory of the said colony.

Lack of observations made in the China Sea renders it impossible to give more details concerning this disturbance. It appears, however, perfectly safe to assert that the same did not acquire the character of a real typhoon.

TYPHOON OF THE GULF OF TONGKING, AUGUST 5 TO 11, 1907.

Manila announced the existence of this typhoon at 5 p. m. of August 5 in the following terms:

August 5, 5 p. m.: There is probably a typhoon in the Pacific, east of northern Luzon.

The weather map for 10 p. m. of the following day shows a very imperfectly developed center of depression to the northeast of Manila, close to the east coast of Luzon, between parallels 15° and 17° N. The observations of 6 a. m. on the 7th locate the depression in the China Sea, near the western coast of the same island. Hence the following note was sent to the observatories of Tokio, Zikawei, Taihoku, Hongkong, and Phulien:

August 7, 10.30 a. m.: The typhoon crossed Luzon last night in the form of a shallow depression. It is at present close to the western coast of Luzon.

In the ordinary weather note of that day was added: "It may increase in intensity in the China Sea," as it actually came to pass. The notes of August 8 and 9 contained the following references to the typhoon:

August 8, 11.50 a. m.: The depression which was yesterday close to the western coast of Luzon seems to be at present northwest of Manila, increasing in intensity.

August 9, 11.50 a. m.: The depression in the China Sea is at present west-northwest of Manila, moving probably toward the Gulf of Tongking.

These statements made by Manila Observatory were confirmed by the following cablegram from Phulien, which was received at 10.27 p. m. of the 9th:

The typhoon announced [by Manila Observatory] threatens to enter the Gulf of Tongking, between Hainan and northern Annam.

The same observatory of Phulien cabled at 11 a. m. of the 11th:

The typhoon has passed a few miles south of Haiphong.

The passage of this depression or typhoon south of Hainan is clearly pointed out by the observations made at Lamko light-house (northwest of Hainan, Kiung-chow district). The barometric minimum was observed there in the early morning of the 10th, with gusty, though not very strong, winds from east-northeast. At 9 a. m. the lower clouds came from east, and at noon both wind and clouds came from southeast. At the time when the typhoon passed south of Haiphong it must have been fully developed because Phulien had hurricane winds from east during the forenoon of the 11th.

TYPHOON IN THE PACIFIC, AUGUST 8 TO 16, 1907.

On August 9, 10, 12, and 13, Manila Observatory sent the following warnings to Tokio, Zikawei, Taihoku, Hongkong, and Phulien:

August 9, 10 a. m.: Typhoon southwest of Guam, in about 11° latitude.

August 10, 1 p. m.: Typhoon now west-northwest of Guam between 136° and 138° longitude, near 15° or 16° latitude. It moves at present northwest.

August 12, 7 p. m.: Typhoon still far off in Pacific about east-northeast of Manila. Appears to have been almost stationary last twenty-four hours.

August 13, 12.30 p. m.: Typhoon recurved southeast of Loochoos and moves at present in a northerly direction.

The following tables contain the observations made at Guam and Yap during the period August 7 to 12, which serve admirably to show the formation of this typhoon and the first part of its path:

METEOROLOGICAL OBSERVATIONS AT SUMAY, GUAM, LADRONES ISLANDS, AUGUST 7 TO 12, 1907.

Date and hour.	Pressure.	Wind.		Clouds.			Sea.	Remarks.
		Direction.	Force.	Amount.	Form.	Direction.		
Aug. 7:	*mm.*		*0–12.*	*0–10.*				
6 a. m.	757.51	NE	1	10	N.	--------	Calm	
2 p. m.	55.97	E	3	8	A.-Cu.	--------	do	
6 p. m.	56.07	ENE	2	8	Cu.	--------	do	
Aug. 8:								
6 a. m.	56.26	SE	1	10	Cu.	--------	do	
2 p. m.	55.17	E	4	9	S.-Cu.	--------	do	
4 p. m.	54.54	E	4	8	S.-Cu.	E	do	
8 p. m.	55.72	E	2	--------	--------	--------	do	
Aug. 9:								
6 a. m.	55.06	ESE	2	10	S.-Cu.	SE	do	Good deal of thunder and lihgtning around.
10 a. m.	55.54	ESE	4	10	S.-Cu.	SE	do	
2 p. m.	54.69	SE	2	10	N.	--------	do	
4 p. m.	53.61	ENE	2	10	A.-S.	--------	do	
8 p. m.	54.36	E	3	--------	--------	--------	do	
Aug. 10:								
6 a. m.	54.51	S	2	10	N.	--------	do	Frequent heavy rain squalls. Vivid lightning and heavy thunder around all afternoon, being very close at 4.15 p. m.
9 a. m.	55.79	S	5	10	N.	--------	do	
2 p. m.	54.84	S	1	10	N.	--------	Slight swell	
4 p. m.	54.64	S	4	10	N.	--------	Increased swell	
Aug. 11:								Wind from SSE and S all morning. Frequent heavy rain squalls with thunder and lightning.
6 a. m.	56.94	SSE	2	10	A.-S.	--------	Moderate swell	
2 p. m.	56.47	SSE	4	10	Ci.-Cu.	--------	do	
Aug. 12:								Fresh wind blowing all morning between SSE and SSW, principally latter. Heavy rain and thunderstorm during one hour.
6 a. m.	57.64	S	1	6	Ci.-S.	--------	do	
2 p. m.	57.64	SSW	4	10	Cu.	--------	do	
6 p. m.	57.97	SW	3	10	Ci.-Cu.	--------	do	

METEOROLOGICAL OBSERVATIONS AT YAP, WESTERN CAROLINES, AUGUST 7 TO 12, 1907.

Date and hour.	Pressure.	Wind.		Clouds.			Sea.	Rainfall.
		Direction.	Force.	Amount.	Form.	Direction.		
Aug. 7:	*mm.*		*0–12.*	*0–10.*				*mm.*
6 a. m.	757.74	SW	3	8	N.	--------	L.	--------
2 p. m.	55.94	SW	2	9	N.	--------	L.	1.3
Aug. 8:								
6 a. m.	55.95	N	1	10	N.	--------	S.	--------
2 p. m.	54.68	SW	3	8	N.	--------	S.	61
Aug. 9:								
6 a. m.	54.51	NE	1	10	Cu.	--------	S.	--------
2 p. m.	53.28	SW	2	10	N.	--------	L.	54.6
Aug. 10:								
6 a. m.	53.26	SW	2	9	Cu.-N.	SW	L.	--------
2 p. m.	52.84	SW	5	9	Cu.-N.	SW	L.	20.6
Aug. 11:								
6 a. m.	54.26	WSW	6	8	Cu.-N.	WSW	H.	--------
2 p. m.	54.14	SW	5	8	Cu.-N.	SW	H.	--------
Aug. 12:								
6 a. m.	56.15	SW	6	6	Cu.-N.	SW	H.	--------
2 p. m.	56.37	SW	5	5	Cu.-N.	SW	H.	3.3

PLATE I

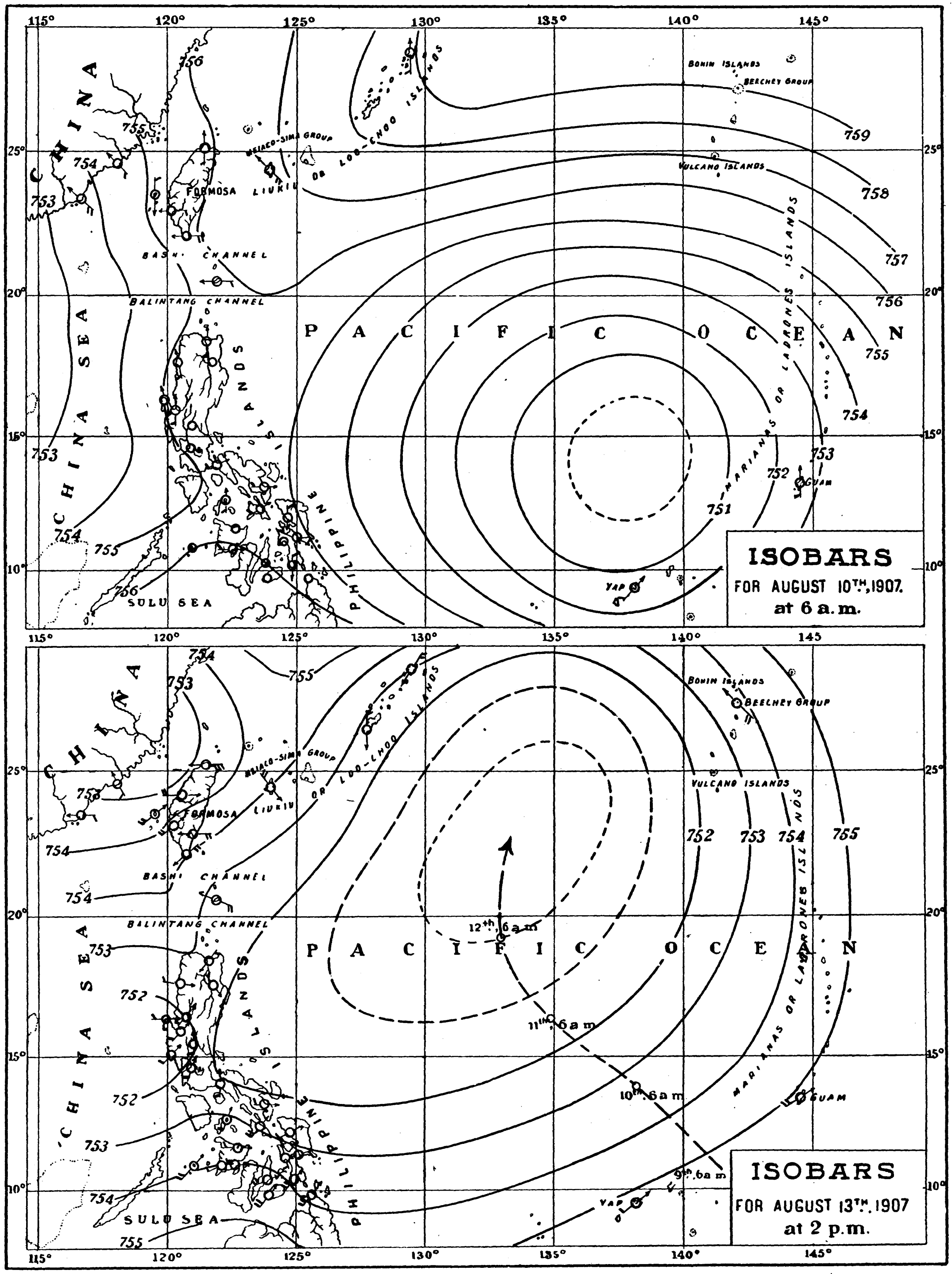
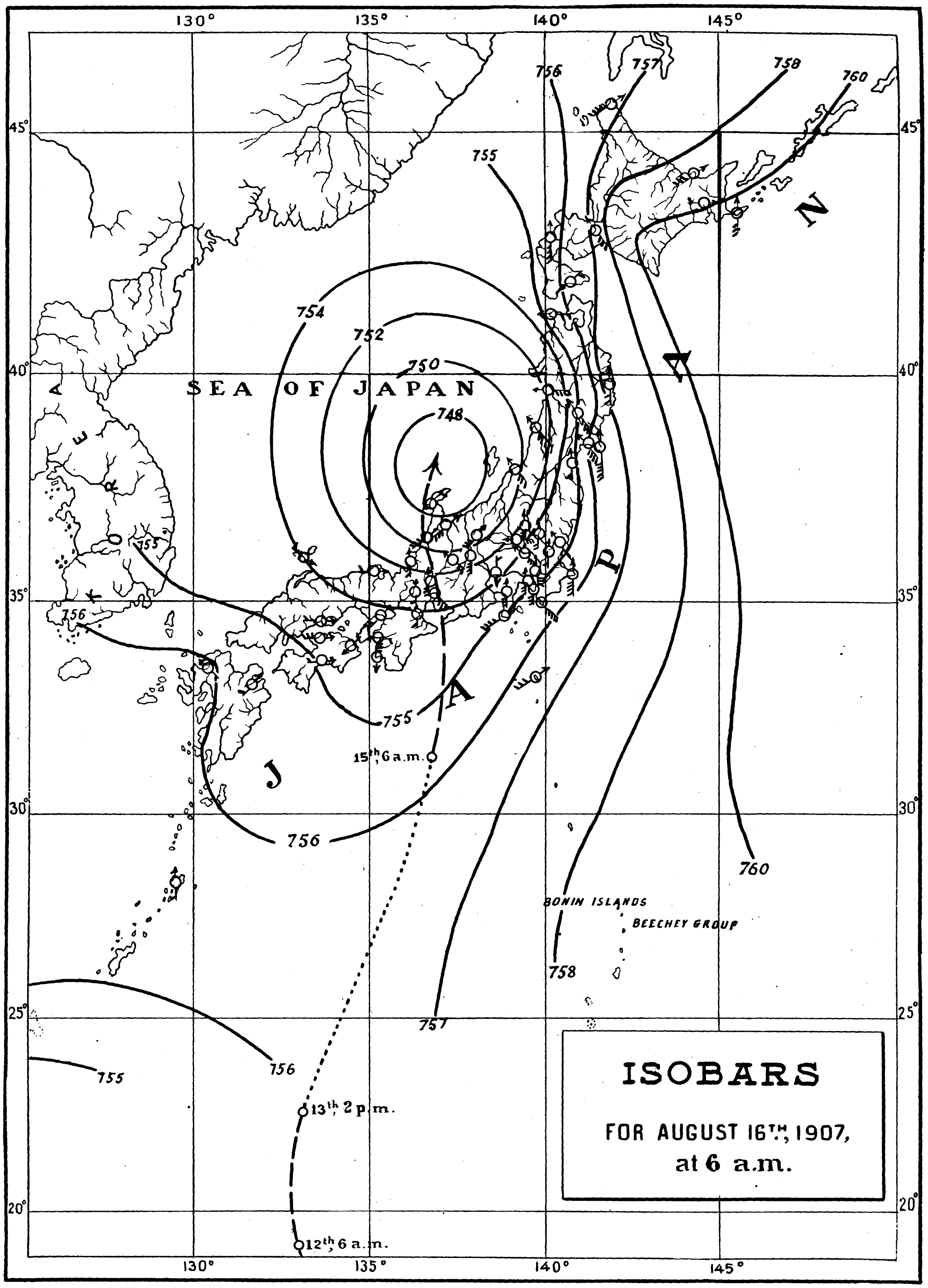

ISOBARS
FOR AUGUST 10TH, 1907.
at 6 a.m.
CHINA
CHINA SEA
FORMOSA
BASHI CHANNEL
BALINTANG CHANNEL
SULU SEA
PHILIPPINE ISLANDS
PACIFIC OCEAN
BONIN ISLANDS
BEECHEY GROUP
VULCANO ISLANDS
MARIANAS OR LADRONES ISLANDS
LIUKIU OR LOO-CHOO ISLANDS
MEIACO-SIMA GROUP
GUAM
YAP
ISOBARS
FOR AUGUST 13TH, 1907
at 2 p.m.
12th 6 a m
11th 6 a m
10th 6 a m
9th 6 a m

PLATE II.


130°
135°
140°
145°
45°
40°
35°
30°
25°
20°
SEA OF JAPAN
KOREA
JAPAN
BONIN ISLANDS
BEECHEY GROUP
754
752
750
748
755
756
757
758
760
15th, 6 a.m.
13th, 2 p.m.
12th, 6 a.m.
ISOBARS
FOR AUGUST 16TH, 1907,
at 6 a.m.

According to the foregoing observations, the storm must have formed between the 6th and 8th, to the south-southwest of Guam and east of Yap, in a region about equally distant from the two stations. From the 8th to the 10th it moved in a northwesterly direction and at 6 a. m. of the 10th its vortex lay north of Yap, in the neighborhood of parallel 14° N. Until the 11th it appears to have retained its northwesterly course, but from the 11th to the 13th it recurved, when the cyclonic center was southeast of the Loochoos, at a great distance from the Philippines. It can be stated with a fair degree of accuracy that the typhoon was situated at 6 a. m. of the 12th in about 19° lat. N, and 133° long. E. The velocity of the progressive movement decreased somewhat while the center was recurving. After recurving the storm advanced toward north-northeast until the 15th, when it took a northerly direction and traversed central Japan during the night of August 15 to 16. From the 16th to the 17th it crossed the Sea of Japan, and inclining once more toward northeast it penetrated into the Sea of Okhotsk in the morning of the 17th. The track of this typhoon is given on Plates I and II.

TYPHOONS IN THE PACIFIC, AUGUST 16 TO 24, 1907.

The following observations were made at the meteorological station on the Island of Guam during the period August 14 to 21:

METEOROLOGICAL OBSERVATIONS AT SUMAY, GUAM, LADRONES ISLANDS. AUGUST 14 TO 21, 1907.

Date and hour.	Pressure.	Wind.		Clouds.			Sea.	Remarks.
		Direction.	Force.	Amount.	Form.	Direction.		
Aug. 14:	mm.		0-12.	0-10.				
6 a. m.	758.16	SSW	2	10	N.		Slight swell	7 a. m. wind veers round to SE, force 1, and heavy rain starts.
10 a. m.	59.26	WNW	2				do	Still raining, wind steadily going around by the west.
2 p. m.	55.76	WNW	2	10	S.		Slight swell and nasty choppy sea.	Note the big fall in barometer since 10 a. m.
Aug. 15:								
6 a. m.	56.39	S	1	8	A-S.		Moderate	
2 p. m.	55.19	W	1	8	N.		do	
6 p. m.	55.89	SW	1				do	
Aug. 16:								
6 a. m.	55.29	SE	1	10	Cu.		do	
2 p. m.	54.24	SSW	2	8	Cu.		do	1 p. m. all around horizon Cu. clouds. Higher up detached.
6 p. m.	54.89	S	2	10	Cu.-N.		do	
Aug. 17:								
6 a. m.	54.76	WSW	2	10	Cu.		do	
2 p. m.	54.61	SW	3	10	S.		do	
4 p. m.	54.14	SW	5	10	N.		do	
Aug. 18:								
7 a. m.	55.24	SW	6	10	S.-Cu.		Moderate swell, but nasty choppy sea.	Succession fierce rain squalls from SW all night.
2 p. m.	53.99	SW	5	10	S.-Cu.	SW	do	Wind varying between S and W all morning.
4 p. m.	54.27	SW	5	10	S.-Cu.	SW	do	
6 p. m.	54.99	SW	5	10	A.-S.		do	
Aug. 19:								
6 a. m.	55.68	SW	1	10	N.		Moderate swell	Frequent strong rain squalls from SW during night.
2 p. m.	55.66	SW	4	10	N.		Moderate swell increasing.	1 p. m. squalls getting more frequent.
4 p. m.	55.21	SW	4	10	N.		do	Raining all afternoon, but fierce squalls seem to have ceased.
Aug. 20:								
6 a. m.	55.99	SSW	2	10	N.		Very heavy swell from SW.	
2 p. m.	55.24	SW	5	10	A.-S.		do	
Aug. 21:								
6 a. m.	56.84	SW	4	10	N.		do	
2 p. m.	55.94	SW	5	10	Cu.	SW	do	

The fall of the barometer and the prevailing winds on the 14th seem to indicate the existence of a depression or typhoon which was probably forming to the east-northeast of the station.

The barometer continued its descent for several days, until the 18th, which day was characterized by heavy squalls of rain and wind coming from southwest. Consequently, the typhoon must have passed at the least distance from Guam on August 17–18, moving toward northwest. It is probably identical with the cyclonic storm which appeared south of the Bonin Islands on the 21st and recurved to the northwest of said group between the 22d and 24th.

Manila Observatory issued the following notices concerning this typhoon:

August 18, 12 noon: There is a typhoon far out in the Pacific in the neighborhood of northern Marianas.

August 19, 11.50 a. m.: The typhoon reported yesterday not far from the north of Guam is moving slowly, deflecting to the north.

August 20, 11.50 a. m.: The typhoon north of the Marianas is moving north-northwest.

The observations made within our Archipelago from the 16th to the 18th indicated the existence of another depression in the Pacific situated to the east of Luzon and moving toward northwest. This depression or typhoon recurved east of Balintang and Bashi Channels on the 19th and 20th, and on the 22d the weather map for 6 a. m. showed it distinctly east-southeast of Naha, Loochoos Islands. At this time it had a northeast direction. On the 22d and 23d the storm passed in a north-northeast direction east of the said islands and appeared on the 24th near Japan, south of Shikoku Island.

Mr. F. Fabregas, captain of the steamship *Ban-Yek,* has kindly furnished us the observations, given in the following table, which were made on board of his vessel on the eastern and northern coasts of southeastern Luzon. The strong southwest winds and ground swell from northeast and north-northeast observed on the 17th and 18th clearly pointed out the existence of this cyclonic center east of northern Luzon.

METEOROLOGICAL OBSERVATIONS MADE ON BOARD OF STEAMER "BAN-YEK," AUGUST 16 TO 19, 1907.

[Captain, Mr. F. Fabregas.]

Date and hour.	Position.	Pressure.	Wind.		Remarks.
			Direction.	Force.	
Aug. 16:		*mm.*		*0-12.*	
4 a. m	E of Santiago Point	756.3	SW	3	Smooth sea.
9 a. m	S of Malabrigo Point	57.8	SW	3	Do.
3 p. m	Tres Reyes Islands	55.7	SW	2	Do.
9 p. m	S of San Pascual (Burias Islands)	57.1	SW	5	Do.
Aug. 17:					
4 a. m	S. Miguel Point (Ticao Islands)	55.3	SW	6	Squalls.
8.30 a.m	E of Barcelona	56.2	SW	3	Squalls and N swell in San Bernardino Strait.
4 p. m	Gubat	54.5	SW	8	
10 p. m	Lagonoy Gulf	55.5	SW	10	SW wind decreasing in force since midnight.
Aug. 18:					
4 a. m	Between Sisiran and Botabanan	53.8	WSW	3	NE swell.
9.30 a. m	Daet	54.6	WSW	2	Do.
4 p. m	San Miguel Bay	53.1	SW	10	Blue sky and very strong SW wind.
8 p. m	Cauit	55	SW	8	Squalls.
Aug. 19:					
4 a. m	do	53.8	SW	8	Do.
9 a. m	do	54.1	SW	10	Do.
3 p. m	Mouth of the Bicol River	53.2	SW	10	Do.
9 p. m	Nueva Caceres	53.5	SW	10	Do.

The following warnings were given by Manila Observatory in connection with this typhoon:

August 19, 11.50 a. m. The barometers continue to fall in Luzon, especially along the western coast and in the north, owing to the combined effect of the depression in the Pacific, which lies east of the Balintang Channel, and of another in the China Sea, which is developing at present and lies west of north Luzon.

August 20, 11.50 a. m.: The depression in the Pacific is moving northward and approaching the Loochoos.

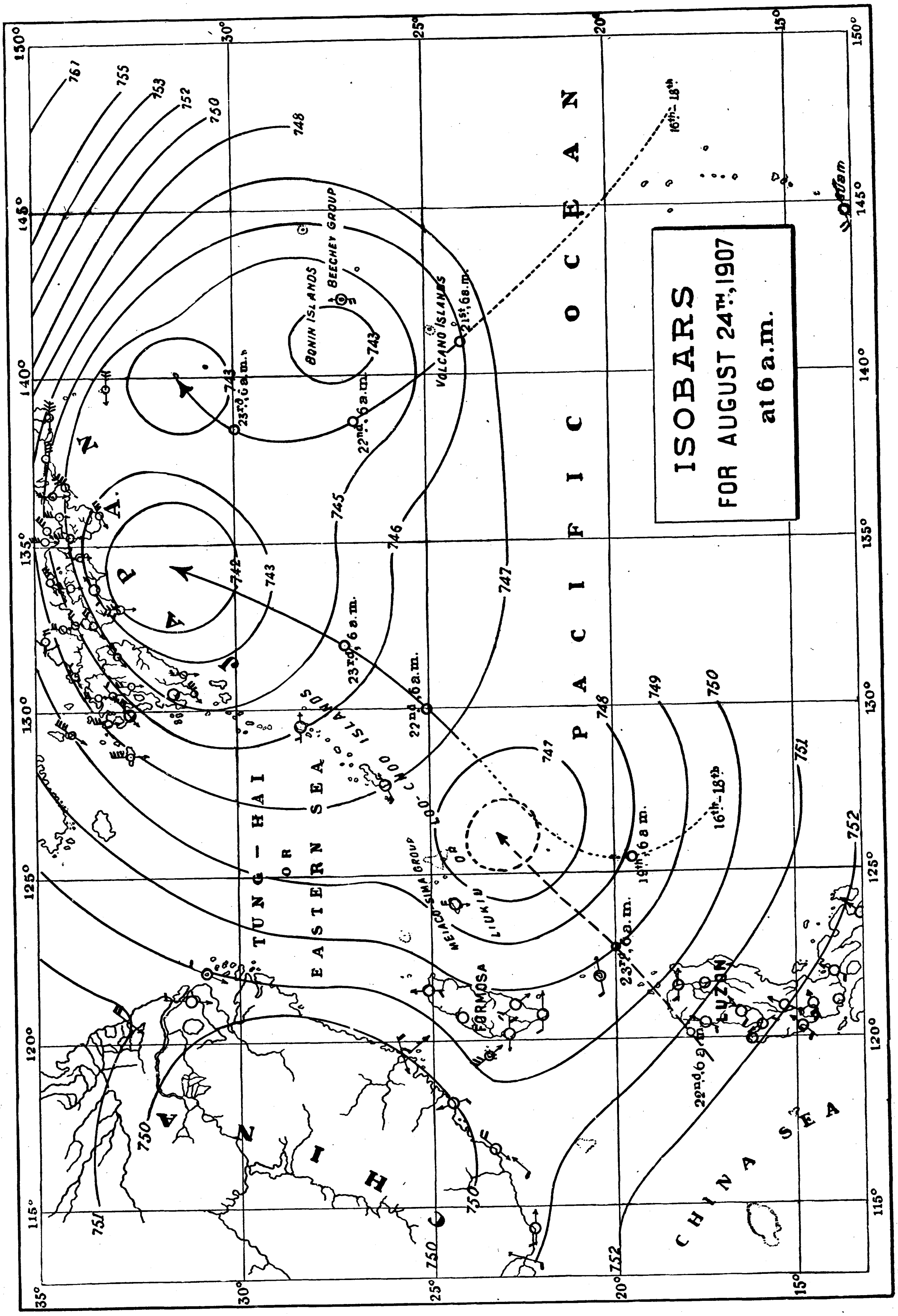
August 21, 11.50 a. m.: The typhoon of the Pacific has moved to northeast and is receding from the Archipelago.

August 22, 11.50 a. m.: The typhoon in the Pacific has moved to north-northeast.

August 23, 11.50 a. m.: Barometers are falling decidedly over the Loochoos and southern Japan, owing to the northerly motion of the typhoon in the Pacific which is probably increasing in intensity, or deepening on account of being joined to the depression which crossed north of Guam a few days ago.

August 24, 11.50 a. m.: The typhoon which was situated yesterday east of the Loochoos, approaching that group of islands, appears to be moving at present in a northerly direction.

PLATE III


ISOBARS
FOR AUGUST 24TH, 1907
at 6 a.m.
JAPAN
PACIFIC OCEAN
TUNG-HAI
OR
EASTERN SEA
CHINA SEA
CHINA
FORMOSA
LUZON
BONIN ISLANDS
BEECHEY GROUP
VOLCANO ISLANDS
MEIACO SIMA GROUP
LIUKIU
LOO CHOO ISLANDS
Guam
23rd 6 a.m.
22nd 6 a.m.
21st 6 a.m.
19th 6 a.m.
16th - 18th
742
743
745
746
747
748
749
750
751
752
753
755
761

On Plate III are reproduced the isobars for 6 a. m. of August 24, in order to enable the reader to see at a glance the positions of the two cyclonic centers in the Pacific which we have mentioned thus far, and of a third, which we shall discuss anon. The latter came from the China Sea, and on the 24th was situated southeast of Meiacosima. On the same chart of isobars appears also a fourth typhoon, near the Bonin Islands, which, according to Tokio Observatory, appeared on the 23d southwest of said group, and, after recurving, moved away toward northeast on the 25th.

TYPHOON OF NORTHWESTERN LUZON, AUGUST 19 TO 28, 1907.

On August 17 Manila Observatory announced the existence of a depression in the Pacific to the east of Luzon. The following day it was stated that the said depression had spread westward as far as the China Sea. On the 19th two centers of low pressure were clearly pointed out, one in the Pacific, east of Balingtan Channel, which we have mentioned before, the other in the China Sea, west of northern Luzon. This latter, which of all the disturbances during the month was undoubtedly the most important to the Philippines, remains to be discussed.

The ordinary daily weather notes of the Observatory issued on the 20th, 21st, and 22d, contained the following references to this storm:

August 20, 11.50 a. m.: The depression in the China Sea to the west of north Luzon seems to move northward.

August 21, 11.50 a. m.: The typhoon in the China Sea is increasing in intensity. It appears to move slowly north or north-northeast.

August 22, 11.50 a. m.: Pressure is still falling in Formosa and in northern Luzon, owing to the movement of the typhoon toward north-northeast. The center lies now about west-northwest of Aparri, at a distance of about 150 miles, moving very slowly.

On the 21st telegraphic communication with Vigan was interrupted. This made it impossible for Manila Observatory to state the further progress of the typhoon in the daily weather notes.

The following table shows some of the observations made at Manila and at the stations of Bolinao, Tuguegarao, Vigan, Aparri, and Santo Domingo (Batanes Islands) during the period August 18 to 24:

Date and hour.	Santo Domingo.					Aparri.					Vigan.				
	Pressure.	Wind. Direction.	Wind. Force.	Rainfall.	Weather.	Pressure.	Wind. Direction.	Wind. Force.	Rainfall.	Weather.	Pressure.	Wind. Direction.	Wind. Force.	Rainfall.	Weather.
Aug. 18:	mm.		0-12	mm.		mm.		0-12	mm.		mm.		0-12	mm.	
6 a. m.	754.28	E	2		b	754.21	SW	0		o	754.27	SSE	1		o
10 a. m.						55.41	S	0		o	55.62	S	1		o
2 p. m.	54.29	E	2		c	53.64	NE	1		o	52.96	SSW	1		o
6 p. m.						53.39	ENE	1	0.5	b	53.56	S by W	1	13.7	o
Aug. 19:															
6 a. m.	53.74	Calm			o	53.88	S	2		b	53.29	SE	1		b
10 a. m.						54.04	S	1		c	53.71	NW by N	1		b
2 p. m.	52.30	N	2	20.6	c	52.72	E	2		o	51.64	N by W	3		o
6 p. m.						52.39	SE	0		o	52.03	S	1	26.4	o
Aug. 20:															
6 a. m.	51.76	Calm			c	52.48	S	1		b	51.46	S by E	1		o
10 a. m.						52.54	S	2		c	51.17	SW	1		o
2 p. m.	51.30	E	1	4.4	o	50.22	NE	2		b	50.18	SSW	2		o
6 p. m.						51.29	ENE	1	3.8	o	49.94	NE	1	.8	o
Aug. 21:															
6 a. m.	50.78	E	2		●	50.28	SW	2		c	49.10	SSE	1		o
10 a. m.						50.21	S	1		o	49.39	S	1		o
2 p. m.	50.28	E	2	33.3	o	48.41	NE	2		o	48.01	S	5		o
6 p. m.						49.23	WSW	1	52.3	o	47.32	SSE	5	32	●
Aug. 22:															
6 a. m.	49.24	E by N	4		o	48	SSE	1		o	43.51	S	11		●
10 a. m.						48.18	SSE	1		o	44.80	SSW	12		●
2 p. m.	47.59	ENE	4	73.9	●	46.30	E	2		o	46.26	SSW	12		●
6 p. m.						45.24	SE	1	.2	o	47.76	SW	5	148.8	●
Aug. 23:															
6 a. m.	46.67	NE	3		o	47.56	W	1		o	51.99	NW	1		o
10 a. m.						50.28	W	1		o	53.16	S	1		o
2 p. m.	48.10	NW	4	77	↙ ●	50.93	W	2		o	52.42	SSW	2		o
6 p. m.						50.88	SW	1	23.6	o	52.52	S by W	1	18.8	o
Aug. 24:															
6 a. m.	50.72	WSW	2		o	51.80	W	1		b	53.70	SSW	1		●
10 a. m.						53.26	N	1		b	54.78	SSW	1		●
2 p. m.	51.77	W	3	29.5	o	52.62	N	2		o	53.91	SSW	1		o
6 p. m.						52.54	NW	1		o	53.70	SSW	1	15.2	●

Date and hour.	Tuguegarao.					Bolinao.					Manila.				
	Pressure.	Wind.		Rainfall.	Weather.	Pressure.	Wind.		Rainfall.	Weather.	Pressure.	Wind.		Rainfall.	Weather.
		Direction.	Force.				Direction.	Force.				Direction.	Force.		
	mm.		0–12	mm.		mm.		0–12	mm.		mm.		0–12	mm.	
Aug. 18:															
6 a. m.		Calm			●	754.76	SW	1		o	754.35	SE by S	1		o
10 a. m.		Calm			o						55.57	Calm			c
2 p. m.		N	1		o	53.87	W	3	3.3	o	53.88	WSW	3		c
6 p. m.		N	1	8.1	c						54.20	SSW	1	0.1	o
Aug. 19:															
6 a. m.		Calm			c	53.87	S	2		c	53.12	Calm			o
10 a. m.		Calm			o						54.50	ESE	1		o
2 p. m.		SE	2		o	52.12	S	4	12.2	o	52.81	S by W	2		o
6 p. m.		S	2	2.8	c						52.64	S	3	19.5	o
Aug. 20:															
6 a. m.		Calm			c	50.92	SE	4		o	52.46	S	2		o
10 a. m.		S	1		o						53.50	S by W	3		o
2 p. m.		S	1		o	50.02	SSE	5	54.1	o	51.84	SW	3		o
6 p. m.		Calm			o						51.58	SW	4	32.1	o
Aug. 21:															
6 a. m.		Calm			c	47.81	SE	3		●²	51.81	SW	3		o
10 a. m.		SE	1		c						52.42	SW	3		o
2 p. m.		S	2		●°	47.88	SW by S	7	127.3	q	51.14	SW	4		o
6 p. m.		N	1		o						51.01	SW	4	18.8	o
Aug. 22:															
6 a. m.		SSE	1		c	48.18	WSW	6		o	51.34	SW by W	4		o
10 a. m.		SE	2		o						52.34	SW by W	5		o
2 p. m.		SW	3		o	50.19	W	8	38.1	o	51.54	WSW	6		o
6 p. m.		SSW	1		o						51.75	SW	1	3.8	o
Aug. 23:															
6 a. m.		Calm			c	52.23	W	1		o	52.64	NW	1		o
10 a. m.		Calm			o						53.81	SSW	1		o
2 p. m.		N	1		o	52.10	WSW	4	22.9	o	52.63	SW by W	4		o
6 p. m.		NE	1		o						53.03	SW	4	5.6	o
Aug. 24:															
6 a. m.		Calm			b	53.39	Calm			o	53.97	SW by W	4		o
10 a. m.		WSW	1		b						54.91	SW by W	3		o
2 p. m.		NW	1		c	53.35	SW	3	7.1	p	54.01	WSW	4		o
6 p. m.		NW	1	1	o						54.52	SSW	2	34.1	o

The winds observed at Vigan on the 18th and at Bolinao on the 19th point with sufficient clearness to the presence of a depression in the China Sea, west of northern Luzon. Already on the 20th, but especially on the 21st, the depression exhibited the characteristics of a well-developed typhoon approaching the northwestern part of Luzon. Plate IV shows the isobars and approximate position of the cyclonic center at 2 p. m. of the 21st, 6 a. m. of the 22d, 6 a. m. and 2 p. m. of the 23d. Since Vigan was at the time our northernmost station on the west coast of Luzon, we are unable to state with absolute certainty whether the vortex in its passage touched the island or not. The former being, however, according to our opinion, almost certain, the track given on Plate V has been drawn under this supposition

At Vigan the south-southeast, south, and south-southwest winds were of hurricane force and very violent. Mr. Pastor Daroy, observer at said place, writes: "The majority of the houses built of light materials have been unroofed and some of them collapsed. A barn belonging to the provincial building has likewise been destroyed." The lowest reading of the barometer at Vigan was 743.3 millimeters and occurred at 5 a. m. of August 22.

The typhoon advanced in a northeasterly direction and passed northwest of Aparri in the evening of August 22. At the latter station the absolute barometric minimum was 744.6 millimeters. This shows that in reality the typhoon passed closer to Aparri than Manila Observatory had supposed in the weather note for August 22 already quoted. The minimum of Aparri differs from that of Vigan by only + 1.3 millimeters. How is it, then, that at the former station the winds acquired hardly any force, while at the latter they attained destructive violence? The character of these notes does not permit our entering upon a lengthy discussion of this phenomenon. Suffice it to say that the fact may be explained sufficiently if we suppose that either the whole or at least a part of the central body of the storm was elevated above the surface of the earth while it passed near Aparri, or that the axis of the cyclone was strongly inclined toward the left of its track; that is to say, toward the sea.

ISOBARS FOR AUGUST 21st.-23rd., 1907.

PLATE IV.

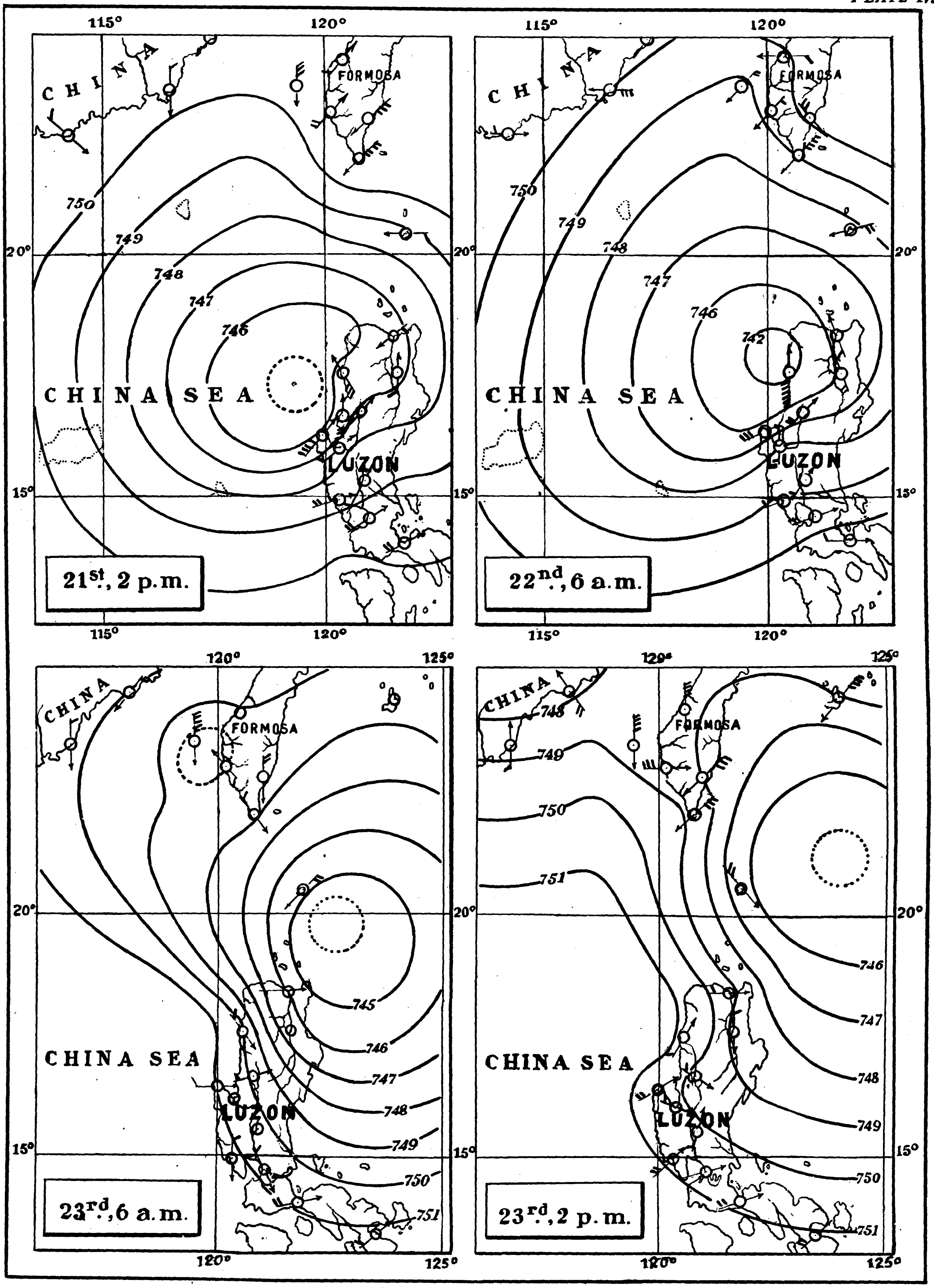
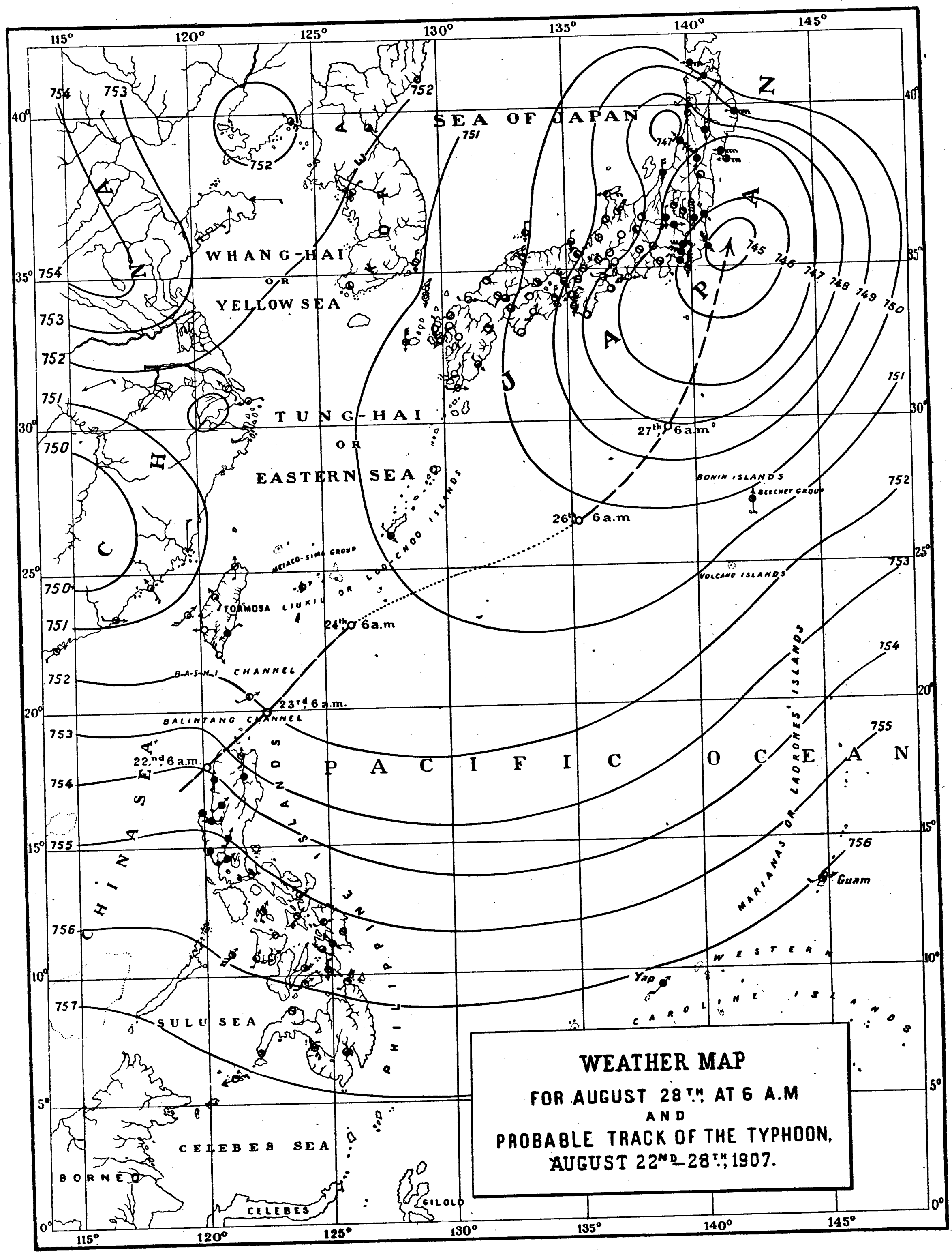


PLATE V.


SEA OF JAPAN
WHANG-HAI
OR
YELLOW SEA
TUNG-HAI
OR
EASTERN SEA
CHINA
CHINA SEA
JAPAN
COREA
PACIFIC OCEAN
FORMOSA
LIUKIU OR LOO-CHOO ISLANDS
MEIACO-SIMA GROUP
BASHI CHANNEL
BALINTANG CHANNEL
PHILIPPINE ISLANDS
SULU SEA
CELEBES SEA
BORNEO
CELEBES
GILOLO
BONIN ISLANDS
BEECHEY GROUP
VOLCANO ISLANDS
MARIANAS OR LADRONES' ISLANDS
Guam
Yap
WESTERN CAROLINE ISLANDS
22nd 6 a.m.
23rd 6 a.m.
24th 6 a.m
26th 6 a.m
27th 6 a.m.
745
746
747
748
749
750
751
752
753
754
755
756
757
WEATHER MAP
FOR AUGUST 28TH AT 6 A.M
AND
PROBABLE TRACK OF THE TYPHOON,
AUGUST 22ND–28TH 1907.

The observations made at Santo Domingo indicate clearly the passage of the typhoon through the south, southeast, and east of said station. The barometric minimum was 746.7 millimeters, and was observed at 6 a. m. of the 23d with gusty winds from northeast.

The data in our possession permit of still locating the vortex southeast of the Meiacosima group during the early morning of the 24th (see Pl. III); but for the 25th such is no longer possible. Nevertheless, as on the 26th a typhoon appeared west of the Bonin Islands, which moved in a north-northeast direction toward the southeast of Japan, we do not believe that anybody will raise objections to the very probable assumption that this typhoon was identical with the one which three days earlier had passed between the north of Luzon and the Batanes Islands, advancing in a northeasterly direction. The track shown on Plate V is based on this supposition. According to Tokio Observatory, the typhoon in question passed along the east coast of Japan moving northward and crossed the Island of Hokaido in a north-northwestern direction, penetrating into the Gulf of Tartary in the afternoon of August 29.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[ϕ=14° 34′ 41″ N; λ=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

Date.	Pressure, mean.	Temperature.										Relative humidity, mean.	Vapor pressure, mean.	Evaporation.	
		Open air.[2]			Underground.									Free exposure, total.	Shelter, total.
		Mean.	Maximum.	Minimum.	0.25 meter.		0.50 meter.		1.50 meters.	2.50 meters.					
					8 a. m.	2 p. m.	8 a. m.	2 p. m.	8 a. m.	8 a. m.					
	mm.	°*C.*	°*C.*	°*C.*	°*C.*	°*C.*	°*C.*	°*C.*	°*C.*	°*C.*		*Per ct.*	*mm.*	*mm.*	*mm.*
1	758.35	27.3	30.5	23.3	27.5	29.1	28.4	28.8	29.4	29.2		83.9	22.5	4.1	2.6
2	58.81	27.8	31.5	23.5	28.5	29.8	28.8	29	29.2	29		84.5	23.2	5.9	2.9
3	58.11	27.2	31.6	24.1	29	30.1	29	29.3	29.2	28.9		85.2	22.8	5.1	2.6
4	57.49	27.1	30.2	24.1	29	29.6	29.1	29.4	29.1	29.1		84.4	22.4	3.8	2.1
5	57.61	25.5	28	22.9	28.7	28.7	29.1	29	29.1	29		87.7	21.3	3.4	2.5
6	56.46	24.3	25.9	22.4	27.8	27.9	28.7	28.7	29	29		94.2	21.2	1.4	1.3
7	54.81	25.8	29.7	22.8	27.5	28.3	28.5	28.6	29.1	29		91	22.5	1	1.2
8	55.42	25.8	29.5	23.5	27.8	28.5	28.5	28.7	29	29		89.8	22.2	1.2	1.2
9	56.68	25.9	28.8	23.3	27.9	28.5	28.4	28.6	29	29		87.5	21.6	2.1	1.9
10	57.81	25.9	30.7	22.9	27.5	28.9	28.4	28.7	28.9	28.8		87.2	21.5	4.3	1.8
11	57.67	26	29.5	22.8	27.8	29	28.5	28.6	29	28.9		88.1	22	2.8	1.2
12	56.21	26.9	30.7	23.9	28	29.3	28.6	28.7	29	28.8		87.2	22.8	4.3	2.6
13	55.14	26.6	30.4	23.4	28.1	28.9	28.6	28.8	28.9	28.9		88.6	22.8	3.2	1.8
14	55.44	26.1	30.7	23.3	28.2	28.8	28.7	28.7	29.1	28.9		89.1	22.4	3.7	2
15	56.57	26.8	30.7	23	27.7	29.1	28.6	28.8	28.9	28.9		88.2	23	3.2	1.7
16	56.81	26.1	28.2	23.8	27.9	28.3	28.5	28.6	29	28.8		91.8	23.1	2.3	1.2
17	55.62	26.3	29.5	24	28	28.6	28.5	28.6	29	29		89.3	22.6	2.6	1.6
18	54.71	26.8	30.5	23.9	27.9	29.2	28.4	28.7	28.9	28.8		84.6	22.1	3.8	2
19	53.55	25.8	28.7	23.4	28	28.4	28.5	28.6	28.8	28.8		85.9	21.1	3.6	2.1
20	52.55	25.5	27.7	23.2	27.4	27.5	28.3	28.3	28.8	28.8		90.4	21.9	1.3	1.7
21	51.71	27	29.1	23.7	27.2	27.8	28.2	28	28.8	28.8		85.8	22.6	3.1	2.3
22	51.88	27.5	29.4	25.7	27.6	28.2	28.1	28.2	28.8	28.7		85.5	23.3	6	3.7
23	53.29	26.6	29	23.8	27.5	28	28	28	28.7	28.9		88.8	23	1.1	2.4
24	54.75	26.3	29.5	23.5	27.2	27.9	28	28.1	28.6	28.6		89.5	22.7	1.2	1.8
25	56.54	27.3	30.2	24.3	27.6	29	28.1	28.2	28.7	28.9		83.6	22.4	7	2.7
26	57.17	27.1	30	24.4	28.1	29	28.3	28.5	28.7	28.8		86.8	23	5.9	3.3
27	56.81	26.9	29.3	23.3	28.1	28.8	28.3	28.5	28.6	28.7		85.9	22.5	4.8	2.6
28	57.12	25	26.7	23.2	27.4	27.2	28.2	28	28.6	28.7		93.6	22	2.4	1.4
29	56.48	25.4	28.5	23.3	26.8	27.2	27.9	27.8	28.4	28.7		92.3	22.2	.9	.6
30	56.14	26	29.6	23.3	27	27.4	27.6	27.7	28.5	28.7		89.8	22.3	1.2	1.3
31	56.23	25.2	27.9	23.1	27.1	27.1	27.7	27.7	28.4	28.6		93.3	22.2	.9	1
Mean	755.93	26.3	29.4	23.5	27.8	28.5	28.4	28.5	28.9	28.9		88.2	22.4	3.1	2
Total														97.6	
Departure from normal	—1.49	—0.8	—1.1	—0.2								+3.2	—0.1	—44.8	

Date.	Wind.				Clouds.					Sunshine.		Rainfall.	Miscellaneous.
	Prevailing direction.	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Amount, mean.	Prevailing form and its direction.							
						Upper.		Lower.					
		Km.	*Km.*		*0–10.*					*h.*	*m.*	*mm.*	
1	WSW	237	26.5	WSW	8.8	Ci.-S.	N	Cu.	WSW	8	50		≡° ⌒ a. ○ a. p.
2	WSW	263	31	WSW	8.9	Ci.-S.	NE	Cu.		7	50	0.5	≡° a. ⌈☇ d p. ○
3	SE, SW	200.5	24.5	WSW	8.3	Ci.-S.		Cu.	SE	6	40	5.3	≡°a. ○°☇ ⊤°● p.
4	WSW, SW	339.5	29	SW	8.8	Ci.-S.	S	Cu.-N.	SE	5	15	.1	≡°a. ●° p. ○ a.p.
5	SW	286	35.5	W	10	Ci.-S		Cu.-N.	W by N	0	00	12.4	≡° a. ● d a. p.
6	NE	134.5	30.5	WSW	10	Ci.-S.		Cu.-N.	W by N	0	00	8.8	●° d a. p.
7	S	194.5	21.5	SW	9.7	Ci.-S.		Fr.-N.	SW	2	45	9.6	⊕ ☇ p. ● a. p.
8	SE	175	15	SE	10	Ci.-S.		Fr.-N.	S by W	0	10	4.6	d. a. p.
9	Variable	130.5	14	W	10	Ci.-S.		Fr.-N.	SSW	0	10	5.4	d. a. p.
10	E	131.5	26	W by N	8.8	A.-Cu.	W	Cu.	SW by W	2	50	22.4	≡° d° a. ● p.
11	E, SW	180	18	SW	9.3	A.-Cu.	NW	Cu.	W	0	50	.2	≡° p a. d p.
12	SW	161	16	SW	8.4	A.-Cu.	NE	Cu.	NW	6	45	8.9	≡° ○ a. ⌈☇ ⌒ p.●
13	SW	206	27	SW	7.3	Ci.-S.	NE	Cu.-N.	WSW	5	10	45.1	≡° a. ● ⊤ a. p.
14	WSW	262	32	WSW	9.1	Ci.-S.	WNW	Cu.	SSW	3	25	29.3	≡° ⌒ ○ a. ⊤ ● p.
15	WSW	395.5	33.5	WSW	8.1	Ci.-S.		Cu.-N.	WSW	6	40	16.2	● ⌒ ○° a. d° p.
16	NW, S	206.5	28	SW by W	9.9	Ci.-S.	SE	Fr.-N.	NW by W	0	05	31.3	● d a. p.
17	S	171	18.5	SW by S	9.9	Ci.-S.		N.-cf.	NE	0	35	4.4	≡° d a. ⌈☇ ● p.
18	SSW	286	23.5	S	7.7	Ci.-S.	WNW	Cu.-N.		7	20	.1	☇° ⦶ p. d° a. p.
19	S	294.5	25	S	9.9	Ci.-S.		Cu.-N.	SW	0	15	19.5	≡° d a. ● d p.
20	S	531	47	WSW	10	Ci.-S.		Cu.-N.	SW by W	0	40	32.1	≡° a. ↙ ● a. p.
21	SW	886	47	SW by W	9.8	Ci.-S.	NW	N.-cf.	WSW	1	15	18.8	● ○ a. p. ⊍° p.
22	SW by W	900.5	50	SW by W	10	Ci.-S.	SE	N.-cf.	W	1	30	3.8	↙ ● ○° a. d p.
23	SW	701.5	40.5	SW	9.8	Ci.-S.		Cu.-N.	WSW	0	45	5.6	d ⌒ a. ● ☇ p.
24	SW	676.5	39	SW	9.5	Ci.-S.		N.-cf.	WSW	4	15	34.1	⌒ a. ↙ ● a. p.
25	SW	614.5	41	SW	6.1	Ci.-S.		Cu.	SW by W	9	00	1.1	≡° a. d a. p.
26	SW	631	38	WSW	9.9	Ci.-S.		N.-cf.	WSW	1	45	12.3	≡° d a. ●. p. ○^{2}
27	WSW	753.5	43.5	WSW	10	Ci.-S.		N.-cf.	WSW	1	05	21	d ⊕ a. ● ⌈☇ p.
28	WSW	342.5	38.5	WSW	10	Ci.-S.		N.	WSW	0	00	56.3	● d a. p.
29	SW	288.5	29.5	SW	10	Ci.-S.		Cu.-N.	SW by W	0	10	22.5	● d a. p.
30	SW	358	23	SW by W	9.8	Ci.-S.		Cu.-N.	W by S	0	15	9.4	d a. ● ⌒ p.
31	SW, SSW	256	29	SW by W	10	Ci.-S.		Cu.-N.	WSW	1	40	32.8	☇ p. ● d a. p.
Mean		361.1	30.4		9.3					2	50		
Total										87	55	473.9	
Departure from normal		+75.4			+1.5					—52	12	+121	

[1] All the mean values given in this table are deduced from hourly observations.
[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

TAGBILARAN.

[ϕ=9° 38′ N; λ=123° 53′ E; barometer above sea, 21.8 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.	Clouds. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	758.53	27.7	34	22.4	78.5	SE	1.3	8	A.-S. NE	Variable	12.2	⊤ ●² p.
2	59.21	26.2	30.1	22.4	83.4	NE, SE	1.3	8.8	A.-S.	Cu.-N. W	1.3	⊤² ⚡ p. ○
3	58.59	26.7	30	23.1	79	SE	1.3	8.7	Ci.-S.	Cu.-N. W	29.7	⚡ p.
4	58.40	25.5	27.7	22.9	81.8	Variable	1.8	10		N. W	.2	d° a. p.
5	58.45	24.9	29.2	22.6	77	Variable	1.2	10		N. W	7.6	↙ ● p.
6	57.45	26.6	31.4	22.4	74.8	SSW	2.8	9.8	A.-S.	Variable	3.8	↙ ● p.
7	57.52	25.6	29.8	22.3	78.1	SSW	2.5	9	A.-S.	N. W, SW		↙° d° p.
8	57.30	27	31.6	23.6	74.5	SSW	1.5	8.2	A.-Cu. SW	Cu.-N. W		↙°
9	57.02	27.5	31.6	24	73.3	SSW, SW	1.5	8.7	A.-Cu. W	S.-Cu. W		
10	57.11	27.8	32	24.4	75.2	SW	1.3	9	A.-Cu. N	S.-Cu. W		d° p.
11	57.43	26.3	28.7	23.4	80.4	WNW	1.5	10		N. W	22.4	↙ ● ⊤° p.
12	57.25	26	30.5	23.4	80	SSW	1.7	8.8	A.-Cu.	N. W		d° a.
13	56.97	25.6	29.7	23.9	84	SSW, SW	2.7	8.7	A.-S.	N. W	11.4	↙ ● p.
14	57.13	26.6	31.4	23.2	79	SSW	2	7	Ci.-S.	Cu. W	2.5	●° a. p.
15	58.04	27	31.1	25	77.2	Variable	2	5.7	Ci.-S. E	Cu. W		d° p.
16	57.83	26	30.1	24.9	84.3	WSW, SSW	2	9.3	Ci.-S. ENE	N. W	2	↙° ● p.
17	57.19	26.1	29.5	24.8	79.9	SSW, WSW	2.2	9.5		Cu.-N. W		d° ⌣ p.
18	56.40	27.3	30.6	24.4	76.1	SW	2.7	9.7	Variable	Variable		↙° d°
19	56.02	27.4	30.4	25.3	74.6	SSW, SW	3.3	9.7	A.-Cu. SW	S.-Cu. W		↙° d° a. ⌣²
20	55.96	28.1	31.4	26.5	74.8	SSW, SW	3.7	9.3	A.-Cu. W	Cu.-N. SW, W	3	↙ ●° p.
21	56.15	26.1	30	23.4	81.8	SW quad.	2.8	9.2	A.-Cu.	N. W	6.4	↙° ● ⊤
22	56.05	26.1	28.7	24.4	80.1	WSW, SW	3.2	9.3		N, Cu.-N. WSW	4.3	↙° ●
23	56.46	27	30.1	24.4	77.2	SW	3.7	9.3	Ci.-S. W	Cu.-N. W, WSW		↙° d°
24	57	27.5	31.1	23.3	74.7	SW	3	7.7	A.-S.	S.-Cu.	1.5	↙° d a.
25	57.89	27.8	31.7	25.3	71.3	SW	2.5	3	A.-Cu., Ci.-S.	Cu.		↙°
26	58.47	27.7	30.9	25.5	74.4	SW	2	9.2	Ci.-S., ENE	Cu. W		○²
27	58.24	28.1	31.9	25.6	73	SW	1.8	9.2	A.-S.	Cu. W, WSW		
28	57.56	28.1	31.6	26.2	74.4	SW, SSW	1.8	6.8	Ci.-S.	Cu. WSW		○²
29	57.98	28.1	32.3	24.9	73	SW	2.2	4.3	Ci.-S. NE	Cu. SW, W		
30	57.74	28.1	32.1	25.4	70.5	SW, SSW	2	3	Ci.-S. NE	Cu. SW		↙°
31	56.98	28.2	32	25.5	72.3	SSW, SW	1.8	4.3		Variable		
Mean	757.43	26.9	30.7	24.2	77.1		2.2	8.2				
Total											108.3	

SURIGAO.

[ϕ=9° 48′ N; λ=125° 29′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.	Clouds. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	758.71					SW, W	0.7	5.7	Ci.	Cu.-N.		⩍ ≡ ⊤ <
2	59.36					Variable	.8	6.5	A.-Cu. SE	Cu.		⩍ ≡
3	58.62					SW	.8	6.2	Ci.	Cu. SW		⩍ ≡ d° a.
4	58.32					SW	2.2	10	A-Cu.	Cu.-N. SW	12.7	↙ ●
5	57.84					SW	5	10		Cu.-N. SW	15.2	● ↙
6	57.16					SW	3.5	8	A.-Cu.	Cu. SW		↙
7	57.58					SW	1.8	9.3	A.-S.	Variable		d° p.
8	57.40					SW	1.3	6.7	A.-Cu. W, NW	Cu. SW		
9	57.11					SW	1.5	8.2	A.-Cu. NNW	Cu., Fr.-S.		
10	57.52					SW	1.5	10	A.-S.	Fr.-S., N.	54.6	●² ↙ ⚡ p.
11	57.41					SW	1	10	A.-S.	Fr.-N.	13.5	d a. ● p.
12	57.26					SW	2	6.6	A.-Cu., Ci.	Cu.	62.2	● a.
13	56.90					SW	1.8	8	A.-Cu. W	Variable	3.3	● a. ↙° d p.
14	57.10					SW	1.3	3.7	Ci.	Cu.		< p.
15	58.01					SW	1.8	2.8	Ci.	Cu.		↙°
16	57.64					SW	3	8.3	A.-S.	Cu. SW		↙° d°
17	56.73					SW	3.8	10		Fr.-S.		●° ↙°
18	56.22					SW	4.5	10		Fr.-N. SW		↙ ⊤
19	55.91					SW	2.3	8.8	A.-Cu. W			↙°
20	55.66					SW	1.7	8.7	Ci.-S.	Cu.		↙ ⌣° p.
21	55.80					SW	2.3	8.8	A.-Cu.	Cu.		↙ d° p.
22	55.73					SW	2	9.8	Ci.-S.	Cu.		↙ p.
23	56.10					SW	2.2	8.5	A-Cu.	Cu. SW		↙° d°
24	57.01					SW	1.4	7.2	Variable	Cu.		↙°
25	57.91					SW	1	2.2		Cu.		
26	58.50					SW	.8	7.8	Ci.-S.	Cu.		⊕ ⌓
27	58.02					SW	1.5	8.5	A.-Cu. SE	Cu.		
28	57.63					SW	1	6.2	Ci.-S. E	Cu. SW, WSW		
29	57.96					WSW, SW	1.3	3.5	A.-Cu. NE, ENE	Cu.		
30	57.82					WSW, SW	1.2	1	Ci. ENE	Cu. WSW		
31	56.98					WSW, SW	1.2	3	A.-Cu. ENE	Cu. WSW		
Mean	757.35						1.9	7.2				
Total											161.5	

[1] All the mean values given in these tables are deduced from six daily observations.

METEOROLOGICAL DATA, ETC.—Continued.

CEBU.

[ϕ=10° 18′ N; λ=123° 54′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Prevailing form and its direction. Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	758.96	26.8	32.5	23.9	80.8	S	0.7	6.3	Variable	Cu. SW	11.9	Ω ≡ ☈
2	59.65	26	30.7	23.8	87.3	Variable	.5	7.7	Ci.-S.	Variable	14.5	Ω ≡ ☈
3	59.05	26.7	30.1	22.8	83.5	S	.3	6.3	Ci.-S.	Cu. W	------	Ω ≡ ☇
4	58.58	25.8	28.9	24	84.8	SW quad.	.5	9.7	Ci.-S.	N.-cf. NNW, W	3.8	Ω ≡ d
5	58.63	24.2	27.3	21.3	82.8	SW quad.	1	9.8	Ci.-S.	N.-cf. W	7.1	●° ≡
6	57.41	26.8	31.4	23.3	75	SW, W	1.2	8.3	Ci.-S.	S.-Cu. Fr.-Cu. W	------	Ω ≡ ∞ ↙°
7	57.89	25.6	30.2	23.1	80	SSW	.8	7.5	Ci.-S.	Cu. SW, WSW	22.9	Ω ≡ ↙ ●
8	57.59	26.6	29.5	22.4	78.7	SW	.8	6.5	A.-Cu. W	S.-Cu. SW	.8	Ω ≡ ↙ ●°
9	57.42	27.1	29.5	23.9	77.5	SW quad.	.7	7.3	A.-Cu.	S.-Cu.	------	Ω ≡ d
10	57.83	27.1	31	23.9	78.2	SW, W	.3	7.8	Ci.-S.	S.-Cu. W	1	Ω ≡ ∞ ☇ p
11	57.77	25.6	30	23.7	87.5	SSW	.7	9.3	Ci.-S.	S.-Cu. NW	5.3	Ω ≡ ● T ☇
12	57.44	25.6	28.5	23.1	83.2	SW	.7	8.5	Ci.-S.	N. W	5.6	●° ≡²
13	56.93	25.6	29.3	23	85.6	SW quad.	.8	7.2	A.-Cu.	Variable	.5	Ω ≡ p ↙°
14	57.29	27	31.7	23.5	79.7	SW	1	5.3	Ci.-S., Ci.	Cu. SW	.2	Ω ≡ d ↙°
15	58.24	26.2	30.5	23.6	82.2	WSW	1	4.3	Ci.	S.-Cu. WSW	5.6	Ω ≡ p ↙°
16	57.88	26.6	30	24.9	82	WSW, SW	1	6.5	Ci.-S.	Cu. SW	.5	Ω ≡ T ☇
17	57.02	25.9	28.4	24	83	SW, W	1	9.3	Ci.-S.	Cu.-N. W	10.2	Ω ≡ ● ↙°
18	56.33	26.8	30.1	23.3	77.4	SW	1	8	A.-Cu.	Cu.-N. SW	.5	d ≡
19	55.90	27.2	31.4	24.7	79.2	SSW	1.3	6.8	A.-Cu. NNW	S.-Cu. WSW	------	Ω ≡
20	55.88	26.9	30.5	25	80.3	SW	1.5	8.8	Ci.-S.	Fr.-Cu. SW, W	1.3	Ω ≡ p ↙°
21	55.84	27.4	30.8	24.3	76.6	WSW, W	1.8	7	Variable	Fr.-Cu. SW	.2	Ω ≡ ⌣ ↙°
22	55.60	27.6	30.6	24.4	75.7	SW	2.2	6.7	A.-Cu.	Cu.-N. WSW	------	Ω ≡ ↙°
23	56.30	27.4	30.6	25.5	75.8	SW	1.7	6.7	Ci.-S.	Cu.-N. SW	.5	≡ p ↙°
24	57.07	27.2	29.9	24.4	78.8	SSW	1.2	6	Ci.-S.	Variable	------	Ω ≡ ∞ ◯ ⌣
25	58.25	27.6	31	24.3	74.8	SW	.7	4.2	Ci.	Cu. SW, W	------	Ω ≡
26	58.64	26.8	30.5	23.1	80.5	SW	.8	6	Ci.-S.	Cu. WSW	------	Ω² ≡ ◯
27	58.36	27.4	30.5	24.6	78.3	SW	1	7	Ci.-S.	Cu. WSW	------	Ω ≡ ◯
28	57.82	28	30.6	25.9	76.5	SW quad.	.7	6.5	Ci.-S.	Cu. WSW	------	⌣ Ω ≡ ∞
29	58.20	27.8	31	24.3	77	SW quad.	1.2	3.7	Ci.	Cu. SW	------	Ω ≡ ∞
30	57.99	27.5	30.6	23.2	75.5	SW	.8	3.5	Ci.	Cu. SW	------	Ω ≡ ∞
31	57.32	27.4	31	23.3	78	SW	1	2.5	Ci.	Cu. WSW	------	Ω ≡
Mean	757.58	26.7	30.3	23.8	79.9	------	1	6.8	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	92.4	

ILOILO.

[ϕ=10° 41′ N; λ=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day	Pressure (mean)	Temp. mean	Temp. max.	Temp. min.	Relative humidity (mean)	Wind: prevailing direction	Wind: force (mean)	Clouds: amount (mean)	Clouds: upper	Clouds: lower	Rainfall	Miscellaneous
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	758.49	26.8	29.6	24.1	81.8	SW	1.5	7	A.-Cu. E	S.-Cu.	------	↙° T
2	59.02	26.3	29.4	23.5	85.3	SW	1.3	7.2	A.-Cu.	S.-Cu. SW	------	↙° T
3	58.36	25.6	29	22.9	83	SW	1.2	7	A.-Cu. SE	S.-Cu.	13.2	p² a. d° p.
4	58.05	25.8	27.7	24	84.2	SW	2	8.7	A.-Cu.	S.-Cu.	.5	d° a. p. ↙°
5	58.13	25.2	26.9	23.4	78.8	SW	2	9.3	A.-Cu.	N.	1.5	d a. p. ↙°
6	57.08	26.6	29.5	24	77.2	SW	2	9.7	A.-Cu.	S.-Cu.	3	⌒ ● p.
7	57.05	25.4	28	23.9	87.7	SW	2.3	10	A.-Cu.	N. SW	33	● a. p.
8	57.13	25.1	28.6	23.1	87.7	SW	1.2	9.3	A.-Cu. W	S.-Cu. SW	29.5	d a ● p.
9	57.06	25.9	28.8	23	87	SW	1.2	9.2	A.-Cu.	S.-Cu. SW	8.4	● a. d p.
10	57.45	26.8	28.9	24.4	78.7	W, SW	1.5	8.5	A.-Cu.	S.-Cu. W	------	☇ p.
11	57.51	25.1	27.9	22.9	85.2	SW	.7	9.3	A.-Cu.	S.-Cu., N.	23.6	● p.
12	56.89	25.8	27.5	24	82.5	SW	1.8	10	A.-Cu.	S.-Cu.	1.5	d
13	56.37	25	27.7	23.3	89	SW	1.8	8.7	A.-Cu.	S.-Cu., N. SW	50.3	● p.
14	56.64	25.2	27.7	22.2	90	SW	2.2	9.3	A.-Cu.	N. SW	100.3	●² a. p.
15	57.42	26.9	28.9	23.3	82.3	SW	2	8.2	A.-Cu.	S.-Cu. SW	16.2	T° ● ⌒ ⊕
16	57.49	25.8	27.6	22.8	86.2	SW	2.2	8.7	A.-Cu.	S.-Cu. SW	9.9	● a. d p.
17	56.71	25	27.7	23	88.8	SW, W	2.2	10	A.-Cu.	N. SW	13.5	●° a. p.
18	56.06	25.9	28.8	23	88.5	SW, W	1.8	8.8	A.-Cu.	N. WSW	12.7	●° a. p.
19	55.61	25.7	28.9	22.1	86.7	SW	2.8	10	A.-Cu.	N. SW	59.2	●² ☇ T ↙
20	55.30	27	29.1	24.5	83.8	SW	3.5	9.7	A.-Cu.	N. SW	31.7	↙ ●° ⌒ ⊕
21	55.08	26.5	28.5	24	84.5	SW	3.7	9.8	A.-Cu.	N. SW	20.6	↙ ● a. p.
22	55	26.6	28.9	23.6	85.7	SW	3.7	9.7	A.-Cu.	N. SW	58.7	↙ ● a. p.
23	55.88	25.2	27.6	22.4	88.7	SW	3.7	10	A.-Cu.	N. SW	47	↙ ● a. p.
24	56.35	27	28.9	24.7	83	SW	2.7	8	A.-Cu.	S.-Cu. SW	5.1	↙ ●° a. p p.
25	57.78	26.5	28.8	24	83.8	SW	2.7	7.7	A.-Cu.	S.-Cu. SW	2.5	p a. p.
26	58.23	27.2	29	25.4	83.6	SW	2.3	8.5	A.-Cu., Ci.-S.	S.-Cu. SW	20.1	●² p.
27	57.87	26.9	29	24	85.8	SW	1.8	8.7	A.-Cu.	S.-Cu. SW	24.9	● a.
28	57.46	27.3	29.5	24.5	82	SW	2.2	8.3	A.-Cu.	S.-Cu. SW	1.5	p a.
29	57.83	27.3	29.1	23.6	82.6	SW	2.2	6.7	Ci.-S.	S.-Cu. SW	------	↙°
30	57.62	27.4	28.9	23.1	76.3	SW	2.2	6	A.-Cu.	S.-Cu. SW	------	↙°
31	57.01	27.1	29.1	24.8	79.2	SW	2.3	6.2	A.-Cu.	S.-Cu. SW	1.8	p a. ☇
Mean	757.09	26.2	28.6	23.6	84.2	------	2.2	8.7	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	590.2	

METEOROLOGICAL DATA, ETC.—Continued.

ORMOC.

[ϕ=11° 00′ N ; λ=124° 36′ E ; barometer above sea, 4.5 meters ; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	758.29	27	31.3	23.3	82.9	SSE	0.5	6.2	Ci., Ci.-S.	Cu. W	------	Ω ↯
2	59.06	26.4	30	24	85.3	Variable	.5	9	Ci.-S.	Cu., Cu.-N.	1	Ω d ↯
3	58.31	25.9	30	22.4	83.3	Variable	.5	4.3	Ci. ESE, SE	Cu.	------	Ω ≡° d° ↯°
4	57.98	24.3	28.1	22.2	91.8	Variable	.5	9.7	Ci.-S.	Cu.-N N	17.8	● ↯
5	57.99	23.7	25.5	21.9	91.5	ESE	.2	10	Ci.-S.	N. W	83.1	● a. p.
6	56.74	25.7	30.4	21.5	81.5	SE, WSW	.3	9.7	Ci.-S.	Cu. W	1.5	d a. p.
7	57.10	27.2	29.8	23.8	75.5	S quad.	2.2	8.5	Ci.-S., Ci.	Cu. SW	------	d° p.
8	56.90	26.6	29.7	24	78.2	SSE	1.2	7.2	A.-Cu., SW	Cu.	------	↯ p.
9	56.92	26.9	30.5	22.8	78.8	S	.5	7.3	Ci.-S.	Cu. W	------	d° a.
10	57.13	27.3	31.2	23.8	76.8	NW quad.	.2	8.2	Ci.-S.	Cu. W	------	d° p.
11	57.06	24.6	26.2	22.7	94.3	N, NNE	.3	10	Ci.-S.	Cu. WNW	103.7	● a. p.
12	57.06	24.7	26.5	23	91.2	N, ESE	0	10	Ci.-S.	Cu. W	53.6	● a. p.
13	56.36	25.9	29.2	22.9	86.8	SE quad.	1.3	7.7	A.-Cu. SW	Cu. SW	11.2	● ↙ ⊤
14	56.71	27.8	30.2	24.1	76.5	S	1.7	8.3	Ci.-S.	Cu. WSW, SW	------	d° a. p.
15	57.62	27.1	29.9	23.5	82.2	SSW	1.7	6.8	Ci.-S., Ci.	Cu. SW	2	d p.
16	57.38	25.7	30	22.8	86.2	SE quad.	.3	8.5	Ci.-S.	Cu. SSW, W	8.6	Ω a. ● ⊤ ↯ p.
17	56.42	26	28.1	23.9	85.5	S, SSW	.5	10	Ci.-S.	Cu. W, WSW	2.5	●° a. d° p.
18	55.98	26.9	29.5	23.7	78.8	S	1.5	9	Ci.-S.	Cu. WSW	14	● p.
19	55.54	27.6	30	23.2	76.2	S, SSW	1.8	8.7	A.-Cu. Variable	Cu. WSW	------	
20	55.34	28.4	30	25	75.9	SSW, S	2.3	9.8	Ci.-S.	Cu. SW	3.8	↙ ● p.
21	55.43	27.8	29.5	24.5	76.2	SSW	3.5	8.7	Ci.-S., A.-Cu.	Cu. SSW	8.4	↙ ● a. ⌓
22	55.30	27.9	29.6	26.2	72.7	S, SSW	4	7.3	Ci.-S.	Cu. SW	.2	↙° d a.
23	55.79	27.8	29.5	26.8	73.3	S, SSW	3.8	7.8	Ci.-S.	Cu. SW	------	↙ d° a. p. ⌓
24	56.52	27.8	30	26.6	75.5	S, SSW	2.3	6.7	Ci.-S.	Cu. SSW, WSW	------	⌓
25	57.65	27.8	30.6	25.5	76.2	SSE, SE	1	5.3	Variable	Cu SSW, SW	------	
26	58.06	27.2	29.8	23.7	79.5	SSE	1.3	9	Ci.-S. E	Cu.	------	○
27	57.62	27.5	30	24.3	78.7	SSE, SSW	1.3	8.5	Ci. ENE	Cu. SSW, WSW	------	
28	57.34	27.8	30.5	25.1	74.7	SSE	1.5	7.2	Ci.-S., Ci. E	Cu SW	------	⌣
29	57.45	27.2	31.2	22.3	77.5	S	.8	4	Ci. ENE	Cu. WSW	------	
30	57.32	27.6	30.7	24.7	78.5	SSE	1.2	3.3	Ci.-S.	Cu. SW, WSW	.2	d p.
31	56.71	26.8	31	23	80	S	.7	2.5	A.-Cu., Ci.	Cu. W	------	
Mean	757	26.7	29.6	23.8	80.7	------------	1.3	7.7	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	311	

TACLOBAN.

[ϕ=11° 15′ N ; λ=125° 00′ E ; barometer above sea, 6 meters ; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temp. Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind, prevailing direction.	Force (mean).	Cloud amount (mean).	Upper.	Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	758.61	27.9	33	25	78.2	Variable	0.8	7.8	Variable	S.-Cu.	------	⊕ ⊤° d
2	59.22	26.8	33.1	24.4	84	Variable	.6	7.6	Ci.	Fr.-N. NNW	0.8	d ⊤° ↯
3	58.63	26.9	33.6	24.2	81.3	Variable	1.4	7	Variable	Variable	.2	⊕ ⊤ ↯ ●°
4	57.86	26.2	30.4	24	86.5	NW quad.	1	9.8	A.-Cu. ENE	Fr.-N.	15.7	● a. p ⊕²
5	57.50	24.6	27.6	23.5	84	W quad.	1.2	10	------------	N.	27.2	● a. d p.
6	56.82	26.7	31.5	23	74.8	W	1.2	9.6	Ci.-S.	Fr.-N. W	1	d a. ○ ⊕
7	57.08	27.2	33	24.1	73.8	SW quad.	1	8.8	A.-Cu. SW	Fr.-N.	------	⊕ ↯° p.
8	57	27.9	32.6	24.3	75.4	Variable	.8	7.4	A.-Cu.	S.-Cu. SSE	------	↯ p.
9	57.01	28	34.5	25.7	73.8	NW quad.	1.4	8.2	Ci.-S.	S.-Cu.	------	↙° ○ ⊕ ↯
10	57.14	27.4	30.9	24.1	77.8	NW	2	9.4	A.-Cu. NNW	S.-Cu.	1.3	●° a. p.
11	27.16	25.3	28.5	23.5	89.7	W	1	10	------------	N.	34.8	● a. d° p.
12	56.96	25.5	30.3	23.4	84.2	WNW	1	9.2	A.-S.	N.	.8	d a. p.
13	56.37	26.5	31.6	23.4	83	Variable	.6	8.4	Ci. WSW	Fr.-Cu. SW	4.1	d a. ● p.
14	56.60	27.6	34.5	24.5	78.2	SSW	.6	6.4	Ci.	Variable	------	↯ p.
15	57.48	27.9	34.1	24.5	72.2	Variable	1.2	5.6	Ci.	Fr.-Cu. W	------	d° p.
16	57.23	26.9	31.5	23.8	78.4	NW by W	.8	9.4	A.-S.	S.-Cu.	------	⊕ d° p.
17	56.35	25.8	28.4	24.4	88	W quad.	.8	10	A.-S.	N.	13.2	● a.
18	55.87	26.5	31.2	23.7	79.2	W	1	9.8	A.-S.	S.-Cu. WSW	4.3	d a. ● p.
19	55.39	27.6	32	24.3	70.5	SW, WSW	.6	9.8	A.-S.	S.-Cu.	------	⊕
20	55.19	28.5	33.5	25.8	65	WSW	1.4	9.4	A.-Cu. NNW	S.-Cu. WSW	.2	⊕ p° p.
21	55.16	28	33	25.5	67	SW	1	8.6	Ci.	Fr.-N. SW	1.5	d a.
22	54.84	28.4	34	26.5	63.2	SW by W	2.4	8.4	A.-Cu. WNW	Fr.-N. WSW	------	↙
23	55.36	27.9	33	26.4	67	SW, SSW	.8	7.4	A.-Cu.	Fr.-N. WSW	------	d° a. p.
24	56.19	28.8	34	26.9	61.7	SW, S	1	6.4	A.-S.	Fr.-Cu.	------	
25	57.41	28.3	32.5	24.7	66.7	SW	1	4.2	Ci. E	Fr.-Cu. SW by W	------	
26	58.12	28.1	34	24.5	73.6	Variable	.6	10	Ci.-S.	Fr.-N.	------	○ ⊕
27	57.68	28.2	34.5	24.5	70	W	1	9.6	Ci.-S.	S.-Cu. WSW, SW	------	⊕
28	57.06	28.4	33.8	24.9	68.8	W	1.2	9.6	Ci.-S.	S.-Cu. W	------	
29	57.36	28.7	35.7	25.3	69.2	W quad.	1	7.6	Ci.-S. ENE	Variable	------	
30	57.26	28.7	35	24.8	70	SW by W	.6	2	Ci. ENE	S.-Cu. W by N	------	Ω a.
31	56.58	28.5	34	25	71	WNW	1.4	2.8	Ci. ENE	Cu.	------	Ω a.
Mean	756.92	27.4	32.5	24.6	75	------------	1	8.1	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	105.1	

METEOROLOGICAL DATA, ETC.—Continued.

CAPIZ.

[ϕ=11° 35′ N; λ=122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	758.20	26.8	31.2	21.4	83.3	Variable	0.3	6	Ci.-S.	Cu.-N.	------	⊤ ⌒° ϟ°
2	58.86	25.9	31.4	20.5	86.2	Variable	.5	7	Ci.	Cu.-N.	6.4	Ω° ⊤° ●
3	58.72	26.1	31	20.1	87.3	SW, NNE	.2	8.3	Ci.	Cu.-N.	11.7	● ϟ°
4	58.10	25.6	31	20.6	88.2	WSW	.2	9.5	Ci.-S.	N.	------	d° p.
5	58.52	23.6	25.9	20	92.8	Variable	.3	10	------------	N.	8.4	d a. p.
6	57.33	25	30	19	87.8	W	1.7	10	Ci.-S.	N.	10.7	d a. p. ↙
7	56.58	26.4	30.7	21.2	82.8	SW quad.	.8	9.7	Ci.-S.	Cu.-N.	------	
8	56.56	25.7	32.7	21.2	89.8	SW quad.	1.2	9.3	Ci.-S.	N.	28.2	d° ●² ⊤°
9	56.85	26.1	31	21.2	85.8	Variable	.8	9	Ci.-S.	Cu.-N.	14	● a. p.
10	57.46	27	31.7	21.2	79.8	NW	1	9.8	Ci.-S.	N.	------	
11	57.37	26.2	30	21.1	83.1	NW	1	9	Ci.-S.	Cu.-N.	------	d° ϟ° p.
12	57.09	25.4	29.7	20.9	89.8	Variable	.3	9	Ci.-S.	N.	------	d° p.
13	56.19	25.4	31.7	21	90.7	SW	.7	8	A.-Cu., Ci.	S.-Cu., N.	40.1	Ω° ≡ ↙ ●²
14	56.22	26.9	32.9	21.3	86.5	SW quad.	.7	8.3	Ci.	Cu.-N.	3	d a. p.
15	57.12	26.6	31.8	21.9	86.2	SSW	.7	6	Ci.-S.	Cu.-N.	1.8	d° ⊤
16	57.28	26.2	30.5	21.5	85.8	SW	.3	8	Ci.-S.	N.	6.6	● p.
17	56.52	25.7	28.8	21.9	89	SW	.7	10	Ci.-S.	N.	------	d° p.
18	56.16	25.7	31	20.9	89	SW	.3	10	Ci.-S.	N.	5.8	d a. p.
19	55.45	26.6	32.7	20.3	82.6	SW	1.2	8.8	Ci.-S.	Cu.-N.	4.3	d° ϟ ●
20	54.68	27.4	32.7	21.9	82	SW	1.3	8.5	A.-Cu.	Cu.-N.	------	d°
21	54.03	27.6	32	22.3	79.3	WSW	1.2	5.7	Ci.-S.	Cu.-N.	------	Ω d°
22	53.76	28.1	32.9	22.4	78.5	SW	1.5	8.2	Ci.-S.	Cu.-N.	------	d° ⌣ ⦶
23	54.93	27	31.2	21.9	83.7	SW	1.3	8.2	Ci.-S.	N.	3.8	d° a. p. ⌒
24	55.82	27.8	33.1	22	79.5	SW	1	6	Ci.-S.	Cu.-N.	------	
25	57.12	28.1	33.4	22.9	80	SW	.7	6.3	Ci.	Variable	11.4	Ω° a. ● p.
26	57.71	27.8	31.3	22.5	82.2	SW	.7	9	Ci.-S.	Cu.-N.	------	d° p.
27	57.35	27.4	32.9	21	83.6	SSW	.3	8.5	Ci.-S.	Cu.-N.	------	d° a. ⦶²
28	57.07	27	30.5	22	84.8	SW quad.	.5	8.8	Ci.-S.	N.	------	
29	56.97	27.5	32.6	22.3	83.8	Variable	1	6.8	Ci.	Variable	1.5	p. p.
30	57.22	27.3	32.2	22.2	84	S	.7	6.7	Ci.	Variable	8.6	●² p.
31	56.94	27.8	32.9	21.8	81.8	SW	.7	5.2	Ci.	Cu.-N.	------	
Mean	756.78	26.6	31.4	21.4	84.8	------------	.8	8.2	------------	------------	------	
Total	--------	------	------	------	------	------------	------	------	------------	------------	166.3	

CALBAYOG.

[ϕ=12° 04′ N; λ=124° 36′ E; barometer above sea, 4.1 meters; gravity correction not applied, —1.80 mm.]

	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	758.84	27.3	32.9	22.4	84.3	N	1.	7.2	Ci.	S.-Cu. SW	------	d° ϟ p.
2	59.49	26.8	32.8	23.5	88.2	N, W	1	7	Ci.-S., Ci.	S.-Cu. W	4.3	●° ⊤ ϟ p.
3	58.86	26.3	34	21.4	87.2	N	1	6.2	A.-Cu.	S.-Cu.	------	d° ϟ p.
4	58.18	25.6	29.5	22.6	88	N, W	1	8.5	Ci.-S.	Cu.-N. W	11.9	● a. p. ϟ
5	57.43	24.7	26.9	22.6	87.7	W quad.	2.3	9.7	Ci.-S.	Cu.-N. W	26.2	↙° ● a. p. ϟ
6	56.93	26.8	30.2	22	90	W quad.	2.8	8.2	Ci.-S.	Cu.-N. W	3.6	↙° p. a. ϟ p.
7	57.38	27	31.5	25	85.2	W quad.	2.2	7.8	A.-Cu., Ci.-S.	S.-Cu.	1	↙ ●° ϟ p.
8	57.28	28.3	33.6	23.4	76	WSW	1.2	6.5	A.-Cu.	S.-Cu. SW	12.2	ϟ ● p.
9	57.16	26.8	32.2	22	85	N, W	1	6.8	A.-Cu.	S.-Cu. SW	------	ϟ p.
10	57.60	26.7	32.8	24	85.2	N, WNW	1	7.8	A.-Cu., Ci.-S.	S.-Cu. SW	.5	●° ϟ p.
11	57.37	25.1	27	23	91.8	WNW	1	7.7	Ci.-S.	Cu.-N. SW	4.1	●° a. p.
12	57.13	25.1	27.6	22	89.2	WNW	1	8.5	Ci.-S.	Cu.-N. W	12.7	● a. d p.
13	56.53	27.1	32.8	23.2	83.2	WSW	1.2	6.8	A.-Cu.	S.-Cu. W	5.3	● a. d p.
14	56.84	27.8	32.2	24.5	80.5	WSW	2	6.8	Ci.	S.-Cu. SW	.8	d a. ϟ p.
15	57.77	28.3	33	26.2	79	WSW	2.3	6	A.-Cu.	S.-Cu. SW	------	d ⌒ p.
16	57.50	27.4	30.7	25.2	84.3	WSW, W	2.3	8.7	Ci.-S.	Cu.-N. SW	5.1	↙° d a. p.
17	56.42	24.9	27.1	23	92.8	W quad.	1.7	9.5	Ci.-S.	Cu.-N. SW	90.4	● a. d p.
18	56.19	26.4	30.9	22	86.2	W quad.	2.2	8.5	Ci.-S.	Cu.-N. SW	41.4	↙° ●
19	55.84	27.2	29.5	23.8	81.2	WSW	2.3	8.2	A.-Cu.	S.-Cu. SW	3	↙° ●
20	55.24	27.7	30.1	25	80.5	WSW	2.5	8.3	A.-Cu.	S.-Cu. SW	------	↙°
21	54.98	27.6	29	25.6	77.8	SW	3	8.3	A.-Cu.	S.-Cu.	.2	↙ p.
22	54.59	28.2	31	25.5	75.2	SW	3	7.8	A.-Cu.	S.-Cu. SW	------	↙
23	55.19	27.4	30	25	78.8	SW	3.3	8	A.-Cu.	S.-Cu. SW	2.5	↙° p. a.
24	56.24	28.3	32.5	25.4	74.2	SW	2.5	6.8	Ci.	S.-Cu. SW	------	↙°
25	57.53	28.4	33.2	24.5	76.7	SW, W	2.3	5.3	Ci.	S.-Cu. SW	------	↙°
26	58.29	28.3	32	26	78.7	W	1.2	8.5	Ci. N	S.-Cu. SW	------	
27	57.82	27.4	31.6	21.5	81	W	1.2	8	Ci.-S.	S.-Cu. SW	20.8	● a.
28	57.53	28.2	31.1	25.5	78.7	W	1.3	8.3	A.-Cu.	S.-Cu. W	------	
29	57.56	29	33	24.5	78	W	1	6.8	Ci. N, NE	S.-Cu. SW, W	------	○°
30	57.39	29	33.8	25.5	74.2	W	1	5	Ci.	S.-Cu. W	------	ϟ p.
31	56.99	28.9	32.8	26	77.5	WSW	1	6.3	A.-Cu.	S.-Cu. SW	------	
Mean	757.10	27.2	31.2	23.9	82.5	------------	1.7	7.5	------------	------------	------	
Total	--------	------	------	------	------	------------	------	------	------------	------------	246	

METEOROLOGICAL DATA, ETC.—Continued.

LEGASPI.

[ϕ=13° 09′ N; λ=123° 45′ E; barometer above sea, 4.3 meters; gravity correction not applied, —1.77 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	758.60	27.5	34.5	23.2	80.2	WSW	0.5	5	Ci. NE	Cu. W	1.8	● ☇ p.
2	59.20	27.3	33.1	24.3	83.7	WSW, W	.3	5.7	A.-Cu. S, SE	Cu. SW	1.3	d° p.
3	58.82	27.1	31.9	23	84	S	.2	4.2	Ci. NE	Cu. SE	.2	d ☇ p. ◯²
4	57.82	26.6	31.7	23.5	85.2	SW	.3	7.7	Ci.-S.	Cu. SE, SW	------	◯
5	57.32	23.8	25.5	23.1	94	W	1	9.5	------------------	Fr.-N. NW	28.2	● a. p.
6	56.19	25.1	28.3	22.9	87.2	W	1.2	8.3	Ci.-S.	Fr.-N. WSW	10.9	●° a. p.
7	56.71	25.9	28.6	23.6	85.6	SW	.7	8	A.-Cu. W	Variable	3.8	d a. p.
8	56.95	26.9	33	23.8	82.7	WSW	.7	6.8	A.-Cu. SW	Cu. SW	.8	p. ☇ ◯ p.
9	57.24	26.4	32.7	23	87.7	W	.5	6.5	Ci. N	Cu. W	11.9	● ⊤ p.
10	57.75	25.6	33	22.9	90.5	WSW	1	7.2	Ci. E	N.	93	●² ⊤ ☇ p.
11	57.50	25.6	28.6	23.5	87	WSW, W	1	10	Ci.-S.	N.	4.3	●° a.
12	56.62	26	31.5	23.9	86.5	W, WSW	1	7.8	Ci.-S. SE	Cu. SW	22.1	● p. ◯°
13	56.28	25.5	30.9	23.4	90.3	WSW	.7	7.8	Ci.-S.	Cu.-N. SW	36.6	d a. ● p.
14	56.42	26.8	31	23.3	85	SSW, WSW	1	7.8	Ci.-S. E	Variable	3.8	●° a. ☇ p. ◯
15	57.20	27.2	31.7	24.5	85.3	SW	1.3	3.5	Ci. ENE	Cu. WSW	6.8	● a.
16	57.12	26.6	31.1	24.5	90.3	WSW	.8	6.5	Ci.-S.	Cu.-N. W	3.6	d a. p. ◯°
17	56.02	26.1	31.5	24.5	88.5	WSW	1	9.3	Ci.-S.	N., Fr.-N. W	8.1	d a. ● p.
18	55.69	26.1	30.5	24	89	W	.8	9.5	Ci.-S.	Fr.-N. WSW	9.9	● a. d p.
19	55.13	25.9	29.3	24.1	88.6	WSW	.8	9.8	Ci.-S.	Cu.-N. WSW	6.1	d a. p. p.
20	54.34	26.5	29.7	24	88.7	WSW	1.2	9.5	Ci.-S.	Cu.-N. WSW	11.2	d a. ● p.
21	53.88	26.5	30.9	24.5	90.5	SW	1.7	8.2	------------------	Fr.-N. SW	10.4	● a. p.
22	53.76	27	31	24.5	86.8	SW	1.7	8.8	A.-Cu.	Cu.-N. SW	7.4	d a. p. ⌒°
23	54.25	26.8	30.7	24.9	85.3	SW	1.8	8.5	------------------	Cu.-N. SW	9.9	d a. p.
24	55.34	27.2	31.5	24.7	84.2	SW, WSW	1.3	7.7	A.-Cu. W	Cu.-N. SW	2.3	d a. p.
25	56.96	27.4	31.2	24.9	85.2	WSW	1.3	4.8	Ci.	Cu. WSW, W	.8	d° a. p. p.
26	57.67	27.2	32.1	24.9	86.7	SW, WSW	.8	9.3	Ci.-S.	Cu.-N. W	.8	p. a. ☇° p. ◯
27	57.05	27.3	31.4	24.4	84.5	W, SW	1.3	8.7	Ci.-S.	Cu. WSW	------	◯²
28	56.99	27.3	31.4	25.5	85.3	SW, WSW	1.3	9.5	Ci.-S.	Cu. W	3	● a.
29	56.99	28	32.3	24.6	78.8	WSW	1.5	7.7	A.-Cu.	Cu. WSW	------	d° p.
30	56.95	28	33	25	80.1	SW, WSW	1.5	3.7	A.-Cu., Ci.	Cu. SW	------	d° p.
31	56.40	28.2	33	24.8	79.5	WSW	1.5	1.5	Ci.	Cu. WSW	------	p° a.
Mean	756.62	26.6	31.2	24.1	86	------------	1	7.4	------------------	------------------	------	
Total	------	------	------	------	------	------------	------	------	------------------	------------------	299	

ATIMONAN.

[ϕ = 14° 00′ N; λ = 121° 55′ E; barometer above sea, 7.8 meters; gravity correction not applied, —1.74 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	757.90	28.4	33.9	23.8	82.3	SW	1	5	Ci.-Cu. ENE	Fr.-Cu. W	------	⏀² Ω̲° ⊕ ◯ ☇
2	58.66	27.5	34.8	23.2	82.7	SW	1.8	7.3	Ci. E	Cu. W	31.7	Ω̲° ☈°
3	58.48	25.3	30.8	22.7	94.3	Variable	.8	8.5	Ci.	Variable	33.3	●° ⌒° ☇°
4	57.67	26.2	31.4	22.7	89.3	SW	1	8	Ci.-S.	Cu. S	17.5	⏀° ●°
5	57.16	24.9	27.5	22.4	90.5	SW	.8	9.7	Ci.-S.	Fr.-N. W	7.6	d a. p.
6	55.88	24.7	27.9	21.6	89.5	SW, W	1.2	9.8	Ci.-S.	Variable	12.2	↙° ●° a. ☇° p.
7	54.93	27.7	33.5	23.4	83	SW, WSW	1.3	9.2	Ci.	S.-Cu. SSW	------	Ω̲° ◯°
8	55.74	26.2	28.3	25	89	S	.8	10	Ci.-S.	S.-Cu. SW	2.5	d a. p.
9	56.29	27.7	31.8	24.4	83.8	Variable	.7	9.5	Ci.-S.	S.-Cu. SSW	------	d° ☇
10	57.26	26.7	31.4	23.2	86.7	WSW	.7	8.7	Ci.-S.	Variable	24.4	d Ω̲ ☈°
11	57.15	26	30.6	22.1	88.5	WSW	.8	10	Ci.-S.	S.-Cu. N	------	d° a. ↙°
12	56.14	26.3	32	23.3	88.3	W quad.	1.3	8	Ci.	S.-Cu. SW	------	Ω̲ ⊕ d°
13	55.30	27.6	33.7	23	84.3	SW quad.	1.5	6.3	Ci.	Cu. SW	3.8	Ω̲ ⌒ d
14	55.39	26.8	32.8	22.1	89.3	SSW	1	9.2	Ci.-S. E	Fr.-N. SW	30.5	● a. p. ☇
15	56.27	28	32.8	23.6	82.6	SW quad.	1.2	5.5	Ci.	Cu. W	------	⌒ d° ☇ ⏀
16	56.61	26.4	31.5	23.5	88.3	WSW	1	7.7	Ci.-S. SSE	Cu. W	------	☇ Ω̲ d°
17	55.60	26.4	30.9	22	88.2	W	1	9.7	Ci.-S.	S.-Cu. SW, W	------	☇ Ω̲ d°
18	54.74	27.1	32.2	23.3	86.2	WSW	1	10	Ci.-S.	S.-Cu. SSW	------	d° ☇ p.
19	53.99	26.3	28.8	24.2	87.2	SSW	1.2	9.7	Ci.-S.	S.-Cu. SW	5.8	d a. p. ⏀
20	53.04	26.2	31.8	23.4	87.2	SW	1	9.7	A.-Cu. SW	S.-Cu. SW	22.9	●° ⌒ ⏀ ↙°
21	52.34	26.4	29.9	23.4	88.5	WSW, W	1.7	9.2	Ci.	S.-Cu. SW	6.4	●° ↙°
22	52.11	26.2	29.8	24.5	90.5	WSW	2.5	9.8	Ci.-S.	S.-Cu. SW	33.5	↙ ●° a. p. ⏀
23	53.27	26	29.2	23.8	89.8	WSW	3.2	10	Ci.-S.	S.-Cu. W	4.3	↙° d
24	54.52	27.4	31	24.6	86	WSW	2.7	9.3	Ci.	Cu. SW	3.6	↙ ●° ⏀ ⍦
25	56.21	28	32.7	23.5	80.8	SW, WSW	2.3	5.7	Ci.	Cu. SW, W	------	↙° ⏀ ⍦ Ω̲
26	56.57	28.6	32.7	26	78.7	SW, W	2	9.5	Ci.-S.	S.-Cu. SW	------	⍦ ⏀ Ω̲ d°
27	56.39	27.8	31	25.5	82	WSW, SW	2.2	10	Ci.-S.	S.-Cu. W	------	☇ d. ⏀ ⍦
28	56.35	27	31.4	23.6	81.8	WSW	1.8	10	Variable	S.-Cu. SW, W	3.8	⏀ ↙ ●°
29	56.39	27.4	31	23.6	82.5	SW	1.5	9.7	Ci.-S.	S.-Cu. WSW	------	↙ d°
30	55.94	28.2	33.3	24.7	80	WSW	1.7	7.5	Ci.	S.-Cu. SW	------	Ω̲ d° ⌒²
31	55.72	27.8	33	24.1	82.8	WSW	1.8	8	Ci.	Variable	------	⏀ ↙° d ☇
Mean	755.81	26.9	31.4	23.6	86	------------	1.4	8.7	------------------	------------------	------	
Total	------	------	------	------	------	------------	------	------	------------------	------------------	243.8	

METEOROLOGICAL DATA, ETC.—Continued.

OLONGAPO.

[ϕ=14° 49′ N; λ=120° 15′ E; barometer above sea, 3.5 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force. (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Prevailing form and its direction. Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	758.08	25.4	27.4	22.8	93	Variable	0	10	Ci.-S. N	Cu.-N. SW	7.1	●
2	58.64	26.3	28	23.3	91.6	SW	.3	10	Ci.-S.	Cu.-N. SW	.8	≡² ●° ○
3	58.05	25.5	27.5	23.6	93.5	SW	.2	10	Ci.-S.	Cu.-N. S	22.1	≡ ● ⊤ ↯
4	57.48	25.7	27.4	23.5	90.8	SW	.5	10	Ci.-S.	Cu.-N. W	-------	≡² d ○
5	57.70	24.1	25.9	22.3	91.3	NNW	0	10	Ci.-S.	Cu.-N. W, NW	11.7	≡ ●
6	56.28	24	25.3	22.2	95	SW, NW	0	10	Ci.-S.	Cu.-N. NW	11	≡ ●
7	54.35	24.6	26.9	22	93	S	.3	10	Ci.-S.	Cu.-N. S	37.6	≡ ● a. p.
8	54.94	25	26	23.3	90.1	S	.3	10	Ci.-S.	Cu.-N. S	53.1	● a. p.
9	56.32	24.5	25.8	23.1	93.5	S	.5	10	Ci.-S.	Cu.-N. S	20.6	↙ ●
10	57.66	24.1	27.5	22.5	95.7	SW	.2	10	Ci.-S.	Cu.-N. W	39.6	● ≡
11	57.59	24.6	26.5	22	93.3	W	0	10	Ci.-S.	Cu.-N. SW, W	10.4	≡ ●
12	56.07	25.2	27.8	22.3	93.8	SSW	.2	8.5	A.-Cu.	Cu.-N. NW	9.9	≡ ● ⊤
13	54.92	25.2	27.6	23.3	93.3	SW, S	.2	10	Ci.-S.	Cu.-N.	27.1	● a. d p.
14	55.10	25.4	27.5	23.5	92.9	SSW, SW	.3	10	A.-Cu.	Cu.-N. SW	19.8	○ ↙ ●°
15	56.41	25.1	27.5	23.2	95.3	SW, NNW	.2	10	Ci.-S.	Cu.-N. SW	20.8	○ ↙ ●°
16	56.88	25.1	26.5	23.4	93.7	NNW	.2	10	Ci.-S.	Cu.-N. SW	39.6	● a. d p.
17	55.74	25.2	27.6	22.6	91.2	WNW	0	10	Ci.-S.	Cu.-N. N	6.1	≡² ●
18	54.44	25.5	27.5	23	91.5	S	.8	10	Ci.-S.	Cu.-N. SW	34.7	● ⊤
19	52.98	24.6	26.1	21.7	93.8	SSW	1	10	Ci.-S.	N. SW	37.1	↙ ● a. p.
20	51.61	25.6	27.1	22.5	92.7	SSW	1.8	9.8	Ci.-S.	Cu.-N. SW	60.8	↙ ● ⌒
21	50.96	26.6	27.6	23	88.3	WSW	3.7	10	-------	Cu.-N. W	19.2	↙ ● a. p.
22	51.83	26.6	27.5	22.1	84.7	WSW	1.5	10	Ci.-S.	Cu.-N. W	27.2	↙ ● a. p. ⌒ ⩛
23	53.10	25.8	26.9	23.2	90.2	SW	.8	10	Ci.-S.	Cu.-N. W	51.9	● a. p. ⊤
24	54.30	25.7	26.5	23.5	91.8	SW	1	10	Ci.-S.	N. W	53.3	● a. p.
25	56.12	25.9	26.9	24	89.7	SSW	1.3	10	Ci.-S.	N. SW	31.4	↙ ● a. p.
26	57.13	26	27.2	23.1	91.3	SSW	1.2	10	Ci.-S.	N. SW	87.1	↙ ● a. p. ⊤
27	56.86	25.8	26.7	23.8	91.5	SSW, SW	1.8	10	Ci.-S.	N. SW	65	↙ ● a. p.
28	56.57	24.1	25.2	22.2	96.8	NW	.5	10	-------	N. SW	158.2	↙ ● a. p.
29	56.03	25	26.7	22.6	94.3	SSW	1	10	-------	N. SW	203.5	↙ ● a. p.
30	55.77	24.4	26.5	21.6	94	SSW	.7	10	Ci.-S.	N. SW	121.9	● ↙ ⊤
31	56.07	23.4	24.2	21.6	96.7	Calm	0	10	Ci.-S.	N. SW	174.9	●² ⌈↯
Mean	755.68	25.2	26.8	22.8	92.5	-------	.7	9.9	-------	-------	-------	
Total	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	1,463.5	

SAN ISIDRO.

[ϕ=15° 22′ N; λ=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temp. Mean.	Temp. Maximum.	Temp. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.	Clouds. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	758.22	26	32	22.7	87.8	S quad.	0.2	6.8	Ci. NW	Cu. S, SSW	26.9	●² p. ○²
2	58.86	27	33.2	22.6	83.8	S	.2	6.8	Ci. NW, N	Variable	-------	⩛ ≡ ↯
3	58.21	25.7	32	24.2	89.8	SSW, S	0	6.5	Ci.-S.	Cu. S, SW	7.1	≡² ⌈↯
4	57.52	26.7	32.9	24	85.3	SSE	.2	5	Ci., Ci.-S.	Cu. S	4.1	● p.
5	57.67	25.7	29.6	22.4	88.5	SSE, SSW	.2	8.7	Ci.-S.	N. W	22.4	● p.
6	56.66	23.7	24.6	22.4	95.7	WSW	0	10	Ci.-S.	N. W	18	● a. p.
7	54.82	25.9	29.4	22.6	88.2	SSE	.5	9.5	Ci.-S. NE	Cu. S	-------	d° a. p.
8	55.40	26	29	23.8	86.2	SSE	.5	9.5	Ci.-S.	N. S	2.5	≡ d p.
9	56.88	24.9	27.8	22.5	90.4	S	.2	10	Ci.-S.	N. S, SW	10.4	● p.
10	57.94	25	30.5	22.5	88.2	SSE, WNW	.2	7.7	Ci.-S.	S.-Cu.	6.4	⩍ ≡ ●
11	57.85	25.2	31.1	22.6	88.4	W	.2	7.8	A.-Cu. NE	Variable	1.3	⩍² ≡ d
12	56.32	26.4	33	23.2	85.5	W	0	7.3	Ci.	Cu. W	5.8	≡ ⌈↯
13	55.16	26.5	32	23.5	85.5	S	.2	7.7	Ci. N, NW	Cu. S	1.3	⩍ ≡ d
14	55.44	25.4	30.2	23.8	91	S	.3	8	Ci.	Cu. S	27.9	≡ ●² ⊤°
15	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	
16	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	
17	55.64	25.5	28.8	23.5	91.7	SSW	0	10	Ci.-S.	N. SW	4.1	⊤° ●°
18	54.58	26.9	31.5	23.5	83.3	Variable	.5	8.7	Ci.-S.	Cu. S	-------	≡
19	53.59	24.5	27.1	22.6	89.8	E, S	.5	8.5	Ci.-S.	N. S	11.7	⩍ ≡ ●
20	52.07	24.8	27.2	23.5	92.2	SSE, SSW	1.3	8.8	Ci.-S. NW	N. S, SW	8.4	● p.
21	51.01	26	29.5	24.1	87.8	SSW	1.3	9.7	Ci.-S.	N. WSW	3.3	●°
22	51.23	25.9	30.4	23.5	85.6	SW, WSW	1.3	9.8	Ci.-S.	Cu. W	11.2	○° ●
23	52.93	25.8	31.9	23	90	SSW, SW	1	8.8	Ci.-S.	N.-cf. W	14.5	● a. p.
24	54.20	26.5	31.5	24.2	85.8	SW quad.	1.5	9.3	Ci.-S.	N. WSW, W	8.9	≡ p.
25	56.12	26.5	31.5	24.1	87.9	SW	1	8.8	Ci.-S.	S.-Cu. SW	3.3	≡ p.
26	56.98	25.8	31.2	24.5	91.7	SW quad.	.8	9.5	Ci.-S.	N. W	10.9	≡ ● ⊤°
27	56.89	25.9	30	24	88.2	SW quad.	.7	10	Ci.-S. N	N.-cf. W	8.4	●² p.
28	57.08	24.4	27	23.5	94.7	SSW	.2	9.8	Ci.-S.	N. W	25.4	d a. p.
29	56.41	25	27.6	23.5	94.3	SW	.3	9.8	Ci.-S.	N. SW	21.8	≡ ●² p.
30	56.26	24	25.4	22.6	96.2	S	0	9.8	Ci.-S.	N. SW	69.9	● a. p.
31	56.20	25	27.2	23.5	91.3	S	.2	9.3	Ci.-S.	Variable	7.1	d a. p. ⊤°
Mean	755.80	25.6	29.8	23.3	89.2	-------	.5	8.7	-------	-------	-------	
Total	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	343	

METEOROLOGICAL DATA, ETC.—Continued.

DAGUPAN.

[ϕ=16° 03′ N; λ=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	757.83	27	32.7	23.6	85.8	SE	1.2	8.7	Ci.	S-Cu. SE by S, W by S	0.5	p p.
2	58.42	27.6	33.5	23.7	85	S	1	9.5	Variable	S.-Cu. SE	20.3	↙ ●^{2} ⚡ p.
3	57.70	28.4	34.6	24.6	83.8	E, SW	1	5.8	Ci.	Cu. SE, SSE	.5	⚡ ≡ ⊤ p.
4	57.06	28.1	34.3	24.2	80.7	S, SE	1.2	5.3	Ci.	Cu. SE	------	⚡ d ⊤ ⌒
5	57.25	26.8	31.6	23.7	83.8	Variable	.7	8.3	Ci.-S. E	S.-Cu. SE	8.1	⊤ ● p.
6	56.27	25.1	26.6	23	94	SE	.3	10	------	N. NE, WNW	7.6	●° a. p.
7	54.03	26.5	32.7	22.8	86.8	SE, E	1.5	9.5	Ci. NNE	N. SSE	8.4	⊤ ●
8	54.44	25.2	27.5	23.5	91.5	SE, ESE	2.8	9.3	A.-S.	N. ESE, SE by S	13.7	● a. p.
9	56.09	24.9	26.4	23.3	92.8	SE quad.	1.8	10	A.-S.	N. SE by S, S	10.7	●° a. p.
10	57.42	25.4	29.5	22.9	91.5	S, SE	1.2	9.5	A.-Cu.	S.-Cu. SW	6.1	● ⊤
11	57.34	26	31.8	22.8	88.2	SE, S	1.2	8.5	A.-Cu. N, NW	S.-Cu. Variable	4.1	≡ ⛈ p.
12	56.04	26.8	32.4	23	83.5	SW, NW	.8	8.5	Ci.-S. WSW	S.-Cu. SSE	7.4	● p.
13	54.90	27	33.5	22.6	85.7	S	.8	7.7	Variable	Cu.-N. S, SE	14.7	⛈ p.
14	54.93	25.8	31.1	23.4	92.3	S, SE	.5	8.5	Ci.-S.	Variable	17.5	≡ ● ⊤
15	56.18	26.7	31.7	23.5	89.2	S	1	8.5	Ci.-S.	Cu.-N. SW	.5	≡ ●° ⚡
16	56.58	26.9	31.8	24.1	89.9	WSW	.8	8.8	Ci. SE	Cu.-N. WSW	44.2	Ω^2 ○ ↙ ● ⚡
17	55.37	26.4	29.6	24.7	93	Variable	.7	10	Ci.-S. E	N., Cu.-N. E, N	13.7	● a. p. ⊤° ⚡
18	53.85	27.3	33.3	23.6	86.5	SE	1.5	9.3	A.-Cu. NW by N	Cu. SE	2	Ω ⊤ ↙° p. ⚡
19	52.64	25.9	30.7	23.6	86.3	SE	2.3	7.8	Variable	Cu.-N. SE	4.8	↙ ●° p.
20	50.89	25.4	27.8	23.5	94	E, SE	2.3	9.7	------	N. ESE	35	↙ ●^{2}
21	50.26	25	27.7	23.8	93.7	SE	1.3	9.8	------	N. SW	76.7	● a. p.
22	50.93	25.6	28.8	23.1	88.5	Variable	1.5	10	A.-Cu.	Fr.-N. W	19.8	↙ ●
23	52.60	27.2	31.4	23	83.2	NW quad.	1.2	6.8	A.-Cu. S	Cu.	10.7	● a. ⚡ p.
24	53.94	27	30.6	24	86.2	NW	.7	8.2	A.-Cu.	Variable	12.4	p a. ● p.
25	55.84	26.3	27.6	24	89.5	NW	.7	10	------	N. SW	21.8	● a. p.
26	56.72	25.8	29.2	24	94.1	Variable	.8	9.8	------	N. SW, WSW	32.5	● a. p.
27	56.58	25.8	28.5	24	92	N	.5	10	------	N. W	8.4	● a. p.
28	56.73	25.3	27.9	23.6	87.7	Variable	.8	10	------	N. SW	33.2	● a. p.
29	55.99	25.3	30	23.5	90.2	S	.5	10	A.-Cu.	N.	72.6	● a. p. ⌒
30	55.66	24.8	26.7	22.8	93	SE	1	10	A.-Cu.	N. SSE, SE	14.5	● a. p.
31	55.50	26.2	30.1	23.7	89.7	SE	1.2	9.8	------	S.-Cu. WSW	.5	d a. p. ⌒
Mean	755.35	26.2	30.4	23.5	88.8	------	1.1	9	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	522.9	

VIGAN.

[ϕ=17° 34′ N; λ=120° 23′ E; barometer above sea, 24 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	757.77	27	30.1	22.5	87.2	SSE, S	1.2	6.3	Ci.-S.	Cu.	------	○ ⚡
2	56.66	26.8	30.3	24.5	87.8	S, SSE	.8	8.2	Ci.-S. NW	Cu. S by W	25.9	● ○ ⛈
3	58.11	26.5	30.2	24.5	92	SE quad.	.7	5	Ci.	Cu. SSW	8.1	⛈
4	57.64	26.6	30.2	24.2	90.2	SW quad.	.7	7.7	A.-Cu.	Cu.	7.1	● ⚡
5	57.65	26.2	30.2	24.4	90.7	SSW	.7	6.7	Ci.-S. E	Cu. SSW	3	○ ⛈
6	56.70	24.7	27.9	23	93.5	SE	.7	9.2	A.-Cu. ESE	N. ESE, NNE	22.1	● ⚡
7	54.30	25.2	29.5	23.4	90.2	S quad.	.8	9.3	Ci.	S.-Cu. SE	30.7	● ⚡
8	54.15	26.4	30.2	23.6	87.7	Variable	.5	9.3	A.-Cu. SSE	S.-Cu.	4.3	⛈
9	55.82	26	30.4	24.4	90	SSW, S	.5	9.2	Ci.-S.	N. N	------	d
10	57.52	26.6	30.3	24.3	82.4	S quad.	1.3	9.7	A.-Cu.	S.-Cu. S by E	.5	d
11	57.90	26.2	29.9	24.2	87.3	S quad.	.8	9.2	Ci.-S.	Variable	------	d ⚡
12	56.48	26.1	30.2	23.5	85.8	N, SE	1	6.8	A.-Cu. E by N	Cu. N by W	.2	○ d ⌒ ⚡°
13	55.04	26.4	30.7	24.1	85.8	Variable	1	5.2	Ci.-S.	Cu.	.5	⌒ d
14	55.17	26.8	30.4	24	86.7	Variable	1	3.8	Ci.-S.	Cu. SW	9.4	● p.
15	56.47	26.5	29.9	23.7	85.2	S	.8	6.5	Ci.-S. ENE	Cu. SW	.5	⌒ ●°
16	57.01	26.7	30	24.6	87.8	Variable	.7	8.2	Ci. ENE	Cu.	.5	●° ⚡
17	55.70	26.4	29.2	24.7	92.2	Variable	.7	10	Ci.-S.	N.	9.6	⛈
18	54.28	26.3	30.1	24.2	88.8	S quad.	.8	9.3	A.-Cu. E by N	Cu. S by W	13.7	● ⌒ ○ ⚡
19	52.85	26	30.3	23.8	90.8	S	1.2	6.3	Ci.-S ENE	Cu. N	26.4	⛈
20	50.78	26.7	31.7	24.1	89	Variable	1.2	9.8	A.-Cu. SW by W	S.-Cu.	.8	d a. p.
21	48.43	25.7	29	24	90.7	SE, S	3	10	------	N. S	32	↙ ● a. p.
22	46.50	------	------	------	------	SSW	8.2	10	------	N.	148.8	↙ ●^{2} a. p.
23	52.58	26	29	24	88	Variable	1.7	10	------	Cu.-N.	18.8	↙° ● a. ⊕
24	54.14	25.8	28.1	25	91.2	SSW	1	8	Ci.-S.	N.	15.2	● a. p.
25	55.94	26.1	28	25.1	90.2	S, SSW	1.2	7.7	Ci.	Cu. SSW	6.9	● a. p. ○
26	56.67	26.2	28	25.2	90	S, SSW	1.3	10	A.-Cu.	Cu.-N. SSW	25.4	● a. p.
27	56.47	26.1	28	25.1	90.2	S	1.8	10	Ci.-S., A.-Cu.	N.	106.4	● a. p. ⌒
28	56.28	25.5	27	24.6	88.2	S, SSW	2	9.8	A.-Cu.	N. SSW	25.9	● ↙°
29	55.69	26	28	24.8	86.2	S	2.3	7.7	A.-Cu.	Cu. S	5.1	● ↙°
30	55.01	26.3	28.5	24.4	84.5	SSW	2.5	8.7	A.-Cu.	Cu.-N.	11.4	● ↙°
31	55.31	27.2	28.9	26	81.5	S	2	8.7	A.-Cu. SW	Cu. S	------	↙ d ⚡° p.
Mean	755.26	26.2	29.5	24.3	88.4	------	1.4	8.3	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	559.2	

METEOROLOGICAL DATA, ETC.—Continued.

APARRI.

[ϕ=18° 22′ N; λ=121° 34′ E; barometer above sea, 5 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Prevailing form and its direction. Lower.		
	mm.	*°C.*	*°C.*	*°C.*	*P. ct.*		*0–12.*	*0–10.*			*mm.*	
1	757.73	27	33	23.4	86.4	SW	1.2	6.5	Ci. N	S.-Cu. E	16	☈ p. ○
2	58.60	27	32	23.5	86.3	S	1	5	Ci. N	S.-Cu.	------	⊤ ϟ p. ○
3	57.93	28.1	33	23.5	86	S	1.5	4.3	Ci. E	Variable	------	∞ ϟ p.
4	67.37	28.5	33.5	24.5	84	SW	1.7	2.2	------	Cu. S	.2	☈ p.
5	57.26	27.6	32	24	88.8	Variable	1.2	8.2	Ci.-S. SSE	Cu.-N. N	21.8	☈ p. ○
6	56.52	25.7	30	23.2	92.8	SW, NW	1.2	8.8	Ci.-S. E	N. N	39.1	☈ p.
7	54.63	28.5	32.5	25	83.3	E	1	7	Ci.-S. E	S.-Cu	------	ϟ p.
8	55.23	27.3	31.4	24.2	86.3	S	1.2	10	Ci.-S.	S.-Cu. SE, S	------	⊤° ϟ p.
9	56.32	27.6	33	24	85.3	SE quad.	1.2	10	Ci.-S. SE	S.-Cu.	.5	p ϟ p.
10	57.76	26.7	31.1	23.6	84.7	S	1	10	A.-S. SE	S.-Cu.	1.3	p ϟ p.
11	57.82	26	30.4	23	88.2	SW	1.2	7.3	Ci.-S.	S.-Cu. N	.5	p° p.
12	56.50	26.9	31.5	22.6	86.3	Variable	1.2	6.5	Variable	Cu.-N. N	1.3	p ϟ p.
13	55.18	27.4	31.5	23.2	87.2	SW, E	1	5	Ci. SSW	Cu.-N.	1	
14	55.06	27.6	32.7	24	83.7	Variable	1.3	3.7	Ci. SW	Cu.-N. S, N	2.5	p ϟ p.
15	56.21	27	31	24	86.5	Variable	1.2	6.8	Ci. SE	Cu.-N.	50.5	●² ϟ p.
16	56.75	27.3	28.8	24.5	86.5	NW	1.2	9.7	Ci.-S.	S.-Cu. N	.2	d a. p ϟ ⊤ p.
17	55.72	26.8	29.5	24.2	91.2	Variable	1	8.7	Ci. N	N. N	22.1	● ϟ ⊤ a. p.
18	54.38	27.8	31	25	88.8	SW	.5	6.8	Ci.-S. NE, E	S.-Cu. E	.5	☈ ⌒ a. ∪
19	53.37	27.1	31.8	23.5	85.7	S	1.2	4.7	Ci.-S.	S.-Cu. E	------	ϟ a. ⊤° p.
20	52	27.3	32	23.1	86.2	S	1.3	5.3	A.-Cu. S	S.-Cu. E	3.8	● ⊤ ϟ p.
21	49.80	26.6	31.4	23.6	90.5	SW	1.2	9.2	Ci.-S. NW	S.-Cu. S	52.3	●² ⊤ ϟ
22	47.06	27.4	30.6	20	87.2	SSE	1.2	10	A.-Cu. S	S.-Cu. Variable	.2	p a.
23	49.40	25.3	27.6	23.4	92.2	W	1	10	------	S.-Cu.	23.6	● a. p.
24	52.74	27.3	31.9	23	83	N	1	4.5	Variable	S.-Cu. SW, WNW	------	
25	55.04	27.1	31.5	24.4	88.7	S	1	9.5	Ci. E	S.-Cu. SW	12.2	♀ ● ⊤ ϟ
26	55.30	27.7	32.1	24.5	86.2	S	1	7	A.-Cu. WNW	S.-Cu.	2	⊤ ● ϟ
27	54.76	28.1	32.6	24.7	79	SSW	1.2	7.7	Ci. E	S.-Cu.	1.3	☈ p.
28	54.62	28.3	32.2	24.4	81.8	S	1.3	5.7	A.-Cu. NE	S.-Cu.	------	
29	54.76	26.9	31.9	23.6	85	SW	1.2	4.8	Cu. SE, E	S.-Cu.	25.9	↙ ● ⊤ p.
30	54.63	27.4	32	23.5	85.7	S, NW	1	7.8	Ci.-S. S	S.-Cu.	.2	d p.
31	54.88	27	32.2	22.5	86	SW, S	1	6.5	Ci.-S.	Cu.-N. S	22.9	☈ p.
Mean	755.01	27.2	31.5	23.7	86.4	------	1.1	7.1	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	301.9	

68947——4

METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

SANTO DOMINGO.
[ϕ=20° 28′ N; λ=121° 59′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.3	22.3	70	WSW	1	------	☇ p.
2	32.5	23.5	77	SSW	1	------	Ω² a. ≡ ☇ p.
3	32	24	75	SE	3	------	Ω° a. ↙° p.
4	32.4	24.5	72	SE	2	------	v. a. ≡ ☇ p.
5	32.2	24.2	73	SE	1	------	v. a. ☇ p.
6	32.4	23.4	69	E by N	3	4.6	●° a. p. ⌒ ⌈☇ p.
7	31.6	24.4	76	E	4	5.3	↙° a. ⊤ ⌒ ● p.
8	30.6	24.8	81	ESE	3	1.5	↙° a. p. ●° p.
9	30.9	25.7	79	ESE	3	------	↙° a. p.
10	31	23.3	85	E	1	7.2	● ⊤ ☇² p.
11	30.8	23.1	85	NE	1	20.2	↙ ● p.
12	31.5	23.2	66	E	1	1.3	●° ⌒ a. d° p.
13	31.4	22.4	71	ESE	3	2	Ω ↙° a. ≡ ●° p.
14	32.3	22.2	65	E	1	------	Ω² a. ○ ≡ p.
15	32.4	22.3	75	N	1	1.4	Ω² a. ●° ⌒° p.
16	33.2	22.2	71	E	2	------	Ω² ↙° a. ≡ p.
17	31.5	23.4	82	ENE	2	16.7	Ω² ↙ ● a. ● p.
18	32.2	24.8	79	E	2	------	⊤ ☇² p.
19	31.2	22.7	76	N	2	20.6	●² a. ≡ p.
20	31.5	23.6	87	E	1	4.4	⌒ ↙° a. ●° a. p.
21	28.7	23.5	88	E	2	33.3	● ↙° a. p.
22	27.5	21.4	83	ENE	4	73.9	● ↙ a. p.
23	26.6	21.2	96	NW	4	77	● ↙ a. p.
24	29.8	23.8	78	W	3	29.5	● a. ↙° p.
25	30.1	25	82	W	3	------	≡ ☇ p.
26	29.8	24	84	WSW	4	2.5	●° a. ≡ ⌒ p.
27	29	23.4	88	WSW	4	11.4	⌒ ↙ ● a. ↙ ☇ p.
28	29.5	23.5	84	WSW	2	43.9	≡ ↙ ●² p.
29	27.9	23.2	92	WSW	2	30.7	● a. p.
30	31.9	22.8	73	ESE	1	------	≡ p.
31	31.8	22.7	90	W	1	21	● a. p. ☇ p.
Mean	30.9	23.4	79.1	------------	2.2	------	
Total	------	------	------	------------	------	408.4	

SAN FERNANDO UNION.
[ϕ=16° 37′ N; λ=120° 18′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32	22	77	S	2	------	
2	32.2	22.2	72	S	3	------	☇ p.
3	32	22.4	70	W	3	------	⊤ d p.
4	32.5	23.2	69	N	3	11.2	● ⊤ p.
5	31	21.6	76	N	2	170.7	●² p.
6	29	20	93	S	2	15.7	● ⊤ p.
7	30.9	21.2	75	SE	3	13.2	● p.
8	29.4	21.8	75	SE	3	------	d p.
9	29.2	22.2	81	S	3	5.8	●° a. p.
10	33.5	22	48	S	4	2.5	●° a. ↙ p.
11	31.4	21.2	82	S	2	5.3	● a.
12	31.8	21.6	85	S	2	1.8	● p.
13	31	22.3	76	SW	2	------	d p.
14	31.3	22	81	SE	3	120.1	●² ⌈☇² p.
15	30.8	21.2	80	NW	3	7.6	● p.
16	30.8	22.4	48	NW	2	------	d p.
17	29.8	22.3	78	SE	2	3.8	●° ☇ p.
18	31	21.6	78	E	2	2	⌈☇² ●° p.
19	30.6	22.1	68	SE	2	5.1	● p.
20	29.2	21.2	85	SE	4	4.6	↙ ● p.
21	27.2	22	94	S	6	67.1	● a. p. ∪ p.
22	26.8	19.8	92	S	2	42.4	↙² ● a. p.
23	30	20	91	N	3	------	d a. p.
24	30.4	21.2	84	S	2	36.8	↙ ● a. p.
25	29.2	22.3	89	S	2	11.2	● p.
26	29	21.3	90	S	2	43.2	● a. p. ⌈☇² p.
27	28	19.6	89	S	3	79.8	● a. p. ⊤ p.
28	28	19.4	89	S	2	6.4	●° a. p.
29	27.6	21.2	89	S	2	36.8	● a. p.
30	28.6	21.2	84	SE	3	------	d° a. p.
31	29.8	22	82	S	2	------	
Mean	30.1	21.5	79.7	------------	2.6	------	
Total	------	------	------	------------	------	693.1	

BAGUIO.
[ϕ=16° 35′ N; λ=120° 43′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	23.1	15.4	85	W	0	10.7	● p.
2	22.3	15.7	95	W	0	------	d p.
3	23.4	15.7	76	SSW	1	5.3	
4	24	15.4	76	SE	2	------	
5	21.3	15.1	99	W	0	5.8	● d p.
6	18.7	14.6	96	NW	0	78.5	● a.
7	23.9	14.8	78	SE	0	4.6	d a. p. ● p.
8	18.2	15.7	93	ESE	2	39.1	● a. d p.
9	19	16.5	90	WSW	0	7.4	●° a. p.
10	20	15.2	98	Calm	------	4.6	● a.
11	20.4	15.2	86	Calm	------	10.2	≡ a. ● p.
12	20.9	14.4	98	Calm	------	2	●° p.
13	22.5	14.7	97	Calm	------	35.3	d ● p.
14	22.7	15	97	WSW	0	15.5	● p.
15	22	15.7	97	W	1	14.7	≡ a. ● p.
16	21	14.8	98	Calm	------	2.8	●° p.
17	22.1	15.8	99	W	0	7.9	●° a. p.
18	24.3	16	93	Calm	------	4.8	●° p.
19	21.6	15.3	95	E	1	1.5	●° p.
20	20.5	16.2	95	WSW	0	21.6	● a. p.
21	18.4	16.5	99	SW	2	53.8	● a. ↙ ● p.
22	17.2	16.8	99	SW	7	230.6	r² a. p.
23	18.1	13.3	99	NW	1	115.8	r a. p.
24	19.7	14.8	99	WSW	0	32.5	d ● a. p.
25	19.5	15.2	99	WSW	3	63.2	d ● a. p.
26	18.9	16.2	99	W	1	42.9	d ● a. p.
27	18.8	16.2	99	SW	1	102.1	r a. p.
28	17.6	15.4	99	WSW	2	55.9	d ● a. p.
29	18.1	15.2	99	WSW	1	97.8	r a. p.
30	19.2	14.7	92	Calm	------	4.1	●° a.
31	21.5	15.9	98	WSW	0	11.9	● a.
Mean	20.6	15.4	94.3	------------	.8	------	
Total	------	------	------	------------	------	1,082.9	

BOLINAO.
[ϕ=16° 24′ N; λ=119° 53′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.5	24.4	66	SSW	1	3.8	●° ⌒ a.
2	30.6	24	66	SSW	1	3.6	● a.
3	30.6	24.5	74	SW	3	------	⊤° p.
4	31.4	24.3	69	SW	4	11.2	●° a. ↙° ⌒ ●² p.
5	30.8	23.5	72	SW	2	------	d p.
6	30.3	23.2	89	Calm	------	16.8	● a.
7	29.7	23.3	75	Calm	------	1.3	●° a. ↙° p.
8	30.5	24	88	Calm	------	6.1	↙° d° a. ● p.
9	27.5	23.6	93	SSE	2	20.3	d° a. ● p.
10	25.8	23	83	Calm	------	33.3	●² a.
11	29.8	23.2	67	SW	1	10.7	● a. ⊤° p.
12	29.8	23.5	78	Calm	------	.3	●° a.
13	29.9	22.8	76	WNW	2	------	⌈☇ p.
14	31.2	22.9	74	Calm	------	16	⌈☇ p. ●
15	30.8	23.4	80	Calm	------	10.4	●² a.
16	30.2	24	75	NNW	1	1.8	●° a.
17	30.8	24.6	83	SW	3	1	d a. ☇ ● ⊤° p.
18	30.1	23.2	74	W	3	3.3	● p.
19	31.8	23.7	75	S	4	12.2	●² ↙ p.
20	30.9	23.8	91	SSE	5	54.1	↙° a. ↙ ●² p.
21	29.8	23.8	93	SW by S	7	127.3	r² ↙ a. ↙ ● p.
22	26.5	24	84	W	8	38.1	● d a. ↙ p.
23	------	23.6	70	WSW	4	22.9	↙ ∪ ⦶ p. ●
24	30.5	24	78	SW	3	7.1	● ⌒ p.
25	30.5	24.2	73	SW	1	27.7	⌒ a. ●
26	31	24.6	89	Calm	------	33.5	↙ ● ⊤ p.
27	29.2	24	89	Calm	------	41.1	●° a. ●² ⊤ p.
28	29	23.6	99	SW	1	112.8	r a. p.
29	26.5	23.9	89	SW	2	47	⌈☇ a. ● a. p.
30	27.2	23.5	98	SSE	3	121.9	⌒ a. r a. p.
31	26.5	22.6	86	SW	1	5.3	●° ⌒ a.
Mean	29.7	23.7	80.5	------------	2	------	
Total	------	------	------	------------	------	790.9	

METEOROLOGICAL DATA, ETC.—Continued.

BALER.
[ϕ=15° 47′ N; λ=121° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33.5	23.2	------	W	------	------	
2	34.5	23.6	------	WNW	------	8.4	
3	31.5	23.9	------	WNW	------	23.6	
4	30.5	24.4	------	NE	------	------	
5	31.8	23.1	------	NE	------	32.3	
6	30	23.3	------	WNW	------	15.7	
7	29.9	23	------	W	------	50.8	
8	29	24	------	NE	------	37.6	
9	29.1	24	------	SW	------	------	
10	33	23.3	------	WNW	------	------	
11	31.9	22.7	------	WNW	------	------	
12	33.5	23.7	------	WNW	------	------	
13	33.5	23.7	------	WNW	------	33.8	
14	33.5	23.7	------	WNW	------	------	
15	33.4	24	------	WNW	------	------	
16	31.5	24.6	------	WNW	------	8.4	
17	32	24.5	------	NE	------	------	
18	32.5	24	------	NE	------	5.1	
19	30	23.5	------	NE	------	3	
20	29.4	23.9	------	NE	------	3.3	⌒ a.
21	30.6	24.4	------	E	------	5.1	
22	30.9	24	------	W	------	------	⌒ a.
23	31.5	24	------	W	------	------	⌒ p.
24	32.1	25	------	W	------	4.6	⌒ a.
25	32	24.6	------	W	------	------	⌒ a. p.
26	31.4	25	------	WNW	------	------	
27	31.4	26.1	------	W	------	------	
28	29.5	25.3	------	W	------	------	
29	35	25.6	------	W	------	------	⌒ a.
30	30	24	------	W	------	------	
31	29.4	24.7	------	WNW	------	------	
Mean	31.5	24.1	------	------------	------	------	
Total	------	------	------	------------	------	231.7	

TARLAC.
[ϕ=15° 31′ N; λ=120° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33	22.3	89	ESE	1	6.4	≡^{2} a. ☈ ● p.
2	32.5	22.7	73	SW	1	8.4	≡^{2} a. ● p.
3	35	23.8	60	SE	1	37.3	≡ a. ☈^{2} ● p.
4	33	23.4	63	SSE	2	------	≡^{2} a.
5	31.2	23.7	88	WSW	1	20.1	Ω a. ● ○^{2} ☈ p.
6	25	22.2	96	SW	1	5.1	≡ a. ●° a. p.
7	30.4	23.1	85	SSE	2	10.7	↙ ●° a. p. ⊤° p.
8	26.8	23	92	SE	1	17	● d a. p.
9	26.7	22.7	90	S by E	1	11.2	●° d° a. p.
10	30.4	22.2	79	S	2	32.8	↙ ●^{2} p.
11	31.6	22.4	88	SW by W	1	3.6	●° ↯° p.
12	33.7	23.4	61	NW	1	39.6	☈ ● p.
13	32.5	22.4	72	E	1	3.6	⊤° ● p.
14	30.7	23.5	90	ESE	1	58.9	≡^{2} ●° a. ⊤ ●^{2} p.
15	33.1	23.5	72	WSW	1	4.6	≡○^{2}a. ↙ ● ⊤° p.
16	31.3	22.6	76	SW	1	55.6	≡ a. ○ ☈^{2} ● p.
17	31.3	23.5	76	WNW	1	139.2	≡ a. ○^{2} ☈ r^{2} p.
18	32.7	23.1	69	SE	2	------	↙ ●° ○^{2} ⊕^{2} ↯° p.
19	27.5	22	90	SE	2	17.8	↙ ●° d a. p.
20	28.3	22.9	94	SSE	1	13.7	●° d° a. p.
21	28.1	23	89	SW	1	12.7	↙ ●° p.
22	29.1	23	86	NW	1	28.4	↙ ● a. ○ p.
23	32.5	22.5	82	WNW	1	18.5	Ω ≡ ⌒° a. ⊤° ● p.
24	32.7	23.8	72	WSW	2	10.7	≡ ↙ ●° a. ⊤ ●° p.
25	30.8	24	76	W	2	9.9	d° a. p. ↙ ●° p.
26	30.1	23.9	86	W	1	1.5	●° a. d° ↯° p.
27	30.2	23.8	93	W by S	1	7.6	d° a. p. ↙ ● ↯° p.
28	25.9	23	97	W	1	44.4	● a. p.
29	27.8	22.9	91	SSW	1	82.3	≡^{2} ● a. ●^{2} ⊤° p.
30	26.7	21.9	97	NW by W	1	36.1	● d° a. p.
31	27.2	22.8	90	SW	1	10.9	● d a. p.
Mean	30.3	23	82.6	------------	1.2	------	
Total	------	------	------	------------	------	748.6	

ARAYAT.
[ϕ=15° 08′ N; λ=120° 46′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.9	23	72	WSW	3	------	⊤ p.
2	30.7	24	76	SSW	2	------	d p.
3	31.3	25.1	68	SW	1	2.5	⊤ ● p.
4	30.7	23.1	70	SW	1	------	≡^{2} a. ⊤ p.
5	30	23.7	71	SW	1	10.2	d ● p.
6	25	22.4	92	WSW	1	4.1	d ● a.
7	29.4	23	74	SSW	2	14.5	d a. p. ● p.
8	27.4	23.6	80	SSW	1	------	d a. p. ⊤ p.
9	37.1	23	84	SW	1	19.8	● a. d a. p.
10	26.2	22.6	88	S	2	7.1	● ⊤ d p.
11	32.2	22.9	88	W	1	1.8	d ⊤ a. ● p.
12	32.4	23.5	64	Calm	------	26.2	⊤ ●^{2} p.
13	29.9	23.5	85	SSW	2	15.2	● a. p. d ⊤ p.
14	28.2	24	85	SW	1	12.2	d a. ● p.
15	29.3	23.5	78	SSW	3	------	d a.
16	------	------	------	------------	------	------	
17	------	------	------	------------	------	------	
18	------	------	------	------------	------	------	
19	------	------	------	------------	------	------	
20	26.9	23.5	90	SSW	3	13.4	d ● a. p.
21	28	23.6	78	SW	5	11.7	d ● p.
22	28.4	23.7	83	SW	1	3.3	d a. p. ● p.
23	------	------	------	------------	------	------	
24	------	------	------	------------	------	------	
25	------	------	------	------------	------	------	
26	------	------	------	------------	------	------	
27	------	------	------	------------	------	------	
28	------	------	------	------------	------	------	
29	------	------	------	------------	------	------	
30	------	------	------	------------	------	------	
31	------	------	------	------------	------	------	
Mean	29.1	23.4	79.2	------------	1.7	------	
Total	------	------	------	------------	------	------	

PORAC.
[ϕ=15° 05′ N; λ=120° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.4	21.4	72	SW	2	------	↯ p.
2	31.9	22.2	72	SW	2	------	⌒ ↯ p.
3	32.9	23	70	SW	1	0.5	☈ ● p.
4	31.6	23.5	72	S	2	------	↯ p.
5	30.9	22	79	Calm	------	27.2	● d p.
6	25	22.5	95	Calm	------	15.7	● d a.
7	29.3	22.5	88	SSW	2	10.2	● d p.
8	26.3	23	94	SSW	1	29	● d a. p.
9	25.2	22.4	95	Calm	------	12.7	●° a. p.
10	29.3	22.5	84	Calm	------	6.6	● d ⊤ a. p.
11	28.4	22	95	Calm	------	24.1	● d ☈ p.
12	31	22.5	81	Calm	------	5.1	☈ ● ⌒ p.
13	31.1	23.5	79	S	0	.5	↯ ●° p.
14	28.5	23.3	84	SW	2	1.8	●° a. p.
15	32	23.3	85	SSW	1	3.8	● ↙ ⌒ p.
16	28.6	23.3	93	Calm	------	15	● d ⊤ a. p.
17	29.4	23.6	85	Calm	------	------	☈ p.
18	30.9	23.7	77	SE	3	9.1	● a.
19	26	21.4	93	SE	2	39.9	● d a. p.
20	26.9	22.5	95	S	0	35.6	● d a. p. ⌒ p.
21	27.5	22.6	89	WSW	2	22.1	● d a. p. ↙^{2} p.
22	29.4	23	77	WSW	4	7.6	⌒ ●° ↙ a.
23	31.4	23.5	73	WSW	2	21.6	● d a. p. ⌒ p.
24	30.4	23.2	74	W by S	3	8.1	●° a. p.
25	29.9	23.8	76	S by W	3	11.9	● d a. p. ↙ p.
26	28.5	23.9	87	Calm	------	7.4	●° a. p.
27	28.9	23.2	92	Calm	------	33.8	● d ⊤ a. p.
28	------	22.7	97	Calm	------	94	● d a. p.
29	------	------	------	------------	------	------	
30	------	------	------	------------	------	------	
31	------	------	------	------------	------	------	
Mean	29.4	22.9	84	------------	1.1	------	
Total	------	------	------	------------	------	------	

METEOROLOGICAL DATA, ETC.—Continued.

MALOLOS.

[ϕ=14° 52′ N; λ=120° 48′ E]

Day.	Temperature.		Relative humidity, 2 p. m.	Wind, 2 p. m.		Rainfall.	Miscellaneous.
	Maximum.	Minimum.		Direction.	Force.		
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.8	21.8	80	SW	1	7.6	● a.
2	32.5	23	66	SW	1	1	● a. ϟ p.
3	32.5	23.8	76	SW	1	19.6	⌈ϟ ● p.
4	31	23	67	SW	2	15.5	● a. ◯² p.
5	30.5	22.8	81	WSW	1	------	
6	25.8	21.7	90	Calm	------	10.7	● a. p.
7	29.6	21.8	75	S	4	2.3	● ↙ p.
8	28.6	22	76	S	1	3	● a. p.
9	27.7	21.8	94	WSW	1	52.8	●² a. ● p.
10	31.9	21.9	73	W	2	------	
11	28.8	21.7	81	S	1	21.1	● a. p.
12	30.8	22	77	SSE	1	4.6	● ⊤ p.
13	30.7	22.1	78	SW	1	2.5	● ⊤ p.
14	30.2	22.8	74	S	3	26.4	● a. p.
15	31	22.4	78	SW	1	8.9	● a.
16	30.7	22.3	87	NE	1	28.7	●° a. ●² p.
17	29.6	23.3	78	Calm	------	6.4	● p.
18	30.6	23.1	69	S	2	------	◯² ϟ ⦶² p.
19	28	22	84	S	4	73.4	●² a. p.
20	27.8	22.2	92	WSW	4	40.6	↙ ●² a. p.
21	30.4	22	71	SW	4	5.1	● a. ◯² ↙ p.
22	29.7	22	89	W	1	6.9	● a. p.
23	30.3	23.3	90	SW	3	5.1	● p.
24	29.7	22.2	76	SW	2	28.7	● a. p.
25	30.3	22.6	70	SW	2	21.6	● a. p. ⌒° p.
26	29.5	23	75	SW	4	12.2	● a. p.
27	28.8	22.4	82	SW	1	2.3	● a.
28	27.6	22	96	SW	1	99.3	●² a. p.
29	26.6	22.1	96	SW	1	62.7	●² a. p.
30	27.5	21.4	93	SE	1	120.4	r² a. p.
31	26.5	22.5	96	S	1	36.1	● a. p.
Mean	29.5	22.4	81	------------	1.7	------	
Total	------	------	------	------------	------	725.5	

BALANGA.

[ϕ=14° 41′ N; λ=120° 32′ E]

Day.	Temperature.		Relative humidity, 2 p. m.	Wind, 2 p. m.		Rainfall.	Miscellaneous.
	Maximum.	Minimum.		Direction.	Force.		
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.1	22.1	77	SW	3	------	ϟ p.
2	31.9	22.7	75	SW	3	------	ϟ p.
3	31	23.6	75	SW	2	1	⌈ϟ ● p.
4	31	23	76	SW	3	------	
5	29.1	22.8	82	SW	3	1.8	● ↙ p.
6	25.8	22.7	88	SW	1	2.8	●° a. p.
7	30	22	77	S	2	22.6	d a. ● p.
8	26.9	23.4	90	SE	1	20.8	● a. p.
9	25.9	22.5	88	SW	2	16.3	● a. p.
10	31	22.6	78	NW	2	8.4	● p.
11	29.7	22.5	90	NW	1	1.8	⌈ϟ ● p.
12	31	23.3	79	SW	2	4.3	● p.
13	30.3	23.4	75	SW	3	7.6	● ⊤ ϟ p.
14	30.1	23.4	78	SW	2	22.9	↙ ● p.
15	30.5	23.2	78	SW	2	11.7	● p.
16	28.1	23.5	89	S	1	53.9	⊤ a. ● a. p.
17	29.5	23.3	82	S	2	1.5	● p.
18	30.4	23.5	82	SW	2	2.5	● p.
19	27.5	22.5	83	SE	1	32.5	● a. p.
20	26.5	22.9	91	SW	3	65	↙ ● a. ● ⌒ p.
21	27.5	23	88	SW	4	43.7	↙ ● a. p.
22	28.6	23.2	86	WSW	1	17.5	↙ a. ● a. p.
23	29.9	23.9	90	SW	2	11.9	● a. p.
24	28.4	23.5	92	SW	2	42.7	⊤ a. ● a. p.
25	30.3	23.5	88	SW	3	39.9	↙ ● a. p.
26	29	23.9	81	SW	2	41.2	● p.
27	28.5	23	87	W	1	19.3	● ⊤ p.
28	25.1	23	93	Calm	------	99.3	● a. ●² p.
29	27.2	22.7	92	SSW	2	76.2	● a. p.
30	27.9	22.2	88	SW	3	56.4	↙ a. ● a. p.
31	25.1	22.4	95	Calm	------	105.9	↙ ⊤ a. ⌈ϟ ●² p.
Mean	28.8	23	84.3	------------	2	------	
Total	------	------	------	------------	------	831.4	

CORREGIDOR.

[ϕ=14° 23′ N; λ=120° 34′ E]

Day.	Temperature.		Relative humidity, 2 p. m.	Wind, 2 p. m.		Rainfall.	Miscellaneous.
	Maximum.	Minimum.		Direction.	Force.		
	°C.	°C.	P. ct.		0-12.	mm.	
1	32	22.8	67	SW	3	------	
2	32.5	23.7	66	SW	2	------	
3	31.6	23.8	86	SW	1	17.5	⊤ a. ● a. p.
4	30.5	22.6	69	SW	2	------	
5	30	22.7	77	W	4	9.4	d ● p.
6	26	22	90	SW	2	30.5	● a. p.
7	29.8	21.7	79	SW	2	36.6	● a. p.
8	28.4	22.1	75	SW	1	6.1	● a. p.
9	28.3	22.1	86	SW	1	7.9	● a. p.
10	31.1	22.4	70	SW	1	------	
11	27.7	22.7	89	SW	1	10.2	● a. p. ⊤ p.
12	29.3	22.9	77	SW	1	------	d p.
13	31.2	24.3	69	SW	1	------	
14	31.5	22.7	73	SW	4	147.6	●² a. p.
15	30.1	22.5	86	SW	3	------	
16	27.7	22	87	SW	1	8.1	● a.
17	29.7	23	79	W	3	88.6	●² ⊤ ϟ p.
18	29.7	22.5	74	SW	3	2	● p.
19	28.2	22	81	SW	4	10.4	● a. p.
20	27.5	21.6	88	W	2	44.2	● a. p.
21	28.5	19.8	79	W	4	18.3	● a. p.
22	30	24.5	77	W	4	40.6	●² p.
23	28.5	21.8	86	SW	1	72.1	●² a. p.
24	28.5	21.8	89	SW	2	59.2	r a. ● p.
25	30	21.8	75	SW	4	5.1	● a. p.
26	29.3	23.2	80	SW	2	30.5	● a. p.
27	29.4	21.7	75	SW	2	25.7	● a. p.
28	26.5	22	88	SW	2	28.4	r a. p.
29	27.2	22	90	SW	4	65.5	r a. p.
30	28.2	22.8	83	SW	2	51.1	● a. r p.
31	27.7	21.2	90	SW	1	13.5	● a. p.
Mean	29.2	22.4	80	------------	2.3	------	
Total	------	------	------	------------	------	829.1	

SAN ANTONIO.

[ϕ=14° 23′ N; λ=121° 32′ E]

Day.	Temperature.		Relative humidity, 2 p. m.	Wind, 2 p. m.		Rainfall.	Miscellaneous.
	Maximum.	Minimum.		Direction.	Force.		
	°C.	°C.	P. ct.		0-12.	mm.	
1	29	20.5	78	W	2	------	
2	30	21.9	79	W	3	16.3	⌒ p.
3	31.6	20.6	64	SW	2	------	
4	28.1	19.6	81	Calm	------	17.5	
5	24.2	20.6	90	W	1	22.9	
6	22.8	19.6	96	W	2	10.2	
7	28.4	20.6	78	W	1	5.1	
8	29	21.9	91	SW	3	5.8	
9	28.3	21.9	74	W	2	------	⌒ a.
10	28.7	21	97	W	1	49	
11	26.4	20.5	87	W	2	------	
12	29	20.9	88	W	1	5.8	
13	29.5	21.6	75	W	1	------	
14	29.5	21.2	83	W	1	8.9	
15	29	21.2	83	W	1	14.5	⌒ p.
16	28.6	21.5	99	W	2	4.6	
17	28.5	22	77	W	1	.8	
18	29.2	21.6	78	W	2	------	
19	27.8	20	88	W	1	31.7	⌒ p.
20	26.4	20.6	93	W	4	43.2	
21	26.2	21	90	W	4	15.2	
22	25.6	19.9	99	W	4	29.7	
23	24	20.1	98	W	2	15.7	
24	26.5	18.9	91	W	3	6.6	
25	28.4	21.2	87	W	4	------	
26	27.4	19.6	88	W	4	------	
27	28	20.4	96	W	4	3.8	⌒ a.
28	26	18.2	99	W	1	28.7	
29	25.5	20.9	88	W	2	2.5	
30	27.2	21.4	78	W	4	2.3	
31	28	20.5	95	W	5	------	
Mean	27.6	20.7	86.7	------------	2.3	------	
Total	------	------	------	------------	------	340.8	

METEOROLOGICAL DATA, ETC.—Continued.

SILANG.
[ϕ=14° 14′ N; λ=120° 58′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32	18.2	73	W	2	------	≡ ∩ a. ⊤ p.
2	31.5	18.7	69	W	3	------	Ω p a.
3	31.6	18	73	W	3	23.6	● ⊤ p.
4	31	18.3	73	W	3	15.2	Ω a. ● p.
5	30.6	18.1	74	W	2	5.1	Ω ● a.
6	30.9	18	75	W	3	20.6	d a. ● p.
7	31	18	74	W	3	48.3	∩ ● a.
8	31.8	18.1	77	W	3	8.1	⊤ ●° a.
9	32	18.3	73	W	2	------	↙° a. p.
10	30.6	18.9	69	W	3	------	⊤ p.
11	30.9	18	72	W	2	19	⊤ ● a.
12	32	18.2	73	W	3	34.8	● a. p.
13	32.4	18.3	71	W	3	------	∩ d a.
14	32.4	18.7	70	W	2	------	⊤ p.
15	31.3	18.9	69	W	2	------	↙° p.
16	31.5	18	74	W	3	50.8	Ω a. ●² p.
17	32.3	18	71	W	2	33.3	d ● a.
18	32	17.3	68	SSW	3	------	↙° p.
19	30.6	17.3	69	SW	3	------	⊤ a. d p.
20	30.1	17	73	SW	3	19.3	● a.
21	29.7	16.6	78	SSW	3	30.5	d a. ●² p.
22	29.6	16.8	80	SW	4	46.5	● a. p.
23	29.5	16.4	78	SW	6	52.6	↙° a. ↙ ● p.
24	30.8	16.5	77	W	3	48.3	●² a. ∩ p.
25	30.2	16.8	69	W	2	------	↙° p.
26	29.9	16.8	71	W	3	13.2	● p.
27	29.9	16.3	73	SW	2	33	∩ ● a.
28	30.2	17	73	SW	3	10.9	● a. p.
29	30.8	17.7	73	SW	3	------	↙° a. ⊤ p.
30	30	18	72	W	2	------	p p.
31	30.6	17.2	72	W	2	46.5	● a. p.
Mean	31	17.7	72.8	------	2.8	------	
Total	------	------	------	------	------	559.6	

BATANGAS.
[ϕ=13° 45′ N; λ=121° 03′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	------	23	54	W	2	------	
2	------	22.5	53	WNW	2	14.7	● p.
3	------	22.6	64	SW	2	1.3	●° ∩ a. p.
4	------	22.8	63	SW	2	------	
5	------	22.4	92	W	2	7.4	d a. ● p.
6	------	21.9	88	W	2	145.5	r² a.
7	------	23	67	SW	2	2.3	d ● a.
8	------	23	92	S	1	15	d● a. p.
9	------	22.9	67	WSW	2	4.1	● a.
10	------	22.8	55	WSW	2	1.3	↙ ●° p.
11	------	22.7	90	W	2	1.5	●° a. p.
12	------	23.2	93	SW	1	12.4	r° a. p.
13	------	22.5	70	SW	2	------	
14	------	22.5	65	W	2	.3	●° a.
15	------	23.6	57	W	2	1.5	●° a.
16	------	------	------	------	------	------	
17	------	------	------	------	------	------	
18	------	------	------	------	------	------	
19	------	------	------	------	------	------	
20	------	------	------	------	------	------	
21	------	------	------	------	------	------	
22	------	------	------	------	------	------	
23	------	------	------	------	------	------	
24	------	------	------	------	------	------	
25	------	------	------	------	------	------	
26	------	------	------	------	------	------	
27	------	------	------	------	------	------	
28	------	------	------	------	------	------	
29	------	------	------	------	------	------	
30	------	------	------	------	------	------	
31	------	------	------	------	------	------	
Mean	------	22.8	71.3	------	1.9	------	
Total	------	------	------	------	------	------	

SUMAY, GUAM (Ladrones Islands).
[ϕ=13° 22′ N; λ=144° 45′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	31.4	23.4	69	SE	3	------	
2	29.4	26	87	NE	3	------	
3	29.4	24.6	83	E	2	------	
4	29.4	24.4	69	ENE	4	------	
5	29.6	23.2	77	SE	3	------	↙ ● p.
6	30	26.4	89	NE	4	------	
7	30.4	24.8	76	E	3	------	
8	30.6	25.8	69	E	4	------	
9	31.2	26	82	SE	2	------	⊤ ↯ p.
10	27.4	24	97	S	1	------	↙ ●² ↯² ⊤² p.
11	29	23.6	75	SSE	4	------	↙ ● ⊤ ↯ p.
12	31	25.6	75	SSW	4	------	● ⊓ p.
13	30.4	24.6	79	WSW	3	------	⊤° ↯° p.
14	27	23	86	NNW	2	------	●² a.
15	29.8	24	82	W	1	------	
16	31	24.4	75	SSW	2	------	
17	29	25.6	92	SW	3	------	
18	29.8	23.6	77	SW	5	------	↙ ● a.
19	27.4	24	98	SW	4	------	↙ ●² a. ● p.
20	29.4	22.2	79	SW	5	------	
21	29.8	24	78	SW	5	------	
22	30.2	26.2	77	SW	4	------	
23	30.6	25.6	78	SW	3	------	
24	30	26.8	75	WSW	3	------	
25	30	24.2	86	SSW	4	------	
26	30.2	26	71	SW	3	------	
27	30	24.4	71	SW	4	------	
28	30.4	24.2	73	SW	3	------	
29	30.6	26	73	W	3	------	
30	30.6	26	74	W	4	------	⊓ p.
31	29.6	23.6	78	W	3	------	
Mean	29.8	24.7	79	------	3.3	------	
Total	------	------	------	------	------	------	

GUBAT.
[ϕ=12° 55′ N; λ=124° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	34.2	23	52	SW	1	------	↯ ⊤ p.
2	32.7	23.6	75	W	1	6.4	● ⊤ ↯ p.
3	32.8	22.3	68	SW	1	------	↯ p.
4	31.8	22.8	75	WSW	1	11.7	● ↯ p.
5	26	23.1	94	WSW	1	14.2	● a.
6	30.6	23.1	82	NW	3	3.8	↙ ●° a. p.
7	29.5	23.4	86	W	1	10.9	r a. p.
8	33.2	22.8	62	S	2	------	d p.
9	32.9	22.8	63	W	2	------	
10	32.5	23.4	71	NW	2	1.3	↙ ● ⊤ ↯ p.
11	28.6	23	83	NW	1	30.5	⊤ a. ● a. p. ↯ p.
12	31.2	23.8	85	SW	1	3	●° a. p.
13	32.8	23.5	77	SW	1	4.6	d ● p.
14	31.5	23.5	70	SW	2	------	d a. p.
15	32.3	23.2	69	W	1	------	d a. p.
16	30	24	77	W	1	3.8	● a. p.
17	30.3	24.2	85	SW	2	4.6	⊤ ● d p.
18	31.5	24.4	70	SW	3	------	d a. p.
19	31.6	24.7	81	SW	3	2.5	d ● p.
20	32.7	23.6	67	W	4	2	d a. ↙ ● p.
21	32.1	24.4	48	SW	3	3.8	↙ ● a. p.
22	32	25.3	68	SW	3	------	d a. p. ∩ p.
23	31.8	24.8	65	SW	3	?	d a. ↙ ●² p.
24	32.8	25.1	66	SW	3	------	∩ d p.
25	32.9	24.6	62	SW	4	?	↙ ● a.
26	31.2	24.9	72	SW	2	------	
27	33.4	24.1	67	SW	2	------	
28	31.5	25.4	65	SW	2	------	
29	33	23.8	60	SW	3	------	◡ p.
30	33.6	24.3	61	W	3	------	
31	33.4	24	60	SW	3	------	◡ p.
Mean	31.8	23.8	70.5	------	2.1	------	
Total	------	------	------	------	------	[1] 103.1	

[1] 29 days of observation.

METEOROLOGICAL DATA, ETC.—Continued.

ROMBLON.

[ϕ=12° 35′ N; λ=122° 16′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33	25.4	66	WSW	1	------	
2	31.6	25.5	73	SW	1	------	d ϟ p.
3	30.6	24.5	76	SW	1	------	
4	30.7	25.4	75	SSW	1	3.8	●° a.
5	29.4	24.4	90	Calm	------	14.2	r a. p.
6	29.5	23.2	80	NW	1	------	
7	30.5	24.5	80	SW	2	7.9	↙ ● p.
8	29.9	24.4	76	SE	1	------	d° ↙° a.
9	31.5	24.3	72	SSW	1	4.1	●° ↙ a.
10	31	25	71	SW	1	21.6	●^{2} ⌈ϟ^2 p.
11	32.4	23.6	72	Calm	------	2.5	d ↙ ● p.
12	31.8	24	78	SW	3	9.1	● p.
13	30.6	24.4	80	SSW	2	32.8	●^{2} p.
14	30.1	24.2	86	S	3	2.5	●° p.
15	30.9	25.1	76	NNW	2	2.5	d ↙ ● p.
16	31.4	25.9	90	SW	2	20.8	↙ ● p.
17	30.2	25	71	SSW	2	------	d a. ↙ p.
18	29.6	26.1	76	SW	2	7.6	● ↙ p.
19	29.9	24.1	82	WSW	4	15.5	↙ ●° a.
20	28.6	24.2	77	SW	4	11.4	↙ ●° a. p.
21	30	24.5	81	SW	3	35.8	↙ ● a. p.
22	28.9	25	85	SW	3	15.2	↙ ● a. p.
23	29	24.4	87	W	3	19	↙ ● a. p.
24	31.1	25	74	NW	2	5.1	↙ ●° a. p.
25	31.2	25.5	78	S	2	------	d ↙ a.
26	31.1	25.5	76	S	2	2.5	●° a.
27	30.5	25.4	81	WSW	1	------	↙ a. p.
28	31.8	25.8	68	NW	1	------	
29	32.1	27	76	SW	1	------	↙° a.
30	30.6	24.5	79	SSW	2	------	
31	32.5	26.5	68	SW	2	------	
Mean	30.7	24.9	77.4	------------	1.8	------	
Total	------	------	------	------------	------	233.9	

BORONGAN.

[ϕ=11° 42′ N; λ=125° 25′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33.1	22.7	70	Calm	------	------	Ω a. ⌈ϟ p.
2	32.8	23	81	W	2	2	● a. ⌈ϟ p.
3	33.5	22.6	69	ESE	1	.5	Ω a. ◯ T ↙ ●° p.
4	32.2	23.1	71	Calm	------	30.7	● a. p.
5	28.1	22.6	79	W	3	11.9	● ↙ a.
6	32.1	22.8	65	W	3	1.3	●° a. p. ↙ p.
7	32.7	23.2	67	Calm	------	------	
8	33.1	22.8	64	SE	2	4.3	● T p.
9	33.9	22.9	60	SE	1	------	Ω a.
10	32.5	22.8	81	NW	1	5.1	Ω a. ● p.
11	31.3	23.4	70	WNW	3	.8	● a. ↙ p.
12	28.8	23.3	74	W	2	------	↙ p.
13	32.3	22.7	76	SE	1	7.4	◯ a. ↙ ● p.
14	33.4	22.3	58	WSW	2	2.5	≡ ↙ a. ↙ ● p.
15	34.1	23	57	W	3	------	Ω a. ↙ p.
16	32.1	22.9	69	SW	2	2.8	↙ ●° p.
17	28.7	23.1	82	SW	1	27.9	● a.
18	29.5	23.7	72	W	3	2.8	↙ ● p.
19	30.6	23.4	71	Calm	------	------	↙ a. ⋓ p.
20	32.1	22.9	68	SW	1	------	↙ ⋓ p.
21	32.4	24.3	67	SW	3	.3	↙ ●° p.
22	32.5	23.4	74	SW	2	------	↙ a. p.
23	33.1	24	63	SSW	3	------	↙ p.
24	33.4	22.2	60	SW	1	------	Ω ◯ a. ↙ p.
25	33.7	21.8	62	SW	2	------	Ω a. ↙ p.
26	32.9	22.2	66	Calm	------	------	⋓ ◯ a.
27	33.8	22.6	56	Calm	------	------	◯ a. ⋓ a. p.
28	33.5	22.1	54	W	2	------	◯ a. ↙ p.
29	34	22.4	58	WSW	2	------	↙ p
30	34.7	22.8	59	WSW	2	------	Ω a. ↙ a. p.
31	35	23.2	56	W	2	------	Ω a. ↙ a. p.
Mean	32.4	22.9	67.1	------------	1.6	------	
Total	------	------	------	------------	------	100.3	

TUBURAN.

[ϕ=10° 44′ N; λ=123° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.4	23.4	61	Calm	------	28.4	●^{2} ⌈ϟ^2 p.
2	31.2	22.4	75	Calm	------	1.5	◯^{2} a. T^2 ●° ϟ^2 p.
3	30.6	22.6	82	Calm	------	1	●° ϟ° p.
4	28.7	23.9	75	Calm	------	6.1	◯^{2} p. ●° a. p.
5	27.4	21.4	79	E by S	2	6.6	●° a. p.
6	31.4	21.6	61	E by S	2	4.1	↙ ● p.
7	31.6	23.2	57	SE	4	1.3	↙ a. ●° p.
8	32.2	22.4	53	SE	3	------	↙ p.
9	31.8	23.2	58	Calm	------	------	d p.
10	31.9	23.1	64	ESE	1	1.5	↙ ●° ϟ^2 p.
11	30.1	23.4	68	Calm	------	9.7	◯^{2} ↙ ● p.
12	28.5	23.1	78	Calm	------	------	d a. p. ϟ^2 p.
13	31.2	23	76	SE	6	------	↙^{2} a. p. d p.
14	31.7	23.3	58	S by E	6	------	↙^{2} p.
15	33.3	24.2	60	S by E	5	------	↙^{2} d p.
16	32	24.4	84	Calm	------	4.1	◯^{2} a. ●° T^2 ϟ^2 p.
17	29.4	24	71	ESE	3	------	◯^{2} p. d a. p.
18	31	23.9	64	S	4	1.3	●° a. p.
19	33	23.3	53	S by W	6	------	↙^{2} a. p.
20	31	26.3	65	SSE	6	------	↙^{2} p.
21	32.3	25.1	59	S	6	------	d° a. ↙^{2} a. p.
22	32.6	23.5	56	S	7	------	⌒ a. ↙^{2} Φ^2 p.
23	32.6	26.1	65	S	7	------	↙^{2} a. p. Φ^2 p.
24	33.2	24.9	50	S	6	------	◯^{2} a. ↙^{2} p.
25	33.8	22.6	48	S	4	------	≡ a.
26	33.1	23.7	54	S by E	4	------	◯ a. ◯^{2} ϟ° p.
27	33.6	24.2	49	S	6	------	↙^{2} ◯^{2} Φ^2 p.
28	34	25.7	48	S	4	------	◯° a. ◯^{2} p.
29	34.9	23.6	47	S	4	------	≡° ↙^{2} a. ϟ° p.
30	34.6	23	47	S	5	------	≡^{2} a. ↙^{2} ϟ° p.
31	34.8	24.7	53	S	4	------	≡^{2} a.
Mean	31.9	23.7	61.9	------------	3.4	------	
Total	------	------	------	------------	------	65.6	

SAN JOSE BUENAVISTA.

[ϕ=10° 44′ N; λ=121° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.1	22.9	73	Calm	------	------	d° ϟ p.
2	31	23.5	73	Calm	------	40.6	T d ● p.
3	29.4	22.4	76	W	1	52.8	● a. p.
4	24.6	22.9	92	Calm	------	47.2	● d a. p.
5	25	21.4	85	Calm	------	14.7	● d a. p.
6	29.1	21.8	87	W	1	29.7	● a. p.
7	28.2	22.3	97	WSW	2	50.5	↙ ● a. p.
8	29.7	22	82	S	3	27.2	● a. ↙ ● p.
9	29.7	22.9	88	Calm	------	6.4	● a. d° p.
10	29.4	22	76	NE	1	13.2	↙ ● p. ● a. p.
11	29.1	22.9	91	Calm	------	36.6	● a. r p.
12	27.5	22.5	97	NE	1	18.5	● a. T r p.
13	27.5	22.7	87	WSW	1	51.6	r a. p.
14	28.4	23.7	87	WSW	1	37.6	● a. ↙ ● p.
15	29.4	24.1	97	Calm	------	12.7	● a. p.
16	27.5	24	92	S	1	72.6	●^{2} d a.
17	24.8	22.7	94	Calm	------	214.4	r^2 a. p.
18	29.1	22.9	92	SSW	2	15.7	↙ ● p.
19	29.4	22.5	82	SSW	2	69.6	⌈ϟ ↙ ● a. p. ⊕ p.
20	30	22.6	81	SSW	3	17.3	↙ ● a. p.
21	29.5	23.4	79	SSW	5	.5	↙ ●° a. p.
22	30	23.9	75	SSW	3	30.2	↙ ● a. p.
23	26.8	24	92	WSW	1	33	↙ ● a. r p.
24	30.2	23.8	75	SSW	1	1.5	● a.
25	30.1	24.3	81	SSW	2	2.3	● a. p.
26	30.6	24.5	76	SSW	1	2.8	● a. p. ϟ p.
27	30.1	23.1	77	SSW	2	.5	●° ϟ p.
28	30.1	26.3	81	Calm	------	------	
29	30.9	25.5	75	SSW	2	------	
30	31	25.7	77	SSW	1	10.2	● a. ϟ p.
31	32	25.3	75	SSW	1	6.1	d° a. ϟ ↙ ● p.
Mean	29.1	23.4	83.6	------------	1.2	------	
Total	------	------	------	------------	------	916	

METEOROLOGICAL DATA, ETC.—Continued.

BACOLOD.
[ϕ=10° 41′ N; λ=122° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.9	22.5	73	SW	3	1.5	⊤° ●° ↯ p.
2	30.7	23.1	80	SSW	3	18.3	● a. p. ☈ p.
3	30.5	23	74	SSW	3	------	⌒ a. ↯ ●° p.
4	27.2	22.3	84	SW	2	13	● a. p.
5	25.5	20.3	86	SSW	4	17.5	●^{2} a. ● p.
6	30.6	22.2	74	SSW	3	16.8	◯° a. d° ↙ ● p.
7	29.9	21.4	84	SW	3	10.5	● d° a. p. ↙ p.
8	30.4	22.5	69	SSW	3	1.5	◯^{2} a. ↙ ●° p.
9	30.2	23	83	SW	4	10.2	d° ● p.
10	30.1	23	77	SSW	2	.3	d° ●° ↯ p.
11	29.7	23.9	82	W by S	5	7.6	d° ◯^{2} a. ↙ ●° p.
12	27.7	23.1	95	S	2	3.6	●° ↯ p.
13	28.9	21.9	94	S	3	48.3	↙ ●° a. ●^{2} p.
14	28.3	22.6	93	SW	3	42.9	●^{2} a. ↙ ● p.
15	29.6	22.4	84	SSW	4	24.7	● a. d° ●^{2} p.
16	28.1	23	90	S by W	4	14.5	⌒° ◯^{2} ↙ ● ⊤° ↯
17	27.8	22.9	86	SSW	4	13.5	● a. p. ∪° p.
18	29.4	22.9	83	SSW	4	29.2	↯ a. ◯° ↙ ●^{2} ☈°
19	30.2	21.9	82	SSW	5	27.7	↙ ●^{2} a- p. ∪ ☈
20	29.9	22.8	80	SSW	4	24.1	↙ ● p.
21	28.3	23.2	80	SW	5	13.2	↙ ● a. ●° p.
22	27.5	23	87	SSW	5	12	●° ↙^{2} a. p.
23	28.2	22.6	82	SW	5	76.4	↙^{2} ●^{2} a. p.
24	29.6	22.7	80	SSW	4	.8	● ◯° a.
25	29.5	23.2	76	SW by S	4	1	●° a.
26	29.7	23.1	72	SSW	4	------	●° a. p. ◯^{2} p.
27	30.4	22.5	72	SSW	4	4.1	● a. ◯^{2} a. p. ↯ p.
28	30.6	24.4	75	SSW	3	------	◯° a. p. ⊤° p.
29	30.9	23.3	72	SSW	4	.3	∪^{2} ●° a.
30	30.5	23.2	73	SSW	4	------	↯ p.
31	30.1	22.5	75	SW	4	5.3	●° a. p. ↯ p.
Mean	29.4	22.7	80.5	------------	3.7	------	
Total	------	------	------	------------	------	438.8	

MAASIN.
[ϕ=10° 08′ N; λ=124° 50′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.5	24.6	73	S	1	10.7	↙ a. ↙ ● ☈ p.
2	31.1	23	81	SW	5	29.2	● a. ↙ ● ↯^{2} p.
3	30.5	23.5	81	SE	3	10.7	↯ a. ↙ ● p.
4	29.4	22.5	79	SW	2	115.6	r a. p. ↙ p.
5	26	22	84	NW	1	24.6	r a. ↙ ● d p.
6	31.3	22.5	60	SW	6	13.7	● a. p. ↙^{2} p.
7	29.6	24	77	SW	7	------	d a. ↙^{2} p.
8	31	23.4	84	SW	5	------	↙ a.
9	32.3	24	76	S	1	------	↙ a.
10	31.5	22.5	74	NW	2	29.2	d a. ⊤ ↯ ↙ ● p.
11	26.9	22.7	90	W	1	26.9	r a. p. ☈ p.
12	30	22.8	78	SSW	1	29.2	r a. ↙ ●° p.
13	28.4	24.1	82	SW	5	------	d a. p. ↙^{2} ∪ p.
14	29.7	26.2	82	SW	6	------	↯ p.
15	28.8	24	78	SW	4	------	↯ ∪ p.
16	29.6	23.7	89	SW	4	16.8	↯ a. ↙ ● p.
17	28	23.8	87	SW	5	11.4	d a. p. ↙ ● ⊖ p.
18	29.5	24.1	77	SW	4	------	d ◯ a, ↙ d p.
19	30	24.5	86	SW	4	------	d ↙ a. ∪ ⊖ p.
20	30	27	84	SW	5	------	d ↙ ∪ ⊖ p.
21	29.8	23.6	88	SW	6	14.2	↙ ● ⊤ d p.
22	28.4	24.6	89	SW	5	11.2	d a. ↙ ● ⊤ ∪ ⊖
23	29	26.3	78	SW	5	------	↙ d p.
24	31	24.2	80	SW	4	------	
25	31	23.8	76	SW	1	------	↯ p.
26	30.6	23.1	82	SW	3	------	◯ a. ↯ a. p.
27	29.6	23.8	79	SW	3	------	↯ ◯ a.
28	29.5	24	78	SW	4	------	↯ a. p.
29	28.6	23.4	84	SW	4	------	↯ a. p. d p.
30	29.3	23.5	81	SW	4	------	↯ a. p. ↙ d p.
31	29.8	23.4	81	SW	5	4.1	↯ a. p. ↙ ● ⌒ p.
Mean	29.7	23.8	80.6	------------	3.7	------	
Total	------	------	------	------------	------	377.5	

YAP (Western Carolines).
[ϕ=9° 29′ N; λ=138° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33.4	24.7	75	SSE	3	22.1	
2	30	24.3	78	SW	3	123.4	
3	29.7	22.7	76	SW	3	78.7	
4	33.2	22.7	65	SW	1	58.7	
5	31.1	23.2	76	SW	1	77.5	
6	32	22.3	71	SSE	1	38.6	
7	32.5	21.8	77	SW	2	1.3	
8	29.1	23.7	86	SW	3	61	
9	29.5	22.4	97	SW	2	54.6	
10	30.5	22.3	75	SW	5	20.6	
11	30.3	23.2	79	SW	5	------	
12	31.5	23.8	77	SW	5	3.3	
13	30.5	23.8	94	SW	2	7.9	
14	26.8	23	94	E	1	34.5	
15	29.5	22.8	87	N	3	57.1	
16	25.7	22.4	93	SSW	4	12.7	
17	30.1	22.6	88	SW	4	27.4	
18	31.2	22.8	79	SW	7	9.9	
19	30.4	23.7	78	SW	7	------	
20	31.4	25.2	85	SW	6	------	
21	31.4	25	78	SSW	4	------	
22	32	24	73	SW	5	------	
23	33	25.2	75	SW	4	------	
24	33.7	24	92	SW	3	------	
25	33.1	26.5	70	SW	4	------	
26	34	23.2	81	SW	2	1.8	
27	32.8	23.5	69	SW	3	------	
28	33	23.8	85	SW	3	------	
29	33.2	23	72	NW	3	5.6	
30	28.5	22.8	94	SW	1	59.9	
31	29	22	84	N	4	19	
Mean	31	23.4	80.7	------------	3.4	------	
Total	------	------	------	------------	------	775.6	

BUTUAN.
[ϕ=8° 55′ N; λ=125° 31′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	------	22.7	74	NNW	1	------	
2	------	22.4	70	N	1	1	● p.
3	------	22.6	71	NNW	1	7.6	● a.
4	------	22.7	87	N	1	19.3	● a.
5	------	22.2	66	NNW	2	3.8	● a. ↙ p.
6	------	22.5	49	NW	3	------	≡ a.
7	------	22.3	71	N	1	.8	≡ a. ●° p.
8	------	------	64	N	3	------	≡ a.
9	------	23.9	60	NNW	2	.3	●° p.
10	------	23.4	74	NNW	1	13.7	● a. d a. p.
11	------	23.5	87	NNW	2	19.8	● a.
12	------	23	68	NNW	2	7.1	● a.
13	------	23	75	W	2	------	Ω ≡ a. d p.
14	------	22.9	65	NNW	2	------	Ω a.
15	------	23	57	NW	3	------	Ω ≡ a.
16	------	23.1	67	NNW	3	------	Ω a.
17	------	22.6	76	NW	4	------	≡ a.
18	------	22.8	53	SSE	2	------	Ω a.
19	------	23	63	NW	1	.5	●° p.
20	------	23.7	56	Variable	1	------	
21	------	23.6	68	SE	1	------	∪ p.
22	------	22.6	60	SE	1	21.1	Ω ≡ a. ☈ ● p.
23	------	23.1	73	N	1	------	Ω a.
24	------	23.6	52	NW	3	------	Ω a.
25	------	23.7	58	NW	3	------	
26	------	23.7	59	NNW	1	------	
27	------	22.5	56	NNW	2	1.5	● p.
28	------	23.4	65	NW	2	------	
29	------	23.1	53	NNW	2	------	
30	------	23.3	56	NW	3	------	⊤ p.
31	------	23	56	NW	3	------	
Mean	------	23	64.8	------------	1.9	------	
Total	------	------	------	------------	------	96.5	

METEOROLOGICAL DATA, ETC.—Continued.

BALINGASAG.

[ϕ=8° 45′ N; λ=124° 44′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33.6	21.1	53	W	1	------	↙ p.
2	32.2	21.8	63	W by S	1	22.1	● a. ↙ ● p.
3	32	21.2	65	W	1	26.7	● p.
4	30.5	20.2	52	W	2	8.6	⊤° a. p.
5	31	19	51	WSW	1	16.3	↙ ● d p.
6	33	19.5	59	SSW	1	------	↙ d° a.
7	31.9	21.5	56	Calm	------	7.1	↙ ● p.
8	34	19.9	62	S	1	------	
9	33.4	20.9	63	NW	2	2	●° p.
10	32.2	21.5	61	WSW	1	------	d° p.
11	27	20.5	87	Calm	------	42.9	● a. d° ↙ ● p.
12	33.1	20	63	SW	1	2.8	●° a.
13	30.1	22.4	79	S	1	20.8	d ↙ ● p.
14	32.6	19.5	66	W	1	------	d° p.
15	35.4	21.5	55	W	1	------	○ p.
16	32.3	22.4	59	W	1	27.9	↙ ● p.
17	32.3	20.7	97	SSW	1	20.3	↙ ● ⩛ p.
18	33.3	19.5	60	SW	1	------	
19	31.1	21.5	82	ESE	2	3.8	↙ ● d p.
20	34.5	21.7	60	W by S	2	------	
21	32.9	22.8	74	SSW	4	1.5	●° ↙ p.
22	34.1	22.6	67	SW	3	8.9	d ↙ ● p.
23	31.6	22.7	86	E	2	7.9	↙ ●° p.
24	33.6	21.6	62	W	2	------	
25	35.8	20.6	66	WNW	2	1.8	●° p.
26	36.2	21	48	W	1	2.3	d ⊤ ⋖ ● p.
27	35	20.5	63	W	1	2	●° p.
28	35.1	20.4	60	W	1	------	
29	37	21.3	44	W	1	------	
30	35.4	20.7	61	W	2	------	
31	35.9	19.7	49	W	1	------	
Mean	33.2	21	63.6	------------	1.4	------	
Total	------	------	------	------------	------	225.7	

DAPITAN.

[ϕ=8° 38′ N; λ=123° 23′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	------	23.5	78	W	2	------	⋖ p.
2	------	23.1	74	W	2	8.1	● a. p. ⋖ p.
3	------	22.8	82	W	2	36.8	⌒ a. ● a. p.
4	------	22.5	81	W	2	36.1	● a. ↙ ● p.
5	------	22	81	W	4	1.8	↙ ●° a. p.
6	------	22	74	W	3	1.3	↙ ● a. d° p.
7	------	22.2	81	W	2	------	↙ ⊤ p.
8	------	22.5	75	W	2	------	↙ a.
9	------	23.2	74	W	2	3	↙ ● a.
10	------	22.7	79	W	2	------	↙ p.
11	------	22	81	W	2	3.3	↙ ●° a. p.
12	------	21.7	79	W	3	1.8	↙ ●° p.
13	------	22	78	W	3	------	↙ a. p.
14	------	22.2	75	W	3	------	
15	------	22.5	64	W	2	------	
16	------	23.9	78	W	3	3.8	↙ ● a. p.
17	------	22.8	81	W	2	31.2	↙ ● a. p.
18	------	22.4	72	W	2	------	
19	------	23	71	S	2	------	
20	------	23.4	75	W	2	------	⩛ ⊖ p.
21	------	24.2	82	S	2	1.5	↙ ●° p.
22	------	23	77	W	2	2.3	↙ ●° a. p. ⊤ ⋖ ⊖
23	------	23	79	W	2	------	↙ ●° a.
24	------	24.4	82	W	1	------	↙ p.
25	------	24.6	83	NNW	3	------	⊤ ⋖ p.
26	------	24.8	77	NNW	2	------	
27	------	25	79	NNW	2	------	
28	------	25.2	79	SW	2	------	⋖ p.
29	------	25.2	80	NW	2	------	⋖ ↙ p.
30	------	25	70	W	2	------	⋖ p.
31	------	25	79	NW	2	------	
Mean	------	23.2	77.4	------------	2.2	------	
Total	------	------	------	------------	------	131	

CARAGA.

[ϕ=7° 30′ N; λ=126° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	31.7	22.3	78	Calm	------	3.8	⊤ ● ⋖ p.
2	30.7	21.6	72	Calm	------	5.6	● ⊏ p.
3	30.7	21.6	67	Calm	------	11.2	r° p.
4	27.9	21.5	84	Calm	------	.3	r° a. d° ●° p.
5	30.7	23.6	65	Calm	------	.3	↙ a. ●° p.
6	30.8	22.4	69	Calm	------	------	d a.
7	31.3	23	69	Calm	------	------	⊤ a.
8	28.9	22	76	Calm	------	------	
9	31	22.8	68	Calm	------	18.5	⊏ ● p.
10	28.4	21.7	77	Calm	------	1	r° a. p.
11	29.7	22	77	Calm	------	------	d° a.
12	30.2	22.5	72	Calm	------	.3	d° a. ⌒ p.
13	31.4	21.8	71	Calm	------	------	
14	31.9	22.5	72	S	3	------	↙° a. ⩛ p.
15	31	22.4	78	S	2	------	d° ∞ ⋖ p.
16	29.7	23.4	85	Calm	------	------	⊏ p.
17	30.9	23.3	69	Calm	------	------	⋖ p.
18	30.1	23.5	74	Calm	------	.3	●° a. ⊏ d° p.
19	32.4	22.6	68	S	5	8.9	↙° a. ∞ r p.
20	32.4	21.5	70	SSW	5	------	↙° a. ∞ ⊖ ⩛ ↙ p.
21	31.9	21.5	79	SSW	5	------	↙° a. ∞ ⊖ ⩛ ↙ p.
22	30.8	25.5	74	S	5	------	↙ p.
23	31.9	23.5	67	S	5	------	↙ a. p. ⊕ ∞ ⊖ ⩛
24	31.8	23.4	63	S	5	------	↙ a. p. ∞ p.
25	31.5	22.1	66	S	5	------	↙ a. p. ⋖ ⊤ p.
26	------	------	------	------------	------	------	
27	------	------	------	------------	------	------	
28	------	------	------	------------	------	------	
29	------	------	------	------------	------	------	
30	------	------	------	------------	------	------	
31	------	------	------	------------	------	------	
Mean	30.8	22.6	72.4	------------	1.6	------	
Total	------	------	------	------------	------	------	

COTABATO.

[ϕ=7° 13′ N; λ=124° 12′ E.]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33.2	21.6	60	WNW	3	19.3	≡ a. ● ⋖ p.
2	33	22.6	56	SW	4	3.3	● a. p.
3	29	22.6	94	WSW	2	58.1	≡ a. ● a. p.
4	26.2	21.5	87	NW	2	67.1	● a. p. ↙ p.
5	31.1	20.7	69	SW	3	8.1	≡ a. ○ ● p.
6	30.5	20.7	72	WNW	3	.5	≡ a. ⊤ ●° p.
7	32.8	21.8	66	NE	3	------	≡² a. ○ p.
8	31.5	21.7	83	WSW	1	------	≡ ⌒ a. d p.
9	33.1	21	70	NW	4	------	≡² a. d p.
10	32.3	23	77	SW	7	10.9	↙ d ⊤ ⋖ ● p.
11	32.4	21.8	66	WNW	2	3.8	⊏ ● a. d p.
12	32.8	23	63	W	4	4.3	≡ a. ↙° ● p.
13	30	22.6	90	W	5	7.8	● a. p. ⊖ p.
14	31.5	21.7	72	WNW	4	2	Ω ≡ a. ●° ⩛ p.
15	33.2	23.2	70	W	3	2	● ≡ a. ○ p.
16	31.9	22.5	73	WNW	4	32.7	⊏ ≡ a. ○ p. ●
17	31.5	21.6	76	WNW	4	10.9	≡ a. ● p.
18	30.1	22 4	78	SE	1	9.4	● a. d ⩛ p.
19	32.3	22.2	84	NW	3	11.4	≡ ● a. d p.
20	31.6	21.4	71	WNW	6	------	≡ a. ↙° p.
21	34.1	22.7	62	WNW	5	------	≡ a.
22	32.2	22.5	66	WSW	5	2.8	≡ ● a.
23	32.6	22.7	79	W by N	4	1.3	≡ a. ↙ ● p.
24	30.8	21.7	72	SW	3	1.8	≡ ● a.
25	33.7	21.3	73	W	4	------	⋖ p.
26	34.4	21.4	74	WNW	3	------	≡ a.
27	32.6	21.8	80	SW	3	------	≡ a.
28	33.4	21.1	72	WNW	5	4.8	Ω ≡² a. ○ ● p.
29	33.2	22.5	75	WNW	5	9.1	● p.
30	32	22.3	68	NW	3	2.6	≡ a. ⋖ ↙ ● p.
31	32.8	21.8	71	SW	4	7.6	● p.
Mean	32	22	73.2	------------	3.6	------	
Total	------	------	------	------------	------	281.6	

METEOROLOGICAL DATA, ETC.—Continued.

DAVAO.
[ϕ=7° 01′ N; λ=125° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.2	22	67	SW	2	------	
2	31	22.1	69	Calm	------	24.6	● ⊤ p.
3	30.9	22	73	Calm	------	------	
4	26.5	22.7	88	Calm	------	------	⊤ a. p. d p.
5	28	21	79	SSW	2	15.7	● p.
6	31.9	21.3	63	Calm	------	------	
7	32.6	22.7	59	S	2	------	
8	32.7	22.5	61	SW	2	16.3	● p.
9	31.2	20.9	68	Calm	------	------	⊤ p.
10	26.7	22.3	84	Calm	------	------	
11	29.3	22.6	76	Calm	------	14.7	● a.
12	31.1	22	66	NW	1	------	
13	31.6	23.1	65	WNW	1	------	
14	32.3	21.5	64	WSW	1	26.4	● ⊤ p.
15	31.6	22.8	75	Calm	------	------	
16	31.6	23	66	SW	1	------	
17	30.5	22.5	67	Calm	------	------	
18	31.5	23	73	WSW	2	------	
19	31.6	22.9	68	SSE	1	40.6	● ⊤ p.
20	31.8	21.3	69	NW	1	------	
21	31.9	22.6	65	S	2	------	
22	32.9	23.7	59	SW	1	18.8	● p.
23	33.7	22.5	57	NW	2	16.3	● ⊤ p.
24	32.9	21.7	60	SE	1	------	
25	32.6	22.9	63	Calm	------	------	⊤ p.
26	34	23.2	56	Calm	------	------	
27	31.2	22	66	NW	1	------	
28	31.9	22.1	64	SE	1	------	≺ p.
29	32.2	23.1	66	Calm	------	------	
30	31.3	22.2	72	SE	1	------	
31	32.6	22.5	61	Calm	------	------	
Mean	31.4	22.3	67.4	------------	.8	------	
Total	------	------	------	------------	------	173.4	

ZAMBOANGA.
[ϕ=6° 54′ N; λ=122° 05′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.5	22.5	75	SE	1	------	
2	31.5	24	79	W	2	22.4	● p.
3	30.4	22.5	77	W	4	14.2	● p.
4	25.5	20.1	88	W	3	35.6	● a. p.
5	28.7	21.5	74	WNW	4	------	
6	29.1	22.4	75	W	2	------	
7	29.5	24.1	72	W	2	------	
8	31.4	21	73	Calm	------	12.2	● a.
9	29	22.4	77	SE	1	2.5	● a.
10	28.4	24	81	W	1	------	
11	28.6	22.4	75	WNW	1	7.9	● a. d p.
12	27.5	22.4	91	W	2	3.8	● a.
13	26.2	22	93	Calm	------	49.6	● a. r p.
14	29.5	22	79	SE	1	15.8	● a. p.
15	29.6	22.8	81	SE	2	------	
16	27.7	22.5	83	W	2	5.3	● a.
17	28.5	22.5	90	W	2	------	
18	28.9	24.9	76	W	2	------	
19	28	22.3	86	W	1	17	● a.
20	30	24.9	76	W	2	------	
21	29.7	25	76	W	3	------	
22	29.9	23.8	73	W	2	1	●° a.
23	28	21.5	95	W	2	1	●° ↙ a.
24	29.5	21.5	70	Calm	------	3.8	↙ ● a.
25	30	22.2	83	E	1	------	
26	31.1	23.4	74	SE	1	------	
27	29.8	23.5	78	SSE	1	------	
28	30.1	23	79	SE	1	------	
29	29.5	22.5	77	W	3	------	
30	30	23.5	71	W	3	------	
31	29.3	22	79	W	2	------	
Mean	29.2	22.7	79.2	------------	1.7	------	
Total	------	------	------	------------	------	192.1	

ISABELA, BASILAN.
[ϕ=6° 43′ N; λ=121° 57′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31	21.5	66	NE	------	------	Ω ≡° a.
2	30.4	22	67	W	------	------	Ω ≡° a. ⊤ p.
3	29.5	22.2	76	NE	------	20.1	↙ ● a.
4	29.4	19.9	91	Calm	------	45.2	↙ ● a. ●° p.
5	30	21.5	72	W	------	4.1	↙ ● p.
6	32	22	59	W	------	1	p a.
7	31.5	22.2	64	NE	------	------	Ω ≡° a.
8	30.5	23	74	NE	------	13.7	Ω ≡° ↙ ● a.
9	31.8	22	64	NE	------	4.1	↙ ●° a.
10	30.2	21.5	67	W	------	------	Ω ≡° a.
11	29.8	21.7	84	W	------	17.3	↙ ● a. ●° p.
12	30	22	84	W	------	20.8	≡° ↙ ● a. ●° p.
13	29.4	22.2	81	W	------	13.2	≡° ↙ ● a.
14	31.6	21.6	71	NE	------	17.8	≡° a. ↙ ● p.
15	30	21.5	72	NE	------	------	≡° a.
16	30.5	22	73	W	------	12.7	↙ ● a.
17	31.6	22.2	74	W	------	------	Ω ≡° a.
18	32	22.5	69	W	------	------	Ω ≡° a.
19	32.2	22.5	69	W	------	51.6	↙ ● a.
20	30.4	22.3	62	W	------	------	Ω a.
21	30	21.5	73	SW	------	------	↙ a.
22	30.2	21.9	64	SW	------	8.6	● Γ↯ a.
23	29.6	23.2	75	W	------	1.5	≡° ● a.
24	30	21.5	74	W	------	8.4	↙ ● a.
25	30.2	23	74	NE	------	------	Ω ≡° a.
26	30.5	21	72	NE	------	------	Ω ≡° a.
27	30	22	71	NE	------	------	Ω ≡° a.
28	30.2	22.3	73	NE	------	------	Ω a.
29	30.5	21	63	SW	------	------	Ω a. ⊤ p.
30	30.2	22	70	W	------	------	Ω ≡° a. ↙ p.
31	31	21.5	61	W	------	------	Ω ≡° a.
Mean	30.5	21.9	71.3	------------	------	------	
Total	------	------	------	------------	------	240.1	

NOTAS GENERALES DEL TIEMPO.

Presión y temperatura.—El pasado Agosto ha sido verdaderamente notable por la frecuencia de perturbaciones atmosféricas: y así no es de extrañar que la media mensual de la presión haya sido en todas las estaciones de Filipinas bastante inferior á la normal de este mes y á la media de Agosto, 1906. Estas diferencias, según puede verse en la tabla que acompaña el texto inglés, han sido mucho más notables en las estaciones situadas en el norte del Archipiélago que en las del sur, por haberse hallado aquéllas más cerca de los centros ciclónicos de que hablaremos más tarde. La media mensual para Manila difiere de la normal de Agosto en —1.49 milímetros, y de la media del año pasado, en —1.75 milímetros. Las máximas presiones fueron registradas en todo el Archipiélago el día 2 y las mínimas, del 20 al 23.

La media mensual de temperatura ha sido en general algo inferior á la normal y á la media del año pasado. Es notable la máxima absoluta de Olongapó que no pasó de 28.0° C.: fué esto debido, sin duda alguna, al tiempo extraordinariamente lluvioso que reinó allí durante todo el mes hasta el punto de recogerse la enorme cantidad de agua que mencionaremos luego, superior á la de Agosto, 1906 en 928.5 mm.

Precipitación acuosa.—Durante la segunda década del mes puede decirse que las lluvias fueron generales en todo el Archipiélago y aún bastante abundantes, si exceptuamos únicamente algunas regiones de Cebú y Mindanao. Las mayores cantidades de lluvia han sido registradas este mes en las estaciones de S. José de Buenavista (W de Panay), Olongapó (W de Luzón) y Baguio, Benguet (centro de Luzón, no muy lejos de la costa occidental). La suma total de agua medida en los pluviómetros de estas estaciones es 916.0 mm., 1,463.5 mm. y 1,082.9 mm. respectivamente

DEPRESIONES Y TIFONES.

Hemos indicado ya que fueron bastantes en número las depresiones y tifones que durante este mes de Agosto influyeron en el Archipiélago.

Diremos aquí algo de las más importantes, fijándonos de un modo especial en la que cruzó el día 22 la parte noroeste de Luzón en dirección al NE, no solo porque en realidad fué, al menos para Filipinas, el tifón más intenso de todo el mes, sino también porque deseamos publicar algunas de las observaciones hechas en la costa occidental de Luzón ya que por falta de ellas les fué imposible á los Directores de los otros Centros Meteorológicos del Extremo Oriente situar el centro de este tifón y más aun señalar su trayectoria. Aún el Observatorio de Manila solo pudo seguirle en su movimiento de traslación hasta que llegó al noroeste de Luzón, por haberse interrumpido entonces la comunicación telegráfica entre Manila y las estaciones del norte más próximas al vórtice ciclónico.

DEPRESIÓN DEL MAR DE CHINA DE 1 Á 3 DE AGOSTO, 1907.

Damos á continuación los anuncios dados por el Observatorio de Manila sobre esta depresión, que fué, al parecer, de poca importancia.

Julio 30, 1.30 p. m.: Hay indicios de un área de baja presión en el Mar de China hacia el W de Luzón.

Julio 31, 11.50 a. m.: Se confirma la existencia de un área de baja presión en la región septentrional del Mar de China.

Agosto 1, 11.50 a. m.: La depresión en el Mar de China aparece ahora hacia el SE de Hongkong, en los 20° ó 21° Lat.

Agosto 2, 11.50 a. m.: La depresión del Mar de China se halla hoy algo más cerca de la costa meridional de China, al S ó SSE de Hongkong.

Agosto 3, 11.50 a. m.: La depresión del norte del Mar de China ha entrado probablemente en el Continente por entre Hongkong y Amoy en dirección hacia el norte.

El Observatorio de Hongkong dió los siguientes anuncios:

Agosto 1, 11.55 a. m.: La presión es aparentemente baja en la parte norte del Mar de China, siendo probable se desarrolle una depresión hacia el sur de Hongkong entre los paralelos 18° y 20° Lat.

Agosto 1, 6.30 p. m.: Una depresión se halla situada hacia el sur de Hongkong. No parece ser de grande intensidad.

Agosto 2, 11.50 a. m.: La depresión al sur de Hongkong se halla probablemente en los alrededores de 20° Lat. Parece moverse hacia el NW.

Agosto 3, 11.55 a. m.: La depresión penetró ayer noche en el Continente pasando cerca de Hongkong y moviéndose hacia el norte.

Los vientos del SE, S y SSW que desde el 30 de Julio predominaron á lo largo de la costa occidental de Luzón fué el principal indicio que movió al Observatorio de Manila á suponer tan pronto la existencia de esta depresión en el Mar de China, al W de Luzón. El 1.° de Agosto era ya imposible dudar de la verdad de dicha suposición: el mapa del tiempo de 6 a. m. de aquel día señalaba un centro de depresión en la parte norte del Mar de China en los alrededores de 19° Lat. El día siguiente á la misma hora aparecía la depresión más cerca del Continente, en donde penetró durante la noche del 2 al 3 pasando no lejos de Hongkong, según anunció el Director de aquel Observatorio.

La falta de observaciones del Mar de China nos impide dar más detalles sobre esta depresión. Sin embargo, parece poder asegurarse que no llegó á adquirir el carácter de verdadero tifón.

TIFÓN DEL GOLFO DE TONGKING DE 5 Á 11 DE AGOSTO, 1907.

El Observatorio de Manila anunció este tifón el día 5 á 5^h p. m. en estos términos:

Existe probablemente un tifón en el Pacífico hacia el E del norte de Luzón.

El mapa del tiempo de 10 p. m. del día 6 señala un centro de depresión muy poco desarrollado hacia el NE de Manila junto á la costa oriental de Luzón, entre los 15° y 17° Lat. Las observaciones de 6 a. m. del 7 sitúan la depresión en el Mar de China junto á la costa occidental de la misma isla. De ahí que el Observatorio enviase el siguiente anuncio á los Observatorios de Tokio, Zikawei, Taihoku, Hongkong y Phulien:

Día 7, 10.30 a. m.: El tifón ha cruzado Luzón la noche pasada en la forma de una depresión dilatada. Se halla al presente junto á la costa oeste de Luzón.

En la nota ordinaria del tiempo dada á 11.50 a. m. del mismo día se añadía que "probablemente adquiriría mayor intensidad en el Mar de China," como así fué en realidad. Véase en efecto lo que se decía en las notas del tiempo de los días 8 y 9:

Día 8, 11.50 a. m.: La depresión que se hallaba ayer junto á la costa occidental de Luzón parece demorar ahora al NW de Manila aumentando en intensidad.

Día 9, 11.50 a. m.: La depresión del Mar de China se halla al presente al WNW de Manila, moviéndose probablemente en dirección al golfo de Tongking.

Estos anuncios del Observatorio de Manila fueron confirmados con el siguiente telegrama del Observatorio de Phulien que se recibió en Manila á 10.27 p. m. del día 9:

La depresión anunciada [por el Observatorio de Manila] amenaza entrar en el golfo de Tongking por entre Hainán y el norte de Annam.

El mismo Observatorio de Phulien telegrafió á 11 a. m. del día 11:

El tifón ha pasado algunas millas al sur de Haiphong.

El paso de esta depresión ó tifón por el sur de Hainán se echa de ver claramente por las observaciones del Faro Lamko (NW de Hainán, Distrito de Kiung-chow). La mínima barométrica se observó allí la madrugada del 10 con vientos racheados, aunque no muy fuertes, del ENE. Las nubes bajas venían del E á 9 a. m. y los vientos y las nubes eran ya del SE á mediodía. Al pasar el tifón por el sur de Haiphong debía de estar bien desarrollado, pues en Phulien soplaban la mañana del 11 vientos huracanados del E.

TIFÓN DEL PACÍFICO DE 8 Á 16 DE AGOSTO, 1907.

Damos á continuación los anuncios de tifón enviados por el Observatorio de Manila los días 9, 10, 12 y 13 á Tokio, Zikawei, Taihoku, Hongkong y Phulien;

Día 9, 10 a. m.: Tifón al SW de Guam en los alrededores de 11° Lat.

Día 10, 1 p. m.: Tifón ahora al WNW de Guam entre los meridianos 136° y 138° y cerca de 15° ó 16° Lat. Se mueve al presente al NW.

Día 12, 7 p. m.: Tifón aún lejos en el Pacífico hacia el ENE de Manila. Parece haber permanecido casi estacionario durante las últimas 24 horas.

Día 13, 12.30 p. m.: Tifón recurvó al SE de las Islas Liukiu y se mueve al presente hacia el norte.

En el texto inglés publicamos las observaciones hechas en Guam y Yap los días 7–12, las cuales sirven admirablemente para conocer la formación y primera parte de la trayectoria de este tifón.

Según estas observaciones, el tifón hubo de formarse del 6 al 8 hacia el SSW de Guam y E de Yap, casi á igual distancia de ambas estaciones. Del 8 al 10 se movió al NW, y á 6 a. m. del 10 se hallaba el vórtice al N de Yap en los alrededores de 14° Lat. Hasta el día 11 parece que siguió moviéndose al NW; pero del 11 al 13 tuvo lugar la recurva, cuando el centro ciclónico se hallaba al SE de las Islas Liukiu, á gran distancia de Filipinas. Dicho centro se puede situar con bastante aproximación á 6 a. m. del 12 en los alrededores de 19° Lat. y 133° Long. E. La velocidad de traslación del tifón disminuyó algo durante la recurva. Después de la recurva se movió al NNE hasta el día 15, en que se dirigió al norte, viniendo á atravesar la región central de Japón durante la noche del 15 al 16. Del 16 al 17 cruzó el Mar de Japón, é, inclinándose de nuevo al NE, penetró en el Mar de Okhotsk la madrugada del 17. Véase la trayectoria de este tifón en las láminas I y II.

TIFONES DEL PACÍFICO DE 16 Á 24 DE AGOSTO, 1907.

En el texto inglés damos las observaciones hechas en Guam durante los días 14–21. La bajada del barómetro y los vientos del día 14 parecen indicar la existencia de una depresión ó tifón que probablemente se estaba desarrollando hacia el ENE de aquella estación. El barómetro continuó bajo varios días hasta el 18, en que desfogaron fuertes chubascos de agua y viento del SW. El tifón debió de pasar, pues, á la menor distancia de Guam del 17 al 18 moviéndose al NW. Probablemente es el mismo que el 21 apareció al S de las Islas Bonín y que recurvó del 22 al 24 al NW de dichas Islas.

El Observatorio de Manila dió los siguientes anuncios sobre este tifón:

Día 18, 12 m. d.: Existe un tifón lejano en el Pacífico en las cercanías del norte de las Marianas.

Día 19, 11.50 a. m.: El tifón anunciado ayer no lejos del norte de Guam se mueve lentamente inclinándose al N.

Día 20, 11.50 a. m.: El tifón del norte de Marianas se mueve al Nornoroeste.

Las observaciones de nuestro Archipiélago indicaban del 16 al 18 la existencia de otra depresión en el Pacífico, hacia el E de Luzon, moviéndose al NW. Esta depresión ó tifón recurvó del 19 al 20 al E de los canales Balintang y Bashi, y el 22 aparecía claramente en el mapa del tiempo de 6 a. m. hacia el ESE de Naha, Islas Liukiu, dirigiéndose al NE. Del 22 al 23 subió por el E de aquellas Islas en dirección al NNE; y el 24 se le veía situado cerca del Japón, al S de la Isla Shikoku. En el texto inglés pueden verse las observaciones hechas á bordo del vapor *Ban-Yek* cerca de las costas orientales y septentrionales del SE de Luzón. Los vientos duros del SW y la mar de fondo del NE y NNE observada el 17 y 18 señalaban bien la existencia de este centro ciclónico al E del norte de Luzón.

He ahí los anuncios que dió el Observatorio de Manila referentes á este tifón:

Día 19, 11.50 a. m.: Bajan los barómetros en Luzón, especialmente á lo largo de la costa occidental y N de esta Isla por efecto de la influencia simultánea de la depresión del Pacífico que se halla al E del canal de Balintang y de otra que se desarrolla actualmente en el Mar de China y está situada hacia el W del norte de Luzón.

Día 20, 11.50 a. m.: La depresión del Pacífico se mueve hacia el norte acercándose á Liukiu.

Día 21, 11.50 a. m.: El tifón del Pacífico se ha movido hacia el NE y se aleja del Archipielago.

Día 22, 11.50 a. m.: El tifón del Pacífico se ha inclinado algo hacia el NNE.

Día 23, 11.50 a. m.: Bajan decididamente los barómetros en las Islas Liukiu y S del Japón por moverse hacia el N el ciclón del Pacífico, el cual probablemente aumenta en intensidad ó se profundiza más por unirse á este el baguio que cruzó por el N de Guam, hace pocos días.

Día 24, 11.50 a. m.: El tifón, que se hallaba ayer al E de las Islas Liukiu acercándose á las mismas, se mueve probablemente hacia el N.

En la lámina III damos las isobaras del día 24 á fin de que puedan nuestros lectores ver la posición, en aquel día, de estos dos centros ciclónicos del Pácifico de que acabamos de hablar y la de otro que discutiremos luego, el cual, procedente del Mar de China, se hallaba el 24 al SE de Meiacosima. También aparece en este mapa de isobaras otro tifón cerca de las Islas Bonín, el cual, según el Observatorio de Tokio, se presentó el 23 al SW de aquellas Islas, y después de recurvar, se alejó el 25 hacia el NE.

TIFÓN DEL NOROESTE DE LUZÓN DE 19 Á 28 DE AGOSTO, 1907.

El Observatorio de Manila anunciaba el día 17 la existencia de una depresión en el Pacífico hacia el E de Luzón. El 18 se indicaba que dicha depresión se había extendido hacia el W hasta el Mar de China. El 19 se señalaban ya distintamente dos centros de baja presión: uno en el Pacífico, al E del canal de Balintang, de que hemos hablado ya, y otro en el Mar de China, al W del norte de Luzón. Hablaremos ahora de este último, que fué, sin duda, el de más importancia para Filipinas.

He ahí los anuncios dados por este Observatorio en las notas ordinarias del tiempo de los días 20, 21 y 22:

Día 20, 11.50 a. m.: La depresión del Mar de China, al W del norte de Luzón, parece moverse hacia el el norte ó nornordeste.

Día 21, 11.50 a. m.: El tifón del Mar de China aumenta en intensidad. Parece moverse lentamente hacia el norte ó nornordeste.

Día 22, 11.50 a. m.: La presión sigue bajando aún en Formosa y norte de Luzón, debido al movimiento del tifón al NNE. El centro demora ahora hacia el WNW de Aparri, á la distancia de unas 150 millas, moviéndose muy despacio.

El 21 se interrumpió la comunicación con Vigan y así fué imposible al Observatorio de Manila seguir en sus notas del tiempo el curso ulterior del tifón. En el texto inglés publicamos algunas de las observaciones hechas en Manila y en las estaciones de Bolinao, Tuguegarao, Vigan, Aparri y Santo Domingo (Islas Batanes), durante el período 18–24.

Los vientos observados en Vigan el día 18 y en Bolinao el 19 indican bastante claramente la existencia de una depresión en el Mar de China, al W del norte de Luzón. La depresión aparecía ya el día 20, y sobre todo el 21, como un tifón bien desarrollado que se iba acercando á la parte noroeste de la Isla de Luzón. En la lámina IV damos las isobaras y posición aproximada del centro ciclónico á 2 p. m. del 21, 6 a. m. del 22, 6 a. m. y 2 p. m. del 23. Como la estación de Vigan es la más septentrional que teníamos en la costa oeste de Luzón, no nos es posible precisar si el vórtice llegó á tocar la Isla, por más que lo tenemos por casi cierto, y así lo suponemos en la trayectoria que puede verse en la lámina V.

Los vientos del SSE,S y SSW fueron en Vigan huracanados y muy violentos. "La mayor parte de las casas de materiales ligeros, escribía el Observador de aquella estación, D. Pastor Daroy, fueron destechadas y algunas se cayeron. También fué destruído un camarín de la Casa-Gobierno." La mínima absoluta fué allí 743.3 milímetros, registrada á 5 a. m. del 22.

El tifón se movía al NE. y así pasó á la menor distancia de Aparri durante la noche del 22 al 23. La mínima barométrica absoluta en Aparri fué 744.6 milímetros. Como se ve, el vórtice pasó más cerca de aquella estación de lo que había supuesto el Observatorio de Manila en la nota citada del día 22. La mínima de Aparri se diferencia de la de Vigan en solo + 1.3 milímetros. Siendo esto así, cómo puede explicarse que en la primera estación apenas adquirieron los vientos fuerza alguna cuando, según queda dicho, llegaron á ser destructores en la segunda? El carácter de estas notas no nos permite detenernos en este punto y así bastará indicar que puede explicarse este fenómeno, bien suponiendo que todo ó parte del cuerpo central del tifón estaba levantado sobre el suelo cuando pasaba cerca de Aparri, bien que el eje de la tormenta se hallaba muy inclinado por el lado izquierdo de la trayectoria, ó sea, por el lado del mar.

Las observaciones de Santo Domingo señalan perfectamente el paso del tifón por el S, SE y E de aquella estación. La mínima barométrica fué 746.7 mm. y se observó á 6 a. m. del 23, con vientos racheados del NE.

El día 24 por la madrugada todavía es posible con los datos que poseemos situar el vórtice al SE del grupo de Meiacosima (véase la lámina III). El 25 es ya imposible situarlo: sin embargo, como el 26 aparece un tifón al W de las Islas Bonín, el cual subió hacia el NNE en dirección al SE de Japón, creemos no se nos objetará si suponemos como muy probable que fué este el mismo tifón que tres días antes había pasado por entre el norte de Luzón y las islas Batanes moviéndose al NE. Con esta suposición hemos trazado la trayectoria que damos en la lámina V. Según el Observatorio de Tokio, el tifón después de haber corrido á lo largo de la costa oriental del Japón, atravesó la Isla Hokaido en dirección al NNW, penetrando en el golfo Tartary la tarde del 29.

SEISMOLOGICAL BULLETIN FOR AUGUST, 1907.

By Rev. Miguel Saderra Masó, S. J.,

Assistant Director of the Weather Bureau.

EARTHQUAKES FELT IN THE PHILIPPINES.[1]

1, $9^h\ 25^m$. **Borongan** (E of Samar). Oscillatory earthquake of intensity IV; duration 6^s.

1, $22^h\ 15^m\ 0^s$.* **Northern and western Panay.** Earthquake of intensity III. The station at Capiz, northern coast of the Island, reports that for about half an hour before the disturbance prolonged rumblings were heard to the west; the seismic shocks seemed to have the direction WNW–ESE.

3, $5^h\ 45^m$. **Ormoc** (W of Leyte). Oscillatory earthquake of intensity III, lasting 8^s.

3, $17^h\ 38^m$. **Caraga** (E of Mindanao). Oscillatory quake. Direction N–S; intensity III; duration 20^s.

7, $6^h\ 30^m$. **Baganga** (E of Mindanao). Oscillatory earthquake of intensity II.

7, $20^h\ 10^m$. **Butuan** (N of Mindanao). Earthquake of force II and very short duration.

9, $15^h\ 51^m\ 25^s$.* **Capiz** (N of Panay). Oscillatory earthquake. Direction WNW–ESE; intensity III; duration about 10^s.

9, $21^h\ 56^m$. **Caraga** (E of Mindanao). Earthquake. Direction E–W; intensity III; duration 20^s.

10, $18^h\ 31^m$.* **Balanga** (W of Luzon). Earthquake of intensity II; duration 10^s.

17, $4^h\ 27^m$.* **Legaspi** (SE of Luzon). Oscillatory quake. Direction NNW–SSE; intensity IV; duration 8^s.

17, $17^h\ 35^m$. **Zamboanga** (W of Mindanao). Earthquake of intensity II; duration 5^s.

19, $10^h\ 45^m$. **Butuan** (N of Mindanao). Oscillatory earthquake. Direction NNE–SSW; force III; duration short.

22, $19^h\ 30^m$. **Balingasag** (N of Mindanao). Earthquake of 15^s duration.

24, $16^h\ 37^m$. **Ormoc** (W of Leyte). Earthquake of force II; duration 15^s.

29, $18^h\ 20^m$. **Aparri** (NE of Luzon). Oscillatory quake; intensity II; duration 7^s.

31, $8^h\ 18^m\ 50^s$.* **Northern Luzon, Babuyanes and Batanes Islands.** Earthquake of intensity IV. At Santo Domingo, Batanes Islands, were observed trembling shocks accompanied by subterranean noises. The character of the seismograms traced by the Vicentini and the horizontal pendulum microseismographs of the Observatory indicate that the focus of this disturbance lay outside the Island of Luzon. The duration of the preliminary movements, 80 seconds, places it at a distance of at least 600 kilometers from Manila, which is that of the Babuyanes group of islands, where several volcanoes exist, which are more or less active.

[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the note. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

RECORDS OF THE MICROSEISMOGRAPHS.

[Time of the one hundred and twentieth meridian east of Greenwich. Midnight = 0h.]

No.	Date.	Component.	Beginning. First preliminary tremors.	Beginning. Second preliminary tremors.	Beginning. Principal portion.	Maximum range of motion. Hour.	Maximum range of motion. Amplitude (2 a.).	Maximum range of motion. Period.	End.	Instrument.	Remarks.
			h. m. s.	*h. m. s.*	*h. m. s.*	*h. m. s.*	*mm.*	*s.*	*h. m. s.*		
153	1	WSW-ENE	22 15 00	----------	22 16 08	22 16 44	0.06	2.4	22 23 00	V. M.	Earthquake, intensity III, in the north and west of Panay.
		NNW-SSE	22 15 01	----------	22 16 05	22 16 44	.18	2	22 27 00	V. M.	
		WSW-ENE	22 15 20	----------	22 15 53	22 16 51	.11	6.6	22 30 00	H. P.	
154	3	WSW-ENE	9 42 54	----------	9 43 16	9 43 24	.04	------	9 46 00	V. M.	
155	3	WSW-ENE	18 10 01	----------	----------	----------	------	------	18 15 00	V. M.	
		NNW-SSE	18 10 00	----------	----------	----------	------	------	18 16 00	V. M.	
156	9	WSW-ENE	15 51 25	----------	15 52 20	15 52 42	.04	2.4	15 57 00	V. M.	Earthquake, intensity III, at Capiz (N of Panay).
		NNW-SSE	15 51 26	----------	15 52 29	15 52 42	.06	2	15 58 00	V. M.	
		WSW-ENE	15 51 33	----------	15 52 36	----------	------	------	15 56 00	H. P.	
		NNW-SSE	15 51 33	----------	----------	----------	------	------	15 55 00	H. P.	
157	9	WSW-ENE	23 55 10	----------	----------	----------	------	------	23 57 00	V. M.	
158	10	WSW-ENE	18 30 41	----------	18 30 57	18 31 23	1.90	2	18 51 00	V. M.	Vertical component; amplitude 0.70 mm. Earthquake, intensity II, at Balanga (W of Luzon).
		NNW-SSE	18 30 38	----------	18 30 56	18 31 38	1.80	2	----------	V. M.	
		WSW-ENE	18 30 44	----------	18 31 00	18 31 36	1.53	6	18 42 00	H. P.	
		NNW-SSE	18 30 45	----------	18 30 59	18 31 27	1.57	6	18 42 00	H. P.	
159	14	WSW-ENE	5 59 32	----------	6 07 56	6 09 21	.08	6.3	6 22 00	H. P.	
160	14	WSW-ENE	7 23 18	----------	7 27 23	7 30 16	.07	6	7 43 00	H. P.	
161	16	WSW-ENE	15 10 21	----------	----------	----------	------	------	15 30 00	V. M.	
		WSW-ENE	15 10 16	----------	15 18 04	15 21 34	.07	6	15 39 00	H. P.	
162	17	NNW-SSE	4 27 00	----------	4 27 39	4 27 43	.03	2	4 30 00	V. M.	Earthquake, intensity IV at Legaspi (SE of Luzon).
163	18	NNW-SSE	1 36 32	----------	----------	----------	------	------	1 55 00	V. M.	
		WSW-ENE	1 36 36	1 42 06	1 46 01	1 46 54	.04	7.2	2 07 00	H. P.	
		NNW-SSE	1 36 40	1 42 12	1 46 03	1 46 23	.04	5.8	1 59 00	H. P.	
164	25	WSW-ENE	7 52 58	----------	7 54 16	7 55 32	.09	5.6	7 58 00	H. P.	
		NNW-SSE	7 52 58	----------	7 54 19	7 55 40	.03	6	7 58 00	H. P.	
165	31	WSW-ENE	8 18 50	----------	8 20 02	8 20 35	.18	2	8 25 00	V. M.	Earthquake, intensity IV, in the north of Luzon, Babuyan and Batanes islands.
		NNW-SSE	8 18 43	----------	8 19 51	8 20 14	.18	1.8	8 28 00	V. M.	
		WSW-ENE	8 18 55	----------	8 20 12	8 21 54	.17	6	8 28 00	H. P.	
		NNW-SSE	8 18 53	----------	8 20 05	8 21 52	.08	6.6	8 26 00	H. P.	
166	31	WSW-ENE	13 40 53	----------	13 41 20	13 41 45	1.62	2.2	13 53 00	V. M.	Vertical component; amplitude 0.38 mm.
		NNW-SSE	13 40 50	----------	13 41 17	----------	------	------	13 59 00	V. M.	
		WSW-ENE	13 40 57	----------	13 41 22	13 41 58	1.20	6.2	13 58 00	H. P.	
		NNW-SSE	13 40 55	----------	13 41 20	13 42 01	.92	6.4	13 58 00	H. P.	
167	31	WSW-ENE	23 24 24	----------	23 24 47	23 25 24	1.74	1.6	23 38 00	V. M.	Vertical component; amplitude 0.80 mm.
		NNW-SSE	23 24 23	----------	23 24 41	----------	------	------	23 38 00	V. M.	
		WSW-ENE	23 24 32	----------	23 24 54	23 25 15	1.33	5.4	23 42 00	H. P.	
		NNW-SSE	23 24 29	----------	23 24 51	23 25 29	1.07	6.4	23 38 00	H. P.	

Instrumental constants.—Vicentini microseismograph (V. M.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record: NNW-SSE component, 50 times; WSW-ENE component, 50 times.

Horizontal Pendulums (H. P.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation, NNW-SSE pendulum, T=7 seconds; WSW-ENE pendulum, T=6.4 seconds. Magnification of the record: NNW-SSE, 15 times; WSW-ENE, 15 times.

These seismographs have no damping arrangement.

Foundation and location.—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above the sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above the sea level.

Geological structure.—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters, which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E-W direction, at a distance of 1.5 kilometers to the north of the Observatory.

TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

1, 9^h 25^m. **Borongan** (E de Sámar). Temblor oscilatorio de intensidad IV; duración 6^s.

1, 22^h 15^m 0^s.* **N y W De Panay.** Temblor de tierra de intensidad III. De la estación de Cápiz, situada al N de la isla notifican que desde media hora antes del temblor de tierra se oyeron hacia el W prolongados ruidos; los movimientos parecían tener la dirección WNW–ESE.

3, 5^h 45^m. **Ormoc** (W de Leyte). Temblor oscilatorio de intensidad III; duración 8^s.

3, 17^h 38^m. **Caraga** (E de Mindanao). Temblor oscilatorio. Dirección N–S; intensidad III; duración 20^s.

7, 6^h 30^m. **Baganga** (E de Mindanao). Temblor oscilatorio; intensidad II.

7, 20^h 10^m. **Butúan** (N de Mindanao). Temblor de tierra de intensidad II; duración muy corta.

9, 15^h 51^m 25^s.* **Cápiz** (N de Panay). Temblor oscilatorio. Dirección WNW–ESE; intensidad III; duración unos 10^s.

9, 21^h 56^m. **Caraga** (E de Mindanao). Temblor de tierra. Dirección E–W; intensidad III; duración 20^s.

10, 18^h 31^m.* **Balanga** (W de Luzón). Temblor de tierra de intensidad II; duración 10^s.

17, 4^h 27^m.* **Legaspi** (SE de Luzón). Temblor oscilatorio. Dirección NNW–SSE; intensidad IV; duración 8^s.

17, 17^h 35^m. **Zamboanga** (W de Mindanao). Temblor de tierra de intensidad II; duración 5^s.

19, 10^h 45^m. **Butúan** (N de Mindanao). Temblor oscilatorio. Dirección NNE–SSW; intensidad III; duración corta.

22, 19^h 30^m. **Balingasag** (N de Mindanao). Temblor de tierra, duración 15^s.

24, 16^h 37^m. **Ormoc** (W de Leyte). Temblor de intensidad II; duración 15^s.

29, 18^h 20^m. **Aparri** (NE de Luzón). Temblor oscilatorio; intensidad II; duración 7^s.

31, 8^h 18^m 50^s.* **N de Luzón é Islas Babuyanes y Batanes.** Temblor de tierra de intensidad IV. En Santo Domingo de Batanes se observaron movimientos susultorios acompañados de ruido subterráneo. El carácter de los seismogramas del microseismógrafo Vicentini y de los péndulos horizontales del Observatorio indican que el origen de este terremoto se hallaba fuera de la isla de Luzón. La duración de 80^s de los movimientos preliminares lo colocan á una distancia de Manila no inferior á 600 kilómetros. Esta distancia corresponde al grupo de las islas Babuyanes; donde existen varios volcanes más ó menos activos.

REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

[1] La intensidad de los terremotos se indica conforme á la conocida escala de De Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120° E de Greenwich.

CROP BULLETIN FOR AUGUST, 1907.

By Rev. George M. Zwack, S. J.,
Secretary of the Weather Bureau.

GENERAL NOTES.

Although some regions report good, and even abundant, crops during August, the latter were, in general, less satisfactory than those brought in during the preceding month. Nevertheless, in only a few places were they so poor as the dismal descriptions of their state at the end of July led to expect. The corn crop was abundant in the north—with local exceptions—and above the average in most places in the south of the Archipelago. Hemp, cocoanuts, sweet potatoes, and other tubers have been harvested in fair quantities. It is a pity that in some regions, notably in the district of Davao, there should be a dearth of willing hands to gather the gifts which nature offers. Unfortunately, the prices of hemp and copra were low throughout the month. In order to remedy this state of affairs, the hemp planters of the neighborhood of Dapitan made an agreement among themselves to stop production until better prices could be obtained; but as those of other regions continue to strip the fiber as before, the action of the former is not very likely to have the desired effect. Owing chiefly to the season, the price of rice is high everywhere.

Considering the Archipelago as a whole, it may be said that the state of the growing crops was fair at least at the end of the month. Most of the stations report them flourishing; bad, none. Mindanao and Cebu suffered somewhat from drought, which impeded planting and in some places even killed the rice seedlings resulting from the first sowing. The western coast of Panay saw some of its crops damaged by prolonged rains. On the western coast of northern Luzon the second half of the month brought inundations caused by heavy rains, which latter revived indeed some drooping plants, but also drowned many of them, besides doing other damage.

Of injurious insects, locusts have been reported from Mindanao, where they did great harm, from the east coast of Samar, the north of Leyte, and the Islands of Bohol, Panay, and Romblon. In northern Luzon much damage has been done to the rice by worms.

The reports on the prevalence of animal diseases generally characterize the latter as not very virulent. This does not, however, apply to the east coast of Samar and to Batangas, where epizoötia has reappeared; if the losses are numerically small, the reason lies in the small numbers of animals which survived the preceding outbreak. La Laguna is likewise to be excepted, epizoötia having been severe at Siniloan and threatening to spread. But most of all suffered the Province of Lepanto-Bontoc, where 225 animals succumbed to anthrax. More or less isolated cases of the following sicknesses have been reported: Rinderpest—Surigao, Leyte, Bohol, Panay, Albay, Tayabas, Tarlac, Union, Benguet, and Ilocos Sur. Surra—Leyte, Bohol, Union, and Isabela. Glanders—Ilocos Sur. It is feared that the remark of the observer at San Fernando, Union, ascribing many of the losses to the carelessness of the owners of the animals rather than to the virulence of the diseases, is only too true, not merely for his district but for the whole Archipelago.

SPECIAL NOTES.

DISTRICT I.

Borongan.—The amount of copra produced during the month of August is quite satisfactory. Notwithstanding the recent slump in the price of this article, people work, and a fair quantity of fruit is being gathered. As in former years, the locusts are paying their visit customary at this season, to the whole eastern coast of Samar, traveling from place to place without anyone molesting them, and causing the corresponding harm to the crops. Rinderpest has likewise returned and is finishing the few animals which had remained after the first outbreak.

Tacloban.—On the eastern and northeastern coasts of Leyte the corn crop has been damaged by excessive rains, not, however, at Tacloban itself, where it is good, though not very copious. The yield of hemp, copra, gabe, sweet potatoes, and vegetables is good. The locusts have paid several visits without doing very much harm. At Naval the number of victims of rinderpest is decreasing; but at Abuyog surra has broken out, though it does not inflict great loss.

Ormoc.—The crops of corn, sugar cane, fruits, and vegetables have been fair. Rice, tubers, and sugar cane are at present growing. Though the rainfall was abundant it has done no harm to any of the crops. Isolated cases of epizoötia have been recorded. According to data furnished by the municipal officials of Ormoc, there have died in said municipality during the months of April to July 10 carabaos, 15 horses, 700 hogs, and 2,000 chickens.

Tuburan.—During the month of August have been harvested tobacco, corn, cocoanuts, rice, hemp, and a small quantity of sugar cane. Of these crops, the corn had suffered a little from scarcity of water and the strong southerly winds. The plants growing at present, such as maguey and hemp, are in a pretty fair condition.

Cebu.—Since the beginning of August considerable scarcity of water makes itself felt. The depressions which affected the barometer caused only very light rains. The greater number of seed beds for rice have dried up, thus rendering useless all the work expended upon their preparation. It would seem to be about time that the landowners tried some other crops which are less dependent upon rainfall. In the six years during which the meteorological station at Cebu exists, not one case has been recorded in which rain fell during more than twenty-four consecutive hours. Moreover, the rainfall is very irregular; sometimes a torrential rain of four or five hours' duration is followed by an entire month of glaring sunshine. If to this be added the fact that rivers which carry plenty of water throughout the year are missing, it will easily be understood that irrigation rice can not be grown with any assurance of success in many sections of Cebu Island.

Maasin.—No important agricultural products have been harvested during August, except a little corn toward the end of the month. The rain which fell at the beginning of the month has greatly benefited the growing rice. Fevers and diarrhea are again prevalent, and epizoötia continues among the animals.

Surigao.—From the more advanced cornfields a small quantity of corn has been harvested. The principal occupation of the people consisted in the stripping of hemp and the making of copra. The cocoanut groves are not very numerous at present, but within a few years they will rival the hepm plantations. The growing crops are in good condition, generally speaking, except that the corn has been damaged a little by the lack of sufficient water. The squally southwesterly winds have not harmed any of the plants, but they have brought about a scarcity of fish. A few hogs have succumbed to sickness.

Tagbilaran.—For the coming month of September a very good rice crop is in sight for Sierra-Bullones, Vilar, Sevilla, and Carmen. Already toward the end of August some rice of this new crop could be seen in the markets of Loboc and Loay. As to corn, it may be truly said to be flourishing everywhere throughout the province, bearing large ears. For some time to come the poor people will be exempt from the necessity of buying imported corn, the price of which has recently risen to 13 centavos per ganta (3 liters). Chinese merchants who monopolize the trade have exported to Cebu a quantity of copra and cocoanut oil from Tagbilaran and, among other products, hemp and sugar, chiefly from Anda, Tubigon, Calape, Jagna, Guindulman, and one or the other town more. Carmen and Vilar had a few cases of rinderpest and surra, and at the end of the month locusts were infesting the neighborhood of Ubay.

Butuan.—Owing to the drought most people of Butuan and neighboring towns could not finish the transplanting of rice. The two varieties of banana called, respectively, *laba* and *retonglan* are affected by a disease which the people call *bugtoc;* this spoils the fruit considerably and likewise gives it a bad appearance. According to the reports of some merchants, a very good corn crop has been obtained at Milagros and Corinto, two settlements of neo-Christians (converted infidels and their descendants) higher up the Agusan River. These people show, likewise, great activity in the cultivation of tubers. There is some fear that the rice crop will be smaller than last year.

Balingasag.—The transplanting of rice is continuing, but very slowly, because, in spite of repeated rains during the month, there is not yet enough water for irrigation purposes. Balingasag has at present no corn, owing to the destruction wrought by the locusts during July and August. This cereal has to be brought from

Bubutungan and sells for a real (12.5 centavos) per ganta. The price of rice is ₱7.50 per sack; while that of hemp is very low, since a picul of the fiber will bring only ₱12. The same holds true of copra which sells at ₱6.50 per picul. The winds have uprooted some trees and also injured a few cornfields.

Caraga.—The hemp plantations are improving and increasing in number. Rain has been scarce. Strong southerly winds prevailed during nine days, damaging some crops and uprooting a few banana plants. There have been no injurious insects nor diseases among the stock, but monkeys and wild hogs are creating havoc in the hemp plantations, cocoanut groves, and especially in the corn and sweet potato fields.

Cotabato.—During this month the planting of late rice continued, while the early variety is already producing ears. The recently transplanted rice has been devastated by locusts; other tender plants likewise. Malabang, Tucuran, Tuburan, and Biwang are producing rubber, the prices per picul of which are: Third quality, ₱16; second quality, ₱22.

Davao.—Hemp stripping is done quite extensively, but not commensurately with the existing possibilities, since willing arms are wanting. The soil is fertile and produces magnificent plants. Relatively little copra is being made; the proprietors give a large proportion of the cocoanuts to the Moros who work on the plantations. There is great abundance of biao in the woods, but the lack of laborers prevents its being gathered. Trade in gum mastic, wax, and woods is greatly hindered by the change of the monsoon, which does not permit of transporting these products by water to this port.

DISTRICT II.

San Jose Buenavista.—The persistent rains have injured the coffee, cacao, and especially the mongo to such an extent that not even one-fifth of an average crop is to be expected. But these same rains have greatly benefited the rice, with the transplanting of which people are busy at present. The harvest of this month consisted of corn, sweet potatoes, and gabe, which, owing to the late advent of the rains, gave results inferior to those of last year. Locusts and grubs are about the only article of which there is an abundance. In some sugar plantations they have destroyed approximately 20 per cent of the cane. As to animal diseases, San Remigio is the only place which had misfortunes, 2 carabaos dying of disease.

Dapitan.—Thanks to the copious rainfall during the first half of the month, the planting of rice could be effected. The crop growing in the caiñgin will probably be ready for the harvest before the end of September; that on other ground is not yet so far advanced. This remark holds likewise true as regards the municipalities of Dipolog and Libungan. On August 8 an enormous swarm of locusts passed over Dapitan. So dense was the cloud of insects that the sky was obscured. Their passage lasted about four hours. Thanks be to God, they have not harmed the rice; but the cocoanut trees and sugar cane have been stripped completely, nothing remaining but the stalks. At Haya, however, these insects have ruined several fields of rice which were just ready for cutting the grain. The hemp growers have agreed among themselves to suspend the production of the fiber on account of the very low price offered, viz, ₱12.50 per picul. Though the price of rice has risen to ₱8 and ₱8.50 per sack, these people will probably not suffer want, since the rice harvest is close at hand. As regards copra, the conditions are about the same as those of hemp; that is to say, the industry is paralyzed, since a picul of this product brings only ₱5 to ₱5.50. The price of carabaos has followed that of hemp. They can be bought for ₱40 to ₱60 per head, according to age and quality. The buyers come from other towns or are Chinese, who export them to Cebu, were they dispose of them at good prices, because during the last four years neither rinderpest nor other animal diseases have appeared in Dapitan.

Zamboanga.—Lack of water and great heat have prevented the work of planting rice, several of the fields lying still fallow. The rise in the price of rice makes itself felt considerably, a picul of second-quality rice costing now ₱8.50.

Isabela, Basilan.—During August, 28 piculs of hemp and about 30 piculs of copra have been shipped to Zamboanga from Basilan and 32 piculs of copra from Malamaui Island. The corn harvest which is in progress gives fair results; but the crop of fruit has been small. Mountain rice is thriving. Most of the planters are at present engaged in making copra.

Jolo.—All the crops harvested during August gave fair returns, hemp, rice, and sweet potatoes as well as fruits and the products of less importance. In addition to the regular rice fields, nearly all the neighboring mountains are planted in rice, which is in flourishing condition. The rainfall has been heavy, but without doing harm.

DISTRICT III.

Legaspi.—The transplanting of rice has been finished, favored by the frequent rains during the month. Several municipalities produced quite a fair quantity of hemp, although there was no improvement in the price of the fiber. The price of Pangasinan rice continues high, being at present ₱6.70 per cavan, current quality. Good crops of cocoanuts, bananas, sweet potatoes, gabe, and corn were obtained at Libog, Tabaco, Guinobatan, and Ligao. Stimulated by the good price of the article, some of the farmers continue preparing copra. In the municipalities of Albay and Legaspi a few horses and cattle have died of rinderpest.

Gubat.—Thanks to the strong southwest squalls which reigned during the whole month, the plague of locusts has disappeared completely after it had done serious harm to the cocoanut trees, sugar cane, and corn during the preceding months. Their ravages notwithstanding, some planters of this municipality have been able to harvest sufficient corn to supply the local market, much to the satisfaction of the consumers. The winds, though strong, have done no damage, either to the bananas or to the hemp. These plants are developing splendidly since the rains, which were frequent in the Province of Sorsogon throughout nearly the whole month, but especially during the first half thereof, have supplied them with plenty of water. Many proprietors throughout the province have taken advantage of these rains to prepare the seed beds for the next planting of rice. Saigon rice is quoted at ₱6.75, and copra at ₱11.50 per picul. Palay sells for ₱3 per cavan.

Romblon.—The corn harvest is in progress and gives fair returns. Rice, sweet potatoes, and other tubers are growing well, favored by the rains. But the locusts are creating havoc in the fields wherever they reach, and great will be the loss of the planters concerned.

Calbayog.—The amount of hemp shipped from the port of Calbayog to Manila during the month of August reached 5,890 piculs. The price of this article of commerce has fallen to ₱22 and ₱21, while Saigon rice has risen from ₱6.75 and ₱7 during July to ₱7.50 at present. The rains did no damage, but the strong southwest winds have torn blossoms and fruits from the Chinese and other orange trees.

DISTRICT IV.

Santo Domingo, Batanes Islands.—In the district of San Vicente de Saptang people are harvesting a fine crop of rice which had been planted during May. The cattle are in splendid condition, as there is an abundance of water.

Tuguegarao.—The little corn which was left in the fields surrounding Tuguegarao is being harvested. In the municipalities of Solana, Peñablanca, Enrile, Iguig, and in the district of Itaves people have obtained a fair harvest of corn. Fruit, sugar cane, and tubers are abundant, at least as compared with the preceding years. The rice seedlings are plentiful and healthy, and are being transplanted at present. It is said that during the last third of the month surra was decreasing in the Province of Isabela.

Vigan.—During this month the farmers have been occupied with transplanting rice and planting maguey, corn, and vegetables, taking advantage of the rains which accompanied the typhoon of August 22. Although the latter did a little damage to some plants, destroyed a few buildings of light materials, and injured others, it was on the whole a great blessing. Vigan had a good crop of corn, but those of other products were merely fair. At Santa Ana the state of the crops has been bad. Magsingal and Santa are afflicted with sickness among the stock. At Vigan five head of cattle have died of rinderpest and one horse of glanders.

San Fernando, Union.—The transplanting of rice is finished. The heavy rains have drowned out a considerable part of the early rice. There are no injurious insects; but quite an amount of sickness is found among the work animals. Rinderpest and surra are creating havoc on the hamlets surrounding Balaauan, and likewise cause some losses at San Juan and Bagnotan. There are, however, people who maintain that it is not so much disease itself which does the harm, but the supreme carelessness of the owners, who take no care of their stock.

Baguio.—Rice is being harvested at present and gives good results. At Trinidad potatoes and other tubers, all of good quality, are likewise being harvested. A few cases of epizoötia have occurred among the stock and poultry. Cervantes, Lepanto-Bontoc Province, had an epidemic of anthrax, which killed 225 out of 375 animals attacked.

Bolinao.—The almost continuous rains from July 16 to July 30 have caused inundations in several places, converting whole villages into miniature Venices. With this abundance of water the crops have prospered more than usually, giving hopes of a good rice crop. The work of the farmers of Bolinao is rendered very difficult by the great distances which separate their fields from the town. Some of these lie at a distance of about 24 kilometers (15 miles). Hence it is clear that many times the men are unable to attend to their growing crops to the extent desirable. On August 28 there was a flood in the Agno River which uprooted trees, drowned animals, and swept away a few houses.

Tarlac.—There is a good deal of activity among the farmers of this region who are at present occupied in the rice fields. Unfortunately the heavy rains of the second half of the month have done much harm by causing inundations in the northern portion of the municipality, thereby ruining the fields. Many hogs and some goats were drowned. The bodies of two persons—one a man, the other a woman—were likewise found in the river. The dam constructed west of the town broke. At Capas several farmers had to sow their seeds beds of rice anew, since the seedlings of the first sowing had been destroyed by worms. Hogs and poultry continue to die of disease.

San Isidro.—The corn harvest has been finished during August. The crop was abundant on all the fields which had not been reached by the inundations resulting from the copious rains during the month. The transplanting of rice is likewise accomplished, except as regards the fields which will have to be planted a second time, since the first planting only furnished food to the worms. Corn sells for ₱1.75 per cavan or ₱0.58 per 100 ears. The price of palay has risen to ₱2.75, while first-quality rice costs ₱7 and second-quality ₱6.25 per cavan. The swarms of locusts mentioned in the report for July have disappeared.

Olongapo.—The corn harvest is in progress, and its results are well above the average. Rice is growing in the fields, and although excessive rains have damaged it in a few places, a good crop is expected.

Malolos.—Thanks to the copious rains during the month, the planting of rice and garden products has advanced well. The seedlings of the former are being attacked by worms.

Balanga.—The state of sugar cane, corn, rice, and sweet potatoes is fair, notwithstanding the fact that the rice has been damaged to some extent by worms and that some fields have been inundated by the floods caused by heavy rains.

Silang.—Corn, sweet potatoes, and gabe are the products harvested during the month, all of which gave good returns. Rain has fallen in moderate abundance and greatly benefited the various crops, especially rice and hemp.

San Antonio, Laguna.—Nearly all the farmers within this region have finished the planting of irrigation rice. The tubers continue growing well, as does likewise the mountain rice. The price of hemp remains unchanged, being ₱12 per picul, current quality, while first-class fiber brings ₱19. The price of copra is likewise the same as before. Epizoötia continues at Siniloan, about 50 carabaos having died thus far. The same sickness is now invading Pañgil.

Atimonan.—The rains which fell in the beginning and middle of the month, though not very abundant, have completely changed the aspect of things. The farmers who at the end of July were almost in despair are now very active and hopeful. Those whose rice seedlings have been destroyed by locusts and drought are preparing new seed beds, while those who had the good luck of seeing theirs escape are now transplanting them. But it is feared that after all the crop will not be abundant, owing to the late planting. The locusts and grubs are disappearing. The cocoanut trees continue improving; but the price of copra is very low, being only ₱5 per picul in the local market. The same is true of the price of hemp, which is ₱10 per picul, while the rice brought hither from Manila costs ₱7.50 the cavan. The amount of corn is quite considerable. It is said that epizoötia is prevalent among the draft animals at Pagbilao, Lucena, and Laguimanoc, though it is not very malignant. Cases of this sickness occur likewise at Atimonan. Only a few days ago a dealer in carabaos, who passed through said town on his way to Lipa, lost four animals within two days. It is, however, quite possible that the exhausted condition of the carabaos due to their traveling had also something to do with their loss.

Batangas.—Up to the end of August the town of Lipa had forty cases of epizoötia. Thanks to the efforts of the municipal physician and of the veterinarians sent by the Government, the disease is on the wane. The worms which were infesting the fields have disappeared during the second half of the month, and, under the influence of the abundant rains, the rice has sprouted anew, and the sugar cane, as well as the corn, is growing vigorously.

ESTADO GENERAL DE LAS COSECHAS.

Aunque algunas regiones dan cuenta de buenas y aun de abundantes cosechas durante el mes de Agosto, no obstante, éstas han sido en general menos satisfactorias que las del mes anterior. Con todo, solamente en algunos pocos lugares han llegado á ser tan pobres como era de temer, dado el triste estado de las mismas á fines de Julio. La cosecha de maíz ha sido abundante en el norte, salvas pocas excepciones de carácter local, y más que regular en la mayor parte de las provincias del S del Archipiélago. El abacá, coco, camote y otros tubérculos han dado buenos rendimientos. Es de lamentar que en algunas regiones, sobre todo en el distrito de Dávao, no haya habido manos deseosas de recoger los frutos que la naturaleza ofrece. Desgraciadamente, los precios del abacá y cóprax han sido bajos durante todo el mes. Para remediar este estado de cosas, los plantadores de abacá en los alrededores de Dapitan convinieron en suspender la producción hasta que pudieran obtener mejores precios; pero como su ejemplo no ha sido seguido por los plantadores de otras regiones, no es posible que obtengan el resultado apetecido. Debido principalmente á la época del año, el precio del arroz ha subido en todas partes.

Hablando en general de todo el Archipiélago, el estado de las plantaciones ha sido bueno, á lo menos al fin del mes. La mayor parte de las estaciones dan cuenta de que las cosechas están florecientes; ninguna las califica de malas. Mindanao y Cebú han sufrido algo de sequía, que paralizó la plantación y hasta secó en algunos puntos los semilleros de palay que resultaron de la primera siembra. Las continuas lluvias han perjudicado algunas de las cosechas de las costas occidentales de Panay. En las costas occidentales del norte de Luzón, las fuertes lluvias de la segunda quincena del mes han sido causa de inundaciones que, aunque hicieron revivir algunas plantas marchitas, pero también fueron causa de que se ahogasen muchas de ellas, causando además algunas otras pérdidas.

Cuanto á insectos dañinos, se han recibido reports dando cuenta de la aparición de la langosta en Mindanao, donde hizo mucho daño, en la costa oriental de Sámar, en el norte de Leyte, en las islas de Bohol, Panay y Romblón. Los gusanos infestaron el sembrado de palay en el norte de Luzón.

Las enfermedades dominantes de los animales son calificadas en general de no muy virulentas. Esto, sin embargo, no ha sido así en la costa oriental de Sámar y en Batangas, donde la epizotia ha reaparecido; y si las pérdidas son numéricamente pocas, es debido á que son muy pocos los animales que sobrevivieron á la última aparición. La Laguna también ha tenido que sufrir pérdida de animales, habiendo sido la epizotia muy severa en Siniloan y amenazado cundirse. Pero más que todos ha sufrido la Provincia de Lepanto-Bontoc, donde han sucumbido 225 animales víctimas del ántrax. Han dado parte también de algunos casos de enfermedades más ó menos aislados: de epizotia: Surigao, Leyte, Bohol, Panay, Albay, Tayabas, Tárlac, Unión, Benguet é Ilocos Sur; de surra: Leyte, Bohol, Unión é Isabela; de muermo: Ilocos Sur. Es de temer que la observación que hace el observador de San Fernando, Unión, atribuyendo muchas de las pérdidas más á la negligencia de los dueños de animales que á la virulencia de las enfermedades, sea demasiado verdadera, no sólo para su distrito, sino también para todo el Archipiélago.

NOTICIAS PARTICULARES.

DISTRITO I.

Borongan.—La cosecha del cóprax en este mes de Agosto se presenta satisfactoria. No obstante la baja que ha sufrido últimamente en su precio, se trabaja y se recoge bastante fruto. La langosta, como en años pasados, ha vuelto á visitar en esta época toda la costa oriental de Sámar, moviéndose de un punto á otro sin que nadie la molestase, y causando en los plantíos los daños consiguientes. La epizotia también ha vuelto y sigue acabando con los pocos animales que restan.

Tacloban.—En las costas orientales y septentrionales de Leyte la cosecha de maíz quedó perjudicada por las lluvias que cayeron con algún exceso. En Tacloban sin embargo, es buena, aunque no muy abundante. Los rendimientos de abacá, cóprax, gabe, camote y otros vegetales son buenos. Las langostas se presentaron varias veces sin causar notables perjuicios. El número de víctimas de la epizotia en Naval quedó aminorada, pero en Abuyog apareció la zurra si bien causando pocas pérdidas.

Ormoc.—Las cosechas de maíz, caña-dulce, frutas y legumbres han sido regulares. Actualmente están creciendo palay, maíz, tubérculos y caña-dulce. Á pesar de haber sido las lluvias abundantes, no han perjudicado á ninguna siembra. Se han registrado casos aislados de epizotia. Según datos facilitados por el municipio de Ormoc, han muerto allí de enfermedad, en los meses de Abril á Julio, 10 carabaos, 15 caballos, 700 cerdos y 2,000 gallinas.

Tuburan.—Durante el mes de Agosto se ha cosechado tabaco, maíz, cocos, palay, abacá y un poco de caña-dulce. De estos productos el maíz ha sufrido un tanto por la poca lluvia y los vientos fuertes del Sur. El estado de las plantas que están aún creciendo, como maguey, maíz y abacá, es mediano.

Cebú.—Nótase bastante escasez de lluvia desde principios de Agosto. Las depresiones que afectaron al barómetro apenas han hecho caer algunas lluvias ligeras. La mayoría de los semilleros de palay se ha secado, quedando inutilizado todo el trabajo de la preparación. Parece ya es hora que los propietarios de terrenos palayeros ensayen otra clase de productos que dependan menos de las lluvias. En los 6 años que lleva funcionando la estación meteorológica de Cebú no se han registrado lluvias que pasen de 24 horas de duración. Además son muy irregulares; á veces, á lluvias torrenciales de 4 ó 5 horas se sigue un mes de fuerte sol. Añádase á esto la falta de ríos de caudal perenne, y se verá que el palay de regadío no puede nunca prosperar en muchos puntos de esta isla.

Maasin.—Durante el mes de Agosto no se ha cosechado ningún producto agrícola de importancia, excepto una pequeñísima cantidad de maíz á fines del mes. El palay ha sido favorecido mucho por las lluvias que cayeron á principios del mes. Otra vez prevalecen las calenturas y diarrea. Aún existe la epizotia entre los animales.

Surigao.—Se ha cosechado un poco de maíz en las siembras más adelantadas. La ocupación principal de los labradores ha consistido en el beneficio del abacá y cóprax. Los cocales no son de grande extensión por ahora, pero dentro de pocos años serán iguales á los abacales. Las cosechas aún crecientes están en estado bastante bueno: sólo que el maíz ha sido algo perjudicado por la falta de agua. Los vientos achubascados del tercer cuadrante, si bien no han dañado á ninguna clase de plantas, han ocasionado alguna escasez de pescado. Ha habido algunos muertos de enfermedad entre los cerdos.

Tagbilaran.—Prometen cosechas muy buenas del palay para el próximo mes de Septiembre, los pueblos de Sierra-Bullones, Vilar, Sevilla y Carmen. Aún á fines de Agosto ya se veía algo en los mercados de Laboc y Loay, de la nueva cosecha de este grano. Del maíz se puede decir que cuantos sembrados hay en la provincia se presentan lozanos. Los pobres dejarán por algún tiempo de comprar maíz de fuera, cuyo precio, en plaza, subió últimamente hasta 13 centavos ganta. Exportáronse á Cebú por los chinos monopolizadores, cóprax y aceite, de Tagbilaran; y también, entre otros artículos, abacá y azúcar, principalmente de Anda, Tubigan, Calape, Jagua, Guindulman y algún otro pueblo. De la epizotia y la zurra se han presentado algunos casos en Carmen y Vilar. Á fines de Julio último aparecieron langostas en Úbay.

Butúan.—Por razón de la sequía, la mayoría de la gente de Butúan y otros pueblos no ha podido acabar con la trasplantación del palay. En los plátanos llamados *laba* y *retonglan* existe una enfermedad que llaman los naturales *bugtoc*, la cual perjudica mucho la fruta y le da mal aspecto. Según relación de comerciantes, se recogió muy buena cosecha de maíz en Milagro y Corinto, pueblos de nuevos cristianos más arriba del Río Agusan. También se nota en dichos pueblos mucha actividad en el cultivo de los tubérculos. Se teme que la cosecha de palay será menor que la del año pasado.

Balingasag.—Continúa el trasplante del palay, pero muy despacio; porque, á pesar de las repetidas lluvias del mes de Agosto, todavía no hay bastante agua para el regadío. En el pueblo de Balingasag no hay maíz por los destrozos que hizo la langosta en Julio y Agosto. Traen este cereal desde Bubuntugan y lo venden á real (12.5¢) la ganta. El precio del arroz es de ₱7.50 el saco; el del abacá es muy bajo, pagándose el pico á solos ₱12. Lo mismo puede decirse del cóprax que cuesta ₱6.50 el pico. Los vientos han derrumbado algunos árboles y también perjudicado algunos maizales. Los cabritillos padecen de diarrea y 8 han muerto de ella; también han muerto algunos cerditos.

Caraga.—Las plantaciones de abacá van mejorando y aumentando en número. La lluvia ha sido escasa. El viento fuerte del Sur duró nueve días consecutivos; ha perjudicado á algunas plantas y tumbado algunos plátanos. No ha habido insectos dañinos ni enfermedad en los ganados; pero en cambio, los monos y jabalíes han hecho destrozos en las plantas de abacá y los cocos, pero especialmente en el maíz y camote.

Cotabato.—Durante este mes ha continuado la trasplantación del palay tardío, mientras el temprano ya estaba produciendo espigas. La langosta ha causado destrozos en el palay recientemente plantado y en otras semillas. En Malabang, Tucunan, Tuburan y Biwang se están cosechando gomas. Los precios son ₱16 el pico las de tercera calidad, y ₱22 las de segunda.

Dávao.—El beneficio del abacá es bastante grande, pero no tanto como sería posible, por falta de brazos. El terreno es fértil y da hermosas plantas de esta fibra. De cóprax se prepara muy pequeña cantidad, por dar los hacenderos gran parte de los cocos á los moros que trabajan en sus haciendas. Hay abundancia de *biao* en los bosques; pero no hay quien pueda dedicarse á su recolección. El negocio de almáciga, cera y maderas está además impedido por el cambio de la monzón, que no permite trasportar los productos á esta localidad.

DISTRITO II.

San José de Buenavista.—Por la persistencia de las lluvias, han sido perjudicados el café, cacao y en especial el mongo; pues ni siquiera se puede esperar la quinta parte de una cosecha ordinaria. En cambio, estas mismas lluvias han favorecido al palay, en la plantación del cual, la gente está todavía ocupada. Se ha cosechado maíz, camote y gabe; pero los rendimientos son menores que el año pasado, debido al retraso de la lluvia. Las langostas y loctones es casi lo único que abunda, habiendo destruído en algunas plantaciones un 20 por ciento de la caña-dulce. En cuanto á los animales de labor, solo en San Remigio ha habido desgracias, muriendo dos carabaos de enfermedad.

Dapitan.—Gracias á la abundante agua caída durante la primera quincena de este mes todo el mundo ha podido plantar palay. Puede ser que antes de fin de Septiembre se pueda recoger la cosecha de las sementeras de los caiñgin de este pueblo: las demás no están tan adelantadas. Lo mismo puede decirse de los municipios de Dipólog y Lubungan. El día 8 de Agosto, una nube compacta de langostas apareció en Dapitan. Era la nube tan espesa, que el cielo quedó completamente cubierto. Permanecieron en este distrito unas 4 horas. Gracias á Dios, no hicieron daño al palay, pero sí á los cocoteros y á la caña-dulce, no quedando de ellos más que sus ramos y tallos respectivamente. En Haya, sin embargo, estos insectos han devastado muchos campos de palay ya á punto de ser cosechado. Los productores de abacá se han convenido en suspender el trabajo á causa del precio muy bajo de este producto, á saber: de ₱12 á ₱12.50 el pico. No obstante haber subido el precio del arroz hasta ₱8 y ₱8.50 el saco, los habitantes de este distrito no padecerán probablemente hambre por aproximarse ya la cosecha. Por lo que toca al cóprax, puede decirse lo mismo que del abacá, á saber: la industria queda paralizada, pues el pico vale solamente ₱5 á ₱5.50. El precio de los carabaos ha seguido la misma suerte que el del abacá, pues oscila entre ₱40 y ₱60 según su edad, cualidad, etc. Los compradores son gente procedente de otros pueblos, ó chinos que exportan estos animales á Cebú, vendiéndolos allí á buen precio, porque durante los últimos 4 años ni la epizotia ni otras enfermedades han aparecido entre los carabaos de este pueblo de Dapitan.

Zamboanga.—La falta de agua y el excesivo calor han impedido el trasplante del palay, quedándose todavía muchos campos abandonados. Se hace sentir en gran manera la subida del precio del arroz costando ahora el pico del de segunda ₱8.50

Isabela, Basilan.—Durante el mes de Agosto, se han embarcado para Zamboanga desde este pueblo 28 picos de abacá y unos 30 picos de cóprax, mientras la Isla Malamauy ha exportado 32 picos de cóprax. Se está cosechando actualmente el maíz que da buenos resultados; pero la cosecha de frutas ha sido escasa. El palay de secano presenta buen aspecto. Por ahora, la mayor parte de los cultivadores se dedican á hacer cóprax.

Joló.—Todas las cosechas de este mes, tanto del abacá, palay y camote, como de frutas y productos de menos importancia, han sido buenas. Además de los terrenos palayeros, casi todos los montes cercanos están sembrados de palay, cuyo estado es satisfactorio. La lluvia ha sido abundante, pero no perjudicial.

DISTRITO III.

Legaspi.—Se ha terminado el trasplante del palay favoreciéndole bastante las lluvias frecuentes del mes. En varios municipios se ha obtenido regular cosecha del abacá, aunque su precio no ha mejorado. El arroz corriente de Pangasinán, continúa en su alto precio de ₱6.50 á ₱6.70 por caván. Son buenas las cosechas de coco, plátanos, camote, gabe y maíz obtenidas en Libog, Tabaco, Guinobatan y Ligao. Varios cosecheros siguen haciendo cóprax por su buen precio. Han muerto de epizotia algunos caballos en los municipios de Albay y Legaspi.

Gúbat.—Debido á los fuertes chubascos del SW que hubo en todo este mes, ha desaparecido por completo la plaga de langostas que hizo tanto daño á las plantaciones de coco, caña-dulce y maíz durante el mes pasado. Sin embargo, algunos propietarios de este pueblo han podido cosechar ahora el maíz, lo bastante para venderlo en el mercado á satisfacción de los consumidores. Los vientos, aunque fuertes, no han hecho ningún daño ni al plátano ni al abacá, que se han desarrollado bien por haber tenido suficiente agua, pues las lluvias han caído en esta Provincia de Sorsogón con mucha frecuencia en casi todo el mes, especialmente en la primera quincena. Muchos propietarios de esta provincia han aprovechado estas lluvias, preparando los semilleros para la próxima siembra de palay. El arroz de Saigón se cotiza hoy en plaza á ₱6.75 el pico, y el cóprax á ₱11.50. El caván del palay se vende á ₱3.

Romblón.—Se cosecha el maíz que da rendimientos regulares. El palay, camote y otros tubérculos crecen bien, favorecidos por las lluvias. Empero las langostas hacen estragos por todas partes y será grande la pérdida de los respectivos cultivadores.

Calbayog.—Durante el mes de Agosto la cantidad de abacá enviado á Manila desde el puerto de Calbáyog ha llegado á 5,890 picos. El precio de este producto ha bajado hasta ₱21 y ₱22 el pico; mientras que el del arroz de Saigón ha subido este mes hasta ₱7.50, cuando no costaba más que ₱6.75 ó ₱7 el mes pasado. Las lluvias no han hecho daño, pero sí los vientos fuertes del SW que han echado á perder las flores y frutas tiernas de cajel y naranjitas.

DISTRITO IV.

Santo Domingo, Islas Batanes.—En el distrito de San Vicente de Saptang están cosechando buen palay, sembrado el mes de Mayo. Los ganados están en muy buen estado por la abundancia de agua.

Tuguegarao.—El poco maíz que quedaba en los campos alrededor de Tuguegarao se está recogiendo actualmente. En las municipalidades de Solana, Peñablanca, Enrile, Iguig y en el distrito de Itaves hay regular cosecha de maíz. Las frutas, caña-dulce y tubérculos son abundantes, á lo menos en comparación de los años anteriores. Las semillas de palay son abundantes y hermosas y ya se están trasplantando. Se dice que en la Provincia de Isabela la zurra iba desapareciendo durante la tercera década del mes.

Vigan.—En este mes se ocuparon los agricultores en trasplantar palay y sembrar maguey, maíz y legumbres, aprovechándose de las lluvias que acompañaron al baguio del 22 de Agosto. Éste, á pesar de haber perjudicado un tanto á algunas plantas, destruído algunas casas de materiales ligeros y causado algún daño á otras, ha sido en general muy beneficiosa para los campos. La cosecha de maíz ha sido buena en Vigan, pero la de otros productos, no más que regular. En Santa Ana, el estado de las cosechas ha sido malo. En los pueblos de Magsingal y Santa Ana hay enfermedades en el ganado y en Vigan han muerto de epizotia, 5 vacunos; y del muermo, un caballo.

San Fernando, Unión.—Se ha terminado el trasplante del palay. Las excesivas lluvias han ahogado gran parte del palay temprano. No hay insectos dañinos, pero sí mucha enfermedad entre los animales de labor. La epizotia y la zurra hacen grandes estragos en las rancherías próximas al pueblo de Balaauan, y tmbién causan algunas pérdidas en los pueblos de San Juan y Bagnotan. Pero hay quienes dicen que no se debe atribuir tanto á la epizotia la pérdida de ganados cuanto al abandono de los mismos propietarios, los cuales no tienen ningún cuidado de sus animales.

Baguio.—Se cosecha actualmente el palay, que da buenos rendimientos. En Trinidad se recogen también patatas y otros tubérculos de buena calidad. Han ocurrida algunos casos de epizotia en el ganado y las aves de corral. En Cervantes, Provincia de Lepanto-Bontoc, hubo una epidemia de ántrax, muriendo 225 animales de los 375 que fueron atacados.

Bolinao.—Las lluvias casi continuas desde el 16 hasta el 30, han inundado varios puntos, convirtiendo los barrios en lagunas. Con esta abundancia de agua, las siembras han prosperado más que regularmente dando esperanza de una buena cosecha de palay. Los trabajos de los agricultures de Bolinao son muy penosos por razón de la distancia de sus terrenos: algunos de éstos distan del pueblo hasta unos 24 kilómetros ó sea 15 millas inglesas. Por eso no pueden muchas veces atender á sus sementeras tanto como desearían. El día 28 hubo avenida en el Río Agno, la cual derrumbó árboles, arrastró animales y destruyó algunas casas.

Tárlac.—Se ve bastante animación en los agricultores de esta región que actualmente están ocupados en el cultivo del palay. Pero las excesivas lluvias de la segunda quincena han causado grandes daños, inundando la parte norte de este municipio y arruinando sementeras. Muchos cerdos y algunas cabras perecieron ahogados; también fueron víctimas de la inundación dos personas, un hombre y una mujer. Se rompió el dique construído al W del pueblo. En Capas, muchos agricultores se han visto precisados á hacer nuevos semilleros de palay, porque la primera siembra ha sido completamente destruída por los gusanos. Continúan muriendo cerdos y aves de corral.

San Isidro.—Durante este mes ha terminado la recolección del maíz, habiendo sido abundante la cosecha en los campos que no han sufrido por la inundación que siguió á las abundantes lluvias de este mes. El trasplante del palay también está hecho, excepto en los terrenos en que es menester plantar nuevas semillas, por haber sido las primeras pasto de los gusanos. El maíz se vende á ₱1.75 por caván ó á ₱0.58 cada cien mazorcas. El precio del palay ha subido hasta ₱2.75 el caván, mientras que el arroz de primera clase cuesta ₱7 el caván, y el de segunda, ₱6.25. Las bandadas de langostas mencionadas el mes de Julio, han desaparecido.

Olongapó.—Se está cosechando el maíz, con resultado más que mediano. El palay sigue creciendo en las sementeras, y aunque las excesivas lluvias lo han perjudicado en algunos puntos, sin embargo, se espera buena cosecha.

Malolos.—Gracias á las abundantes lluvias de este mes, se ha adelantado la siembra del palay y de hortalizas. Hay algunos gusanos que perjudican las siembras de palay.

Balanga.—El estado de la caña-dulce, maíz, palay y camote ha sido regular, á pesar de haber sido el palay algo perjudicado por los gusanos, y en algunas sementeras por la inundación debida á las abundantes lluvias.

Silang.—En este mes se han cosechado maíz, camote y gabe, siendo buenos los rendimientos. La lluvia ha sido regular y ha favorecido mucho los sembrados, sobre todo de palay y abacá.

San Antonio, Laguna.—Casi todos los labradores de esta localidad han terminado ya la siembra del palay de regadío. Los tubérculos siguen bien, así como también el palay de secano. El precio del abacá conitnúa como antes, siendo de ₱12 el pico para la clase ordinaria, mientras el de primera calidad se vende á ₱19. El precio del cóprax tampoco ha cambiado. En el pueblo de Siniloan persiste la epizotia y han muerto unos 50 carabaos. La misma enfermedad está ahora invadiendo el pueblo de Pañgil.

Atimonan.—Las lluvias caídas en los primeros días y á mediados de Agosto, aunque no han sido muy abundantes, han cambiado por completo el aspecto de las cosas. Los labradores que á fines del mes anterior estaban casi desesperados, ahora están muy activos y animados, haciendo nuevos semilleros los que han perdido los primeros por la sequía y las langostas, y transplantando el palay los que han tenido la buena suerte de conservar sus semillas. Pero, con todo, se teme que la cosecha del palay no sea abundante, debido al atraso de la siembra. Los loctones y langostas ya van desapareciendo. Los cocoteros siguen mejorando; pero el precio del cóprax está muy bajo, pues se cotiza á ₱5 el pico en la plaza. Lo mismo se puede decir del precio del abacá que se vende á ₱10 el pico; mientras que el arroz importado de Manila cuesta ₱7.50 el caván. Se ha recogido una cosecha bastante regular de maíz. Se dice que en los pueblos de Pagbilao, Lucena y Laguimanoc existe epizotia entre los animales de labor, aunque no muy maligna. También en Atimonan ocurren algunos casos de esta enfermedad. Hace pocos días que un comerciante de carabaos que estuvo en dicho pueblo, de paso para Lipa, ha perdido 4 de estos animales en el espacio de dos días, si bien es muy posible que el cansancio de los carabaos haya influído también en causar esta desgracia.

Batangas.—Hasta el fin de Agosto el pueblo de Lipa ha tenido 40 casos de epizotia. Gracias á los esfuerzos de los médicos municipales y veterinarios nombrados por el Gobierno, el mal va decreciendo. Durante la segunda quincena han desaparecido los gusanos que infestaban los campos; y debido á las abundantes lluvias, ha vuelto á retoñar el palay; y la caña-dulce, así como el maíz, se desarrollan bien.

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BULLETIN FOR SEPTEMBER, 1907.

METEOROLOGICAL BULLETIN FOR SEPTEMBER, 1907.

By Rev. José Coronas, S. J.,

Assistant Director of the Weather Bureau.

GENERAL WEATHER NOTES.

Pressure and temperature.—Though at every station within the Archipelago the mean atmospheric pressure was higher than the corresponding values for September, 1906, it remained nevertheless considerably below the normal mean for the month. Thus, for instance, at Manila the actual mean pressure differed from the normal by —0.69 millimeter, though it exceeded the mean for September of the preceding year by 0.36 millimeter. This state of affairs resulted from the fact that this year's September typhoons, though sufficiently numerous, failed to come close to the Islands, not a single one having crossed the Archipelago, while during September of the preceding year three traversed the Island of Luzon, and two passed between Luzon and Formosa on their march toward the Continent. The days of highest pressure over the Philippine Islands were the 19th and 20th; the lowest pressures were recorded at nearly all the stations on the 5th.

The mean temperature of the month differed but slightly from both the normal mean for September and the mean for the same month of last year; on the whole they seem to have been slightly lower than the said values. For Manila it differed from the normal by —0.3° C., and was identical with the mean for September, 1906. The absolute maximum observed at the Central Observatory was 32.3° C., and the absolute minimum 22.6° C., the former having been recorded on the 25th and the latter on the 8th.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS, SEPTEMBER, 1907.

Station.	Pressure.						Temperature.					
	Mean.	Departure from September, 1906.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from September, 1906.	Highest.	Day.	Lowest.	Day.
	mm.	*mm.*	*mm.*		*mm.*		°*C.*	°*C.*	°*C.*		°*C.*	
Tagbilaran	757.45	+0.07	759.48	19	754.89	5	27.9	+0.4	35.5	13, 15	22.2	15
Surigao	57.53	+ .12	59.88	19	54.58	4						
Cebu	57.75	+ .30	59.96	19	54.76	5	27.1	0	32.6	15		
Iloilo	57.35	+ .35	59.26	19	54.35	5	26.2	— .1	31.2	15	21.8	14
Ormoc	57.18	+ .20	59.55	19	54.28	5	26.5	— .3	32.9	13	21.6	8
Tacloban	57.12		59.79	19	53.91	5	27.6		34.5	13	23.4	21
Capiz	57.53	+ .42	59.92	20	53.77	5	26.4	— .5	32.9	1		
Calbayog	57.48		59.88	19	53.83	5	27.5		34.2	13	21.1	2
Legaspi	57.13	+ .27	59.72	19	52.90	5	27	0	34.6	13	22.5	18
Atimonan	56.54	+ .15	59.04	20	52.35	5	27.1	— .1	34.6	25	22.1	21, 22
Olongapo	56.65		59.22	20	52.04	5	25.6		29.9	15	21.6	20
San Isidro	56.77	+ .49	59.31	20	52.11	5	26.2	— .1	34.2	28	22	28
Dagupan	56.51	+ .65	59.18	20	51.67	5	26.8	+ .1	34.3	29	22.5	29
Vigan	56.80	+ .76	59.73	20	52.10	5	26.6	— .7	30.2	30	24	18
Aparri	56.56	+ .20	59.73	19	51.28	5	26.8	— .5	32	1	22	18

Precipitation.—With only seven exceptions, all the stations report a total rainfall below that of September of the preceding year. The largest amounts are reported by Olongapo and San Jose de Buenavista, viz, 718.2 and 719.7 millimeters, respectively. At Manila 278.7 millimeters have been collected, which amount differs from the normal for September by —87.8 millimeters, and from the total rainfall during September, 1906, by —192.8 millimeters.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF SEPTEMBER, 1907.

District.	Station.	Total.	Departure from September, 1906.	Rainy days.	Departure from September, 1906.	Greatest rainfall in a single day.	Day.
		mm.	mm.			mm.	
I	Yap	401.3	+ 28.2	21	− 5	49.5	1
	Davao	134.4	-------	4	-------	43.2	20
	Cotabato	283.3	+ 15.2	17	+ 1	76.5	17
	Balingasag	76.5	−354.5	7	−13	51.8	15
	Butuan [1]	16	-------	4	-------	12.4	10
	Tagbilaran	31.4	− 99.8	6	− 9	22.1	23
	Surigao	113.8	−118.1	10	− 1	36.8	13
	Maasin	281.1	− 55.5	13	− 5	52.3	17
	Cebu	71.6	−120.3	12	− 7	19.6	15
	Tuburan	24.9	−262.3	4	− 6	11.4	4
	Ormoc	141	−288.1	13	− 6	30	26
	Tacloban	74	-------	17	-------	22.4	24
	Borongan	87	−197.4	12	− 4	20.8	14
II	Jolo	181.1	+ 21.3	12	− 7	42.2	16
	Isabela, Basilan	138	− 28.3	13	− 2	31	17
	Zamboanga	99.5	− 3.2	6	− 2	35.8	17
	Dapitan	61.1	− 51.9	10	+ 1	30.2	27
	Bacolod	248.2	− 71.2	16	− 3	62.7	2
	Iloilo	298.7	− 51	17	− 4	104.4	2
	S. Jose Buenavista	719.7	+ 15.2	21	+ 1	151.1	2
	Cuyo	404.6	+ 30	15	− 9	105.4	16
	Capiz	148	−411.7	13	− 2	40.9	29
III	Calbayog	94.7	−328.1	16	− 1	25.4	2
	Palanoc	187.6	− 78.1	19	+ 3	44.2	29
	Gubat	98.1	−382.3	14	+ 5	22.4	27
	Legaspi	176.9	−332.1	19	+ 7	38.1	29
	Romblon	147.6	-------	8	-------	31.2	17
IV	Batangas [2]	297.2	-------	12	-------	95.8	18
	Atimonan	81	−303.9	11	0	25.4	18
	Silang	231.4	− 70.6	11	−1	43.2	30
	S. Antonio, Laguna	289.7	− 74.7	21	+2	50.8	5
	Corregidor	510.5	− 37.6	16	−3	114.8	6
	Manila	278.7	−192.8	19	−4	39.6	10
	Balanga	495.5	231	19	0	123.7	5
	Olongapo	718.2	-------	21	-------	188.2	5
	San Isidro	319.6	− 63.8	22	−3	49.3	23
	Tarlac	357.4	−132.7	22	−3	67.3	5
	Baler	208.5	−506.5	10	0	50.8	27, 28
	Dagupan	415.1	+ 38.8	22	−1	89.4	1
	Bolinao	571	-------	26	-------	139.7	9
	Baguio	586.9	−362.6	26	+4	93	11
	S. Fernando, Union	557.8	+111.3	16	0	88.4	9
	Candon	518.3	−179	18	+3	139	6
	Vigan	383.2	−233.4	22	+6	78	8
	Tuguegarao	193.3	−556.3	15	−9	67.2	12
	Aparri	233.9	−276.3	21	0	36.8	16
	Santo Domingo	557.3	+133.2	22	−4	94.3	26

[1] 27 days only. [2] 26 days only.

DEPRESSIONS AND TYPHOONS.

The month of September has furnished a very clear, almost tangible, demonstration of the immense advantage which arises from the possession of meteorological stations so far advanced into the Pacific as are Guam and Yap, since they make it possible to announce the existence of quite a number of typhoons in the Pacific long before they influence the Philippines to any degree, and to follow their progressive movements toward the Archipelago, or the Continent, or Japan. Four of these cyclonic storms have occurred during this month; all of which, as we shall see presently, recurved at great distances from these Islands. Besides these storms, two depressions in the northern part of the China Sea have been observed, only one of which acquired the characteristics of a typhoon.

TYPHOONS IN THE PACIFIC.

The typhoon of August 30 to September 10.—The following announcements were cabled to the directors of the central observatories of Tokio, Zikawei, Taihoku, Hongkong, and Phulien from the time when this typhoon appeared east of the Marianas until it recurved northeast of Luzon:

August 31, 11.55 a. m.: Typhoon northeast Guam approaching Ladrones Islands.

September 2, 4 p. m.: Typhoon north western Carolines in about 16° or 17° latitude moving probably westward.

September 4, 12.50 p. m.: Typhoon probably about east-northeast of Manila between 17° and 20° latitude.

September 5, 11 a. m.: Typhoon probably recurving northeast of Luzon in about 20° latitude.

The Observatory continued to announce the movements of the storm in the ordinary daily weather notes of the 6th, 7th, and 8th, from which we transcribe the following passages as bearing upon our subject:

September 6, 11.50 a. m.: The typhoon in the Pacific was situated this early morning south of the Loochoos Islands between 22° and 24° latitude moving to NE or NNE toward Japan.

September 7, 12.30 p. m.: The typhoon in the Pacific is approaching Japan moving probably to NNE.

September 8, 4 p. m.: The typhoon of the preceding days appears already in this morning's weather map over southwestern Japan moving in a northerly direction.

According to Tokio Observatory the typhoon crossed the Sea of Japan in a northeasterly direction on the 9th, and penetrated into Sakhalin Island during the night of September 9–10.

It is believed that the following observations made at Guam and Yap during the period August 29 to September 4 will prove of special interest to the readers. These observations show clearly how the typhoon appeared to the east-northeast or northeast of Guam on August 30–31, how it traversed the Marianas, passing north of Guam during the night of August 31 to September 1, and crossed the meridian of Yap on the 2d, its track having a strong westerly inclination.

METEOROLOGICAL OBSERVATIONS FOR AUGUST 29 TO SEPTEMBER 4, 1907.

Date and hour.	Sumay, Guam, Ladrones Islands.				Yap, western Carolines.			
	Pressure.	Winds. Direction.	Winds. Force.	Remarks.	Pressure.	Winds. Direction.	Winds. Force.	Rainfall. (total).
Aug. 29:	mm.		0-12.		mm.		0-12.	mm.
6 a. m.	757.3	W	1	Moderate swell	758.1	NW	1	
2 p. m.	56.6	W	3	do	56.6	NW	3	5.6
Aug. 30:								
6 a. m.	56.3	W	1	At 10 p. m. thunderstorm lasting nearly an hour.	58.7	W	6	
2 p. m.	54.8	W	4		57.3	SW	1	59.9
4 p. m.	53.9	WNW	4					
Aug. 31:								
6 a. m.	53.8	WNW	3	Wind varying WSW to WNW all day.	56	S	3	
2 p. m.	52.3	W	3		54.8	N	4	19
6 p. m.	52.4	WSW	2					
Sept. 1:								
6 a. m.	53.4	SW	2	Slight swell	56.4	NE	3	
2 p. m.	52.1	SW	5		55.4	E	3	49.5
6 p. m.	53.2	SW	3					
Sept. 2:								
6 a. m.	55.2	WSW	6	Heavy swell from SW	55.4	SW	4	
2 p. m.	54.7	WSW	3		54	SW	6	1.8
6 p. m.	55.4	SW	2					
Sept. 3:								
6 a. m.	56.1	SW	1	Continuous, but not heavy rain all day with frequent heavy squalls from SW; moderate swell.	55.3	SW	5	
2 p. m.	55.6	SW	5		54.7	SW	4	3
6 p. m.	56	SW	2					
Sept. 4:								
6 a. m.	57.3	W	3	Moderate swell	55	SW	5	
2 p. m.	56.5	SW	2	do	54.5	SW	4	3.3

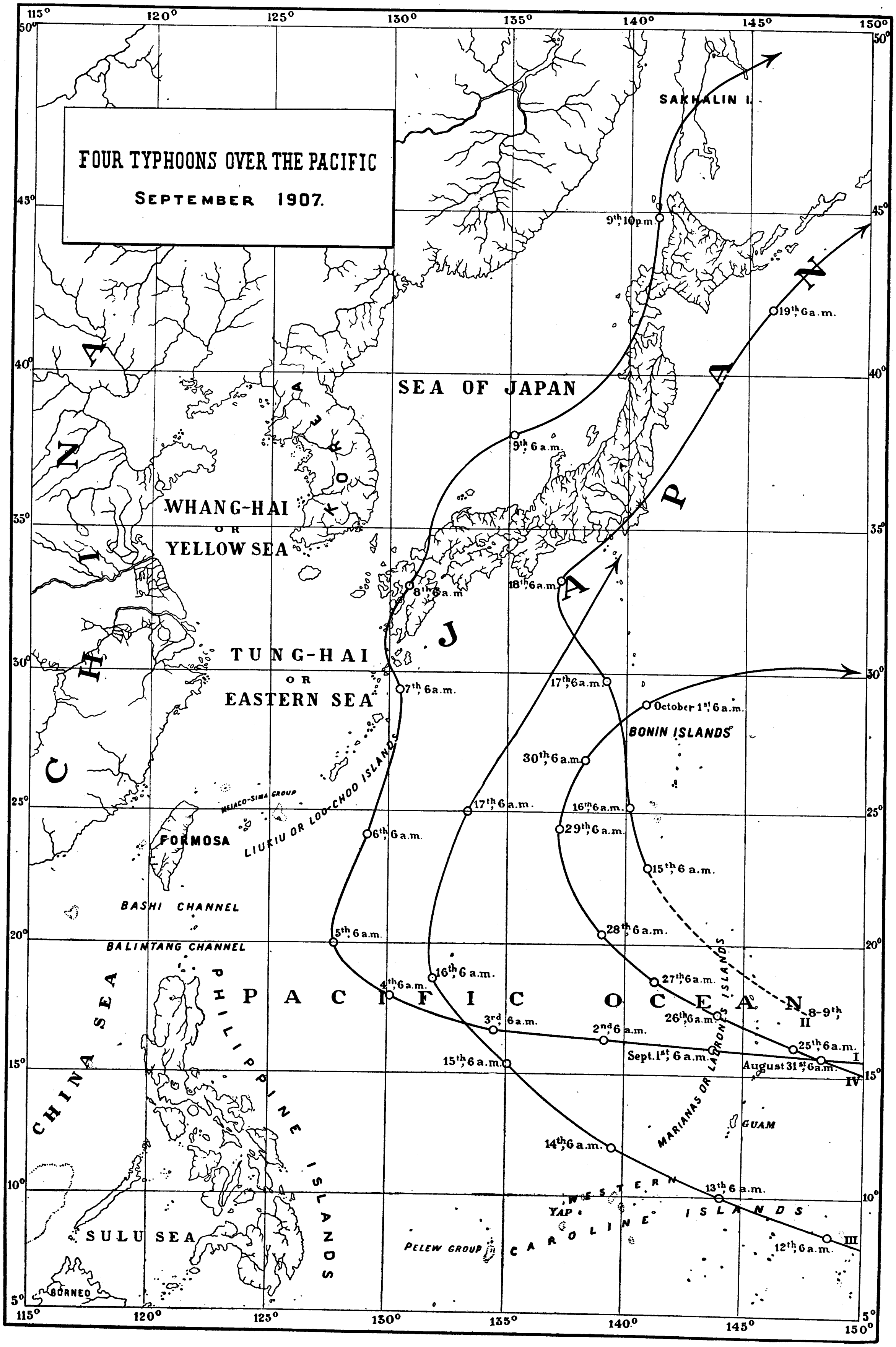
Of the storm tracks laid down upon the accompanying chart, curve I represents the path which this typhoon most probably followed. The same differs only slightly from the one supposed by the notes and warnings issued by Manila Observatory, and which we have reproduced in the foregoing paragraphs.

The path mentioned shows that on the 3d the typhoon began to incline its course toward northwest, and finally recurved on the 5th while near parallel 20° N and between the meridians 127° 30′ and 128° E. At 6 a. m. of the 6th the cyclonic center lay southeast of the Loochoos Islands between 24° and 25° N latitude and 129° and 130° E longitude; that is to say, a short distance northeast of the position which Manila assigned to it in the weather note for the said day. From 6 a. m. of the 5th until the same hour of the 7th the typhoon traveled on a north-northeastern course. During the forenoon of the latter day an inflection of the track toward northwest became apparent, which, however, was of very short duration, since during the afternoon of the same day the storm resumed its north-northeast direction.

After entering the Sea of Japan it took a still more easterly direction, but only to deflect once more toward north during the afternoon of the 9th.

The typhoon of September 8 to 19.—On September 8 Manila Observatory sent the following cablegram to Tokio, Zikawei, Taihoku, Hongkong, and Phulien:

September 8, 1 p. m.: Typhoon forming in about north of Guam.


FOUR TYPHOONS OVER THE PACIFIC
SEPTEMBER 1907.
SAKHALIN I.
SEA OF JAPAN
WHANG-HAI OR YELLOW SEA
TUNG-HAI OR EASTERN SEA
KOREA
CHINA
JAPAN
FORMOSA
MEIACO-SIMA GROUP
LIUKIU OR LOO-CHOO ISLANDS
BONIN ISLANDS
BASHI CHANNEL
BALINTANG CHANNEL
PACIFIC OCEAN
PHILIPPINE ISLANDS
CHINA SEA
SULU SEA
BORNEO
MARIANAS OR LADRONES ISLANDS
GUAM
YAP
PELEW GROUP
WESTERN CAROLINE ISLANDS
9th, 10 p.m.
19th, 6 a.m.
9th, 6 a.m.
8th, 6 a.m.
18th, 6 a.m.
7th, 6 a.m.
17th, 6 a.m.
October 1st, 6 a.m.
30th, 6 a.m.
17th, 6 a.m.
16th, 6 a.m.
6th, 6 a.m.
29th, 6 a.m.
15th, 6 a.m.
5th, 6 a.m.
28th, 6 a.m.
16th, 6 a.m.
4th, 6 a.m.
27th, 6 a.m.
8-9th
26th, 6 a.m.
II
3rd, 6 a.m.
2nd, 6 a.m.
25th, 6 a.m.
I
Sept. 1st, 6 a.m.
15th, 6 a.m.
August 31st, 6 a.m.
IV
14th, 6 a.m.
13th, 6 a.m.
12th, 6 a.m.
III
115°
120°
125°
130°
135°
140°
145°
150°
50°
45°
40°
35°
30°
25°
20°
15°
10°
5°

This warning was based upon the observations made at Guam on the said day, which we present, in the following table, together with all the others made during the interval September 7 to 10:

METEOROLOGICAL OBSERVATION AT SUMAY, GUAM, LADRONES ISLANDS, SEPTEMBER 7 TO 10, 1907.

Date and hour.	Pressure.	Wind. Direction.	Wind. Force.	Remarks.
Sept. 7:	*mm.*		*0–12.*	
6 a. m.	757.5	SE	1	At 7 a. m. wind W 2; at 11 a. m. wind NNW 2; moderate swell.
2 p. m.	56.3	NNW	2	
Sept. 8:				
6 a. m.	56	Calm	0	At 8 a. m. wind SE 2; at 10 a. m. wind N 2; clear starry night; moderate swell.
3 p. m.	54.5	SW	3	
6 p. m.	55	SSW	1	
Sept. 9:				
6 a. m.	55.6	WNW	1	At 8 a. m. wind N 2; at 1.45 p. m. thunderstorm to eastward; moderate swell.
2 p. m.	55.7	WSW	1	
6 p. m.	56.4	WSW	1	
Sept. 10:				
6 a. m.	56.8	W	1	At 8 a. m. broad belt Ci. from SW converging in N; at 9 a. m. wind around by W now NNE 2; at 4.30 p. m. heavy shower worked up against wind which goes round from NNW to SW; moderate swell.
2 p. m.	56.3	N	3	
6 p. m.	57.6	SW	2	

Although sufficient to make certain the existence of some depression or typhoon, these observations, taken alone, would not enable the forecaster to point out its position; but combined with those from the Bonin Islands, they furnish enough data for the construction of the first part of track II (see plate). After traversing the Marianas Group on a northwesterly course, the typhoon took a more northerly direction, and passed to the west of the Bonin Islands on the 16th. On the 17th the path seems to have again inclined toward northwest, but recurved toward north and northeast in the evening of said day and during the following night. During the whole of the 18th the storm retained its northeast direction, crossing the extreme southeast of Nippon Island in the afternoon. The following table contains the 6 a. m. observations made at Chichijima, Bonin Islands, on September 14 to 18:

METEOROLOGICAL OBSERVATIONS AT CHICHIJIMA, BONIN ISLANDS.

[Latitude, 27° 5′ north; longitude, 142° 11′ east of Greenwich; gravity correction not applied, —1.2 mm.]

Date and hour.	Pressure.	Wind. Direction.	Wind. Force.	Weather.
	mm.		*0–12.*	
Sept. 14, 6 a. m.	758.2	Calm	0	b.
Sept. 15, 6 a. m.	54.7	Calm	0	o.
Sept. 16, 6 a. m.	50.6	Calm	0	r.
Sept. 17, 6 a. m.	52.8	S	8	o.
Sept. 18, 6 a. m.	59.4	S	6	o.

The typhoon of September 12 to 18.—Manila Observatory was able to follow the course of this typhoon perfectly, from the time of its origin until it recurved to the southeast of the Loochoos and northeast of the Philippines. Concerning this disturbance the following notices were sent to Tokio, Zikawei, Taihoku, Hongkong, and Phulien:

September 13, 8.30 a. m.: Typhoon crossed south of Guam last night.

September 14, 1.15 p. m.: Typhoon in about 12° or 13° latitude, north of Yap, western Carolines, and moving probably west-northwest at present.

September 15, 3 p. m.: Typhoon between 133° and 136° longitude in about 15° or 16° latitude moving apparently northwest or northwest by north.

September 17, 9 a. m.: Typhoon recurved yesterday northeast of Philippines and southeast of Loochoos.

The observations made at Guam and Yap, which are embodied in the following table, clearly indicate the passage of the typhoon south of Guam during the night of September 12 to 13, and north of Yap on the 14th.

METEOROLOGICAL OBSERVATIONS FOR SEPTEMBER 11 TO 16, 1907.

Date and hour.	Sumay, Guam, Ladrones Islands.				Yap, western Carolines.			
	Pressure.	Wind. Direction.	Wind. Force.	Remarks.	Pressure.	Wind. Direction.	Wind. Force.	Rainfall (total).
	mm.		0-12.		mm.		0-12.	mm.
Sept. 11:								
6 a. m.	757.2	ENE	1	At 10 a. m. wind NNE 2; at 1 p. m. heavy squall from NE.	758.2	N	3	------
2 p. m.	56.4	NNE	3		58.7	N	4	23.6
Sept. 12:								
6 a. m.	56.7	ENE	5	Brilliant lightning all evening; at 9 p. m. heavy thunderstorm lasting 30 minutes; frequent heavy squalls during night from E and NE; moderate choppy sea.	56.6	E	2	------
2 p. m.	53.4	NE	6		55.3	N	1	25.4
7 p. m.	53.4	NE	7		------	------	------	------
Sept. 13:								
6 a. m.	51.7	E	7	At 8.30 a. m. terrific rain squall from SE; choppy sea.	54.6	N	3	------
2 p. m.	50.7	ESE	7		52.3	NW	3	19.1
6 p. m.	51.4	ESE	6		------	------	------	------
Sept. 14:								
6 a. m.	52.5	SSE	3	Rain all morning; frequent squalls; squalls from S all afternoon; moderate swell.	50.7	W	6	------
2 p. m.	52	S	5		50.2	W	6	17.5
6 p. m.	53.3	S	6		------	------	------	------
Sept. 15:								
6 a. m.	54.2	S	6	Wind force 8 in squalls; moderate swell from SW.	54.2	SW	8	------
2 p. m.	53.4	S	6		54.5	SW	6	48.3
Sept. 16:								
6 a. m.	56.9	SSW	4	Heavy swell	56.6	SW	4	------
2 p. m.	56.8	SSW	4	do	55.6	SW	4	23.6

As shown in track III (see plate), the position of the cyclonic center at 6 a. m. of the 15th was probably in the neighborhood of 15° N and 135° E. On the 16th the storm recurved at a great distance from the Archipelago. At 6 a. m. of the 17th the center was between 133° and 134° E longitude and over parallel 25° N latitude, moving toward north-northeast or northeast by north. Up to this time the storm had exhibited the characteristics of a very well-developed typhoon; but it is difficult to say what happened thereafter. This uncertainty arises from the simultaneous existence of the other typhoon which we mentioned before. The one now under discussion either may have lost its individuality in the early morning of the 18th by meeting the former, or it may have been identical with the depression which during the early morning hours of the next day appeared close to southeastern Japan. In the latter eventuality the typhoon must have had lost much of its intensity since the 17th, on which day it ascended northeastward between the Loochoos and Bonin groups of islands. In drawing the track III (see plate) we have adopted the latter supposition which is likewise assumed by Tokio Observatory in the short description of the paths of these typhoons issued a few days after their occurrence.

The typhoon of September 24 to October 1.—In connection with this typhoon Manila Observatory cabled the following warnings to the other Meteorological Centers of the Far East:

September 24, 1 p. m.: Typhoon about east-northeast Guam approaching southern Ladrones Islands.

September 25, 6.30 p. m.: Typhoon crossing north Guam.

September 27, 1 p. m.: Typhoon between 18° and 21° latitude in about 141° longitude moving apparently northwest at present.

September 28, 12.30 p. m.: Typhoon between 21° and 23° latitude in about 138° longitude seems moves still northwest.

September 29, 12.30 p. m.: Typhoon now west of Bonin Islands moving in a northerly direction probably tending to recurve northeast.

The track of this typhoon (curve IV of the plate) is based upon the observations of Guam, Yap, and Chichijima (Bonin Islands), which are given in the following tables. It differs only slightly from the one indicated by the warnings issued by this Observatory.

METEOROLOGICAL OBSERVATIONS FOR SEPTEMBER 23 TO 29, 1907.

Date and hour.	Sumay, Guam, Ladrones Islands.				Yap, western Carolines.			
	Pressure.	Wind. Direction.	Wind. Force.	Remarks.	Pressure.	Wind. Direction.	Wind. Force.	Rain-fall (total).
	mm.		*0-12.*		*mm.*		*0-12.*	*mm.*
Sept. 23:								
6 a. m	757.1	N	2	Moderate sea; striking coloration	758	N	1	-----
2 p. m	56.1	N	1	at sunset.	56.9	S	2	-----
Sept. 24:								
6 a. m	55	NW	4	Moderate swell from WNW; little	57.7	Calm	-----	-----
2 p. m	52.4	WNW	4	coloration at sunset.	56.6	S	1	6.4
Sept. 25:								
6 a. m	50.2	W	5	Rough sea; maximum force wind	56.2	SSW	1	-----
2 p. m	49.5	W	6	night 7 or 8.	54	SW	6	4.8
6 p. m	49.4	WSW	6		-----	-----	-----	-----
Sept. 26:								
6 a. m	50.8	WSW	7	Rough sea	54.8	W	4	-----
2 p. m	50.2	WSW	6	do	52.5	SW	6	30.2
6 p. m	51.4	SW	5	do	-----	-----	-----	-----
Sept. 27:								
6 a. m	52.3	SW	5	do	54.5	W	6	-----
2 p. m	52.5	SW	6	do	53.9	SW	3	41.9
Sept. 28:								
6 a. m	54.5	SW	5	Heavy swell	55.9	W	5	-----
2 p. m	54.7	SW	5	do	55.4	SW	4	19.6
Sept. 29:								
6 a. m	57.2	SSW	2	Moderate swell	57.4	W	4	-----
2 p. m	56.9	SW	4	do	56.4	W	5	-----

METEOROLOGICAL OBSERVATIONS AT CHICHIJIMA, BONIN ISLANDS.

Date and hour.	Pressure.	Wind. Direction.	Wind. Force.	Weather.	Date and hour.	Pressure.	Wind. Direction.	Wind. Force.	Weather.
	mm.		*0-12.*			*mm.*		*0-12.*	
Sept. 27, 6 a. m	753.8	NE	4	o.	Sept. 30, 6 a. m	748.2	SE	8	r.
Sept. 28, 6 a. m	52.8	E	4	o.	Oct. 1, 6 a. m	44.3	S	8	r.
Sept. 29, 6 a. m	50.8	SE	6	o.	Oct. 2, 6 a. m	59.2	N	2	o.

DEPRESSIONS OR TYPHOONS IN THE CHINA SEA.

The depression of August 30 to September 2.—On August 30 Manila Observatory announced the existence of a depression in the northern or northeastern part of the China Sea, and at 11.55 a. m. of the 31st it sent the following dispatch to Japan, China, and Indo-China:

Depression over northeastern China Sea.

Concerning this same depression Hongkong Observatory issued the following notices:

August 31, 6 p. m.: A depression appears to be developing over the China Sea to the southward of Hongkong in from 18° to 20° latitude.

September 1, 11.40 a. m.: The depression, which appears to be shallow, is to the SW of Hongkong, and moving apparently toward Hainan.

September 2, 12.05 p. m.: Pressure is low over the NW part of the China Sea.

According to observations made at the *Lamko lighthouse* (NW of Hainan), the barometer there reached its minimum at 3 a. m. of September 2, with northeast winds of force 5, Beaufort scale.

By 6 a. m. the wind had veered to east-southeast, and at 9 a. m. to southeast. Hence the depression passed south of the said station, in the direction of the Gulf of Tongking, during the first hours of September 2. We do not know whether the disturbance acquired the full development of a typhoon.

The typhoon of September 8 to 14.—In the ordinary daily weather note given out by Manila Observatory on September 8 it was stated that there were indications of a depression in the northern part of the China Sea. At 1 p. m. of the 9th Tokio, Zikawei, Taihoku, Hongkong, and Phulien were notified by the following dispatch:

Depression developing China Sea northwest of Luzon.

The weather notes of September 12, 13, and 14 contained the following references to this disturbance:

September 12, 11.50 a. m.: There appears still in this morning's weather map a depression over the northeastern China Sea, closer to the Continent, and moving away from Luzon.

Sptember 13, 11.50 a. m.: The depression in the northern part of the China Sea seems to be at present a true cyclone and is situated this morning ESE of Hongkong approaching the Continent.

September 14, 11.50 a. m.: The China Sea typhoon entered the Continent, probably not far from Hongkong, yesterday evening or last night.

Hongkong Observatory issued the following notices:

September 11, 11.55 a. m.: A low-pressure trough is lying over the N part of the China Sea.

September 12, 11.55 a. m.: Pressure remains low over the NE part of the China Sea. A depression may be forming in this area to the SW of Formosa.

September 12, 9.30 p. m.: A depression appears to be developing in the China Sea, probably to the SE of Hongkong.

September 13, 11 a. m.: The depression may be a typhoon. It appears to be situated about 125 miles to the SE of Hongkong and to be moving toward WNW at present.

September 14, 12.35 p. m.: The typhoon has probably reached the coast to the SW of Macao, after passing near Gap Rock early this morning.

September 15, 12.45 p. m.: The typhoon, which has probably filled up considerably, appears to be situated over SW China about north of Pakhoi.

This typhoon burst with great violence over Hongkong as well as Macao, especially during the night of September 13–14 and the forenoon of the 14th. At both places the winds reached hurricane force and veered rather rapidly from the NE to the SE quadrant. Hence the typhoon must have passed very close to these colonies, moving at the time toward west-northwest, if not more inclined toward west. Immediately after the occurrence the Hongkong daily papers published full descriptions of the damage wrought in the said colony by the violence of the storm.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[ϕ=14° 34′ 41″ N; λ=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

Date.	Pressure, mean.	Temperature.									Relative humidity, mean.	Vapor pressure, mean.	Evaporation.	
		Open air.[2]			Underground.								Free exposure, total.	Shelter, total.
		Mean.	Maximum.	Minimum.	0.25 meter.		0.50 meter.		1.50 meters.	2.50 meters.				
					8 a. m.	2 p. m.	8 a. m.	2 p. m.	8 a. m.	8 a. m.				
	mm.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	Per ct.	mm.	mm.	mm.
1	755.79	25.3	27.3	23.8	26.9	27	27.5	27.7	28.3	28.7	93.2	22.3	0.2	0.8
2	55.96	26.4	29.9	23.5	26.8	28.2	27.5	27.7	28.4	28.6	85.1	21.7	5	2.1
3	55.29	26.5	29.4	23.7	27.4	28.9	27.6	27.9	28.4	28.5	84.1	21.6	5.2	2.7
4	52.62	26.4	30.5	23.1	27.9	29	28	28.1	28.3	28.7	86	22	3.8	2.2
5	52.36	25.2	27.8	23.6	27.9	28.2	28	28.2	28.3	28.5	92.9	22.1	1.2	1.4
6	54.59	25	26.9	22.8	27.3	27.2	27.9	27.8	28.3	28.8	92	21.6	.4	1.3
7	57.01	25.2	27	23	26.8	26.8	27.6	27.6	28.2	28.5	93.6	22.3	.5	.9
8	56.95	26.2	29.8	22.6	26.4	27.6	27.3	27.5	28.2	28.5	89.4	22.6	3.3	1.5
9	56.73	25.5	29	23.4	27.3	27.4	27.5	27.4	28.2	28.6	91.8	22.2	2.2	1.7
10	57.20	24.6	25.5	22.8	27	26.6	27.4	27.2	28.2	28.5	94.8	21.8	.5	.7
11	57.98	25.7	28	22.9	26.4	27	27.2	27.2	28.2	28.7	90.9	22.2	.9	.5
12	58.05	27	30.3	23.3	26.8	28.2	27.2	27.6	28.2	28.7	87.9	23.2	4.3	1.6
13	58.05	27.5	30.5	23.9	27.8	28.6	27.7	27.9	28.2	28.7	85.7	23.3	6	2.4
14	57.73	27.6	31	24.1	27.9	29.3	27.9	28.3	28.2	28.7	83	22.6	6.5	1.9
15	57.16	26.9	31.4	24	28.1	29.6	28.2	28.3	28.2	28.6	85.1	22.3	5.4	2.9
16	55.97	26.7	31.7	23.9	28.3	29.4	28.3	28.6	28.2	28.4	87	22.4	5.2	3
17	56.20	26.4	31.3	23.5	28.3	29.6	28.4	28.6	28.1	28.4	87.2	22.2	3.4	1.9
18	57.56	26.3	31.1	22.7	28.1	29.3	28.3	28.6	28.2	28.4	83.6	21.1	3.2	1.9
19	59.22	26.3	30.4	23.5	28.3	29.4	28.5	28.7	28.3	28.4	84.4	21.3	3.7	1.9
20	59.32	27.4	31.7	22.7	28.2	29.6	28.5	28.8	28	28.4	80.6	21.6	5.5	2.6
21	58.80	27.7	31.6	23.6	28.7	29.7	28.7	28.8	28.1	28.5	81.4	22.4	6.8	3.3
22	58.51	27.5	30.8	24.3	28.9	29.9	28.8	29	28.2	28.5	81.9	22.2	7.4	3.8
23	58.22	27.5	31.8	23.2	28.8	30.3	28.8	29.3	28.3	28.4	82.4	22.3	5.2	2.7
24	57.61	28	32.2	23.7	29	30.3	29.1	29.4	28.3	28.4	81.5	22.7	4.5	2.5
25	57.04	28.3	32.3	24	29.1	30.5	29.3	29.4	28.3	28.5	80.5	22.8	6	3.6
26	56.80	28	31.8	24.2	29.2	30.4	29.3	29.6	28.3	28.4	82.9	23.1	5.9	3.1
27	56.24	27.9	31.8	24.3	29.3	30.6	29.4	29.6	28.4	28.5	84.4	23.4	6.3	3.7
28	55.73	27.5	31.7	24.2	29.2	30.2	29.4	29.5	28.4	28.5	86.5	23.6	4.8	2.4
29	56.62	27.1	31.7	24.2	29.4	30.2	29.6	29.6	28.4	28.5	85.9	22.7	5	2.4
30	58.16	27.1	32	24	29.1	30.1	29.2	29.5	28.2	28.3	87.4	23.2	3.5	1.9
Mean	756.85	26.7	30.3	23.6	28	29	28.3	28.4	28.2	28.5	86.4	22.4	4.1	2.2
Total													121.8	
Departure from normal	—0.69	—0.3	—0.3	—0.1							+0.7	—0.2	—4.9	

Date.	Wind.				Clouds.			Sunshine.	Rainfall.	Miscellaneous.
	Prevailing direction.	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Amount, mean.	Prevailing form and its direction.				
						Upper.	Lower.			
		Km.	Km.		0–10.			h. m.	mm.	
1	WSW	327	32.5	W by S	10	Ci.-S.	N. WSW	0 00	27.4	● d a. p.
2	SW	435	38.5	SW by W	8.5	Ci.-S. E by N	Cu. SW by W	7 45		≡° ○ a. d° ϟ p.
3	SW	462	31	WSW	7.8	Ci.-S. E by N	Cu. WSW	7 00		≡° a.
4	SW	285	27	SW by S	8.8	Ci.-S. E by N	Cu. SW by S	8 50	1.8	≡° a. d° ● a. p.
5	SW	649.5	48.5	SW	10		N. WSW	0 05	31.3	↙ ●° a. p.
6	SW	633	39.5	WSW	10	Ci.-S.	N. W	0 00	21.9	d ↙° ●° a. p.
7	WSW	346	32.5	WSW	10	Ci.-S.	N., Cu. WSW	0 00	30.9	⌒ ↙ ●° a. ● p.
8	WSW	354	27.5	WSW	9	A.-Cu. NW by N	N.-cf. WSW	4 50	31.2	● a.
9	SSE, SSW	294	30.5	W by S	9.8	A.-Cu. NE	Cu.-N. WSW	0 25	17.4	⌒ a. ↙ ● a. p. ⊤ p.
10	SSW	237	27	SW by S	10		N. SW by W	0 00	39.6	● a. d p.
11	WSW	308	35.5	WSW	9.2	A.-Cu. N	Cu.-N. SW by W	3 20	4.5	● a. ↙° d p.
12	WSW	294.5	30	WSW	7.2	Ci. NE	Cu. SW by W	9 15		≡ Ω a.
13	WSW	281.5	23	SW by W	6.2	Ci. NE	Cu. WSW	9 35		○° a.
14	SW, WSW	317.5	26	SW	6.2	Ci. E	Cu. NNW	7 00		⌈ϟ d ⊔ p.
15	Variable	155	24	WSW	7.1	Ci. E	Cu. WNW	8 25	1.8	d ○° a. ⌈ϟ ● ⊔ p.
16	NE, WNW	199	24	WNW	6.8	Ci. E	Cu.-N. NNW	7 10	15.2	≡° a. ⌈ϟ ●^{2} ⌒° p.
17	SSE	179.5	27	WSW	8.5	A.-Cu. E by S	Cu. NNW	5 05	20.4	≡° a. ⌈ϟ ●^{2} p.
18	Variable	161	13.5	S by E	8.7	A.-Cu. SE	Cu.-N. SE	5 20		≡° Ω^2 a. ⌈ϟ p.
19	WNW	117.5	14	WNW	9.3	Ci.-S. E	Cu. E	3 00	.6	≡° a. ○° d a. p.
20	WSW	253.5	25	WSW	3.8	Ci. SSE	Cu. SW	9 20		⌒ a. ⊕° p.
21	SW	264.5	24	SW	7.3	Ci.-S. S	Cu. W by N	7 40	.5	≡° ○ a. ϟ° p.
22	WSW	219	19.5	WSW	6.6	Ci.-S. NNW	Cu. W	6 45	1	● a. ⌈ϟ° p.
23	Variable	194.5	19.5	WSW	4.8	Ci. E	Cu. NNW	8 40		≡ Ω a. ⌈ϟ° p.
24	SW	197	23	SW	5.2	Ci. NE by E	Cu.	8 50		≡ Ω a. ϟ° p.
25	SW	228.5	22.5	SW	3.8	Ci. NE	Cu. W	10 15		Ω^2 a. ϟ° p.
26	WSW	347	35.5	WSW	7.6	Ci.-S. E	Cu.	7 20	2.5	≡° ● a. ↙° ϟ° p.
27	SW	238.5	28	SW	4.8	Ci. E	Cu. W	9 35	5.7	● a. ϟ° p.
28	SW	262.5	24.5	SW	7.4	Ci.-S. NE	Cu.-N. SW by W	6 30	14.6	●^{2} ⌒ a. ○° ϟ° p.
29	SE	153.5	16	NW	8.1	Ci.-S. ENE	Cu.-N. N	4 20		≡° a. ⌈ϟ d° p.
30	ENE, SE	94	11	NW	9.9	A.-Cu. SE by E	N.-cf. E	1 55	10.4	⊤° a. ϟ° ●^{2} p.
Mean		283	26.7		7.7			5 36		
Total								168 15	278.7	
Departure from normal		+11.0			+0.1			+26 04	—87.8	

[1] All the mean values given in this table are deduced from hourly observations.
[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

TAGBILARAN.

[ϕ=9° 38′ N; λ=123° 53′ E; barometer above sea, 21.8 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Force (mean).	Clouds. Amount (mean).	Prevailing form and its direction. Upper.	Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	756.64	27.6	32.5	25.5	72.2	SW	2.7	5.8	Variable	Cu.-N. SW, W		↙° a. p.
2	56.92	26.9	31.2	25.6	76	SW quad.	1.7	9.3	A.-Cu. N	Variable	1.3	↙ ●° p.
3	57.01	25.8	29	23.6	80.8	WSW, SW	1.7	9.3	A.-Cu., A.-S.	N. W	1.8	↙ ●° a. d° p.
4	54.98	27.5	30	23.5	73.8	SW, SSW	3.2	7.8	Ci.-S.	Cu.-N. W, SW		↙ ○°
5	54.89	27.5	30.2	24.3	71.7	SW, WSW	2	9.7	A.-S.	N. W	3.6	↙ ● ⊤
6	56.32	28.2	31.4	25.1	71.1	SW	2	9.2	Ci.-S. NE	Cu. W		
7	57.66	28.2	32	25.4	71	SW, SSE	1.3	7.3	Ci.-S.	Cu. SW, W		○°
8	57.82	28	32.1	23.6	69.3	S	1.8	7	Ci.-S. ENE	Cu. SW, W		↙° ⟨ p.
9	57.64	28.3	31.5	24.9	71.8	SE, SW	1.5	7.5	Ci.-S. NE	Cu. W		○²
10	58.16	28.2	32.6	25.2	71.3	SSW, SE	1.3	6.8	Ci.-S. NE	Cu. SW		
11	58.51	28.4	31.1	25	73.2	SE	1.2	8.3	Ci.-S. NE	Cu. W		⟨² p.
12	58.14	28.5	30.7	24.5	76.5	SE	1.3	7.5		Cu.-N. W, NE		
13	57.45	28.3	35.5	24	73.7	SE, SW	1	9	Ci.-S. NE, ENE	Cu. W	.8	⟨ ●° p.
14	57.19	27.3	30.1	22.6	75.8	SE	1	9.3	A.-S.	S.-Cu. W		⟨° p.
15	56.50	28.6	35.5	22.2	69.2	Variable	1.3	9.7	Ci.-S.	Cu.-N. W	1.8	⊤² ⟨² p ○°
16	56.01	28.4	32.7	23.4	72.2	Variable	1.7	9.5	Ci.-S. E	Cu.-N. W		⊤² p. ○°
17	56.80	27.3	29.6	24.9	72.2	SSW, WSW	1.7	10	A.-S.	Cu.-N. W		↙° d° p.
18	58.42	27.6	31.1	24.4	69.5	SSW, SW	2.3	9.7	Ci.-S. ENE	Cu.-N. SW		↙°
19	59.48	27.9	31.6	25.2	73.6	SW, SE	1.3	7	Ci.-S. E	Cu. W		○°
20	59.23	28.2	31	53.9	71.7	SE	1.5	3.5	A.-S.	Cu. W		○°
21	58.68	28.1	32.5	24.2	72.3	N	1	8.2	A.-S. NE	Cu.-N. W		∪
22	58.27	28.2	31.9	23.2	72.9	NNE, SE	1.3	7.5	Ci.-S. NE	Cu.-N. W		d° ○° ⌒ ⊤ ⟨° ∪.
23	58.05	27.6	32	23.2	76.5	NNE, SE	1.3	8.3	Ci.-S. SE	Cu.-N. SW, W	23.1	ʞ p.
24	58.06	27.5	31.3	23.1	77.2	NNE, SSW	1.8	8.8	A.-S.	Cu.-N. W		○° ∪°
25	57.78	28	31.4	25.6	74.2	SSW, SW	1.8	8.2	Ci.-S. ENE	Cu. W		
26	57.57	27.6	31.8	25.4	76.5	SW quad.	2	8	A.-S.	Cu.-N. W		d° a.
27	57.33	28	32.4	25.3	72.8	Variable	2	8.2	Ci.-S., A.-S.	Variable		↙°
28	56.70	28.1	31.7	25	70.5	SW	1.8	6.7	Ci.-S., A.-S.	Cu.-N. W		↙°
29	57.15	28.2	32.7	25.1	70.5	SW	1.8	7.2	Ci.-S.	Cu.-N. SW		↙° ⟨
30	58.26	28.5	32.5	25.2	72.2	SE	1	5.6	Ci.-S., A.-S.	Cu. W		⟨° p.
Mean	757.45	27.9	31.7	24.4	73.1		1.6	8				
Total											31.4	

SURIGAO.

[ϕ=9° 48′ N; λ=125° 29′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Force (mean).	Clouds. Amount (mean).	Prevailing form and its direction. Upper.	Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	756.17					SW	2.8	6.2	Ci. E, NE	Cu. WSW		↙°
2	56.46					SW	2.2	8.7	A.-S.	Cu. W		
3	56.46					SW	2.3	8.8	A.-Cu. WSW	Cu.-N. wsw, sw		↙° p.
4	54.58					SW	2.8	7.2	Ci. E	Fr.-S., Cu. SW		↙° a. p.
5	54.70					SW	3.2	7.3	A.-S.	Fr.-S. SW		↙° ⟨
6	56.43					SW	2	6.8	Ci. NE	Cu. SW		
7	58.06					WNW, SW	.5	4.2	Ci. NE	Cu. SW		
8	58					SW	.7	5.5	Ci.	Cu. SW		p ⊤ ⟨ p.
9	57.71					SW	1	7	Ci.-S. E, ENE	Cu. SW, W		⟨ p.
10	58.95					WSW	.5	2.8	Ci.	Cu.		⟨ p.
11	58.69					WNW	.7	3.5	Ci. NE, E	Cu.		≡ a.
12	58.54					WNW	.6	6.6	A.-Cu. NE	Cu. SW	5.3	ʞ p.
13	57.86					W	.8	7.3	A.-Cu. E	Cu. SW	36.8	ʞ² ↙ ○ p.
14	57.09					W, WSW	1.2	8.8	A.-S.	Fr.-N. SW	19.3	ʞ p.
15	56.34					WSW	1.8	8.5	A.-S., Ci.	Fr.-S. SW	9.4	⟨ ⊤° a. p.
16	56.10					SW	1.8	7.8	Variable	Cu. WSW	24.4	⟨ ⊤° ↙ ● p.
17	56.90					SW	1	10	Ci.-S. ENE	Cu. SW	5.1	● p.
18	58.68					SW.	.2	8.5	Variable	Cu.		
19	59.88					NE, NW	.3	6	Ci.-S. E	Cu. SW		∪
20	59.45					SW	.5	4	Ci.	Cu. W, SW		≡ a. ⟨ p.
21	58.98					SW, WSW	.3	6.7	Ci. E	Cu. SW		Ω ≡ a. ∪²
22	58.47					SW	.5	5.8	Ci. N	Cu. W		Ω ≡ a. ⊤° ⟨ p.
23	58.24					NE, W	.5	7.5	Ci.	Cu.-N. W	3.6	p ⊤° a. ⟨ p. ⊕
24	58.31					SW	.8	6.5	A.-Cu. NW, SW	Cu. WSW	2.5	⟨ ●° a.
25	57.64					SW	1.7	4.8	Ci. E	Cu. WSW		≡ a.
26	57.50					SW	2.8	6.7	Ci. E	Cu. WSW	1.3	p a. ↙° p.
27	57.17					SW	4.2	6	A.-Cu. W	Cu. WSW		↙° ⟨
28	56.68					SW	2.2	4	Ci. N	Cu. WSW	6.1	● p.
29	57.27					SW	.7	4.5	Variable	Cu. WSW		⟨ p.
30	58.57					WNW	.5	6.3	Variable	Cu. WSW		
Mean	757.53						1.4	6.5				
Total											113.8	

[1] All the mean values given in these tables are deduced from six daily observations.

METEOROLOGICAL DATA, ETC.—Continued.

CEBU.

[ϕ=10° 18′ N; λ=123° 54′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean)	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	756.73	27.7	31.1	------	76.7	W	1.2	6.2	Ci., Ci.-S.	S.-Cu.	------	Ω ≡ a
2	57.20	26.4	30.4	------	81.5	SW quad.	1	8.7	Ci.-S.	Variable	17	Ω ≡ a. ↙° [ϟ p.
3	56.81	26.6	29	------	79.7	SW	1.2	8.7	A.-Cu.	N.-cf. WSW	.2	Ω ≡ d a. ↙° p.
4	54.87	27.5	31.3	------	75.1	SW	1.5	7	Ci.-S.	Cu. SW	------	≡ ○ a. ↙° p.
5	54.76	26.8	30.5	------	75.8	SW	1.5	7.8	Ci.-S.	N.-cf. SW	5.6	↙° p ≡ a. p.
6	56.34	27.6	31.5	------	77.2	SW	1.2	7	Ci.-S.	S.-Cu. WSW	------	↙° ○
7	58.11	27.5	30.8	------	77.5	SW	.7	5.8	Ci.-S.	Cu. WSW	------	Ω ≡ ○ a
8	58.24	26.8	30.9	------	75.9	S, SW	.3	4.5	Ci.-S.	S.-Cu.	------	≡ a.
9	58.01	27.8	30.5	------	76.5	SW quad.	.7	6	Ci., Ci.-S.	Cu. W	------	Ω ≡ ○ a.
10	58.40	27.6	30.6	------	76.5	W, SSW	.8	4.8	Ci.	Cu. SSW	------	Ω ≡ a. ϟ p.
11	58.90	27.3	31.4	------	80.3	Variable	.5	3.7	Ci.	Cu. SW	------	Ω ≡ a.
12	58.61	25.9	31	------	86.8	S, SW	.3	4.2	A.-Cu.	Cu. SW	3.3	Ω ≡ a. [ϟ p.
13	58	27.1	32	------	79.9	S, NE	.3	5	Ci.	Cu. N	------	Ω² ≡ a. ϟ p.
14	57.56	27	30.1	------	79.7	S, SW	.3	7.8	Ci.-S. E	Cu. NNE, NNW	------	Ω ϟ ≡ ○
15	57	27.4	32.6	------	80.5	Variable	.5	8.5	Ci.-S. ENE	Cu. N	19.6	Ω ≡ a. ↙° [ϟ p.
16	56.10	27.2	32.4	------	79	W	.8	7	Ci.-S. ENE	Cu.-N. NW	5.6	Ω² ≡ a. ↙° [ϟ p.
17	56.93	26.2	30	------	80.7	SW	.7	8.5	Ci.-S.	Cu.-N. WSW	7.6	Ω ≡ a. p ϟ p.
18	58.79	25.9	29.2	------	83.2	S, SSW	.7	8	Ci.-S.	Cu. SW	------	Ω ≡ a. ○
19	59.96	26.8	31	------	80.2	S	.3	4.7	Ci.	Cu. S	------	Ω ≡ a.
20	59.63	26.9	------	------	80	SSE, SSW	.3	3.5	Ci.	Cu. SSW	------	Ω ≡ a.
21	59.06	26.6	31.5	------	81.7	S	.3	5.3	Ci.-S. E, ESE	Cu. SW, SSW	------	Ω² ≡
22	58.84	26.7	32	------	83	S	.2	5.2	Ci.	Cu.-N. W, N	1.5	Ω² ≡ a. p ϟ p.
23	58.62	26.1	31.3	------	85.3	S	.2	4.8	Ci. ENE	Cu. W	.8	Ω² ϟ ≡ ⊤ d ϟ ○
24	58.50	26.9	30.6	------	81.5	SW quad.	.7	5.8	Ci.-S. ENE	Cu. S	------	Ω² ϟ ≡ ○ ϟ
25	58.05	27.8	31.3	------	76.8	SW quad.	1	5.3	Ci. ENE	Cu. SW	------	Ω ≡ ⊤ ϟ ↙°
26	57.73	27.1	30.9	------	79	SW quad.	1	5.7	Ci.-S. NE	Cu. WSW	2.3	Ω ≡ a. p ϟ p.
27	57.57	27.1	31.1	------	79.3	SW quad.	1	5.7	Ci.	Cu. WSW	1	Ω ≡ a. ↙ ●° ⊤ p.
28	56.98	26.5	30.5	------	82.5	SW	1	4.8	Ci., Ci.-S.	Cu. W	7.1	Ω ≡ a. ↙° [ϟ p.
29	57.50	27.2	31.4	------	79	SSW	1	5.5	Variable	Cu. W	------	Ω ≡
30	58.71	26.9	31.5	------	78.5	S	.5	4.7	Ci. ENE	Cu. WSW	------	Ω² ϟ ≡ ⊤
Mean	757.75	27.1	31	------	79.5	------	.7	6	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	71.6	

ILOILO.

[ϕ=10° 41′ N; λ=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean)	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	756.45	27.2	29.6	25	82.2	SW	2.3	7.7	A.-Cu.	S.-Cu. SW	7.4	● a.
2	56.86	23.9	26	22	88.6	SW	1.8	10	A.-Cu.	N. SW	104.4	●² a. p. ⊤°
3	56.42	25.8	28	23.4	79.4	SW	2	9.5	A.-Cu.	S.-Cu. SW	9.1	d° ⌒ a. p p.
4	54.45	25.6	27.5	24	90.1	SW	2.8	10	A.-Cu.	N. WSW, SW	51.3	p ⌒ a. ↙ ● p.
5	54.35	25.6	28.8	23.7	88.8	SW	3	9.7	A.-Cu.	N. WSW	18	↙ ● a. p.
6	55.96	26.7	29	23.6	80.8	SW	2.8	9.3	A.-Cu.	N. SW	16.5	↙ ● a. p p.
7	57.60	26.3	28.1	24.5	87.3	SW	2	9.2	A.-Cu.	S.-Cu. SW	7.1	p a.
8	57.77	26	28.5	24.6	86.9	SW	1.8	8.3	A.-Cu.	S.-Cu. SW	------	d° a. p.
9	57.60	26.7	28.9	23.9	84.8	SW	2	7.8	Ci.-S.	S.-Cu. SW	------	d° a.
10	58.05	26.8	29.1	24.9	83.5	SW	1.8	7.2	Ci.-S.	S.-Cu. SW	1.3	p a.
11	58.48	27	29.1	24.8	81.2	SW	1.8	5.5	A.-Cu.	S.-Cu. SW	------	ϟ p.
12	58.18	26.6	29.6	24.2	81.3	SW	1.3	4.8	A.-Cu.	S.-Cu.	------	⊤ p.
13	57.70	25.6	30.3	23	83.8	SW	.8	4.5	A.-Cu.	S.-Cu.	------	ϟ p.
14	57.36	26	30.5	21.8	81.9	SW	.3	5.5	Ci.-S.	S.-Cu.	------	ϟ p.
15	56.62	26.2	31.2	22.8	80.8	SW, W	.5	7.8	A.-Cu. NW	S.-Cu.	2.3	⊤ p ⊖ p.
16	56.25	26.6	30.7	23.6	80.3	W	1	8.7	A.-Cu.	Variable	------	⊤° d° ϟ p.
17	56.37	25.6	29.4	22.4	82.2	SW	1.3	8.8	A.-Cu.	S.-Cu.	3.6	ϟ p.
18	57.97	25	27.5	23.2	85.5	SW	1.7	9.2	A.-Cu.	S.-Cu. SW	11.9	p a. ● p.
19	59.26	26.4	28.9	24	82.8	SW	1.3	5.8	A.-Cu.	S.-Cu. SW	3.8	● a. ⊖
20	59.24	26.2	29.9	23.5	86	SW	1.3	2.5	Ci.	Cu.	------	⊖ ψ
21	58.69	26.1	29.7	22.6	79.1	SW	1.2	4.5	Ci.-S.	S.-Cu.	------	⊖ ψ
22	58.38	26.5	29.7	23.9	81.7	SW	.8	4.2	A.-Cu.	S.-Cu.	.5	⊤ ϟ p.
23	58.17	26.2	30.4	22.2	80.7	SW	.7	5.8	Ci.-S.	S.-Cu.	------	
24	57.93	26.3	29.5	22.3	84.9	SW	1.2	6	Ci., A.-Cu.	Cu.	------	⊤ ϟ ⊖ p.
25	57.56	26.8	29.6	24.2	82.4	SW	1.8	6	Ci.-S.	S.-Cu.	------	⊖
26	57.36	26.5	29.6	24.7	83.7	SW	1.5	6.7	A.-Cu.	S.-Cu. WSW, SW	.5	d a.
27	57.15	26.1	28.8	23.7	80.2	SW	2.2	7.7	A.-Cu.	S.-Cu. WSW	1.8	↙° p° p.
28	56.67	26.5	28.9	24	79.9	SW	1.8	8.3	A.-Cu.	N. SW	23.4	p a. [ϟ p.
29	57.42	25.2	28.1	23.1	86	SW	1.7	9.5	A.-Cu.	N. SW	35.8	● a. p.
30	58.13	26.6	29.1	24.1	83	SW	.8	6.2	Ci.	S.-Cu. SW	------	ϟ p.
Mean	757.35	26.2	29.1	23.6	83.3	------	1.6	7.2	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	298.7	

METEOROLOGICAL DATA, ETC.—Continued.

ORMOC.

[ϕ=11° 00′ N; λ=124° 36′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	755.98	26	30.4	22.5	84.3	E	0.5	4.7	Ci., Ci.-S.	Cu. WSW	8.9	Ω a. ⛈ p.
2	56.36	25.9	29.1	23.5	84.8	Variable	.5	10	Ci.-S.	Cu. W	4.3	d a. p.
3	56.21	26.2	29.7	23.9	78.5	S	1	9.2	A.-Cu. WSW	Cu. WSW	.5	↙ ●° a.
4	54.44	27	29.3	23.5	79.2	SW, SSW	2.5	9.8	Ci.-S.	Cu. WSW	7.4	↙ ●° a. p.
5	54.28	27.8	29.3	26.5	70.7	SSW	3.8	9.7	Ci.-S.	Cu. WSW	------	↙° d° p.
6	55.90	28.5	31.1	26.5	73.7	SSW, S	2.3	8.5	Ci.-S.	Cu. WSW	------	↙°
7	57.57	27.5	30.7	23.3	77.5	S	1.2	5.6	Ci.	Cu. SW, W	------	ζ p.
8	57.56	26	30.7	21.6	81.2	SSE, SE	.5	4	Ci.	Cu.	------	Ω a. ζ p. ◯°
9	57.38	26.5	30.1	23.5	81.3	SSE	.5	6.3	Ci. E	Cu. SW	------	◯° ζ p.
10	57.80	26.7	30.3	22.6	82.3	SSE	.8	4.7	Ci. E	Cu. SW	------	Ω a. ζ p.
11	58.28	26.6	30.7	22.9	81.3	SE, S	.3	6.2	A.-Cu. SSE	Cu. SSW, SW	------	ζ ⊤
12	58.10	26.3	30.9	22.3	84.3	SSE, S	.3	6.2	A.-Cu. NE, ENE	Cu. NE	------	ζ p.
13	57.35	27	32.9	22.3	79.2	WNW	.3	4.7	Ci. E	Cu. NW, NNW	------	ζ Ω
14	57.07	26.4	30	23.8	85.4	SSW, WNW	.3	8.3	Ci.-S.	Cu. NW	1.8	●° a. ζ p.
15	56.41	26.3	30.4	24	86.7	N	.5	8.5	Ci.-S.	Cu. WNW	26.2	ζ ⊤ ●
16	55.80	26.4	30.2	23.2	85.7	ESE, S	.5	8.5	Ci. ENE	Cu. WNW	20.3	●° a. ⛈ p.
17	56.43	25.5	29.4	22.8	89.2	SE quad.	.3	9.2	Ci.-S.	Cu. W	17.8	⛈ a. p.
18	58.10	25.6	29	22.7	87.3	SSE	1	9.8	Ci.-S.	Cu. S	19	● a. d p.
19	59.55	26.3	30.5	22.7	83.2	SSE	.3	6.7	Ci. E	Cu.	------	Ω ψ
20	59.20	26.1	30.5	21.9	82.8	SSE	.5	4.7	Ci. ENE	Cu.	------	Ω ζ ⊤ ψ
21	58.63	25.9	30.5	22.5	86	SSE, SE	.2	8	Ci. E	Cu. W by N	------	Ω ψ
22	58.27	26.2	30.4	22.7	84.4	SSE, SE	.5	4.7	Ci. E	Cu. W	------	Ω ⊤ ζ
23	57.93	26.2	30.6	22.2	85.8	ENE	0	6.8	Ci.	Cu. NW	------	ζ d° ⊤ ⌒
24	57.89	26.3	30.5	22.8	84.4	Variable	.3	5.6	Ci.	Cu. SW	------	ζ Ω ⊤
25	57.36	26.9	30.5	23.4	83.2	SSE	.5	6.5	Ci. E, ESE	Cu. SSW	2	⛈ p.
26	57.14	26.8	30.5	23.6	85	SSE	.8	7.2	Ci. E, ENE	Cu. SSW, WSW	30	⊤ a. ⛈ p.
27	56.81	26.8	30.4	22.9	83.8	SSE	.7	5.6	Ci.	Cu. WSW	1.5	d° a. ● ⌒ ζ p.
28	56.43	26.5	30.3	22.7	85.2	SE quad.	1	6	Ci.	Cu. SW, WSW	1.3	Ω a. ⛈° p.
29	57.16	27.2	30.5	24.5	81	SSE	1	7.2	Ci. ENE	Cu.	------	d° ⊤ ζ p.
30	58.14	26.8	31.8	23.5	82.5	Variable	.5	7.7	A.-Cu. SE	Cu. S	------	ζ ⊤
Mean	757.18	26.5	30.4	23.2	82.5	------------	.8	7	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	141	

TACLOBAN.

[ϕ=11° 15′ N; λ=125° 00′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	755.60	28.5	33.4	25.6	72.1	Variable	1	6.2	A.-S.	S.-Cu. WSW	2	ψ ϖ ⊕ ● ⊤ ζ
2	55.88	26.9	31.2	24.5	78.7	W quad.	.8	9.6	A.-S.	Fr.-N.	2	● ⊕ ζ
3	55.77	27.3	31.9	23.5	76.5	Variable	.6	7.8	A.-S.	S.-Cu. W	1.5	d a. p.
4	53.97	27.3	32.1	23.6	72.8	Variable	1	9.8	A.-Cu. WSW	S.-Cu. SW by W	1.3	d p. ⊕
5	53.91	28	30.7	26.7	64.7	SW	1.8	8.8	A.-S.	S.-Cu. W by S	------	d° p.
6	55.62	29	33	26.5	61.5	SW, SSW	1.4	9.4	Ci.-S.	S.-Cu.	------	d° p.
7	57.34	29.2	34.1	24.2	64.5	W	1.4	7	Ci.-S.	Variable	------	⊕
8	57.50	28.2	32.9	23.6	75.2	WNW	1	8.2	Ci.-S.	Cu.	------	⊕
9	57.36	27.6	32.5	24	78.5	Variable	.8	8.2	Ci.-S. E	S.-Cu.	------	ζ p.
10	57.82	28.4	33.4	24.2	75.6	Variable	.8	7.2	Ci.-S.	S.-Cu. SW	------	◯ ⊕
11	58.65	27.5	33.5	24.4	79.3	Variable	1	6.4	Ci.-S.	S.-Cu.	.2	Ω° d p.
12	58.25	27.9	33.4	24.7	78	ENE	.6	6	Ci.-Cu. ENE	Cu. WSW	.8	⌒ d ζ p.
13	57.51	28.3	34.5	24.4	77.2	Variable	1	4.4	Ci.-S. SSE	S.-Cu. NNE	------	⊤ ϖ° p.
14	56.64	28	31.7	25.4	76.5	NW quad.	2	6.4	Ci.-Cu. ESE	Cu. NNW	2.5	ζ ● ◯^{2}
15	56.03	27.8	33	25.3	77.8	NW	1.6	6.2	Ci. SSE	Cu.-N. NW, NNW	1.3	⛈° a. p.
16	55.52	27.8	29.9	26.3	76.3	NW, WNW	1.2	7.4	Ci.-Cu.	Cu.-N. WNW	5.8	● a. ζ p.
17	56.40	26.7	30	23.7	81.3	Variable	.6	8.2	Ci.-S.	Cu.-N. W	1.5	●° a. ζ d° p.
18	58.38	26.8	30.7	24	79	S, SW	.6	8	Ci.-S.	Variable	------	d° a. ◯^{2} ϖ°
19	59.79	27.8	32.5	23.5	77.6	ESE, SSW	.4	6.4	Ci.-S. S, SSE	Cu. W	------	ψ^2
20	59.47	26.4	30.6	24.6	84.8	ENE, E	.4	4.4	Ci.-S.	S.-Cu.	19	⛈ p. ψ
21	58.74	27.2	32.5	23.4	81.5	ENE, E	.4	6.4	Ci.	Variable	------	⊤ ψ° p.
22	58.25	27.8	32.5	24.4	77.3	N	1	6	Ci.-S. S	Cu. W	------	ψ^2
23	58	27.8	32.7	25.5	79.8	SSE, S	.4	4.2	Ci.-S.	Variable	6.8	⛈ p.
24	57.96	26	32.8	23.8	86.6	Variable	.6	6	Ci.-Cu. SSE	Cu.-N. W	22.4	⛈^{2} p.
25	57.52	26.5	31	23.5	84.7	Variable	.6	6.4	Ci., Ci.-S.	Cu. W	.8	d a. p.
26	57.24	27.2	32	24.4	80.8	NNW	1.2	5	Ci. S, SSE	Cu. W	.8	d° ζ p.
27	56.74	28.1	33.2	24	77.5	NNW	.8	4.6	Ci.-S., Ci.	Cu. W	------	ζ p.
28	56.29	27.6	32	24.2	80.3	Variable	.8	4.8	Ci. S	Cu. WNW, W	2.3	● a. ζ p.
29	57.10	28.1	32.4	24.5	77.2	NE, NW	1	7.2	Ci. S, SSE	Cu. W	------	◯^{2} ⊕ ζ
30	58.36	27.9	32.8	25	78.7	Variable	.6	6.7	Ci.-S.	Cu.-N. SSW	3	⛈° p.
Mean	757.12	27.6	32.3	24.5	77.1	------------	.9	6.8	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	74	

METEOROLOGICAL DATA, ETC.—Continued.

CAPIZ.

[ϕ = 11° 35′ N; λ = 122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	756.23	27.5	32.9	------	81.7	W quad.	0.3	6.8	Ci.	Cu.-N. NW	5.3	Ω° a. ● p.
2	56.75	25.5	30.2	------	89.8	SW	.5	9.7	------	N.	8.4	d a. p.
3	56.49	25	27.1	------	90.2	WSW	.3	9.5	Ci.-S.	Cu.-N. SW	1	d° a. p.
4	54.53	25.2	30.5	------	91.8	SW	.3	9.2	Ci.-S., Ci.	N.	13.2	● ⊤° ϟ p.
5	53.77	26.4	31.9	------	84.3	W	.7	7.8	Ci.-S.	N.	3	d a. p.
6	55.60	27.6	32.7	------	80	SW	.5	8.5	Ci.-S.	N.	------	⊤° p.
7	57.59	27.2	31.1	------	84	SW	.2	9.2	Ci.-S.	N. SW	------	
8	57.54	27.4	32.5	------	83.3	SW	.5	6.8	Ci., Ci.-S.	Variable	7.9	Ω° a. ⌈ϟ p.
9	57.53	26.9	31.6	------	86.5	SW	.3	8.3	Ci.-S. S	N. SW	24.1	⌈ϟ² p.
10	57.98	26.4	31.9	------	89.3	Variable	1	6.3	Ci. W	N. NE	7.9	Ω° ⌈ϟ p.
11	58.48	26.7	31.6	------	84.5	SSE	.7	4.3	Ci.	Cu.-N. SE, NE	------	Ω° a. ⊤° p.
12	58.33	26.9	31.5	------	84.8	SSE	.5	4.7	Ci.	Cu.-N. SW, SE	------	Ω° a.
13	58.24	26.4	30.7	------	84.2	WNW	.7	3	Ci.	Cu. NE	------	Ω a. ϟ² p.
14	57.71	26.7	30.9	------	81.1	NW	1.2	5.7	Ci.-S.	Variable	------	Ω a.
15	56.83	27.7	30.4	------	80	WNW	1.7	7.8	Ci.-S.	Cu.-N. NW	------	ϟ° ⋓ ⊕ p.
16	56.05	27.4	31.3	------	80.8	W	.8	7.8	Ci.-S.	N. NW	------	ϟ° ⋓ ⊕ p.
17	56.86	25.9	30.5	------	88	SW, NNW	.2	9.5	Ci.-S.	Cu.-N. Variable	3.3	⊤ ● p.
18	58.48	25.1	28.9	------	89.2	SW	.8	8.2	Ci.-S.	Cu.-N. SW	8.1	●² ⊕² p.
19	59.76	25.8	32.5	------	88.5	W	.5	6.3	Ci., Ci.-S.	Cu.-N. SW, NW	21.6	⊕² ●² ⊤ ≡²
20	59.92	26.4	30.1	------	86.8	Variable	.5	5.2	Ci.-S., Ci.	S.-Cu.	------	Ω a. ⊤ p.
21	59.53	26	31.4	------	86.2	Variable	.7	5	Ci.	S.-Cu.	------	Ω² a. ⋓ ⊕
22	59.08	26.6	30.5	------	81.3	NNE	.3	4.3	Ci.	Cu.-N. NE	------	Ω² a.
23	58.71	25.9	31	------	88	WSW, N	.5	5.2	Ci.	Cu. NW	------	Ω a. ϟ² p.
24	58.44	25.9	30.6	------	87.7	Variable	.3	5.5	Ci.	Variable	------	Ω a. ⊤° p.
25	57.93	26.1	32.4	------	86	SSE, SSW	.3	6.2	Ci., Ci.-S.	N. SW	3.3	Ω a. ⌈ϟ° p.
26	57.46	26.4	31.9	------	87.5	NNE, NE	.3	5.3	Ci.	Cu.-N.	------	Ω a. ⊤ p.
27	57.22	26.6	30.7	------	87.7	Variable	.5	5.2	Ci., Ci.-S.	Variable	------	Ω a. ⊤ d p.
28	56.76	26.8	31.6	------	85.8	S quad.	.5	4.5	Ci., Ci.-S.	Cu.-N. S	------	Ω a. ⊤° ϟ° p.
29	57.54	25.7	31.1	------	90.3	SSW	.3	8.2	Ci.-S.	N. NW	40.9	Ω a. ⌈ϟ² p.
30	58.70	26.3	31.3	------	89.8	SW, NE	.3	6.7	Ci.	Cu.-N. NE	------	⊤° d° p.
Mean	757.53	26.4	31.1	------	86.9	------	.5	6.7	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	148	

CALBAYOG.

[ϕ = 12° 04′ N; λ = 124° 36′ E; barometer above sea, 4.1 meters; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temp. Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind: Prevailing direction.	Force (mean).	Clouds: Amount (mean).	Upper.	Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	756.18	28.2	32	25.1	80.3	W	1	7.5	Ci.	S.-Cu. SW	5.3	↙ ● p.
2	56.36	26.2	30	21.1	85.8	WSW	1.5	9	A.-Cu.	Cu.-N. SW	25.4	↙ ● a.
3	56.10	27.2	30.5	24.2	80.7	WSW	1.5	8.7	A.-Cu.	Cu.-N. SW	6.6	● a.
4	54.26	27.1	31.3	25	83	WSW	2.2	9.2	Ci.-S.	Cu.-N. SW	1	↙° ●° a. p.
5	53.83	27.2	29.2	24.5	81.7	SW	3.2	9	A.-Cu.	Cu.-N. SW	2.8	↙ ●° a. p.
6	55.76	28	31	24.6	78.3	SW	2.8	8.8	Ci.-S.	Cu.-N. SW	.8	↙° ○° ●°
7	57.85	27.9	31.5	25.5	81.5	SW, WNW	1	8.3	A.-Cu.	S.-Cu. SW	------	ϟ p.
8	57.81	28.1	31.8	24	80.7	W	1	6.3	Ci.	S.-Cu. SW	------	
9	57.76	28.5	32.6	25.5	80.2	W	1	8.2	Ci.-S.	S.-Cu. SW	------	ϟ p.
10	58.20	28.3	32.5	25.5	77.7	W	1	6.5	Ci.	S.-Cu. SW	------	
11	58.69	28.3	33.9	23.5	79.2	W	1	5.3	Ci.	S.-Cu. SW	------	○°
12	58.59	27.3	33.8	22	83.5	N, W	1	6.2	A.-Cu.	S.-Cu. SW, W	------	
13	57.88	26.2	34.2	22	86.8	N, W	1	5.3	Ci.	S.-Cu. W	1	●° p.
14	57.29	27.1	32.9	22	84	N, WNW	.8	6	Ci.	S.-Cu. W	------	d° ϟ p.
15	56.52	27.8	33.1	22.4	80	WNW	1	7.2	A.-Cu.	S.-Cu. NW	.5	d a. ⊤ ϟ p.
16	56	26.9	30.5	24.2	83.7	NW	1	8.3	Ci.-S.	S.-Cu. W	19.6	p a. ⌈ϟ p.
17	56.81	26.3	30.5	22.5	86.3	W	1	8.2	Ci.-S.	S.-Cu. W	13.7	● a. d ϟ p. ○°
18	58.48	26.4	32.4	22.5	84.8	WSW	1	8	A.-Cu.	Cu.-N. SW	3	●° a. p. ϟ ⋓°
19	59.88	27.6	32.5	23.8	77.7	WSW	1	8	Ci.	S.-Cu. W	------	ϟ ⊕ ⋓° p.
20	59.76	26.9	34	22	82.3	N, W	1	7	Ci.	S.-Cu. W	------	ϟ p.
21	59.08	26.6	33.9	22	85	N, W	1	7.5	A.-Cu.	S.-Cu. W	------	d° ϟ ⋓° p.
22	58.82	26.9	33.9	22	83.2	N, WNW	1	6.3	Ci.	S.-Cu. W	------	⋓
23	58.46	26.6	33.4	22	87.3	N	1	6.5	A.-Cu.	S.-Cu. W	------	⊤ ϟ p.
24	58.37	27.5	34	22.6	84.3	N, W	1	8.2	A.-Cu.	S.-Cu. SW	6.1	● a. ϟ p.
25	57.93	27.4	32.5	23	84.2	N, W	1	7.3	A.-Cu.	S.-Cu. W	6.4	● a. ϟ p.
26	57.51	28.6	33.2	23.4	79.5	W	1	7.2	Ci.	S.-Cu. W	.2	ϟ p.
27	57.08	28.4	33.4	24	80.2	WSW	1	7	A.-Cu.	Cu.-N. W	.5	d a. ϟ p.
28	56.69	29.2	34	26.2	76.5	WSW	1	6.5	A.-Cu.	S.-Cu. SW	------	d° a. ϟ p.
29	57.65	28.7	34	24.3	78	W	1	7.7	A.-Cu.	S.-Cu. SW	------	ϟ p.
30	58.72	27.2	34.1	22.8	87	N, W	1	6.8	A.-Cu.	S.-Cu. SW	1.8	●° a. d ϟ p.
Mean	757.48	27.5	32.6	23.5	82.1	------	1.2	7.4	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	94.7	

METEOROLOGICAL DATA, ETC.—Continued.

LEGASPI.

[ϕ=13° 09′ N; λ=123° 45′ E; barometer above sea, [illegible]3 meters; gravity correction not applied, —1.77 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	*°C.*	*°C.*	*°C.*	*P. ct.*		*0-12.*	*0-10.*			*mm.*	
1	756.04	27.4	32.2	23.5	82.8	W	1	7.2	Ci.-S.	Cu.-N. W	2.8	●° ⊤° p.
2	55.86	26.9	30.6	23.5	83.2	W, WSW	1.2	7.3	Ci.-S.	Cu.-N. W	2.8	●° a. ↯ p.
3	55.61	27	32.6	23.9	81.9	WSW	1.2	7.7	Ci.-S.	Cu. W	------	d° p.
4	53.80	26.6	31.3	24.1	84.3	WSW	1.2	10	Ci.-S.	Fr.-N. WSW	2	d a. p.
5	52.90	26.4	30.3	24.1	90.3	WSW, SW	2	9.5	Ci.-S.	Fr.-N. WSW	12.4	● a. p.
6	55.04	26.4	30.5	23.6	85.7	SW	1.5	10	Ci.-S.	Cu.-N. WSW	23.4	● a. d p.
7	57.30	26.6	29.5	24.4	82.3	WSW, W	1.2	8.5	Ci.-S.	Cu. WSW	.2	d a.
8	57.35	27.2	31.5	24.1	80.3	W	1.2	5.6	Ci. NE	Cu. W	------	↯ p.
9	57.26	27.6	32.8	25.2	80.4	WSW	1.3	7.5	Ci.	Cu. WSW	.2	d ○² a. ↯ p.
10	57.73	28 1	33.7	24.9	75.3	W	1.3	2.8	Ci., A.-Cu.	Cu. WSW	------	↯ p.
11	58.42	28.2	33.5	24	76.2	WSW	1.2	1.3	A.-Cu.	Cu. WSW, W	------	↯ p.
12	58.08	28.2	33.9	24.1	77.4	WSW	.7	2.2	Ci. ENE, E	Cu. W	------	p° ↯° p.
13	57.81	27.8	34.6	24.5	80.5	WSW	.5	3.2	Ci.	Cu.-N. W	2.8	● a. d p.
14	57.10	27.4	34.4	24	79.9	W	.8	4.2	Ci. E	Cu.-N. NW	------	≡ ⊤° a. d ↯° p.
15	56.36	27.4	33.5	23.6	80.3	W	1	6.2	Ci. SE	Cu. NW	------	d° a. p. ↯
16	55.69	27.1	31.2	25.4	80.5	W	1.2	7.3	Ci.-S.	Cu., Cu.-N. NW	11.4	d a. ⌈↯ p.
17	56.44	26.3	31.3	24	85.2	W	.2	8.3	Ci.-S., Ci.	Cu.-N. W	1.8	↯ d ᴗ
18	58.24	26.3	30.5	22.5	83.2	S, W	.5	7.3	Ci.-S., A.-Cu.	Cu. S	29.2	● a. p. ↯
19	59.72	26.9	32	23	78.8	W, SW	.7	4.7	Ci.	Cu. SW	------	↯ p.
20	59.51	27.6	32.3	23.6	80.5	SSW, W	.3	3.5	Ci.	Cu. W	------	p. a. ↯ p.
21	58.90	26.8	33	23.7	83	WSW	.8	6	Ci.-S.	Cu.-N. W	1.5	⊤ d ᴗ
22	58.46	27.8	34.5	24.5	77.5	W	.8	4.5	Ci.	Cu. NW	------	d ↯ p.
23	58.30	26.4	33	23.5	85.2	N, NW	.3	4.2	Ci.-S.	Cu. W	15.7	⌈↯² p.
24	58.01	26.7	32.1	22.9	86	WSW	.2	5.8	Ci.-S. ESE	Cu. W	5.3	●° ↯ p. ○
25	57.52	27.2	33.1	23.9	83.8	SSW, W	.5	1.8	Ci.	Cu. WSW	9.9	≡ a. ● ↯ p.
26	57.23	27.2	32.1	23.6	82.5	SW, WSW	.3	2	Ci., A.-Cu.	Cu. WSW	11.4	≡ d a. ● ↯ p.
27	56.88	26.7	31.1	24	84.3	W	.5	3.3	A.-Cu. W	Cu.	3	● a. ↯ p.
28	56.29	27.4	32.5	24.6	83.4	WSW	1	5.2	Ci.-S.	Cu. W	3	d a. ↯ p.
29	57.35	25	30.1	23.4	91.8	WSW	.8	8.2	Ci.-S.	N. W	38.1	●² ⊤ a. ↯ p.
30	58.66	26.7	33	22.9	85.2	WSW, NW	.3	4	Ci.	Cu.-N. W	------	≡ a. ↯ p.
Mean	757.13	27	32.2	23.9	82.4	------	.9	5.6	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	176.9	

ATIMONAN.

[ϕ = 14° 00′ N; λ = 121° 55′ E; barometer above sea, 7.8 meters; gravity correction not applied, —1.74 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.	Clouds. Lower.	Rainfall.	Miscellaneous.
	mm.	*°C.*	*°C.*	*°C.*	*P. ct.*		*0-12.*	*0-10.*			*mm.*	
1	755.33	28	32.6	25.6	80.3	WSW	1.2	7.8	Ci.-S.	S.-Cu. W	------	ᴗ° ϖ° Ω d ↯°
2	55.30	27.2	32.3	24.2	82.2	SW	1.5	8.5	Ci.	S.-Cu. SW	------	d° ↯° p.
3	54.90	26.8	32.5	24	82.3	SW, W	2.3	6.3	Ci. NE	Cu. W	------	d° p.
4	52.70	27.2	31.4	24.3	83.2	W, WSW	1.3	8	Ci.-S. N	Cu. SW, WSW	4.6	Ω° ○² d²
5	52.35	25.7	29.2	23.9	87.2	SW	2.7	10	Ci.-S. N	Fr.-N. W	4.3	↙° d a. p.
6	54.12	25	26	24	90	SW	2.8	10	Ci.-S. N	N. W	8.1	↙° ●° a. p.
7	56.64	27	31.3	23.9	83.8	SW	1.8	10	Ci.-S.	S.-Cu. W	------	↙°
8	56.48	28	32.8	24.4	79.2	WSW	1.2	7.3	Variable	S.-Cu. WSW	------	d° a.
9	56.48	28	33.2	24.9	79	SW, WSW	1.5	9.7	Ci.-S.	S.-Cu. WSW	------	d° p.
10	56.64	26.9	33.3	24	83	WSW	1.5	6.5	Ci. NE	Cu. SW	2.5	↙° p p.
11	57.59	28.1	33.7	23.4	80	WSW	1.2	5.2	Ci. NE, W	Cu. SW	------	≡ a.
12	57.64	28.1	34.3	23.5	80.3	WSW	1	6.2	Ci.	Fr.-Cu. WSW	------	↯° p.
13	57.39	27.6	33.5	22.8	82	WSW	.8	4.2	Ci. E	S.-Cu. WSW	------	
14	57.14	27.6	32.5	22.8	82.7	SW, NW	.8	6.7	Ci.-S.	Cu.	------	↯° ϖ² p.
15	56.28	28.2	34.4	23.8	82.2	WNW	1	8.8	Ci.-S.	S.-Cu.	------	↯° p. ○² ⊕²
16	55.29	27.9	33.3	23.9	80.8	WNW	1.2	7.5	Ci.-S. NE	S.-Cu. WNW	------	↯° p.
17	55.99	27.6	33.2	24	83.3	W, SW	1	8.7	Ci.-S.	Cu.-N. SW	------	↯° a. ⌒² d p.
18	57.48	25.7	30.7	23.2	89	SW	.5	8.7	Ci.-S.	Cu.-N.	25.4	d a. ● p.
19	58.98	26.8	32	23.1	86.3	SW	.7	7.3	Ci.-S. SE	Cu. SSW	2.3	d a. ⌒² ↯° p.
20	59.04	26.2	32.2	22.5	88	SW, WSW	1	6	Ci.-S.	Cu.-N. SW	17.8	⌈↯ p ϖ° ᴗ° p.
21	58.59	25.4	31.9	22.1	91.7	W, SW	1.2	6.7	Ci. NE	Cu. WSW	2	≡ ⌈↯ ϖ
22	58.16	26	31.7	22.1	89.5	SW	1.2	6.8	Ci.	Cu. SW	3.6	Ω° ≡° d ϖ² ᴗ°
23	57.98	26.7	32.2	22.8	87.8	SW	1.2	5.3	Ci. ENE	Cu. NNW	------	ᴗ° ↯° ϖ²
24	57.42	27.8	34.4	22.3	83	WSW	1.2	4.3	Ci.	S.-Cu. SW	------	↯° ϖ²
25	56.88	28.3	34.6	23.7	84.2	SW, WSW	1.2	4.3	Ci.	S.-Cu. W	------	ϖ² ᴗ² ↯°
26	56.57	28	34	23.3	81.3	WSW	1.3	3.7	Ci.	Cu. SW	------	Ω ≡ ↯°
27	56.10	27	33	23.6	88.5	SW	.8	5.8	Ci. E	Cu.	7.6	Ω° ≡ ⌈↯
28	55.77	27.2	34	23.5	85.7	SW, WSW	1	6.5	Ci. SE	Cu. W	2.8	Ω° ⌈↯
29	56.79	26.7	32.3	24	90.5	Variable	.8	7.8	Ci. N	Cu.-N. NE	------	Ω° ≡ d° ↯
30	58.22	26.5	30.9	24	91	SW	.7	8.3	Ci.-S.	Cu.-N. NE	------	≡ d ↯°
Mean	756.54	27.1	32.4	23.6	84.6	------	1.3	7.1	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	81	

METEOROLOGICAL DATA, ETC.—Continued.

OLONGAPO.

[ϕ=14° 49′ N; λ=120° 15′ E; barometer above sea, 3.5 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force. (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rain-fall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	755.77	24.9	25.6	23.1	93.2	SW	0.3	10	Ci.-S.	Cu.-N. SW	70.9	● a. p. ↯
2	55.93	24.3	25.9	22.3	93.7	SW	.5	10	A.-Cu.	Cu.-N. W	46.5	● a. p.
3	55.19	24.5	25.9	22.8	93.5	SSW, W	.3	9.8	A.-Cu. W	Cu.-N.	13.5	●° a. p.
4	52.26	25.1	26.6	22.9	91.8	S, SSW	.2	9.7	Ci.-S.	Cu.-N. S	2.5	d ≡ a. ◯
5	52.04	24.5	25.4	23.2	94.3	SSW	0	10	Ci.-S.	N. W	188.2	●² a. p.
6	54.42	24.3	24.9	23	94.3	SSW	.2	10	Ci.-S.	N. W, SW	71.4	● a. p.
7	56.71	24.8	26.8	22.6	90.5	SSW	.5	10	Ci.-S.	Cu.-N. SW, W	49.3	↙ ● a. p.
8	56.61	26	26.9	22.7	89.3	SW	1.2	10	Ci.-S.	Cu.-N. SW	52.3	↙ ● a. p.
9	56.31	25.7	26.5	23.3	87.5	SW	1.3	10	Ci.-S.	Cu.-N. SW	60.7	● a. p. ⊓
10	56.54	25	26.4	22.8	92	SSW	1.3	10	Ci.-S.	N. SW	85.3	↙ ● a. p.
11	57.52	25.4	26	22.6	90.2	SSW	.8	9.8	Ci.-S.	Cu.-N. WSW	19.6	● a. p. ⌒ ≡
12	57.86	26.1	27.1	23.8	90.5	SSW	.7	9.5	Ci.-S.	Cu.-N. WSW	22.9	● ≡ a. d p.
13	57.96	25.9	27.5	24	88.5	SSW	.3	8.5	Ci.-S.	Cu.-N. WSW	2.2	p a. ◯° ≡ p.
14	57.99	25.7	27.8	21.8	84.6	SSW	.3	8	Ci.-S.	Cu. NW	--------	≡ a.
15	57.08	26.4	29.9	23.5	85	NW	0	8.2	Ci.-S.	Cu. NW	1.5	≡ d a.
16	55.86	26.7	29.5	24.1	82.2	Variable	.5	8.5	Ci.-S.	Cu.-N. NW	--------	⊓ p.
17	56.02	25.4	27.2	23.2	86.8	SW, WSW	0	8	Ci.-S.	Cu.	1	≡ d
18	57.26	25.9	28.7	22.8	83	ENE, SSW	0	9	Ci.-S.	Cu.-N. SE	7.6	≡² a. ● ⊤ p.
19	58.95	25.4	28	23	88.5	SSW	0	9.5	Ci.-S.	Cu.-N.	9.4	≡ ● ⌣
20	59.22	25	28	21.6	86.5	SW, SSW	.2	7	Ci.-S.	Cu.	.2	≡ d
21	58.74	25.6	28.2	22	86.5	SSW	.2	7.5	Ci.-S.	Cu.	--------	≡ ◯°
22	58.46	26	27.6	23.7	85.5	SSW, NW	0	7.7	A.-Cu.	Cu.-N. WSW	.8	≡ d ↯
23	58.09	25.7	29	22.3	86.8	SSW	0	6	Ci.-S.	Cu., Cu.-N.	12.2	⊓ p. ⌣²
24	57.52	26.1	28.8	23	84.7	SSW, NNW	.2	4.7	Ci.-S.	Cu.	--------	Ω ↯ ≡
25	56.93	26.1	28.7	22.5	86.1	SSW	.5	4.7	Ci.-S.	Cu.	--------	≡ ⌣
26	56.63	26.6	28.9	23.5	85.2	SSW	.3	7.7	Ci.-S.	Cu.	--------	⌣² ◯
27	56.11	26.6	29.1	23.4	86	SSW, WSW	.3	6	Ci.-S.	Cu.	.2	d ⊤
28	55.48	26.4	28.9	23.4	85.8	SSW	.2	7	Ci.-S.	Cu. W	--------	↯
29	56.24	26.6	28.4	23.1	84.8	SSW	0	8.2	A.-Cu.	Cu.-N. SE	--------	⌒ d ↯
30	57.85	26.8	29.7	23.4	83.2	E	0	8	A.-Cu. SE, E	S.-Cu.	--------	⊤ d ↯
Mean	756.65	25.6	27.6	23	88	------------	.3	8.4	------------	------------		
Total	--------	------	------	------	------	------------	--------	--------	------------	------------	718.2	

SAN ISIDRO.

[ϕ=15° 22′ N; λ=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force. (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rain-fall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	755.86	25.4	29.6	22.8	89.7	S	0.2	9.8	Ci.-S.	N. WSW, SSW	15.2	● p.
2	55.73	25.8	30.5	22.5	85.2	S	.8	6.3	Ci.-S.	Cu. SSW	------	≡ a.
3	55.12	26.8	31.9	23.5	81.8	S	.7	7.2	Ci. NE	Cu. WSW, S	------	≡ a.
4	52.85	26.6	30.5	23.5	83.2	S	.8	6.7	Ci., Ci.-S. N	Cu. S	------	≡ a. ⊤° p.
5	52.11	25.4	30.4	24.3	93.2	S	0	9.8	Ci.-S.	N. SSW	2	d a. ● p.
6	54.15	24.7	26.4	23.8	94.3	S	.3	10	Ci.-S.	Fr.-N. SW	6.1	d a. p. ≡
7	56.94	25	27.7	23	92.1	SW, SSW	.3	10	Ci.-S.	N. SW	15	d a. p. ≡
8	56.75	25.3	29.5	23.1	88.7	S, SSW	.8	9.2	Ci.-S.	Cu. SW	15.2	≡ d a. ● p.
9	56.48	24.9	28.9	23.6	91.8	SSW, S	.2	10	Ci.-S.	N. SW, SSW	5.3	d ⊤ p.
10	56.94	24.5	25.5	23.7	95.5	S	.2	10	Ci.-S.	N. SW, S	32.5	● a. p.
11	57.72	24.6	27	23	94	SSW	.3	9.7	Ci.-S.	N.-cf. SW	27.9	● a. d. ⊤ p.
12	57.90	26.5	31.5	23.5	87	SSW	.5	7.2	Ci.-S.	Cu. SW	16.5	≡ ● a.
13	58.01	26.9	31.9	23.5	85.7	S	.3	5.3	Ci. N	Cu. W	1	
14	57.71	26.5	33.6	23	84.1	WNW, W	0	6.5	Ci.-S.	Cu. WNW	44.2	⊓ p.
15	57.22	26.7	31.9	23	85.7	W, WNW	.2	7	A.-Cu. NE	Cu. WNW	1.3	≡ a. ⊤ p ⌒ p.
16	55.87	26.5	32.4	23.6	84.7	NNE	.3	6.2	Ci.-S. SE	Cu. NW	5.6	≡² a. ● p.
17	56.08	26.5	33.5	22.5	85.2	Variable	0	8.7	Variable	Cu. NW, W	19.3	d a. ⊓ p.
18	57.50	26.7	31.9	23	80	Variable	.2	7.5	A.-Cu. NW, W	Cu. NE	3.8	≡ a. p p.
19	59.24	25.1	29.7	23.2	89.5	NE, S	0	8.3	Ci.-S. SW	N. SE	1	≡ a. d ⌓² p.
20	59.31	26	31.7	22.6	83.7	SE, S	.2	5.6	A.-Cu.	S.-Cu.	------	Ω² ≡² ⊤ d ↯
21	58.76	26.9	32.7	23.1	82.5	SSW	.2	5.8	Ci.	Cu. E, SW	2.8	≡² a. ●° p.
22	58.60	26.5	32.7	23.2	85.7	Variable	.2	5.3	Ci., Ci.-S.	Cu. W	9.1	≡ a. ●° ↯ p.
23	58.39	26.5	34	22.8	85.2	WNW, N	.2	5.7	Variable	Cu. NW, W	49.3	≡ a. ●² ↯ ⊤ p.
24	57.61	26.9	32.7	23.1	84.3	S, SSW	.2	7.2	Ci.-S. E	Cu. W	19.6	Ω ≡ a. ◯² ● p.
25	57	27.5	33	24	82.7	SW	.3	6.8	Ci. NNE	Cu. SW, W	------	Ω ≡ a. ↯ p.
26	56.79	27.2	33.4	24	84.4	SSE, S	.3	6.8	Ci. NE, N	Cu.-N. SE, S	3	● ⊤ p.
27	56.21	27.6	33.1	24.4	81.8	Variable	.2	6.8	Ci.	Cu. SSW	------	≡² Ω ⌓° ◯ ⊤ ↯
28	55.57	27.5	34.2	22	82.5	SW	.2	6.8	Ci. N, NE	Cu. SW, NW	23.9	⊤° ⌣ ≡° ⊓
29	56.55	27.4	33	22.8	82.3	S, SSE	.2	7.2	A.-Cu. NE	S.-Cu.	------	⊤ a. p.
30	58.25	27	31.7	23.7	85.5	S	.3	6.2	Ci.-S.	Cu. E	------	≡ a. ↯ p.
Mean	756.77	26.2	31.2	23.3	86.4	------------	.3	7.5	------------	------------	------	
Total	--------	------	------	------	------	------------	--------	--------	------------	------------	319.6	

METEOROLOGICAL DATA, ETC.—Continued.

DAGUPAN.

[ϕ=16° 03′ N; λ=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rain-fall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	755.48	25.1	28.6	23	93.2	SE, N	0.8	9.8	A.-Cu.	S.-Cu., N. WSW, SSE	89.4	d a. ●² p.
2	55.56	25.9	31.9	23.2	90.2	S	.7	9.3	A.-Cu., Ci.	S.-Cu. Variable	1.8	d a. p.
3	55.04	26.9	30.8	23.1	84.6	Variable	1	8.2	A.-Cu.	S.-Cu. WSW	35.3	●² a. d ⊤ ⩽ p.
4	52.24	26.7	32.8	24.1	87.2	SE	.8	8	Ci.-S.	S.-Cu. SE	44.2	d a. ⌒ ⊏ p.
5	51.67	27.1	31.5	24	84.8	Variable	.7	7.5	Variable	S.-Cu. WSW	.8	d p.
6	53.74	26	29.4	24.3	89	Variable	1	10	A.-Cu.	S.-Cu. W	5.6	●° a. p.
7	56.43	24.9	26.9	23.6	95	SE	.8	10	------	N. SE	15.7	●° a. p. ⌒
8	56.40	25.4	29.2	23.3	90.1	SE	.8	10	A.-Cu.	N. WSW	11.7	●° a. p. ⩽ ⊤
9	56.38	24.6	26.8	23.9	94.8	SE	1	10	------	N.	57.9	●² a. p.
10	56.47	24.6	28.9	23.4	94.5	SE	1	10	A.-Cu.	N. WSW	50.8	● a. p. ⌒
11	57.17	25	27.2	23.1	94.5	SE	1.2	9.7	A.-Cu.	S.-Cu. WSW	24.1	● a. p.
12	57.41	27.4	33.8	23.4	81.8	S	.8	8.2	A.-Cu. NE	S.-Cu. SW	1.5	d a. ⊤ ⩽ p.
13	57.72	27.3	31.5	23.6	82.2	SE	.5	8	Ci.-S. NE	S.-Cu. WSW	------	⩽ ◡ p.
14	57.65	27.5	31	24.3	81.5	NW	.8	6.8	Ci.-S.	S.-Cu. SW	.5	≡° a. ⊏° p. ⦶
15	57.30	27.4	31.1	23.2	82.2	NW	1.7	7.3	A.-Cu.	Cu.	4.6	p a. ⩽ ⦶ ◡ p.
16	56.01	27.8	30.6	25.9	82.3	NW	2.2	6.2	Ci.-S. NE	S.-Cu. NNW	------	↙° ⩽ p.
17	55.83	27.4	30.8	24.2	80.2	N, NW	1.7	7	Ci.	Cu.	------	◯ ⊕ ⌒ ⦶
18	56.95	27.5	33	23.9	79.2	SE	1.2	7.5	A.-Cu. SE	S.-Cu. SE	3.6	p ⩽ ⦶ p.
19	58.74	26.6	32.3	23.2	83.1	SE	.7	6.5	A.-Cu.	S.-Cu. S, SW	5.1	≡° a. ⊏ p.
20	59.18	27.2	31.5	23.4	80.6	Variable	.7	6.8	A.-Cu.	Cu.	------	d a. ⩽ ⦶ p.
21	58.76	27.1	31	23.9	80.9	NW	.7	6	A.-Cu.	S.-Cu.	1	⩽ ⌒ d.
22	58.54	27	29.5	24.5	82	NW	1	6.8	A.-Cu.	S.-Cu. NW	1.3	⦶ d ⌒ ⩽
23	58.16	27.5	31.2	23.2	81	NW	1	5.3	A.-Cu.	Cu.	------	⩽ a. p.
24	57.36	27.9	32.2	23.7	79.7	NW	1	4.3	A.-Cu.	Variable	------	⊤ ⩽ d p.
25	56.68	28	32.5	24.2	79.2	NW	.7	6.8	Ci.-S.	Variable	------	≡ a. ⊤ ⩽ p.
26	56.53	27.5	32.9	24.5	84.9	SE	.7	8	Ci.-S.	S.-Cu. SE	11.7	⊏ p. ⦶
27	56.07	27.8	32.2	24	82.2	NW	.8	5.2	A.-Cu.	S.-Cu.	.5	◡ ≡° ⊏°
28	55.52	28.1	32	24.8	83.2	NW	.5	8.7	A.-Cu.	Cu.-N. SW	------	d ⩽ p.
29	56.27	27.7	34.3	22.5	82.3	S	.7	7.8	A.-Cu.	Cu.	46.5	⊏ a. p.
30	58	28.1	33	24	81.2	NW, SE	.3	4.7	Ci.	Variable	1.5	⊤ ⩽ p. ⦶
Mean	756.51	26.8	31	23.8	84.9	------	.9	7.7	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	415.1	

VIGAN.

[ϕ=17° 34′ N; λ=120° 23′ E; barometer above sea, 24 meters; gravity correction not applied, —1.59 mm.]

	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	755.68	26.7	28.4	25.7	84.2	S	0.8	8.5	Ci.-S.	Cu.	2.5	d a. p. ◯
2	55.44	26.6	28.5	25.1	85.3	S	.8	6.8	Ci.-S. E by N	S.-Cu. SSW	2	●° p.
3	55.04	26.6	28.5	25.2	86.7	S, SSW	1	4.8	Ci.-S. NE by E	Cu. S by W	.8	d a. p. ⌒ ◯
4	52.72	26.8	29.2	25.3	85.3	Variable	.7	6	Ci., Ci.-S.	Cu. SW	1.5	⊏ p.
5	52.10	26.6	28.5	25	85.2	S	.7	9.8	Ci.-S. NE	Cu.	25.1	● p.
6	53.98	25.7	27.1	24.6	91.2	S	1	10	A.-Cu.	N. SW by W	11.4	● p.
7	56.29	26	27.6	24.7	87.3	S by W	2.2	10	Ci.-S.	Cu.-N. S	7.6	● a. ↙° p.
8	56.34	25.7	27.7	24.4	87.1	S.	2.8	10	A.-Cu.	N.	78	↙° a. ● p.
9	55.91	25.5	27	24.2	89.2	S quad.	2.2	9.8	A.-Cu.	N.	26.9	● a. p. ↙°
10	55.88	25.4	28	24.2	89.2	S, SSW	2.3	10	------	N. SSW	58.7	● a. p. ↙°
11	57.02	25	26.5	24.2	89.5	SSE, SSW	3	10	Ci.-S.	S.-Cu.	30.7	● a. p. ↙°
12	57.28	25.8	27.5	25	88.9	S	2.2	10	Ci.-S.	N. SSW	36.8	● a. p. ↙°
13	57.01	26.2	28.1	24.6	86.2	S quad.	.8	5.8	Ci.-S. NE by E	S.-Cu.	------	◯ ⩽° p.
14	58.32	26.9	29	25.5	86.4	SSW	.8	5.3	Variable	Cu. SW	2.8	●° a. p.
15	58.02	26.1	27.7	25	86.7	WNW	1.2	5.7	A.-Cu.	Cu. ENE	.2	d ⦶ p.
16	57.04	25.7	27.5	25.2	87.8	NW quad.	.8	7.3	A.-Cu. NE by E	S.-Cu. NNW	.5	d a. p. ⦶
17	56.44	26.2	29.2	24.5	83.8	NW	.7	1.3	A.-Cu. NNE	Cu. WNW	------	
18	57.55	26.6	29.3	24	78	SSE, W	1	1.7	A.-Cu.	Cu.	------	⦶
19	59.24	27.1	29.6	25	81.9	WSW	1.2	4.3	Ci. E by N	Cu. NW by N	6.3	⊕ ● p.
20	59.73	27.1	29.1	25.6	82.8	S quad.	1	5.8	A.-Cu. WSW	Cu. SW	------	⦶
21	59.25	27.1	29.1	25.7	83.5	SW	.8	3.3	A.-Cu. WSW	Cu. SW	3	● a. d p.
22	58.91	27	28.9	25.2	81.3	NW by W	1	.3	Ci.	Cu. N by W	------	d° p.
23	58.44	27.2	29.5	25.3	80.7	WNW	.7	.3	Ci., Ci.-S.	Cu. WNW	------	⩽ p.
24	57.89	27.7	30.1	25.4	81.7	Variable	1	2.7	Ci.-S.	Cu. SW by S	------	⩽ ⦶ p.
25	57.26	27.5	29.4	26.2	83.9	S, SW by S	1	7.5	Ci.-S.	Cu. SW	3.6	⊏ ⌒ a. ⩽ p.
26	56.96	27.7	29.6	26	84	S	1	3.3	Ci.-S.	Cu. SW by S	2.5	⩽° ● p.
27	56.24	27.6	29.5	26	84.1	S quad.	1.3	7	Ci.-S. SE	Cu. SW by S	11.7	● a. ⊕ ⩽ p.
28	55.96	26.6	30.1	25.2	84.7	S	1	6.7	Ci.-S. W by S	Cu.	70.4	●² a. ◯ ⩽° p.
29	56.82	27.2	29.1	25.4	84.8	Variable	.8	2.2	A.-Cu.	Cu. WNW	.2	d ⊕ ⩽ p.
30	58.29	27.9	30.2	25.5	80.7	S	.8	1	Variable	Cu.	------	⩽ p.
Mean	756.80	26.6	28.6	25.1	85.1	------	1.2	5.9	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	383.2	

METEOROLOGICAL DATA, ETC.—Continued.

APARRI.

[ϕ=18° 22′ N; λ=121° 34′ E; barometer above sea, 5 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.					Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction.					
									Upper.		Lower.			
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.					mm.	
1	755.06	27.1	32	24	89.3	S, NE	1	8.7	Ci.	E, SE	S.-Cu.		14.5	⛈ a. p.
2	54.96	26.7	30	23	87.2	S, NW	.8	6.5	Ci.	E	S.-Cu.	E	2.8	● a. ϟ p.
3	54.72	27	30.7	24.5	87.2	Variable	1.2	4.3	Ci.-S.	E	Cu.-N.	NE	1.3	d ⌒ a.
4	52.56	27.6	31.3	24	85.2	N	1.2	3.3	A.-Cu.	SW	Cu.-N.	W, N	------	
5	51.28	26.2	28	24.2	91.7	SW, S	1.2	10	------		S.-Cu.	NW	30	● ϟ p.
6	52.35	26.8	29.2	24	88	SW	.8	10	Ci.-S.		S.-Cu.	NE	9.1	● a. ϟ p.
7	55.27	26.8	31.5	24.4	86	S	1	8.5	Ci.-S.		S.-Cu.	S	.5	⊤ d ϟ p.
8	55.56	26.6	31	23.4	87.5	SW, S	1.2	7.7	Ci.-Cu.	S	S.-Cu.	SW	21.8	⛈ p.
9	55.36	25.7	29.5	23.5	92.2	S	1.2	9.8	A.-Cu.	S, W	S.-Cu.		23.6	● ϟ p.
10	55.67	26.1	30.6	23.2	90.5	SW, SE	1.2	8.3	------		S.-Cu.	SW	11.4	⛈ p.
11	56.34	26.1	29.8	23.5	90.2	SE, S	1	9.7	Ci.-S.	S	S.-Cu.	NW, SW	11.7	●² p.
12	57.18	26	30.6	23.5	89.1	S	1.2	6.7	A.-Cu.	SW	S.-Cu.		2.8	⌒ ⛈ ↙ ●
13	58	27.2	30.7	23.5	86.7	S, N	1.3	6.3	Ci.	E	Cu.-N.	S	------	○ ⌒ ⌓
14	58.21	27.2	30.8	23.6	86.7	NW	1.5	2.2	------		Cu.-N.	NE	.5	d ⌓
15	57.23	26.1	28	23.1	89.7	NW	2.3	6	Ci.	E	S.-Cu.	NW, NE	------	⊤° a. ϟ p.
16	56.37	25.3	27.5	23.1	91.8	NW	1.7	9.5	Ci.		S.-Cu.	NE	36.8	⛈ a.
17	56.68	26.4	30.5	22.5	84.8	SW, N	1	3.7	A.-Cu.	NE	Cu.-N.	NE	------	
18	58.14	26.6	30.6	22	82.8	SW, ENE	1	3.3	A.-Cu.	E	S.-Cu.		------	∞
19	59.73	26.9	31	22.1	83.2	SW, ENE	1.2	.5	Ci.		Cu.-N., S.-Cu.		------	Ω ∞
20	59.50	27.4	31.1	23.4	84.4	NE, N	1	3.2	A.-Cu.	SW	Cu.		------	Ω ∞
21	58.90	27.4	30.5	23.1	85	W, NNW	1.2	2.2	Ci.		Cu.-N.	N	------	
22	58.69	26.9	29.5	23.5	87.8	NNW	1.7	4.8	Ci.		Cu.-N.	N	4.6	● a.
23	58.85	27	31.5	23.5	85.7	Variable	.8	3.8	A.-Cu.	E	Cu.-N.	NE	3.3	● a. ϟ ⊤ p.
24	57.66	27.3	30.1	24.1	87.2	NNW	1.3	8	------		Cu.-N.	NE	9.4	● a. p. ⌒ ϟ
25	56.73	27.5	31.1	24.7	87	Variable	1.3	9.5	Ci.-S.	NW	S.-Cu.		7.1	● ⊤ ϟ
26	56.70	27.3	31.7	24	88.3	Variable	1.3	5.8	Ci.-S.	E	Cu.-N.	NE	4.3	⊤ ϟ ● p.
27	56.19	26.8	31.2	24.4	89.7	S, NE	1.2	8	Ci.-S.	E	S.-Cu.	W	1.3	⊤ d p.
28	56.19	27.6	31.6	24.5	85.2	S	.8	6.3	A.-Cu.	S, SE	S.-Cu.	E	------	
29	57.53	27.3	31.7	23.7	88	Variable	1	1.7	------		Cu.-N.	E, NE	.5	Ω a. p p.
30	59.12	27.5	31.6	24.4	89	SW, NE	1	6.2	------		Cu.-N.	NE	36.6	● a. ϟ p.
Mean	756.56	26.8	30.5	23.6	87.6	------	1.2	6.2	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		233.9	

METEOROLOGICAL DATA, ETC.—Continued.

JOLO.
[ϕ=6° 03′ N; λ=120° 59′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	------	------	------	SW	2	------	d a. ☇ p.
2	------	------	------	SW	3	2.3	●° a. p.
3	------	------	------	ENE	1	------	
4	------	------	------	SW	2	------	
5	------	------	------	SSE	4	2.5	●° a. ⇙ ☇ p.
6	------	------	------	SSE	3	4.8	●° ⇙ a.
7	------	------	------	NE	2	------	Ω a. ☇ p.
8	36	26.3	68	SW	1	------	
9	35.4	26	64	WSW	1	1.8	●° p.
10	35	26	62	SSW	2	------	Ω² a.
11	33	23.6	76	SW	3	------	Ω a. ⇙ ☇ p.
12	32.7	23.1	72	SW	2	------	Ω a.
13	33	22.9	72	SW	2	------	
14	33	24.6	75	NW	2	5.3	⇙ ● a.
15	30.7	24.2	92	SW	4	21.3	⇙ ● a. p.
16	26.5	22.3	89	WSW	1	42.2	r ⊤ a. ●° p.
17	27.1	23.4	80	S	2	41.1	r a. ⊤ ● p.
18	30.5	21.9	67	NE	3	33.8	● a. ⊕ p.
19	31.8	22.9	66	SW	2	------	
20	32.5	21.9	62	WSW	2	------	Ω a. ☇ p.
21	31	22.3	85	Calm	------	20.6	Ω a. ● p.
22	32	21.7	72	ENE	2	------	Ω a.
23	32.4	22.8	66	SW	2	------	Ω a.
24	32.5	23	72	SW	2	------	⌈☇ p.
25	32.1	23.2	76	SE	3	------	⌈☇ p.
26	32.9	22.2	76	SW	3	4.1	⌈☇ ●° p.
27	33.4	24.4	71	SW	2	------	Ω a.
28	33.6	24	60	WSW	2	------	⌈☇ p.
29	32.1	24	74	SSW	1	------	d p.
30	32.7	23.3	88	W	2	1.3	⊤ ●° p.
Mean	32.3	23.5	73.3	------------	2.1	------	
Total	------	------	------	------------	------	181.1	

ISABELA, BASILAN.
[ϕ=6° 43′ N; λ=121° 57′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.5	22.1	56	W	------	------	Ω ≡° a.
2	32	22	88	WSW	------	8.1	Ω a. ⇙ ● p.
3	31.6	21.5	69	W	------	.8	Ω a. p p.
4	30.2	21.5	61	SW	------	------	Ω ≡° a.
5	31	22.2	65	SW	------	------	Ω ≡° a.
6	30.2	22.5	63	SW	------	1	Ω ≡° ⇙ ●° a.
7	31.1	21.5	56	SW	------	------	Ω ≡° a. ⇙ p.
8	32	21.9	73	W	------	.5	Ω ≡° ⊤ a. ⇙ ●°
9	31.8	22	65	W	------	.8	Ω ≡° a. ⊤ ●° p.
10	30.2	22.2	73	W	------	------	Ω a.
11	29.5	21.2	72	W	------	------	Ω a.
12	30.2	22	68	W	------	------	Ω a. ⊤ p.
13	30.5	22.2	73	W	------	------	Ω a. ⇙ p.
14	29.6	21.9	69	W	------	28.2	d ⌒ a. ⇙ ● a. p.
15	30.1	21.7	92	W	------	27.9	Ω ⌒ ⊤ a. ● a. p.
16	29.5	22.5	88	NE	------	26.7	● ⌒ a. ⇙ ● p.
17	29	21.4	89	W	------	31	⇙ ● a. d ● p.
18	30.6	22.3	58	W	------	1.3	p a.
19	30.2	21.1	74	NE	------	.5	Ω ≡° a. p p.
20	30.5	20.5	65	W	------	------	Ω ≡° a.
21	28.6	21.5	76	NE	------	------	Ω ≡° a.
22	30.5	21	71	W	------	------	Ω ≡° a. ☇ p.
23	31.2	20.5	80	W	------	1	Ω ≡° a. ☇ p p.
24	30	23	73	W	------	------	Ω ≡° a.
25	30.2	22.7	80	W	------	------	Ω ≡° a. ⇙° p.
26	30.2	21.9	71	W	------	------	Ω ≡° a.
27	29.5	23.5	72	W	------	------	Ω ≡° a. ⇙ p.
28	30	23	71	NE	------	------	Ω ≡° a.
29	30.3	22	66	W	------	------	⊤ p.
30	29.8	21.7	68	Calm	------	10.2	Ω d a. ● ⊤ ☇ p.
Mean	30.4	21.9	71.5	------------	------	------	
Total	------	------	------	------------	------	138	

ZAMBOANGA.
[ϕ=6° 54′ N; λ=122° 05′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	29.5	24	75	W	2	5.1	● a.
2	29.5	24.4	79	W	2	1.8	● p.
3	29.4	23.4	78	W	2	------	
4	30.5	24	77	W	2	------	
5	29.8	25.5	73	W	3	------	
6	29	24.5	78	W	2	------	
7	30.1	22.4	65	W	2	------	
8	30.2	23	59	W	2	------	
9	30.4	22.4	80	SSE	1	------	
10	30	22.9	77	W	3	------	
11	30.4	22.9	48	W	1	------	
12	30.5	23	77	W	1	------	☇ p.
13	29.1	23	80	W	2	------	
14	29.5	23.5	82	W	3	------	⌒ a.
15	25.5	22	98	W	1	27	● a. r p.
16	27.4	21.5	95	W	2	26.2	● a. p.
17	25.5	22	84	W	2	35.8	r a.
18	30.8	22.5	70	Calm	------	3.6	● a.
19	30.1	23.5	73	E	1	------	d p.
20	30.9	22.6	65	ESE	1	------	
21	29.6	22.1	69	SE	1	------	
22	29.5	22.5	76	SSE	1	------	
23	29.6	22.4	82	W	1	------	
24	29.4	23.8	78	WSW	1	------	
25	28.4	23	80	W	3	------	
26	29.5	22.9	82	W	1	------	
27	30	24.5	80	W	1	------	
28	31.9	22.7	63	Calm	------	------	
29	30.5	24	71	S	1	------	
30	30.4	23	73	Calm	------	------	
Mean	29.6	23.1	75.6	------------	1.5	------	
Total	------	------	------	------------	------	99.5	

DAVAO.
[ϕ=7° 01′ N; λ=125° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.8	22.1	63	Calm	------	------	
2	33.3	22.5	60	WNW	1	------	
3	32.9	22.3	60	WNW	3	------	
4	32.3	22.4	61	Calm	------	------	
5	31.8	22	69	SW	1	------	⊤ p.
6	32.6	22.9	62	Calm	------	------	
7	33.1	21.5	60	WSW	2	------	
8	33.3	22.1	63	SW	1	------	
9	34	23.2	59	WNW	2	------	
10	33.6	22.2	58	Calm	------	18.8	● p.
11	33.9	22.3	58	NW	1	------	
12	33.7	23	59	Calm	------	39.4	● ⊤ p.
13	33.8	21.5	75	Calm	------	------	
14	------	22	57	WSW	2	------	⊕ p.
15	32.1	22.6	77	Calm	------	------	
16	33.8	22.3	72	Calm	------	------	
17	33.2	22.7	70	WNW	1	------	
18	32.9	22.2	64	S	2	------	
19	33.2	22.3	69	Calm	------	------	
20	34.3	22.7	62	WSW	2	43.2	● p.
21	33.7	22.2	62	S	2	------	
22	32.7	22.9	60	Calm	------	------	
23	33.6	22.8	68	WSW	1	------	
24	33.7	22	58	WNW	1	------	⊤ p.
25	33.5	22.6	65	Calm	------	------	
26	32.9	22.7	64	WNW	2	------	
27	33.7	22.1	67	Calm	------	------	
28	32.7	21.7	61	Calm	------	------	☇ p.
29	34.5	22.9	66	ENE	1	------	
30	33.4	23.1	65	Calm	------	33	● p.
Mean	33.3	22.4	63.8	------------	.8	------	
Total	------	------	------	------------	------	134.4	

METEOROLOGICAL DATA, ETC.—Continued.

COTABATO.

[ϕ=7° 13′ N; λ=124° 12′ E.]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32.4	21.4	73	W	5	12.4	d a. ● p.
2	30.7	22.2	77	WNW	2	5.3	● a. d ☈ p.
3	32	21.8	87	SW	3	3.8	≡ a. ● a. p.
4	33	21.9	67	SW	5	------	d a. ⫽° p.
5	33.1	21.3	68	WNW	3	1	≡ a. ●° p.
6	32	21.5	79	NW	3	------	≡ a.
7	32.7	21.2	66	WNW	3	------	≡ a.
8	33.5	21.3	74	W by N	4	1.3	≡ a. ● ϟ ⊤ p.
9	33.6	21.5	72	WNW	4	------	≡ a. ϟ ⫽ p.
10	32.8	21.5	69	WNW	3	------	≡ a. ϟ p.
11	33	21.5	75	W	5	------	≡ a. ⫽° ☈ p.
12	33.7	21.4	71	NW	4	4.6	≡ a. ☈ ⫽ ● p.
13	32.6	21.7	74	WSW	3	1.5	≡ a. ●° p.
14	32.9	21.6	64	W	5	7.4	☈ ● p.
15	33.2	22.9	71	SW	8	42.4	≡ a. ⊤ ○ ● p.
16	31	21.5	80	SW	5	54.9	● a. p.
17	30.4	20.7	85	SW	5	76.5	d ●² p.
18	30.6	21.5	83	ESE	4	7.6	● a. ⋓ p.
19	33	21.6	64	SW	3	------	≡ a. ○ p.
20	33.8	20.7	67	WNW	5	------	≡ a.
21	32	20.5	72	WNW	5	------	≡ a.
22	33.1	21	67	W	4	7.1	≡ a. ϟ ● p.
23	33.4	22.6	74	WNW	5	5.3	∩ d a. ☈ ● p.
24	32.3	23.3	73	WNW	3	------	≡ a. d ϟ p.
25	33.7	22.3	72	WSW	5	25.7	≡ a. ● p.
26	33.7	22.8	77	NNW	4	12.7	d a. ● p.
27	32	22.1	74	WSW	3	13.7	≡ d a. ● p.
28	30.4	22.4	77	SW	2	------	≡² a.
29	32.8	22.5	67	WNW	3	------	≡ a. ○ p.
30	33.8	21.8	62	W	4	------	≡ a. ϟ p.
Mean	32.6	21.7	72.7	------------	4	------	
Total	------	------	------	------------	------	283.2	

DAPITAN.

[ϕ=8° 38′ N; λ=123° 23′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	------	24.1	83	W	2	------	ϟ p.
2	------	24.3	77	W	2	------	
3	------	23.8	71	W	3	?	⫽ ● p.
4	------	23.9	68	SW	2	------	
5	------	23.8	77	S	3	------	
6	------	24.5	83	S	5	------	☈ ⫽ p.
7	------	24.9	81	SW	2	------	ϟ p.
8	------	25.2	81	W	2	------	⌓ a.
9	------	25.1	79	W	2	------	⌓ a. ϟ p.
10	------	25.2	79	W	2	1.8	⌓ a. ☈ ● p.
11	------	24	78	W	2	2.8	● ϟ p.
12	------	24	83	W	2	------	
13	------	23.9	74	W	2	------	d ϟ ⊖ p.
14	------	23.9	81	W	2	------	⫽ a. p. d p.
15	------	23.7	86	W	2	6.6	● a. ⫽ ●° ϟ p.
16	------	23	73	S	2	12.2	☈ a. ● a. p.
17	------	22.8	72	W	3	3.6	● p.
18	------	23.1	68	W	3	.5	●° ⋓ p.
19	------	23.2	72	W	3	------	⋓ p.
20	------	23	67	W	1	2.3	● p.
21	------	22.9	76	W	2	------	≡ a.
22	------	23.2	75	W	2	------	⌓ ≡ a.
23	------	23.4	79	W	2	------	⌓ ≡ ∩ a. d° p.
24	------	23.6	79	W	2	.3	⊤ ⌓ a. ●° ϟ p.
25	------	23.5	80	W	3	------	⌓ a. ϟ p.
26	------	23.8	81	W	3	------	⌓ a. ϟ p.
27	------	23.6	79	W	4	30.2	⫽ ● a. ⫽ d p.
28	------	23.8	76	W	4	------	ϟ p.
29	------	23.9	78	W	3	.8	ϟ ●° p.
30	------	24	79	W	3	------	ϟ p.
Mean	------	23.8	77.2	------------	2.5	------	
Total	------	------	------	------------	------	61.1[1]	

BALINGASAG.

[ϕ=8° 45′ N; λ=124° 44′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	35.5	20.1	55	W	2	------	
2	34	21.8	68	W by S	1	------	
3	32.1	21.5	74	W	1	1.3	⫽ ●° p.
4	34.5	20.6	59	W	1	------	
5	35.2	21.2	54	WSW	1	------	
6	32.6	21.6	64	W	1	------	
7	36	20.5	48	W	1	------	
8	35	20	60	W by S	1	------	
9	35.2	20.5	64	W by S	1	------	
10	35.8	20.4	58	NW	2	.8	☈ ⫽ ●° p.
11	34.5	20.4	65	W by S	1	------	⫽ ☈ p.
12	35.4	20.1	58	WNW	1	4.8	☈ ⫽ ● p.
13	33.6	20.9	64	W by S	1	14.5	d°a. ☈ ⫽ ●² p.
14	29.6	20.2	67	Calm	------	------	
15	32.4	22	64	Calm	------	51.8	⫽ ☈ ●² p.
16	33.5	20.6	62	Calm	------	------	d° p.
17	32.1	20	71	W	1	2.3	● d p.
18	33.2	20.5	59	W by S	1	------	
19	34.6	20.1	57	WNW	2	------	
20	36.3	20	55	W by N	1	------	
21	34.5	20.7	58	W	2	------	
22	34.8	19.5	63	Calm	------	------	
23	31.9	20.8	74	W by S	1	------	⊤ a.
24	33.2	21.5	69	W	1	------	☈ d° p.
25	34.4	20.6	57	W by S	1	1	●° p.
26	35.7	20.7	58	W by S	1	------	d° ☈ p.
27	35.7	22	59	W by S	1	------	d° ϟ p.
28	36.5	20.6	57	W by S	1	------	d° p.
29	36	21	57	W	1	------	
30	------	21.4	78	Calm	------	------	d° p.
Mean	34.3	20.7	61.9	------------	1	------	
Total	------	------	------	------------	------	76.5	

BUTUAN.

[ϕ=8° 55′ N; λ=125° 31′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32.5	23.4	56	NNW	3	------	≡ a.
2	30.8	23.7	61	NW	2	------	
3	30.8	23.2	70	N	4	------	
4	32.5	22.7	48	NNW	2	------	○ a.
5	32.5	22.4	56	NNE	1	------	d p.
6	31.3	22.4	65	NW	2	------	
7	31.9	22.9	50	N	3	------	⌓ ≡ a.
8	31.5	23	64	N	3	------	○ p.
9	30.8	22.7	60	NNW	2	------	≡ a.
10	32	22.6	64	NW	2	12.4	☈ ● p.
11	30.7	23.5	66	NW	1	------	∞ a.
12	31.5	22.6	62	SW	1	------	∞ a.
13	------	------	69	NW	1	1.5	● a.
14	------	------	------	------------	------	------	
15	------	------	------	------------	------	------	
16	------	------	------	------------	------	------	
17	31.4	22.2	66	SE	2	------	⊤ p.
18	30.5	22.4	66	E	2	------	⌓ a.
19	32.6	22.1	64	SSW	2	.3	⌓ ≡° a. ⊤ ●° p.
20	31.6	22	62	SE	2	------	⌓ ≡ a.
21	30.8	22.5	74	S	1	------	⌓ ≡ a.
22	30.4	22	75	S	1	------	⌓ a.
23	31.1	22.5	67	N	2	------	⊤ ⌓ a. ☈° p.
24	31.1	23.7	64	N	2	------	⌓ ≡ a. ○ ☈ p.
25	30.3	23.7	63	NNW	3	------	∞ a. ○ p.
26	30.8	24	64	N	3	------	○ a.
27	30.8	23.6	62	N	4	------	○ a. ⊤ ϟ p.
28	31.3	23.6	60	NNW	3	------	○ a.
29	31	23.4	61	N	3	------	☈ p.
30	32	23.6	69	NW	2	1.8	≡ a. ☈ ● p.
Mean	31.3	22.9	63.3	------------	2.2	------	
Total	------	------	------	------------	------	------	

[1] 29 days of observation.

METEOROLOGICAL DATA, ETC.—Continued.

YAP (Western Carolines).
[ϕ=9° 29′ N; λ=138° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	28	21.5	92	E	3	49.5	
2	30.3	21.3	76	SW	6	1.8	
3	31.5	23.5	73	SW	4	3	
4	30.7	23	78	SW	4	3.3	
5	33.2	24.7	73	SSW	2	------	
6	33.3	24	73	SW	1	------	
7	33.5	23.7	69	S	1	------	
8	32.8	24.5	71	SW	2	------	
9	32	24.3	72	SW	4	3.8	
10	30	23	80	W	5	7.9	
11	32	22.5	95	N	4	23.6	
12	28.8	21.5	91	N	1	25.4	
13	29.4	22.7	82	NW	3	19.1	
14	27.7	22.6	81	W	6	17.5	
15	27.4	22	86	SW	6	48.3	
16	31.5	21.5	79	SW	4	23.6	
17	31	22.4	80	SW	1	27.9	
18	30.5	22.5	80	NE	1	6.1	
19	29.8	22.6	78	NE	2	------	
20	32.2	22.7	83	N	2	32.8	
21	30.3	22.8	75	N	2	4.8	
22	32.5	22.8	75	SW	2	------	
23	33.3	23.3	72	S	2	------	
24	33.3	23.4	75	S	1	6.4	
25	31	23.2	79	SW	6	4.8	
26	30.5	23	80	SW	6	30.2	
27	30.5	22.8	88	SW	3	41.9	
28	28.7	22	86	SW	4	19.6	
29	30.5	23.8	80	W	5	------	
30	31.4	23.7	84	S	2	------	
Mean	30.9	22.9	79.5	------------	3.2	------	
Total	------	------	------	------------	------	401.3	

MAASIN.
[ϕ=10° 08′ N; λ=124° 50′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	29.1	25.2	83	SW	4	------	ϟ ↙ a. ⊤ d p.
2	30	25.1	78	SW	4	------	↙^{2} ϟ p.
3	28.5	24.4	75	SW	2	------	ϟ ⊤ ↙ a. d a. p.
4	29.8	24.3	78	SW	6	------	
5	29.3	25.8	75	SW	3	5.1	ϟ a. p. ↙ ● p.
6	30	23.5	82	SW	4	------	ϟ a.
7	31	24.3	78	SW	2	------	
8	32.4	23.5	79	SW	5	34.3	ϟ ↙ a. [ϟ ↙ ● p.
9	30.5	23.4	80	SW	4	------	ϟ a.
10	31.5	22.1	78	SW	2	25.9	ϟ a. [ϟ ↙ ● p.
11	31.1	22.7	78	SE	1	------	d a. ϟ p.
12	32.3	24	79	S	1	------	d ϟ p.
13	32	24.1	79	SW	2	------	d a. ⊕ ϟ p.
14	29.5	24.4	72	NW	2	5.3	d ⊤ a. ↙ ● [ϟ p.
15	31	23.4	74	SW	2	10.9	[ϟ a. d ● p.
16	29.8	23.4	84	SW	3	------	↙^{2} ⊤ a. d [ϟ ∪
17	29.3	23.8	78	SW	3	52.3	d a. p. ↙ ●^{2} p.
18	29	23.8	79	S	2	34	↙ ● d a.
19	30.6	23.6	76	S	1	------	ϟ ∪ ⊕ p.
20	31	23.7	76	S	1	------	ϟ a. ∪ ⊕ p.
21	31.5	24	78	SW	4	------	⊤ ↙ ⊕ p.
22	29.1	24	81	SW	2	------	ϟ a. p.
23	31	24	82	S	1	------	ϟ d a. [ϟ d p.
24	30.7	23.6	78	SE	1	23.6	⊤ a. ↙ ● [ϟ p.
25	28.5	24.1	88	SW	3	14.5	● [ϟ ↙ p.
26	28.4	23.8	95	SW	2	34.3	↙ d a. ↙ ● p.
27	30.8	24.2	89	SE	2	3.3	●° a. p. ↙ [ϟ p.
28	29.3	23.4	93	SW	2	18.3	ϟ a. p. ⊤ ↙ ● p.
29	29.6	23.5	83	SW	2	19.3	↙ ● ⊤ d ϟ p.
30	29.9	23.5	81	SW	1	------	ϟ p.
Mean	30.2	23.9	80.3	------------	2.5	------	
Total	------	------	------	------------	------	281.1	

BACOLOD.
[ϕ=10° 41′ N; λ=122° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.9	23.5	73	SW	3	2.3	●° a. p.
2	26.5	22.5	96	W by S	8	62.7	● ⊤° a. ↙ ●^{2} p.
3	27.5	22.2	94	S	2	9.7	⌒ ● a. ⊤° ●° p.
4	26.8	22.1	96	SW	4	55.7	● a. p. ⊤ ϟ p.
5	28.7	23	88	SW	4	15.5	●° a. ◯ ↙ ● p.
6	29.4	22.6	79	SW	4	13.7	d ◯° a. ● ⊤° p.
7	30.1	23.3	77	SSW	4	------	⊤° a. ◯^{2} d p.
8	29.7	22.5	77	SW	4	------	◯° a. ϟ p.
9	30.6	23.5	75	SW by S	4	------	◯° a. ϟ p.
10	30.9	23.5	71	SW	4	.3	●° a. ϟ p.
11	31.1	22.2	71	SSW	3	------	⊤° a. ϟ p.
12	31.5	21.8	71	SW	4	------	Ω° ≡° a. ⊤° ϟ p.
13	31.5	23	78	SW	4	------	Ω° ≡° a. ⊤° ⌒^{2} ϟ
14	31.4	22.8	70	SW	3	------	Ω° ≡° a. ◯^{2} ϟ p.
15	32.4	24	74	SW	3	------	◯° a. [ϟ ⊕° p.
16	32.7	23.5	74	SW	3	1	[ϟ ● ∪ p.
17	30.8	23.5	78	SW by S	5	35.1	● p.
18	28.7	22	78	SW	3	14.8	●° a. ● p.
19	30.4	22.2	72	SW by S	4	1.8	●° ≡° ◯° a. ⊤°
20	31.2	21.5	64	SSW	3	------	Ω^2 ≡^{2} [ϟ ∪° ⊕^{2}
21	30.6	21.8	76	SW	3	------	Ω^2 ≡^{2} ◯° ⊤° ∪°
22	31.4	23	67	SW	4	------	Ω° ≡^{2} a. [ϟ° ●° p.
23	30.7	23.5	80	SW by S	3	6.6	≡° a. [ϟ ●° p.
24	30.9	23	71	SW	4	------	◯^{2} a. ⊤° ϟ p.
25	30.7	23.1	80	SSW	4	------	
26	30.2	23.4	79	SW	5	18.8	●° a. ⊤° ϟ ● p.
27	29.9	22.7	90	SW	5	.8	⊤° a. ●° ϟ p.
28	29.5	23.5	79	SSW	3	2.5	⌒ a. ● a. p. [ϟ p.
29	28.5	23.2	81	SW	3	6.9	● a. p. ϟ p.
30	31.1	22	71	SSW	4	------	Ω^2 ≡° a. ◯° ϟ p.
Mean	30.2	22.8	77.7	------------	3.8	------	
Total	------	------	------	------------	------	248.2	

SAN JOSE BUENAVISTA.
[ϕ=10° 44′ N; λ=121° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.1	24.4	77	Calm	------	49	● a. ϟ ●^{2} p.
2	24.2	22.2	96	Calm	------	151.1	⊤ a. r a. p.
3	26	22.8	93	Calm	------	16.8	● d a. p.
4	27.1	23	86	WSW	2	80	↙ ● a. ⊤ ϟ p.
5	28.6	22.9	83	SW	2	10.4	↙ ●° a. p.
6	30.6	24.1	77	SW	1	------	
7	29	24.5	82	SSW	1	1.5	●° p.
8	29.5	23.9	77	Calm	------	2	●° a. p.
9	29.5	24.2	79	SW	2	13	● a. ϟ p.
10	31.4	23.9	76	SW	1	3.3	● a. d° p.
11	31.4	23.5	72	SW	1	------	
12	31.6	23	73	Calm	------	------	⌒ p.
13	31	22.7	74	Calm	------	------	ϟ p.
14	30.9	22	74	N	1	------	⊕ ●° p.
15	31	22.9	81	N	1	29	● a. p. ⊤ p.
16	28	23	89	NW	1	63.2	⊤ a. ● a. p.
17	28.4	22	84	WSW	1	52.6	● a. r p.
18	28.4	22.7	88	SW	1	21.6	● a. p.
19	30	23	83	S	1	7.1	● a. p.
20	31.4	22.9	79	SSW	2	?	↙ ● p.
21	31.7	22.4	70	WSW	1	------	ϟ p.
22	31.6	22.8	74	W	1	------	ϟ p.
23	31.6	22.4	73	WNW	1	------	
24	31.7	22.8	70	W	1	2.5	● p.
25	31.8	23.5	83	SSW	1	11.9	● a. p.
26	32.1	23.6	80	SSW	1	24.1	● a. p. ⌒ p.
27	30.2	23.2	92	Calm	------	37.9	● a. p.
28	31.1	24	80	SW	1	87.1	[ϟ ↙ ● p.
29	28.1	23.5	86	Calm	------	54.6	● a. p.
30	30.1	23.4	79	SSW	1	1	● a. d° ϟ p.
Mean	30	23.2	80.3	------------	.9	------	
Total	------	------	------	------------	------	719.7[1]	

[1] 29 days of observation.

METEOROLOGICAL DATA, ETC.—Continued.

TUBURAN.
[ϕ=10° 44′ N; λ=123° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33	25.3	58	S	4	------	◯^{2} p.
2	31.4	26	75	S	3	0.8	●$^\circ$ a. p.
3	30.4	23.8	86	SSE	2	------	d$^\circ$ a. p.
4	31.2	23.9	74	SE	3	11.4	●^{2} a. d ϟ^2 p.
5	30	25.2	64	S	7	------	◯^{2} a. ↙^{2} d ϟ^2 p.
6	32	24.3	58	S by W	7	------	◯^{2} a. p. ↙^{2} p.
7	33.4	22.6	52	S	5	------	◯^{2} p.
8	32.7	22.3	52	S	3	------	◯^{2} ϟ^2 p.
9	33.9	24.2	51	S	3	------	◯^{2} ϟ^2 p.
10	34.3	23.4	49	S by E	3	------	≡$^\circ$ a. ◯$^\circ$ ϟ^2 p.
11	33.8	22.4	58	Calm	------	------	≡^{2} a. ϟ^2 p.
12	32	22.5	64	Calm	------	------	≡ a. ⛈^{2} p.
13	32.6	23.4	60	Calm	------	------	≡^{2} a. ⊤$^\circ$ p.
14	32.3	23	55	Calm	------	------	Ω^2 ≡^{2} a. ◯^{2} ϟ^2
15	32.8	25	65	Calm	------	------	◯^{2} a. ϟ^2 p.
16	33.3	23.9	65	S	2	6.1	↙^{2} ● ⛈^{2} p.
17	31.5	24.5	87	Calm	------	6.6	◯^{2} a. ⊤^{2} ● p.
18	30.6	22.4	70	S by W	4	------	◯^{2} ⊖^{2} p.
19	33.3	21.9	58	S	3	------	⊤ d ⊍^{2} p.
20	33	22.3	65	Calm	------	------	≡$^\circ$ a. ⛈^{2} p.
21	32.5	23	58	W by S	2	------	◯^{2} a.
22	32.4	22.9	63	W by S	2	------	≡^{2} a. ⊤$^\circ$ ϟ^2 p.
23	33.1	23.5	62	W	1	------	≡$^\circ$ a. ⊤^{2} ⌒$^\circ$ ϟ^2
24	33	23.8	58	Calm	------	------	◯^{2} ⊤$^\circ$ ϟ^2 p.
25	34.1	23.7	62	SSW	4	------	⊤^{2} ϟ^2 p.
26	34	23.8	60	SSW	4	------	ϟ^2 p.
27	34	24.7	57	S by W	4	------	d$^\circ$ ϟ^2 p.
28	33.3	24.6	56	SSW	4	------	↙ ϟ^2 p.
29	33.1	24.7	54	SSW	4	------	◯^{2} ↙ a. ϟ^2 p.
30	32.6	23.3	66	Calm	------	------	⛈ d p.
Mean	32.7	23.7	62.1	------------	2.5	------	
Total	------	------	------	------------	------	24.9	

BORONGAN.
[ϕ=11° 42′ N; λ=125° 25′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	34.8	23.1	61	W	2	------	Ω ◯ a. ↙ a. p.
2	31.3	24.1	68	WSW	1	3.6	● a. ↙ a. p.
3	31.6	24.4	68	W	2	.3	↙ a. p. ●$^\circ$ ⌒ p.
4	31.9	23.8	62	SW	2	.8	↙ a. p. ⊤ p. ●
5	32.3	23.5	64	SSW	3	------	↙ a. p.
6	33.9	24.8	57	SW	3	------	↙ a. p.
7	34.6	23.9	51	SW	3	------	◯ a. ↙ a. p.
8	33.9	22.7	54	W	2	------	Ω a. ↙ p.
9	34.7	22.3	53	W	2	------	⊕ p.
10	35.1	22.9	53	W	1	------	Ω ◯ a.
11	34.9	22.4	53	S	1	------	
12	33.5	21.2	56	SSE	2	9.7	Ω a. ⛈^{2} p. ●
13	32.3	21.7	90	SSE	1	.8	⊤ ↙ ●$^\circ$ ⊖ p.
14	33.1	22	57	W	1	20.8	Ω a. ⛈^{2} ↙ ●^{2} ⊍
15	34.8	22.9	48	W by N	2	------	◯ a. ↙ p.
16	33.1	24.9	77	W	2	------	↙ a. ⊤ ϟ ⊍ p.
17	33.7	23.3	62	W	2	------	↙ ◯ a. ⛈ p.
18	32.9	23.6	60	SSW	1	2	●$^\circ$ a. ⛈ p.
19	34.5	22.7	59	SE	2	------	Ω a. ⊍ p.
20	33.2	22.8	69	SE	1	------	Ω a. ⛈ ⊍ p.
21	33.8	22.4	83	Calm	------	------	Ω a. ⛈ ⊍ p.
22	33.1	22.2	76	Calm	------	11.4	Ω ↙ ● a. ⛈ p.
23	32.6	22	80	W	1	1.8	Ω a. ⛈ ↙ ●$^\circ$ p.
24	33.4	23.3	94	W	1	9.9	Ω a. ⛈ ↙ ● p.
25	33.6	22.2	71	SW	1	7.9	Ω a. ↙ ● p.
26	33.9	22.6	70	NE	1	------	ϟ p.
27	34.3	22.7	55	W	3	------	↙ a. p.
28	34.5	22.3	60	WSW	3	------	↙ a. p. ⊤ ϟ p.
29	34.3	23.8	62	WNW	1	------	⊍ a. ◯ ⛈ p.
30	32.2	23.8	93	WSW	1	18	⛈ ↙ ● p.
Mean	33.5	23	65.5	------------	1.6	------	
Total	------	------	------	------------	------	87	

ROMBLON.
[ϕ=12° 35′ N; λ=122° 16′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.9	26.6	77	SW	2	7.6	● a.
2	30.5	25.1	71	NW	1	------	
3	29	25	80	NW	1	------	
4	29.5	25	81	SW	3	17.8	d a. ↙ ● p.
5	30.1	24.5	95	SSW	1	26.7	● a. ≡ ↙ ●^{2} p.
6	30	25.5	76	SW	2	22.9	↙ ●^{2} p.
7	30.5	24.4	72	SW	1	------	
8	30.6	25.5	76	SW	1	------	
9	30.4	24	73	SW	2	------	
10	31.4	25	76	S	2	------	
11	31.9	26	68	SSW	2	------	
12	33.1	26	72	SW	1	------	
13	33.5	25	65	NW	1	------	
14	34.8	23.5	63	NW	1	------	
15	32.5	25.4	72	NW	2	------	⊍ p.
16	32.8	24.4	65	NW	1	------	⊍ a.
17	31.5	24	71	W	1	31.2	● a. ϟ p.
18	30.6	23	77	SW	2	18.3	● a.
19	29.9	23.2	78	S	2	11.7	● a. p.
20	31.1	24.5	81	SSW	1	------	⊕ a.
21	32.5	24.5	70	SSW	1	------	⊖ p.
22	33.8	25.5	69	SW	2	------	
23	33.5	23.9	69	NW	2	------	
24	33	24.4	69	SW	1	11.4	● a.
25	32	25.5	70	S	2	------	
26	32	25	67	SW	2	------	
27	32.5	26	72	SW	1	------	
28	32.5	25.6	74	SW	1	------	
29	30.6	25.4	69	WNW	1	------	
30	32.6	25	57	NW	1	------	
Mean	31.7	24.9	72.5	------------	1.5	------	
Total	------	------	------	------------	------	147.6	

GUBAT.
[ϕ=12° 55′ N; λ=124° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33.6	25.5	80	SW	2	20.3	↙ ● p.
2	30.5	23.5	74	SW	2	8.1	d ↙ ●$^\circ$ a. p.
3	31	23.5	74	WNW	3	2.3	● d a.
4	31.8	23.8	78	SW	2	1.5	↙ ●$^\circ$ a. p.
5	32.9	24.4	73	SW	4	2.5	d a. ● p.
6	32.5	24.5	68	SW	3	------	↙ d p.
7	31.1	24.6	71	W	2	------	
8	32.2	21.5	64	SW	2	------	Ω a.
9	32.5	23.2	66	W	2	------	
10	33.6	23.7	60	WNW	2	------	
11	34.1	23.5	60	WNW	2	------	ϟ p.
12	34.5	22.5	56	W	2	------	
13	34.6	23.5	82	W	1	2.5	● ⛈ p.
14	33.8	24.3	62	WNW	2	------	
15	32.9	24.4	74	W	2	16.5	d ● ⛈ p.
16	29.9	24.5	88	NW	1	2	d ⛈ ● p.
17	32.9	23.4	90	SW	1	4.8	⌒ d a. ● ⛈ p.
18	31.4	22.2	75	W	1	3.8	d ● p.
19	33	22.1	62	SW	2	------	
20	33.4	22.3	60	NW	2	3	⊖ p. ●
21	33.3	23.4	93	WNW	1	5.1	⛈ ● ⊍ p.
22	33	23.6	55	NW	1	------	ϟ p.
23	34.2	24.2	80	SW	1	------	⊤ p.
24	33.2	23.6	60	NW	2	------	
25	34.3	23	58	W	2	------	
26	34.2	23.2	50	NW	3	------	
27	31.3	23.5	72	W	3	22.4	⌒ ● a,
28	32.6	23.7	62	SW	2	3.3	● d a.
29	33	23.8	61	W	2	------	ϟ p.
30	34	22.5	68	W	1	------	d p.
Mean	32.8	23.5	69.2	------------	1.9	------	
Total	------	------	------	------------	------	98.1	

METEOROLOGICAL DATA, ETC.—Continued.

SUMAY, GUAM (Ladrones Islands).
[ϕ=13° 22′ N; λ=144° 45′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	28.4	23.8	77	SW	5	------	
2	28.4	23.6	84	WSW	3	------	
3	26.6	22.4	95	SW	5	------	⚡ ●^{2} a. p.
4	27.4	23.6	81	SW	2	------	
5	30	24.2	72	N	2	------	⚡ ● p.
6	30.4	24	79	N	3	------	
7	28.2	24	86	NNW	2	------	
8	31	23.8	65	SSE	2	------	
9	30.4	24.4	71	WSW	1	------	☈ p.
10	31	25	78	N	3	------	⚡ ●^{2} p.
11	30.2	25	82	NNE	3	------	⚡ ●^{2} p.
12	30.4	25.2	76	NE	6	------	☈^{2} ⚡ ●^{2} p.
13	28.6	25	80	ESE	7	------	⚡ ●^{2} a.
14	28	23.8	89	S	5	------	⚡ ● a. p.
15	29	23	80	S	6	------	
16	30	25	76	SSW	4	------	
17	30	24.6	77	ESE	2	------	
18	29.4	24.8	75	NE	6	------	● p.
19	29.2	25.4	79	ENE	3	------	⚡ ● a.
20	29.2	24.8	84	N	1	------	● a.
21	29.8	23.4	77	SE	1	------	● a. p.
22	30	24	73	N	1	------	
23	30	24	77	N	1	------	
24	30.2	24.4	77	WNW	4	------	
25	28.8	24.6	77	W	6	------	
26	29.6	25.2	75	WSW	6	------	
27	30	26.2	76	SW	6	------	
28	29.6	25.4	72	SW	5	------	
29	29	23.6	80	SW	4	------	
30	29	24.8	74	WSW	3	------	
Mean	29.4	24.4	78.1	------------	3.6	------	
Total	------	------	------	------------	------	------	

BATANGAS.
[ϕ=13° 45′ N; λ=121° 03′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	------	------	------	------------	------	------	
2	------	------	------	------------	------	------	
3	------	------	------	------------	------	------	
4	------	------	------	------------	------	------	
5	30	22.5	94	W	2	48.8	⚡ ● a. p.
6	26.8	22.5	96	W	2	32	⚡ ● a. r p.
7	32.5	22.5	71	W	2	.5	⚡ ●° p.
8	32.8	22.4	61	W	3	------	
9	32.6	24	63	WSW	3	------	
10	32.8	23	94	W	3	16	⚡ ● d p.
11	31.5	22.9	73	W	3	------	
12	31.6	22.5	72	W	3	------	Ω a.
13	31.8	22	67	W	3	------	≡° a.
14	31	22.8	74	W	2	------	☈ p.
15	30.6	24.2	78	WSW	3	5.6	● a. d p.
16	30.5	24	79	WNW	2	50.3	●^{2} ☈ p.
17	30.7	22	82	WNW	2	25.9	⊤ r p.
18	30.3	22.6	80	NE	1	95.8	r a. p.
19	30.8	23	64	SW	1	------	☈ p.
20	31.3	21.5	67	SSW	2	------	
21	30.8	21.7	72	WSW	2	------	⊤ ⊖ p.
22	31.6	22.7	69	W	2	------	⊤ a. ↯ p.
23	31	22.4	73	WSW	2	------	☈ p.
24	31.6	22.7	72	SW	2	1	⊤ ●° p.
25	31.2	23	69	W by N	3	------	
26	31.5	22.4	69	W by N	3	------	
27	31.3	23.9	73	WNW	3	2	∩ ●° a.
28	31.7	22.7	72	WNW	3	------	⊤ ∩ p.
29	33.1	22.8	83	ENE	2	8.1	⚡ ● ⊤ p.
30	31.6	23	80	E	1	11.2	d ● a. ⊤ ↯ p.
Mean	31.3	22.8	74.9	------------	2.3	------	
Total	------	------	------	------------	------	297.2[1]	

SILANG.
[ϕ=14° 14′ N; λ=120° 58′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	------	------	72	W	2	31	∩ d ● a.
2	------	------	72	SW	3	------	Ω a.
3	------	------	71	SW	3	------	d a.
4	------	------	70	SW	2	------	
5	------	------	72	W	4	41.9	● a. ●^{2} p.
6	------	------	73	SW	5	13.2	⊤ d ● a.
7	------	------	75	W	2	4.6	Ω a. ● p.
8	------	------	75	SW	3	------	p p.
9	------	------	72	W	3	------	Ω a.
10	------	------	72	W	2	20.3	● p.
11	------	------	72	W	3	------	Ω a.
12	------	------	74	W	2	------	Ω a.
13	------	------	72	W	2	------	
14	------	------	72	W	3	------	Ω a.
15	------	------	72	SW	2	8.4	● a. ⊤ p.
16	------	------	69	W	2	------	≡ a.
17	------	------	70	W	2	------	Ω a.
18	------	------	70	W	2	------	p a.
19	------	------	70	W	2	11.9	Ω ≡ ● a.
20	------	------	70	W	2	------	⊤ p.
21	------	------	70	W	3	------	Ω ∩ a.
22	------	------	70	W	1	4.6	● a. ⊤ p.
23	------	------	70	W	1	------	≡ a.
24	------	------	69	W	2	------	Ω ≡ a.
25	------	------	69	W	1	------	d ⊤ p.
26	------	------	70	W	2	23.6	● a.
27	------	------	71	W	2	------	
28	------	------	70	W	2	28.7	● a.
29	------	------	70	W	1	?	≡ a. ⊤ ● p.
30	------	------	69	W	3	43.2	● a.
Mean	------	------	71.1	------------	2.3	------	
Total	------	------	------	------------	------	231.4[2]	

SAN ANTONIO.
[ϕ=14° 23′ N; λ=121° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	26.5	20.6	87	W	3	27.4	
2	28	21	78	W	4	5.8	
3	27	21	88	W	1	21.1	
4	27.8	21	81	W	3	9.4	
5	23.5	21.1	98	W	4	50.8	
6	23	20.4	99	W	3	34	
7	25	20.6	95	W	1	5.1	
8	28.2	21	75	W	3	1.3	
9	28	18.4	93	W	2	2	
10	27.3	20.6	88	W	4	2.5	
11	28	20.5	92	W	4	3.8	
12	28.3	20.5	86	W	1	1.3	
13	28.5	21.5	83	W	1	------	
14	29.5	21.4	85	W	1	9.1	
15	28.8	22.1	69	W	3	------	
16	29.6	21.4	69	W	2	36.8	
17	29.6	20.1	76	SW	1	3.8	
18	29.5	20.1	70	E	1	1.8	∩ a.
19	29	20.5	79	W	2	22.9	∩ a.
20	29.9	19.4	77	W	1	------	
21	30	19.2	67	W	2	------	
22	29	21	80	W	2	19.1	
23	29	21.5	74	NE	1	------	
24	30.5	20	70	W	3	------	
25	30	19.9	84	W	2	------	
26	30.2	21.9	74	W	2	------	
27	30	20.5	78	W	2	------	∩ p.
28	29.5	20.6	75	W	1	4.3	
29	30	21.8	82	E	1	24.1	∩ p.
30	29.5	21.9	73	SE	2	3.3	
Mean	28.4	20.7	80.8	------------	2.1	------	
Total	------	------	------	------------	------	289.7	

[1] 26 days of observation.

[2] 29 days of observation.

METEOROLOGICAL DATA, ETC.—Continued.

CORREGIDOR.
[ϕ=14° 23′ N; λ=120° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	28	23	87	SW	2	79.2	● a. p.
2	29.8	21.8	89	SW	2	16.3	● p.
3	29	21.8	84	W	2	2	● a.
4	29.5	22.5	78	SW	2	30.2	● a. p.
5	27.2	22.2	93	SW	4	77.5	r a. p.
6	26.3	21.9	88	SW	2	114.8	r a. p.
7	27.3	21.7	86	SW	4	31.5	● a. p.
8	30.2	23.2	75	SW	2	2	● a.
9	28	22.7	84	SW	2	26.7	⊤ a. ● a. p.
10	27.7	21.8	92	SW	3	14.7	● a. p.
11	29.2	22.4	85	SW	2	11.7	● a. p.
12	31.2	23	62	W	3	------	
13	31.2	23.7	70	SW	2	------	
14	30.7	22.5	68	SW	2	------	
15	31.6	23.5	66	W	2	------	
16	31.2	24.7	67	W	3	------	
17	30.7	22.7	79	SW	2	------	
18	29.7	22.2	86	N	1	55.6	● p.
19	29.9	22	73	N	1	------	
20	31.3	22.5	63	W	2	------	
21	31.5	22.6	67	W	2	10.7	● a.
22	30.5	23.6	65	W	2	------	
23	31.5	22.8	61	W	2	------	
24	32.2	22.3	69	W	2	------	
25	31.6	23.5	67	W	2	------	
26	32.5	23.8	66	W	2	------	⌒ a. d a. p.
27	32.5	23.9	67	SW	2	8.1	● p.
28	31	24.6	75	SW	2	21.6	⌒ a. ● a. p.
29	31.7	23.6	71	N	1	7.9	● a.
30	30.7	24	74	N	1	------	
Mean	30.2	22.9	75.2	------------	2.1	------	
Total	------	------	------	------------	------	510.5	

BALANGA.
[ϕ=14° 41′ N; λ=120° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	27.6	22.4	92	SW	1	65	● a. p.
2	30	22.1	78	SW	2	------	
3	29	22.6	84	SW	3	6.6	● a.
4	30.2	22.5	77	SW	3	29.2	● a. p.
5	27.5	23	88	SW	2	123.7	r a. p.
6	26.2	22.7	88	WSW	2	46.2	● d a.
7	27.4	22.5	87	SW	3	62.2	● a. p. ☈ p.
8	28.5	22.6	81	SW	4	28.7	● a. p. ↙ p.
9	27.8	23.5	89	S	2	28.2	↙ ● a. p. ☈ p.
10	24.9	23.1	94	Calm	------	40.6	● d a. p.
11	26.5	22.5	92	WSW	1	30.7	● a. p.
12	30.4	23.2	79	SW	3	------	d ☇ p.
13	31	23.3	71	SW	3	.5	●° a. ☇ ⊕ p.
14	32.2	22	70	SW	2	------	☇ p.
15	31.9	23.5	71	SW	2	------	☇ p.
16	32.3	23.7	81	SW	2	3	● ☈ p.
17	31.4	23.4	75	SW	2	2.5	☈ ●° a. ⊕ p.
18	31.5	23.1	62	Calm	------	3.6	● a. ☈ p.
19	30.4	23.5	77	SW	2	------	⊕ ⊍ p.
20	32	21.9	63	SW	2	1.3	● a. ☇ p.
21	32	22.3	68	SW	2	------	☇ p.
22	30.4	23.4	79	W	1	10.4	● a. p. ⊤ ☇ p.
23	31.9	22.5	68	SW	2	------	⊤ ☇ p.
24	32	23.1	69	SW	2	5.1	⊤ ● a. ☇ p.
25	33.2	22.5	66	SW	2	------	☇ p.
26	32.4	23	70	SW	2	------	☇ p.
27	32.2	23.3	67	SW	3	------	☇ p.
28	31.3	23.8	73	SW	2	7.2	● a. ☇ p.
29	32.5	23.6	68	Calm	------	------	
30	30.8	24	70	N	2	.8	☈ ● a. ☇ p.
Mean	30.2	23	76.6	------------	2	------	
Total	------	------	------	------------	------	495.5	

TARLAC.
[ϕ=15° 31′ N; λ=120° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.1	23.2	78	WSW	1	22.9	⊤° ●° a. ● ☈° p.
2	32.2	22.2	69	WSW	1	1.3	≡² a. ⊤° ●° ☇° p.
3	32.1	22.8	69	SE by S	1	13.7	●° ☈ p.
4	32	23.2	85	W	1	12.4	●° ⊤° p.
5	30.5	23.2	97	W	1	67.3	●² a. p. ⊤ d ² p.
6	25.7	23.2	97	WSW	1	21.8	● a. ●° ⊤ p.
7	25.9	22.7	97	SW	1	54.4	●° a. p. ● p.
8	29.6	22.6	87	WSW	1	15	●° a. p. ⊤ p.
9	26.3	23.3	96	W	1	26.4	●° a. ● p.
10	27	22.9	92	S	2	32	●° a. p. ● ⊤ p.
11	27.1	22.4	96	WSW	1	27.9	● a. ⊤ ●° p.
12	30.7	22.9	82	NNW	1	2.5	●° a. p. ☈ p.
13	31.1	22.5	80	NW	1	.5	≡² a. ●° ⊤ ☇° p.
14	33.5	22.4	60	NW	1	2	Ω ≡ a. ●° ☈° p.
15	31.3	23.2	68	NW	1	.8	⊤ ☇° p. ●°
16	32.6	22.6	64	NNW	4	------	Ω ≡° a. ↙° ☇° p.
17	33.1	23.8	71	WNW	1	.3	≡ a. ⊤ d° p.
18	32.9	23.5	58	E	1	------	☈° ⊕² p.
19	31.6	22.7	90	WSW	1	3.6	●° d° ⊤ ⊕ p.
20	33	21.5	66	NW by N	1	6.6	≡° a. ●° ☈ ⊕² p.
21	33	21.9	63	W	1	------	≡° a. d° ☈° p.
22	34.3	22.9	77	W	1	------	☈ ⊕ p.
23	34.5	22.3	55	N	1	.8	Ω² ≡° a. ☇ ●° p.
24	34.6	22.9	59	SW by W	1	6.9	≡² a. ●° ☈° p.
25	34.3	23.9	61	N	1	1	≡° a. ☈ ●° p.
26	35.3	23.9	59	SW	1	------	≡ a. ☈ d° p.
27	34.1	22.8	76	W by S	2	------	☈ d° p.
28	34.9	23	59	N	1	37.3	≡ a. ☈ ●° p.
29	34	22.9	65	SW	1	------	☈° p.
30	34.1	23.4	60	S	1	------	Ω² ≡ a.
Mean	31.7	22.9	74.5	------------	1.2	------	
Total	------	------	------	------------	------	357.4	

BOLINAO.
[ϕ=16° 24′ N; λ=119° 53′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	28.9	23.1	86	Calm	------	32.8	● ⊤° a. ☈ ⌒ p.
2	29.2	23.4	76	SW	1	3.3	● a.
3	30.5	23.6	84	SW	2	27.9	●² ⌒ a. ☇ p.
4	31.5	23.7	72	W	3	.5	●° ≡° a. ↙° ⌒ p.
5	30.6	23.2	75	W	3	2	↙ ● p.
6	30.8	23	82	WSW	3	64.3	● a.
7	28.8	23.5	89	SSW	3	35.6	● a. d p.
8	28.9	23.5	79	SW	2	18.3	d a. ↙ ● ☈ p.
9	28.7	23.2	95	Calm	------	139.7	●² ⊤° a. ↙ ● p.
10	27.4	22.7	85	SW	1	78.2	● d a. ↙ ● p.
11	28.8	23	85	SW	3	50.3	↙ ● a. p. ☇ p.
12	29	23.9	79	SSW	4	12.2	p a. ●² p.
13	29.9	23.6	77	SW	1	9.7	● a.
14	30.8	23.4	76	W	4	3	●° a. ↙° p.
15	31.2	23.7	74	NW	1	17.3	● a. ●² p.
16	31.5	23.7	67	N by E	2	------	
17	30.8	23.4	71	NNE	3	------	
18	31.3	23.8	68	W	2	15.7	≡° a. ☇ ● p.
19	33	22	61	SE	1	6.9	⊤° ● p.
20	33	23.4	84	Calm	------	.3	●° p.
21	30.1	23.6	74	NW	2	------	
22	30	22.6	71	NW	2	27.7	● a. ↙° p.
23	31	23.6	69	NW	2	.5	●° a.
24	32.7	23.2	70	WNW	2	------	
25	32.8	23.6	70	WSW	2	3.3	●° a. ⊤° p.
26	32.3	24.8	80	WSW	1	.8	●° a.
27	32.5	24	68	SW	3	1.3	⌒ ●° a.
28	32.5	24.5	82	NNE	1	19.4	⌒ ● a. d p.
29	30.5	24.6	68	SW	1	------	≡° a. ⊤° p.
30	33	24.5	66	Calm	------	21.1	☇ p. ●
Mean	30.7	23.5	76.1	------------	1.8	------	
Total	------	------	------	------------	------	592.1	

METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

BAGUIO.

[ϕ=16° 35′ N; λ=120° 43′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	17.9	15.9	99	WSW	1	42.9	d a. ● p.
2	21.5	15.2	99	W	1	19	≡ a. ●° p.
3	20.1	16.2	87	WSW	0	10.2	≡ a. ● p.
4	21.3	16.3	93	W	0	19.8	● p.
5	21.3	14.2	93	W	0	------	
6	19	15.7	99	W	0	17.3	≡ a. d ● p.
7	19.3	15.2	99	SW	1	29.5	●° a. p.
8	18.1	15.7	99	W	1	23.6	d a. ● p.
9	18.2	16	98	WSW	0	67.1	● a. p.
10	18.9	15.7	98	W	1	33	● a. p.
11	18.6	16.2	99	SW	2	93	● a. p.
12	19.1	15.6	99	SW	2	9.7	●° p.
13	20.9	14	79	SW	0	1.5	●° p.
14	21.3	14	93	SW	0	8.6	● p.
15	20.7	15	93	W	1	------	d p.
16	20.6	15.2	83	SW	0	------	
17	22.2	14.4	88	SW	1	9.7	≡ a. ● p.
18	22.7	15.1	98	WSW	0	27.9	≡ a. ● p.
19	22.1	13.4	86	WSW	0	55.9	● p.
20	21.6	13.5	86	WSW	0	14.2	● p.
21	22	14.1	98	SW	1	19.6	≡ a. ● p.
22	21.2	14.3	99	SW	0	5.6	●° p.
23	22	14.8	97	W	1	25.4	● p.
24	23	13.4	87	W	1	1.3	●° p.
25	22.7	13.8	95	WSW	1	------	d a. p.
26	22.6	14.2	98	W	0	31	● d p.
27	22.1	14.7	95	WSW	1	10.9	● d p.
28	20.2	15.1	86	Calm	------	2	●° p.
29	24.2	15.6	96	W	1	6.4	● p.
30	22.5	14.1	92	Calm	------	1.8	●° p.
Mean	20.9	14.9	93.7	------------	.6	------	
Total	------	------	------	------------	------	586.9	

SAN FERNANDO UNION.

[ϕ=16° 37′ N; λ=120° 18′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	28.4	21.4	89	S	3	58.9	●² p.
2	29.2	21.6	84	W	2	------	
3	30.2	22	84	S	2	30	⌈ϟ ● p.
4	30	22.3	78	W	3	16.8	⊤ ●° p.
5	29.6	21.2	78	W	2	49.5	● p.
6	29.9	21	92	W	3	54.6	● a. p.
7	29	21	87	S	3	17.8	●° a. p.
8	28	20	90	S	2	49.3	⌈ϟ² ● p.
9	27.6	21.4	93	S	3	88.4	⊤ a. ● a. p.
10	28.6	19.4	87	S	2	57.1	↙ ● ⊤ a. p.
11	27.6	21.1	82	SE	2	48.3	↙ ●° a. p.
12	29.4	22	84	SE	3	?	↙ ● ϟ p.
13	30.8	22.3	76	S	2	------	d° p.
14	30.4	23	85	SW	2	------	d p.
15	29.9	22	75	S	3	------	
16	29.4	23.2	75	NW	3	------	Ω a.
17	29.6	23	77	N	2	------	Ω a.
18	30.4	21.4	65	NW	2	------	Ω a. d p.
19	30	22.2	70	N	3	------	Ω a. d p.
20	30.2	22	75	NW	3	31.5	Ω a. ⌈ϟ ● p.
21	29.8	22.4	76	N	2	------	Ω a.
22	30.2	23.2	80	NW	2	4.3	● d a.
23	29.9	22.8	75	NW	2	------	Ω a.
24	31	22.4	73	NW	2	------	Ω a
25	31.6	22.2	67	SW	3	13.2	● ϟ p.
26	31.4	23.2	75	NW	3	30.5	Ω a. ↙ ● p.
27	31.2	23.3	81	N	2	------	Ω a. d p.
28	28.8	24.8	88	N	2	3	●° a.
29	30.2	24	74	N	2	4.6	Ω a. ⊤ ⌒ ●° ϟ p.
30	31.2	23.4	68	SW	2	------	Ω a. ⊤ ϟ p.
Mean	29.8	22.2	79.4	------------	2.4	------	
Total	------	------	------	------------	------	557.8[1]	

CANDON.

[ϕ=17° 12′ N; λ=120° 26′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	28.5	25.9	88	SE	0	48.3	●² p.
2	29.2	24.2	85	SW	1	9.1	●° p.
3	29.1	24.2	83	SSW	1	4.3	● ϟ p.
4	29.9	25	81	W	0	2.5	● ϟ p.
5	29.1	25	80	Calm	------	53.6	●² p.
6	28	25	88	SW	1	139	● a. d ●² p.
7	28.4	24.6	82	S	5	------	d a. ↙ p.
8	28.7	25.4	86	SSE	1	64	d ↙ a. ⊤° p. ●
9	27.8	24.5	83	S	2	36.1	● ⊤ a. ↙ p.
10	28.8	24	82	SSW	2	63.8	● a. p. ↙ p.
11	26.4	24.5	92	S	1	33.8	d ● a. p.
12	29.2	24.4	82	S	4	43.9	⌒ a. ↙ ⊤ ●² p.
13	28.8	24	78	SW	1	1.3	●° p.
14	29.2	24	81	SW	1	1.3	⊤° ●° ϟ p.
15	29.2	25.1	79	NNW	2	1	●° ϟ p.
16	28.8	25.2	85	NNW	2	------	↙ d p.
17	29.2	24	78	NW	1	------	Ω² a.
18	29.5	24	78	SSW	1	------	
19	30	24	76	SSW	1	------	Ω² a. ϟ d ⊤ p.
20	30.1	25.9	75	SW	1	------	⌒ a. d ϟ p.
21	30	25.6	75	SW	2	------	⌣ d p.
22	29.5	24.8	81	NW	1	------	Ω² a. ⊤° ϟ p.
23	30.2	24.5	78	W	1	------	Ω² a. ϟ p.
24	30.9	24.6	78	SW	1	------	Ω² a. ϟ ⌣ p.
25	30.3	25.6	81	SW	2	------	Ω ⌒ a. ↙ ϟ p.
26	30.8	25.8	82	SW	1	1	Ω² a. ϟ ●° p.
27	30.7	25.5	80	S	2	1.3	Ω a. ϟ p. ●°
28	28.7	26	85	S	1	12.7	● a. ϟ p.
29	30.2	25.1	77	NW	1	------	Ω a. ⊤ d ⌒ ϟ p.
30	30.6	25	80	WSW	1	1.3	Ω² a. ⊤° ● ϟ p.
Mean	29.3	24.8	81.3	------------	1.4	------	
Total	------	------	------	------------	------	518.3	

SANTO DOMINGO.

[ϕ=20° 28′ N; λ=121° 59′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.8	22.5	77	WNW	2	37.8	≡ ● p.
2	31.1	22	76	N	1	40.6	● ⊤ ϟ² p.
3	31.2	22.4	78	N	1	1.3	≡ ϟ p. ●°
4	32.2	24.5	74	N	2	6.4	Ω a. ⌒ a. p. ● p.
5	31	24.4	85	N	3	29.7	↙° a. ● a. p. ⊤ p.
6	31.3	24.5	80	N	3	32.9	↙ ●° a. ↙° p.
7	30.7	24.3	83	W	2	1	ϟ² p. ●°
8	30.7	24.4	75	SW	2	------	d p.
9	31.3	23.5	83	Calm	------	49.3	Ω a. ↙ ● p.
10	27.6	21.3	92	ESE	1	48.5	d ●² a. ↙° ϟ p.
11	30.6	21.7	82	E	2	73.6	● ↙ a. ↙ ●² p.
12	30.7	21.5	78	ESE	3	------	↙° ⌣ Ω p.
13	30.5	22.5	78	N	1	------	Ω a. p. ≡ p.
14	30.8	21.6	75	NW	2	------	Ω² a. ≡ Ω p.
15	30.5	23.7	72	N	3	1.3	●° a. ≡ p.
16	30.7	22.5	64	N	1	23.8	↙° ● a. ●° p.
17	30.5	20.6	65	NW	1	------	Ω a. ≡° Ω² p.
18	30.6	21.1	66	N	1	------	Ω² a. ≡ p.
19	30.6	19	71	E	1	------	Ω a. ≡ Ω² p.
20	30.5	21.2	78	E	1	17	⌒ a. ●° a. p.
21	30.4	23.4	78	N	2	------	⌒ d a. ⊤ ϟ ● p.
22	29.5	22.5	79	N	2	18.8	● a. ϟ p.
23	30.9	22.5	77	NNE	2	21.4	● ↙° a. ≡ ⌒ p.
24	30.6	23.7	76	NE	2	------	⌒ ↙° a. ϟ p.
25	28	23	85	E	2	9.4	● a. d p.
26	26.4	21.1	92	E	1	94.3	●² r° a. d° ϟ p.
27	29.4	22	78	E	1	33	●² a.
28	31.1	22	73	N	2	1.5	≡ p. ●°
29	29.8	23.3	80	NE	2	3.3	●° a.
30	30	25	81	NNE	3	12.4	↙° a. ↙ d ● p.
Mean	30.3	22.6	77.7	------------	1.7	------	
Total	------	------	------	------------	------	557.3	

[1] 29 days of observation.

NOTAS GENERALES DEL TIEMPO.

Presión y temperatura.—Aunque los valores medios de la presión atmosférica son en todas las estaciones de Filipinas superiores á los de Septiembre, 1906; sin embargo, distan aún bastante de la normal de este mes: así p. ej. la media de Manila difiere de dicha normal en —0.69 milímetros y de la media del año pasado en +0.36 milímetros. Debe esto atribuirse á que los tifones de este año, aunque bastantes en número, se han acercado poco á Filipinas y ni uno solo ha atravesado el Archipiélago, siendo así que el año pasado fueron tres los que en el mes de Septiembre cruzaron la Isla de Luzón y dos los que pasaron por entre Luzón y Formosa en dirección al Continente. Los días de presiones más altas en Filipinas fueron el 19 y 20: las mínimas presiones se registraron casi en todas las estaciones el día 5.

Las temperaturas medias difieren poco tanto de la normal como de la media del año pasado. En general parecen ser algún tanto inferiores á entrambas. La de Manila difiere de la normal en —0.3° C. y es enteramente idéntica á la de Septiembre, 1906. La máxima absoluta observada en el Observatorio Central ha sido 32.3° C. y la mínima absoluta 22.6° C.: fueron registradas los días 25 y 8 respectivamente.

Precipitación acuosa.—Á excepción solamente de siete estaciones, todas dan un total de lluvia inferior á la de Septiembre del año anterior. Las mayores cantidades de agua recogida durante este mes nos la dan las estaciones de Olongapó y San José de Buenavista con un total de 718.2 milímetros y 719.7 milímetros respectivamente. En Manila se recogieron 278.7 milímetros, cantidad inferior á la normal de Septiembre en 87.8 milímetros y al total del año pasado en 192.8 milímetros.

DEPRESIONES Y TIFONES.

El pasado Septiembre ha sido en verdad muy á propósito para hacer ver la grandísima ventaja de tener estaciones tan avanzadas como Guam y Yap para predecir con mucha anticipación un buen número de tifones del Pacífico y poderlos seguir fácilmente en su movimiento de traslación hacia Filipinas ó el Continente ó hacia Japón. Cuatro de estos tifones han ocurrido este mes, recurvando todos á gran distancia de Filipinas, según veremos luego. Dos depresiones se han observado además en la región septentrional del Mar de China, de las cuales solo la segunda llegó á adquirir los caracteres propios de un tifón.

TIFONES DEL PACÍFICO.

Tifón de 30 de Agosto á 10 de Septiembre.—He ahí los anuncios enviados por el Observatorio de Manila á los Jefes de los Servicios Meteorológicos de Tokio, Zikawei, Taihoku, Hongkong y Phulien, desde que apareció este tifón al E de las Marianas hasta que recurvó al NE de Luzón:

Agosto 31, 11.55 a. m.: Tifón al NE de Guam acercándose á las Marianas.

Septiembre 2, 4 p. m.: Tifón al norte de Carolinas Occidentales en los alrededores de 16° ó 17° latitud moviéndose probablemente hacia el oeste.

Septiembre 4, 12.50 p. m.: Tifón probablemente al ENE de Manila entre los 17° y 20° latitud.

Septiembre 5, 11 a. m.: Tifón probablemente recurvando al NE de Luzón en los alrededores de 20° Lat.

Además de estos anuncios enviados por cable, el Observatorio fué siguiendo el curso del tifón en las notas ordinarias del tiempo de los días 6, 7 y 8 de las cuales trascribimos lo siguiente que hace á nuestro propósito:

Día 6, 11.50 a. m.: El tifón del Pacífico se hallaba esta madrugada al sur de las Islas Liukiu entre 22° y 24° Lat. moviéndose hacia el NE ó NNE, en dirección al Japón.

Día 7, 12.30 p. m.: El tifón del Pacífico se acerca al Japón moviéndose probablemente hacia el NNE.

Día 8, 4 p. m.: El tifón de los días anteriores aparece en el mapa del tiempo de esta madrugada atravesando la región más occidental del Japón moviéndose hacia el norte.

Según el Observatorio de Tokio, el tifón atravesó el día 9 el Mar del Japón en dirección al NE y penetró en la Isla Sakhalin la noche del 9 al 10.

Por creerlo de especial interés para nuestros lectores publicamos en el texto inglés las observaciones hechas en Guam y Yap durante el período 29 de Agosto á 4 de Septiembre. Estas observaciones indican claramente cómo se presentó este tifón por el ENE ó NE de Guam del 30 al 31 de Agosto, cómo atravesó las Islas Marianas por el N de Guam la noche del 31 de Agosto al 1.º de Septiembre y cómo cruzó el meridiano de Yap el día 2 moviéndose bastante inclinado al W.

En la lámina que acompaña el texto inglés damos la trayectoria probable seguida por este tifón, la cual apenas sí difiere de la supuesta por el Observatorio de Manila en los anuncios que acabamos de copiar.

Según se ve en esta lámina, el tifón empezó á inclinarse al NW el día 3 y recurvó por fin el día 5 en los alrededores del paralelo 20° y entre los meridianos 127° 30′ y 128° E. Á las 6 a. m. del 6 demoraba el centro ciclónico al SE de las Islas Liukiu entre 24° y 25° Lat. y 129° 130° Long., es decir, algo más al nordeste de lo que suponíamos en el anuncio de dicho día. Desde 6 a. m. del 5 hasta 6 a. m. del 7 se había movido el tifón al NNE; pero la mañana del 7 se nota una inflexión de la trayectoria al NW que duró muy poco, pues por la tarde del mismo día se movió de nuevo al NNE. Una vez en el mar del Japón recurvó más al E, pero para inclinarse otra vez al N la tarde del día 9.

Tifón de 8 á 19 de Septiembre.—El 8 de Septiembre envió el Observatorio de Manila el siguiente telegrama á Tokio, Zikawei, Taihoku, Hongkong y Phulien:

Día 8, 1 p. m.: Tifón formándose hacia el norte de Guam.

Fundábase el Observatorio en las observaciones hechas en Guam el día 8, las cuales pueden verse en el texto inglés juntamente con las de los días 7, 9 y 10. Estas observaciones, aunque suficientes para asegurar la existencia de alguna depresión ó tifón, no lo serían por sí solas para precisar su posición: mas, combinadas con las de las Islas Bonín, dan bastante fundamento para la primera porción de la trayectoria II. El tifón después de atravesar las Islas Marianas en dirección al NW, se inclinó al norte subiendo el día 16 por el W de las Islas Bonín; el 17 parece haberse inclinado de nuevo al NW, volviendo á recurvar al N y NE la tarde del 17 y noche del 17 al 18; durante todo el día 18 se movió al NE., atravesando la extremidad SE de la Isla Nippón la tarde de dicho día. Véanse en el texto inglés las observaciones de Chichijima (Islas Bonín.)

Tifón de 12 á 18 de Septiembre.—Este tifón pudo ser seguido perfectamente por el Observatorio de Manila desde su origen hasta que recurvó al SE de las islas Liukiu y NE de las Filipinas. He ahí los anuncios enviados á Tokio, Zikawei, Taihoku, Hongkong y Phulien:

Día 13, 8.30 a. m.: Tifón cruzó sur de Guam noche pasada.

Día 14, 1.15 p. m.: Tifón en los alrededores de 12° ó 13° Lat., al norte Yap, Carolinas Occidentales, moviéndose probablemente al WNW al presente.

Día 15, 3 p. m.: Tifón entre 133° y 136° Long. en los alrededores de 15° ó 16° Lat. moviéndose aparentemente al NW ó NW¼N.

Día 17, 9 a. m.: Tifón recurvó ayer al NE de Filipinas y SE de las Islas Liukiu.

Las observaciones de Yap y Guam que publicamos en el texto inglés indican claramente el paso de este tifón por el sur de Guam la noche del 12 al 13 y por el norte de Yap el día 14. Según se ve en la trayectoria III, el centro ciclónico se hallaba probablemente á 6 a. m. del 15 en los alrededores de 15° Lat. y 135° Long. El 16 recurvó á gran distancia de Filipinas; y el 17 á 6 a. m. se hallaba entre 133° y 134° Long. y en los alrededores de 25° Lat. moviéndose al NNE ó NE¼N. Hasta entonces el tifón se había presentado muy bien desarrollado: lo que pasó después es difícil de averiguar, debido á la existencia del otro tifón simultáneo de que hemos hablado antes. El que ahora nos ocupa ó se confundió con el anterior la madrugada del 18, ó es el mismo que apareció cerca del SE de Japón la madrugada del 19. En este último caso habría disminuído mucho en intensidad desde el día 17 en que subía por entre las Islas Liukiu y Bonín. En la trayectoria III seguimos esta última suposición, por ser admitida por el Observatorio de Tokio al describir brevemente las trayectorias de estos tifones varios días después de su ocurrencia.

Tifón de 24 de Septiembre á 1 de Octubre.—Damos á continuación los anuncios sobre este tifón enviados por el Observatorio de Manila á Tokio, Zikawei, Taihoku, Hongkong y Phulien:

Día 24, 1 p. m.: Tifón hacia el ENE de Guam acercándose á la parte meridional de las Islas Marianas.

Día 25, 6.30 p. m.: Tifón cruzando norte de Guam.

Día 27, 1 p. m.: Tifón entre 18° y 21° Lat. en los alrededores de 141° Long. moviéndose aparentemente al NW al presente.

Día 28, 12.30 p. m.: Tifón entre 21° y 23° Lat., en los alrededores de 138° Long., parece moverse aún al NW.

Día 29, 12.30 p. m.: Tifón ahora al W de las islas Bonín moviéndose hacia el norte y tendiendo probablemente á recurvar al NE.

En el texto inglés van las observaciones hechas en Guam, Yap y Chichijima (islas Bonín) las cuales nos han sesrvido para trazar la trayectoria IV que difiere muy poco de la indicada en los anuncios del Observatorio.

DEPRESIONES Ó TIFONES DEL MAR DE CHINA.

Depresión de 30 de Agosto á 2 de Septiembre.—El Observatorio de Manila anunció el 30 de Agosto la existencia de una depresión en la parte norte ó nordeste del Mar de China, y el 31 á 11.55 a. m. envió el siguiente cablegrama á Japón, China é Indochina:

Depresión parte nordeste del Mar de China.

El Observatorio de Hongkong dió los siguientes anuncios referentes á esta depresión:

Agosto 31, 6 p. m.: Una depresión parece estar desarrollándose en el Mar de China hacia el S de Hongkong entre 18° y 20° Lat.

Septiembre 1, 11.40 a. m.: La depresión, que parece ser de poca profundidad, se halla al SW de Hongkong y se mueve aparentemente hacia Hainán.

Septiembre 2, 12.05 p. m.: La presión es baja en la parte NW del Mar de China.

Según las observaciones hechas en el Faro *Lamko* (NW de Hainán), el barómetro alcanzó allí su mínima á 3 a. m. del día 2 con vientos del NE, fuerza 5 de la escala Beaufort. Estos habían rolado al ESE á 6 a. m., y al SE á 9 a. m. del mismo día. La depresión pasó, pues, por el sur de aquella estación en dirección al golfo de Tonking durante las primeras horas del 2 de Septiembre. No nos consta si llegó á adquirir todo el desarrollo propio de un tifón.

Tifón de 8 á 14 de Septiembre.—El Observatorio de Manila decía en la nota ordinaria del tiempo del día 8 que había indicios de una área de baja presión en la parte septentrional del Mar de China: y á 1 p. m. del 9 enviaba este anuncio á los Observatorios de Tokio, Zikawei, Taihoku, Hongkong y Phulien:

Depresión desarrollándose en el Mar de China al NW de Luzón.

En las notas del tiempo de los días 12, 13 y 14 se decía lo siguiente:

Día 12, 11.50 a. m.: En el mapa del tiempo de esta madrugada aparece todavía una depresión en la parte nordeste del Mar de China, más cerca del Continente y alejándose de Luzón.

Día 13, 11.50 a. m.: La depresión en el norte del Mar de China parece ser al presente un verdadero tifón y se halla esta mañana hacia el ESE de Hongkong acercándose al Continente.

Día 14, 11.50 a. m.: El tifón del Mar de China entró ayer tarde ó la noche pasada en el Continente, probablemente no lejos de Hongkong.

Los anuncios dados por el Observatorio de Hongkong con motivo de este tifón son como sigue:

Día 11, 11.55 a. m.: Un área de baja presión se extiende sobre la parte norte del Mar de China.

Día 12, 11.55 a. m.: La presión es baja en la parte nordeste del Mar de China. Es posible se forme una depresión dentro de dicha área de baja presión, hacia el SW de Formosa.

Día 12, 9.30 p. m.: Una depresión parece desarrollarse en el Mar de China, probablemente hacia el SE de Hongkong.

Día 13, 11 a. m.: La depresión es posible sea un tifón. Parece hallarse situado á unas 125 millas, al SE de Hongkong, y moverse al WNW al presente.

Día 14, 12.35 p. m.: El tifón ha llegado probablemente á la costa al SW de Macao después de haber pasado muy cerca de Gap Rock esta madrugada.

Día 15, 12.45 p. m.: El tifón, que probablemente se ha rellenado de un modo considerable, parece hallarse sobre el SW de China hacia el N. de Pakhoi.

Tanto en Hongkong como en Macao desfogó este tifón con mucha intensidad, especialmente la noche del 13 al 14 y la mañana del 14. Los vientos llegaron á ser huracanados en ambos puntos, rolando con bastante rapidez del 1° al 2° cuadrante. El tifón hubo de pasar muy cerca por el sur moviéndose al WNW aun tal vez más inclinado al W. Los periódicos de Hongkong publicaron á raiz del suceso una descripción minuciosa de los destrozos causados en aquella colonia por la violencia del huracán.

SEISMOLOGICAL BULLETIN FOR SEPTEMBER, 1907.

By Rev. MIGUEL SADERRA MASÓ, S. J.,
Assistant Director of the Weather Bureau.

EARTHQUAKES FELT IN THE PHILIPPINES.[1]

3, 3^h 12^m 5^s.* **Aparri** (NE of Luzon). Oscilatory earthquake. Direction E–W; intensity III; duration 10^s.

9, 6^h 20^m. **Eastern Mindanao.** An earthquake of intensity II at Davao and I at Butuan. Both stations are close to the meridian 125° 30′ E, and separated from each other by a distance of nearly 200 kilometers. The direction of the movements was SE–NW at Butuan, the northern station, and N–S at Davao, the southern station. Hence we conclude that the center of the disturbance must have been between the two stations, in the valley of the Agusan River. There are no indications that the shock was perceptible in the stations situated on the eastern coast of the Island. This, together with the failure of the seismographs at the Observatory to register the quake, lead to the belief that the phenomenon was of feeble intensity even within the epicentral region.

24, 12^h 50^m. **Culion** (Calamianes). Earthquake of intensity I.

25, 13^h 4^m 36^s.* **Vigan** (NW of Luzon). Earthquake of force II and 10^s duration.

29, 11^h 10^m 40^s.* **Batangas** (S of Luzon). Oscilatory earthquake. Direction NW–SE; intensity II; duration about 7^s.

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[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

RECORDS OF THE MICROSEISMOGRAPHS.

[Time of the one hundred and twentieth meridian east of Greenwich. Midnight = 0^h.]

No.	Date.	Component.	Beginning. First preliminary tremors.	Beginning. Second preliminary tremors.	Beginning. Principal portion.	Maximum range of motion. Hour.	Maximum range of motion. Amplitude (2 a.).	Maximum range of motion. Period.	End.	Instrument.	Remarks.
			h. m. s.	*h. m. s.*	*h. m. s.*	*h. m. s.*	*mm.*	*s.*	*h. m. s.*		
168	3	NNW-SSE	0 11 46	0 18 56	0 24 53	0 29 57	0.02	11.2	1 40 00	V. M.	
		WSW-ENE	0 11 35	0 18 50	0 24 47	0 32 28	.08	12	1 48 00	H. P.	
169	3	WSW-ENE	3 12 05	----------	3 12 31	3 12 37	.14	2.4	3 16 00	V. M.	Earthquake, intensity III at Aparri (NE of Luzon).
		NNW-SSE	3 11 48	----------	3 12 23	3 13 19	.07	2.8	3 16 00	V. M.	
		WSW-ENE	3 12 19	----------	3 12 53	3 13 54	.07	4.2	3 19 00	H. P.	
170	4	WSW-ENE	0 02 26	----------	----------	0 02 35	.16	2	0 04 00	V. M.	Vertical component; amplitude 0.04 mm.
		NNW-SSE	0 02 26	----------	----------	0 02 36	.12	.8	0 04 00	V. M.	
171	9	WSW-ENE	----------	----------	12 42 47	----------	------	------	12 46 00	V. M.	Vertical component; amplitude 0 09 mm.
		NNW-SSE	----------	----------	12 42 47	----------	------	------	12 46 00	V. M.	
172	9	WSW-ENE	----------	----------	15 32 38	----------	------	------	15 37 00	V. M.	Vertical component; amplitude 0.15 mm.
		WSW-ENE	----------	----------	15 32 41	----------	------	------	15 38 00	H. P.	
173	19	WSW-ENE	----------	----------	0 53 49	----------	------	------	0 57 00	V. M.	
		NNW-SSE	----------	----------	0 53 50	----------	------	------	0 56 00	V. M.	
174	19	WSW-ENE	9 35 32	----------	9 35 52	----------	------	------	9 38 00	V. M	
		NNW-SSE	9 35 32	----------	9 35 49	----------	------	------	9 38 00	V. M.	
175	20	WSW-ENE	19 08 05	----------	19 08 18	19 08 41	.08	2	19 12 00	V. M.	
		NNW-SSE	19 08 06	----------	19 08 21	19 08 50	.12	2.4	19 13 00	V. M.	
		WSW-ENE	19 08 08	----------	19 08 29	19 09 24	.06	5	19 12 00	H. P.	
176	21	WSW-ENE	6 21 38	----------	6 22 08	6 22 38	.10	6	6 26 00	H. P.	
177	21	WSW-ENE	8 02 23	----------	8 03 00	8 03 16	.12	1.8	8 09 00	V. M.	
		NNW-SSE	8 02 27	----------	8 03 01	8 03 03	.06	2	8 09 00	V. M.	
178	21	WSW-ENE	8 10 23	----------	----------	----------	------	------	8 14 00	V. M.	
179	22	WSW-ENE	4 22 38	----------	4 23 02	4 23 19	.06	2.4	4 27 00	V. M.	
		NNW-SSE	4 22 39	----------	4 23 10	4 23 21	05	1.6	4 27 00	V. M.	
180	22	WSW-ENE	20 08 51	20 13 20	20 15 36	20 19 29	.04	8	20 33 00	V. M.	
		NNW-SSE	20 09 05	20 13 10	20 15 35	20 19 37	.03	8	20 25 00	V. M.	
		WSW-ENE	20 08 58	20 13 38	20 15 41	20 19 44	1.11	7.2	21 45 00	H. P.	
		NNW-SSE	20 08 52	20 13 45	20 15 55	20 19 51	.68	7.8	21 45 00	H. P.	
181	22	WSW-ENE	23 55 47	----------	----------	----------	------	------	24 22 00	H. P.	
182	23	NNW-SSE	7 07 22	7 08 27	7 09 15	7 09 28	.90	7.2	7 25 00	H. P.	
		WSW-ENE	7 07 22	7 08 20	7 09 03	7 09 16	1.40	5.4	7 25 00	H. P.	
183	23	NNW-SSE	----------	----------	7 27 19	----------	------	------	7 31 00	H. P.	
		WSW-ENE	----------	----------	7 27 19	----------	------	------	7 31 00	H. P.	
184	23	WSW-ENE	----------	----------	13 17 28	13 17 54	.08	2.4	13 21 00	V. M.	
		NNW-SSE	----------	----------	13 17 29	13 17 56	.04	2.4	13 20 00	V. M.	
185	25	WSW-ENE	0 46 39	----------	0 47 05	0 48 10	.60	2	0 52 00	V. M.	Vertical component; amplitude 0.04 mm.
		NNW-SSE	0 46 40	----------	0 47 08	0 47 50	.42	2.2	0 51 00	V. M.	
		WSW-ENE	0 46 51	----------	0 47 10	0 47 27	.20	6.4	0 55 00	H. P.	
		NNW-SSE	0 46 44	----------	0 47 07	0 47 49	.17	6.3	0 53 00	H. P.	
186	25	WSW-ENE	13 04 36	----------	13 05 19	13 05 24	.06	2	13 10 00	V. M.	Earthquake, intensity I at Vigan (NW of Luzon).
		NNW-SSE	13 04 33	----------	13 05 14	13 05 45	.06	2.4	13 11 00	V. M.	
187	26	WSW-ENE	20 05 24	----------	20 09 13	20 09 46	.26	2.6	20 21 00	V. M.	
		NNW-SSE	20 05 24	----------	20 09 09	20 09 30	.16	2.4	20 18 00	V. M.	
		WSW-ENE	20 05 24	----------	20 09 19	20 10 18	.45	6	20 28 00	H. P.	
		NNW-SSE	20 05 24	----------	20 09 16	20 11 11	.23	6.6	20 26 00	H. P.	
188	29	WSW-ENE	11 10 40	----------	11 10 50	11 12 14	.12	2	11 17 00	V. M.	Vertical component; amplitude 0.06 mm. Earthquake, intensity II at Batangas (S of Luzon).
		NNW-SSE	11 10 40	----------	11 10 49	11 11 03	.24	1.6	11 14 00	V. M.	
		WSW-ENE	11 10 40	----------	11 10 58	11 11 59	.12	6	11 17 00	H. P.	
		NNW-SSE	11 10 40	----------	11 10 53	11 12 25	.09	6	11 15 00	H. P.	

Instrumental constants.—Vicentini microseismograph (V. M.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record: NNW–SSE component, 50 times; WSW–ENE component, 50 times.

Horizontal Pendulums (H. P.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation, NNW–SSE pendulum, T=7 seconds; WSW–ENE pendulum, T=6.4 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

Foundation and location.—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above the sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above the sea level.

Geological structure.—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters, which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

3, 3^h 12^m 5^s.* **Aparri** (NE de Luzón). Temblor oscilatorio. Dirección E–W; intensidad III; duración 10^s.

9, 6^h 20^m. **E de Mindanao.** Temblor de tierra de intensidad II en Davao y I en Butúan. Estas dos estaciones están situadas ambas cerca del meridiano 125° 30′ E y á una distancia de 200 kilómetros entre sí. La dirección de los movimientos fué SE–NW en Butúan, estación septentrional, y N–S en Davao, que está al sur: de donde deducimos que el origen de este temblor debió hallarse entre ambas estaciones en el valle del Río Agusan. No consta fuese perceptible en las estaciones de la costa oriental de la Isla. Ésto y el no haber sido registrado por los seismógrafos del Observatorio hace suponer que el fenómeno no tuvo mucha intensidad en la región epicéntrica.

24, 12^h 50^m. **Culion** (Calamianes). Temblor de tierra de intensidad I.

25, 13^h 4^m 36^s.* **Vigan** (NW de Luzón). Temblor de tierra de intensidad II; duración 10^s.

29, 11^h 10^m 40^s.* **Batangas** (S de Luzón). Temblor oscilatorio. Dirección NW–SE; intensidad II; duración unos 7^s.

REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

[1] La intensidad de los terremotos se indica conforme á la conocida escala de De Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120° E de Greenwhich.

CROP BULLETIN FOR SEPTEMBER, 1907.

By Rev. George M. Zwack, S. J.,
Secretary of the Weather Bureau.

GENERAL NOTES.

On the average, the yield of the crops harvested during September has been fair. The two extremes are represented, on the one side by the district of Davao, where the only complaints are the lack of labor to gather the lavish gifts of nature, and on the other by Laguna Province and the Island of Panay, where hardly anything is abundant except disaster. In the rest of the Archipelago either the yield of all the products was fair, or the abundance of the one offset the scarcity of the other. Of rice only the early varieties have begun to be cut. Mindanao, Occidental Negros, and Batangas report good crops; likewise the interior of Bohol. But Panay and Laguna Province complain of the small yield. The other reports, as far as they mention the rice harvest, qualify the results as fair to good. The corn crop has been very abundant in the extreme north of Luzon, abundant in Batangas, and fair to good in the rest of the Islands, except in the north of Bohol and the regions in which, as stated, all the crops have been poor. Though in some hemp districts the stripping of the fiber continued unabated, the total output has decreased, owing to the low prices offered for the product. This decrease is due to the fact that in some localities the planters have suspended work entirely and others continue in a half-hearted manner. Fiber which cost as much as ₱27 per picul, must now be sold for ₱22, while the quality produced in Tayabas is as low as ₱7.50 per picul. Cocoanuts have been plentiful nearly everywhere, but the very low price of copra did not invite great activity. The lowest price has been reported from Tayabas, being only ₱4.35 per picul. The yield of sweet potatoes and other tubers has been generally good, especially north of Manila and on the Island of Negros. Fruit has likewise been plentiful as a rule.

The state of the growing crops is reported as flourishing at the end of the month by the stations in the extreme south and north of the Archipelago. Less gratifying is the news from the stations in the Visayas and on the west coast of northern Luzon. Thus Jolo, Basilan, and by far the greater part of Mindanao had prospects of good crops, especially of irrigation rice, with the exception of the Cotabato district, where the newly transplanted rice had been attacked by worms. Northeastern Mindanao, however, shared the fate of the Visayas, while the Islands of Bohol, Negros, and Romblon must be excepted from the general statement regarding the Visayas, since they report that the growing crops hold out good promises. In northeastern Mindanao, Samar, and Leyte the crops suffered somewhat from the scarcity of water, but they were still in a fair condition. On Cebu matters were worse, especially in the southern part, where drought killed the rice seedlings and with them all hope of a crop of this cereal. Nor are prospects much brighter on the Island of Panay. In Iloilo Province field mice and locusts have completely ruined the *lubang* rice, and rain was likewise scarce; locusts, *tomasoc,* and belated planting leave little hope in the Province of Antique; in Capiz rice was indeed flourishing south of the capital, but only little had been planted—practically nothing to the northwest of the town of Capiz—owing to the scarcity of rain. The part of Luzon south of Manila and the central region of northern Luzon report good conditions of the growing crops, while the stretch of coast lying between Olongapo and Vigan was somewhat less fortunate. The reports claim that the less satisfactory state of the crops was due to scarcity of water at one time or another during the month. This seems hardly credible in view of the amounts of rainfall registered in the said district. Thus Olongapo reports 718.2 millimeters, Bolinao 571.0, Candon 518.3, and Vigan 383.2. San Fernando, Union, had its crops damaged by excess of rain. Finally, the northernmost provinces, Isabela and Cagayan, describe the state of their crops as flourishing. On the Batanes group rice which was considered ruined by insects revived on the advent of rain and was thriving at the end of the month.

As may be deduced from the foregoing remarks, periods of drought have been experienced throughout a great part of the Philippines. The only station which reports harmful excess of rain is San Fernando, Union. These rains must likewise have been heavy on the higher ground back of the coast, since the low plains of the municipality of Balaoan were inundated for the space of three days, many fields being buried beneath the sand deposited by the flood.

Locusts invaded the crops in Misamis (Mindanao), on the east coast of Samar, in the north of Leyte, Negros, southern Panay, Romblon, and Tayabas. While, as a rule, the harm done by them was not very great they caused great loss in Romblon, Iloilo, and on the east coast of Samar. The strangest thing is, that no efforts at combating them are mentioned; on the contrary, the observer at Borongan expressly states that they are not being molested while carrying on their work of destruction. In addition to the locusts Romblon and Antique report worms in the rice fields, which likewise did great harm in the Cotabato region and, locally, in the Province of Zambales. At Capas, Tarlac, several rice fields have been destroyed completely by worms, while the surrounding country was perfectly free from the scourge.

Animal diseases furnish another dismal chapter. Epizoötia has been more or less prevalent in the following provinces: The east of Samar, Leyte, Cebu, Iloilo, Sorsogon, Albay, Batangas, Laguna, Bulacan, Tarlac, Pampanga, Zambales, Union, Ilocos Sur, Benguet, Isabela, and Cagayan. The last two provinces and Union had cases of surra in addition, of which latter sickness five cases occurred also in Tayabas. Anthrax continued its ravages in Lepanto-Bontoc, the losses during August and September amounting to 600 animals. Sickness among the poultry has been fairly general.

SPECIAL NOTES.

DISTRICT I.

Borongan.—The yield of the cocoanut trees and hemp plantations continues to be good, especially of the former; wherefore the people are quite contented in spite of the fall in the price of copra. Rinderpest has ceased at Borongan after killing many cattle and carabaos, but it is spreading northward toward San Julian, Sulat, Tubig, and Oras, causing everywhere the same losses as here. The locusts are fattening themselves at various points along the coast without being molested. Their ravages do greater harm to the cocoanut groves than the passage of a fierce typhoon.

Tacloban.—The principal products harvested during this month were corn, sweet potatoes, sugar cane, tomatoes, bananas, and fruit. Of these corn and sweet potatoes had suffered somewhat from the scarcity of rain, which likewise harmed the growing rice. The state of the crops which are at present growing is, however, fair notwithstanding the fact that they have been damaged to some extent by locusts and by the *hanao*. The losses caused by epizoötia reach now as high as 65 per cent.

Ormoc.—No crops have been harvested during this month except a small amount of corn. Rice, corn, and hemp have been affected by the lack of water. Neither injurious insects nor diseases among the stock have been observed.

Tuburan.—The harvest of this month consisted of copra, tobacco, corn, maguey, hemp, rice, and some sugar cane. The yield of all of these has been fair, something like that of the preceding year. A few rains would be very beneficial to the growing crops, especially to the sugar cane and the various kinds of tubers.

Cebu.—The scarcity of rain, which made itself felt so severely since the middle of August, continued throughout nearly the whole of September, with the result that in the district surrounding Cebu the rice seedlings have dried up, and there is no longer any hope of even a small crop of this important article of food. Quite an amount of corn has been harvested, and some landowners are already planting their fields anew with this cereal. Of greens and tubers only small supplies are to be seen in the markets.

Tagbilaran.—The corn crop has been bad in the north of Bohol, owing to the heavy rains which fell while the plants were in blossom. The sugar cane, however, promises well. The south of the island had a good crop of corn, both in quantity and quality. The same is true of the rice harvest in the center.

Butuan.—Water has been scarce ever since the first half of August, whence arise grave fears that the rice now growing will be a total loss. It looks sufficiently bad, and in part has already withered. On account of the drought there is also much fever and headache among the people. Higher up on the Agusan River people are harvesting cacao, sweet potatoes, corn, etc., and planting corn, sweet potatoes, gabe, uve, but above all hemp.

Balingasag.—The people are finishing the planting of the rice which they call *binagasag*. The variety called *calamian* promises a good crop, but suffers somewhat from the lack of water. Hemp stripping and the making of copra go on as usually. Some 15 kids have died of diarrhea, and a few chickens have also succumbed to disease.

Davao.—The production of hemp, gums, biao, wax, copra, and the trade in wood were the same as during the preceding months. The landowners complain bitterly of their inability to secure the number of laborers necessary for the collection of these products. Sickness is prevalent among the poultry and the hogs which are running wild.

Cotabato.—During September the transplanting of late rice has been finished, which, unfortunately, is being attacked by grubs. The early variety of rice is already being harvested. The trade in rubber and gutta-percha continues the same as during August, as do likewise the prices paid for these products.

DISTRICT II.

Capiz.—The farmers living in the northern part of the municipality of Capiz have not planted any rice—some because they had no carabaos, others because they deemed the rainfall insufficient, maintaining that nothing short of nine days' continual rain would do to supply the water needed for their land. On the other hand, the farmers of Dao, Madalag, Sapian, and the southern part of the municipality of Capiz are congratulating themselves on the flourishing condition of their growing rice and may expect an abundant crop, provided that the locusts do not intervene.

San Jose Buenavista.—During September the fields are usually covered with rice. This year, however, people are still occupied in planting it, and in spite of all their diligence there is little hope of a good crop. This is due partly to the locusts and *tomasoc*, partly to the late planting. Owing to the harm done by the insects mentioned, the crops of corn and rice which are being brought in at present are inferior to those of last year. The same might be said of all the other agricultural products.

Iloilo.—According to information furnished by the municipal presidents of Barotac Nuevo, Cabatuan, and Janiuay, complaint of the scarcity of rain during September has been general among the farming population. The people of Janiuay fear that it will be impossible to transplant the late rice unless it rains soon. The yield of the variety of rice called *monajan* has been very small; in fact, owing to the destruction wrought by field mice, it amounted to only 50 per cent, as compared with that of last year. The same pests completely ruined the crop of rice called *lubang*. In addition to the rodents the locusts appeared, which have destroyed quite extensive fields of rice and other products. Epizoötia has not yet disappeared completely, but its victims are relatively few.

Bacolod.—The harvest of mountain rice has begun in this region and gives quite satisfactory results. It is hoped that irrigation rice will yield an equally good crop when the time comes for cutting it, which is November and December. The state of the sugar plantations varies—some are flourishing, others not. The crop of tubers is abundant. Copra is at present being prepared on a large scale in this province, since many people devote their energies to this industry. At the capital its price is ₱6.50 to ₱6.75 per picul, while the nuts sell for ₱2 to ₱2.50 per hundred. Nothing has been heard of sickness among the stock, but immense swarms of locusts have appeared at Silay.

Dapitan.—The rice planted in May is now being reaped and yields a good grain. This year no misfortune occurred like those of former years; although locusts put in an appearance they have not done any appreciable harm in this region. In the towns and hamlets in the south, above Haya, the people are likewise harvesting a good crop of mountain rice. Irrigation rice will probably be cut during the second half of October. What a pity that on account of the lack of seedlings the irrigated fields could not all be planted! Owing to the work in the rice fields, there is little activity in the production of hemp.

Zamboanga.—Notwithstanding the rain which fell during the month, the fields could not all be planted; those which have been planted are showing a healthy growth. The price of rice has fallen from ₱0.33 per ganta (3 liters) during August to ₱0.28 at the end of September. But the price of copra has likewise gone down, only ₱7 per picul being paid for same. Hemp is quoted at ₱22 per picul; corn at ₱0.50 per hundred ears.

Isabela, Basilan.—The planting of irrigation rice has been finished throughout this region. The crops growing on high ground were in great danger, but thanks to the rains which fell in the middle of the month, they are now thriving and beginning to blossom. Of hemp only 5 piculs have been produced; of copra about 16.

Jolo.—The crops of fruit and garden products have been good, there being especially a great abundance of lanzones and ates. The rice is growing vigorously. The prices of the chief commercial products are (per picul): Hemp, current quality, ₱17; copra, ₱9.50; mother-of-pearl shell, ₱40; tortoise shell, ₱100 to ₱150.

DISTRICT III.

Legaspi.—The crops of cocoanuts, gabe, sweet potatoes, squash, sitao, bananas, etc., have been good. Those owners of hemp plantations who continued stripping have obtained a fair yield; others, however, suspended operations completely, owing to the fact that the price of hemp is falling lower and lower. The fine condition of some rice fields which had been planted early holds out hopes of a good crop during the month of October.

Gubat.—The plague of locusts, which during the two preceding months devastated the cocoanut groves and corn fields, has disappeared completely. Notwithstanding these losses quite fair amounts of copra and corn have been produced. As a result corn is at present cheaper in the market than it was for some time past. As to rice, although the last crops have been fair, there is at present a scarcity of it, wherefore its price oscillates between ₱6.80 and ₱7 per cavan, while hemp has gone down to ₱15 and ₱18 per picul. Throughout the Province of Sorsogon people are busy preparing the rice fields for the next planting, there being now greater activity in this line than last year and this in spite of the lack of work animals, due to the reappearance of epizoötia.

Romblon.—The yield of mountain rice is sufficiently good. Late rice is growing and already producing ears, but suffers from the ravages of an insect which the natives call *tomasoc*, and likewise from scarcity of water, at least that planted recently. The tobacco seedlings are being prepared. Locusts continue to do considerable damage.

Calbayog.—The yield of the principal agricultural products of this region during September has been 8,404 piculs of hemp and 51,750 cocoanuts, which are equivalent to about 207 piculs of copra. The rainfall during the month has not been sufficiently abundant to cause a strong development of the crops growing in the fields, especially of the rice. The temperature has been higher during this month than during the preceding. The strong southwest winds which blew during the last days of August and somewhat less violently during the first days of September, have torn off the blossoms of many fruit trees which were in flower at the time. A sickness which the natives call *tucuao* is prevalent among the poultry and many birds succumb to it.

DISTRICT IV.

Santo Domingo, Batanes Islands.—During the second half of September the digging of uve began and although it is not yet finished it may be safely said that the yield is good; the tubers are large and sound. The other districts have likewise sent good news. The rice which about the middle of July was in poor condition in the district of Santa Maria, Ibayat Island, has fully recovered from the attacks of the insects since the rains which fell during August.

Aparri.—The rice fields offer a pleasant aspect, the rice having developed vigorously, thanks to the frequent thunder showers which fell during the month and to the absence of violent winds, all the storms having up to date passed at a great distance from this place. The very abundant crop of corn makes the shortage of rice felt less. The inhabitants of the towns in the interior live, for the present, almost exclusively on corn.

Tuguegarao.—The entire corn crop has been harvested and the farmers are beginning to clear their fields for the planting of tobacco and other products. The crops growing at present in the fields are in a flourishing condition. During the first half of September cases of diarrhea were quite frequent. The district health officer ascribes their frequency to the consumption of new corn. Luckily the patients submitted willingly to medical treatment. In the Provinces of Cagayan and Isabela epizoötia and surra have appeared among the work animals, both cattle and horses, without causing many deaths thus far. The diseases are being combated energetically, and it seems that the efforts at localizing them will be successful. Stringent measures have been adopted to prevent infection.

Laoag.—The most important product of Ilocos Norte is maguey, because, besides the production of fiber, pole plants are being exported to other places. About 2,300,000 of these plants have been shipped to the Bureau of Agriculture. The price of these maguey plants is ₱1.20 per thousand. The crop of tubers has been abundant.

Vigan.—During this month have been harvested peanuts, sitao, patola, and balsamine; yield fair. Sugar cane and tubers are still growing. These and other plants, especially rice, have suffered a little on account of the relative scarcity of rain during the last two-thirds of the month. Early rice and that planted on the hillsides is already blossoming in the inland municipalities, but it is feared that the crop will not be very satisfactory. Epizoötia is disappearing; but one horse died of glanders.

Candon.—Owing to the scarcity of rain during July and August, the transplanting of rice has been effected rather late. Nevertheless there are hopes of a good crop, provided nothing happens to mar the prospects. Corn and cocoanuts gave fair returns. The prices are: Rice, ₱5 per cavan; cocoanuts, ₱5; corn, ₱2.50 per thousand. The crops growing on high ground, especially mountain rice, have suffered a little on account of the small rainfall during the second half of the month. About 10 per cent of the poultry has died of sickness.

San Fernando, Union.—The principal occupation of the farmers during this month consisted in the preparation of the tobacco fields for planting. Owing to excessive rains, which have damaged them, the state of the growing crops is only fair, especially that of corn and rice. There was some loss of stock by epizoötia in Naguilian, and in various towns a number of deaths from surra among the horses. The low plains comprised within the municipality of Balaoan were covered with water for three days, to the great detriment of the crops, some of which have been buried beneath the sand deposited by the flood.

Baguio.—Coffee, sweet potatoes, gabe, potatoes, and bananas are growing well at Sablan and Trinidad, but only middling at Baguio. The weather has generally been favorable. There were a few cases of sickness among the stock at Trinidad and Itogon, and the epidemic of anthrax is continuing in Lepanto-Bontoc Province, the total loss during August and September having been about 600 animals.

Bolinao.—During August and the first days of September nearly all the garden products and tubers planted in May have dried up, owing to the scarcity of water which then prevailed in the neighborhood of Bolinao. At Zaragoza and Agno the rice is being killed by small worms, which in the Pangasinan dialect are called *bocboc* and *cutalo*. Both municipalities are besides afflicted with epizoötia, which carries off horses, carabaos, other cattle, and hogs.

Dagupan.—Thanks to the rains which fell during the month the rice is in a flourishing condition, though the amount planted is not very large. The rains have likewise greatly benefited the sugar-cane and corn fields, the bananas and oranges. The latter are very abundant. Rice is being sold in the market at ₱5.75 per cavan.

Tarlac.—In the municipality of Tarlac the people are occupied in repairing the damages done by the inundation during August. The provincial board employed several gangs of workmen to repair and heighten the broken dam, and the farmers are busy planting anew their rice fields. The houses destroyed by the flood are likewise being rebuilt. Some people have already begun to harvest the peanuts planted in April, and the corn resulting from the second planting in June. Tubers and sugar cane are developing well. The loss caused by epizoötia does not exceed 2 or 3 per cent of the stock and hogs. In the municipality of Capas worms have completely devastated a few rice fields. This plague is confined exclusively to the said municipality, the surrounding regions being free of it. Epizoötia continues there, as it does likewise at Camiling.

San Isidro.—According to information furnished by some farmers and by the municipal presidents of the neighboring towns, rice is promising an abundant crop, in spite of the fact that some of the fields have been planted at the very last hour. Early rice is already ripe for cutting, thanks to the rains during the month. Sugar cane, gabe, ates, etc., are being harvested, and the tobacco fields made ready for planting.

Olongapo.—Mountain rice is ripe, while irrigation rice is still growing. The latter seems to suffer slightly from scarcity of water (?). Gabe is being harvested with rather good results.

Balanga.—The harvesting of corn has been finished during the second half of the month. Although it had been slightly harmed by the continual rains, the yield is fair. The growing crops are doing fairly well.

Silang.—During September a plentiful crop of oranges, bananas, and guayabas has been gathered, and during the last days of the month the cutting of mountain rice began. Many people are busily clearing new ground in order to plant hemp.

San Antonio, Laguna.—The returns of hemp, cocoanuts, and other crops are very small. Mountain rice is ready for cutting, which will begin during the first days of October. In the region lying between Santa Maria and Paete 372 carabaos have succumbed to epizoötia. The other municipalities are still free from the scourge.

Atimonan.—The state of the rice fields is unsatisfactory, owing to the general dryness, which is also the chief reason why the rice land could not all be cultivated, though the scarcity of labor had also some influence in this. The cocoanut trees are in the same condition as last month, but the price of copra has fallen still further, being now ₱4.35 per picul. Hemp has likewise gone down in price, while rice is continually rising. It costs at present ₱7.50 per picul. During the first days of the month Atimonan had another visit from the locusts, but luckily they did not do very great harm. Five cases of surra among the equines have been registered during the month, two of the animals attacked succumbing to the disease. The infection had been brought hither from Lopez, a town of this province. Chickens are likewise dying of sickness. People are at present occupied in planting hemp and cocoanut trees.

Batangas.—During the first half of July the appearance of insects, which usually prove destructive to the growing rice, had given rise to grave fears that the rice crop would be a failure in this province. But, fortunately, these fears have not come true. The apparently ruined rice sprouted anew, and, favored by the rains during August and September, it is now more vigorous than before. The cutting began during the first half of September, and a good yield is expected. The corn crop is abundant; likewise that of small oranges. The latter are being brought to town once a week and sell for ₱6 the thousand. It is now two months since epizoötia became again prevalent in this province. The sickness is now scattering death among the animals which it spared last year. In spite of the efforts made by the Government and the municipalities, it has hitherto been impossible the stop the ravages of the plague completely. The losses caused by this terrible scourge may be set down as being about 10 per cent.

ESTADO GENERAL DE LAS COSECHAS.

Por término medio, el rendimiento de las cosechas del mes de Septiembre ha sido regular. Representan los dos extremos, por un lado el distrito de Dávao, donde no hay más quejas que la falta de brazos para recoger los abundantes frutos de la naturaleza, y por otro, la Provincia de La Laguna y la Isla de Panay, donde casi lo único que abunda es la desgracia. En el resto del Archipiélago ó el rendimiento de todos los productos fué regular ó al menos la abundancia de unos productos compensó por la escasez de otros. Del palay, sólamente las variedades tempranas han comenzado á ser cosechadas. Mindanao, Negros Occidental y Batangas dan cuenta de buenas cosechas; asimismo el interior de Bohol. Pero Panay y la Provincia de La Laguna se quejan del escaso rendimiento. Los otros reports siempre que mencionan la cosecha de palay, califican los resultados de regulares ó buenos. La cosecha de maíz ha sido muy abundante en el extremo N de Luzón, abundante en Batangas y regular ó buena en el resto de las islas, excepto en el N de Bohol y en las regiones donde, como queda dicho, todas las cosechas han sido escasas. Aunque en algunos distritos abacaleros el beneficio de esta fibra continúa animada, el producto total ha decrecido, debido á los bajos precios que se ofrecen por este producto. Esta disminución se debe al hecho de que en algunos puntos los cultivadores han suspendido por completo el trabajo; y en otros, continúa de una manera poco animada. La fibra que costaba ₱27 el pico, se vende ahora á ₱22, mientras la que se produce en Tayabas está á tan bajo precio que cuesta sólo ₱7.50 el pico. El coco ha sido abundante casi en todas partes, pero el precio muy bajo del cóprax no ha inspirado gran actividad. El precio más bajo lo dan los reports de Tayabas donde cuesta sólo ₱4.35 el pico. El rendimiento del camote y otros tubérculos ha sido generalmente bueno, especialmente al N de Manila y en la Isla de Negros. Las frutas han sido también abundantes por regla general.

El estado de las plantas que crecen en los campos era próspero al fin del mes en los extremos sur y norte del Archipiélago. Menos gratas son las noticias de las estaciones de Visayas y de la costa occidental del N de Luzón. Así v. gr., Joló, Basilan y gran parte de Mindanao tenían esperanzas de buenas cosechas de palay de regadío, á excepción únicamente del distrito de Cotabato, donde el palay recientemente trasplantado ha sido atacado por los gusanos. Sin embargo, la parte NE de Mindanao participó de la suerte de Visayas, mientras que por el contrario las Islas de Bohol, Negros y Romblón deben ser exceptuadas del estado general referente á aquéllas, pues se esperan allí buenos rendimientos. En el NE de Mindanao, en Sámar y en Leyte las plantas han sufrido algo por la escasez de lluvia, pero se conservan todavía en estado regular. En Cebú, la situación es peor, especialmente en la parte meridional, donde la sequía ha matado las semillas de palay y con ellas toda esperanza de cosecha de este cereal. Ni son más halagüeñas las esperanzas en la Isla de Panay. En la Provincia de Iloílo las ratas campestres y las langostas han arruinado por completo el palay denominado "lubang," y las lluvias han sido además escasas; las langostas, los tomasoc y lo atrasado de las plantaciones dan bien poca esperanza en la Provincia de Antique; en Cápiz, el palay estaba realmente próspero al sur de la Capital, pero sólamente se ha plantado poca cantidad, y prácticamente nada al NW del pueblo de Cápiz, debido á la escasez de lluvia. La parte de Luzón situada al S de Manila y la región central del N de Luzón dan cuenta de hallarse en buenas condiciones las plantas que crecen en los campos, mientras que la extensión de la costa comprendida entre Olongapó y Vigan ha sido algo menos afortunada. Los reports dicen que el estado menos satisfactorio de las cosechas ha sido debido á la escasez de lluvia en un tiempo ú otro durante el mes. Esto parece increíble en vista de las cantidades de lluvia registradas en dicho distrito.

Así, Olongapó acusa 718.2 mm., Bolinao 571.0 mm., Candón 518.3 mm. y Vigan 383.2 mm. En San Fernando, Unión, las cosechas han sufrido algo, por exceso de lluvia. Finalmente, las provincias más septentrionales, Isabela y Cagayán, califican de próspero el estado de sus cosechas; en las Islas Batanes, el arroz que se consideraba arruinado por los insectos revivió con las lluvias y estaba lozano al fin del mes.

Como se puede deducir de lo que llevamos dicho, períodos de sequía se han experimentado en gran parte de Filipinas. La única estación que da cuenta de exceso de lluvia perjudicial á los campos es San Fernando, Unión. Estas lluvias deben haber sido también abundantes en las tierras elevadas del interior, porque los llanos bajos del municipio de Balaoan quedaron inundados por espacio de tres días sepultándose muchos campos debajo de la arena depositada por la corriente.

Las langostas invadieron las plantaciones en Misamis (Mindanao), en la costa oriental de Sámar, en el N de Leyte, en Negros, en el S de Panay, en Romblón y en Tayabas. Aunque, por regla general, el daño que han causado no ha sido muy grande, sin embargo, se han tenido que lamentar grandes pérdidas en Romblón, Iloílo y en la costa oriental de Sámar. Lo curioso es que no se menciona ningún esfuerzo para combatirlas; al contrario, el observador de Borongan expresamente afirma que no han sido molestadas mientras llevaban á cabo su obra de destrucción. Además de las langostas, Romblón y Antique dan cuenta de gusanos en los campos de palay, los cuales también causaron gran daño en la región de Cotabato y en algunos puntos aislados de la provincia de Zambales. En Capas, Tárlac, muchos campos de palay han sido destruídos completamente por estos gusanos, mientras que las comarcas limítrofes se han visto del todo libres de tal calamidad.

Las enfermedades de los animales nos proporcionan otro capítulo desconsolador. La epizotia ha prevalecido más ó menos en las siguientes provincias: costa oriental de Sámar, Leyte, Cebú, Iloílo, Sorsogón, Albay, Batangas, Laguna, Bulacán, Tárlac, Pampanga, Zambales, Unión, Ilocos Sur, Benguet, Isabela y Cagayán. Las dos últimas provincias y la Unión tuvieron además casos de surra, de la cual enfermedad ocurrieron también 5 casos en Tayabas. El ántrax continuó su obra de destrucción en Lepanto-Bontoc, llegando las pérdidas durante los meses de Agosto y Septiembre á la suma de 600 animales. La enfermedad entre las aves de corral ha sido bastante general.

NOTICIAS PARTICULARES.

DISTRITO I.

Borongan.—Las cosechas de coco y abacá continúan siendo buenas, especialmente la del primero; por lo cual los labradores están contentos no obstante haber bajado el precio del cóprax. La epizotia desapareció de Borongan con la muerte del ganado vacuno y caraballar; hoy sigue su marcha hacia el norte para los pueblos de San Julián, Sulat, Tubig y Orás, causando los mismos estragos. La langosta se ceba tranquilamente en varios puntos de esta costa, haciendo más daño en los cocales que un fuerte baguio.

Tacloban.—En este mes se han cosechado principalmente maíz, camote, caña-dulce, tomates, plátanos y frutas. De estos productos el maíz y camote han sufrido por falta de agua, la cual ha perjudicado también al palay creciente. El estado de las cosechas ha sido regular no obstante el daño causado por la langosta y un insecto llamado vulgarmente janao. Las pérdidas debidas á la epizotia llegan ya á un 65 por ciento.

Ormoc.—Este mes nada se ha cosechado, excepto un poco de maíz. El palay, maíz y abacá han sentido la falta de agua. No hay insectos perjudicales á los sembrados, ni se ha notado enfermedad notable en los ganados.

Tuburan.—Los productos cosechados en este mes han sido cóprax, tabaco, maíz, maguey, abacá, palay y un poco de caña-dulce. Todos estos han dado rendimientos regulares, parecidos á los del año precedente. Si cayeran algunas lluvias quedarían muy favorecidas las plantas crecientes en los campos como la caña-dulce, el abacá y varios tubérculos.

Cebú.—La escasez de lluvia tan notable desde mediados de Agosto ha continuado casi todo este mes, por cuya causa se han secado todos los semilleros de palay en estas cercanías y ya no hay esperanza de cosecha siquiera pequeña de este importante cereal. Se han recogido algunas cantidades de maíz, y algunos propietarios ya están plantando de nuevo este artículo en sus terrenos. De verduras y tubérculos sólo se encuentran en el mercado pequeñas cantidades.

Tagbilaran.—En la parte norte de la Provincia de Bohol la cosecha de maíz ha sido escasa por razón de las lluvias que habían caído en abundancia al tiempo de la florescencia de este cereal. Pero la caña-dulce promete dar buenos rendimientos. Al sur de la isla han tenido regular cosecha de maíz de buena calidad. Lo mismo se puede decir del palay en el centro de la isla.

Butúan.—Ya desde la primera quincena del mes de Agosto hacía falta el agua, por lo cual se teme que el palay ahora creciente se eche á perder. En efecto, tiene aspecto bastante malo y algunas plantas ya se han secado. Por la misma causa los habitantes padecen mucho de calentura y dolores de cabeza. En el alto Agusan están cosechando cacao, camote, maíz y otros artículos y plantando maíz, camote, gabe, uve, pero sobre todo, abacá.

Balingasag.—La gente está terminando la siembra del palay llamado "binagasay." El palay calamián promete buena cosecha, pero sufre algo por la falta de agua. El beneficio del abacá y coco sigue su curso ordinario. Se han muerto unos 15 cabritos de diarrea. Han sucumbido también víctimas de enfermedad algunas gallinas.

Dávao.—El beneficio del abacá, almáciga, biao, cera, cópráx y maderas sigue como en los meses anteriores. Los propietarios se quejan mucho de no disponer de brazos para estos trabajos. Hay enfermedad entre las aves de corral y los cerdos monteses.

Cotabato.—Durante el mes de Septiembre se ha terminado la trasplantación del palay tardío, el cual es atacado por los loctones. El palay temprano ya se cosecha. El comercio de goma y guttapercha continúa lo mismo que en el mes de Agosto, así como también los precios que se pagan por estos productos.

DISTRITO II.

Cápiz.—Los agricultores de la parte norte de esta población no han sembrado palay, por falta de carabaos los unos, y por falta de agua los otros. Según estos últimos la lluvia caída no basta para estas tierras, pues se necesitan nueve días de lluvia continua. En cambio, los de Dao, Madalag, Sapian y de la parte sur de esta población están de enhorabuena, porque la siembra de palay crece bien, y, si no aparecen las langostas, tendrán abundante cosecha. El precio del palay oscila entre ₱2.87 y ₱3.00 por caván; el del arroz es de ₱6.60.

San José de Buenavista.—En el mes de Septiembre los campos suelen estar cubiertos de palay: pero este año la gente está todavía sembrando, y no obstante toda su diligencia, no puede esperarse buena cosecha, ya por la invasión de las langostas y tomasoc, ya por el atraso de la siembra. Por estas mismas causas las cosechas de maíz y palay de secano, que se están recogiendo, son escasas en comparación con las del año pasado. Lo mismo puede decirse de todos los demás productos.

Iloílo.—Durante el mes de Septiembre la queja de escasez de lluvia ha sido general entre los agricultores, según informan los presidentes de Barotac Nuevo, Cabatúan y Janinay. En este último pueblo se teme que los semilleros del palay macan queden sin ser trasplantados, si no llueve hasta fines de Octubre. La cosecha del palay monajan ha resultado escasísima; pues debido á los destrozos causados por las ratas, sólo se ha recogido el 50 por ciento de la que fué recogida el año pasado. En Cabatúan la cosecha del palay lubang quedó totalmente destrozada por las ratas. Además, aparecieron también las langostas que destruyeron considerables plantaciones de palay y demás productos. La epizotia aún no ha desaparecido, pero sus víctimas son relativamente pocas.

Bacólod.—Por los contornos de esta localidad se comienza ya la recolección del palay de secano con resultados bastante satisfactorios. También se espera que el palay de regadío dará el mismo resultado que el de secano cuando llegue la época de su cosecha, la cual se principiará allá por los meses de Noviembre y Diciembre. El estado de las plantaciones de caña-dulce es vario, pues unas se presentan bien y otras no. La cosecha de tubérculos es abundante. El beneficio del cópráx se hace ahora en grande escala en esta provincia, siendo muchos los que se dedican á esta clase de negocio. En esta Capital oscila su precio entre ₱6.50 y ₱6.75 el pico y el coco cuesta de ₱2.00 á ₱2.50 el ciento. No se ha tenido noticia alguna de enfermedades de ganado; en cambio, se han presentado nuevamente en el pueblo de Silay grandes bandadas de langostas.

Dapitan.—El palay plantado en el mes de Mayo se está ya cosechando y da buen rendimiento. Este año no se han tenido que lamentar desgracias como en otros anteriores. Si bien es verdad que la langosta ha aparecido durante el mes de Agosto, no ha hecho notable daño en esta región. También en los pueblos y rancherías del Sur, arriba de Ilaya, la gente está recolectando una buena cosecha de palay de secano. El de regadío quizás será cortado en la segunda quincena de Octubre. Lástima que por falta de semillas no hayan sido plantados todos los terrenos de regadío. Á causa de los trabajos en los palayales hay poca actividad en el beneficio del abacá.

Zamboanga.—Á pesar de las lluvias caídas durante el mes no se han podido sembrar todas las sementeras; pero las ya sembradas se hallan en buen estado. El precio del arroz que era de ₱0.33 por ganta el mes de Agosto se ha reducido á ₱0.28 al fin de Septiembre; el del cópráx ha bajado también pagándose á ₱7 el pico. El abacá se cotiza á ₱22 el pico; el maíz á ₱0.50 cada cien mazorcas.

Isabela de Basilan.—Ha terminado en este pueblo y sus cercanías la siembra del palay de regadío. Las siembras en el terreno seco estaban en gran peligro, pero gracias á las lluvias que cayeron á mediados del mes ahora están lozanas y ya empiezan á florecer. De abacá se han beneficiado tan solo 5 picos; de cópráx unos 16.

Joló.—La cosecha de frutas y hortalizas ha sido buena, abundando sobre todos los lanzones y ates. El palay está creciendo vigorosamente. Los precios de los principales productos comerciales son por pico: abacá corriente, ₱17; cópráx, ₱9.50; concha nácar, ₱40; carey de tortuga, de ₱100 á ₱150.

DISTRITO III.

Legaspi.—Se han recogido buenas cosechas de coco, gabe, camote, calabaza, sitao, plátanos, etc. Los propietarios de abacales que han continuado el beneficio de este artículo han conseguido cosecha regular; pero algunos lo han abandonado por completo por razón de su bajo precio, el cual va disminuyendo de día en día. El estado del palay en algunas sementeras que se habían sembrado temprano promete buena cosecha para el mes de Octubre.

Gúbat.—La plaga de langostas que había hecho destrozos en los cocales y maizales durante los dos meses anteriores ha desaparecido completamente. Á pesar de estos daños se ha recogido bastante cóprax y maíz, costando hoy en plaza más barato que en los días pasados. Por lo que toca al arroz, no obstante haber sido regulares las pasadas cosechas, hoy se siente carestía, oscilando su precio entre ₱6.80 y ₱7 el caván, mientras que el abacá ha bajado pagándose el pico de ₱15 á ₱18. En los campos palayeros de toda la provincia de Sorsogón se están activando los trabajos para la próxima siembra. Á pesar de la falta de animales debida á la reaparición de la epizotia, se nota en esta provincia más actividad que el año pasado.

Romblón.—Los rendimientos del palay de secano son bastante buenos. El palay tardío está creciendo y produciendo ya espigas, pero ha sufrido algo por el insecto llamado por los naturales tomasoc, y también por la falta de agua, á lo menos el sembrado últimamente. Se están preparando las semillas de tabaco. Las langostas continúan haciendo daños considerables.

Calbáyog.—La producción de los principales productos agrícolas en este pueblo, durante el mes de Septiembre, ha sido como sigue: 8,404 picos de abacá y 51,750 frutas de coco, equivalentes á 207 picos de cóprax, más ó menos. La lluvia caída durante el mes, no ha sido suficiente para el verdadero desarrollo de las plantas que crecen en los campos, especialmente del palay. La temperatura ha sido algo más alta que la del mes anterior. Los vientos fuertes del SW que soplaron en los primeros días de este mes, y especialmente en los últimos del mes anterior, han echado á perder la flor de muchos árboles frutales que en este mes florecen y dan frutas. Se ha propagado entre las gallinas, de las que murieron muchas, cierta enfermedad, que los naturales llaman tucuao.

DISTRITO IV.

Santo Domingo, Islas Batanes.—En la segunda quincena de Septiembre empezó la recolección del uve, y aunque no se ha terminado todavía, ya pueden apreciarse los buenos rendimientos: los tubérculos son grandes y sanos. De los demás distritos también han llegado buenas noticias. El palay que á mediados de Julio estaba en mal estado en el distrito de Santa María, Isla de Itbayat, por haber sido atacado por insectos, se ha repuesto desde que cayeron las lluvias de Agosto.

Aparri.—Las sementeras de palay presentan buen aspecto y están muy desarrolladas las siembras, gracias á las frecuentes lluvias de turbonada que han caído durante el mes y al hecho de no haberse sentido vientos fuertes hasta el presente. La falta de arroz se compensa por la muy abundante cosecha de maíz, del cual exclusivamente se alimentan los habitantes de los pueblos del interior.

Tuguegarao.—Se ha recogido ya todo el maíz sembrado y los agricultores empiezan á limpiar los terrenos para sembrar tabaco y otros productos. El estado de las cosechas crecientes es bueno. Durante la primera quincena de Septiembre se han observado muchos casos de diarrea debidos, según el médico provincial, al nuevo maíz. Afortunadamente los habitantes son dóciles al tratamiento. En la Provincia de Isabela y en esta de Cagayán han aparecido la epizotia y la surra en los animales de labor sin ocurrir mucha mortandad; se está trabajando con mucha actividad para atajar el mal; para este fin se han adoptado rigurosas medidas, y hoy parece que tiende á localizarse.

Laoag.—El producto de más grande importancia para la Provincia de Ilocos Norte es el maguey; pues además de su beneficio se exportan semillas de esta planta á otras regiones. Unas 2,300,000 han sido enviadas á la Oficina de Agricultura de Manila. El precio de estas semillas ya bastante crecidas es de ₱1.20 el millar. La cosecha de tubérculos ha sido abundante.

Vigan.—En este mes se han cosechado cacahuete, sitao, patola y amargoso, con resultados regulares. La caña-dulce y los tubérculos están todavía creciendo. Todas las plantaciones, especialmente las de palay, se hallan algo perjudicadas por la relativa escasez de lluvia en la 2.ª y 3.ª década del mes. El palay temprano y el sembrado en las faldas de los montes, en los pueblos del interior, está ya floreciendo; pero se teme que la cosecha no sea muy satisfactoria. La epizotia va desapareciendo, pero del muermo fué víctima un caballo.

Candón.—El trasplante del palay ha sido tarde este año, debido á alguna escasez de lluvia en los meses de Julio y Agosto. Esto no obstante, se tiene esperanza de buena cosecha, si no sobreviene algún contratiempo. La cosecha de maíz y coco ha sido regular. Se cotiza el arroz á ₱5 el caván; el coco y el maíz á ₱5 y ₱2.50 el millar, respectivamente. Las plantaciones en los terrenos altos, especialmente el palay de secano, se han resentido un poco de la escasez de lluvia en la segunda quincena de Septiembre. De enfermedad ha muerto un 10 por ciento de las aves de corral.

San Fernando, Unión.—Los agricultores estuvieron ocupados principalmente en la preparación de los terrenos para la siembra del tabaco. El estado general de las plantas crecientes es tan sólo regular, debido á las excesivas lluvias que las han perjudicado algo, sobre todo al maíz y palay. Hubo algunas pérdidas de animales por la epizotia en Naguilian, y bastante mortandad de caballos causada por la surra en varios pueblos. En las llanuras del pueblo de Balaoan los campos han estado cubiertos de agua por espacio de tres días con gran perjuicio de las sementeras, de las cuales algunas han quedado sepultadas en la arena depositada por la corriente.

Baguio.—Las plantaciones de café, camote, gabe, patatas y plátanos presentan buen aspecto en Sablán y Trinidad, pero sólo regular en Baguio. El tiempo es favorable en general. Ha habido algunos casos de enfermedad en los ganados en Trinidad é Itogon, y ha continuado la epidemia de ántrax en la Provincia de Lepanto-Bontoc, llegando las pérdidas en los meses de Agosto y Septiembre á unos 600 animales.

Bolinao.—Durante el mes de Agosto y los primeros días de Septiembre casi todas las hortalizas y los tubérculos plantados en el mes de Mayo se han secado por la escasez de lluvia en los contornos de Bolinao. En los pueblos de Zaragoza y Agno el palay está muriendo por los gusanillos que en dialecto de Pangasinán llaman bocboc y cutalo. Además, en dichas dos poblaciones existe la epizotia que causa víctimas en los caballos, carabaos, vacunos y cerdos.

Dagupan.—Debido á las lluvias caídas durante el mes, el palay está bien desarrollado, aunque no es muy abundante. También han sido beneficiadas las plantas de caña-dulce, maíz, plátanos y naranjas. Estas últimas son abundantísimas. El arroz se cotiza en plaza á ₱5.75 el caván.

Tárlac.—En el municipio de Tárlac se están resarciendo de los daños causados por la inundación del mes de Agosto. La Junta Provincial emplea algunas secciones de obreros para reparar el dique interrumpido y los agricultores se ocupan en hacer nueva siembra de palay; además se reconstruyen las casas destruídas por la corriente. Algunos labradores ya han empezado la recolección de cacahuete sembrado en Abril, y el maíz de la segunda siembra hecha en el mes de Junio. Los tubérculos y la caña-dulce se desarrollan bien. Las pérdidas causadas por la epizotia no pasan de 2 ó 3 por ciento en el ganado mayor y en los cerdos. En el municipio de Capas, los gusanos han destrozado completamente algunas siembras de palay. Esta plaga se ha notado únicamente en dicho municipio, encontrándose libres de ella los alrededores. Continúa todavía la epizotia en este pueblo así como también en Camiling.

San Isidro.—Según informes de algunos agricultores y presidentes municipales de los pueblos cercanos, el palay, á pesar de que algunos campos se sembraron á última hora, promete abundante cosecha. Favorecido por las lluvias de este mes, el palay temprano está ya para segarse. Se cosecha caña-dulce, gabe, ates, etc. y se están preparando los campos para la siembra de tabaco.

Olongapó.—El palay de secano ya está maduro, el de regadío todavía está creciendo y parece que sufre algo por la sequía. La cosecha de gabe que se está recolectando es bastante buena.

Balanga.—En la segunda quincena de este mes se ha terminado la cosecha de maíz, el cual, á pesar de haber sido algo perjudicado por las continuas lluvias, ha dado rendimientos regulares. Los campos se presentan regulares.

Silang.—Durante el mes de Septiembre se han recolectado naranjas, plátanos y guayabas en abundancia, y á fines del mes ha empezado la cosecha del palay de secano. Muchos se dedican á la preparación de nuevos terrenos para plantar abacá.

San Antonio, Laguna.—La cosecha del abacá, coco y demás plantas es muy escasa. El palay de secano ya está sazonado y su recolección comenzará en los primeros días de Octubre. En el distrito comprendido entre Santa María y Paete han muerto de epizotia 372 carabaos. Los demás municipios están hasta ahora libres de este azote.

Atimonan.—El estado de las siembras de palay no es satisfactorio por razón de la sequía general, la cual ha sido además causa de que en algunos sitios no se hayan podido labrar todos los terrenos palayeros, si bien la falta de brazos ha influído también en esto. Los cocos siguen en el mismo estado que el mes anterior; pero ha bajado más el precio del cóprax, costando ahora ₱4.35 el pico. El abacá ha sufrido también una baja, mientras el arroz va subiendo cada vez más de precio, pues cuesta ya ₱7.50 el pico. En los primeros días de este mes este pueblo ha sido de nuevo visitado por la langosta, pero afortunadamente sin graves perjuicios hasta el presente. Se han registrado 5 casos de surra en el ganado caballar, muriendo dos de los animales atacados. El mal ha venido de López, pueblo de esta Provincia de Tayabas. También se mueren gallinas. La gente se dedica en general á la siembra del abacá y del coco.

Batangas.—En la primera quincena de Julio último habían aparecido insectos destructores de palay, por lo que se temía se echara á perder la cosecha de este cereal en esta provincia: mas afortunadamente no ha sido así, pues los sembrados destruídos han vuelto á retoñar con más lozanía; y favorecidos por las lluvias de Agosto y Septiembre resultaron mejores que lo que se esperaba y es de creer que sea buena la cosecha que ya se empezó en la primera quincena de Septiembre. La del maíz es abundante, así como la de naranjitas. Estas se exportan semanalmente á esa Capital y se venden aquí á ₱6 el millar. Hace dos meses que reina en esta provincia la epizotia sembrando la muerte en los animales respetados por la misma enfermedad en el año anterior; y á pesar de los esfuerzos del Gobierno, secundados por los municipios, no se ha conseguido extinguirla por completo hasta la fecha, pudiéndose calcular en un 10 por ciento las pérdidas ocasionadas por tan terrible plaga.

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BULLETIN FOR OCTOBER, 1907.

METEOROLOGICAL BULLETIN FOR OCTOBER, 1907.

By Rev. José Coronas, S. J.,

Assistant Director of the Weather Bureau.

GENERAL WEATHER NOTES.

Pressure and temperature.—As we shall see presently, only one typhoon affected the Philippines during the month, and even this one was of relatively small importance and passed very rapidly. As a result the monthly mean of atmospheric pressure is found to have been considerably higher than the mean for October, 1906, and likewise higher than the normal mean for the month as deduced from several years of observations. The reader is referred to the table of mean and extreme values for the first and second class stations and also to the summary of observations made at Manila. The days of maximum pressure over the Islands were the 2d, 3d, and 28th. With a very few exceptions the minimum monthly pressure was registered at all the stations on the 25th or 26th.

At Manila the mean temperature of the month differed from the normal mean for October by —0.4° C. The absolute maximum during the month, as registered at the Central Observatory, was 33.7° C., and the absolute minimum 20.8° C.; their respective dates being October 5 and 17. The smallest daily oscillation of temperature observed at Manila took place on the 26th, on which the thermometer reading varied only between 21.8° and 25.3° C. As usually, the following table contains, besides the pressure data, the monthly means of temperature at the first and second class stations, their departures from the same values for October, 1906, and the absolute maxima and minima:

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS, OCTOBER, 1907.

Station.	Pressure.						Temperature.					
	Mean.	Departure from October, 1906.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from October, 1906.	Highest.	Day.	Lowest.	Day.
	mm.	*mm.*	*mm.*		*mm.*		°*C.*	°*C.*	°*C.*		°*C.*	
Tagbilaran	758.56	+1.03	759.75	2	757.55	25	27	—0.3	33.7	20	22	15
Cebu	59.09	+1.34	60.24	2	58.03	16	26.7	— .4	32.8	6	20.7	18
Iloilo	58.49	+1.15	59.91	2	57.55	8	26.9	+ .6	33.6	5	21	18
Ormoc	58.51	+1.19	59.81	2	57.34	25	25.4	— .8	32.5	28	19	18
Tacloban	58.96	----------	60.25	28	57.62	25	27	----------	33.8	6	23.3	26, 27
Capiz	58.94	+1.26	60.13	2	57.62	26	26.8	+ .1	32	26	----------	----------
Calbayog	59.29	----------	60.61	28	58.01	25	25.4	----------	34.1	1	18.9	18
Legaspi	59.43	+1.89	60.95	28	58.25	25	27.2	+ .3	34	1	21.2	16
Atimonan	59.21	+1.81	60.46	28	56.58	26	27.1	+ .2	34.3	1	19.9	26
Olongapo	58.94	+1.40	59.99	28	55.65	26	26.7	0	34.5	24	21	26
San Isidro	59.24	+2.09	60.50	28	55.82	26	26.7	+ .4	34.7	18	21.5	17
Dagupan	59.03	+1.90	60.21	2, 3	55.91	26	27.9	+1.2	35.5	5, 22	22.5	26
Vigan	59.44	----------	60.67	28	55.98	26	28.1	----------	31.2	10	24.2	23
Aparri	60.31	+2.09	61.90	3	58.93	26	27	+ .8	33.1	5	21.4	14

Precipitation.—As is evident from the following table, only nine stations show a total rainfall above that during October of the preceding year; all the rest fell below it, some of them quite considerably. We may add that at Manila the total amount of rain collected surpassed the normal for October by 30.7 millimeters. In many stations of Luzon the greatest rainfall for a single day took place during the typhoon of October 25 to 27, of which more anon.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF OCTOBER, 1907.

District.	Station.	Total.	Departure from October, 1906.	Rainy days.	Departure from October, 1906.	Greatest rainfall in a single day.	Day.
		mm.	mm.			mm.	
I	Yap	102.1	—105.8	17	— 8	21.6	10
I	Davao	438.2	+229.2	16	+ 8	43.9	31
I	Cotabato	223.8	+ 26.6	13	+ 6	91.9	16
I	Butuan[1]	274.8	--------	17	------	117.9	1
I	Tagbilaran	150.2	+ 40.5	23	+ 9	32.8	11
I	Maasin	130.9	— 62.7	7	—10	49.3	13
I	Cebu	108	—115.4	14	— 3	41.4	12
I	Tuburan	109.5	— 77.8	6	—10	46.2	15
I	Ormoc	176.1	—250.8	21	+ 1	49.8	30
I	Tacloban	204.9	--------	16	------	43.9	26
I	Borongan	198.3	— 3.8	16	— 3	45.7	31
II	Jolo	222.7	+ 26.3	14	0	65	5
II	Isabela, Basilan	200.5	—115.1	13	— 2	41.7	16
II	Zamboanga	53	+ 20.7	7	— 2	20.8	17
II	Dapitan	161.6	+ 98	13	+ 4	45.2	15
II	Dumaguete[2]	50.9	--------	5	------	21.6	30
II	Bacolod	209	— 30.6	16	— 6	57.9	14
II	Iloilo	150.3	—144.7	21	0	20.8	3
II	S. Jose Buenavista[3]	140.2	--------	16	------	45	12
II	Cuyo	324.7	+ 84.1	15	— 6	111.3	2
II	Capiz	234.1	—501.8	16	— 5	39.4	8
III	Calbayog	251	—236.1	25	+ 3	48	12
III	Palanoc	46.5	— 83.7	12	0	14	15
III	Gubat	320.9	+ 78.2	20	+ 8	41.9	28
III	Legaspi	136.1	—260.1	17	— 3	25.1	26
IV	Batangas	146	--------	18	------	54.9	26
IV	Atimonan	271.4	— 50.3	18	+ 1	83	26
IV	Silang[4]	38.4	--------	2	------	33.8	3
IV	S. Antonio, Laguna	325.3	+ 66.4	16	+ 2	47.8	26
IV	Corregidor	126.2	—261	6	— 6	55.9	26
IV	Manila	221.9	—100.8	16	— 4	124.7	26
IV	Balanga	124.9	—422.2	10	— 4	54.4	31
IV	Olongapo	96.8	—283.3	14	— 5	25.4	26
IV	San Isidro	94.6	—269.6	9	— 4	27.7	6
IV	Tarlac	202.3	—163	15	0	64.8	2
IV	Baler	278.4	--------	13	------	76.2	25
IV	Dagupan	69.6	— 74.2	11	— 5	19.3	1
IV	Bolinao	73.3	--------	8	------	28.4	23
IV	Baguio	94.6	—149.1	12	— 4	28.7	6
IV	S. Fernando, Union	24.7	— 66.2	4	— 5	15	27
IV	Candon	8.5	—164.2	4	—10	3	11
IV	Vigan	15.3	--------	6	------	5.3	27
IV	Tuguegarao	142	—374.6	8	— 8	53.1	26
IV	Laoag	35.5	--------	7	------	15.5	6
IV	Aparri	140	—523.4	11	— 6	34.8	25
IV	Santo Domingo	79.3	—539.3	18	— 8	17.8	26

[1] 29 days only. [2] 16 days only. [3] 30 days only. [4] 18 days only.

DEPRESSIONS AND TYPHOONS.

During October Manila announced only two typhoons. One of these recurved in the Pacific at a great distance from the Philippines and Japan; the other, originating likewise in the Pacific, crossed Luzon Island and the China Sea toward the Gulf of Tonking, in which it recurved northeastward. We will say a few words concerning each.

THE TYPHOON OF OCTOBER 13 TO 22, 1907.

The following storm warnings were dispatched by Manila Observatory to Japan, Formosa, and the coasts of China and Indo-China:

October 14, 11.30 a. m.: Typhoon south Guam.

October 17, 8 a. m.: Typhoon about north Yap. Has moved very slowly three days.

October 19, 10 a. m.: Typhoon recurved north Yap and northwest Guam. Appears now about north Guam moving apparently east-northeast.

The further course of the typhoon during the three following days was pointed out by the Observatory in the daily weather notes of the 21st and 22d, from which we copy the passages referring to it:

October 21, 12.15 p. m.: The typhoon in the Pacific appears in this morning's weather map east-southeast of the Bonin Islands, moving probably northeastward.

October 22, 12.30 p. m.: The typhoon in the Pacific inclined its course toward the north and appears in this morning's weather map about east-northeast of the Bonin Islands, moving apparently to north-northeast.

The following tables give the observations made during this period at Guam (Ladrones Islands), Yap (western Carolines), and Chichijima (Bonin Islands). These observations show the passage of the typhoon between Guam and Yap while tracing the first branch of its parabolic track, and between Guam and Chichijima on the second branch thereof. The only discordant elements which appear in these tables are the southwest winds which are reported as having blown on Guam on the 15th at a time when the cyclonic center lay to the southwest of the station. Unless, therefore, the given wind direction has been recorded erroneously, there must have existed a second cause of disturbance, of which, however, we have not received any notice thus far.

METEOROLOGICAL OBSERVATIONS FOR OCTOBER 13 TO 18, 1907.

Yap, western Carolines.

Day.	Hour.	Pressure.	Wind. Direction.	Wind. Force.	Rainfall (total).
		mm.		0-12.	mm.
13	6 a. m.	756.99	NNE	1	-------
	2 p. m.	56.04	NNE	3	-------
14	6 a. m.	56.34	N	2	-------
	2 p. m.	54	NNW	1	-------
15	6 a. m.	54.32	ENE	2	-------
	3 p. m.	52.50	NNW	1	-------
16	6 a. m.	54.80	W	2	-------
	2 p. m.	52.91	W	4	-------
	4 p. m.	52.50	W	4	3.6
17	6 a. m.	54.62	SW	4	-------
	2 p. m.	53.97	SW	4	-------
18	6 a. m.	55.58	SW	1	-------
	2 p. m.	55.39	W	3	-------

Sumay, Guam, Ladrones Islands.

Day.	Hour.	Pressure.	Wind. Direction.	Wind. Force.	Remarks.
		mm.		0-12.	
13	6 a. m.	756.96	ENE	4	Frequent heavy rain squalls during the day and moderate swell.
	2 p. m.	54.94	ENE	6	
14	6 a. m.	55.44	ENE	3	Frequent rain squalls and moderate swell.
	2 p. m.	53.29	ENE	6	
15	6 a. m.	54.31	Calm	-------	Moderate swell.
	2 p. m.	52.47	SW	4	
16	6 a. m.	53.94	S	1	Do.
	2 p. m.	52.74	S	2	
17	6 a. m.	54.61	S	5	Frequent SW squalls and SW moderate swell.
	2 p. m.	54.19	S	5	
	6 p. m.	55.01	SSW	3	
18	6 a. m.	55.41	SSW	3	Lunar halo. Very vivid rainbow at 1 p. m. Band of Ci. extending from NNE to NW, and increased swell.
	2 p. m.	54.37	SW	4	

METEOROLOGICAL OBSERVATIONS FOR OCTOBER 19 TO 22, 1907.

Sumay, Guam, Ladrones Islands.

Day.	Hour.	Pressure.	Wind. Direction.	Wind. Force.	Remarks.
		mm.		0-12.	
19	6 a. m.	755.72	WSW	3	Moderate swell.
	2 p. m.	55.79	SW	3	Do.
20	6 a. m.	57.01	WSW	1	Do.
	2 p. m.	55.77	SW	3	Do.
21	6 a. m.	57.34	Calm	-------	Winds round to NE, very light, and slight swell.
	2 p. m.	56.27	W	1	

Chichijima, Bonin Islands.

Day.	Hour.	Pressure.	Wind. Direction.	Wind. Force.	Weather.	Rainfall.
		mm.		0-12.		mm.
19	6 a. m.	758	NE	4	r.	-------
	2 p. m.	57	NE	4	o.	14
20	6 a. m.	58	NE	4	o.	-------
	2 p. m.	56	NW	4	r.	2
21	6 a. m.	56	N	4	o.	-------
	2 p. m.	54	N	4	o.	-------
22	6 a. m.	58	NW	4	b.	-------
	2 p. m.	59	N	2	r.	-------

The path of this typhoon is represented on Plate I. It seems that the storm recurved before reaching the meridian of Yap. On the 19th it was moving eastnortheast. On the 20th the track began to assume a northeast and north-northeast direction, as announced by the Observatory; but to judge from the Japanese observations of the 23d and 24th, the typhoon either resumed its easterly direction and was lost in the Pacific or it filled up east of Nippon Island.

THE TYPHOON OF OCTOBER 25 TO 30, 1907.

This typhoon may without hesitation be called a typical instance of such storms as give barely sufficient time for advance warnings. Formed, as it appears, in the Pacific east of the Philippines and, probably, not at a great distance from them, the typhoon appeared in the early morning of the 26th east-northeast of Manila, close to the eastern coast of Luzon, without the Observatory having been able to announce its existence the previous evening. It is true, the ordinary daily weather note of 12.15 p. m. on the the 25th said: "The barometers * * * are slightly below the normal over southeastern Luzon, the Visayas, and Mindanao"; but the fact that all these stations reported their barometers still somewhat above 756 millimeters at 2 p. m. of the said day was sufficient reason for abstaining from issuing a typhoon warning at the time. When examining the pressure curve traced by the Fuess barograph at 10 p. m., we were greatly struck by the fall of pressure between 9 and 10 o'clock p. m., which put us on the lookout for its possible signification. Hence we looked at the curve again at 1 a. m. of the 26th, and though at first sight its abnormal character was evident, we judged that there was nothing alarming about it and we could safely expect the morning to decide whether there existed any danger and to take the necessary precautions. But as early as 4 a. m. a mere glance at the barometric curve induced us to lose no time in ordering the fourth storm signal hoisted in Manila and the neighboring provinces. The meaning of this signal is: "The position of the cyclonic center is dangerous for this place, though the peril is not imminent."

PLATE I.

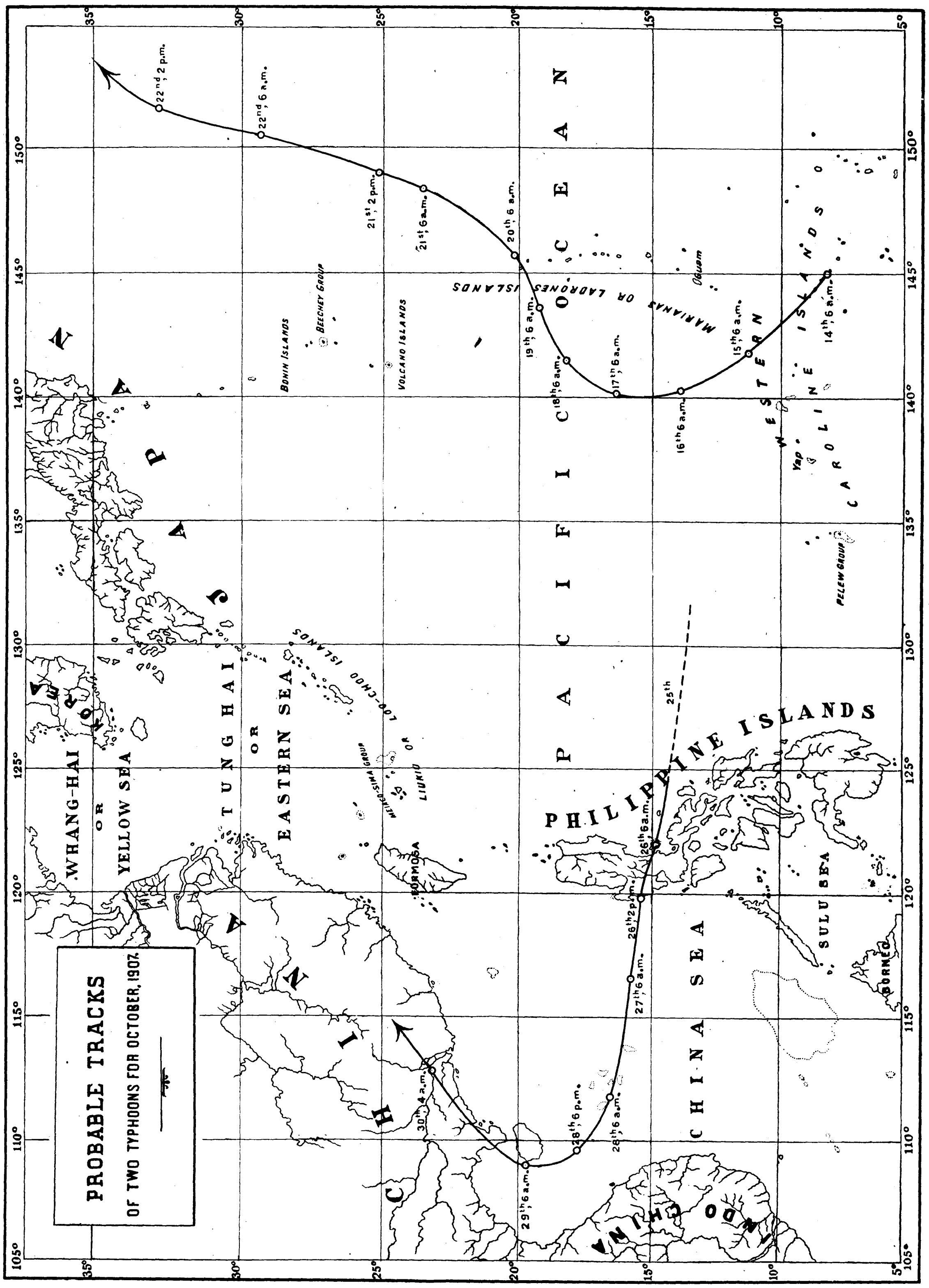

PROBABLE TRACKS
OF TWO TYPHOONS FOR OCTOBER, 1907.
PACIFIC OCEAN
JAPAN
CHINA
CHINA SEA
SULU SEA
PHILIPPINE ISLANDS
WESTERN CAROLINE ISLANDS
MARIANAS OR LADRONES ISLANDS
WHANG-HAI OR YELLOW SEA
TUNG HAI OR EASTERN SEA
KOREA
FORMOSA
LOO-CHOO ISLANDS OR LIUKIU
BONIN ISLANDS
VOLCANO ISLANDS
BEECHEY GROUP
PELEW GROUP
MEIACO-SIMA GROUP
Guam
Yap
BORNEO
INDO CHINA
22nd 2 p.m.
22nd 6 a.m.
21st 2 p.m.
21st 6 a.m.
20th 6 a.m.
19th 6 a.m.
18th 6 a.m.
17th 6 a.m.
16th 6 a.m.
15th 6 a.m.
14th 6 a.m.
25th
26th 6 a.m.
26th 2 p.m.
27th 6 a.m.
28th 6 a.m.
28th 6 p.m.
29th 6 a.m.
30th 4 a.m.

PLATE II.

CURVES OF THE SPRUNG-FUESS BAROGRAPH AT MANILA

During the Typhoon of October 26th, 1907.

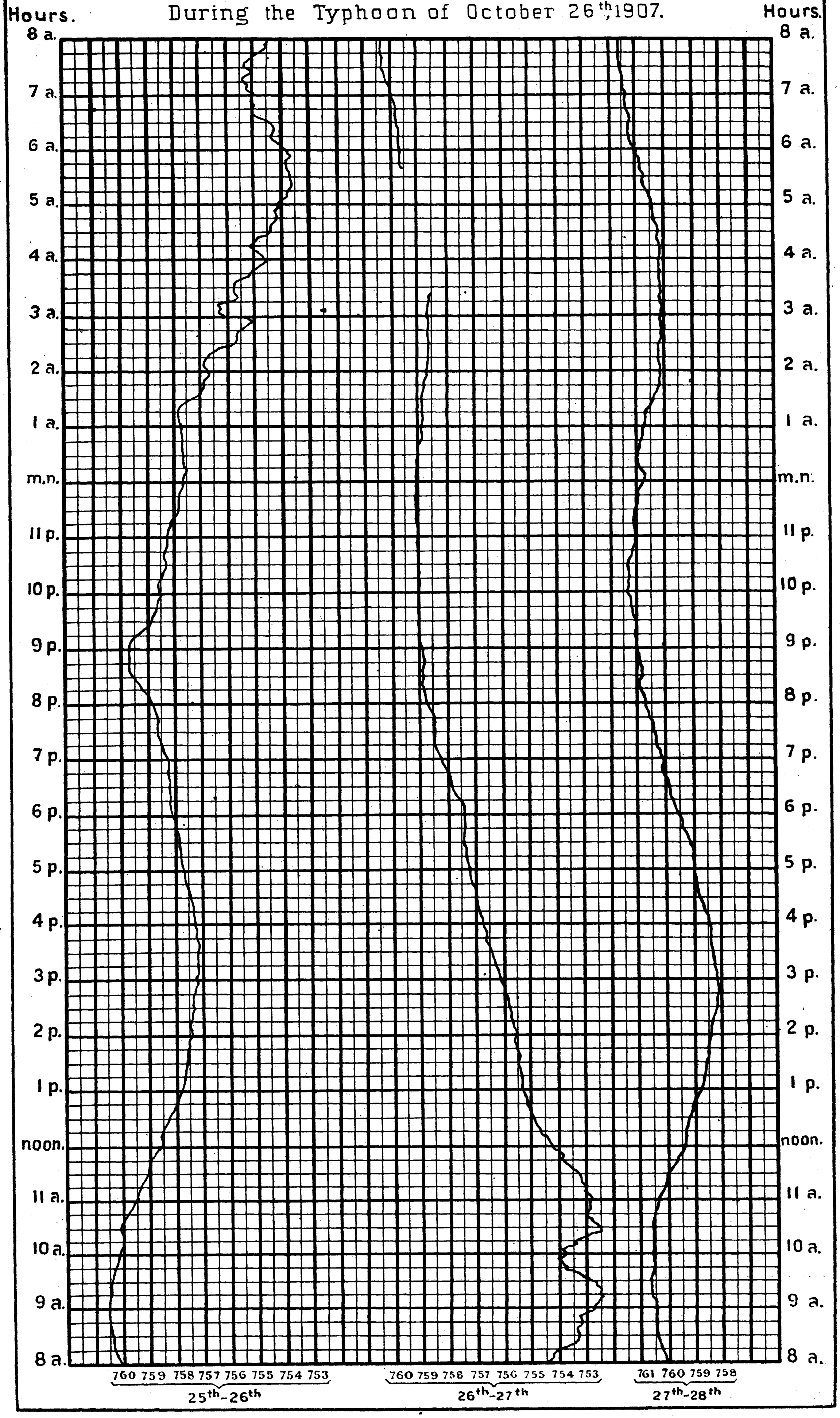
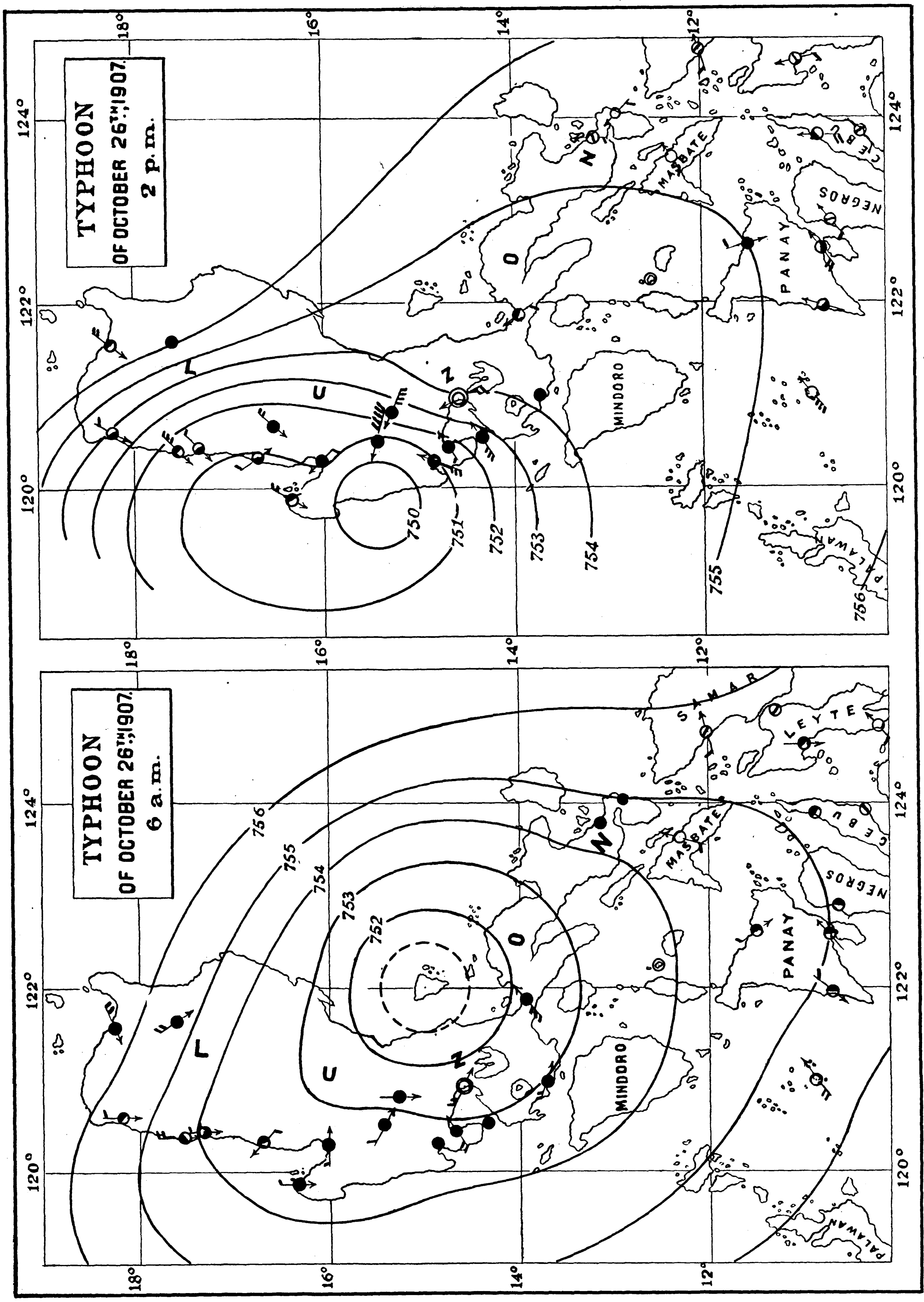


PLATE III.



N.B. The barometer has been corrected to standard gravity.

Plate II is a faithful reproduction of the barographic curves from 8 a. m. of the 25th to 8 a. m. of the 28th, the first curve on the left being the one to be considered. As is clearly shown by this record, the barometer began to fall in a decided manner at 1.22 a. m., describing a curve which is characteristic of an approaching typhoon which will pass close to the place of observation. There was no time to be lost. As soon as the 6 a. m. observations arrived from the provinces we made the weather map for said hour, which located the center of the typhoon to the east-northeast of Manila, close to the eastern coast of Luzon. Hence notice was given that the cyclone would pass at a short distance north of the capital, toward the China Sea.

At 4 p. m. the Observatory cabled to Tokio, Shanghai, Taihoku, Hongkong, and Phulien:

Typhoon crossed Luzon north Manila and south Dagupan moving very rapidly in a westerly direction.

The correctness of this statement will appear to the reader if he carefully examines the observations of Atimonan, Manila, Olongapo, San Isidro, Tarlac, and Dagupan, contained in the subjoined table. Of these stations the first three were south of the track, the remainder north of it. Plate III exhibits the distribution of the isobars at 6 a. m. and 2 p. m. of the 26th.

Day and hour.	Atimonan.					Manila.					Olongapo.				
	Pressure.	Wind.		Rainfall.	Weather.	Pressure.	Wind.		Rainfall.	Weather.	Pressure.	Wind.		Rainfall.	Weather.
		Direction.	Force.				Direction.	Force.				Direction.	Force.		
Oct. 25:	*mm.*		*0–12.*	*mm.*		*mm.*		*0–12.*	*mm.*		*mm.*		*0–12.*	*mm.*	
2 a. m.	759.10	N	0		o.	759	NE	1			758.49	N	0		c.
6 a. m.	58.75	SW	0		c.	59.29	NNE	0		o.	59	Calm			o.
10 a. m.	59.78	N	2		c.	60.09	N	1		c.	60.08	NE	1		o.
2 p. m.	57.57	N	3		o.	57.41	WSW	1		o.	57.15	ENE	2		o.
6 p. m.	58.35	N	3		o.	58.17	NE	1		o.	57.88	NNW	0		o.
10 p. m.	57.69	N	1	29.7	o.	58.50	NNE	1	10.6		58.69	Calm		22.5	o.
Oct. 26:															
2 a. m.	56.43	W	2		r.	56.75	ENE	0		u.	56.72	Calm			d.
6 a. m.	53.99	SW	5		q.	53.95	W by N	4		q.	55.33	Calm			d.
9 a. m.						52.77	W	6		q.	54.71	NNW	2		o.
10 a. m.	56.22	SSW	3		q.	53.81	W	4		q.	54.03	NW	0		o.
11 a. m.						52.84	SSW	8		q.	53.66	NW	0		d.
Noon						54.33	S by W	8		q.	52.90	SSW	1		r.
2 p. m.	56.13	SE	2		r.	55.58	SE by S	3		r.	52.66	SSW	6		q.
6 p. m.	57.49	SE	1		d.	57.30	E	0		o.	56.83	Calm			d.
10 p. m.	59.21	SE	0	83	o.	58.90	SSE	1	124.7		58.34	Calm		25.4	o.
Oct. 27:															
2 a. m.	59.02	SW	1		o.	58.60	E	1			58.28	ENE	0		o.
6 a. m.	59.78	SW	1		d.	59.57	Calm			c.	58.84	ENE	0		c.
10 a. m.	60.94	E	1		c.	60.64	SSE	1		c.	60.31	ENE	1		o.
2 p. m.	58.81	ENE	1		o.	58.51	SE	1		c.	58.28	ENE	0		c.
6 p. m.	59.49	NE	0		c.	59.52	SE	1		c.	59.28	ENE	0		o.
10 p. m.	61.28	SW	1		b.	61.30	SE	1			61.08	Calm		16.8	c.

Day and hour.	San Isidro.					Tarlac.					Dagupan.				
Oct. 25:															
2 a. m.	59.05	Calm			c.						58.94	Calm			b.
6 a. m.	59.31	Calm			c.		W by N	1		o.	59.19	Calm			o.
10 a. m.	60.31	SE	0		c.						59.92	SE	1		o.
2 p. m.	57.87	NNE	1		o.		SE	1		c.	57.74	NNW	2		o.
6 p. m.	58.13	NNE	1		o.						57.96	NNW	2		d.
10 p. m.	58.87	NNE	0		o.				.3		58.52	Calm		.3	o.
Oct. 26:															
2 a. m.	56.65	ENE	0		u.						56.84	Calm			d.
6 a. m.	54.48	N	0		d.		WNW	1		o.	55.48	W	1		d.
10 a. m.	53.28	NNW	5		o.		NW	3		o.	55.10	NW	1		d.
Noon	51.36	NNE	8		o.		NNE	6		d.	53.01	NW	2		o.
1 p. m.	52.63	ENE	8		o.		E	7		d.	52.60	NNW	2		d.
2 p. m.	54.14	ESE	8		q.		E by S	10		q.	52.91	SE	2		p.
4 p. m.							SE	5		q.	54.04	SE	6		q.
6 p. m.	57.62	SE	1		q.		SE	2		d.	56.85	S	4		q.
10 p. m.	58.78	Calm		24.9	c.		ESE	0	22.8	o.	58.30	S	2	10.4	o.
Oct. 27:															
2 a. m.	58.84	Calm			c.						58.26	S	2		o.
6 a. m.	59.86	ESE	0		c.		SW	1		b.	59.19	SE	1		c.
10 a. m.	60.68	SE	1		c.						59.93	SE	2		c.
2 p. m.	58.15	SE	1		c.		SE	1		d.	57.92	SSE	2		c.
6 p. m.	59.54	ESE	0		o.						59.06	S	2		o.
10 p. m.	61.43	E	1		d.				20.1		61.04	SE	1		b.

Luckily the cyclone either was not yet fully developed when it penetrated into Luzon, or it lost some of its intensity while crossing the Island, because we have received no report of serious damage from any one of the stations situated within the affected territory. While traversing the Island of Luzon, the meteor had a translatory velocity of 15 miles per hour. The barometric minima were observed at the following hours: Atimonan, 6 a. m.; Manila, 9.10 a. m.; San Isidro, 11.50 a. m.; Olongapo, 1.10 p. m., and Dagupan, 2.10 p. m.

Manila Observatory announced the further course of the typhoon in the daily weather notes of October 27 to 30, as may be seen from the following passages transcribed from them:

October 27, 12.10 p. m.: The typhoon which crossed Luzon Island yesterday is situated now in the China Sea about halfway between the Philippines and Indo-China.

October 28, 12.15 p. m.: According to the reports just received from Indo-China, the typhoon which crossed Luzon Island day before yesterday was situated early this morning over the China Sea, approaching central Indo-China between 15° and 16° latitude. It continues moving westward and it seems it has gained in development while crossing the China Sea.

October 29, 12.30 p. m.: According to a cablegram received from Phulien Observatory (near Haiphong), the typhoon was situated yesterday evening about 200 miles southeast of Haiphong moving northwest. It seems that the cyclonic center began to recurve to north before reaching Indo-China; it lies apparently at present in the neighborhood of Hainan Island moving in a northerly direction.

October 30, 12.15 p. m.: The typhoon seems to have entered the Continent yesterday evening about north of Hainan Island.

The observations made at the Lamko light-house, northwest coast of Hainan, which are given in the following table, show very clearly the recurving of the typhoon west of the said island. During an interval of about fifteen hours the storm center passed successively south, west, and north of Lamko.

METEOROLOGICAL OBSERVATIONS AT LAMKO LIGHT STATION, OCTOBER 27 TO 30, 1907.

Day and hour.	Pressure.	Wind.		Clouds.			Rainfall.	Weather.	Sea.	Remarks.
		Direction.	Force.	Amount.	Form.	Direction.				
Oct. 27:	*mm.*		*0–12.*	*0–10.*			*mm.*			
3 a. m	760.6	NE	3	----	----	----	----	b. c. m.	----	
6 a. m	60.6	NE	3	7	Cu.	NE	----	b. c. m.	C.	
9 a. m	61.9	NE	4	7	Ci.	SE	----	b. c. m.	C.	
Noon	60.8	NE	4	7	Ci.	SE	----	b. c. m.	M.	
3 p. m	59	NE	4	9	Cu.	NE	----	c. o.	M.	
6 p. m	59.1	NE	5	9	Cu.	NE	----	c. o.	M.	
9 p. m	59.5	ENE	5	----	----	----	----	o. m.	----	
Midnight	59.1	NE	6	----	----	----	----	o. m.	----	
Oct. 28:										
3 a. m	57.4	NE	7	----	----	----	----	o. m.	----	
6 a. m	56.9	NE	7	10	N	NE	----	o. m. r.	R.	4^h 20^m, rain set in.
9 a. m	56.7	NE	7	10	N	NE	20.8	o. m. r.	R.	
Noon	55.5	NE	7	10	N	NE	----	o. m. p.	R.	
3 p. m	52.5	NE	8	10	N	NE	----	o. m. p.	R.	
6 p. m	51.1	ENE	8	10	N	NE	----	o. m. p.	R.	
9 p. m	50.4	ENE	9	----	----	----	----	o. m. p.	----	
Midnight	47.4	E	10	----	----	----	----	o. m. p.	----	
Oct. 29:										
3 a. m	46.3	E	10	----	----	----	----	o. m. p.	----	
6 a. m	45.8	SE	8	10	N	SE	----	o. m. p.	R.	
9 a. m	45.5	S	8	10	N	S	127	o. m. p.	R.	
Noon	48	WSW	7	10	N	SW	----	o. m. p.	R.	
3 p. m	51.6	W	7	10	N	W	----	o. m. p.	R.	
6 p. m	54.4	NW	6	10	N	NW	----	o. m. p.	R.	
9 p. m	56.7	NW	5	----	----	----	----	o. m. p.	----	
Midnight	57.3	NW	5	----	----	----	----	o. m.	----	11^h, rain passing off.
Oct. 30:										
3 a. m	57.3	NW	5	----	----	----	----	o. m.	----	
6 a. m	58.5	NW	5	10	S.-Cu.	NW	----	o. m.	M.	
9 a. m	60.8	NW	4	10	S.-Cu.	NW	25.4	o. m.	M.	
Noon	60.5	WNW	3	9	Cu.	NW	----	c. o.	M.	
3 p. m	59	WNW	2	7	Cu.	NW	----	b. c. o.	C.	
6 p. m	58.8	NW	2	9	Cu.	NW	----	c. o.	C.	
9 p. m	60	N	2	----	----	----	----	c. o.	----	
Midnight	60	N	1	----	----	----	----	b. o.	----	

With reference to the last part of the track of this typhoon, Hongkong Observatory issued the following announcements:

October 29, 11.55 a. m.: The typhoon is situated to the west of Hainan Straits. It appears to have moved northwards since yesterday and to have a tendency to recurve to the NE.

October 30, 11.55 a. m.: The typhoon was recurving to the NE yesterday, and is now situated to the NW of Hongkong.

The same plate which shows the path of the typhoon of the Ladrones and western Carolines discussed in the first place, contains likewise that of the typhoon of Luzon which we have just described.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[ϕ=14° 34′ 41″ N; λ=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

Date.	Pressure, mean.	Temperature. Open air.[2] Mean.	Maximum.	Minimum.	Underground. 0.25 meter. 8 a. m.	0.25 meter. 2 p. m.	0.50 meter. 8 a. m.	0.50 meter. 2 p. m.	1.50 meters. 8 a. m.	2.50 meters. 8 a. m.	Relative humidity, mean.	Vapor pressure, mean.	Evaporation. Free exposure, total.	Shelter, total.
	mm.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	Per ct.	mm.	mm.	mm.
1	759.69	27.4	33	23.2	28.9	30.3	29.4	29.6	28.5	28.4	82	22	5.4	2.6
2	60.29	26.8	31.8	23.2	29	30.1	29.4	29.5	28.4	28.3	84.7	22	4.1	2
3	60.42	26	28.7	23.7	28.9	29.4	29.2	29.4	28.4	28.4	89.9	22.4	2.1	1.2
4	60.18	26.4	30.2	23.6	28.5	29.2	29	29.2	28.4	28.4	88.1	22.5	2	1.3
5	59.92	27	33.7	22.6	28.5	29.8	29	29.3	28.4	28.4	84.9	22.3	5	2.6
6	59.43	26.5	33.2	22.3	28.2	29.7	29	29.3	28.3	28.4	85.9	22	3.8	2.1
7	58.85	26.9	31.9	22.2	28.5	29.7	29.1	29.2	28.5	28.4	82.6	21.6	4.4	2
8	58.47	25.8	29.1	23.3	28.6	29.2	29	29.1	28.4	28.3	88.6	21.8	3.5	1.9
9	59.25	27.2	33	23.1	28.4	29.7	29	29.1	28.5	28.5	83.2	22	5.2	2.2
10	60	26.7	33.6	22.1	28.3	29.7	29	29.1	28.5	28.4	86.3	22.3	3.6	2.1
11	59.11	26.3	31.3	22.3	28.6	29.1	28.9	29	28.5	28.5	89.7	22.7	3.3	1.7
12	58.95	25.9	28.3	22.7	28.1	28.8	28.8	28.8	28.5	28.4	90	22.2	1.5	1.1
13	59.15	25.8	30.1	22.2	27.8	28.3	28.5	28.7	28.5	28.4	88.3	21.7	2	1.1
14	59.05	25.8	29.8	22.1	27.5	28.8	28.4	28.7	28.4	28.3	85.7	21	3.8	1.9
15	58.67	25.4	30.6	21.8	27.6	28.2	28.4	28.4	28.5	28.6	89.8	21.6	2.4	1.7
16	58.36	26.6	31.9	22.8	27.7	28.6	28.4	28.5	28.6	28.7	83.2	21.4	3.6	1.8
17	58.62	26.4	33	20.8	27.7	29.1	28.5	28.7	28.5	28.4	79.5	19.9	5.7	2.8
18	58.84	27.1	32.3	21.9	28	29.5	28.5	28.9	28.5	28.5	82.1	21.8	5.1	2.7
19	58.58	27.7	32.3	23.7	28.5	29.8	28.8	28.9	28.4	28.5	81.5	22.3	4.7	2.3
20	58.68	26.8	32.4	21	28.4	30	28.9	29.1	28.4	28.3	79.6	20.7	5.4	3
21	59.29	27	32.5	22.2	28.8	30.1	29.1	29.3	28.5	28.6	84.1	22.1	6	2.7
22	59.32	27.1	32.7	22.8	28.8	30.2	29	29.4	28.5	28.5	80.2	21.2	4.8	2.4
23	59.15	26.2	33	21.8	28.6	30.1	29	29.3	28.4	28.5	81.6	20.5	5.3	2.8
24	59.32	25.9	32.4	21.2	28.4	29.4	29	29.1	28.5	28.5	84.6	20.9	4.9	2.6
25	58.71	26.3	31	22.8	28.2	29.2	28.9	29	28.4	28.3	81.3	20.5	4.6	2.2
26	56.10	23.6	25.3	21.8	27.7	25.8	28.6	27.8	27.8	28	94.1	20.2	1.5	1.5
27	59.66	27	32.5	22.1	26.7	28.4	27.9	28.2	28.4	28.4	81.5	21.4	3.7	2
28	60.33	26.9	33	22.5	27.5	29	28	28.5	28.4	28.4	82.7	21.5	4.9	2.2
29	59.68	27.6	33.4	22.9	28	29.9	28.3	28.9	28.4	28.5	81.2	22.1	5.4	2.5
30	59.23	27.4	32.5	23	28.5	30	28.6	29	28.5	28.5	82.6	22.3	4.7	2.6
31	59.46	27.2	32.7	23.1	28.7	30	28.8	29.1	28.5	28.6	85.4	22.8	5	2.6
Mean	759.19	26.5	31.7	22.5	28.2	29.3	28.8	29	28.4	28.4	84.7	21.7	4.1	2.1
Total													127.4	
Departure from normal	+0.51	—0.4	+0.7	—0.6							+1.2	—0.1	—13.6	

Date.	Wind. Prevailing direction.	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Clouds. Amount, mean.	Prevailing form and its direction. Upper.	Lower.	Sunshine.	Rainfall.	Miscellaneous.
		Km.	Km.		0-10.			h. m.	mm.	
1	E	177.5	19.5	WSW	8	Ci.-S.	Cu. SE, by S, S	8 20	0.1	≡° Ω a. ☈⌒ d p.
2	E	138.5	14	W	6.2	Ci. E	Cu. N by E	6 55	.1	≡° Ω a. ☈ d p.
3	ENE, SE	96	10.5	NE	9.9	Ci.-S. E	Cu.-N. NE by N	0 35	.2	●° a. d a. p.
4	E	60	6	ENE	9.6	A.-Cu. NNW	S.-Cu. ENE	0 05		p a.
5	NNE, SE	140.5	18	NW	7.7	A.-Cu. SW	Cu. E by S	8 20	22.6	☈² ●² ⌒ p.
6	NE	122	9.5	WNW	4.7	Ci.-S.	Cu. E	6 55		≡° a. ☈ ⚡ p.
7	NE, NNW	103.5	8	S	4.6	A.-Cu. ENE	Cu. E	7 55		≡° Ω☈ a. ⌒ ⊤ p.
8	N, ENE	150	15	N	9.8	A.-S.	Cu.-N.	0 00	1.6	≡° d ●° a.
9	NNE	138.5	16.5	ESE	6.7	Ci.-S. NNE	Cu. E by N	8 00	8.9	≡° Ω a., ↙ ● ⊤ ⚡ p.
10	NE	133	15	N by W	7.8	Ci.	N.-cf. E, ENE	6 20	7.9	≡° Ω a. ☈ ● p.
11	NE	106	14.5	W by N	7.4	A.-Cu.	Cu. ENE	5 20	16	≡° Ωd a. ☈ ↙ ● p.
12	S	92.5	11	NW	9.8	A.-Cu. ESE	Cu.-N. NE	1 15	6.9	● a. p.
13	Variable	73.5	5.5	ESE	7	A.-Cu. ESE	S.-Cu. E	1 40		≡° a. ☈° p. d
14	SSE, NE	147.5	18	NNE	10	Ci.-S. NW by N	S.-Cu. E	0 15		≡° Ω a. ⚡ p.
15	Variable	83	15.5	NNE	8.3	Ci. N	S.-Cu.	4 20	1.2	≡ d a. ☈° p. ●
16	Variable	127	10.5	SE	4.8	Ci.	Cu. ENE	9 10	2.5	≡° a. ● ⌒ p.
17	WSW, E	140.5	17.5	W by N	5.2	Ci. SE by E	Cu. ENE	7 55		≡° Ω a.
18	SW quad.	150.5	14	W by S	4.9	A.-Cu. NE	Cu. N by E	7 50	.1	≡° a. ●° ☈° p.
19	NE, ESE	118.5	11.5	NNW	3.7	Ci.	Cu. NE	11 00	2	≡° ● a.
20	W	90	10.5	WNW	1.5	Ci.-S.	Cu.	10 35		≡ a.
21	ESE, WNW	98	14	W by N	3.4	A.-Cu.	Cu. ENE	9 25		≡° a. d° p.
22	S, E	84.5	12	WNW	3.1	A.-Cu. E by N	Cu. E	9 25		≡° a. ⚡° p.
23	ENE	116.5	12	WSW	5.1	A.-Cu. ENE	Cu. E by N	5 45		≡° a. ⊤ d p.
24	W, ENE	141	14.5	NW	4.1	A.-Cu.	Cu. E by N	9 30	16.5	≡° a. ●² ⌒ p.
25	NE	215	29	NNE	8.8	Ci.-S. E	Cu. NE quad.	6 25	10.6	○° a. ● a. p.
26	SE	452.5	55	S by W	10	Ci.-S.	N. WNW	0 00	124.7	↙ ●² a. ● p.
27	SE	221.5	18	SE	6.9	Ci.	Cu. SE by E	10 00		≡° a. ⚡ p.
28	E	101.5	10.5	NNE	3.4	Ci.-S. SE by S	Cu. E by S	8 30		≡° Ω a.
29	SE	132.5	15	SE	3.4	Ci. S by E	Cu. E by S	9 45		≡° Ω a. ⚡° p.
30	WNW, NNW	128	14	WNW	3.2	Ci. E	Cu. E	9 35		≡° a. ⌒ ☈ p.
31	WNW, NW	114.5	17.5	WNW	6.1	Ci. S	Cu.-N. NE	7 55		≡° Ω a. ⌒ ⊤ p.
Mean		135.3	15.2		6.3			6 25		
Total								199 00	221.9	
Departure from normal		—42.5			—0.3			+24 46	+30.7	

[1] All the mean values given in this table are deduced from hourly observations.
[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

TAGBILARAN.

[ϕ=9° 38′ N; λ=123° 53′ E; barometer above sea, 21.8 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rain-fall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	759.45	28.7	33.3	24.4	72.8	NNE, SE	0.8	4.8	A.-S.	Cu. W	------	↯ p.
2	59.75	27.2	29.9	23.6	79.8	NNE	1.2	7.8	A.-S.	Variable	19.5	● a. d ↯ p.
3	59.66	27.5	32.7	23.7	79.2	Variable	1.3	5.5	Ci.-S. E, ENE	Cu.-N. E	.3	d ◯° ↯ p.
4	59.43	28.3	31.3	25.4	75	NNE, SE	1.3	4.8	Ci.-S.	Cu.-N. E	------	⊤² p.
5	59.14	27.9	32.4	23.5	75.5	NNE, SE	1.2	3.7	A.-S.	Cu.-N. NE, E	.8	d ⊤² a.
6	58.72	27	30.5	23.7	80.2	SE, N	1	5.7	A.-S.	Cu.-N. NE	4.3	●° a. ⊤² d² p.
7	58.06	26.6	30.4	24	83	N, SE	1	8.3	A.-S.	N. E	12.5	⌈↯² p.
8	57.78	27	31.5	22.9	81.7	N, SE	1.3	8.8	A.-S.	Cu.-N. Variable	2	◯° a. ⌈↯ p.
9	58.40	26.8	32	23.1	84.3	N	1	7.5	A.-S.	S.-Cu.	3.1	⌈↯ p.
10	58.76	27.2	31.8	23.8	80.8	NNE, N	1.2	6.5	A.-S.	Cu.-N. E	.2	d° p.
11	57.96	26.5	32.5	23.4	84.2	NNE	1.2	8.3	A.-S.	Cu.-N. E	32.8	⌈↯² p.
12	58.01	26	30.2	23	83.7	NNE	1.2	9.5	A.-S.	Cu.-N. E	21	d a. ⌈↯ p.
13	58.59	26	30.3	22.4	84.3	NNE	1	9	A.-S.	S.-Cu. E	------	↯ p.
14	58.52	26.7	31.3	23.4	83.2	NNE, SE	1.2	8.8	A.-S.	Cu.-N. E	4	⌒ ⌈↯ p.
15	58	26.4	32.6	22	84	N	1.3	9.3	Ci.-S. SE, E	Cu.-N. W	11.4	◯ ⌈↯ p.
16	57.60	26.1	30.7	22.4	85	NNE	1	8.8	A.-S. E	Cu.-N. NE	1.2	●° p.
17	57.68	26.7	30.7	23.4	81	NNE, SE	1.3	7.3	Ci.-S. E	Variable	1.3	d² a. ⊔² p.
18	58.13	27	32.5	23	77.5	NNE, SE	1.5	4.5	Ci.-S.	Cu. NE	------	
19	58	27.2	33.5	23.6	77	Variable	1.2	4.2	------	Cu.-N. NE, W	------	
20	58.11	26.7	33.7	23.5	81.5	NNE, SE	1.3	5.8	------	S.-Cu. NE	8.9	⊤ ● ⌒ ⊔² p.
21	58.82	26.6	31.7	22.8	81.8	NNE, SE	1	5.8	A.-S.	Cu.-N. E	------	d° a.
22	58.69	26.8	30.9	23.4	81.2	Variable	1.2	5.7	------	Cu.-N. W, NE	8.6	p² a.
23	58.46	26.7	31	23.2	81.5	NNE, SE	1	4.3	A.-S.	Cu.-N. E, W	3.6	p a.
24	58.31	26.4	33.5	22.5	81.2	N, SE	1.2	4.8	Ci.-S., A.-S.	Cu.-N. NE	.8	d ⌒² p.
25	57.55	27.3	32.7	23.9	81.5	Variable	1.3	7.3	A.-S.	Cu.-N. NE, W	------	d° ↯ ⊤ p.
26	58.10	27.8	31.1	24.5	76	Variable	1.5	6.2	Ci.-S.	Cu. SW	------	↯ p.
27	59.58	27.5	31.8	22.9	75.8	N	1.2	7.8	A.-S. NE	Cu.-N. E	9	● ⊤ a. ↯ p.
28	59.66	27.6	31.7	24.3	78.1	N	1	4.7	A.-S. NE	Cu.-N. E	.2	d a.
29	59.26	27.6	32.5	24	78.7	NNE	1.2	5.8	Ci.-S.	Cu.-N. E	.5	⊤² ↯² d° p.
30	58.61	27	33.5	23.6	81.8	SE, N	1.2	7.2	A.-S. E	Cu.-N. E	3.3	d° a. ⌈↯ p.
31	58.43	27.3	31.4	23.7	81.3	NNE, N	1.2	6.7	Ci.-S. NE	Cu.-N. E	.9	⊤² d° ↯ p.
Mean	758.56	27	31.8	23.5	80.4	------	1.2	6.6	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	150.2	

CEBU.

[ϕ=10° 18′ N; λ=123° 54′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	759.81	26.6	32.7	24.2	83.5	SSE	0.2	4.7	Ci. E	Cu. WSW	2.5	Ω² ≡ ⌈↯
2	60.24	26.5	31	23.5	81.2	NE, ESE	.3	6.3	Ci.-S. E	Cu. NE, NNE	2.5	Ω² ≡ ↯ ↙ ●°
3	60.15	27.1	31	23.4	79.8	S, NE	.3	4.3	Ci. E	Cu. SE, ENE	------	Ω² ↯ ≡
4	59.98	27.4	31	24.7	80	SE, E	.3	3.3	Ci.	Cu. E	.2	Ω² ≡ p.
5	59.79	27.2	31.6	24.4	80.7	ESE, E	.3	2.5	Ci.	Cu. ENE	------	Ω² ≡
6	59.32	27.1	32.8	23.3	79.6	SE, NW	.3	4.2	Ci. E	Cu. NE	------	Ω ⊤ ↯ ≡
7	58.58	26.8	31	24.3	81.6	SE, S	.3	6.7	Ci.-S. W, WNW	Cu.-N. NNE	------	Ω² ↯ ≡ ◯
8	58.38	27	31.5	22.9	82.5	S	.7	6.7	Ci.-S. NE	Cu.-N. SSE	------	↯ d°
9	58.95	27.1	31.3	24	81.8	NE quad.	.5	4.7	Ci.-S. SE	Cu. E	3.6	Ω² ⌈↯ ≡
10	59.35	27.4	31.5	24.6	80.2	E quad.	.5	3.3	Ci.	Cu. ENE	------	Ω ≡ ∞
11	58.51	27.5	31.8	24.7	81.7	E	.7	5.7	Ci.-S., Ci. NE	Cu. E	4	Ω² ≡ ↯ p.
12	58.59	27.1	30.5	24	82.8	E	.5	6.8	Ci.-S. NE	Cu. E	41.4	Ω² ↯ ≡ ↙ ● ⊤
13	58.98	26.4	32.3	22.5	84.2	S, E	.3	4.8	Ci. NE	Cu. ENE	------	Ω² ↙ ↯
14	59.13	26.4	------	23.9	87.3	SSE, NW	.3	6.2	Ci. E	Cu.-N. N	1.5	Ω² ≡ ⌈↯
15	58.51	26	31.5	23.8	86.9	NW, ENE	.3	8	Ci.-S. N	Cu., Cu.-N. WNW	22.1	●° ≡ ⌒ ↙ ⌈↯
16	58.03	25.5	29.9	22.7	85.5	E	.7	6.3	Ci.-S. E	Cu.-N. NNW	2	≡ d ↙
17	58.25	25.8	30	22.3	81.8	E	.5	3.8	Ci. E	Cu. NNE	------	Ω² ≡ ∞
18	58.66	26	30.5	20.7	78.5	E	.5	2.8	Ci. E	Cu. NE	------	Ω² ≡
19	58.54	26.3	31	21.8	78.3	E	.3	2.3	Ci.	Cu. NNE	------	Ω² ≡
20	58.70	26.9	31.9	22.6	81.2	E, SE	.3	3.2	Ci.	Cu. NE	------	Ω ≡
21	59.17	26.4	31.8	23.2	84.8	SE, NW	.3	4.5	Ci.	Cu. NNE	------	Ω ≡ ⊤
22	59.14	26.2	32.1	23.2	83.8	SE, WNW	.3	3	Ci.	Cu. N	------	Ω² ≡ ⊤
23	59.01	26.3	31	22.5	82.8	ENE, E	.3	3.7	Ci.	Cu. N	------	Ω² ≡
24	58.97	27	30.8	23.6	81	E	.3	4.7	Ci.	Cu. ENE	------	Ω ≡
25	58.05	25.9	31.5	23.5	86.2	SE, NW	.3	5.7	Ci.-S. E	Cu. N	3.8	Ω ≡ p.
26	58.57	27.1	31.5	23.1	81.1	S, SW	.7	4.8	Ci. NNE	Cu. SW	------	⊕ Ω ≡ ∞
27	60.10	27	31.7	24	84.1	SW	.2	4	Variable	Cu. SSE	7.1	Ω² ≡ ⌈↯
28	60.20	27.1	30.6	23.7	80.6	E, ENE	.5	3.3	Ci.	Cu. E	7.9	Ω² ● ≡
29	59.68	27.4	32	24.3	79.8	ENE, E	.3	3.2	Ci.	Cu. E	------	Ω ≡ ∞ ↯
30	59.23	26.5	31.5	23.6	86.3	S, E	.3	5.2	Ci. ESE	Cu. NE	8.4	Ω ⌈↯ ≡
31	59.23	27.6	30.7	24.7	81.2	E, NNE	.5	3.5	Ci.	Cu. ENE	1	Ω ⌈↯ ≡
Mean	759.09	26.7	31.3	23.5	82.3	------	.4	4.6	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	108	

[1] All the mean values given in these tables are deduced from six daily observations.

METEOROLOGICAL DATA, ETC.—Continued.

ILOILO.

[ϕ=10° 41′ N; λ=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Prevailing form and its direction. Lower.		
	mm.	°*C.*	°*C.*	°*C.*	*Per ct.*		*0-12.*	*0-10.*			*mm.*	
1	759.48	26.7	29.8	24.1	82.2	SW	0.7	7.7	A.-Cu. ENE	Fr.-N. SW	1.5	p a. ϟ d p.
2	59.91	25.7	31.6	23	86.8	NE	.8	7.3	Ci.-S.	Cu.	3.3	⛈ p.
3	59.67	26.1	32.3	22.6	85	E, SW	.7	8.2	Ci.-S.	Cu.	20.8	● p.
4	59.32	28	33	24.2	77.5	NE, ENE	.5	7	Ci.	Cu. NE, NNW	------	⊤ p.
5	59.11	27.9	33.6	24.5	79.5	N, NE	.8	4.5	Ci., Ci.-S.	Cu.	------	ϟ p.
6	58.83	26.6	32.1	23.8	82.8	NE	.7	6.2	Ci.-S.	Cu.	1	⊤ ● p.
7	58.18	27.1	31.9	23.6	81.5	N, NE	.5	6.8	Ci.-S.	Fr.-N.	2.8	● a. p. ϟ ○° ⊕
8	57.55	26.7	29.3	23.7	84	Variable	.7	9.7	Ci.-S.	Variable	6.6	● ϟ ○ ⊕ a p.
9	58.18	27.4	32.5	24.1	83.2	NE	.5	8.5	Ci.	Cu.	20.1	⛈ ○ p.
10	58.71	27.7	32.4	23.7	80.2	N	1	4.5	Ci.-S. SW	S.-Cu. NE	------	
11	57.87	27.5	32.7	24.5	78.3	N, NE	1.3	7.3	Ci.-S. E	Cu.	9.6	Ω° a. ● p.
12	57.80	25.9	31.4	23.4	86.2	N, E	.8	9.5	Ci.-S.	Cu.-N.	15.5	● p.
13	58.30	26.5	32	23.5	83.3	NE	.3	9.5	Ci.-S. ENE	Variable	1.5	● a. ⛈ p.
14	58.49	26.3	29.9	23	83.8	SW	.7	8	A.-Cu. SE	N.	1.5	●° ⌒° a. ⛈ p.
15	58.25	25.8	29.3	24	85.1	NE	.7	9.2	A.-Cu. WNW, SE	N.	.2	d p.
16	57.57	26.3	31.9	23.3	83.7	NE	.3	9	A.-Cu. E	N. N	1.3	d a ●° p.
17	57.65	27	31.8	23	77.5	ENE, E	.8	6	Ci.-S.	Cu. NE	.2	d a.
18	58.14	25.9	31.6	21	79.7	Variable	.7	2.8	Ci.	Cu.	4.3	Ω a. ● p.
19	57.99	26.6	32.7	22.7	81.5	N, W	.7	3.7	Ci.	Cu., N.	.2	d p.
20	58.13	26.7	32.5	22.7	79.8	Variable	.5	3.3	Ci.-S.	Cu.	------	Ω a.
21	58.50	27.2	32.7	23	79	N	.3	3.2	Ci.	Cu.	------	Ω a.
22	58.57	26.6	32.8	22.8	83.4	Variable	.3	3.8	Ci.-Cu.	Variable	13	Ω a. ● p.
23	58.53	27	32.1	22.9	78.8	N, NE	1	2.5	Ci.	Cu.	------	
24	58.29	27.2	32.5	23.2	77.6	N, NE	1.3	2.7	Ci.	Cu. NE	------	Ω a.
25	57.67	26.6	32.5	23	78.7	N	.7	8.7	Ci.-S.	Cu. NNE	15.2	Ω a. ● p.
26	57.70	26.9	30.1	23.6	81.4	SW, S	1	6.8	Ci.-S.	Cu. SW	------	⊽ ○ ⊕
27	59.44	26.9	31.7	23	79.8	SW	.3	6.7	A.-Cu. ESE	S.-Cu. S	17.3	Ω ≡° a. ● p.
28	59.46	27.5	32.5	23.9	77.2	N, E	1	4.2	Ci.-S.	Cu. NE	------	
29	59.08	28	33	24.5	77.3	NE	.8	5.5	Ci.	Cu. ENE	------	Ω a. ●° ϟ p.
30	58.58	27	33.1	24	81.5	E	.7	5.3	Ci.	Cu.	7.6	⛈ p.
31	58.38	27.7	33.4	24	78.8	N	1	6.3	Ci.-S. NE	Cu.	6.8	d a. ● p.
Mean	758.49	26.9	32	23.4	81.1	------	.7	6.3	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	150.3	

ORMOC.

[ϕ=11° 00′ N; λ=124° 36′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Force (mean).	Clouds. Amount (mean).	Upper.	Lower.	Rainfall.	Miscellaneous.
	mm.	°*C.*	°*C.*	°*C.*	*Per ct.*		*0-12.*	*0-10.*			*mm.*	
1	759.45	26.1	30.9	23	88.2	Variable	0.5	5	Ci.	Cu. ENE	32	⛈ a. p.
2	59.81	25.4	30.5	22.2	89.2	N	.3	6.5	Ci. E	Cu. NE	1	⛈ p.
3	59.66	25.4	30.5	21.2	86.5	SSE	.3	4.5	Ci. ESE	Cu.	------	Ω² ○° a. ⛈° p.
4	59.62	24.8	32	21.7	90.2	Variable	.3	4	Ci. NE, E	Cu.	5.8	Ω a. ⛈ p.
5	59.08	25.7	32.1	20.5	83.4	N	.5	2.7	Ci.	Cu. ENE	------	ϟ° Ω² a. ⛈° p.
6	58.56	25.9	31.4	21.3	84.5	Variable	.5	3.8	Ci.	Cu. ENE	3	Ω a. ⛈ p.
7	57.94	25.1	29	21.2	87	Calm	------	6	Ci.-S.	Cu. NE	1.8	Ω d a. ● ϟ p.
8	57.70	25.4	30.4	22.2	87.7	S, SSE	.2	6.2	Ci. NW	Cu. SE, ESE	8.1	Ω a. ⛈ p.
9	58.38	25.9	32	21.2	83.1	Variable	.3	3.7	Ci. SW	Cu. E	3.3	Ω² a. ● ϟ p.
10	58.84	25.3	29.7	21.8	88.2	N quad.	.3	2.5	Ci.	Cu. ENE	5.3	Ω² v a. ● ϟ p.
11	58.08	25.4	30.5	22.1	88.5	Variable	.3	6	Ci.	Cu. ENE	12.4	Ω ⛈ a. p.
12	57.91	24.8	30.3	21.9	89	WSW, ESE	.3	5.7	Ci.-S.	Cu. E	3.8	ϟ Ω² ●
13	58.32	24.8	30.8	21	88.2	SSE, N	------	5.5	Ci. SE	Cu. E	3.6	Ω a. ⛈ p.
14	58.48	26	30.4	21.8	87.5	Variable	.3	8.2	Ci. ESE	Cu. SSW, NW	2.8	⛈ p.
15	58.03	25	30.1	22.2	91	S, NNE	.2	9	Ci. NE	Cu. ENE	12.2	d a. ⛈ p.
16	57.42	24.7	30	20.8	89.2	Variable	.3	5.7	Ci. ENE	Cu. NE	9.1	Ω² ○° ⊤ ● ψ
17	57.62	25	31.6	19.6	80.3	Variable	.3	3.5	Ci. E, ENE	Cu. NE	------	Ω² ○ a.
18	58.07	25	30.7	19	80	Variable	.3	3	Ci. SE, E	Cu.	------	Ω a.
19	57.92	25.9	31	21.2	82.7	S	.3	2.8	Ci.	Cu. NE	------	Ω a.
20	58.11	25.7	30.7	21.2	84.7	SSE	.5	3.2	A.-Cu.	Cu. NE	------	Ω a.
21	58.57	25	31.3	20.5	84.3	Variable	.5	3.7	Ci.	Cu.	5.6	Ω a. ⛈ p.
22	58.62	25.8	30.7	20.9	82	SSE	.3	2.7	Ci.	Cu. NE	------	Ω a. d° ϟ p.
23	58.46	25.6	31.2	21.1	83.8	Variable	.3	3.5	Ci.	Cu. E, NW	8.4	Ω a. ● p.
24	58.25	25	31.6	20.3	85.2	N	.5	5	Ci. ESE	Cu. ENE	------	Ω² a. d ⊤ ψ p.
25	57.34	24.8	30.5	20.5	84.3	N	.3	8	Ci. ENE	Cu. NNW	------	Ω a.
26	57.89	25.8	30.6	21.9	84.8	N, SE	.7	5	Ci.	Cu. S, SE	.5	ψ Ω ●° a. ϟ p.
27	59.50	25.5	31.8	21.3	83.7	Variable	.5	4.3	Ci.	Cu. ESE	.5	ϟ Ω a. ⊤ d p.
28	59.54	25.9	32.5	21	82	Variable	.5	2.5	Ci.	Cu. E	------	ϟ Ω² d° a.
29	59.16	25.9	31	22.3	86	N quad.	.2	4.2	Ci.	Cu. NE	3.3	ϟ d a. p.
30	58.71	24.8	31.6	20.9	87.5	SW, N	.2	2.8	Ci.	Cu. E	49.8	ϟ Ω² a. ⛈ p.
31	58.67	24.8	30.9	21.6	91.5	Variable	.2	5.3	Ci. SE	Cu.-N. ESE	3.8	Ω² a. ⛈ ⌒ p.
Mean	758.51	25.4	30.9	21.3	85.9	------	.3	4.7	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	176.1	

METEOROLOGICAL DATA, ETC.—Continued.

TACLOBAN.

[ϕ=11° 15′ N; λ=125° 00′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	759.77	27.1	32.5	24.4	82.2	NE	0.8	5.5	Ci.-S. SSE	Cu.-N. SW	------	ϟ p.
2	60.20	27	32	24	81.7	NE	1	5.3	Ci.-S. NE, SE	Cu. WSW	2	Φ a. ⌈ϟ p.
3	59.98	27.3	32.5	23.8	82	NW quad.	.7	4.3	Ci.-S. SSE, W	Cu. S	------	
4	60.20	26.8	32.7	24.9	83.7	NE	.7	5	Ci.-S.	Cu. SSE, SSW	------	d° a.
5	59.70	27.7	32.8	23.5	78.5	Variable	.8	2.3	Ci.-S.	S.-Cu., Cu.	------	⊤° p.
6	59.17	27.1	33.8	24.3	79.8	NE, NW	1	4.5	Ci.-S. NW	S.-Cu.	.8	⌈ϟ° p.
7	58.38	26.3	28.9	24	85.5	NNW, S	.3	8.5	------	N. E, NNE	11.2	● a. p.
8	58.27	26.6	30.4	24	86	N	.8	7.3	------	Cu.-N. E	15.2	● ⌒ a.
9	59.02	27.8	31.7	24.3	79.3	E	1.2	2.7	Ci.-S. SSW	Cu. E	------	○² ϟ p.
10	59.43	28.1	32.8	24.3	76.6	N, NW	.8	3.8	Ci.-S.	S.-Cu.	------	ϟ p.
11	58.57	26.5	31	24	85.3	WNW, NW	1	6.8	Ci.	N. E	24.6	● a. p. ⌒°
12	58.50	25.5	30	23.8	87.5	N quad.	1	7	Ci.-S.	Cu.-N. E	24.6	ϟ ●² a.
13	58.73	26.8	30.7	24.3	82.2	NNW	1	4.7	Ci.-S. SSE	Cu.	1.3	≡ Ω ○² a. ● Φ p.
14	58.66	26.7	32.5	24	81.7	N	1	4.7	Ci.-S. E	Cu.-N. NNE	38.1	ϟ a. ●² p.
15	58.27	26.2	30.8	23.7	87.3	N, NNW	1.3	5.5	Ci.-S. SSE	Cu. ENE, N	4.8	● Φ² ɷ p.
16	57.84	26.4	31.2	24	84	N, NNW	.8	5.7	Ci. S	Cu.-N. WNW, NNE	.8	≡° d a. ●° Φ p.
17	58.02	27.1	33	23.7	78	NW, N	1.2	5	Ci. SSE	Cu. NE	------	Φ² Ω° ○° ⊕° a.
18	58.35	27.4	33.3	23.5	77.5	NNW	.8	4.2	Ci.-S. S, SSE	Cu. NE	------	Ω² a.
19	58.29	27.5	32.7	24.5	78.5	N	.8	3.8	Ci.-Cu.	S.-Cu. NE	------	
20	58.38	27.5	33.5	24.2	76.7	Variable	1.2	3.2	Ci.-Cu.	S.-Cu.	------	
21	58.96	27	33	23.9	79.2	WNW	1.2	4	Ci.-S.	Cu.-N. NE	------	ϟ p.
22	58.92	27.7	33.5	23.4	75.7	N	1	3.5	Ci.-S.	Cu. NE	------	Φ° a. ⌒ p.
23	59.01	27.3	33	23.7	76.6	N	1.2	2.8	------	Cu. NE	------	
24	58.77	26.8	32.5	24	80.8	WNW, NW	.8	5.5	Ci.-S. S	Variable	10.4	● p. Φ² ɷ°
25	57.62	26.9	30.5	23.8	79.2	NW	1.3	6.5	Ci. ESE, SSE	Cu. NNE	------	○² ⊕ ɷ² Φ²
26	58.21	27.3	32.2	23.3	78.8	SSE	.8	5	Ci.	Cu. SSW	43.9	ϟ ●² p.
27	60.13	26.6	32.4	23.3	83.3	SE	.8	5.2	Ci.-S. SW	Cu. ESE	------	Φ² ○° a. ⌒ p.
28	60.25	27.3	32.5	24	82.7	N, S	1	2.8	------	Cu. SSE	16.5	Φ° ● a. p.
29	59.74	27.4	31.7	24.3	84.7	WNW	1	3.3	Ci.-Cu. ESE	S.-Cu.	2.3	●° a. p. ϟ
30	59.20	27.4	32	24.6	81.2	NW, SE	1.2	3.7	------	Cu.-N. SE	1	d a. p.
31	59.12	26.7	32	24.2	86.7	E	.7	5.8	Ci.-S. SE	Cu.-N. ESE	7.4	Ω d a. ⌈ϟ p.
Mean	758.96	27	32.1	24	81.4	------	.9	4.8	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	204.9	

CAPIZ.

[ϕ=11° 35′ N; λ=122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	759.96	26.3	30.7	------	87.7	SW	0.5	5.7	Ci.	Variable	------	ϟ° p.
2	60.13	26.7	31.6	------	86.2	Variable	.3	5.7	Ci.	Cu.-N. SW, N	------	ϟ° p.
3	59.86	26.9	30.4	------	87.7	NE, NNE	.3	5.7	Ci.-S.	Cu.-N. NE	------	⊤° ϟ° a. p.
4	59.90	26.8	30.6	------	89.5	Variable	.5	8	Ci.-S.	Cu.-N. NE	------	d° a.
5	59.64	26.8	30.6	------	87.2	NE	.2	6.5	Ci.	S.-Cu. NE	2	≡² ● a.
6	59.43	26.7	30.6	------	88.5	Variable	.3	7.5	Ci.-S.	Cu.-N. NE	10.4	≡² ●² a.
7	58.92	27	30.9	------	83.8	NW	.3	8.7	Ci.-S.	N.	22.9	⌈ϟ p.
8	58.36	25.8	27.6	------	88.2	WSW	.3	10	Ci., Ci.-S.	N.	39.4	⌈ϟ² a. d° p.
9	58.87	27.3	30.9	------	85.5	E	.3	8	Ci., Ci.-S.	Cu.-N. NE	------	d° a. p.
10	59.20	28	30.7	------	83.2	E	.5	6.3	Ci.	Cu.-N. NE	------	ϟ² p.
11	58.48	27.8	30.9	------	83.2	ENE	.8	7.5	Ci.-S.	Cu.-N. NE	29	↙° ⌈ϟ p.
12	58.63	26.8	30.6	------	89	SE, NNE	.3	8.7	Ci.-S.	N. SE	4.6	d ⌒ a. ●° ϟ p.
13	58.96	26.2	30.2	------	90.5	NE	.2	7.7	Ci.-S.	Cu.-N. NE	.8	d a. ϟ² p.
14	59.44	26.4	29.6	------	90.2	Variable	.7	9	Ci.-S.	N.	14.2	● a. ⊤ ⌒ ϟ° p.
15	58.84	25.7	29.7	------	89	SE	.7	7.5	Ci.-S.	Cu.-N. Variable	5.8	●° a. d° ϟ° p.
16	57.92	26.3	30.7	------	84.7	NNE, NW	.3	4.5	Ci.	S.-Cu. SE	------	Ω ϟ° a. p.
17	58.07	26.2	30.2	------	84.3	E, NNW	.3	5.5	Ci.	S.-Cu. NE	3	●° ≡° a.
18	58.46	26.2	30.5	------	84.2	NW	.3	5.2	Ci.	Cu. NE	------	Ω a. ϟ° p.
19	58.27	26.8	30.5	------	87.5	WNW	.5	5.8	Ci.	Cu.-N. NW, NE	25.6	●² ⌒ a.
20	58.48	26.7	30.5	------	85.8	NE, N	.3	5.3	Ci.	Cu.-N. NE	------	d° a. ϟ° p.
21	59.04	26.8	30.4	------	84.2	NNE	.3	4.8	Ci.	Cu.-N. NE	1.3	d a.
22	59.03	26.9	30.2	------	83.3	NNE	.3	4.7	Ci.	Variable	1.3	d a. ϟ p.
23	58.97	26.2	29.3	------	86.7	Variable	.3	7.2	Ci.	N. NE	35	●² a. ϟ° p.
24	58.71	26.7	30.3	------	84.2	ENE	.3	5.3	Ci.	Cu.	------	≡° a. d° ϟ° p.
25	57.86	26.7	30	------	84.2	N	.3	7.8	Ci.-S.	Cu.-N. SE, NE	------	Ω° a.
26	57.62	26.5	32	------	88.3	NNW	.7	8	Ci.-S.	Cu.-N. NW	5.3	● a. d° ϟ° p.
27	59.76	26.6	30.6	------	89.8	SSW, E	.2	6.2	Ci.	Cu.-N. SW, NE	------	Ω ≡° a. ϟ° p.
28	60.01	27.1	30.7	------	86.2	E, ENE	.8	5.8	Ci.	Cu. E	33.5	⌈ϟ a. ϟ° p.
29	59.12	27.6	31.2	------	85.7	SSE, E	.3	5.2	Ci.	Cu. SE, NE	------	d° a. ϟ p.
30	58.71	27.2	30.6	------	86.7	NE	.5	5.5	Ci.	Cu. NE	------	d° a. ϟ p.
31	58.57	27.9	31	------	83.5	E, NE	.5	5.7	Ci.	Cu.-N. NE	------	ϟ² p.
Mean	758.94	26.8	30.5	------	86.4	------	.4	6.6	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	234.1	

METEOROLOGICAL DATA, ETC.—Continued.

CALBAYOG.

[ϕ=12° 04′ N; λ=124° 36′ E; barometer above sea, 4.1 meters; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	759.94	26.5	34.1	22.4	87	N, W	1	6.3	Ci.	S.-Cu.	1.8	●° ⚡ p.
2	60.55	24.5	34	21.6	93.3	N	1	6.8	Ci.	S.-Cu.	20.1	⛈ p.
3	60.34	25.5	30.8	21	88.8	N, WNW	1	7.7	Ci.	S.-Cu.	.2	d a. ⚡ p.
4	60.56	25.2	32	21.5	89.8	N, NNE	1	7.2	Ci.	Cu.-N.	------	d ⚡ p.
5	60.13	25.6	34	20.9	86.7	N	1	4.3	Ci.	S.-Cu.	1	d ⚡ p.
6	59.40	25.5	32	20.6	87	NNE	1	5	A.-Cu.	S.-Cu.	.8	p. ⚡
7	58.70	24.8	29.4	21.4	95.5	NNE	1	8.8	Ci.-S.	Cu.-N.	33.5	● a. ⊤ ⚡ p.
8	58.73	25.5	30.5	22.4	90.8	N, E	1	6.8	Ci.-S.	S.-Cu.	------	⚡ p.
9	59.30	25.8	31.6	21.5	89.2	N	1	6.5	A.-Cu.	S.-Cu.	1	p a. d ⚡ p.
10	59.59	26	31.4	22	90.2	N, W	1	5.3	A.-Cu.	S.-Cu.	3.3	d a. ●° ⚡ p.
11	58.89	25.1	30	22	94	N, WNW	1	8	Ci.-S.	Cu.-N.	2	d a. ●° ⚡ p.
12	58.72	24.9	30.8	22	92.3	N	1	7.3	Ci.	S.-Cu.	48	● a. d ⚡ p.
13	59.24	24.8	30.4	21.6	94	N	1	7.7	Ci.-Cu.	Cu.-N.	18	● a. d ⚡ p.
14	59.06	26	31	21.4	88.8	N, NW	1	6.8	Ci.-S.	S.-Cu.	.2	d a. ⚡ p. ω°
15	58.52	24.6	29.6	22	95	N	1	7.2	A.-Cu.	S.-Cu.	8.4	d a. p. ⚡
16	58.15	24.4	30.3	20.7	90.2	N	1	6.7	Ci.	S.-Cu.	------	d° ⚡ ω° p.
17	58.37	25.2	31	20	84.5	N	1	5.8	Ci.-S.	S.-Cu.	------	◯°
18	58.91	24.4	32	18.9	89	N, WNW	1	5	Ci.	S.-Cu.	26.4	● ⚡ p.
19	58.74	24.9	31	19.4	89.2	N	1	5.2	Ci.	S -Cu.	9.9	● ⚡ p.
20	58.82	25	30.2	21	90.7	N	1	5.5	A.-Cu.	S.-Cu.	8.9	● a. p. ⌒° ⚡ p.
21	59.29	25.1	31.4	20.4	90.3	N, WNW	1	4.7	A.-Cu.	S.-Cu.	9.6	p ⚡ p.
22	59.41	25.2	30.4	20.5	90.3	N	1	4.7	A.-Cu.	S.-Cu.	17.8	● ⌒° ⚡
23	59.31	25.2	31.4	20.7	89.5	N	1	5.7	A.-Cu.	S.-Cu.	11.7	● ⚡ p.
24	59.26	25	30.8	20.6	90	N	1	5.5	Ci.	S.-Cu.	1.3	p ⚡ p.
25	58.01	25.2	30	20.3	89.5	N, W	.8	8	Ci.	S.-Cu.	------	d° ⚡ p.
26	58.24	27.8	31.4	23.2	79.5	WSW	1	6.2	Ci.	S.-Cu.	------	⚡ p.
27	60.32	26.4	32	22	87.7	N	.8	5.7	Ci.	S.-Cu.	3	⛈ p.
28	60.61	25.6	30.5	21.7	90.8	N	1	6.5	A.-Cu.	S.-Cu.	6.1	p ⊤ ⚡
29	60.10	25.5	30.5	21.9	91.8	N	1	5	Ci.	S.-Cu.	7.6	p a. p. ⚡
30	59.44	25.2	31	21.4	90.3	N	1	5.2	A.-Cu.	S.-Cu.	2	p a. ●° ⚡ p.
31	59.47	25.5	31.4	21.5	90.8	N	1	5.7	A.-Cu.	S.-Cu., Cu.-N.	7.6	⛈
Mean	759.29	25.4	31.2	21.2	89.9	------------	1	6.2	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	251	

LEGASPI.

[ϕ=13° 09′ N; λ=123° 45′ E; barometer above sea, 4.3 meters; gravity correction not applied, —1.77 mm.]

	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	759.82	27.6	34	23.4	83.2	W	0.3	2.7	------------	Cu.-N. W	8.6	≡ a. ⛈ p.
2	60.29	26.9	32	22.5	82.3	ESE, W	.3	4.5	Ci.	Cu. WNW, NW	------	≡ a. ⚡ p.
3	60.30	26.8	31.4	22.5	83.1	ENE, ESE	.3	3.3	Ci.	Cu.-N. NW	------	≡ a. d ⊤ ⚡ p.
4	60.39	27.8	31.7	23.8	79.7	ENE	.7	4.7	Ci.-S.	Cu. Variable	------	≡ a.
5	60.27	27.3	30.8	24.1	81	NNE, E	.5	4.8	Ci.-S.	Cu. E, NE	------	≡ a. ⚡° p.
6	59.64	27.4	31.7	21.9	78.5	E	.5	.8	Ci.	Cu. ENE	2	≡ p a. ⚡ p.
7	59.02	27.4	32.3	23.5	81.7	NNE	.7	5.7	Ci., A.-Cu.	Cu.-N. ENE	6.4	p° a. ● p.
8	58.76	26	31	23.7	88.2	Variable	.7	6.7	Ci.-S.	Cu.-N. ENE, SE	21.8	d a. ⛈ p.
9	59.58	28.2	31.5	23.7	77.5	ENE	1.5	2.8	------------	Cu.-N. NE, ENE	1.5	● p.
10	59.85	27.8	31.5	24.9	81.7	NE	.8	2.5	Ci.	Cu.	2.5	d a. ⚡° p.
11	59.04	26.9	31.3	24.5	84.7	NE, NNE	1.3	7.3	Ci.	Fr.-N. NE	11.4	d² a. ⛈ p.
12	58.98	27	31.1	23.1	82.5	E, NNE	.5	4.7	A.-Cu. E	Cu. E	8.4	● a. ⚡ p.
13	59.27	26	30.3	23.5	88.5	NE	.7	9.2	Ci.	Fr.-N. ENE	18.3	● a. p.
14	59.18	27	31.6	23.3	84	W, NNE	.3	5.3	Ci.-S.	Cu. SW	------	d° ⚡ p.
15	58.83	25.7	30.2	23.1	86.3	E	.3	5.8	Ci.-S.	N.	4.8	● a.
16	58.43	26.3	31.7	21.2	80	E quad.	.5	.7	Ci.	Cu. NE	------	≡ a.
17	58.63	27.2	32.1	22.5	74.8	NNE	.7	2.7	Ci. ENE	Cu.	------	≡ a.
18	58.82	27.1	32.5	21.5	77.7	ENE	.5	2.8	Ci.	Cu. NE	------	≡ a.
19	58.87	27.1	32.2	21.6	74.5	NNE, E	.5	1.7	Ci. E	Cu.	------	≡ a.
20	58.87	27.6	32	22.4	77.4	E	.7	.7	------------	Cu.	6.1	≡ a.
21	59.43	28.4	32.5	22.8	73.3	NNE	1	.7	A.-Cu.	Cu. NE	------	≡ a.
22	59.50	27.3	33.3	21.8	78.2	N, E	.5	.8	Ci.	Cu. N	------	≡ a. ⊤° p.
23	59.32	27.3	32.1	21.6	77.1	NE quad.	.7	.3	------------	Cu. ENE	------	≡ a.
24	59.38	28.2	33	24.4	73.5	NE	.8	1.3	------------	Cu.	2	● p.
25	58.25	26.8	32.1	23.5	77.5	NNE, E	1	6.2	Ci. SE	Cu.	7.6	≡ a. ● ⚡° p.
26	58.26	25.7	31.8	21.3	85.7	W, S	.3	5.5	A.-Cu. SW	Cu.-N. SW	25.1	● a. ⚡ p.
27	60.42	27.5	31.9	22.4	80.5	E	1	1.8	A.-Cu.	Cu. SE	------	≡ a. ⚡° p.
28	60.95	27.3	31	23.6	82.3	NE	1	4.3	Ci.	Cu. E, SE	6.1	d a. p.
29	60.38	27.8	31.4	24.5	80.8	NNE	1	3	Ci.	Cu. ENE	.5	d a.
30	59.73	27.8	32.4	22.7	79.5	NE, NNE	.8	1.2	Ci.	Cu. E	------	≡ a.
31	59.86	28	31.5	26	80.8	NNE	.2	4.2	Ci.-S., Ci.	Cu. ENE	3	●° a.
Mean	759.43	27.2	31.8	23.1	80.5	------------	.7	3.5	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	136.1	

METEOROLOGICAL DATA, ETC.—Continued.

ATIMONAN.

[ϕ = 14° 00′ N; λ = 121° 55′ E; barometer above sea, 7.8 meters; gravity correction not applied, —1.74 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.					Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.		Lower.			
	mm.	°*C.*	°*C.*	°*C.*	*Per ct.*		*0–12.*	*0–10.*					*mm.*	
1	759.54	27.8	34.3	23.1	85.7	SW	1	5.2	Ci.-S.		Cu., Cu.-N.	S	1.3	≡ Ω a. ☈ p.
2	60.06	27.2	32.7	23.4	86.9	SW, NW	1.2	5.5	Ci.	E	Cu.		11.9	● ≡ ϟ°
3	60.21	26.1	28.3	23.6	89	N	1.2	8.5	Ci.-S.		N.		13.7	● a. p. ϟ°
4	60.09	26.4	28.7	23.4	89.5	NNW, N	1	7.5	Ci.-S.		S.-Cu.		------	d° a. p.
5	60	27.5	31.5	24	86.3	NNW	1.3	5.8	Ci.		Cu.	NE	------	ϟ° p.
6	59.35	27.8	31.9	23.9	84.5	NNW	1.7	5.2	Ci.		Cu.	NE	------	d a. p.
7	58.74	27.8	31.8	25.2	85.7	N, quad.	1.7	8	Ci., Ci.-S.		S.-Cu.	NE	4.5	d a. p. ϟ°
8	58.48	26.5	30.8	24.5	91.8	NNW, NW	1.3	9.2	Ci.-S., Ci.		N.		23.5	● a. p. ϟ°
9	58.98	26.9	32.5	22.8	89.5	SW, NE	1.3	3.5	Ci.		Cu.		9.6	d Ω ⌒ ϟ
10	59.95	27.7	31.9	25.2	87.7	NE, NNE	1.5	7.2	Ci.		Cu.	NE	8.6	d a ☈ p.
11	59.23	27	30	24.3	88.5	NE	2.2	7.5	Ci.-Cu.		S.-Cu.	NE	12.7	● ⊤° a. d ϟ p.
12	58.94	26.3	27.4	24	88.8	N, quad.	1.7	9	Ci.-S.		S.-Cu.	N	6.4	d a. ϟ p.
13	59.08	26.4	29.5	24	89.8	NNE	.5	8.3	Ci.-S.		S.-Cu.	NE	------	Ω d° ϟ°
14	59.53	25.6	27.7	23.1	90.5	N, quad.	1.3	9.3	Ci.-S.		S.-Cu.	NE, N	8.9	Ω ●°
15	58.93	26.2	31.7	24.2	90.8	NNE	.7	8.5	Ci.		N.	N, NE	23.1	● ⊍
16	58.50	26.8	31.3	22.6	85.2	NE	1.3	5.5	Ci.		Cu.	NE	7.6	≡ ●° ⊍
17	58.40	28.2	33.2	25.5	80.2	NE, NNE	1.3	3.2	Ci.		Cu.	NE	------	Ω ⊤ ⊍
18	58.92	26.4	30.9	23.9	89.8	NE, NNW	1.2	5	Ci.		Cu.	N	8.4	p ϟ ⊍
19	58.66	27.5	33	23.3	84.8	NE	.7	3.5	Ci.		Cu.	NE, N	------	⊍ Ω d° ϟ
20	58.74	27.6	32.4	23	83.5	NNW	.8	1.7	Ci.-Cu.,	ESE	Cu.	NNE, NE	------	Ω ⊍
21	59.27	28.2	33.5	24	82.8	NE	.7	4.2	A.-Cu.		Cu.	NE	------	⊍ Ω
22	59.30	28.8	33.2	26	76.5	NE	.7	3.3	Ci.-Cu.		Cu.	NE, N	------	⊍ Ω
23	59.26	27.6	32.1	24.5	85.2	N	1	5.8	A.-Cu.	N	S.-Cu.	N	10.4	⊍ Ω p.
24	59.41	27.8	33.7	23.2	84.1	N	1.5	4	Ci.		Cu.	NE	------	⊍ Ω
25	58.54	26.8	31.5	23.9	87.7	N	1.5	8.5	Ci.	NE	S.-Cu.	NE	29.7	●
26	56.58	24.6	27.4	19.9	86.3	SE	2.2	10	Ci.-S.		N.	SW	83	↙ ● a
27	59.89	26.8	32.3	22.5	85.2	SW	.8	6.5	Ci.		S.-Cu.	S	------	⊍ d° ϟ
28	60.46	26.6	32.3	22.1	88.2	SW, NE	.8	3.7	Ci.		Cu.	E	------	⊍ ϟ Ω d°
29	59.80	27.2	33.3	23	88.3	SW, ENE	.2	3.3	Ci.	E	Cu.		------	⊍ Ω ≡ ⌒ ϟ
30	59.36	27.8	31.9	24.1	85.2	NE	.5	3.5	Ci.		Cu.	NE	5.6	● ϟ
31	59.18	28.3	32.6	25.8	83.2	NE	1.3	6	Ci.	SSE, SE	Cu.	NE, E	2.5	Ω d ϟ
Mean	759.21	27.1	31.5	23.7	86.5	------	1.2	6	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		271.4	

OLONGAPO.

[ϕ = 14° 49′ N; λ = 120° 15′ E; barometer above sea, 3.5 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Force (mean).	Clouds. Amount (mean).	Upper.		Lower.		Rainfall.	Miscellaneous.
	mm.	°*C.*	°*C.*	°*C.*	*Per ct.*		*0–12.*	*0–10.*					*mm.*	
1	759.31	26.5	28.9	23.6	84.7	SSW	0.3	7.5	Ci.-S.		Cu.	SE	4.1	☈ a.
2	59.94	26.4	29.4	23.5	85.3	E, SSW	.3	7.3	Ci.-S.	E	Cu., Cu.-N.		5.4	≡ ○° a. ☈ p.
3	59.97	27.3	32.4	23.3	79.7	ENE, NE	.2	8.7	Ci.-S.		Cu.	E, NE	------	
4	59.77	27.1	32.2	23.2	81.1	NE	.3	7.7	A.-Cu.	E	Cu.	E	.2	d a. ⊕ p.
5	59.63	27.4	34	23.6	79.5	ENE	.2	7	A.-Cu.	WNW	Cu.	ESE	1.3	ϟ a. ⊤ d p.
6	59.28	26.8	30.8	23.5	81.7	E	.6	6.8	Ci.-S.		Cu.	SE	------	ϟ a. ⊤ p.
7	58.54	27	31.6	22.5	80.2	Variable	.3	4.3	Ci.-S.		Cu.		5.1	☈ p.
8	58.24	25.8	28.5	23.8	87.5	E, ENE	.2	9.3	Ci.-S.		Cu.-N.		1.8	d a.
9	59.13	26.1	30.7	23	85.3	E, NE	.3	5.3	Ci.-S.	N	Cu.		2	ϟ ≡ a. ☈ p.
10	59.73	27	33.2	22.2	78.5	NE quad.	.4	5.7	Ci.-S.	E	Cu.		------	ϟ Ω ○
11	58.86	27	31.9	22.4	80.1	Variable	.4	7.8	Ci.-S.		Cu.-N.	ENE	5.8	☈ p.
12	58.52	26.6	31	22.5	79.9	NNE, NE	.5	8.5	Ci.-S.	E	Cu.		------	
13	58.81	26.6	31.9	22.5	80.2	NNE	.5	5.3	A.-Cu.		Cu.	E	------	Ω a. ϟ p.
14	58.71	26.4	31.5	22.1	79	ENE	.4	8	Ci.-S.	SE	Cu.		------	ϟ a. p. ≡
15	58.38	26.7	30.4	22.6	78.5	E	.3	7.3	Ci.-S., A.-Cu.		Cu.		1.3	≡ ☈ a.
16	58.26	27.6	33.4	23	75.9	ENE	.3	5.2	Ci.-S.		Cu.	E	------	d a. ϟ p.
17	58.40	27.2	34	22.3	75	NNE	.5	3	Ci.-S.		Cu.		------	ϟ a.
18	58.67	26.4	29.9	22	79.2	NE	.3	4.7	Ci.-S.		Cu.	E	.5	p ϟ p.
19	58.45	27.3	31.6	24.4	81.8	Variable	.5	4.8	Ci.-S.		Cu.	E	------	ϟ a. p.
20	58.44	26.8	31.4	23.1	81.7	Variable	.4	2.8	Ci.-S.		Cu.		------	ϟ p.
21	59.10	26.7	34.4	22.6	81.8	ENE, N	.7	3.7	Ci.-S.		Cu.		------	≡ a.
22	59.15	26.8	34.1	23.8	81.5	ENE	.5	5.7	A.-Cu.		Cu.	NE	------	≡ a.
23	59.31	26.1	34.2	23.3	82.8	ENE	.4	3.7	Ci.-S.		Cu.		------	⊤ d ϟ p.
24	59.23	26.7	34.5	22.4	80.7	ENE	.5	3.3	Ci.-S.		Cu.		4.4	≡ a. ↙ ●° ⌒ ϟ p.
25	58.55	26.9	33.9	22.8	81	N quad.	.6	8.7	Ci.-S.	E	Cu.		22.5	ψ ϟ Ω a. ○ ☈ p.
26	55.65	24.4	28.9	21	92	NW, SSW	1.1	10	Ci.-S.		Cu.-N.	NNE	25.4	d a. ↙ ● p.
27	59.34	26.4	32	23.5	86.2	ENE	.5	8.2	Ci.-S.		Cu.	ESE	17	⊍ ψ a. ↙ ● ☈ p.
28	59.99	27.2	33.3	23.3	83.1	ENE	.6	3	Ci.-S.		Cu.	E	------	≡ Ω² a. ○° p.
29	59.53	27.7	34.4	23.4	82.1	ENE	.5	5	Ci.-S.		Cu.		------	Ω a.
30	59.14	27.1	33.3	24.1	85.5	ENE	.5	4.5	Ci.-S.		Cu.		------	d° ⊤ ϟ p.
31	59.24	26.8	33.9	23.6	86.3	ENE	.4	5	Ci.-S.		Cu.	E	------	≡ a. ϟ d° p.
Mean	758.94	26.7	32.1	23	81.9	------	.4	6.1	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		96.8	

METEOROLOGICAL DATA, ETC.—Continued.

SAN ISIDRO.

[ϕ=15° 22′ N; λ=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force. (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	759.68	27.5	33.6	24	82.8	SSE	0.7	7.7	Ci.-S. E	S.-Cu.	------	⚡ ⊤ p.
2	60.37	26.5	33.7	23.1	84.7	SE, SSE	.3	6.7	Ci.-S. SE	Cu. E	------	≡ a. ⊤ ⚡ p.
3	60.40	25.4	29.9	23	92	S	0	7.3	Ci.-S.	Cu. N, NE	1.3	⚡ ≡ a. ● ⊤ p.
4	60.24	26.6	32.7	23.1	85.4	NE	0	6.7	Ci.-S.	Cu. NE, E	1.3	⚡ ⊤ ≡ a. p p.
5	60.17	27.3	34.2	23	79.7	Variable	.3	6.3	A.-Cu. NE, W	S.-Cu.	------	≡ ⚡ ⊤
6	59.52	26.6	33.6	22.6	82.8	SE	0	5.3	Ci., Ci.-S.	Cu. W	27.7	≡ ●² ⊤ ⚡
7	58.99	27.1	33.4	22.5	78.7	Variable	.2	2.3	Ci.	Cu. NE	------	≡² a. ⚡ p.
8	58.58	25.2	28	23.5	92.3	NW	.2	7.5	Ci.-S.	N. N, NE	11.2	⚡ d² a.
9	59.54	27	32.4	23.5	81.2	NNE, ESE	.3	5.7	Ci.-S.	Cu. NE, E	------	⚡ a. p.
10	60.08	26.7	33.5	22.1	80.8	NE, SE	.2	4	Ci.-S. SSW	Cu. NE	------	○² a. ⚡ p.
11	59.21	27	33.9	23	81.5	NW, N	.2	6	Ci.-S.	Cu. NE, N	2.3	≡ ⚡ ●
12	59	25.9	30	23	84.3	NNE, E	.2	8.5	Ci.-S.	N. E	------	d° p.
13	59.09	26.4	32.7	22.2	81.5	E	.2	4	Ci.	Cu. E, NE	------	Ω ≡ a. ⚡ p.
14	59.31	25.5	31	22.5	83.2	SE	.3	7.8	Ci.-S.	Cu. E, N	------	⚡ a. ⊥°
15	58.72	25.5	32.3	22	81.8	N	0	7.5	Ci.-S.	Cu. E	------	≡ a. ⚡ p.
16	58.40	26.7	33.5	22.1	78.1	SE	.3	4.5	Ci.	Cu. E	------	≡ a. ⚡ p.
17	58.49	27	33.7	21.5	73.7	ESE, SE	.2	3.2	Ci.	Cu. NE	------	≡ Ω ⚡ a.
18	58.72	27.4	34.7	22.6	77.3	NNE, NE	0	6.3	A.-Cu. SE, SSW	Variable	3	⊏⃗ p.
19	58.57	27.4	33.7	23.7	76.8	NNE, E	.3	4.2	A.-Cu. SE	Cu. NE	------	⚡ Ω ≡
20	58.60	27.2	33.7	22	78.2	SE	.3	2.5	------------	Cu. N, SE	------	≡ a. ⚡ p.
21	59.25	27.9	34.1	22.4	73.8	ESE	.2	4	Ci.-S.	S.-Cu.	------	≡ Ω a.
22	59.33	27.7	34.5	23.5	75.6	Variable	0	5	A.-Cu. NE	Cu. E, SE	------	≡ Ω a. ⊤ ⚡ p.
23	59.23	26.4	34.3	22.8	84	NW	0	4.8	Ci.-S., Ci.	Cu.-N. NE, N	.8	≡ a. ⊤ d. p.
24	59.52	26.6	33.7	22.6	80.2	Variable	.3	6.2	A.-Cu. E	S.-Cu. NE	------	Ω ≡ a.
25	58.92	26.9	33.7	23.4	77.7	NNE	.3	7.8	Ci.-S. NE	S.-Cu. E	------	⦶° ≡ ○°
26	55.82	23.4	26.7	22	94	Variable	2.2	9	A.-S. SE	N. Variable	24.9	⸔ ● a. p.
27	59.75	26.7	33.1	21.6	78.3	ESE, SE	.5	6.2	Ci.-S. NE, E	S.-Cu. SE	------	⊕² ⚡ ⊤ d° p.
28	60.50	27	32.1	23	75.5	ESE	.7	6	Ci.-S. SE	S.-Cu. E, SE	------	
29	59.70	27.6	33.4	23.4	79.7	N	.2	4.5	Ci. E	S.-Cu. NE	------	⚡ ⌒
30	59.28	27.7	34.3	22.8	79	Variable	.3	4	Ci.-S.	Cu.-N. NW, N	22.1	⚡ ⊤ ≡ a. ⊏⃗ p.
31	59.55	27.2	33.5	22.7	79.8	Variable	0	3.2	Ci.-S., Ci. SE	Cu. NE	------	≡ Ω a. ⚡ ⊤ p.
Mean	759.24	26.7	32.8	22.7	81.1	------------	.2	5.6	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	94.6	

DAGUPAN.

[ϕ=16° 03′ N; λ=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force. (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	759.29	27.8	34.5	22.9	84.2	S	1	7.5	Ci.	Variable	19.3	⚡° a. ⊏⃗ p.
2	60.21	26.8	31.6	22.7	82.5	Variable	.8	7.7	Ci.	Cu.	5.1	⊏⃗° p.
3	60.21	27.4	31.3	23.4	82	NW	.8	4.7	Ci., A.-Cu.	S.-Cu.	------	⊤° p.
4	59.80	28	34.8	24	78.7	S	1	3	Ci., A.-Cu.	Variable	------	⊤ d° p.
5	59.84	28.3	35.5	24.4	79	SE, S	.5	4.7	A.-Cu.	Variable	------	⚡° Ω a. d° ⊤ p.
6	59.58	27.9	34.6	23.8	78.3	SSE	.8	4.7	Variable	Cu.-N.	------	⚡° p.
7	58.88	28.3	34.3	23.6	77.2	NNW	.8	4.8	Ci.	Fr.-Cu. S	------	≡ Ω a. d° p.
8	58.42	27.1	30.4	24.6	83.5	SSE	.8	6.5	Variable	S.-Cu.	------	≡ Ω a.
9	59.13	28.3	34.9	23	78.1	S	1.2	3	Variable	S.-Cu. E	------	Ω° a. ⚡ p.
10	60.07	27.9	32.4	23.4	75.9	S, NNW	.3	3	Ci.-S.	Cu.	------	Ω° a. ⊤ ⚡ ⌒ p.
11	59.08	27.8	32.8	23	73.8	NW	.7	3.5	Variable	S.-Cu. E	------	⚡ p.
12	58.79	27.5	34.4	23.9	76.5	S	.7	7.5	A.-Cu.	S.-Cu. E	3.8	p p.
13	58.83	28.2	34.7	23	77	Variable	.8	1.5	Ci.	S.-Cu.	------	⊤° ⚡° p.
14	58.73	28.4	33.6	23.9	73.8	Variable	.7	5.5	Variable	S.-Cu.	------	⸔° ⚡ p.
15	58.39	27.2	32.5	23.5	74.7	Variable	.8	6.5	Ci.	S.-Cu. SSE	.2	⊤° d° ⦶ p.
16	58.31	27.8	33.9	22.7	77	Variable	.8	3.8	Ci.	S.-Cu.	------	Ω a. ⚡ ⊤° p.
17	58.39	29	35.4	23.7	73.7	SE	1.3	3.3	Ci.	Cu.	------	
18	58.74	28.1	32	23.5	76.8	NNW, WNW	.7	4.2	Ci.	S.-Cu.	4.8	p a. ⚡° p.
19	58.37	28.8	34.8	23.8	78	SE, S	1.2	4.8	------------	Cu.	------	Ω a. ⊤° ⚡ p.
20	58.38	28.6	33.9	23.8	76.8	S, NW	1	2.7	Ci.	Cu.	------	Ω a.
21	59.05	28.6	33.5	23.7	76.9	Variable	1.2	4.2	------------	Variable	------	≡, Ω a.
22	59.06	29.1	35.5	24.2	73.2	Variable	1	3.3	------------	S.-Cu.	------	Ω a. ⚡ p.
23	58.87	27.8	35	23.8	79.7	Variable	.8	5.3	A.-Cu.	Variable	9.1	● p.
24	59.26	27	31.8	22.9	80.6	NNW	1	5.2	Ci.	Cu.	4.3	● ≡° a.
25	58.71	27.4	32.5	23.4	79.7	NNW	.8	8	Ci.-S.	Cu.	.2	⦶ ○ a. d ⚡ p.
26	55.91	25.6	30	22.5	87.3	SE, S	1.7	9.7	A.-Cu.	N. SE	10.4	d a. ⸔ ● p.
27	59.23	27.4	33	22.6	76.2	SE	1.7	5.5	Ci.	S.-Cu.	------	⦶ a. ⌒ ⚡ p.
28	60.11	27.8	34.2	22.6	76.2	SE	1	2.7	Ci.	Cu.	------	Ω a. d° p.
29	59.60	28	34.5	23.2	76.8	SE	1.3	4.5	Ci.	Cu.	11.9	⚡ Ω a. ⊏⃗ p.
30	59.13	27.9	33.3	23	80.8	SE	.7	2.8	Ci.	Cu., Cu.-N.	.5	⦶ a. ⊤ ⚡ d p.
31	59.47	27.6	31.5	23.4	81.3	NW	1	4.3	Ci.	Variable	------	≡ a. ⚡ p.
Mean	759.03	27.9	33.5	23.4	78.3	------------	.9	4.8	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	69.6	

METEOROLOGICAL DATA, ETC.—Continued.

VIGAN.

[ϕ=17° 34′ N; λ=120° 23′ E; barometer above sea, 24 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	759.70	28.3	30.6	26	80.2	S quad.	0.8	0.3	Ci. NE by E	Cu.	------	⚡ p.
2	60.55	27.7	29.9	26	79	Variable	1.3	2.2	Ci.-S. NE by E	Cu.	------	d° p.
3	60.55	27.6	30	25.2	79.6	W	.5	.7	A.-Cu.	Cu. NE by E	------	⊕
4	60.36	28	30.2	26	72.8	W	1	.5	A.-Cu.	Cu.	------	⚡ p.
5	60.30	28	30.2	26.2	77.8	SSE	.8	1.2	Ci.-S.	Cu. SSW, W	------	Ω a. ⌒ ⚡ p.
6	59.91	27.1	29.6	25.5	79.8	Variable	.8	2.8	Ci.-S.	Cu. NNE, WNW	1	⛈° p.
7	59.32	27.5	30	25.8	78.8	SSE	.8	2	Ci. NE	Cu.	------	d° ⌒ p.
8	58.73	27.9	30	25.5	79.2	S quad.	.7	3.2	Ci. ENE	Cu.	------	◯° d° ⚡ p.
9	59.62	28.2	30.4	26.5	80 1	SSE	.8	2.2	Ci.-S.	Cu. NW	------	⊕ d° ⚡° p.
10	60.20	29	31.2	26.8	76.2	Variable	1.2	.8	Ci.-S.	Cu. NE	------	Ω a. ⚡° p.
11	59.34	29	30.8	27.2	68.5	S	.8	4.2	Ci.-S. SE by E	Cu.	------	⚡° p.
12	59.14	28.7	30.6	26.8	73	W	.8	1.7	Ci.-S. SW by W	Cu.	------	◯°
13	59.30	28.4	30.6	26.6	76	SE	.7	.3	Ci.	Cu. ENE, ESE	3.6	● ⚡° p.
14	59.04	27.9	30.5	26.1	71.7	Variable	.7	3.3	A.-Cu. ENE	Cu.	------	⊕ ⚡° ◒ p.
15	58.92	27.6	30	26.1	76.1	Variable	1.2	4.7	A.-Cu. ENE	Cu. NW	1.8	⊕ ● ⌒ ⚡ ◒ p.
16	58.64	28	30.5	25.7	77.7	SE, NW	1.2	2.7	Ci.-S.	Cu.	------	◒
17	58.81	28.2	30.4	25.7	74.8	S quad.	.8	.3	A.-Cu.	Cu.	------	◒
18	59.02	28.4	30.2	26.7	76.2	WNW	.8	1	Variable	Cu. WNW	------	◒
19	58.69	28.6	30.5	26.7	75.2	Variable	.5	.3	A.-Cu.	Cu.	------	⚡ ◒ p.
20	58.93	28.6	30.5	26.2	78	W	.3	.3	Ci. NE by E	Cu.	------	Ω° a.
21	59.57	28.3	30.6	26.4	78.8	WNW	.8	.2	A.-Cu.	Cu.	------	Ω° a.
22	59.58	28.3	30.9	25.8	79.1	S	1	.3	A.-Cu. E	Cu.	------	Ω° a. ◒
23	59.34	28.2	30.5	24.2	77.5	W	.8	.3	A.-Cu.	Cu.	------	⚡ p.
24	59.69	28.2	30.2	25.4	72.8	Variable	1.2	.2	Variable	Cu.	------	⚡ p.
25	59.21	28.6	31.1	26.9	69.5	NW	1.2	3.3	Ci.-S. ESE	Cu.	1.3	◯ d ⚡ p.
26	55.98	28	30	25.1	67.7	N, NE	2.7	9.8	Ci.-S.	S.-Cu. NE	2.3	◒ ↙ ● a. ⚡ p.
27	59.70	27.6	29.9	25.5	78.5	WNW	.8	3	A.-Cu.	Cu. NE by E	5.3	⛈ p.
28	60.67	27.5	29.9	25	77.2	NW	1.2	1.3	Ci.	Cu. NNE	------	⚡° p.
29	59.98	28.1	30.2	25.9	76.5	Variable	.8	1.7	Ci.	Cu. WSW	------	⚡ p.
30	59.68	28.5	30.5	26.5	72.5	WSW	1.2	.2	Ci.-S.	Cu.	------	⚡ p.
31	60.18	28	30.1	26	76.3	NW	1.2	.3	------	Cu. NW by N	------	Ω a. ⚡° p.
Mean	759.44	28.1	30.3	26	76	------	.9	1.8	------	------		
Total	------	------	------	------	------	------	------	------	------	------	15.3	

APARRI.

[ϕ=18° 22′ N; λ=121° 34′ E; barometer above sea, 5 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	760.27	27.6	32	24	87.2	S, ENE	1	3.8	Ci. E	Cu.-N. ESE	14.5	● a. ⚡ p.
2	61.23	27.5	31.2	24.5	86.5	ENE	1.3	4.2	Ci.-S.	S.-Cu. E	2	● ⌒ a. ⚡ p.
3	61.90	27.4	31.5	23.4	84	Variable	1.2	.8	A.-Cu. NE	Variable	------	Ω a.
4	61.07	27.4	32	23.4	83.7	SW, S	.8	.2	A.-Cu. E	Cu.-N.	------	
5	60.39	27.6	33.1	24	84.9	SW	1	1.7	------	Cu.-N. NW	.8	⛈ p.
6	59.86	27.6	32	23.7	85	S, NE	1	2.3	Ci, NE	Cu.-N.	------	⚡ ⊤ p.
7	59.60	27.3	31.6	23	84.8	ENE	.8	4.2	Ci. N	Cu.-N. S	.5	p ⚡ p.
8	59.06	27.6	31.3	23.5	84.8	S	1.2	1.7	Ci.	Cu.-N. SE	------	Ω a. ⚡ p.
9	60.25	27.7	32.4	23.5	81.8	S	1.2	------	------	------	------	Ω a. ⚡ p.
10	61.81	27.8	32	23.7	83.3	ENE	1.2	3.7	Ci. E	Cu.-N.	.5	Ω a. ⛈ p.
11	61.26	26.1	30.8	21.5	91.2	Variable	1.2	7.2	------	Cu.-N. ENE	13.5	● a. ⛈° p.
12	60.27	26.8	31.7	23	85.5	Variable	1.2	1.8	A.-Cu. E	Variable E	------	⊤ ⚡ p.
13	60.39	27.5	32.5	24	84.2	SW, ENE	.7	------	------	------	------	Ω a. ⚡ p.
14	60.82	23.8	26.5	21.4	93	SW, SE	1	9	------	Cu.-N. NE, S	23.6	⛈ a. p. ⌒
15	60.20	26	30.9	21.7	86	Variable	1	4.2	A.-Cu. S	S.-Cu.	------	⌒
16	59.51	26.9	31.2	23	84.2	Variable	1.2	.8	A.-Cu. SE	S.-Cu.	------	Ω a.
17	59.42	27.4	31.2	23.1	84.3	Variable	1	1.5	------	Cu.-N. E	------	Ω a.
18	59.71	26.8	30.8	23	87.2	N	1	3	------	Cu.-N. E	13.2	Ω a.
19	59.17	27.1	31.2	22.9	83.3	SW, ENE	1	.3	------	Cu. S	------	Ω a.
20	59.16	27.1	31.4	23.5	86	SSE, NE	1.2	.2	------	Cu.	------	Ω a.
21	60.21	27	31.2	23	83.8	Variable	1.2	.2	------	Cu. S	------	Ω ≡ a.
22	60	27	31.9	22.5	83.3	ENE	1	.2	------	Cu.-N.	------	Ω ≡ a.
23	60.09	27.4	31.5	23	81.8	S, ENE	1	.2	------	Cu.-N. SE	------	Ω ≡ a.
24	60.92	27.5	31.5	23	84.3	ENE	.8	1	A.-Cu. E	Cu.-N. E	------	Ω ≡ a.
25	60.64	27.1	31.5	22.5	85.2	Variable	1	5.2	Ci.	Cu.-N.	34.8	● ⚡ p.
26	58.93	26.5	28	23.1	88.7	ENE, E	2.3	9.3	------	S.-Cu. E	24.4	↙ ● a. ⚡ p.
27	61.20	26.7	30.4	23.4	86.5	SSE	1	4.2	A.-Cu. SE	Cu.-N. SE	12.2	p² a. ⚡ p.
28	61.47	26.9	31.4	22.9	85.7	S	1	.3	------	Cu.-N. S	------	⚡ p.
29	60.38	27	32	23.6	85.3	S	1	2.3	Ci.	Cu.-N. W	------	⊤° ⚡ p.
30	59.91	26.9	31.5	23	86.1	S	1.3	.2	------	Cu.-N.	------	Ω a. ⚡ p.
31	60.36	27	31	23.5	85.9	S	1.2	1.7	Ci. W	S.-Cu.	------	Ω a. ⚡ p.
Mean	760.31	27	31.3	23.1	85.4	------	1.1	2.4	------	------		
Total	------	------	------	------	------	------	------	------	------	------	140	

METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

JOLO.
[ϕ=6° 03′ N; λ=120° 59′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	31.1	22.7	82	SE	1	13.2	⌓ ● a. d ⋞ p.
2	32.3	22	74	SSW	1	3.8	⌓ a. d ● ⋞ p.
3	29.8	22.3	85	SE	1	46	⌓ ●^{2} a. d p.
4	32.1	21	77	ENE	2	------	⌓ d p.
5	31.8	21.4	96	E	1	65	● a. p. ⊤ p.
6	31.4	21.9	71	NW	2	------	
7	31.6	22.9	75	WSW	2	------	p a.
8	31.4	23.1	72	SE	2	------	⌓ a.
9	31.3	22.9	84	Calm	------	2.8	d ⊤ ● p.
10	31.6	22.3	84	SW	1	1.5	●° p.
11	33.7	22.2	75	SW	1	------	≡ a. ⊤ d p.
12	30.4	23.1	73	SW	2	------	
13	31.1	22.2	77	NE	1	10.9	d ● p.
14	31.2	22.1	77	SW	1	------	⌓ a. ⌈⋞ p.
15	32.2	22.3	73	SW	2	33.8	⌓ ≡ a. ⌈⋞ ●^{2} p.
16	31.2	22.9	77	SW	2	25.9	d a. ⊕ ↙ ● p.
17	28.8	22.1	85	SW	4	13.7	r° a. ↙ ● p.
18	28.8	23.5	76	SW	3	1.5	↙ ●° a ⊕ ◡ p.
19	31.6	22.2	70	NE	2	------	
20	30.9	22.9	73	Calm	------	3.6	↙ ● a.
21	31.1	22.6	74	SE	1	------	⌓ ≡ a.
22	32.2	22	72	SW	1	------	
23	32.6	22.7	73	SW	1	------	
24	33.1	22.5	74	S	1	------	
25	32.4	20.1	66	SW	2	------	
26	31.7	22.4	72	SW	2	------	⋞ p.
27	36.5	21.9	58	SW	2	------	⌓ ≡ a. ⋞ p.
28	33.5	22.3	64	NE	3	.5	⌓^{2} a. ●° p.
29	32.6	22.4	65	NW	2	.5	⌓^{2} a. ●° p.
30	32.8	21.6	71	NE	2	------	⋞ p.
31	33.5	23.1	66	NE	2	------	⋞ p.
Mean	31.8	22.3	74.5	------	1.6	------	
Total	------	------	------	------	------	222.7	

ISABELA, BASILAN.
[ϕ=6° 43′ N; λ=121° 57′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.1	21.2	81	Calm	------	31	⌓ ≡° ⌈⋞ ● a.
2	30.1	22	78	W	------	1.5	⌓ a. p ⊤ p.
3	30	23	88	W	------	29.2	⌓ r a.
4	30.1	23	81	W	------	------	⌓ ≡° d a. ↙ p.
5	29.8	22.5	85	W	------	------	⌓ ≡° a. ⊤ p.
6	30.2	23	81	NW	------	------	⌓ a. ↙ p.
7	30.1	22.3	80	W	------	1.5	⌓ a. p p.
8	30.5	22.9	76	W	------	.5	⌓ ≡° a. ●° p.
9	30	22.5	71	Calm	------	22.9	⌓ ≡° a. ● ⊤ p.
10	30.3	22.5	78	W	------	------	⌓ a. d p.
11	30.4	23.5	94	Calm	------	8.4	●° a. p.
12	30	22	90	Calm	------	24.9	● a. r° p.
13	29.9	22	71	W	------	1.5	⌓ a. ●° ⋞ p.
14	29.5	22.2	87	W	------	.5	⌓ a. ⊤ ●° p.
15	30	22	77	W	------	.8	⌓ a. ↙ ●° p.
16	29.8	22	95	W	------	41.7	↙ ● a. p. ⌒ p.
17	29.5	22.1	88	W	------	36.1	r° a. p.
18	30.1	22.5	85	W	------	------	⌓ a. ◡ p.
19	30.2	22.2	71	W	------	------	⌓ a.
20	29.6	22	71	W	------	------	⌓ a.
21	30.2	22	73	W	------	------	⌓ a.
22	30.1	22.2	71	W	------	------	⌓ a.
23	30	22.7	74	W	------	------	⌓ a.
24	30.1	23	81	W	------	------	⌓ ≡° a.
25	30.5	22.5	78	W	------	------	⌓ a.
26	30.2	23	70	W	------	------	⌓ ≡° a.
27	31	22.5	75	W	------	------	⌓ ≡° a.
28	31	21.3	62	NE	------	------	⌓ ≡° a.
29	30.4	22	66	W	------	------	⌓ ≡° a. p p.
30	31	22.5	68	W	------	------	⌓ ≡° a. ⊤ p.
31	30.5	22.6	72	W	------	------	⌓ a. d p.
Mean	30.2	22.4	78	------	------	------	
Total	------	------	------	------	------	200.5	

ZAMBOANGA.
[ϕ=6° 54′ N; λ=122° 05′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	31.5	23.5	82	S	1	------	
2	31	23.9	74	SE	2	------	
3	29.9	23.4	75	Calm	------	0.5	●° a
4	31.1	23	68	SE	1	------	
5	30.9	23.2	76	W	2	------	
6	31	23	80	W	1	------	
7	29.5	23	77	W	2	------	d p.
8	29.8	23	74	Calm	------	------	
9	29.5	23.4	78	WSW	1	------	
10	30.4	23.1	75	W	2	------	
11	30.4	23	82	W	2	2	● a. d p.
12	28	23.4	86	W	1	2.5	● a. d a. p.
13	29.7	22.9	80	W	1	------	
14	30.5	23.4	83	Calm	------	------	
15	30.6	23.3	84	E	1	.5	●° p.
16	28.6	22.4	96	W	1	16.8	●° a. p.
17	27	22	99	WNW	2	20.8	r p.
18	28.6	22.4	84	Calm	------	9.9	● p.
19	30.5	21.5	80	W	2	------	
20	30	22.5	77	W	1	------	
21	30.2	23	75	W	1	------	
22	30.5	22.9	80	W	2	------	
23	31	23	75	W	1	------	
24	31.7	22.5	71	ESE	1	------	
25	31.6	23	76	W	1	------	
26	30.9	22	73	W	1	------	
27	30.7	23	65	SE	1	------	
28	31.2	23	65	Calm	------	------	
29	30.5	22.6	77	W	2	------	
30	30.5	23.9	71	W	1	------	
31	32.1	23	75	SE	1	------	
Mean	30.3	22.9	77.8	------	1.1	------	
Total	------	------	------	------	------	53	

DAVAO.
[ϕ=7° 01′ N; λ=125° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33.9	23.1	65	SW	1	31.2	● ⊤ p.
2	33.1	22.3	64	Calm	------	35.1	● p.
3	34.6	22.4	65	NW	1	24.4	● ⋞ p.
4	34.2	22.3	57	WSW	2	22.1	● ⊤ p.
5	34.2	22	64	Calm	------	26.7	● p.
6	33.2	22.1	66	WSW	1	24.1	● p.
7	33.8	22.3	61	SE	1	------	
8	33.6	22.2	66	NW	2	------	
9	32.8	22.4	59	WSW	1	------	
10	31.2	22.6	69	Calm	------	31.2	● ⌈⋞ p.
11	31.9	23	75	Calm	------	------	
12	33.1	22.1	68	NW	2	------	
13	33.5	21.9	64	Calm	------	17	● ⊤ p.
14	32.5	21.3	83	Calm	------	27.4	● ⊤ p.
15	32.5	22	66	SW	1	------	
16	32.7	22	67	ESE	2	43.4	⊤ ● p.
17	32.6	22	67	SE	1	15.	● p.
18	34.2	22.5	61	Calm	------	------	
19	32.1	22.8	76	Calm	------	------	
20	32.7	22.2	75	NW	1	27.7	● p.
21	33.6	22.1	70	NNW	2	------	
22	32.7	22.8	69	NE	1	------	⌈⋞ p.
23	32.5	22.7	71	Calm	------	------	
24	32.8	22.5	85	NNE	2	15.7	● p.
25	32.1	23.5	75	NW	1	------	⋞ p.
26	33.1	22.4	72	WNW	2	------	⊤ p.
27	33.1	22.1	64	WSW	2	38.6	● ⊤ p.
28	33.2	22.7	60	Calm	------	------	
29	33	22.6	68	Calm	------	14.7	● p.
30	32.5	22.7	69	NW	2	------	
31	32.1	22.5	71	NW	1	43.9	● ⊤ p.
Mean	33	22.4	68.1	------	.9	------	
Total	------	------	------	------	------	438.2	

METEOROLOGICAL DATA, ETC.—Continued.

COTABATO.

[ϕ=7° 13′ N; λ=124° 12′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33.5	21.8	58	WNW	3	2.5	Ω ≡² a. ● ϟ p.
2	33.8	21.7	65	WNW	3	------	Ω ≡ a. d ϟ p.
3	34.8	21	57	SW	4	------	Ω ≡² a.
4	35.1	22.1	52	SE	3	------	≡ a. ϟ p.
5	35.5	22.8	48	NW	1	------	≡ a. ϟ p.
6	33.2	23.5	70	WNW	6	------	d ≡ a. ⟋° ⊤ p.
7	33.2	22.5	69	NW	3	------	
8	35	22.5	67	SW	4	.8	Ω ≡² a. ●° p.
9	33.5	22.5	63	NW	4	------	≡ a. ϟ p.
10	34	22.6	65	NE	2	10.4	≡ a. ⊤ ϟ ● p.
11	33	22.6	74	NNW	2	15.5	● ϟ p.
12	31.5	21.5	68	NW	4	46.7	≡² a. ● p.
13	32.7	21.8	69	WNW	4	1	●° p.
14	32.4	22.1	63	WSW	3	1.3	●° p.
15	33.7	22.6	65	WSW	4	26.9	● p.
16	32.4	21.8	71	WSW	5	91.9	≡² a ● ⊤ ϟ p.
17	32.5	21.8	75	WNW	5	5.1	d ≡ a. ● p.
18	33.4	22.5	70	SW	3	------	≡ a. ϟ ⊤ p.
19	33.8	22.7	70	WNW	4	------	Ω ≡ a.
20	33.2	22.4	74	NW	2	------	Ω ≡ a.
21	33.3	22	66	NW	3	------	Ω ≡ a.
22	34	22.9	67	SW	3	1.3	≡ a. ϟ ⊤ ●° p.
23	33.5	22.5	67	SW	3	------	≡ a. ϟ p.
24	32.4	22.4	68	WNW	4	------	≡ a.
25	33.8	23.2	66	SW	3	------	≡ a.
26	32.2	22.2	66	WNW	2	------	Ω ≡ a.
27	35.2	21	65	WNW	3	10.2	≡ a. ⌒ ⊤ ● ϟ p.
28	34.5	21.7	59	NE	2	------	≡ a.
29	34.2	22.7	72	NW	2	10.2	≡ a. ● p.
30	33.8	21.2	64	NE	2	------	ϟ a.
31	34.9	21.6	59	ENE	2	------	Ω a. ⊤ p.
Mean	33.6	22.2	65.5	------------	3.2	------	
Total	------	------	------	------------	------	223.8	

DAPITAN.

[ϕ=8° 38′ N; λ=123° 23′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	------	24.2	86	W	2	1.5	● a. ϟ p.
2	------	23.8	84	E	2	2.8	● ⊤ a. ϟ p.
3	------	23.6	86	W	2	29.2	● a. p. ⊤ p.
4	------	24	85	E	2	------	⌈ϟ p.
5	------	24	83	E	2	------	⊤ p.
6	------	23.9	64	E	2	29.7	● ⊤ a. ϟ p.
7	------	24.2	77	E	2	------	d ⊤ a. ϟ p.
8	------	24.1	75	W	2	1.8	d ⊤ a. ● ϟ p.
9	------	24.2	67	E	2	------	ϟ ⊤ p.
10	------	24	81	E	2	------	≡² a. ϟ p.
11	------	24.2	81	E	2	33.8	⟋ ● d ≡ a. ⊍ p.
12	------	24.1	85	NNW	2	2	●° p.
13	------	23.8	75	E	1	------	Ω a. d ⊍ p.
14	------	23.6	75	NNW	2	------	Ω a. ⊤ ϟ p.
15	------	23.3	73	W	3	45.2	≡ d ⌒ ● a. ϟ p.
16	------	24.2	74	W	2	------	⊍ p.
17	------	24	73	E	2	------	⊍ p.
18	------	24.3	80	E	2	------	
19	------	24.6	75	W	2	------	Ω ≡ a.
20	------	24.8	79	W	2	------	Ω ⌒ a.
21	------	24.9	79	W	2	------	Ω a. ⊕ ⊍ p.
22	------	24.7	81	W	2	------	d ⌒ a. ϟ p.
23	------	24.5	64	NNW	2	1.8	●° a. ϟ p.
24	------	24.7	79	NNW	2	------	Ω ≡ a. ⊍ p.
25	------	24.2	80	NNW	2	------	Ω a.
26	------	24.6	80	W	3	3.3	Ω a. ● ⊤ ϟ p.
27	------	23.9	80	E	2	2.3	Ω a. ● ⊤ ϟ p.
28	------	24.1	79	E	2	3.6	≡ a. ● a. p. ⌈ϟ p.
29	------	23.5	74	Calm	------	------	ϟ p.
30	------	23.8	76	Calm	------	------	
31	------	23.6	77	Calm	------	4.6	● ⌈ϟ a.
Mean	------	24.1	77.6	------------	1.8	------	
Total	------	------	------	------------	------	161.6	

BUTUAN.

[ϕ=8° 55′ N; λ=125° 31′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.1	22.2	67	WNW	2	117.9	Ω a. ⌈ϟ ●² p.
2	30.2	22.6	69	N by E	2	.5	Ω a. ⊤ ●° p.
3	30.1	22.9	81	ESE	1	1.3	Ω a. ● p.
4	32.2	23.2	58	ESE	1	------	Ω ≡° a. d° p.
5	32.1	23.3	71	WNW	1	2.3	Ω ≡° a. ● p.
6	30.7	23.5	60	N	2	.5	Ω ≡° a. ●° ⌒ p.
7	30	23.3	78	NNW	1	16	● a. d p.
8	31.1	22.9	76	N	1	------	⌈ϟ p.
9	31.2	21.4	91	SE	1	3.3	Ω a. ●° ϟ p.
10	30.3	20.5	82	W	1	?	Ω ∞ a. ● ϟ p.
11	30.1	23.6	74	N	2	------	Ω ≡° a.
12	29.9	22.7	77	NW	1	1.3	Ω d° a. ● p.
13	30.8	21.3	74	N	1	.3	Ω ∞ a. ⌈ϟ ●° p.
14	29.5	22.1	68	N	2	------	Ω a.
15	28.2	22.8	81	NW	2	47	● a.
16	29	22.3	76	NW	2	?	∞ a. ⌒ p.
17	29.1	20.3	67	N	2	------	Ω a. ⌒ ⊍ p.
18	29.7	20.3	63	NW	2	------	
19	30	20.8	61	NW	2	------	Ω ≡ a.
20	30.3	22	61	N	2	------	Ω a.
21	30.3	23	70	NNW	2	------	Ω a.
22	30.3	22.8	65	NNW	2	------	⊕ p.
23	30.1	23	70	NW	2	------	Ω a.
24	30.3	23	60	WNW	2	------	
25	30.2	23.5	61	NW	2	------	Ω a.
26	30.7	23.1	62	NE	1	------	⌈ϟ p.
27	30.1	22.8	89	E	1	9.1	⌈ϟ ● p.
28	31.5	22.8	68	NNW	2	4.8	Ω a. ● p.
29	30.2	23	95	Variable	1	52.3	Ω a. ⟋ ● ⊤ p.
30	29.3	23	76	SSE	1	2.5	⊤ ● p.
31	30.8	23.3	91	SE	1	15.7	Ω ∞ a. ⌈ϟ ● ⌒ p.
Mean	30.3	22.5	72.3	------------	1.5	------	
Total	------	------	------	------------	------	274.8[1]	

YAP (Western Carolines).

[ϕ=9° 29′ N; λ=138° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.5	24.7	86	S	1	------	
2	31	24.1	84	N	2	19.3	
3	30.4	23.7	70	NE	3	.3	
4	30.8	23.7	82	N	1	.5	
5	31.8	23.6	71	ENE	3	5.1	
6	33.2	23.9	75	E	1	------	
7	29.4	23.6	78	E	4	2.5	
8	29.7	23.2	79	E	5	10.7	
9	30.5	23.7	81	E	4	1	
10	29.7	24	79	NE	4	21.6	
11	29.9	24.4	79	E	3	------	
12	30.7	22.2	76	NE	3	1.3	
13	30.6	23.5	80	NNE	3	------	
14	32	24.3	80	NNW	1	------	
15	------	23.3	------	------------	------	------	
16	27.7	------	90	W	4	3.6	
17	31	23.8	80	SW	4	------	
18	32.7	24	75	W	3	------	
19	33.2	23.5	71	W	3	------	
20	31.7	23	72	W	4	------	
21	30.9	23.2	77	W	3	------	
22	31.8	23.5	78	W	4	------	
23	33	23.1	74	W	2	.8	
24	32.4	23.4	79	W	3	------	
25	29.5	22.5	74	SE	3	10.2	
26	29.5	23.2	76	NE	3	8.6	
27	30.7	23.7	76	NE	3	.3	
28	30.9	24.3	78	E	3	9.9	
29	31	23	79	NE	2	2.8	
30	32	23.7	75	SE	2	3.6	
31	30.4	23.7	73	NE	2	------	
Mean	31	23.6	77.6	------------	2.9	------	
Total	------	------	------	------------	------	102.1	

[1] 29 days of observation.

METEOROLOGICAL DATA, ETC.—Continued.

MAASIN.

[ϕ=10° 08′ N; λ=124° 50′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	31.4	24.4	78	SW	1	------	⚡ a. p. T p.
2	31	23.8	85	NW	1	21.3	⚡ d a. T ↙ ● p.
3	29.8	23.5	81	SE	1	------	⚡ a.
4	30.7	23.5	77	SE	1	------	
5	30.8	23.5	88	NW	1	------	d p.
6	31.4	23.1	82	N	1	------	⚡ a. p. T d p.
7	29	23.6	82	SE	1	3.3	⚡ d a. p. p p.
8	29.4	23.6	80	SE	2	------	⚡ p.
9	31.8	24.1	75	SE	3	------	⚡ ↙ a. p. d p.
10	30.1	23.2	77	W	1	------	⚡ a. p. d p.
11	30	23.5	89	NW	1	------	⚡ a. p. d T p.
12	30	22.4	79	SW	1	------	⚡ a. p. ↙ d p.
13	29.6	22.8	77	SW	1	49.3	⚡ a. p. ↙ ● d p.
14	30.5	22.8	78	SW	1	32	↙ ● ⛈ p.
15	29.5	22.5	85	SE	1	4.6	↙ ● d ⛈ p.
16	30	23.4	86	SW	2	13	d ↙ ● ⊖ ᴗ ⚡ p.
17	30.4	22.6	76	SW	2	------	⊖ p.
18	29.4	23.4	74	SW	2	------	⚡ p.
19	29.5	23.3	78	S	1	------	⚡ a.
20	30	23.6	75	S	1	------	⚡ a.
21	30.3	23.2	74	SW	1	------	↙ a.
22	29.4	24	79	SW	1	------	⚡ ⌒ d a.
23	30.6	23.2	74	SE	1	------	d a. p. ⌒ ⚡ ᴗ p.
24	30	22.8	93	NW	1	7.4	⚡ ᴗ a. p r° p.
25	30.6	23.1	73	W	1	------	↙ p.
26	31.4	24.1	74	SE	1	------	⛈ ↙ d a.
27	31.7	24	74	SW	2	------	⌒ a. ⚡ a. p. ↙ d
28	31.2	23.5	64	E	4	------	⚡ p.
29	33	23.8	73	W	1	------	↙ ⚡ p.
30	30.5	23.5	87	NE	1	------	d a. p.
31	31.9	23.5	67	N	1	------	d ⌒ ↙ a. ⚡ a. p.
Mean	30.5	23.4	78.5	------------	1.3	------	
Total	------	------	------	------------	------	130.9	

BACOLOD.

[ϕ=10° 41′ N; λ=122° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32.2	22.5	70	WNW	2	3.8	⛈ ● p.
2	31.8	21.9	71	N by W	1	.3	T° ● ↙ ⚡ p.
3	31.9	21.5	82	ENE	3	7.4	Ω² a. ● ⛈ p.
4	31.3	22.9	72	WNW	3	.3	●° ⛈ p.
5	31.9	22.5	84	ENE	1	------	d ⚡ p.
6	30	22	82	NNW	3	------	Ω² a.
7	33	24.1	81	NW	2	6.9	d° ↙ ● ⛈ a. ⚡ p.
8	29.9	23.1	79	NNW	1	------	Ω² T a. d° ⚡ p.
9	31.2	22.7	78	N	3	3	⛈ ↙ ●° p.
10	31.1	23	72	N	4	------	T a. ↙² ⚡ p.
11	31.6	23.1	73	N by E	3	7.6	↙ ●° a. p. ⛈ p.
12	30.3	22.5	97	Calm	------	51.1	d° a. ⛈² ●² p.
13	31.1	22.6	78	N	1	21.6	●² T a. ⛈ p.
14	31.6	22.6	74	Calm	------	57.9	↙ ● a. p. ⛈ p.
15	30	23	82	SW	1	35.6	●° a. ●² ⛈ p.
16	30.6	22.5	69	N	2	5.3	●° ○² a. ⊖ p.
17	30.9	21.6	64	N by E	3	6.1	p a. ⊖ ᴗ p.
18	31.2	21.7	68	N by E	2	------	⚡ ⊖ p.
19	31.1	22	71	N	3	------	T ⊖ p.
20	30.7	21.8	68	N	2	------	T ⊖ p.
21	30.9	21.8	63	N	3	------	⊖ p.
22	31.1	22.3	68	N by E	3	------	⊖ ⚡ p.
23	30.1	22.3	71	N by W	3	------	⌒ a. ↙ ⊖ p.
24	30.8	21.6	69	N	3	.3	↙ ●° p.
25	31	21.9	68	N by E	2	------	⚡ p.
26	31.2	23	69	SW	2	------	⚡ p.
27	31.8	22.6	65	NNW	2	------	⚡ p.
28	32	23	74	N	3	------	d° a. ⛈ ⌒ p.
29	31.9	22.6	73	N	2	1	T ⌒ ●° ⚡ p.
30	31.1	22.6	70	N	3	------	d° T ⌒ ⚡ p.
31	31.8	22.2	74	N by E	3	.8	T ●° a. p. ⚡ p.
Mean	31.2	22.4	73.5	------------	2.2	------	
Total	------	------	------	------------	------	209	

SAN JOSE BUENAVISTA.

[ϕ=10° 44′ N; λ=121° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	29.9	23.2	78	W	1	------	⚡ p.
2	31.6	22.9	74	Calm	------	------	T ⚡ d° p.
3	31.9	23.1	77	NNE	1	------	⚡ p.
4	32	23.5	75	Calm	------	0.5	T ⚡ ●° p.
5	32.1	23.3	85	NNE	1	------	T a. d° p.
6	31.9	22.9	81	Calm	------	------	T d° ⚡ p.
7	32.2	22.8	72	W	1	------	T ⚡ p.
8	30.5	23.4	80	W	1	------	⚡ p.
9	32.2	23.3	92	Calm	------	13	● T ⚡ p.
10	31.4	23.5	84	Calm	------	.5	●° T p.
11	32.7	23	72	N	1	12.4	● ⚡ p.
12	31.4	23.5	79	Calm	------	45	● a. p. T ⚡ p.
13	31.5	22.5	72	W	1	13.7	● T ⚡ p.
14	31.6	23.4	74	S	1	2.3	● d a. ⚡ p.
15	31.9	23.7	75	SW	3	1.5	● a. T p.
16	31.9	22.9	72	W	2	5.8	● p.
17	31.6	21.8	70	WSW	1	------	
18	31.9	20.8	70	WSW	1	28.7	T ● ⌒ p.
19	31.4	22.9	76	Calm	------	------	T p.
20	32.4	22.8	66	SW	1	------	
21	32.5	22.5	66	Calm	------	------	
22	32.2	22.6	66	Calm	------	------	
23	32.7	22.5	68	S	1	------	⌒ T a.
24	33	21.5	63	WSW	1	1	⌒ ●° p.
25	32.8	22	70	W	1	------	
26	32.3	22.4	74	SSW	2	3.3	d ↙ ● a. ●° p.
27	33	22.4	65	SW	1	------	↙ a.
28	33.4	22.7	72	Calm	------	1.3	● p.
29	33.6	23.3	70	SW	1	10.4	●° ⛈ p.
30	32.5	23	72	Calm	------	?	● T d° p.
31	33.1	23.1	81	Calm	------	.8	●° ⛈ p.
Mean	32.1	22.8	73.9	------------	.7	------	
Total	------	------	------	------------	------	140.2[1]	

TUBURAN.

[ϕ=10° 44′ N; λ=123° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	31.1	21.8	73	Calm	------	11.7	d T² a. ⛈² ↙ ● ⌒
2	31.1	23.2	72	WNW	2	------	⌒ ○² a. T² ⚡² d
3	31.1	22.9	74	Calm	------	------	○² ⛈ ⌒² d p.
4	32.1	23.1	66	NW by W	1	------	○° ⚡² p.
5	32.6	23.1	68	NW	1	------	T ○° ⚡² p.
6	32.6	23.1	70	NW	2	------	T a. p. ⚡² p.
7	30.9	23.4	78	Calm	------	1	●° ○° a. d ⛈² p.
8	31.4	23	73	Calm	------	35.3	d ●² ⛈² p.
9	30.7	23	80	Calm	------	------	○° a. ⚡² p.
10	31.9	22.7	67	NW	2	------	⌒ ⚡² p.
11	31.6	23	76	N	2	------	d ⚡² p.
12	31.6	23	72	N	3	------	○° T² ⚡² p.
13	30.2	22.8	81	Calm	------	14	d° a. ●² ⚡ d p.
14	30.9	22.9	70	Calm	------	------	⌒ a. ⛈² p.
15	30.8	23.9	73	N by W	2	46.2	●² ⌒² a. p. ⛈° p.
16	30.3	23.1	75	N	1	------	○² a. ᴗ² p.
17	30.6	21.9	68	N by W	4	------	○² a. p.
18	30.8	21.6	66	N	1	------	Ω² a. ⚡ p.
19	31.4	22.5	57	N	2	------	
20	31.3	22.2	68	Calm	------	------	⌒² a.
21	31.6	22.6	67	N	2	1.3	●° p.
22	31.5	22.5	67	N by W	2	------	⚡° ⊖² p.
23	31.1	23.2	67	N	1	------	d° p.
24	31.7	22.4	68	N by W	3	------	d ⚡° p.
25	31.1	22.9	68	N	1	------	○² a. p.
26	33.1	22.9	60	S by W	4	------	○² ⛈² p.
27	32.5	22.9	67	Calm	------	------	d° a. p. ⚡² p.
28	32.1	22.5	69	Calm	------	------	⚡² p.
29	32.5	23	69	Calm	------	------	d° a. ○ ⚡² p.
30	31.4	23.4	69	Calm	------	------	⌒ d T² a. ○² ⚡²
31	35	22.9	53	Calm	------	------	○² a. ⚡² p.
Mean	31.6	22.9	69.4	------------	1.2	------	
Total	------	------	------	------------	------	109.5	

[1] 30 days of observation.

METEOROLOGICAL DATA, ETC.—Continued.

BORONGAN.
[ϕ=11° 42′ N; λ=125° 25′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32.6	22.5	93	NW	1	20.6	Ω a. ◯ ↙ ●² ⚡ p.
2	33.4	22.1	69	SSE	1	------	Ω a. ◯ ⛈ p.
3	33.2	22.3	66	ESE	2	------	⊤ ◯ a. ↙ ⚡ p.
4	33.7	23.2	65	ESE	2	------	Ω a. ⚡ p.
5	33.9	21.9	62	E by S	1	------	Ω a. ⚡ p.
6	33.2	21.7	62	E by S	1	------	Ω a.
7	28.7	23.7	81	N	1	27.2	● ⛈ a. ↙ ●² p.
8	32.4	23.2	72	SE	2	3.6	↙ ●° a. p. ⚡ p.
9	32.7	23.1	70	E by S	1	3.8	●° a. ⚡ p.
10	32.5	22.7	73	E	1	1.8	Ω ●° a. ↙ ● p.
11	32.2	23.3	65	NE	1	16.3	● a. ↙ ● p.
12	30.4	22.9	70	SSW	1	33	↙ ●² a. ⚡ p.
13	32.2	22.1	69	NE	1	------	Ω ◯ a. ⚡ p.
14	32.5	22.3	90	SE	1	3.3	Ω a. ↙ ●° p.
15	32.7	22.4	76	NE	1	------	◯ a. ⊕ ⚡ p.
16	32.5	22.4	73	NNE	1	.3	●° a. ⊍ ⚡ p.
17	33.1	20.8	62	NE	2	------	Ω ◯ a. ↙ p.
18	33	20	72	NE	2	------	Ω a.
19	33.2	20.8	66	NE	2	------	Ω a.
20	33.4	21.3	67	NE	1	------	Ω a.
21	33.3	21.5	71	NE	1	------	Ω a.
22	33.5	21	69	NE	1	------	Ω a.
23	33.4	21	67	NE	1	1	Ω a. p ↙ p.
24	32.9	22.3	67	NE	1	3.8	p a. ⊍ p.
25	33.5	21.4	71	N	1	------	Ω ◯ a. ⊍ p.
26	33.9	20.7	67	SSE	3	.5	Ω a. ↙ p ⚡ p.
27	33.7	23.4	66	SSE	1	1.3	●° a. p p.
28	32.5	23.5	71	E	1	15.5	● a. ●° p.
29	32.1	23.3	74	ENE	1	20.6	●² a. ⚡ p.
30	32.3	22.8	70	ESE	1	------	Ω a.
31	31.7	22.9	74	E by N	1	45.7	↙ ● a. p.
Mean	32.7	22.2	70.6	------------	1.3	------	
Total	------	------	------	------------	------	198.3	

GUBAT.
[ϕ=12° 55′ N; λ=124° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	34.5	22.8	67	W	1	3.3	●° a. p.
2	33.4	21.8	60	S	2	2	● ⊤ d p.
3	34	22.1	55	S	1	3	⚡ ● p.
4	33.9	23	58	E	1	------	d ⚡ p.
5	34.4	23.2	52	NE	2	2.5	● p.
6	33	21.6	56	NE	1	12.7	d a. ● p.
7	31.5	22	67	E	2	26.2	● ⊤ a. d p.
8	33	23.5	67	E	3	30.5	⛈ a. ●² a. p.
9	33	22	61	NE	2	6.4	● d a. ⌒ p.
10	33.2	23.2	60	NE	2	------	d p.
11	31.2	24.2	90	E	2	40.6	● a. ⛈ ●² p.
12	32.9	22.7	61	NE	1	12.7	● d a. ⌒ p.
13	32.6	23	67	NE	1	15.7	●² p.
14	33.5	22.3	60	E	1	13.7	● p.
15	29	23.1	75	E	1	24.1	●² ⌒ a. ● p.
16	31.6	22.5	64	E	2	9.7	● a.
17	32.7	21.2	61	NE	1	------	
18	32.5	21	63	NE	1	------	⌒ a.
19	32.4	20.7	62	NE	1	------	
20	33.4	21.5	59	NE	1	------	
21	33.5	22.5	58	NE	1	------	
22	33.4	22.4	79	NE	1	8.1	⌒ a. ● p.
23	33	22	58	NE	1	3	● a.
24	33	24.4	60	NE	2	2	p a. d p.
25	30.7	21.7	73	NNW	1	26.7	⛈ ↙ ● p.
26	31.8	22.6	62	SE	2	------	
27	33.4	22.2	61	E	1	------	
28	32.5	23.5	71	E	1	41.9	●² a. p.
29	33	23.4	59	E	1	------	
30	32.8	23.4	62	E	1	36.1	●² ⌒ a.
31	32.4	23.8	64	NE	1	------	⊤ ⚡ d p.
Mean	32.7	22.6	63.6	------------	1.4	------	
Total	------	------	------	------------	------	320.9	

SUMAY, GUAM (Ladrones Islands).
[ϕ=13° 22′ N; λ=144° 45′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	29	23.6	84	SE	1	------	
2	27.8	24.8	84	N	2	------	
3	29	23.2	75	N	2	------	
4	29	24.2	87	ESE	3	------	↙ ● a.
5	30	24.2	70	E	3	------	
6	29.4	25	80	NNE	2	------	
7	29.4	24	77	NE	3	------	
8	29.6	23.2	74	E	4	------	
9	28.8	23.8	84	ENE	3	------	⊤° ●² a.
10	29.6	23.6	78	ENE	4	------	
11	29.4	23.2	74	ENE	4	------	↙ ● a.
12	29	23.8	74	ENE	4	------	
13	29	24.6	78	ENE	6	------	↙ ●² a. p.
14	29	24	87	ENE	6	------	↙ ● a.
15	30	24.6	79	SW	4	------	
16	29.2	24.8	79	S	2	------	
17	29.4	24	84	S	5	------	↙ ● p.
18	30.2	24.8	75	SW	4	------	⊍ a.
19	30.2	25.4	77	SW	3	------	
20	29.8	24.8	74	SW	3	------	
21	30	24.6	71	W	1	------	
22	27.8	23.2	87	NE	4	------	
23	27.8	23.4	82	SE	4	------	●² a. ↙ ● p.
24	29.8	24	71	E	5	------	↙ ● a. p.
25	30.4	24	77	ESE	4	------	
26	30.8	23.8	70	ENE	2	------	
27	29	24.2	88	E	3	------	
28	27	24	87	NE	4	------	●² a.
29	30.4	24	64	SE	3	------	
30	30.4	23	74	NE	3	------	
31	29.8	25	71	NE	4	------	
Mean	29.4	24.1	77.9	------------	3.4	------	
Total	------	------	------	------------	------	------	

BATANGAS.
[ϕ=13° 45′ N; λ=121° 03′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	31.4	22.8	72	SSW	1	14.5	● a. ⛈ p.
2	31.8	21.7	71	SW	2	15.2	⛈ ↙ ● p.
3	28.8	22.2	81	ESE	1	------	⊤ a.
4	31.8	22.6	71	E	2	3	● ⌒ p.
5	32.9	22.7	66	SSW	1	3.3	● ⊤ p.
6	32.5	21.7	68	ENE	2	------	⛈ p.
7	31.9	21.3	84	WSW	1	1.3	● ⛈ p.
8	31	22.8	76	SSW	3	.3	●° a. ⛈ p.
9	32.5	22.2	66	SSE	2	2.3	● a.
10	33	21.7	87	Calm	------	23.9	⛈ ● p.
11	32.9	22.5	67	SE	2	.5	●° ⊤ p.
12	31.7	22.4	66	E	1	.5	●° a.
13	31.8	22.2	70	ENE	3	------	⛈ d p.
14	31.7	22	74	SW	2	7.1	●° ⌒ p.
15	30.1	21.5	89	ESE	1	10.7	● a.
16	31.4	21	86	SSE	1	.5	●° ⛈ p.
17	31.1	19.4	68	SSW	2	------	
18	31.5	20.2	72	SSE	2	6.4	⛈ ● ⌒ p.
19	32.3	21.6	67	SSE	2	------	
20	32.9	19.7	64	SW	2	------	
21	32.6	20.8	67	W by S	2	------	
22	32.5	20.7	66	W by S	2	------	
23	31.3	20.6	80	N	2	.8	● ⊤ ⌒ p.
24	32.8	20.8	63	SE	2	------	
25	31.3	21.6	72	SW	2	------	⌒ d p.
26	26	20.9	93	Calm	------	54.9	r a. p.
27	32.6	21.7	63	S by E	2	------	
28	32	22.2	66	SSE	2	------	◯ a.
29	32.8	22.4	66	SSE	2	.5	●° a.
30	33.2	21.8	62	WSW	2	------	⛈ p.
31	31.9	21.3	70	SSE	1	.3	●° p.
Mean	31.7	21.6	72	------------	1.7	------	
Total	------	------	------	------------	------	146	

METEOROLOGICAL DATA, ETC.—Continued.

SILANG.

[ϕ=14° 14′ N; λ=120° 58′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.6	20.8	72	W	1		≡ a. ↙° p.
2	30.9	20.6	72	W	1		
3	30.8	20.8	72	W	1	33.8	● a. p.
4	30.8	20.8	72	SW	2		Ω ≡ a. ↙° p.
5	30.9	20	72	W	2		Ω a.
6	30.3	20.1	72	W	2		≡ a. ↙° p.
7	30	20.7	71	W	2		d a. ⊤ p.
8	30.6	21.	68	W	2		≡ a. ↙° p.
9	30.2	20.6	70	SW	2		
10	30.7	20.4	69	W	3		d p.
11	30.5	20.6	70	W	3	4.6	Ω ≡ ● a.
12	30	20.5	70	W	3		↙° p.
13	30	20.2	69	E	1		↙° a. p p.
14	30.8	19.3	71	W	2		Ω a.
15	30.7	20.3	69	W	3		
16	31.4	20.4	71	W	3		Ω a. ↙° p.
17	30.9	20.8	69	W	2		d p.
18		20.5	70	W	3		↙° p,
19							
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
Mean	30.6	20.5	70.5		2.1		
Total							

SAN ANTONIO.

[ϕ=14° 23′ N; λ=121° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	31.	20.6	85	NE	1		
2	28.5	19	83	NW	2	21.6	
3	24.6	19.5	94	E	1	38.1	
4	28.1	21.5	79	E	2	10.9	
5	29.5	21.5	64	SE	1		
6	31	19.5	65	SE	1		
7	30.1	20	64	SE	2		
8	28.6	19.6	84	SE	2	2.3	
9	30.8	21	80	E	2	6.4	
10	29.6	22.4	91	NE	3	15.2	
11	29.5	22.5	90	E	3	45.7	
12	24.2	20.2	95	E	1	27.9	
13	25.5	21.5	91	E	1	28.4	
14	27.5	20.4	85	E	1	20.3	
15	29.5	20.9	90	E	2	10.2	
16	29.5	21.9	88	E	2	8.4	
17	30.7	18.8	63	E	1		
18	30.8	19.8	66	N	1		
19	30.8	20.2	64	E	2		
20	31.1	18.2	65	E	1		
21	31.3	19.7	65	E	2		
22	31	20	61	E	1		
23	30.9	·8	70	E	2		
24	30	18.4	70	NE	2	7.6	
25	30	22.5	69	NE	2	16.5	
26	28	17	96	SW	1	47.8	
27	30	18.1	84	SE	2		
28	31.2	20.8	78	SE	3	18	
29	30.8	21	73	E	1		
30	32.1	20.5	64	E	1		
31	31.1	21.4	73	E	1		
Mean	29.6	20.2	77.1		1.6		
Total						325.3	

CORREGIDOR.

[ϕ=14° 23′ N; λ=120° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C	°C.	P. ct.		0-12.	mm.	
1	32.5	24.5	64	SW	1		
2	32.7	24.2	62	SW	1		
3	29.3	23.8	72	NE	2		
4	30	24.5	73	N	2		
5	33.5	24	63	N	1		⌐ζ p.
6	32.8	24.8	67	N	1	31	⌐ζ ● p.
7	31.4	20.4	68	N	2		
8	29.8	23.8	74	N	2		d a.
9	31.5	24.4	65	NE	2		
10	32	23.9	68	N	2		d p.
11	31.5	24	67	N	1	12.2	● p.
12	30.2	21.7	69	NE	2		
13	30.5	24	69	N	1		
14	30.2	23.3	66	NE	1		
15	30	23	76	NE	1		
16	31.7	23.4	60	NE	2		
17	31.7	22.8	62	NE	1		
18	32.3	22.5	70	NE	1		
19	31.7	23.2	69	NE	1	11.9	● a.
20	32	22.7	68	N	1		
21	32.7	23.5	59	N	1		
22	32.7	23.2	65	N	1		
23	32.5	23.3	63	NE	1		
24	31.2	23.8	65	N	2		
25	31.8	24.5	64	N	1		↙ d p.
26	31	21	90	SW	5	55.9	● a. r p.
27	31.6.	20.8	72	N	2	2.8	● p.
28	30.9	23.1	67	N	2		
29	32.6	23.9	69	NE	2	12.4	⌐ζ ● p.
30	32.5	23.3	66	N	1		
31	32	24.5	64	N	1		
Mean	31.6	23.3	67.6		1.5		
Total						126.2	

BALANGA.

[ϕ=14° 41′ N; λ=120° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33	23.7	63	S	2		ζ p.
2	33.4	23.6	61	SW	1	5.3	⊤ d ζ ● p.
3	30	23.3	71.	Calm			d p.
4	29.5	24	74	N	1	.5	●° a. ⌐ζ p.
5	33	23.1	60	NE	1	1.3	⌐ζ ●° p.
6	33.6	23.5	55	S	2		⌐ζ p.
7	33.4	22.6	60	Calm		.8	●° p.
8	28.5	23.9	74	Calm			ζ p.
9	33.5	23.1	38	N	1		ζ p.
10	34	22	58	NNE	2		⊤ ζ p.
11	33.5	24.4	84	NW	1	14	d ⌒ a. ⌐ζ ↙ ●° p.
12	31.5	23	72	Calm			
13	31	22.2	71	ENE	1		ζ p.
14	31	22.1	68	N	1		
15	32	22.2	67	N	2		⊤ p.
16	33.2	23	58	Calm			
17	33	21 9	60	NW	1		
18	34.1	21.9	63	SW	2		
19	33.6	24.1	57	SE	1		⌐ζ p.
20	33.1	22.8	49	SE	1		
21	34	23	55	SE	1		ζ p.
22	33	23.8	58	SE	2	13.5	● a. ζ p.
23	33.3	23.5	57	SSE	1		Ω a. ⊤ d° ζ p.
24	33.5	21.8	63	N	3		Ω a.
25	32.9	23.4	62	NNW	2	2	⌐ζ ●° p.
26	26.7	22.5	89	SW	2	27.5	↙° ●° a. p.
27	31.6	22.2	66	NE	1		ζ p.
28	32.5	22.9	63	NE	1		Ω a. ζ d p.
29	32.9	22.6	64	Calm		5.6	Ω a. ⌐ζ ● p.
30	32.6	24	64	SE	1		⌐ζ p.
31	33.5	23	64	N	2	54.4	⌐ζ ●² p.
Mean	32.4	23	63.5		1.2		
Total						124.9	

METEOROLOGICAL DATA, ETC.—Continued.

TARLAC.
[ϕ=15° 31′ N; λ=120° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	35.2	23.6	54	SE	1	------	≡° Ω^2 a. ⌈ʒ p.
2	34.6	23.1	59	N by E	1	64.8	≡^{2} Ω a ⌈ʒ ↙ ●^{2}
3	34	22.3	60	NW	1	2.8	⌈ʒ ●° p.
4	33.8	22.8	61	SE	1	------	≡° a. ζ° p.
5	34.8	22.7	60	SW	1	43.2	≡° Ω a. ⌈ʒ ↙ ●^{2}
6	34.2	22.3	56	WSW	1	23.4	⌈ʒ ● p.
7	34.1	21.8	62	W by S	1	------	ζ° p.
8	28.2	23.4	80	W	1	2.3	●° p.
9	33.2	22.2	63	SE	1	------	Ω^2 a. ζ° p.
10	35	21.8	60	SW	1	7.6	≡° Ω^{2}a. ⌈ʒ ● p.
11	34.3	22.2	54	E	2	.8	⌈ʒ ●° p.
12	33.8	23	65	SW	1	------	
13	33.8	21.9	52	ESE	1	------	≡° Ω^2 a. ζ° p.
14	32.1	22.6	68	WSW	1	------	Ω d° a. ζ° p.
15	33.6	21.7	88	WSW	1	9.1	≡° Ω a. ↙ ● ⊤ p.
16	33.5	22	52	N by E	1	------	≡ Ω a.
17	34.3	22	60	NW	1	------	≡ Ω a.
18	34.5	21.5	60	W	1	1	Ω a. ⌈ʒ° ●° p.
19	34.5	22.5	61	W by N	1	------	≡ a. ⌈ʒ° p.
20	35	22.5	54	SW by W	1	.5	≡ Ω^{2}a. ●° ⌈ʒ p.
21	34.5	22.7	54	SW	1	------	
22	34.8	22.9	54	SW by S	1	.8	≡ Ω a. ⌈ʒ ●° p.
23	35	22	54	SW	1	------	≡ a. ⌒° d° p.
24	33.7	22.3	57	SW	1	------	≡° a.
25	33.7	22.3	55	SE	1	.3	Ω ○^{2}a. ●° ⊤° p.
26	27	22.3	97	E by S	10	22.8	● d ↙ a. p.
27	33.2	21.3	80	SE	1	20.1	≡ a. ⌈ʒ ● p.
28	33	21.8	68	SSE	2	2.8	≡° a. ⌈ʒ ●° p.
29	34.2	22.1	61	S	1	------	≡ Ω a. ⌒ ⌈ʒ° p.
30	34.4	22.9	57	WSW	1	------	≡ a. ζ° p.
31	34.9	22.1	58	NW by W	1	------	≡° Ω a. ⌈ʒ p.
Mean	33.7	22.3	62.1	------	1.4	------	
Total	------	------	------	------	------	202.3	

BALER.
[ϕ=15° 47′ N; λ=121° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.6	24.1	------	N	------	10.9	
2	31.4	23.5	------	NNE	------	6.9	
3	31.4	23.9	------	NE	------	------	
4	31	23.4	------	NE	------	------	
5	31.3	23	------	NE	------	------	
6	31.2	22.4	------	E	------	------	
7	31.4	22.4	------	E	------	26.7	
8	29.3	23.5	------	E	------	4.3	
9	30	23.4	------	ENE	------	------	⌒ a.
10	31.4	22.5	------	E	------	------	
11	31.4	24.3	------	ESE	------	12.7	
12	30.7	23.5	------	ENE	------	------	⌒ a.
13	30	22.6	------	E	------	------	
14	28.7	23.1	------	E	------	18.3	
15	28	23	------	E	------	------	
16	31	22.5	------	ENE	------	------	
17	31.4	21.4	------	N	------	5.6	
18	31.2	22.3	------	NE	------	------	
19	30.5	22.7	------	NE	------	------	
20	30.4	21.4	------	ENE	------	------	
21	30.6	23	------	E	------	31.2	
22	30.6	23	------	E	------	------	
23	30.5	21.9	------	NNE	------	6.4	
24	30.5	21.8	------	NE	------	2.5	
25	32	24	------	E	------	76.2	⌒ a.
26	26	22.6	------	SW	------	67.3	↙ a. p.
27	29	23	------	ESE	------	9.4	↙ a. ⌒ a. p.
28	27.6	23	------	NE	------	------	
29	29.4	23	------	NE	------	------	
30	30.5	22.4	------	NE	------	------	
31	30.2	23.7	------	NE	------	------	
Mean	30.3	22.9	------	------	------	------	
Total	------	------	------	------	------	278.4	

BOLINAO.
[ϕ=16° 24′ N; λ=119° 53′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	34.8	25.4	77	W	1	6.4	● ⌈ʒ p.
2	33.7	23.2	69	NE	1	------	ζ p.
3	33.2	23.6	63	NNW	1	------	
4	34	23.4	63	ESE	1	12.7	≡ a. ●^{2} ⌈ʒ^2 p.
5	34.2	24.2	67	NNW	1	------	d ⌒ a. ⌈ʒ a. p.
6	34	24.8	64	Calm	------	------	
7	33.6	24.4	65	NNW	1	------	
8	33.7	25	67	NNW	1	20.3	⌈ʒ ● p.
9	34.7	24.6	61	ESE	1	------	
10	35.2	23.5	64	NNE	1	------	≡ a. ζ p.
11	34.5	24.5	63	Calm	------	------	ζ p.
12	36	24.8	68	NE	1	------	⌒ p.
13	34.8	23.5	64	NE	1	------	≡ a. ⌈ʒ p.
14	34.9	23.9	64	ESE	1	------	⌈ʒ p.
15	34.6	23.4	66	ESE	1	------	⊤° ∞ p.
16	33.5	23.5	60	Calm	------	------	
17	34.4	23.9	65	WNW	3	------	↙° p.
18	34.3	23.2	68	NW	2	------	≡ a.
19	33.8	24.4	63	NW	2	.3	↙° ●° ⊤ p.
20	35.2	24.5	67	W	2	------	≡ a.
21	35.3	23.9	62	NNE	1	.3	≡ a. ●°
22	35.5	24.2	70	W	3	------	≡ a. ↙° p.
23	35.7	23.4	70	Calm	------	28.4	⊤° ●^{2} p.
24	33.8	22.2	69	E	1	------	
25	33.9	23.2	70	Calm	------	4.1	≡ a. ⌒ ●° p.
26	33.4	25.4	77	NNE	4	------	d a.
27	33.1	24.4	58	SSE	3	------	↙° a. p. ζ p.
28	33.6	23.5	58	Calm	------	------	↙° ζ p.
29	34.2	24.6	74	SW	1	.8	●° ⊤ p.
30	34.1	23.9	71	WNW	2	------	≡ a. ↙° p.
31	34.6	23.4	65	N by W	2	------	
Mean	34.3	24	66.2	------	1.3	------	
Total	------	------	------	------	------	73.3	

BAGUIO.
[ϕ=16° 35′ N; λ=120° 43′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	22.2	14.7	89	WSW	0	4.3	●° p.
2	22.6	14.8	88	Calm	------	24.9	● p.
3	23	13.3	85	WSW	0	------	
4	23.4	14.4	91	SW	0	------	
5	24	13.2	94	Calm	------	6.4	●° p.
6	23.2	13.3	95	Calm	------	28.7	d ● p.
7	22	12.8	91	Calm	------	------	
8	23.6	13.5	94	WSW	1	------	
9	24.7	13.8	81	W	1	------	
10	24.5	13	83	WSW	0	------	
11	23.9	15	79	SW	1	------	
12	23.5	14.5	92	WSW	2	------	
13	25.2	14.1	73	SE	2	------	
14	21.6	13.1	86	NE	2	10.2	d ● p.
15	23.5	15.4	92	WSW	1	------	⊤ p.
16	23.1	12.1	81	SW	0	------	
17	22.7	13	87	W	1	2	●° p.
18	21.7	12.7	86	SW	0	------	
19	23.4	12.9	82	WSW	0	------	
20	23	12.7	88	SW	1	------	≡ p.
21	23.1	13.2	88	WSW	0	------	≡ p.
22	22.7	13	88	SSW	0	2	≡ a. ●° p.
23	22.5	13.5	90	Calm	------	------	
24	24	12.2	83	W	0	------	
25	23	12.2	85	W	0	1.3	●° p.
26	19.9	15	74	NE	4	.8	●° a. p.
27	23.2	15.3	68	ESE	3	9.7	● a.
28	24	14.2	82	Calm	------	------	
29	24.6	14.8	83	WSW	0	1.3	●° p.
30	24	13.2	84	SW	0	------	≡ a.
31	23.1	13.2	93	WSW	0	3	●° p.
Mean	23.2	13.6	85.6	------	.6	------	
Total	------	------	------	------	------	94.6	

METEOROLOGICAL DATA, ETC.—Continued.

SAN FERNANDO UNION.

[ϕ=16° 37′ N; λ=120° 18′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.6	24	89	S	2	5.3	⌓ a. ●° ⌈ϟ d p.
2	30.2	22.2	72	SE	2	4.1	⌓ a. T ●° ↙ p.
3	29.8	22.3	71	E	2	------	⌓ a.
4	31	22.4	66	E	3	------	⌓ a.
5	31.8	23	73	E	2	------	⌓ a. T p.
6	30.8	23.2	76	E	2	------	⌓ a.
7	31	22.6	71	E	2	------	⌓ a.
8	29.5	22	61	E	2	------	⌓ a.
9	30.8	22.4	70	SE	2	------	⌓ a.
10	30.8	23	60	SE	3	------	⌓ a. T p.
11	31.2	23	71	SE	3	------	⌓ a.
12	30.8	22	75	SE	2	------	⌓ a. T ⌣ p.
13	31.2	22.2	69	SE	2	------	⌓ a.
14	31.4	22.6	69	SE	2	------	⌓ a.
15	30.4	23.6	70	E	3	------	⌓ a.
16	29.8	22	73	SE	2	------	⌒ p.
17	31.5	22.4	65	E	2	------	
18	31.2	22	71	E	3	.3	⌓ a. ●° p.
19	31.5	22.8	65	SE	2	------	⌓ a. ⌈ϟ p.
20	31.2	22.3	66	SE	2	------	⌓ a.
21	31.3	21.6	64	SE	3	------	⌓ a.
22	33.4	22.6	58	SE	2	------	⌓ a. ⌈ϟ p.
23	33.4	22.6	71	S	2	------	⌓ a.
24	31.2	22	69	E	3	------	⌓ a.
25	32.5	21.8	74	SE	2	------	⌓ a. d p.
26	29.5	22.4	66	NNW	2	------	⌓ a. ↙² ϟ p.
27	32.8	22.2	68	S	2	15	⌓ a. ● T p.
28	31.5	21.2	73	S	2	------	⌓ a. d T p.
29	32.4	22	69	S	2	------	⌓ a. ϟ p.
30	33.5	21.4	66	N	2	------	⌓ a.
31	31.4	21.2	74	SW	3	------	T p.
Mean	31.3	22.4	69.5	------	2.3	------	
Total	------	------	------	------	------	24.7	

CANDON.

[ϕ=17° 12′ N; λ=120° 26′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.3	25	76	SSW	1	2	⌓² a. T ●° ϟ p.
2	30.7	24	77	WNW	1	1	⌈ϟ° ●° p.
3	31	23.9	75	WNW	1	------	⌓² a.
4	31	24.5	75	WSW	1	------	⌓² a. ϟ p.
5	31	25.5	77	WSW	2	------	⌓² a. T d ⌒ ϟ p.
6	30.5	24	79	WNW	2	------	⌓ a. T ϟ p.
7	30.7	24.2	78	W	1	------	⌓² a.
8	30.4	24	82	NW	1	------	⌓² a. ϟ p.
9	31.4	24.4	83	W	1	------	⌓² a. ϟ p.
10	32	24.5	82	W	1	------	⌓² a. d ⌒ T p.
11	32	26	82	SW	1	3	T² ↙ ● ⌒° ϟ p.
12	30.5	24.1	87	W	1	------	T° ⌒ p.
13	30.7	24	92	W	1	------	⌓² a. ϟ p.
14	30.6	24.1	73	WNW	1	------	⌓² a. ϟ p.
15	29.9	25	71	W	1	------	ϟ T° p.
16	30.7	24.4	69	NW	1	------	⌓ a. ϟ p
17	31.5	24.2	69	WNW	1	------	⌓² a.
18	31.4	24.2	69	W	1	------	⌓² a.
19	31.5	24.2	69	W	0	------	⌓ a. ϟ p.
20	31.5	24	70	W	1	------	⌓² a.
21	31.5	24.7	75	SW	2	------	⌓² a.
22	31.4	23.6	72	W	0	------	⌓² a.
23	31.1	24.5	68	W	1	------	⌓ a. ϟ p.
24	30.9	24.5	72	WNW	1	------	⌓ a.
25	30.5	23.5	75	SW	1	------	⌓ a. d ϟ p.
26	29.7	24.6	90	NE	2	2.5	●° a.
27	31.5	24.1	74	SW	1	------	⌓ a. d p.
28	30.7	24	73	WSW	2	------	⌓² a. T ⌒ d ϟ p.
29	31	24.8	78	WNW	2	------	⌓ a. ϟ p.
30	31.4	24.2	77	SW	1	------	⌓ a. T p.
31	30.8	24.6	78	NW	1	------	⌓² a. ↙ T ϟ p.
Mean	31	24.4	76.4	------	1.1	------	
Total	------	------	------	------	------	8.5	

LAOAG.

[ϕ=18° 12′ N; λ=120° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	34.4	23.1	62	WSW	3	2.3	⌓ a. T ● ϟ p.
2	33.5	22.8	71	W	4	------	ϟ p.
3	35.4	20.1	42	SW	1	------	≡ a.
4	35.3	18.6	50	WNW	4	------	≡ a.
5	34.9	21.5	65	W	3	------	≡ a. T p.
6	34	20.3	75	NW	4	15.5	T ● p.
7	33.9	22.9	63	W	2	1.8	⌓ a. T ● p.
8	33.8	18.9	66	WNW	3	------	⌈ϟ° p.
9	35.3	20.6	63	SW	4	------	
10	34.3	19.2	56	NW	3	------	⌓ a.
11	36.2	22.4	44	NNE	2	.5	●° p.
12	36	20.5	52	SW	3	------	≡ a.
13	35.7	20.4	60	WNW	3	------	≡ a.
14	32.9	20.1	57	NNE	2	------	⌣ p.
15	34.7	21.6	54	WSW	2	------	
16	35.4	20.5	66	NNW	4	------	
17	35.5	21	50	W	4	------	≡ a.
18	36.2	21.3	54	NNW	1	------	⌓ a.
19	35.7	20.5	62	NW	3	------	≡ a.
20	36	19.7	61	WNW	4	------	≡ a.
21	35.9	18.9	61	W	3	------	≡ a.
22	35.9	20.3	55	W	4	------	≡ a.
23	35.8	21.8	58	SW	3	------	≡ a. ϟ p.
24	36.4	19.2	55	NW	3	------	≡ a.
25	36.8	18.7	45	N	4	5.3	≡ a. ● p.
26	29.4	20.5	71	NNE	4	3	● a.
27	36.8	18.5	58	W	3	7.1	⌒ ● ⌈ϟ p.
28	34	17.9	68	NW	4	------	≡ a. T ϟ d p.
29	34.3	17.3	67	SW	4	------	≡ a. T ϟ d p.
30	35.5	18.9	63	W	4	------	≡ a. T p.
31	36.3	17.5	58	NW	4	------	≡ a.
Mean	35	20.2	59.1	------	3.2	------	
Total	------	------	------	------	------	35.5	

SANTO DOMINGO.

[ϕ=20° 28′ N; λ=121° 59′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.6	23.3	76	ENE	2	9.4	●° a. ≡ ● ↙° p.
2	30.3	23.5	73	ENE	2	.3	↙° a. p. ≡ ●° p.
3	31	22.4	65	E	2	------	≡ p.
4	30.8	23.9	74	E	2	3.4	≡ ● p.
5	31.1	23.2	79	ESE	1	------	⌓ a. ϟ p.
6	31	22.4	78	ESE	2	1.3	⌒² ●° a. ≡ p.
7	30.3	23.2	76	ESE	2	------	d ⌒ a. ○ p.
8	30.7	24.1	85	SE	2	3.2	↙ ●° ϟ p.
9	31	24.7	75	ESE	2	------	≡ ↙° ϟ d p.
10	31.9	24.5	77	ENE	2	------	↙° a. p. ϟ p.
11	30.8	23.9	75	ENE	2	3.4	●° a. ≡ p.
12	31.3	21	67	E	2	------	⌓ a. ≡ p.
13	31.4	23	87	E	1	2.5	⌓ ↙° a. ●° p.
14	31.9	22.9	67	E	2	------	⌓ a. ↙° d ⌣ p.
15	31	21.6	73	E	2	.8	●° a. p. ≡ p.
16	31.4	22.5	71	E	2	------	↙° a. p. ≡ d° p.
17	31	22	72	NE	2	3	⌓² d° a. ●° ⌒ p.
18	30.2	24	74	NNE	1	3	●° a. p.
19	31.3	21	77	NE	1	------	⌓² d° a. ≡ ⌒ p.
20	31.5	20.7	74	SSE	1	------	⌓² a. p. ≡ p.
21	31.3	20.7	71	SE	2	3.3	⌓² ⌒ a. ↙° ● p.
22	30.7	21.6	73	ESE	1	------	d ⌒ a.
23	30.7	21.3	78	E	1	.3	●° a. ⌓² a. p.
24	30.7	21.5	70	NE	2	16.3	⌓ a. ↙° ● ⌈ϟ p.
25	31	23.1	76	NE	2	3.3	d ⌒² a. ↙ ● p.
26	30.5	24.8	73	E	3	17.8	↙ a. p. ● ϟ p.
27	30.5	21.5	79	E	2	4.4	d° ⌒ a. ≡ ●° p.
28	30.3	24	77	ESE	1	2.3	d° ≡ ⌒ ● p.
29	30.5	24	79	ESE	1	1.3	d° a. ϟ ●° p.
30	30.5	23.6	79	W	1	------	≡ ϟ p.
31	30.6	21.7	72	W	1	------	⌓² T d° a. ≡ ϟ²
Mean	30.9	22.8	74.9	------	1.7	------	
Total	------	------	------	------	------	79.3	

NOTAS GENERALES DEL TIEMPO.

Presión y temperatura.—Como veremos luego, sólo un tifón influyó este mes en Filipinas, y aun éste fué relativamente de poca importancia y se movió con mucha rapidez. De ahí que la media mensual de la presión atmosférica resulte bastante superior á la media de Octubre del año anterior, y algo superior también á la normal de este mes deducida de varios años de observación. Véase en confirmación de esto la tabla que acompaña el texto inglés y el cuadro de observaciones meteorológicas de Manila. Los días de mayores presiones en Filipinas fueron el 2 y el 3 y el 28. Las mínimas mensuales se observaron en todas las estaciones, salvas raras excepciones, el 25 ó el 26.

La media temperatura mensual de Manila se diferencia de la normal de Octubre en —0.4° C. La máxima absoluta mensual registrada en el Observatorio Central ha sido 33.7° C., y la mínima absoluta mensual, 20.8° C.: fueron observadas los días 5 y 17 respectivamente. El día de menor oscilación térmica en Manila fué el 26, en que el termómetro osciló solamente entre 21.8° C. y 25.3° C. En la primera tabla del texto inglés damos como de costumbre las medias mensuales de la temperatura para las estaciones de 1.ª y 2.ª clase, su diferencia de las medias de Octubre, 1906, y las máximas y mínimas absolutas de todo el mes.

Precipitación acuosa.—Según se ve en la segunda tabla del texto inglés, sólo nueve estaciones dan un total de lluvia superior al de Octubre del año precedente: todas las demás lo dan inferior al mismo. Sin embargo, la lluvia recogida en Manila supera á la normal de Octubre en 30.7 mm. En muchas estaciones de Luzón la mayor cantidad de lluvia caída en un día tuvo lugar cuando el tifón de 25 á 27, de que hablaremos más abajo.

DEPRESIONES Y TIFONES.

Dos tifones únicamente anunció el Observatorio de Manila durante el mes de Octubre: uno que recurvó en el Pacífico quedándose á gran distancia de Filipinas y de Japón, y otro que, procedente también del Pacífico, atravesó la Isla de Luzón y el Mar de China en dirección al Golfo de Tonking, en donde recurvó hacia el nordeste. Diremos cuatro palabras sobre cada uno de estos tifones.

TIFÓN DE 13 Á 22 DE OCTUBRE, 1907.

He ahí los anuncios enviados por el Observatorio de Manila al Japón, Formosa y costas de China é Indochina los días 14, 17 y 19:

Día 14, 11.30 a. m.: Tifón al sud de Guam.

Día 17, 8 a. m.: Tifón hacia el norte de Yap. Se ha movido muy lentamente por tres días.

Día 19, 10 a. m.: Tifón recurvó al norte de Yap y noroeste de Guam. Aparece ahora hacia el norte de Guam moviéndose aparentemente al ENE.

El curso ulterior del tifón durante los tres días siguientes fué indicado por el Observatorio en las notas ordinarias del tiempo del 21 y 22. Damos á continuación la parte de dichas notas que hace á nuestro propósito:

Día 21, 12.15 p. m.: El tifón del Pacífico aparece en el mapa del tiempo de esta madrugada hacia el ESE de las Islas Bonín moviéndose probablemente al NE.

Día 22, 12.30 p. m.: El tifón del Pacífico inclinó su trayectoria hacia el norte y aparece en el mapa del tiempo de esta mañana hacia el ENE de las Islas Bonín moviéndose aparentemente hacia el NNE.

En el texto inglés publicamos dos tablas en las que incluímos las observaciones hechas durante este período en Guam (Islas Marianas), Yap (Carolinas Occidentales) y Chichijima (Islas Bonín). Estas tablas de observaciones indican respectivamente el paso del centro ciclónico por entre Guam y

Yap en la primera rama de su parabólica trayectoria y por entre Guam y Chichijima en la segunda rama. Casi la única nota discordante que aparece en estas observaciones son los vientos del SW que soplaron en Guam el día 15, á pesar de tener el centro del tifón hacia el SW. Si dicha dirección no está equivocada, hemos de suponer que existiría al mismo tiempo otra causa perturbadora de la que no tenemos noticia hasta el presente.

La trayectoria de este tifón puede verse en la lámina I. El tifón parece que verificó la recurva antes de llegar al meridiano de Yap. El 19 se movía el vórtice al ENE. El día 20 volvió á inclinarse al NE y NNE, según indicó el Observatorio: mas, á juzgar por las observaciones del Japón del 23 y 24, el tifón ó se inclinó otra vez al E internándose en el Pacífico, ó se deshizo al E de la Isla Nippon.

TIFÓN DE 25 Á 30 DE OCTUBRE, 1907.

Este tifón puede, sin duda, tomarse como modelo de tifones que apenas dan tiempo para ser anunciados con la debida anticipación. Formado, según parace, en el Pacífico, al este y tal vez á no mucha distancia de Filipinas, se presentó la madrugada del 26 al ENE de Manila y cerca de la costa oriental de Luzón, sin que le hubiese sido posible al Observatorio anunciar su existencia la tarde del día anterior. Es verdad que se decía en la nota ordinaria del tiempo de 12.15 p. m. del 25 que "la presión atmosférica era algo inferior á la normal en el sudeste de Luzón, en Visayas y en Mindanao"; pero el hecho de que todos los barómetros de dichas estaciones se conservaban á una altura algo mayor de 756 milímetros á 2 p. m. del mismo día fué suficiente para que el Observatorio se abstuviese por entonces de enviar ningún aviso de tifón. Sin embargo, al observar la curva del barógrafo Fuess á 11 p. m. llamó sobremanera nuestra atención la bajada observada de 9 á 10 p. m. y nos pusimos en guardia por lo que ello podría significar. Á eso de 1 a. m. del 26 dimos de nuevo un vistazo á dicha curva y aunque desde luego reconocimos ser enteramente anormal, con todo, creímos no haber en ello nada alarmante y que podíamos aguardar la madrugada para resolver si realmente existía algún peligro y tomar las debidas precauciones. Eran solamente las 4 a. m. cuando una simple mirada á la curva barográfica nos indujo á hacer izar inmediatamente en Manila y provincias cercanas á la Capital la 4.ª señal de temporal que significa existir un temporal cuya "situación es peligrosa para la localidad, bien que sin ser inminente todavía."

En el texto inglés publicamos una copia exacta de la curva barográfica á que nos referimos. Según se ve en ella, el barómetro empezó á bajar de una manera bien marcada desde $1^h\ 22^m$ a. m. trazando una curva característica de un baguio que se acerca y va á pasar cerca de la localidad. No había tiempo que perder, y así apenas se recibieron las observaciones de provincias de 6 a. m. hicimos el mapa del tiempo correspondiente á dicha hora, situamos al centro del tifón al ENE de Manila cerca de la costa oriental de Luzón y se avisó que el baguio pasaría cerca por el norte de la Capital en dirección al Mar de China.

Á las $4^h\ 00^m$ p. m. del 26 telegrafiaba el Observatorio á Tokio, Shanghai, Taihoku, Hongkong y Phulien:

> El tifón ha cruzado Luzón por el norte de Manila y sur de Dagupan moviéndose muy rápidamente hacia el W.

La verdad de este anuncio la echarán de ver nuestros lectores examinando con detención las observaciones de Atimonan, Manila, Olongapó, San Isidro, Tárlac y Dagupan, las cuales publicamos en el texto inglés. Las tres primeras estaciones se hallaron al lado sur de la trayectoria del tifón, y las tres últimas al lado norte. Véanse también en el texto inglés las isobaras de 6 a. m. y 2 p. m. del 26.

Afortunadamente ó no estaba aún bien desarrollado el baguio al penetrar en Luzón, ó perdió algo de su intensidad al atravesar dicha isla; pues no tenemos noticias de que causase en ninguna parte grandes perjuicios. La velocidad de traslación del meteoro al atravesar la Isla de Luzón fué de unas 15 millas por hora. Las mínimas barométricas se observaron: á 6 a. m. en Atimonan, á 9.10 a. m. en Manila, á 11.50 a. m. en San Isidro, á 1.10 p. m. en Olongapó y á 2.10 p. m. en Dagupan.

El observatorio de Manila siguió el curso ulterior de este tifón en las notas ordinarias del tiempo de 27–30, como puede verse por las siguientes partes de dichas notas que hacen á nuestro propósito:

Día 27, 12.10 p. m.: El tifón que cruzó ayer la Isla de Luzón se halla ahora en el Mar de China á medio camino entre Filipinas é Indochina.

Día 28, 12.15 p. m.: Según las observaciones de Indochina que acabamos de recibir, el tifón que cruzó antes de ayer la Isla de Luzón se hallaba esta madrugada en el Mar de China entre los paralelos 15° y 16°, acercándose al centro de Indochina. Continúa moviéndose al oeste y parece haber aumentado en intensidad.

Día 29, 12.30 p. m.: Según cablegrama recibido del Observatorio de Phulien (cerca de Haiphong), el tifón se hallaba ayer tarde á unas 200 millas al SE de Haiphong moviéndose al NW. Parece ser que el centro ciclónico empezó á recurvar hacia el norte antes de llegar á Indochina: actualmente se halla en los alrededores de la Isla de Hainán moviéndose hacia el norte.

Día 30, 12.15 p. m.: El tifón parece haber penetrado ayer tarde en el Continente al norte de Hainán.

Las observaciones verificadas en la estación del Faro Lamko, costa noroeste de Hainán, señalan perfectamente la recurva del tifón al oeste de dicha isla. El centro pasó sucesivamente por el S, W y N de Lamko en el intervalo de unas quince horas.

Damos á continuación los anuncios que dió el Observatorio de Hongkong, referentes á la última parte de la trayectoria de este tifón:

Día 29, 11.55 a. m.: El tifón se halla situado al W del estrecho de Hainán. Parece haberse movido desde ayer hacia el norte y tener tendencia á recurvar al NE.

Día 30, 11.55 a. m.: El tifón estuvo recurvando ayer hacia el NE y se halla ahora al NW de Hongkong.

En la lámina I que acompaña el texto inglés damos la trayectoria de este tifón de Luzón juntamente con la del otro tifón de Carolinas y Marianas de que hemos hablado antes.

SEISMOLOGICAL BULLETIN FOR OCTOBER, 1907.

By Rev. Miguel Saderra Masó, S. J.,
Assistant Director of the Weather Bureau.

EARTHQUAKES FELT IN THE PHILIPPINES.[1]

1, 22^h 16^m. **Vigan** (NW of Luzon). Trepidatory shock of intensity I and about 3^s duration.

4, 18^h 33^m 25^s.* **Butuan** (N of Mindanao). Oscillatory earthquake. Direction SW–NE; intensity III.

5, 11^h 32^m 40^s.* **Islands of Panay and Negros.** Earthquake of intensity III. The shock was well perceptible throughout nearly the whole of Panay and the northern part of Negros. Nevertheless it is not certain that the phenomenon developed any great violence in any determined region.

5, 12^h 15^m. **Butuan** (N of Mindano). Oscillatory earthquake. Direction SSE–NNW; intensity II.

27, 14^h. **Culion** (Calamianes). Oscillatory quake of intensity II and short duration.

RECORDS OF THE MICROSEISMOGRAHS.

(Time of the one hundred and twentieth meridian east of Greenwich. Midnight = 0^h.)

No.	Date.	Component.	Beginning. First preliminary tremors.	Beginning. Second preliminary tremors.	Beginning. Principal portion.	Maximum range of motion. Hour.	Maximum range of motion. Amplitude (2 a.).	Maximum range of motion. Period.	End.	Instrument.	Remarks.
			h. m. s.	*h. m. s.*	*h. m. s.*	*h. m. s.*	*mm.*	*s.*	*h. m. s.*		
189	4	WSW-ENE	18 33 25	18 39 03	18 46 15	18 51 17	0.01	13	19 25 00	V. M.	Earthquake, intensity III at Butuan (N of Mindanao).
		NNW-SSE	18 33 25	18 39 03	18 46 15	18 52 14	.01	11.2	19 25 00	V. M.	
		WSW-ENE	18 33 30	18 39 07	18 45 42	18 49 44	.06	11.4	19 16 00	H. P.	
		NNW-SSE	18 33 26	18 39 10	18 45 48	18 49 46	.08	10.8	19 18 00	H. P.	
190	5	WSW-ENE	11 32 42	—	11 33 49	11 35 01	.13	2.8	12 06 00	V. M.	Vertical component; amplitude 0.05 mm. Earthquake, intensity II in Panay and Negros Islands.
		NNW-SSE	11 32 39	—	11 33 45	11 35 08	.23	2.8	12 06 00	V. M.	
		WSW-ENE	11 32 56	—	11 33 57	11 37 03	.79	6.6	12 12 00	H. P.	
		NNW-SSE	11 32 53	—	11 33 54	11 37 14	.73	7.8	12 11 00	H. P.	
191	6	WSW-ENE	—	—	18 13 36	—	—	—	18 15 00	V. M.	
		NNW-SSE	—	—	18 13 35	—	—	—	18 15 00	V. M.	
192	11	WSW-ENE	5 50 15	—	—	—	—	—	6 26 00	H. P.	
193	11	WSW-ENE	22 36 33	—	—	—	—	—	23 31 00	V. M.	
		NNW-SSE	22 36 33	—	—	—	—	—	23 26 00	V. M.	
		WSW-ENE	22 36 43	—	—	—	—	—	33 36 00	H. P.	
		NNW-SSE	22 36 37	—	—	—	—	—	23 27 00	H. P.	
194	11	WSW-ENE	22 53 40	—	22 54 01	22 54 03	.12	2	—	V. M.	Vertical component; amplitude 0.16 mm. Near origin.
		NNW-SSE	22 53 39	—	22 54 00	22 54 02	.15	2.4	—	V. M.	
195	14	WSW-ENE	—	—	4 30 15	—	—	—	4 33 00	V. M.	Vertical component; amplitude 0.03 mm.
		NNW-SSE	—	—	4 30 15	—	—	—	4 33 00	V. M.	
196	14	WSW-ENE	20 35 07	—	20 35 20	20 35 37	.10	2	20 39 00	V. M.	Vertical component; amplitude 0.11 mm.
		NNW-SSE	20 35 05	—	20 35 19	20 36 14	.08	2.2	20 39 00	V. M.	
197	20	WSW-ENE	16 50 54	—	16 51 20	16 51 32	.25	1.8	16 57 00	V. M.	Vertical component; amplitude 0.18 mm.
		NNW-SSE	16 50 53	—	16 51 19	16 51 25	.36	2.4	16 57 00	V. M.	
		WSW-ENE	16 51 03	—	16 51 26	16 52 01	.07	6.6	16 58 00	H. P.	
198	21	WSW-ENE	—	—	2 39 17	—	—	—	2 41 00	V. M.	
199	21	WSW-ENE	12 33 06	12 40 30	12 46 06	12 47 12	.02	12.8	—	V. M.	Earthquake at Bokhara.
		NNW-SSE	12 33 05	12 40 32	12 45 58	12 47 24	.01	8.2	—	V. M.	
		WSW-ENE	12 33 12	12 40 38	12 46 22	12 47 50	.20	12	—	H. P.	
		NNW-SSE	12 33 09	12 40 33	12 45 57	12 47 58	.24	7.8	—	H. P.	
200	21	WSW-ENE	—	—	12 53 21	13 05 54	.02	10.8	14 04 00	V. M.	Second shock.
		NNW-SSE	—	—	12 53 20	13 06 04	.02	11.2	14 07 00	V. M.	
		WSW-ENE	—	—	12 53 40	13 05 11	.13	12.6	14 12 00	H. P.	
		NNW-SSE	—	—	12 53 35	13 06 17	.28	10	14 08 00	H. P.	
201	24	WSW-ENE	5 54 52	—	5 55 22	5 55 28	.08	2.4	5 58 00	V. M.	Vertical component; amplitude 0.08 mm.
		NNW-SSE	5 54 52	—	5 55 21	5 55 37	.05	2	5 58 00	V. M.	
202	24	WSW-ENE	16 46 04	—	16 46 59	16 47 35	.03	2.4	16 52 00	V. M.	
		NNW-SSE	16 46 04	—	16 46 59	16 47 41	.02	2.4	16 52 00	V. M.	

[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

Instrumental constants.—Vicentini microseismograph (V. M.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record: NNW–SSE component, 50 times; WSW–ENE component, 50 times.

Horizontal Pendulums (H. P.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation, NNW–SSE pendulum, T=7 seconds; WSW–ENE pendulum, T=6.4 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

Foundation and location.—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above the sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above the sea level.

Geological structure.—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters, which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

1, 22^h 16^m. **Vigan** (NW de Luzón). Temblor de tierra susultorio. Intensidad I; duración unos 3^s.

4, 18^h 33^m 25^s. **Butúan** (N de Mindanao.) Temblor oscilatorio. Dirección SW–NE; intensidad III.

5, 11^h 32^m 40^s.* **Islas Panay y Negros.** Temblor de intensidad III. Fué bien perceptible en casi toda la Isla de Panay y en la parte septentrional de la de Negros. No consta sin embargo que tuviese mucha intensidad en ninguna región determinada.

5, 12^h 15^m. **Butúan** (N de Mindanao). Temblor oscilatorio. Dirección SSE–NNW; intensidad II.

27, 14^h. **Culión** (Calamianes). Temblor oscilatorio de intensidad II y corta duración.

REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

[1] La intensidad de los terremotos se indica conforme á la conocida escala de De Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120 E de Greenwich.

CROP BULLETIN FOR OCTOBER, 1907.

By Rev. George M. Zwack, S. J.,
Secretary of the Weather Bureau.

GENERAL NOTES.

The results of some of the crops harvested during the month of October have been almost as varied as the topographical positions of the reporting stations. This is especially true of rice. No dependency upon latitude or on the difference between east and west coast manifests itself. Within very limited areas the yield has been widely different. Thus, for instance, Dagupan reports a good crop, while for Binmaley it is characterized as "insignificant." On the average, however, the rice crop (chiefly mountain rice) can probably be called middling, since the qualifications "good," "fair," and "bad" occur about an equal number of times. Only Isabela, Basilan, reports an abundant crop. Complaints about the high price of rice are general. In these circumstances it is lucky for the poor people that the yield of tubers, such as sweet potatoes, gabe, and uve, has been abundant in most places, and fair to good in the rest; only San Jose Buenavista reporting a rather scanty crop. But, as usual, not enough had been planted to really make up for the shortage in the staple food of the Islands; still they afford some relief. Vegetables and such fruits as were in season have been, as a rule, plentiful. There are no complaints about the corn crop from those regions in which it has been harvested; on the contrary, all the stations mentioning the same, describe it as good. The output of hemp and copra has been relatively small. This is not, however, due to the lack of material. On the contrary, hemp plants from which to extract the fiber and cocoanuts to make into copra have been plentiful in most places and scarce in none of the districts which grow these products, as far as reports are on hand. But the prices have been such as not to encourage whole-souled application to the work. Thus, as to hemp, early in the year the people of Dapitan did not consider it worth while to exert themselves, because instead of ₱22 to ₱24, hemp brought only ₱17 per picul (63.25 kilos). But during October the price was ₱12. At Butuan it fell as low as ₱10. Even the excellent quality produced in the Davao region failed to command a higher price than ₱18.50 per picul. Some of the prices paid for copra were ₱7.50 at Zamboanga, ₱7 at Atimonan, ₱6.75 at Bacolod, and ₱6.70 at Legaspi—all of them low for the respective regions.

With few exceptions, the state of the growing crops was very promising throughout the Archipelago at the end of the month. Aside from a few merely local complaints, the exceptions were the southern part of Cebu, where corn had to be substituted for the rice killed by drought; Tayabas, which complains that the irrigated rice was in poor condition and the next crop of cocoanuts threatened to be poor; but above all the northern and western coast of Luzon, above parallel 15°, where drought very seriously menaced the crop of irrigated rice.

Of animal pests Tacloban reports great damage to the plantations caused by *hanao* and *mayas* (both birds), while from Ormoc, on the opposite coast of Leyte, come complaints that mice and bats have ruined part of the rice crop. Locusts continued their activity on the Island of Panay, while in the Provinces of Zambales and Pangasinan various kinds of insects were equally busy doing mischief.

Unfortunately, animal diseases again furnish a dismal chapter. Epizoötia existed in the following provinces: Cagayan (southern part), Benguet, Pangasinan, Zambales, Tarlac, Laguna, Batangas, Tayabas, Oriental and Occidental Negros, Cebu, and Leyte. The losses have been severe at Sual and Mangatarem, Pangasinan; likewise in the northern part of Zambales, where 20 per cent of the horses and carabaos, and 32 per cent of the hogs succumbed. Negros and northern Cebu also suffered considerably. Surra killed many horses at San Fernando and Bauan, and a few at Balauan (Union Province); a few cases occurred likewise in the northern part of Cebu. Anthrax has been reported only from Zambales, where it created considerable havoc among the stock at Alaminos.

As to the latter sickness, serious danger was averted through the watchfulness of the port officers and the firmness of the honorable Secretary of the Interior. During the last decade of the month a shipment of cattle arriving at Manila from Hongkong was found infected with anthrax. In spite of all appeals, landing in Manila and even slaughtering in the bay was refused and the dangerous cargo had to be taken back to China.

But all the efforts of the Government to stamp out animal diseases can not prove successful as long as there is a large number of cattle owners who fail to coöperate. During the latter part of October the writer had an occasion to discuss the subject with a planter whose estate lies on the eastern coast of Negros. It is almost incredible that in a matter of such vital importance to himself any native planter could be so supinely, not to say criminally, careless as the following instance supposes. At the beginning of one of the outbreaks the white settlers (Swiss and Spaniards) banded together and bought of a native neighbor, whose carabaos had been found to be infected, all the diseased animals—a considerable number—shot them, and after throwing the carcasses into a deep hole dug for the purpose, they poured kerosene upon them, to which they set fire. After the fire had died out, the hole was filled up. The pecuniary sacrifice had been heavy, but they were contented in the belief that their animals were safe, when, lo! not many days later the body of a carabao which had died of the dreaded disease was washed ashore. Some native had considered it too much trouble to bury the carcass. Comments are superfluous.

SPECIAL NOTES.

DISTRICT I.

Borongan.—The making of copra continues under favorable conditions all along the eastern coast of Samar. Hemp production likewise improves steadly, since people, perfectly secure from harm, are striving to enlarge their plantations. The same is true of other agricultural products such as corn, sweet potatoes, gabe, and palauan, which are of so great importance to the poorer classes of the people.

Tacloban.—Vegetables are plentiful, likewise hemp, maguey, cocoanuts, squash, palauan, apare, sweet potatoes, bananas, and tomatoes. In the fields sugar cane, rice, and corn are growing. Their condition is generally splendid, except that of sweet potatoes and corn in the municipality of Dulag, where they have been slightly damaged by the rains, though the latter have not been heavy. Abuyoc had little rain, Tacloban the average amount. In the latter municipality the *hanao* and *maya* (both birds) have done great harm in the plantations, and epizoötia has caused some losses among horses and cattle. Dulag had likewise some cases. The price of rice is still as high as in the preceding month, while those of hemp and copra have fallen.

Ormoc.—The rice harvest has begun, but the yield is poor, since mice and *gabyawan* (a species of bats) had invaded the fields and destroyed a great part of the crop. Also corn and some vegetables have been gathered in. Rains have been scarce, but well distributed.

Tuburan.—During the month mountain rice and uve have been harvested. Corn, maguey, cocoanuts, and tobacco seedlings were growing in the fields at the end of October, their condition being excellent, especially that of tobacco. Hence a good crop is expected. The rainfall has been small but sufficient to prevent drought. The strong southwest winds have damaged the corn a little. Rinderpest and surra continue among the few animals still left.

Cebu.—Weather and agricultural conditions showed only slight variation from those of the preceding month. Most of the work in the fields is almost at a standstill, owing to the scarcity of precipitation. In some of the fields planted with rice, the latter had to be substituted by corn, in order to put them to some profitable use. In addition to all these misfortunes, cases of rinderpest have again occurred among the work animals and it is feared that the contagion will spread to other parts of the province.

Maasin.—People coming from Hilongos, Bato, and Matalom report that in said municipalities corn, rice, and sugar cane have been harvested. The landowners of Maasin are just beginning to cut their rice, which work will last until December. It would appear that the yield will be sufficient to cover the local consumption. At present there is an abundance of various fruits, such as lanzones, guayabas, tambis, oranges, ates, etc. The growing crops are doing well, and it is hoped that during November it will be possible to harvest sweet potatoes and gabe, of which articles there is at the time being a great scarcity. Several cases of rinderpest among the work animals have occurred during the month.

Tagbilaran.—During October several warehouses have been filled repeatedly with copra, of which immense quantities have been shipped to Cebu from Tagbilaran, Loay, Duero, Guindulman, Anda, Tubigon, and Calape. Sugar and hemp will likewise not be wanting in any of these towns, except Tagbilaran. The hemp and sugar plantations are in a very satisfactory condition in all of them, the latter especially in the municipalities of Calape and Tubigon.

Butuan.—Thanks to the rain which fell during the first half of the month, the rice, which owing to the drought during September had been very poor, has recovered its vigor and gives promise of a good crop; that which is to be harvested at the end of November is now in blossom. What has been said of rice is also true of the tubers. Of the various kinds of bananas planted in this region, the variety called *sab-a* gives the best results. The people of Talacogon have had good crops of corn, rice, and lanzones, likewise of Chinese oranges and guayabas. Veruela also gathered in a good crop of corn, and people are at present occupied in cutting the rice. The inhabitants of the towns lying in the direction of Veruela expect to obtain a large amount of cacao toward the end of November. The price of hemp has fallen, being at present ₱10 per picul.

Cotabato.—Some early rice has already been harvested during this month. The trade in rubber and guttapercha continues the same, these products being brought hither from Malabang, Biwang, Tucuran, and Tuburan by Chinese dealers. Their market prices are ₱22 per picul of second-class and ₱16 per picul of third-class products.

Davao.—There is rather general complaint of the low price which is being paid for hemp, which is only ₱18.50 per picul. On this account there is visible a marked tendency to store the fiber in the houses. But bad prices notwithstanding, the hemp plantations are increasing day by day. Many landowners are also planting cocoanut trees. There has been plenty of rain and at the right time, wherefore the crops are in a fine condition.

DISTRICT II.

Capiz.—Notwithstanding the destruction wrought by locusts during the months of July and August, there are indications that the rice crop will not be as bad as had been feared, at least not to the south of the capital. Mr. Fortunato Fuentes estimates that his crop will amount to approximately 500 cavans. Mr. Sinforoso Salgado, of Caluan, municipality of Panitan, states that his crop is likewise good, both in quantity and quality.

San Jose, Buenavista.—The farmers of this province are very much depressed, because not only do vegetables continue to give small results, but also the yield of gabe and uve is less than last year. Moreover, the locusts are still infesting the higher ground, and the *timog* (north wind) has set in earlier than usual. This wind is considered harmful if it blows at the time when the rice is forming the grain. Luckily there is at least no sickness among the animals.

Iloilo.—The news received from the towns in the interior of the province is very sad. Field mice, locusts, worms, and drought contributed each its share toward ruining the crops. None of the towns escaped unharmed. The mice devoured the rice called *dag-oman* which was just ripe, while the locusts destroyed the variety called *macan* then growing. The lack of water, especially during the last third of the month, impeded the healthy development of the rice sown last. At Janiuay copious rain fell during the first days of the month, but toward the end of it drought prevailed, of which, however, some planters availed themselves to prepare the tobacco fields. From the "Nuevo Heraldo" (Iloilo) of October 22, 1907, we quote the following lament: "According to information which has reached us from the towns of the interior, the economic problem appears to be assuming a highly alarming aspect. The rice crop is so very small that some towns will do well if they harvest enough to support themselves during five or six months. We are still in the time of the rice harvest, and yet, at Pototan, grain grown in this province costs as much as ₱7 per cavan. It is true, the working population is able to support itself, thanks to the little which they can earn by working on the railroad; but it will not be very long ere the consequences of this year's bad rice crop will make themselves felt. But the end is not yet. As we have been informed by persons arriving from Dingle, last Saturday the fields of Lucena and Santa Barbara have been invaded by locusts and their track seems to indicate that the 'voracious insect' is heading for Pototan."

Bacolod.—The corn harvest is finished and that of the kind of rice called *coccian* has begun. The results obtained are very satisfactory. The yield of balatong, mongo, and vegetables is likewise good. The present price of palay is ₱2 per cavan; that of imported rice, second class, white, oscillates between ₱6.90 and ₱7 per picul, while copra brings ₱6.75 per picul. Throughout the province the farmers are making preparations for the crushing of sugar cane, which will take place during the months of November and December. Epizoötia continues to carry off work animals in this region.

Dapitan.—Above Ilaya the farmers are busy cutting both mountain and irrigation rice. The hemp industry is at a standstill, because a picul of the fiber which formerly sold for ₱22 to ₱24, brings only ₱12 at present. As hemp forms the principal resources of this region, the planters are very much depressed.

Zamboanga.—The condition of the rice and corn fields as well as of the cocoanut and hemp plantations is, as a rule, quite good. The price of copra does not exceed ₱7.50 per picul.

Isabela, Basilan.—During the second half of the month the cutting of mountain rice began in the district south of Isabela, while in the other hamlets the grain is only beginning to ripen. The yield is abundant and surpasses that of the preceding years. Isabela has produced 20 piculs of copra, Malamauy Island, 48.

Jolo.—During October the state of the crops has been fair; neither rain nor winds have done any damage. No injurious insects or cases of sickness among the stock have occurred.

DISTRICT III.

Legaspi.—In the municipality of Daraga the rice harvest has been finished, while in those of Legaspi and Albay a few fields still remain to be reaped. Though the yield has been good, the total amount obtained will not cover local consumption for many months. At Polangui and Oras the harvest is likewise still in progress, and the crop seems to be superior to that of last year. There is an abundance of bananas, gabe, sweet potatoes, and vegetables. The hemp industry is suffering from the low prices prevailing. Copra is plentiful and is sold at ₱6.70 per picul.

Gubat.—Despite the destruction wrought by the locusts in the cocoanut and sugar plantations during the preceding months, there is at present an abundant supply of cocoanuts and sugar cane in the markets. This is due to the copious rains, which likewise have greatly benefited the hemp so greatly in need of them. Many farmers profited by the opportunity offered by said rains to prepare the seed beds for rice, this being the proper time for the sowing of this cereal within the entire Province of Sorsogon. The price of Saigon rice is ₱6.25 per picul, that of palay, ₱3 to ₱3.50 per cavan.

Calbayog.—The amount of hemp produced during October was 8,830 piculs. About the middle of the month began the rice harvest, the results of which fall short of the expectations had regarding them. Some fields had been devastated by locusts, on others the crop suffered from lack of water. Besides hemp, none of the agricultural products growing in the fields is worth mentioning.

DISTRICT IV.

Santo Domingo, Batanes Islands.—The digging of uve is finished, and nobody has any reason for complaining of the quality of his crop. The parcels of land from which the uve has been harvested have again been planted in sweet potatoes, which are growing very vigorously.

Aparri.—The scarcity of rain is very prejudicial to the crops in the fields, but especially to the rice seed beds, the contents of some of which could not be transplanted. This drought is quite abnormal for this month.

Tuguegarao.—The state of the crops continued to be same as during September. The epidemic among the animals seems to be disappearing.

Laoag.—The rice crop will be small, rain having been scarce to such an extent that on several fields planted with the said cereal the plants have dried up.

Vigan.—The principal crop of the month consisted of vegetables and early rice. Owing to insufficient rain, the yield of both was only fair. For this same reason it is already painfully evident that the crop of late rice will be below the average. Although during the typhoon of October 26 the winds never acquired great force, they have nevertheless further injured the crops, since blowing from northeast they came with the characteristics of the *dugudug*, which is dreaded on account of its dryness and high temperature.

Candon.—During the month sweet potatoes, tomatoes, and cotton have been cultivated; all on a small scale, In the municipality of Candon the rice harvest is over. Owing to the great harm done to the fields by the drought, the yield is small. Cocoanuts cost ₱4 per hundred.

San Fernando, Union.—The cutting of mountain rice is nearly finished, and the yield is good. Irrigation rice will, however, give very poor returns, since, owing to the scarcity of rain during the second half of September and the whole of October, the plants are withering. Nevertheless the price of first-class rice oscillates at present between ₱4.50 and ₱5 per cavan, while second-class grain costs ₱3.50. In view of the fact that the crop will be small, these prices can not be called high. The explanation is, that at present people have their granaries still filled with rice of the preceding crop which they are selling at reasonable prices. Similar conditions prevail in the municipalities of Balauan and Bauan. Surra has claimed many victims among the horses at San Fernando and Bauan, and a few at Balauan.

Baguio.—Sickness is prevailing among the work animals, which circumstance renders the proper cultivation of the fields difficult. Tublay, Itogon, and Buguias are raising corn and potatoes. The condition of the crops is at present slightly worse than during the preceding months.

Bolinao.—The farmers are complaining that the rice fields are drying up for lack of precipitation, saying that unless rain falls during the first days of November, the crop on many fields will be a complete failure. Corn, which had been so abundant during the preceding month, is gradually disappearing from the market, because, in view of the scarcity of rice, the people of the surrounding country are reserving it for their own subsistence. Epizoötia is rampant throughout the municipality of Bolinao, the losses amounting to about 20 per cent among horses and carabaos and to 32 per cent among the hogs. In the municipality of Infanta a worm has appeared which causes great destruction in the rice fields. The animal is very slender, but about 5 centimeters (2 inches) long, and has a very hard head. It bores into the tender parts of the rice plant and causes it to rot.

Dagupan.—The people of Dagupan are at present harvesting a fair crop of rice. The crushing of sugar cane is likewise in progress. The yield of both these products is said to be equal in quantity and quality to that of last year. The current market prices are: Rice, ₱4.75 per cavan; sugar, ₱7 per pilon, and cocoanuts, ₱3.40 per hundred. San Nicolas had only a fair amount of rain which, while sufficient to cause a fair development of the lowland rice, was not quite enough for the sowing of mountain rice. Vegetables, corn, and maguey were thriving. At Pozorrubio and San Fabian people obtained good crops, but at Binmaley the yield was almost insignificant, owing to the small amount of rainfall in said district during the month. The insect called *guetaguet* put in an appearance, but did not damage the rice. Thanks to their irrigation ditches, the people of Alava had sufficient water for their rice fields and obtained a middling good crop. At Urbiztondo the drought and an insect called *purpursac* have damaged the rice, and the strong winds the banana plants. At San Manuel rice, coffee, cacao, and cocoanuts have likewise suffered from drought. At Bautista the crop was only about 50 per cent of that harvested last year. Santa Barbara, Sual, and Mangatarem had other afflictions in addition to the drought; at Santa Barbara an insect calle *dagueo* invaded the rice, while Sual and Mangatarem were visited by animal diseases which caused the death of 50 head of cattle and carabaos in the former, and of 32 in the latter municipality. Mangaldan and Asingan have each lost about 5 per cent of their animals through epizoötia, and San Jacinto has also had a few cases of this sickness. Anthrax caused great havoc at Alaminos, and epizoötia killed 1 carabao and 5 horses at Rosales. The last-named town and those of San Carlos, Natividad, Binalooan, Balungao, and Anda complain of the prevailing drought; Infanta also of the scorching wind. It is universally held that this year will witness a great scarcity of rice.

Tarlac.—The work in the rice fields is finished, and people are preparing to plant various other products on the irrigated fields. The yield of gabe, bananas, eggplant, and various kinds of fruit has been fair. The storm of October 26 has done some damage to the banana plants and sugar-cane fields, especially to the east and north of Tarlac. At Victoria and Gerona it has also destroyed several shacks. Work animals, hogs, and poultry are dying of disease at the capital and other points of the province.

San Isidro.—Though the harvest of early rice is still in progress, it is already apparent that the yield will not be abundant, but only fair. The condition of the growing crops is rather good; thanks be to God, they were not damaged by the typhoon of the 26th. Mountain rice is suffering slightly from lack of water. The agricultural products harvested during the month were, besides rice, sugar cane, gabe, guayabas, ate, and garden produce. Nothing has been heard of sickness among the stock.

Olongapo.—At present the mountain rice is being cut and gives good returns. Gabe, sitao, vegetables, and squash are likewise being harvested. Irrigation rice is growing vigorously. A few carabaos succumbed to epizoötia at Castillejos.

Balanga.—During the second half of the month the cutting of mountain rice began, whose yield is about one-third less than the amount expected. This result is due to the scarcity of rain during the period in which the grain was forming its ears. Sugar cane and irrigation rice are doing fairly well.

Silang.—During the month people were occupied in clearing and breaking ground for the planting of corn. Tobacco, onions, garlic, and tomatoes are growing well. The rice harvest is continuing, the yield being only middling and insufficient to meet local needs.

San Antonio, La Laguna.—The harvest of mountain rice is finished; crop fair. Cocoanuts and hemp have likewise been harvested. The present price of the latter commodity is ₱12 per picul. Epizoötia is rampant in the part of La Laguna comprised between Santa Maria and Paete.

Atimonan.—Owing to the drought, irrigation rice continues to be in an unsatisfactory state; in some places it shows hardly any sign of life. Mountain rice has a better appearance, and during the last days of the month some part of it has already been cut. No ill has befallen the cocoanut trees during this month. The price of copra is ₱7 per picul, equal to the cost of a cavan of rice. The price of hemp has not yet risen, and there is at present little demand for the fiber. Guayabas, eggplant, ayap, etc., have been abundant. Not a single case of epizoötia has occurred at the capital, but there has been some sickness among the poultry. The town of Mauban, however is afflicted with epizoötia.

Calauag.—The rice harvest is in progress. At the outset the rice fields held out good promises, but owing to the drought during the months of September and October, the crop amounts to only about one-half of what was expected; in some places it is even a total failure, since the plants dried up. The next crop of cocoanuts, to be gathered in December, threatens to be small, as the nuts are about one-fourth smaller than those of the preceding crops. This fact is generally ascribed to the damage to the trees which resulted from the earthquakes earlier in the year. In former years a fair amount of rain fell during this month, but water is so scarce this October that the soil cracks in the fields. The trees produce an abundance of resins, but there is no demand for these products. Hemp is likewise plentiful. The only trouble is the lack of labor to strip it. A few cases of sickness occurred among the stock, but at the end of the month the evil appeared to be extinct.

Batangas.—The rice harvest is finished throughout the Province of Batangas, having given generally good returns. Hemp and small oranges are the products which are being harvested at present. Besides, the farmers are planting corn and preparing for the crushing of sugar cane. There is a plentiful supply of vegetables, sitao, squash, cucumbers, etc. Epizoötia continues among the cattle, but it is less virulent than in the beginning, only isolated cases occurring at present.

ESTADO GENERAL DE LAS COSECHAS.

Los resultados de algunas cosechas recogidas durante el mes de Octubre han sido casi tan variados como las posiciones topográficas de las estaciones noticieras. Esto es cierto especialmente en lo que se refiere al palay. No se manifiesta ninguna influencia de la latitud ni diferencia entre las costas orientales y las occidentales. Dentro de áreas muy limitadas el rendimiento ha sido completamente diferente. Así, por ejemplo, Dagupan da cuenta de una buena cosecha mientras en Binmaley se califica de "insignificante." Sin embargo, por regla general, la cosecha de palay (principalmente del palay de monte) puede calificarse de mediana, toda vez que las calificaciones de "buena," "regular" y "mala" ocurren casi igual número de veces. Solo Isabela de Basilan da cuenta de una cosecha abundante. Es general la queja por el precio subido del arroz. En estas circunstancias es una dicha para la gente pobre que el rendimiento de los tubérculos como camote, gabe y uve sea abundante en la mayor parte de las provincias y regular ó bueno en el resto; solo San José de Buenavista da cuenta de una cosecha casi escasa. Pero como de costumbre, no se ha plantado bastante para llenar la deficiencia del alimento principal de las islas; sin embargo, sirven de algún alivio. Las legumbres y frutas propias de la estación han sido en general abundantes. No hay ninguna queja por lo que se refiere á la cosecha de maíz de parte de aquellas regiones en donde se ha cosechado; antes al contrario, todas las estaciones que la mencionan la califican de buena. La producción total del abacá y cóprax ha sido relativamente escasa. No se debe esto, sin embargo, á la falta de material. Al contrario, las plantas de abacá de las cuales se extrae la fibra y los cocos de los cuales se hace el cóprax, han sido abundantes en la mayor parte de los pueblos, y escasos en ninguno de los distritos que cultivan estos productos según los reports que tenemos á la vista. Pero los precios han sido tales que no infunden mucho afición al trabajo. Así, por lo que toca al abacá, al principio del año los vecinos de Dapitan consideraron que no valía la pena de esforzarse, puesto que en lugar de ₱22 ó ₱24, el abacá producía solamente ₱17 por pico (63.25 kilos). Pero durante el mes de Octubre fué de ₱12! En Butúan bajó hasta ₱10. No obstante la excelente calidad producida en la región de Dávao no se pudo conseguir un precio mayor que ₱18.50 por pico. Algunos precios pagados por el pico del cóprax eran: ₱7.50 en Zamboanga, ₱7 en Atimonan, ₱6.75 en Bacolod y ₱6.70 en Legaspi, todos los cuales son bajos para las respectivas regiones.

Con pocas excepciones, el estado de las plantas crecientes, prometía mucho en todo el Archipiélago á fines del mes. Dejando á un lado las quejas meramente locales, las excepciones eran: la parte meridional de Cebú donde el maíz hubo de sustituir al palay que había muerto por la sequía: Tayabas que se queja del mal estado del palay de regadío y de que la próxima cosecha de cocos amenaza ser escasa; pero sobre todo la costa septentrional y occidental de Luzón, arriba del paralelo 15°, donde la sequía amenazó muy seriamente la cosecha del palay de regadío.

Sobre la plaga de animales, Tacloban da cuenta del gran daño causado á las plantaciones por los pájaros "hanao" y "mayas," mientras de Ormoc, en la contracosta de Leyte llegan quejas de haberse arruinado parte de la cosecha de palay por los ratones y murciélagos. Las langostas continuaron su actividad en la Isla de Panay, mientras en las Provincias de Zambales y Pangasinán varias clases de insectos estuvieron causando daño. Desgraciadamente las enfermedades de los animales proporcionan de nuevo un capítulo desconsolador. La epizotia se ha registrado en las siguientes provincias: Cagayán (parte meridional), Benguet, Pangasinán, Zambales, Tárlac, La Laguna, Batangas, Tayabas, Negros Oriental y Occidental, Cebú y Leyte. Las pérdidas han sido considerables en Sual y Mangatarem, Pangasinán; así mismo en la parte septentrional de Zambales, donde sucumbieron el 20 por ciento de caballos y carabaos y el 32 por ciento de cerdos. Negros y el N de Cebú también sufrieron considerablemente. La zurra ha matado muchos caballos en San Fernando y Bauan y unos pocos en Balauan (Unión); también han ocurrido algunos casos en la parte septentrional de Cebú. Solo Zambales da cuenta del ántrax, el cual ha causado grandes estragos entre el ganado de Alaminos.

Por lo que toca á la última enfermedad, el gran peligro se ha evitado por la vigilancia de los Capitanes del Puerto y la firmeza de ánimo del Honorable Secretario del Interior. Durante la tercera década del mes un cargamento de ganado procedente de Hongkong, al llegar á Manila, fué hallado que estaba atacado del ántrax. Á pesar de todos los ruegos, el desembarco en Manila y aún la matanza en la bahía se prohibió y tuvieron que volver la peligrosa carga á China.

Pero todos los esfuerzos del Gobierno para desterrar las enfermedades de los animales no podrán prosperar, mientras haya muchos propietarios de ganado que dejan de cooperar. Durante la última parte de Octubre el que estas líneas escribe tuvo ocasión de discutir este asunto con un agricultor, cuya hacienda se encuentra en la costa oriental de Negros. Es casi increible que en materia de tan vital importancia para él mismo, pudiera un agricultor nativo estar tranquilamente, por no decir criminalmente, descuidado, como supone el siguiente caso. Al principio de uno de los ataques los colonos blancos (Suizos y Españoles) se asociaron y compraron de un vecino nativo, cuyos carabaos se habían encontrado infectados, todos los animales atacados, un número considerable, los mataron, y después de arrojar los cadáveres en un hoyo hondo cavado á propósito, vertieron petróleo sobre ellos y les prendieron fuego. Luego que éste se hubo apagado rellenaron el hoyo. El sacrificio pecuniario había sido grande, pero estaban contentos en la creencia de que sus animales estaban salvos: cuando hé aquí que algunos días después el cadáver de un carabao que había sucumbido víctima de tan temida enfermedad fué lanzado á la playa! Cierto nativo había considerado demasiada molestia enterrar el cadáver. Huelga todo comentario!!!

NOTICIAS PARTICULARES.

DISTRITO I.

Borongan.—Sigue dando buenos resultados la cosecha del cóprax en toda la costa oriental de esta isla. El abacá continúa también mejorando: la generalidad de la gente, libre ya de todo cuidado, procura ensanchar sus plantíos de abacá. Aumentan igualmente las otras plantaciones de maíz, camote, gabe y palauan tan necesarias para la gente pobre.

Tacloban.—Se han cosechado verduras en abundancia y también abacá, maguey, cocos, calabaza, palauan, apare, camote, plátanos y tomates. Están creciendo en los campos caña-dulce, palay y maíz. El estado de éstos es generalmente bueno, menos el del camote y maíz en el municipio de Dulag, á causa de haber sido algo perjudicados por las lluvias á pesar de que éstas no habían llegado á ser más que regulares. Abuyog ha tenido pocas lluvias, pero Tacloban bastantes. En este último municipio los pájaros llamados "hanao" y "maya" han hecho mucho daño en las plantaciones, y la epizotia ha causado algunas pérdidas entre caballos y reses. Ha habido también algunos casos de esta enfermedad en Dulag. El precio del arroz es tan subido como en los meses anteriores, mientras los del abacá y cóprax han bajado.

Ormoc.—Ha empezado la recolección del palay; pero los rendimientos no son buenos, por haber aparecido en los palayeros los ratones y "gabyawan," una especie de murciélagos, destruyendo gran parte de la cosecha. También se recogieron maíz y algunas legumbres. Las lluvias han sido escasas pero bien distribuídas.

Tuburan.—Se han cosechado durante este mes palay de secano y uve mientras crecen en los campos maíz, maguey, cocos y semillas de tabaco. El estado de estas plantas, sobre todo el del tabaco es muy bueno, dando esperanzas de una buena cosecha. Las lluvias han sido escasas, pero con todo no hubo sequía. Los fuertes vientos del SW han perjudicado un tanto al maíz. Continúan la epizotia y la surra entre el poco ganado que queda.

Cebú.—Tanto en el tiempo como en las condiciones agrícolas hay muy poca diferencia entre este mes y el anterior. La mayor parte de los trabajos del campo quedan casi paralizados por la escasez de precipitación acuosa. En algunas sementeras de palay, éste hubo de ser sustituído por el maíz para que sean provechosos los terrenos. Además, vuelven á registrarse en estos pueblos algunos casos de epizotia entre el ganado de labor y se teme se propague en muchos puntos de la provincia.

Maasin.—Personas procedentes de los pueblos de Hilongos, Bato y Matalam, informan que en aquellos pueblos se han cosechado maíz, palay y caña-dulce. Los hacenderos de este municipio de Maasin empiezan ya á recolectar el palay, que parece ser suficiente para el consumo del pueblo. Esta recolección durará hasta el mes de Diciembre. Actualmente, en este pueblo y limítrofes, abundan varias frutas como son: lanzones, guayabas, tambis, naranjas, ates, etc. El estado de las sementeras es regular. Hoy son muy escasos los tubérculos, pero en el mes entrante se espera que ya se podrán recoger el camote y el uve. Durante este mes se han registrado varios casos de epizotia entre los animales de labor.

Tagbilaran.—Durante el mes de Octubre varias bodegas se llenaban con frecuencia de cóprax, del cual se han exportado grandes cantidades á Cebú desde los pueblos de Tagbilaran, Loay, Duero, Guindulman, Anda, Tubigon y Calape. El azúcar y abacá no faltarán en los varios pueblos citados, menos en Tagbilaran, porque el estado de los abacales y plantaciones de caña-dulce es muy satisfactorio, sobre todo el de las últimas en los municipios de Calape y Tubigon.

Butúan.—Por las lluvias caídas durante la primera quincena de este mes, el palay que estaba muy macilento á causa de la sequía del mes de Septiembre, ha recobrado su lozanía y ahora promete buenos resultados. El que se debe cosechar á fines de Noviembre está floreciente en la actualidad. Lo mismo se puede decir de los tubérculos. De los plátanos que aquí se plantan, la variedad llamada "sab-a" da los mejores rendimientos. Los habitantes de Talacogon han recogido buenas cosechas de maíz, palay y lanzones. Lo mismo puede decirse del cajel y de la guayaba. En Veruela también tuvieron buena cosecha del cacao para fines de Noviembre. El precio del abacá ha bajado cotizándose á ₱10 el pico.

Cotabato.—Durante el mes de Octubre ya se cosecha un poco del palay temprano. Continúa el comercio de goma y guttapercha de parte de los comerciantes chinos que las traen de los pueblos de Malabang, Biwang, Tucuran y Tuburan. Los precios de estos artículos en plaza son: ₱22 el pico de los de segunda clase y ₱16 el de tercera.

Dávao.—Hay muchas quejas por lo bajo del precio con que se paga el abacá, pues es tan sólo á ₱18.50 el pico. Por eso se observa la tendencia de almacenar la fibra en las bodegas. Todo esto no obstante se aumentan las plantaciones de día en día. Muchos propietarios también se dedican á la siembra de cocos. Ha habido lluvia bastante y muy oportuna, por la cual las cosechas están en buen estado.

DISTRITO II.

Cápiz.—Á pesar de los destrozos causados por las langostas durante los meses de Julio y Agosto parece que la cosecha de palay no será tan mala como se temía, á lo menos, al sur de la Capital. El propietario Sr. D. Fortunato Fuentes dice que su cosecha llegará más ó menos á 500 cavanes; el Sr. D. Sinforoso Salgado vecino de Calauan, municipio de Panitan, asegura que tiene muy buena cosecha tanto en cantidad como en calidad.

San José de Buenavista.—Los agricultores de esta provincia están muy desanimados, porque no solamente continúan las cosechas de legumbres bastante reducidas sino también el gabe y uve están dando rendimientos inferiores á los del año pasado. Además de las langostas en los montes, hay sequía; y el "timog" (viento del Norte) se ha adelantado. Á este último tienen por perjudicial si sopla cuando el palay está por dar espigas. Gracias que, á lo menos, no hay enfermedades en el ganado.

Iloílo.—Muy tristes son los informes y noticias que se han recibido de los pueblos del interior de la provincia: las ratas, las langontas, los gusanos, y la falta de agua continúan causando desastres en las siembras y cosechas y los hay en todos los pueblos: las ratas destrozaron el palay *dag-oman* ya en sazón y las langostas al *macán* en crecimiento; por falta de agua, sobre todo durante la tercera década, se ha impedido el buen desarrollo del palay sembrado. Todavía ocurren dos ó tres casos de epizotia en los pueblos. En Janiuay, cayeron abundantes lluvias en los primeros días de Octubre, pero hacia el fin del mes ha habido sequía la cual han aprovechado algunos propietarios para preparar los terrenos tabacaleros. Del "Nuevo Heraldo" en su número del 22 del mes de Octubre copiamos la siguiente gacetilla: "Según informes que hemos recibido de los pueblos del interior parece ser que el problema económico se presenta pavoroso y alarmante." "La cosecha de palay es tan escasa que en algunos pueblos bueno si recogen lo suficiente para el sustento de cinco ó seis meses." Estamos en tiempo de la recolección del palay y se cotiza en Pototan á siete pesos el caván de provincia. La gente jornalera puede vivir, gracias á lo poco que gana en los trabajos de ferrocarril, pero de todos modos no tardaremos en experimentar las consecuencias de la escasez de la cosecha de este año." "Y va de calamidades. El sábado último las sementeras de los pueblos de Lucena y Sta. Bárbara estaban plagadas de langosta, según dice una persona que acaba de llegar de Dingle, y parece ser que, según las trazas, el "voraz insecto" trataba de dirigir su rumbo á Pototan."

Bacolod.—Ha acabado la cosecha del maíz y empezado la del palay llamado *cocciam*. Los resultados son muy satisfactorios. También es buena la cosecha de balatong, mongo y legumbres. El precio actual del palay es de ₱2 cavan; el del arroz blanco de segunda clase, importado del Extrangero, oscila entre ₱6.90 y ₱7 el pico; y el cóprax se vende á ₱6.75 el pico. Los hacenderos de toda la provincia están preparándose para la molienda de la caña-dulce que tendrá lugar en los meses de Noviembre y Diciembre. La epizotia sigue causando estragos entre los animales de esta región.

Dapitan.—Arriba de Ilaya los agricultores ya están en pleno trabajo segando el palay tanto de secano como de regadío. La industria abacalera queda paralizada por razón de que el pico de la fibra que antes se pagaba á ₱22 y ₱24, ahora vale sólo ₱12. Esto desanima mucho á los labradores por ser el abacá el principal recurso de esta región.

Zamboanga.—El estado de las siembras de palay y maíz y plantaciones de coco y abacá es generalmente bastante regular. El precio del cóprax no pasa de ₱7.50 el pico.

Isabela de Basilan.—En la segunda quincena del mes se ha principiado la recolección del palay de secano en la parte sur de esta población, mientras en los otros barrios el grano empieza á madurar. Los rendimientos son abundantes y superiores á los de los años anteriores. En este pueblo se han producido 20 picos de cóprax; en la Isla Malamauy 48.

Joló.—El estado de las cosechas durante este mes ha sido regular. Ni las lluvias ni los vientos han hecho daño; tampoco ha habido insectos perjudiciales ni enfermedades en el ganado.

DISTRITO III.

Legaspi.—Se ha terminado la cosecha del palay en el municipio de Daraga restando pocas sementeras en Legaspi y Albay. Aunque los rendimientos han sido buenos, la cantidad recogida no será bastante para el abasto local por muchos meses. En Polangui y Oras no se ha terminado aún la cosecha, la cual parece ser superior á la del año anterior. También hay abundancia de plátanos, gabe, camote y legumbres. El abacá continúa algo paralizado por lo bajo de su precio. Hay bastante cóprax que se vende á ₱6.70 el pico.

Gubat.—No obstante los destrozos que la langosta había causado en los cocales y plantaciones de caña-dulce durante los meses anteriores, hay ahora abundancia de estos artículos en los mercados. Esto se debe á las copiosas lluvias que también han ayudado muchísimo al abacá que tanto las necesitaba. Muchos agricultores se han aprovechado de ellas para preparar los semilleros de palay, pues es el tiempo de sembrarlo en toda la Provincia de Sorsogón. El precio del arroz de Saigón es á ₱6.25 el pico, el del palay de ₱3 á ₱3.50 el caván.

Calbayog.—La cosecha del abacá durante el mes de Octubre ha producido unos 8,830 picos. Á mediados del mes ha empezado la recolección del palay, la cual no ha dado tan buenos resultados como se esperaba. Algunas sementeras han sido destrozadas por la langosta y otras han sufrido por la falta de agua. Fuera del abacá, los productos agrícolas que continúan creciendo en los campos, no merecen especial mención.

DISTRITO IV.

Santo Domingo, Islas Batanes.—Se ha terminado la cosecha del uve y ninguno se ha quejado de sus rendimientos que han sido muy buenos. En las parcelas donde se había cosechado el uve, han plantado camote que actualmente crece muy bien.

Aparri.—La falta de lluvias ha perjudicado mucho á las siembras y en particular á algunos semilleros de palay que no se han podido trasplantar, debido á la sequía tan anormal en este mes.

Tuguegarao.—El estado de las siembras continúa lo mismo que durante el mes de Septiembre. Parece que tiende á desaparecer la epidemia de los animales.

Laoag.—La cosecha de palay será escasa, pues las lluvias han sido tan escasas que varios campos sembrados de este cereal se han secado.

Vigan.—La principal cosecha de este mes han sido legumbres y palay temprano con resultados tan solo regulares, debido á la escasez de lluvias. Por la misma causa ya se deja ver que la cosecha de palay tardío será menos que regular. Los vientos causados por el baguio del 26, aunque no han llegado á ser muy fuertes, han aumentado el mal estado de las plantas por haber soplado el "dugudug," viento del NE, temido por su sequedad y calor.

Candón.—En este mes se han cultivado camote, tomates y algodón, pero en pequeña escala. En Candón se ha terminado la cosecha del palay de secano, con resultados poco satisfactorios, debido á la sequía que ha causado grandes daños en las sementeras. Los cocos se cotizan á ₱4 el ciento.

San Fernando, Unión.—Se está terminando la cosecha del palay de secano, que da buenos rendimientos; pero la del de regadío dará muy pocos resultados, pues, debido á la escasez de lluvia durante la segunda quincena de Septiembre y en todo este mes, se está secando. Esto no obstante, el precio del arroz de primera clase oscila entre ₱4.50 y ₱5 el caván; y el de segunda es de ₱3.50 que no es caro en vista de que la cosecha será mala. Pero ahora la gente tiene todavía los camarines llenos de arroz de los años anteriores y lo vende á precios módicos. Lo que se ha dicho de San Fernando puede decirse de los municipios de Balauang y Bauan. Han sucumbido víctimas de la zurra muchos caballos en San Fernando y algunos en Balauang.

Baguio.—Entre los animales existen enfermedades que hacen difícil el cultivo de los campos. En los pueblos de Tublay, Itogon y Buguias se cultivan maíz y patatas. Las cosechas se hallan en estado algo peor que en los meses pasados.

Bolinao.—Los agricultores se quejan por haberse secado las siembras de palay á causa de la sequía, y dicen que si no llueve en los primeros días del mes entrante muchas de dichas siembras se echarán á perder por completo. El maíz que abundaba tanto el mes pasado va desapareciendo ahora, porque los pueblos vecinos lo reservan para su propio alimento en vista de la carestía del arroz. En toda la jurisdicción de Bolinao reina la epizotia y se calculan las pérdidas en un 20 por ciento de caballos y carabaos y en 32 por ciento de cerdos. En el municipio de Infanta ha aparecido cierto gusano que destroza las siembras de palay que por esta causa se pudren.

Dagupan.—Los vecinos de Dagupan están segando sus campos de palay y tienen regular cosecha. También están con la molienda de caña-dulce. Ambas cosechas son iguales en cantidad y calidad á la del año pasado.

Hoy se cotiza en plaza á ₱4.75 el caván de arroz, ₱7 el pilón de azúcar. y ₱3.40 el ciento de cocos. En San Nicolás las lluvias fueron regulares conservándose en su estado anterior las siembras de palay, pero el agua no ha sido suficiente para poder sembrar los terrenos altos. Las legumbres, el maíz y el maguey están lozanos. En Pozorrubio y San Fabián han tenido buena cosecha; pero en Binmaley, ésta ha sido insignificante por haber sido allí escasas las lluvias durante el mes. Apareció el insecto *guetaguet* pero sin hacer daño al palay. En Álava, gracias á las zanjas de regadío, no ha faltado agua para el palay y se ha conseguido mediana cosecha. En Urbiztondo, la sequía y el insecto llamado *purpursac* han hecho daño al palay, y los vientos fuertes á los plátanos. En San Manuel han sufrido también por la sequía el palay, café, cacao y cocos. En Bautista han perdido un 50 por ciento de la cosecha comparada con la del año próximo pasado. Santa Bárbara, Sual y Mangatarem, además de la sequía, han sufrido otras desgracias: en el primero, el insecto llamado *dagueo* ha perjudicado al palay; en el segundo y tercero, han aparecido enfermedades entre los animales causando 50 víctimas entre vacunos y carabaos en Sual y 32 en Mangatarem. Los pueblos de Mangaldang y Asingan también han perdido un 5 por ciento de los animales por la epizotia; San Jacinto ha tenido unos pocos casos de la misma enfermedad. En el pueblo de Alaminos el ántrax ha causado grandes estragos; en Rosales han sucumbido víctimas de la epizotia un carabao y cinco caballos. Este último pueblo como también San Carlos, Natividad, Binalooan, Balungao y Anda se quejan de la sequía; Infanta se queja también del viento abrasador. Se teme que haya escasez grande de arroz este año.

Tárlac.—Se ha terminado la siembra del palay y la gente está preparando los terrenos de regadío para sembrar en ellos varias semillas. La cosecha de gabe, plátanos, berengenas y varias frutas ha sido regular. El temporal del día 26 de este mes ha hecho bastante daño en los platanales y campos de caña-dulce, máxime hacia el Este y Norte de Tárlac. En Victoria y Gerona derrumbó además varias casas. Todavía mueren animales de labor, cerdos y aves de corral tanto en la cabecera como en otros pueblos.

San Isidro.—No se ha terminado aún la recolección del palay temprano, pero ya se ve que la cosecha no será abundante sino regular. El estado de los sembrados es bastante bueno y, gracias á Dios, no han sufrido ningún perjuicio por el baguio del 26. Los campos altos de palay sufren un poco por la sequía. Los productos que se han recogido durante el mes son caña-dulce, gabe, guayabas, ates y hortalizas. No se oye nada de enfermedades entre el ganado.

Olongapó.—Se cosecha el palay de secano que da buenos rendimientos. Además se recogen gabe, sitao, legumbres y calabazas. El palay de regadío crece bien. En Castillejos han muerto algunos carabaos víctimas de la epizotia.

Balanga.—En la segunda quincena de este mes ha comenzado la cosecha del palay de secano cuyo rendimiento ha sido una tercera parte menor que lo que se esperaba. Esta pérdida se debe á la escasez de lluvia durante el tiempo en que el palay estaba produciendo espigas. La caña-dulce y el palay de regadío se hallan en un estado regular.

Silang.—En este mes la gente se ha ocupado en limpiar y roturar el terreno destinado á la siembra de maíz. El tabaco, cebollas, ajos y tomates crecen bien. Continúa la cosecha de palay cuyos rendimientos son medianos é insuficientes para el consumo local.

San Antonio, Laguna.—Se ha terminado la recolección del palay de los terrenos secanos los cuales han dado una cosecha regular. También se han recogido cocos y se ha beneficiado abacá. El precio de este último es de ₱12 el pico. La epizotia reina todavía en la parte de esta provincia comprendida entre Santa María y Paete.

Atimonan.—El palay de regadío continúa en un estado lamentable; en algunos puntos apenas da visos de existencia. No pasa lo mismo al de secano que tiene una apariencia más satisfactoria. En los últimos días del mes ya se ha cosechado un poco de este palay. En este mes los cocos no han sufrido ninguna desgracia. El cóprax se cotiza á ₱7 el pico; el arroz tiene el mismo precio. El del abacá todavía no ha subido y por ahora no hay mucha demanda de este producto. Ha habido abundancia de guayabas, berengenas, ayap, etc. No ha ocurrido ningún caso de epizotia entre los animales de labor en la cabecera, pero sí, enfermedades entre las aves de corral. En cambio, hay epizotia en el pueblo de Mauban.

Calauag.—En la actualidad se está recolectando el palay, el cual al principio presentaba un aspecto muy bueno, pero á causa de la sequía en los meses de Septiembre y Octubre no ha producido más que la mitad de lo que prometía y en algunos lugares se ha echado á perder del todo secándose las plantas. La próxima cosecha de cocos que es en Diciembre será escasa, porque las frutas son á lo menos un 25 por ciento más pequeñas que las recogidas en años anteriores, lo que se atribuye á las sacudidas que han sufrido los árboles por los terremotos. Ordinariamente en este mes hay abundancia de lluvias, pero éstas han sido tan escasas este año que la tierra de las sementeras está agrietada. Los árboles tienen abundancia de resinas, pero no hay demanda de éstas. También hay mucho abacá, pero faltan braceros para beneficiarlo. Se han registrado algunos casos de enfermedad entre el ganado; pero en la actualidad el mal ha cesado.

Batangas.—Ha terminado la cosecha de palay en toda la Provincia de Bantangas que ha dado en general buenos rendimientos. Continúa la recolección de abacá y naranjitas. Los agricultores están sembrando maíz y se preparan á moler la caña-dulce. Hay abundancia de legumbres y frutas como sitao, calabaza, pepino, etc. La epizotia sigue causando víctimas en los vacunos aunque ya con carácter más benigno que en los primeros días de su aparición, pues ya sólo se registran casos aislados.

SUPPLEMENT.

THE ALARM ATTACHMENT TO THE SPRUNG-FUESS BAROGRAPH OF MANILA OBSERVATORY.

By Rev. George M. Zwack, S. J.,

Secretary of the Weather Bureau.

The terrible disaster which befell the neighboring British colony of Hongkong on September 18, 1906, coupled with the consideration of what probably would have happened if the catastrophe had taken place during the night, clearly demonstrated the value of a device which would give immediate alarm if danger came on unexpectedly. It will be remembered with what appalling suddenness the blow fell. The typhoon—being of very small diameter—failed to send its harbingers far and wide and thus give timely warning; but almost tornado-like it followed with destructive violence closely upon the first indications of danger. A brief half hour elapsed between the warning gun and the holocaust of life and property. To imagine what would have been the consequences if the typhoon had swooped down upon the harbor during night, without any warning whatever, is too terrible.

Hongkong Observatory has been made the target of much undeserved criticism on account of the unfortunate occurrence. It is, however, the conviction of the writer—shared by many—that any and every meteorological service can be caught in a similar manner. This will readily be understood if the reader remembers the tornadoes, so uncomfortably frequent in some parts of the United States, and the suddenness of their unheralded approach. Now, there is no essential difference between a tornado and a typhoon. Both are whirls of winds around a more or less vertical axis having a progressive movement; but while the diameter of the central portion of the former is measured in meters, that of the latter must be reckoned in kilometers. The smaller the typhoon, so much the more will its characteristics resemble those of a tornado.

That the "Hongkong typhoon" was of small diameter there can be no doubt. In the light of subsequent events it is easy to say that the approach of some sort of a disturbance manifested itself as early as 5 a. m. of that memorable Tuesday, September 18, 1906, since the barometer continued to fall instead of rising. But it must be remembered that the preceding evening there had been no indication of danger and the staff of Hongkong Observatory had no obligation to remain on duty during the night under the given circumstances. At Manila Observatory the rooms of the members of the staff are on the same corridor with the office. While this has the great drawback that the public is getting more and more accustomed to disregard the right of the officers not to be molested outside of office hours, unless on urgent business, it has the great advantage of having the recording barometers close at hand and thus being able to see at a glance how the atmospheric pressure is changing; a matter which is far less simple if direct readings must be made. This proximity to the instruments lessens the danger of unpleasant surprises, but does not eliminate it. Half an hour gained may mean much. Hence the importance of a contrivance which will call the attention of the forecaster at the earliest indication of peril.

Soon after the Hongkong disaster the writer had proposed an alarm attachment to the Richard barograph; but the matter dragged on until October 26, 1907.

On October 25 the barometric oscillation had been of the normal type until $8^h\ 5^m$ p. m., when the curve commenced to rise rather briskly until it reached 759.7 millimeters at $8^h\ 35^m$, which height it maintained until $9^h\ 5^m$. At $9^h\ 30^m$ it had again descended to a point which might have been expected at said moment if the abnormal rise had not taken place. The unusual movement might have been due to the influence of a thunderstorm or of a small squall. At $0^h\ 15^m$ a. m. of the 26th the pressure was still 0.7 millimeter above the minimum of the preceding afternoon and began to *rise*. There was nothing disquieting about this. However, at 4 a. m. a glance at the barograph caused Father Coronas to telephone in all haste to the semaphore station to hoist typhoon signal No. 4, the meaning of which is: "Position of the cyclonic center is dangerous for this place. Look out for next signal." What had happened? The barograph trace showed that at $1^h\ 16^m$ a. m. pressure had begun to fall; reached the minimum of the preceding day at $1^h\ 36^m$ and still continued to diminish. There is no doubt, had the attention of the official been called to the chart at $1^h\ 45^m$, the first thyphoon signal would have been displayed two hours and fifteen minutes earlier.

On that same day Fr. Coronas independently conceived the idea of an alarm attachment. As it turned out, same was to be applied not to the Richard barograph, but to the Sprung-Fuess mercurial barometer. This is an immense improvement on the original plan, since this barograph magnifies the movements of the barometric column five times—thus permitting of finer adjustment—and, moreover, has sufficient mechanical energy to insure good electrical contact even if the contact points should not be in perfect condition. The practical arrangement of the parts as it appears in the finished instrument is entirely due to the ingenuity of Mr. Román Trinidad, assistant mechanic of the Weather Bureau, who improved the plan furnished to him.

The typhoon mentioned in the foregoing—a very mild specimen—passed between Manila and Dagupan, reaching its least distance from the capital between the hours 9 and 10 a. m., October 26.

Of the illustrations, fig. 1 shows the Sprung-Fuess barograph of Manila Observatory with the alarm attachment in place, while fig. 2 gives a somewhat clearer view of the latter. *a* is a small mortised block of metal, which can be moved along the guide rail A of the barograph and secured at any desired point thereof by means of the clamping screw *b*. In order to insulate the alarm attachment from the apparatus and thus to prevent interference of the two electrical circuits, the mortise of the block is lined with vulcanite. As shown in the drawing, the lower end of said block carries a metallic pointer, *c*, and a vulcanite brace, *d*, the latter to keep the conduct wires from becoming entangled with the pen carriage of the barograph; the upper, two horizontal strips of metal. The upper one of these strips is insulated from the lower by means of a thin plate of vulcanite, and has a double bent near its free end, forming an upward projection; while the lower strip is provided with a screw, *e*, for the purpose of regulating the distance through which the former must be bent to make contact with the latter. Each of the wires seen in the figure terminates in one of the contact strips. Supposing these wires to form part of an electrical circuit in which an alarm bell is inserted, it is evident that the bell will ring if the upper contact spring is depressed until it touches the regulating screw. If we could get the barometer to do the depressing when falling to a predetermined limit, the problem of an alarm barometer would be solved. This is accomplished in the following way:

By an arrangement, the description of which would render this article too bulky, the worm B driven by the clock seen in fig. 1, moves the pen carriage C toward the left until it outbalances the atmospheric pressure, when, electrical contact having been made, the electromagnets seen to the right (in fig. 1) cause the worm to be turned in the opposite direction, and thus to move the pen carriage toward the right until balance is restored and the contact broken. This constitutes the ordinary working of the barograph. To effect the depression of the contact spring of the alarm attachment, a curved metallic arm, *f*, pivoted at its upper end and carrying at the lower a minute vulcanite wheel, has been clamped to the platform of the pen carriage in such a way that by moving it horizontally it can be adjusted until the wheel, bearing against the projection of the contact spring, produces contact at the moment at which the falling barometer reaches the height indicated by the pointer *c*.

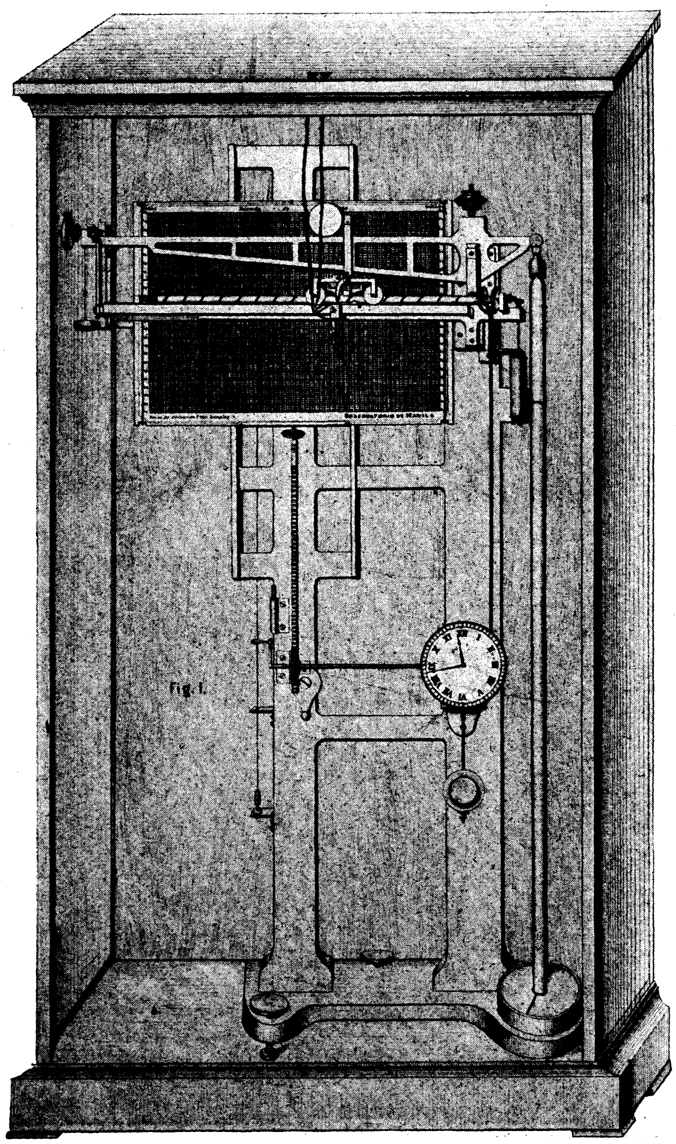


Fig. 1.

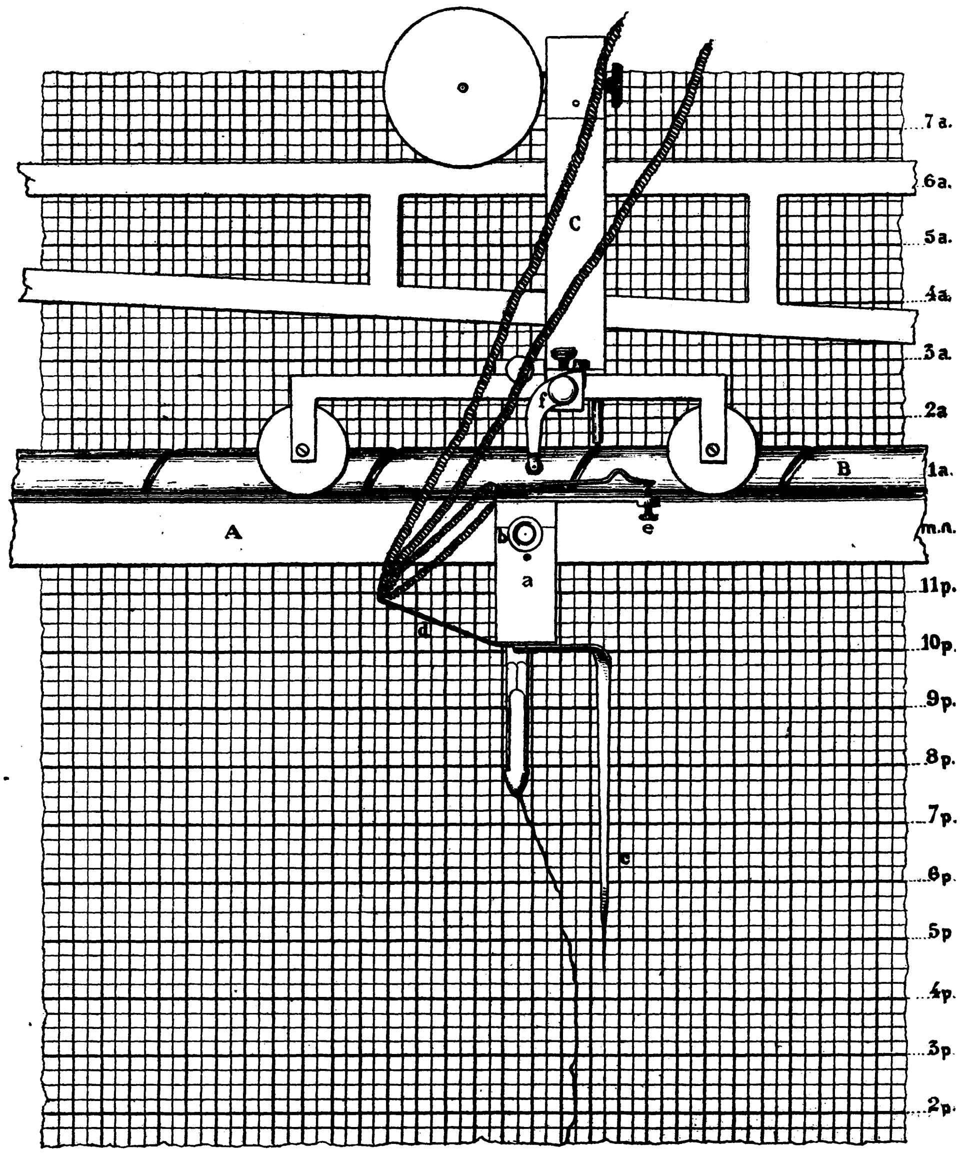


Fig. 2.

From the foregoing description the working of the alarm attachment is clear. However brief the interval, the bursting of a typhoon upon a place is invariably preceded by a fall of the barometer in said locality. The amount of fall indicative of danger varies greatly: but in the tropics, unless pressure is high, the forecaster will be on his guard whenever the barometric minimum of 3 to 4 a. m. is lower than that during the corresponding hours of the preceding afternoon. But if the pressure is near the typhoon limit, peril may be indicated already by the fact that the morning minimum is as low as that of the preceding afternoon. Hence, under ordinary circumstances, at the close of the day the alarm attachment is adjusted in such manner that the pointer indicates either the afternoon minimum or from 0.5 to 1 millimeter lower. However, when the well-ascertained direction of a typhoon, of whose whereabouts and movements the regions likely to be affected have been warned sufficiently, makes it certain that it will pass at some distance from the city and will attain its least distance during the night, the index may be set considerably below the minimum without risk. But the precaution of adjusting the alarm is never neglected in order to prevent a secondary typhoon from stealing unnoticed upon the city and harbor.

The alarm having been set and the electrical circuit tested and found in good condition, the forecaster may retire for the night with the assurance that he will be warned faithfully in case the barometer should take a sudden plunge downward. A watchman may—as a rule, will—fall asleep; but the mechanical device is not subject to human weakness.

EL TIMBRE ELÉCTRICO APLICADO AL BARÓGRAFO SPRUNG-FUESS DEL OBSERVATORIO DE MANILA.

El terrible desastre que ocurrió en la vecina colonia inglesa de Hongkong, el día 18 de Septiembre de 1906, y la consideración de lo que probablemente habría sucedido si la catástrofe hubiera tenido lugar durante la noche, demostró claramente el valor de un aparato que dé inmediata señal de alarma cuando se presenta algún peligro inesperado. Todavía recordamos con qué espantosa rapidez decargó este golpe. El tifón—siendo de muy pequeño diámetro—no extendió á gran distancia sus señales precursoras, ni dió, por tanto, tiempo para prevenirse, sino que, á manera de tornado, apenas dió las primeras indicaciones del peligro, cuando se dejó sentir con toda su violencia destructora. Media hora escasa trascurrió desde que se oyó el estampido del cañón de alarma hasta que tuvo lugar el holocausto de vidas y propiedades. Imaginar lo que habrían sido las consecuencias si el tifón hubiera desfogado en el puerto durante la noche sin aviso alguno, es demasiado terrible!

El Observatorio de Hongkong fué el blanco de injusta crítica á raíz del triste suceso. No obstante, el que estas líneas escribe está convencido, como lo están muchos otros, de que cualquier Servicio Meteorológico puede ser sorprendido de una manera análoga. Esto se comprenderá fácilmente si el lector recuerda los tornados tan frecuentes por desgracia en algunas partes de los Estados Unidos, y lo repentino de su inesperada aparición. Ahora bien, entre un tornado y un tifón no existe diferencia esencial. Ambos son remolinos de vientos dotados á la vez de dos movimientos, de traslación y de rotación alrededor de un eje más ó menos vertical; pero mientras el diámetro de la parte central del primero se mide en metros, el del segundo se debe contar en kilómetros. Cuanto más pequeño sea un tifón tanto más semejantes serán sus caracteres á los de un tornado.

Es indudable que el "Baguio de Hongkong" era de pequeño diámetro. Á la luz de sucesos posteriores es fácil afirmar que la aproximación de alguna perturbación atmosférica se manifestó temprano, á eso de las 5^h a. m. del memorable Martes, 18 de Septiembre de 1906; puesto que el barómetro continuó bajando lentamente en vez de subir. Pero se debe recordar que la tarde anterior no había ninguna señal de peligro, y los Directores del Observatorio de Hongkong no tenían obligación de permanecer en vela durante la noche en aquellas circunstancias. En el Observatorio de Manila los aposentos de los miembros del Servicio Meteorológico están en un corredor contiguo á la oficina. Esto tiene el inconveniente de que el público llega á acostumbrarse más y más á no respetar el derecho de los oficiales á no ser perturbados fuera de las horas de oficina, á menos que se trate de un asunto urgente, pero tiene la gran ventaja de tener los barómetros registradores á mano y así se puede ver de una ojeada cualquier cambio que ocurra en la presión atmosférica. Es esta una operación mucho más sencilla que si se hiciesen las lecturas directamente. Esta proximidad á los instrumentos disminuye el peligro de ser tristemente sorprendidos, pero no lo elimina por completo. Media hora que pase puede significar mucho! De aquí la importancia de una invención que llame la atención del observador á la más ligera indicación del peligro.

Inmediatamente después del desastre de Hongkong, el que suscribe había propuesto un mecanismo para convertir en despertador el barógrafo Richard; pero el asunto quedó encarpetado hasta el 26 de Octubre de 1907.

El 25 de Octubre, la oscilación barométrica había sido del tipo normal hasta las 8^h 5^m p. m., cuando la curva comenzó á subir casi rápidamente hasta que á las 8^h 35^m llegó á 759.7 milímetros, altura á que se mantuvo hasta las 9^h 5^m. Á las 9^h 30^m había bajado de nuevo hasta un punto algo más bajo que la lectura que hubiera correspondido á dicha hora si la curva se hubiera conservado normal. Estos movimientos irregulares fueron debidos tal vez á la influencia de una turbonada ó de un pequeño chubasco.—Á 0^h 15^m a. m. del 26 la presión atmosférica era todavía 0.7 mm. más alta que la mínima de la tarde anterior y comenzó á subir. No había nada alarmante en esto! Sin embargo, á las 4^h a. m. una ojeada que dió el P. Coronas al barógrafo le obligó á telefonear apresuradamente al Semáforo que se izase la 4.ª señal de temporal cuya significación es la siguiente: "La situación del centro del temporal es peligrosa para la localidad, bien que no es inminente. Atiéndase al cambio de señales." Qué había ocurrido? La curva del barógrafo mostraba que á la 1^h 16^m a. m. la presión atmosférica había comenzado á bajar; alcanzó la mínima del día anterior á la 1^h 36^m y todavía siguió bajando. Es indudable que si á la 1^h 45^m se hubiera llamado la atención del oficial á la curva del barógrafo, se habría izado la 1.ª señal de temporal 2 horas y 15 minutos más temprano!

Aquel mismo día el P. Coronas concibió independientemente la idea de un barógrafo despertador. Mas esta vez se ideó un mecanismo no para el barógrafo Richard sino para el barógrafo de mercurio de Sprung-Fuess. Esto fué una mejora muy notable del plan original, porque este barógrafo amplifica el movimiento de la columna barométrica 5 veces—permitiendo de esta manera una apreciación más exacta—y además, tiene una energía mecánica suficiente para asegurar un buen contacto eléctrico, aun cuando los puntos de contacto no estuviesen en perfecta condición. La construcción del mecanismo y arreglo de sus partes, como aparece en el aparato ya instalado, se debe á la ingeniosidad del Sr. D. Román Trinidad, Mecánico Auxiliar del Weather Bureau, el cual perfeccionó el plan que se le había propuesto.

El baguio arriba mencionado, que no fué de mucha intensidad, pasó entre Manila y Dagupan, hallándose á la menor distancia de la Capital entre 9^h y 10^h a. m. del 26 de Octubre.

De las ilustraciones, la figura 1 (véase el texto inglés) representa en conjunto el barógrafo Sprung-Fuess del Observatorio de Manila con el aparatito adicional para tocar el timbre de alarma. La figura 2 ofrece con más detalle este último. *a* es una pequeña pieza metálica corrediza á lo largo de la barra fija A del barógrafo, pudiendo fijarse en un punto cualquiera de ésta por medio del tornillo de presión *b*. Dicha pieza metálica lleva perfectamente ajustada otra de ebonita, con lo cual queda aislada de la barra y deja perfectamente independientes los dos circuitos eléctricos, el del barógrafo y el del timbre. Como se ve en la figura, la parte inferior de la pieza (*a*) lleva un índice metálico, *c*, y un brazo de ebonita, *d*, cuyo objeto es evitar que los hilos conductores se enreden con el carrete de la pluma del barógrafo; la parte superior lleva dos pequeñas tiras metálicas horizontales aisladas entre sí por medio de un pedacito de ebonita. La tira superior presenta hacia su extremo libre una pequeña encorvadura, con la convexidad hacia arriba; la inferior está provista de un tornillo (*e*), que sirve para regular la distancia que debe ser deprimida la tira superior para establecer el contacto que cierre el circuito del timbre. Cada uno de los alambres que se ven en la figura termina en una de las laminitas de contacto.—Suponiendo que estos alambres forman parte de un circuito eléctrico en el que se inserta un timbre, es evidente que la campanilla sonará si se aprieta la tira superior hasta tocar el tornillo *e*. Si consiguiéramos que el barómetro, al llegar á un límite previamente determinado, ejecutase la presión indicada sobre la tira metálica, el problema de un barógrafo despertador quedaría resuelto. Esto se efectúa de la manera siguiente:

Mediante un mecanismo, que no describimos para no hacer este artículo demasiado largo, el reloj que se ve en la figura 1, mueve el tornillo de acero B, el cual á su vez hace mover hacia la izquierda el carrete C que lleva la pluma registradora, hasta el momento en que éste vence la presión atmosférica. Al establecerse entonces el contacto eléctrico, los electroimanes que se ven á la derecha (fig. 1) hacen volver el tornillo en dirección opuesta, y mover de este modo el carrete de la pluma hacia la derecha hasta que se equilibre la balanza y se interrumpa el contacto. Esto constituye el trabajo ordinario del barógrafo.—Para cerrar el circuito del timbre eléctrico, se ha sujetado al carrete del barógrafo, mediante un tornillo, una pequeña pieza metálica, con un brazo *f*, metálico también, que gira libremente por su parte superior y lleva una pequeña ruedecita de ebonita en la inferior. Este brazo metálico se ajusta de tal modo, que al bajar la presión atmosférica y moverse, consiguientemente, el carrito hacia la derecha, la ruedecita de ebonita tropieza con la encorvadura de la laminita metálica superior, comprime ésta y cierra el circuito del timbre, precisamente en el momento en que el barómetro bajando alcanza la altura prefijada y señalada por el índice *c*.

Con esta descripción se ve ya claramente la manera de funcionar del Barógrafo Despertador. Un tifón no desfoga en una localidad sin ir siempre precedido de un descenso barométrico siquiera sea por corto intervalo de tiempo. La cantidad del descenso indicador del peligro varía mucho; pero en los trópicos, á menos que la presión esté alta, el observador estará sobre aviso siempre que la mínima barométrica de las 3^h ó 4^h a. m. sea más baja que la de las horas correspondientes de la tarde anterior. Pero si la presión atmosférica está cerca del límite del baguio, el peligro puede ya preverse cuando la mínima de la mañana está tan baja como la de la tarde anterior. De donde, en circunstancias ordinarias, el aparato se colocará, al anochecer, de tal manera que el índice señale ó bien la mínima de la tarde ó de medio á un milímetro más bajo. Sin embargo, cuando ya está bien determinada la dirección del tifón, de cuyos movimientos han sido avisadas convenientemente las regiones que serán probablemente afectadas, y se puede asegurar que pasará algo lejos de la Capital y llegará á su menor distancia durante la noche, el índice puede colocarse mucho más bajo que la mínima sin riesgo alguno. Pero la precaución de ajustar el aparato no se debe omitir nunca á fin de evitar el ser sorprendido por algún tifón secundario.

Ajustado el aparato y averiguado si la corriente eléctrica funciona y hallándola en buena condición, el observador puede descansar por la noche en la seguridad de que será fielmente avisado en caso de que el barómetro emprenda una bajada inesperada. Un observador que vigile de noche puede, como ordinariamente sucede, caer dormido; pero el funcionamiento mecánico del aparato no está sujeto á la debilidad humana.

GEORGE M. ZWACK, S. J.,
Secretario, Weather Bureau.

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BULLETIN FOR NOVEMBER, 1907.

METEOROLOGICAL BULLETIN FOR NOVEMBER, 1907.

By Rev. José Coronas, S. J.,
Assistant Director of the Weather Bureau.

GENERAL WEATHER NOTES.

Pressure and temperature.—The absence of atmospheric disturbances in the vicinity of the Philippines accounts for the fact that in all the stations within the Archipelago the monthly mean of pressure is found to have been higher than the corresponding value for November of the preceding year. Nevertheless these values differ but slightly from the normal means for the month. Thus, for instance, as regards Manila, the monthly mean exceeds that for November, 1906, by 1.23 millimeters, but from the normal mean it differs only by +0.01 millimeter. The highest pressures have been observed everywhere on the 18th, and the lowest on the 14th and 15th, or 28th and 29th.

The temperatures have likewise been generally higher than during the same month of last year. At Manila, the absolute maximum has been 33.9° C., and the absolute minimum 19.7° C., the former having been registered on the 8th, the latter on the 14th.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS, NOVEMBER, 1907.

Station.	Pressure.						Temperature.					
	Mean.	Departure from November, 1906.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from November, 1906.	Highest.	Day.	Lowest.	Day.
	mm.	*mm.*	*mm.*		*mm.*		°*C.*	°*C.*	°*C.*		°*C.*	
Tagbilaran	758.06	+0.53	760.17	18	756.97	29	27	+0.6	33.8	15	22	19
Surigao	58.43	+ .80	60.77	18	57.15	29	------	------	------	------	------	------
Cebu	58.80	+1	60.88	18	57.58	29	26.6	+ .1	31.3	2	21.6	16
Iloilo	58.13	+ .69	60.56	18	57.12	28	26.7	+ .6	32.5	5	22	15, 16
Ormoc	58.19	+ .85	60.62	18	56.99	29	25.7	+ .6	33.7	3	18.7	17
Tacloban	58.80	------	61.26	18	57.28	14	26.6	------	33	5–7, 12	22	22
Capiz	59.04	+1.08	61.84	18	57.44	27	26.8	+ .7	32	11	------	------
Calbayog	59.18	------	61.51	18	57.75	28	25.4	------	32.5	3	19	16
Legaspi	59.65	+1.59	62.12	18	58.02	15	27.1	+1.1	32.1	5	20.9	16
Atimonan	59.57	+1.40	62.12	18	57.71	28	27.4	+1.8	33.7	6	21.8	16
Olongapo	59.19?	+ .72?	61.84	18	57.37	28	27	+1.1	35.2	6	20.2	14
San Isidro	59.68	------	62.22	18	57.63	28	26.1	------	34.5	28	19.3	14
Dagupan	59.37	+1.32	61.94	18	57.50	28	27.2	+1.4	34.7	7	21.4	26
Vigan	59.84	------	62.50	18	57.89	15	27.8	------	31.5	27	23.2	20
Aparri	61.40	+1.64	63.44	18	58.39	15	26	+1	32.4	1	21	14, 22, 26

Precipitation.—Only nine stations have reported a total rainfall for the month exceeding that for November, 1906. All the rest registered smaller amounts, the difference being in some instances very considerable, as may be seen in the subjoined table. The towns most seriously hurt by the scarcity of rain were those situated along the western coast of Luzon. Thus Laoag, Vigan, Candon, San Fernando (Union), and Olongapo had only a total rainfall of, respectively, 4.8, 3.1, 3.8, 2.8, and 8.2 millimeters. At Manila the amount of rain during the month fell 85.5 millimeters below the normal for November.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF NOVEMBER, 1907.

District.	Station.	Total.	Departure from November, 1906.	Rainy days.	Departure from November, 1906.	Greatest rainfall in a single day.	Day.
		mm.	mm.			mm.	
I	Yap	209.6	−89.9	16	−8	70.6	24
	Davao	197.9	−5.8	7	0	43.7	8
	Cotabato	146.3	----	12	----	40.4	26
	Butuan	234.9	+165.4	21	+8	53.1	23
	Tagbilaran	117.7	−43.8	19	+3	25.9	10
	Surigao	632.1	+264.8	23	+3	119.2	19
	Maasin	451.3	+333.2	14	+1	127	23
	Cebu	210.8	+35.8	19	+2	50.8	9
	Tuburan	92.9	+16.9	13	+3	35.1	23
	Ormoc	197.9	−117.3	15	−1	72.6	23
	Tacloban	338.8	----	21	----	76.6	21
	Borongan	513.7	+64.6	25	+7	60.2	23
II	Jolo[1]	186.2	----	20	----	37.6	28
	Isabela, Basilan	135.6	−97.8	19	+3	29.7	19
	Zamboanga	34.6	−181.7	10	−5	7.9	7, 21, 23
	Dapitan	153.8	−348.1	20	−3	31.2	26
	Bacolod	96.9	−5.7	18	+1	20.8	30
	Iloilo	101	+29.6	15	+4	31.5	23
	S. Jose Buenavista	60.2	−109.7	6	−13	23.9	27
	Cuyo	12.9	−113.1	4	−8	7.6	27
	Capiz	131.1	−220.4	18	+4	24.6	28
III	Calbayog	192.8	----	21	----	35.6	21
	Palanoc	216	−26.7	18	+6	43.4	23
	Gubat[1]	564.2	----	21	----	86.4	20
	Legaspi	502.6	+106.8	19	+3	70.1	20

District.	Station.	Total.	Departure from November, 1906.	Rainy days.	Departure from November, 1906.	Greatest rainfall in a single day.	Day.
		mm.	mm.			mm.	
IV	Batangas	23.4	----	12	----	6.6	30
	Atimonan	169.6	−530.6	19	+1	32.9	20
	Silang	48.6	−159.2	7	−4	16.8	11
	S. Antonio, Laguna	257.4	−167.3	22	+3	26.9	22
	Corregidor	29.8	−108.1	2	−6	23.4	16
	Manila	44.1	−161.4	13	−4	14.1	11
	Balanga	29	−117	4	−9	18.3	10
	Olongapo	8.2	−51.1	2	−9	4.1	1, 21
	San Isidro	10.4	----	6	----	3	2, 13
	Tarlac	13.5	−122.6	3	−10	8.6	28
	Baler	310.9	----	17	----	29.2	10, 12
	Dagupan	14.4	−129.4	7	−7	6.1	11
	Bolinao	16.3	----	3	----	13.5	30
	Baguio	47.3	−138.6	8	−4	13	28
	S. Fernando, Union	2.8	−84.3	2	−6	1.5	30
	Candon	3.8	−69.1	2	−7	2.5	15
	Echague[2]	82	----	15	----	21.8	28
	Vigan	3.1	----	3	----	1.5	11
	Tuguegarao	140	−1,175.7	14	−7	53.3	30
	Loag	4.8	----	2	----	3.8	14
	Aparri	160.8	−624.6	12	−14	62.4	28
	Santo Domingo	437.1	+246.3	17	−3	131.1	9

[1] 29 days only.

[2] 24 days only.

DEPRESSIONS AND TYPHOONS.

Only two typhoons have been announced by Manila Observatory during November. Since both recurved at great distances from the Philippines, their effect upon the weather within the Archipelago has been barely perceptible.

THE TYPHOON OF NOVEMBER 4 TO 7, 1907.

It seems that this typhoon formed to the east of the Ladrones Islands on the 4th, and traveled first toward northwest. Inclining afterwards toward north-northwest and north, it passed west of, and not far from, Chichijima, Bonin Islands, in the evening of the 6th. On the 7th the storm headed decidedly toward northeast.

The observations made at Sumay, on the Island of Guam, Ladrones group, show that the barometer fell regularly after the 4th; but the winds continued to blow from north-northeast and northeast. In the supposition that the typhoon was northeast of the said station, this phenomenon is very difficult of explanation, unless we assume the existence of a second cause of disturbance at the time. Of greater value is the northwest swell observed at said station on the 5th, when the vortex had already traversed the northern part of the Ladrones Islands and was moving toward north-northwest.

The following table contains the valuable observations made on board the steamer *Poona* on November 4, 5, and 6. The vortex passed, at a considerable distance, successively through the south, southwest, and west of the ship. We call the special attention of the reader to the cross seas observed on the 5th, which resulted from two swells, one of which came from south and south-southwest, and hence from the cyclonic center which at the time lay in this direction, while the other came from east, being evidently caused by the strong winds which blew from east-northeast and east-by-northeast.

METEOROLOGICAL OBSERVATIONS MADE ON BOARD STEAMER "POONA" NOVEMBER 4 TO 6, 1907.

Date and hour.	Latitude, north.	Longitude, east.	Barometer.	Wind. Direction.	Wind. Force.	Remarks.
Nov. 4:	° ′	° ′	*mm.*		*0-12.*	
Noon	26 11	143 46	764.6	ESE	4	Easterly swell, high; sunset, dark red; cloud bank SW.
Nov. 5:						
4 a. m	23 17	144 50	60	NE	4	Sky completely overcast.
6 a. m			59.1	E by N	6-7	High confused swell, SSW to S and E.
8 a. m			59.6	ENE	8-9	Do.
10 a. m			58.5	ENE	9	Sky heavily overcast; hard squalls of wind and rain; 10.20 a. m. turned ship, head east, engines to dead slow.
11 a. m			58	E by N		Winds veering east in squalls.
Noon	22 30	145 20	58	E	9	Very high confused sea and swell, SSW and SW prevailing. Kept ship away to SE; resumed speed, about 8 kts. per hour.
1 p. m			55.9	ENE	10	Squalls increasing rapidly in force; turned ship, head to NE.
2 p. m			55.7	ENE	9	Weather improving. Wind coming out to E in the squalls.
4 p. m			55.4	E by S	8-9	Wind kept about 2 points on S bow and followed as it veered.
6 p. m	22 45	145 47	56.6	ESE	8	Weather improving rapidly; course (S 15 E) nearly resumed.
8 p. m			58.3	SE and E	8	Considerable lightning to SE.
Midnight			58.1	SE by S	8-7	
Nov. 6:						
8 a. m			60.3	SE by S	7	
Noon	20 41	146 39	60.5	SE by S	7	

The observations made at Chichijima, Bonin Islands, which are embodied in the following table, show clearly the passage and the recurving of the typhoon to the west of the said group of islands.

METEOROLOGICAL OBSERVATIONS AT CHICHIJIMA, BONIN ISLANDS.

[Latitude, 27° 5′ north; longitude, 142° 11′ east of Greenwich. Gravity correction not applied, —1.2 mm.]

Date and hour.	Pressure.	Wind. Direction.	Wind. Force.	Weather.
Nov. 5:	*mm.*		*0-12.*	
6 a. m	764	N	2	o.
2 p. m	62	NE	2	r.
10 p. m		E	2	r.
Nov. 6:				
6 a. m	59	NE	6	r.
2 p. m	52	NE	6	r.
10 p. m	38	S	11	r.
Nov. 7:				
6 a. m	56	W	8	r.
2 p. m	58	SW	4	o.

The German steamer *Lauschan* felt the full force of this storm from 6 a. m. to 5 p. m. of the 7th. The following report is taken from the Hongkong Daily Press of December 5, 1907:

On the morning of the 7th at 6 o'clock a typhoon burst over the vessel when she was in latitude 31° N and longitude 145° E, namely, near the Bonin Islands. The typhoon was accompanied by heavy rain, and the crew experienced extraordinary difficulties. Her starboard was washed by high waves and she sustained damage toward the bows, while two of the lifeboats were smashed. The vessel listed 33 degrees during the storm and is still inclined 22 degrees in harbor, water having poured into the hull in cascades. All the cabins on the starboard as well as the saloon were full of water and all articles spoiled. The engine department was also flooded; the steamer was consequently disabled for a day or two. The typhoon abated at 5 o'clock in the afternoon.

Manila Observatory mentioned this typhoon in the ordinary daily weather notes of November 6 and 7, though it was not possible at the time to give the exact track of the storm. In the note of the 7th the following was said concerning this typhoon:

November 7: The depression situated yesterday morning south of the Bonin Islands seems to have acquired greater development; it appeared early this morning NE of that group of Islands moving apparently to NNE.

THE TYPHOON OF NOVEMBER 10 TO 18, 1907.

Relative to this typhoon Manila Observatory cabled to Tokio, Zikawei, Taihoku, Hongkong, and Phulien the following notices:

November 11, 12.10 p. m.: Typhoon ESE or E Guam moving apparently in a northerly direction.

November 12, 5 p. m.: The typhoon passed NE and N Guam inclining westward. Appears now about NW. Guam.

November 13, 2.30 p. m.: Typhoon now N Yap in about 15° latitude moving westward.

November 15, 12.20 p. m.: Typhoon now about 17° latitude and 132° or 133° longitude probably inclining northward.

To the ordinary weather notes of the 16th and 17th were added the following references to the ulterior course of the typhoon:

November 16, 12.10 p. m.: The typhoon in the Pacific was situated early this morning in about 133° longitude and 21° latitude, it seems to move at present NE or NNE.

November 17, 12.30 p. m.: The typhoon in the Pacific was situated early this morning between Japan and the Bonin Islands in about 30° latitude and 140° longitude.

That this typhoon traveled first northward and then toward the west, and thus came successively to lie east, northeast, north, and northwest of Guam, is placed beyond doubt by a careful study of the observations made at Guam, which, together with those of Yap, are contained in the following table. At Guam the wind, in the interval of three days, backed successively from northeast to north, northwest, west, southwest, south, and southeast.

METEOROLOGICAL OBSERVATIONS FOR NOVEMBER 9 TO 15, 1907.

Date and hour.	Sumay, Guam, Ladrones Islands.					Yap, Western Carolines				
	Pressure.	Wind.		Weather.	Remarks.	Pressure.	Wind.		Weather.	Rain-fall (total).
		Direction.	Force.				Direction.	Force.		
Nov. 9:	mm.		0–12.			mm.		0–12.		mm.
6 a. m	756.8	ENE	4	c.	Choppy sea	756.9	NE	3	c.	
2 p. m	55.9	ENE	5	c.	do	55.5	NE	3	o.	14.2
6 p. m	56.8	ENE	4	c.	do					
Nov. 10:										
6 a. m	56.3	NE	6	o.	Frequent sharp rain squalls during afternoon and evening; choppy sea.	56.9	NE	3	c.	
2 p. m	54.7	NE	6	o.		55.7	NE	3	c.	
6 p. m	55	NE	5	o.						
Nov. 11:										
6 a. m	55.2	NNE	5	o.	Choppy sea; strong coloration at sunset.	56.2	NE	2	b.	
Noon	53.9	N	6	o.						
2 p. m	53.2	NNW	6	o.		55	NE	2	c.	
6 p. m	53.2	W	3	o.						
Nov. 12:										
6 a. m	53.5	SW	5	o.	Rough sea	56.2	N	1	c.	
11 a. m	53.3	SSW	7	c.	do					
2 p. m	52.7	SSW	6	c.	do	55.4	W	3	c.	
6 p. m	53.8	S	5	o.	do					
Nov. 13:										
6 a. m	55.8	S	3	o.	Ground swell	55.4	W	1	c.	
2 p. m	54.8	S	2	o.	do	53.6	WSW	3	c.	10.2
6 p. m	56.3	SE	2	c.	do					
Nov. 14:										
6 a. m	57.1	S	2	o.	do	54.8				
2 p. m	55.6	SE	2	o.	do					
6 p. m	56.9	S	2	c.	do					
Nov. 15:										
6 a. m	58.9	S	1	c.	Moderate swell	56.1	SW	2	o.	
2 p. m	57.9	NE	2	o.	do	55.4	S	2	c.	
6 p. m	58.4	NE	1	c.	do					

If the typhoon had continued on its westerly course, it would doubtlessly have crossed Luzon Island between the 16th and 17th. But luckily it inclined toward north and then toward northeast, as the Observatory announced on the 15th and 16th, stating in the weather note of the 15th that all danger to the Philippines had passed. The observations of the Loochoos and Bonin Islands show clearly the passing of the storm between these two groups on the 16th, on which day the progressive velocity of the cyclonic center increased considerably. The Japanese weather map for 6 a. m. of the 17th shows the said center in the neighborhood of 31° 30′ latitude and 141° longitude.

THE DEPRESSION OF NOVEMBER 29 AND 30, 1907.

Low pressures of little importance prevailed over the southern part of the Philippines on the 28th and 29th. Almost simultaneously a somewhat more important falling of the barometers was observed over the southern Ladrones Islands and the Western Carolines. On the 29th there could be no doubt about the existence of a depression ENE of Yap and SW of Guam, halfway between both stations. In Yap the winds blew from NNW on the afternoon of the 29th and from SW and W on the 30th; but the lower clouds moved from W during the afternoon of the 29th and all the following day. On the other hand, at Guam the winds were blowing from E and ESE on the 29th and from S on the 30th. The barometric minima took place on the 29th at Guam and on the 30th at Yap. The absolute minimum at Guam was 754.41 millimeters. We do not know the absolute minimum at Yap, because there is no recording instrument there: the corrected readings at 2 p. m. of the 29th and 30th were 754.71 and 754.49, respectively. From this it would seem that the depression moved a little toward NW or WNW on the 29th and 30th; but in all probability it filled up very soon, since there appears no trace of it on the following days.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[ϕ=14° 34′ 41″ N; λ=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

Date.	Pressure, mean.	Temperature. Open air.[2] Mean.	Open air. Maximum.	Open air. Minimum.	Underground. 0.25 meter. 8 a. m.	0.25 meter. 2 p. m.	0.50 meter. 8 a. m.	0.50 meter. 2 p. m.	1.50 meters. 8 a. m.	2.50 meters. 8 a. m.	Relative humidity, mean.	Vapor pressure, mean.	Evaporation. Free exposure, total.	Evaporation. Shelter, total.
	mm.	*°C.*	*°C.*	*°C.*	*°C.*	*°C.*	*°C.*	*°C.*	*°C.*	*°C.*	*Per ct.*	*mm.*	*mm.*	*mm.*
1	759.78	25.9	31.6	22.8	28.7	29	28.9	28.9	28.4	28.7	87.2	21.5	2.7	2
2	60.07	26.5	31.6	22.8	28.1	29.4	28.7	28.9	28.3	28.4	81.7	20.8	5.6	2.5
3	60.79	26.3	32.4	22.2	28.1	29.4	28.8	28.9	28.3	28.4	82.9	21	5.2	2.5
4	60.71	26	31.7	21.4	28	29.2	28.6	29	28.3	28.3	83.8	20.8	3.6	2
5	59.78	26.3	31.7	22.1	28	28.9	28.6	28.9	28.3	28.4	81.5	20.6	6.3	2.2
6	60.30	26.6	32.2	21.8	27.9	29.1	28.5	28.9	28.4	28.5	77.9	20	6.5	2
7	60.46	25.9	32.3	21	27.7	29.2	28.4	28.9	28.2	28.3	78.1	19.3	6.4	4.1
8	59.66	26.8	33.9	21.3	27.8	29.9	28.5	28.9	28.2	28.4	73.9	19	8.5	3.3
9	59.07	26.2	32.3	21.8	28	29.5	28.7	28.9	28.5	28.5	76.4	19.1	8.1	2.9
10	58.70	25.3	30.6	21.2	27.8	29	28.6	28.8	28.2	28.3	84.2	20.2	4.5	2.6
11	58.95	25.5	31.4	22.2	27.7	28.9	28.5	28.9	28.3	28.5	87.2	21	3.4	2.1
12	59.36	26.4	32.7	22.2	27.7	29.6	28.4	28.9	28.3	28.4	79.7	20.1	5.4	2.1
13	59.24	25.3	31	21.1	27.8	29.1	28.4	28.9	28.2	28.4	84.2	20.2	4.6	1.8
14	57.99	25.5	31.3	19.7	27.6	29.1	28.4	28.9	28.2	28.3	80.1	19.2	6.2	2.9
15	57.71	26.2	31.3	20.7	27.7	29.2	28.4	28.9	28.2	28.3	79.9	20.1	5.2	1.9
16	58.75	27	31.3	23.4	28.1	29.7	28.5	28.8	28.3	28.4	80.4	21.1	5.7	2.8
17	60.48	26.5	31.7	23.2	28.3	29.6	28.6	28.9	28.3	28.6	83.9	21.4	5.1	2.4
18	62.12	25.9	31.7	21.6	28	29.4	28.6	28.9	28.2	28.3	81	20	5.7	2.6
19	61.51	26.4	31.7	21.3	28	29.4	28.5	28.9	28.3	28.4	76.9	19.4	6.5	2.9
20	60.12	25.9	30.1	22.6	27.9	29	28.4	28.8	28.2	28.4	83.5	20.7	4.4	2.2
21	59.56	26.2	31.5	22	27.9	29	28.4	28.7	28.2	28.4	80.3	20.2	6.6	2.9
22	59.42	26.8	33.6	21.5	27.7	29.2	28.3	28.8	28.3	28.4	75.7	19.5	6.5	2.8
23	59.86	26.3	32.6	21.8	27.8	29.2	28.4	28.7	28.3	28.4	76.3	19.1	7.7	3.3
24	59.29	25.6	32.3	21.4	27.5	28.8	28.3	28.4	28.3	28.4	75.1	18	7.5	3.4
25	59.56	25.4	32	20.2	27.1	29	28	28.4	28.2	28.3	75.4	17.6	8.8	3.8
26	58.64	25.9	31.8	20.7	27.2	28.9	28	28.3	28.3	28.3	75.1	18.3	8	3.5
27	58.20	24.4	26.9	22.5	27.1	27.8	28	27.9	28.2	28.4	90.3	20.5	4.5	1.8
28	57.64	25.5	30.7	21.8	26.9	28	27.8	28	28.1	28.3	87.5	21.2	2.5	1.5
29	58.21	25.6	31.4	21.7	27	28.3	27.8	28.1	28.1	28.3	86.5	21	2.9	2.4
30	58.90	25.8	31	22.6	27.2	28.6	27.8	28.1	28.1	28.3	86.4	21.1	3.4	1.8
Mean	759.49	26	31.6	21.8	27.7	29.1	28.4	28.7	28.3	28.4	81.1	20.1	5.6	2.6
Total													168	
Departure from normal	+0.01	0.0	+1.4	—0.5							—1.4	—0.4	+29.9	

Date.	Wind. Prevailing direction.	Wind. Total movement.	Wind. Maximum hourly velocity.	Wind. Direction at the time of the maximum velocity.	Clouds. Amount, mean.	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Sunshine.		Rainfall.	Miscellaneous.
		Km.	*Km.*		*0-10.*					*h.*	*m.*	*mm.*	
1	NNE	117	13	WNW	7.1	Ci.-S.		N.-cf.		3	35	6.1	≡° ○ ⊤ a. ● Г<² p.
2	NNE	175	19.5	E	8.7	Ci.-S.	W by S	S.-Cu.		6	15	.1	d° ≡° a. ⊤° p. ○
3	NNE, WNW	148	13.5	WNW	6.6	Ci.-S.		Cu.-N.		8	15		≡ Ω a.
4	NNE, NE	127.5	13	E	5.5	Ci.-S.		Cu.	E	6	30	1.2	≡° d a. ●° Г<° p.
5	NNE, NE	155.5	15.5	WNW	4.2	Ci.	NW	Cu.	E	8	10	8.2	≡° a. ● ⊤ p.
6	ESE	167	15.5	W	3.2	A.-Cu.		Cu.	ENE	9	25		≡° Ω a.
7	NE	151	10.5	W	3.8			Cu.	ENE	7	50		≡° a.
8	E	153.5	14	E	3.4	Ci.		Cu.	ENE	10	05		≡° a.
9	ENE	144	15.5	WNW	4.4	A.-Cu.		Cu.	ENE	7	15		≡° a.
10	N, WNW	142	15	N	7.8	Ci.-S.		Cu.-N.	E	5	55	5.6	≡° Ω a. ● Г< p.
11	N	130	17	NE by N	7	Ci.-S.	NNW, SE	Cu.-N.	NE	6	10	14.1	≡° a. ↙ ● Г< p.
12	NNW, E	165	18	NNW	5.4	A.-Cu.	S	Cu.	E by N	8	20		≡° a.
13	N	130	14.5	NW	5.7	A.-Cu.	SE by S	N.-cf.		6	00	.5	≡° d² a.
14	N, WSW	134	12	W by S	3.4	Ci.	ESE	Cu.	ENE	9	25		≡° Ω° a.
15	SSW	132.5	12.5	SSW	3.8	Ci.		Cu.	ENE	9	05		≡° Ω a. ⏀ p.
16	SW	117.5	11.5	WNW	3.7	Ci.		Cu.	SW by W	8	10		≡° a. ⏀° p.
17	ESE	132	11	W	8	Ci.	NE by E	Cu.	E by N	5	10		≡° a. Г< ⏀° p.
18	E	147	13	ESE	6.8	A.-Cu.		Cu.	E	7	05		≡° a. ⊤ ●° p.
19	NE	112	13	WSW	6	Ci.	SE	Cu.	ENE	6	05		≡° a.
20	Variable	93.5	17.5	N by E	9.4	Ci.-S.	SE by S	Cu.	ENE	0	40	1.1	≡° ○ ● a.
21	E	166	21.5	E by S	7.3	Ci.-S.		Cu.	E	5	20		≡° a. < d° p.
22	ESE	201	21	SE by E	4.5	A.-Cu.	E	Cu.	ENE	8	25		≡ Ω a.
23	NE	261	26.5	NE by N	6.7	Ci.	SE	Cu.	E by N	7	10		≡° a.
24	E	275.5	26	ESE	8.1	A.-Cu.	SW	S.-Cu.	E	3	15		≡° a. p.
25	ENE	190	23	NE by E	7.6	Ci.	NNE	Cu.	E by N	6	50		≡° a.
26	NNE	253	27.5	NNE	5.5	Ci.		Cu.	ENE	5	25	.2	≡° a.
27	NNE	86.5	11	NNE	9.5	Ci.	SW by W	Cu.-N.	ENE	0	00	3.6	≡° ● d a.
28	W	82.5	12.5	W	6	Ci.-S.		Cu.	E	5	35	1	≡° Ω a. ● p.
29	ESE	112	12.5	ENE	7.8	A.-Cu.	E by N	S.-Cu.	NE	6	00	1	≡° Ω a. ● Г< p.
30	Variable	102	10	SW	7.9	A.-Cu.	ENE	S.-Cu.	ENE	3	25	1.4	● d a. p. ⌒ p.
Mean		150.1	15.9		6.2					6	22		
Total										190	50	44.1	
Departure from normal		—11			0.0					+27	11	—85.5	

[1] All the mean values given in this table are deduced from hourly observations.
[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

TAGBILARAN.

[φ=9° 38′ N; λ=123° 53′ E; barometer above sea, 21.8 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Prevailing form and its direction. Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	758.47	26.8	31.8	24.2	83.3	N	1	7	Ci.-S.	Cu.-N. W, E	11.7	● a. p. ⚡
2	58.71	27.6	32.5	24.3	77.3	N	1.2	7.2	Ci.-S.	Cu.-N. E	1	● a.
3	58.99	27.6	31.5	24.1	75.8	NNE	1.2	6.5	Ci.-S.	Cu.-N. E	------	○°
4	58.96	27.6	32	23	76.3	N	1	3.8	A.-S.	S.-Cu.	.5	d² a.
5	57.96	27.4	31.3	24	79.5	NNE, N	1.3	6.7	Ci.-S.	Cu.-N. E	------	⚡ p.
6	58.40	27.8	32.7	23.5	74.3	NNE, N	1.2	4.8	----------	Cu.-N. E	------	
7	58.64	27.7	31.1	23.9	74.7	NNE	1.2	6.3	A.-Cu	Cu.-N. E	1.8	●° a. ⚡° p.
8	57.95	27.2	31.1	23.9	79.6	SE, N	1.2	7.5	----------	Cu.-N. E	5.1	● a. p.
9	57.43	26.4	30	23.8	82.7	NNE, N	1.3	7.7	----------	N. E	3.8	⛈ a. p.
10	57.06	26.2	29	23.6	86.3	N, NNE	1	8.5	----------	S.-Cu. E	25.9	⛈ a. p.
11	57.62	27.2	30.4	24.6	82.7	NNE, SE	1.2	7.7	A.-S.	Cu.-N. E	9.4	p² ⚡° p.
12	58	27.5	31.7	23	79.2	NNE, N	1.3	7.2	Ci.-S. SE	Cu.-N. E	------	⚡ p.
13	57.74	27.4	32.5	23.6	78.8	N, SE	1.3	5.2	----------	S.-Cu. E	2	● p.
14	57.06	27.2	32.8	23.4	76.3	NNE, SE	1.2	5.2	Ci.-S.	Cu. E	1	d² a.
15	57.29	27.6	33.8	22.9	76.6	NW	1	6.5	Ci.-S. E	Cu.-N. NE	------	
16	58.18	27.4	32.3	23.5	77.8	NNE, SE	1.3	6	Ci.-S. E	Cu.-N. E	------	
17	59.73	27.2	33	22.9	74.3	NNE, SE	1.2	4.8	A.-Cu.	Cu. NE	------	
18	60.17	27.1	31.8	24.2	79.3	NNE, N	1	8.8	A.-S.	S.-Cu. NE	1.8	d² ⚡ T p.
19	59.96	26	29.7	22	84.5	NNE	1	9.7	A.-S.	N. E	24.9	↙ ●² T a. p.
20	58.35	26.9	31.5	23.1	80.2	NNE, N	1.7	8.5	A.-S.	Cu.-N. E	3.6	d° T° ⌣ p.
21	58.26	25.8	27.1	23.2	83.1	NNE	.8	9.3	A.-S.	N.	2.3	●° a. d° p.
22	57.84	27.1	31.7	22.9	79.5	NNE, N	1.2	7.5	----------	Cu.-N. E	1.3	● ⚡ p.
23	57.60	25.5	27	23.3	85.2	NNE	1.3	10	A.-S.	N. E	8.6	● a.
24	57.66	26.1	29.6	23.5	80.2	NNE	1.3	10	A.-S.	S.-Cu.	------	d° a.
25	57.72	26.2	30.4	23.5	82.5	NNE	.8	9.7	A.-S.	Cu.-N. E	4.6	● ⌒ T ⚡ p.
26	57.38	26.5	31.9	22.9	82.1	NNE, SE	1	5.7	----------	Cu.-N. E	------	
27	57.30	27.1	31.5	23.6	82.8	SE	1	7	A.-S.	Cu.-N E	------	T ⚡ ⌒° a.
28	57.08	27.2	32	23.2	79.6	NNE	1	6.7	A.-S.	Cu.-N. E	------	⌒² a. T p.
29	56.97	27.4	33.5	23.5	79.6	SE	1.3	6.7	A.-S. E	Cu.-N. E, NE	1	⌒ d ⚡° p.
30	57.44	25.8	29.3	24	86.2	NNE, N	1.2	7.3	A.-S.	N. N, NE	7.4	d² a. ●² p.
Mean	758.06	27	31.2	23.5	80	----------	1.2	7.2	----------	----------	------	
Total	------	------	------	------	------	----------	------	------	----------	----------	117.7	

SURIGAO.

[φ=9° 48′ N; λ=125° 29′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temp. Mean.	Temp. Maximum.	Temp. Minimum.	Relative humidity (mean).	Wind prevailing direction.	Wind force (mean).	Clouds amount (mean).	Clouds upper.	Clouds lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	759.03	------	------	------	------	E	2.7	6.5	Ci.	Cu. E	6.1	● a. ↙° p.
2	59.32	------	------	------	------	E	3.2	5.2	Ci.-S.	Cu. E	18	● ↙° a. p. ⌒
3	59.60	------	------	------	------	Variable	2.8	8.2	Ci.-S.	N. E	23.6	● ↙ a. p.
4	58.99	------	------	------	------	Variable	2.5	4.7	Ci.-S.	N. NE	3	Ω ↙ ● a. p.
5	58.39	------	------	------	------	NE	2.5	4.8	Ci.	S.-Cu. ENE	2	Ω ● a. ↙° d p.
6	58.75	------	------	------	------	NE	2.5	5.3	Ci.	Cu. NE, E	.8	Ω a. ⌒ ⚡ d p.
7	59.11	------	------	------	------	SE	1.5	9.2	Ci.-Cu.	S.-Cu. E, SE	26.9	● a. p. ⌒
8	58.40	------	------	------	------	NE	1.2	8.3	Ci.-Cu.	N. NE	30.4	● a. p.
9	57.88	------	------	------	------	NE	1.8	9.2	Ci.-Cu.	N. NE	33.5	● a. p.
10	57.26	------	------	------	------	NE quad.	1.7	8.7	Ci.-S.	Cu. N, E	7.1	● a. p. ⚡
11	57.99	------	------	------	------	SSE, NE	2.8	8	Ci.-S.	N.-cf. E, NE	26.9	● a. p.
12	58.59	------	------	------	------	E	.7	6	Ci.	Cu. SE, NE	14.7	● p.
13	58.10	------	------	------	------	Variable	2	3.5	Ci.	Cu. N, NE	------	Ω ≡ d° a.
14	57.16	------	------	------	------	Variable	1	1.7	Ci.	Cu. NW	------	Ω ≡ a.
15	57.56	------	------	------	------	NW	1.3	2.2	Ci.	Cu. WNW	------	Ω ≡ a.
16	58.66	------	------	------	------	NW	.8	3.5	Ci.-S.	Cu. NW	------	Ω a.
17	60.26	------	------	------	------	Variable	1.7	4.7	Variable	Cu. NW	1.3	Ω ≡ a. ●′ p.
18	60.77	------	------	------	------	NE	.7	9.3	Ci.-Cu, Ci.-S.	Variable.	25.6	● p.
19	60.38	------	------	------	------	Variable	1	9.7	Ci.-S.	N.-cf. ENE	119.2	●² a. p. ⛈
20	58.67	------	------	------	------	ENE, NE	2	8.8	Ci.-S.	N. N, NE	52.8	● a. p. ⌒
21	58.81	------	------	------	------	ENE	1.5	9	----------	N.-cf. NE	58.4	●² a. d Ω p.
22	58.26	------	------	------	------	E	2	8	Ci.-S.	Cu. NE, E	20.8	Ω ● ↙ ⚡
23	57.89	------	------	------	------	NW	.2	10	----------	N. SE	66.3	● a. p.
24	57.97	------	------	------	------	ENE	.5	10	Ci.-S.	N.	44.1	● a. p.
25	58.06	------	------	------	------	NW	1.2	9	Ci.	S. NW	9.4	● a. Ω p.
26	57.65	------	------	------	------	E	1.2	6	Ci.-S.	Cu. SSE, ENE	------	d a. Ω p.
27	57.54	------	------	------	------	E, N	.5	3.8	A.-Cu	Cu. NW	------	Ω a. p. ≡
28	57.17	------	------	------	------	N	.7	4.3	Ci.	Cu.	------	Ω ⌒ d
29	57.15	------	------	------	------	N, NE	1.2	5	Ci.	Fr.-N. N	10.2	Ω ● ⚡
30	57.67	------	------	------	------	NE	.8	8.3	Ci.-S.	Variable.	31	⚡ ● a. d p.
Mean	758.43	------	------	------	------	----------	1.5	6.7	----------	----------	------	
Total	------	------	------	------	------	----------	------	------	----------	----------	632.1	

[1] All the mean values given in these tables are deduced from six daily observations.

METEOROLOGICAL DATA, ETC.—Continued.

CEBU.

[ϕ=10° 18′ N; λ=123° 54′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	59.16	27.4	30.9	24.1	82	NE quad.	0.7	4.8	Ci.-S.	Cu. ENE	5.6	Ω ≡ ● ⌒ a. ☇ p.
2	59.46	28.2	31.3	24.2	77	E	.8	4.7	Ci.-S., Ci. WSW	Cu. E	------	Ω^{2} ≡ a. ☇ p.
3	59.76	27.8	30	25.3	78.5	NE, E	1.3	4.8	Ci.	Cu. ENE	1.8	Ω ≡ ● ⌒ a.
4	59.64	27.2	30.9	24.6	78.5	NE quad.	.8	3	Ci.	Cu. ENE	------	Ω ≡ a. ∞ p.
5	58.70	27.7	------	23.8	78.1	E	1	3.7	Ci.	Cu. NE	------	Ω ≡ a. ☇ p.
6	59.22	27.6	31.1	24.5	76.5	ENE	.5	2.8	------	Cu. ENE	------	Ω ≡ a. ∞ p.
7	59.44	27.2	30.9	24.4	81.5	E	1	6	A.-Cu. E	N.-cf. NE	.5	Ω ≡ d a.
8	58.72	26.8	30.8	24.4	82.8	NE quad.	1	6.2	Ci.	N.-cf., Cu. NE	15.2	Ω ≡ ● a. ☈ p.
9	58.16	27	------	23.5	83	NE	.7	6.2	Ci.	Cu. ENE, NE	50.8	● ≡ a. Ω p.
10	57.83	26	29	23.4	86.7	NE, E	.3	6	Ci.-S.	Cu.-N. NE	1	Ω ≡ d ☇
11	58.24	27.1	30	24.1	82.4	ENE, E	.3	4.5	Ci.-S., Ci. E	Cu. NE	------	Ω^{2} ≡ a. ☇ p.
12	58.71	27.1	30.5	23.8	79.8	E	.7	4.5	Ci. E	Cu. NE	9.9	p ≡ a. ● p.
13	58.40	26.8	30.3	23.4	79.8	ENE, E	.7	3.2	Ci.	Cu. NE	------	☇ ≡ a.
14	57.69	26.1	30.8	22	78.8	E	.3	3.7	Ci.	Cu. ENE, NNW	------	Ω^{2} ≡ a.
15	57.96	26.3	30.6	21.8	83	SE, SSE	.3	5.7	Ci.	Cu. NNW	------	Ω^{2} ≡ a.
16	58.93	25.9	29.9	21.6	78.5	SE, ENE	.5	4.2	Ci.	Cu. N	------	Ω^{2} ≡ a.
17	60.38	26.2	29.9	22.9	81.2	E	.5	3.3	Ci.	Cu. N	------	Ω ≡ a. ⏀ p.
18	60.88	26.4	30.6	24.3	84.2	ENE, E	.5	6.8	Ci.	N.-cf. NE	3.6	Ω ≡ d a. ● ☇ p.
19	60.42	26.8	30	24	84.8	NE	1.2	8.3	Ci.-S.	Cu.-N. E, NNE	37.6	● ≡ a. p.
20	59.23	26.2	30	22.8	81.7	E, NE	.8	7.2	Ci., Ci.-S.	Cu. ENE	3	p ≡ a.
21	59.09	25	27	23.7	87.9	NE	.7	9.2	Ci.-S.	N.-cf. NE	8.1	● ≡ a. ⏀ p.
22	58.82	26.8	30.1	23.8	81.8	ENE	.8	4.7	Ci.	Cu. ENE	5.8	Ω ≡ a. ☈ p. ◡
23	58.71	24.2	25.5	23.3	92.6	NE	.5	9.8	------	N. NE	31.5	● a. p. ≡
24	58.52	25.8	28.5	23.5	85.3	NE	.7	8.3	Ci.-S.	N.-cf. NE	.3	d Ω ≡ a.
25	58.32	25.8	29.9	23.7	86.8	NE, ENE	.3	8.2	Ci.-S.	Cu. NE, NNE	2.3	Ω^{2} ≡ ○ a. p p.
26	58.03	26.5	31	22.9	83.1	SE	.7	4.8	Ci.	Cu. N	------	Ω^{2} ≡ a. d p.
27	58.02	25.6	30	23.4	88.5	NW, S	.3	5.5	A.-Cu. E	Variable.	21.1	Ω^{2} ≡ ☈ a.
28	57.63	27.1	31.2	23.3	80.8	NE, S	.3	4.5	Ci.	Cu. ENE	1.3	Ω^{2} ≡ p a.
29	57.58	26.7	30.5	22.8	84.8	SE	.2	4	Ci.	Cu. NE	1.5	Ω^{2} ≡ a. p ⊤ ☇ p.
30	58.20	25.6	28.5	24	89.8	E	.3	6.7	Ci.-S.	Cu.-N. ENE, NE	9.9	Ω^{2} ≡ ⊤ ☇ p a.
Mean	758.80	26.6	30	23.6	82.7	------	.6	5.5	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	210.8	

ILOILO.

[ϕ=10° 41′ N; λ=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	58.38	27.6	32.1	24	79.8	NE	1.3	8.2	Ci.-S.	Cu. NE	------	p° a. ☇° p.
2	58.53	28.1	32.4	25	77.8	NE	1.3	4.5	Ci.	S.-Cu. NE	------	☇ p.
3	58.94	27.9	32	24.9	76	N, NE	1.3	4.2	Ci.-S.	S.-Cu. NE	0.8	●° p.
4	58.88	27.5	32	24	77.8	N, NE	1.3	2	Ci.	Cu.	.2	●° a.
5	58.02	27.9	32.5	23.9	77.8	N, NE	1.8	4.2	Ci.	Cu.	2.3	d a. ☇ ● p.
6	58.62	27.7	32.2	24.5	75.8	NE	1.7	4.7	Ci.	Cu.	------	
7	58.92	27.3	32	24.2	74.8	N, NE	1.7	2.5	Ci.	Cu.	------	
8	57.98	27.7	31.8	24.8	74.3	NE	2	3.7	Ci.	S.-Cu. N	------	⊤ d° p.
9	57.54	27	31	24	79.8	NE	1.8	5.5	A.-Cu.	S.-Cu. NNE	2.3	● a.
10	57.23	26.1	29.5	24.2	86.5	N, NE	1	6.7	Ci.-S.	Fr.-N.	4.6	d a. ● p. ⊕
11	57.54	26.2	31.1	24.4	86.5	N, NE	.8	6.2	Ci.-S.	S.-Cu. NE	------	d a. p.
12	57.95	27.6	31.8	24	76.7	N, NE	1.2	6.8	Ci.	S.-Cu., Cu.	2.3	● a. ⏀
13	57.90	26.7	31.5	23.8	81.3	N, NE	1.7	4.2	Ci.	Cu.	1.3	● a.
14	57.17	26.9	31.5	23.5	76.2	N, NE	1	5.3	Ci.-S.	Cu. E	------	Ω°
15	57.38	25.4	30.8	22	83.8	NE, N	1	7.7	Ci.-S.	N. NNE	7.6	Ω a. ● p.
16	58.16	26.8	31.9	22	76.5	E	.7	6.3	Ci.-S.	Cu.	------	
17	59.79	26.6	31.1	22.6	77.3	N	1.2	2.5	Ci.	Cu.	------	
18	60.56	25.8	29	23.6	84	N	1.7	9	A.-Cu.	S.-Cu. E	18	d a. ☈ p.
19	59.97	26	30.7	23.5	87.2	N, NE	1.5	9.7	Ci.-S.	Variable	14	● a. p ⏀^{2} p.
20	58.50	26.5	31.5	23.2	80.8	NE	2	8.7	Ci.-S.	Variable	7.1	↙ ● a. p p.
21	57.89	25.2	27.5	24	85.5	N	1.5	8.5	Ci.-S.	Fr.-N.	------	d a. p.
22	58.16	27	31.1	23.5	76.7	N, NE	1.7	7	Ci.	S.-Cu. NE	------	d a. p.
23	57.84	25.1	26	23	92.4	N, NE	1.5	9.7	------	N.	31.5	●^{2} a. d p.
24	57.56	25.8	28.5	23.5	81.9	NNE, NE	2.2	9.3	A.-Cu.	S.-Cu. NE	------	p° a.
25	57.75	26.3	31	23.9	81.5	N, NNE	2	7.3	Variable	S.-Cu. NE	.2	d a. p° p.
26	57.40	26	31.5	23	83.3	NE	1	6.3	A.-Cu.	S.-Cu. N	------	d ⌒° p.
27	57.28	26.1	30.5	22.8	81.8	Variable	.7	6	A.-Cu.	Variable.	------	d^{2} p.
28	57.12	26	31	22.6	82.8	NNE, NE	.7	7.2	A.-S.	S.-Cu.	.8	● a. d° p. ⊕
29	57.18	27	31.5	23	81.8	NE	.5	5	Ci.	N.-cf. NNE	------	Ω d ⊕
30	57.72	25.2	27.6	22.5	87.7	N, NNE	1.3	8.3	A.-S.	N. NE	7.9	● a. d p.
Mean	758.13	26.7	30.8	23.6	80.9	------	1.4	6.2	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	100.9	

METEOROLOGICAL DATA, ETC. –Continued.

ORMOC.

[ϕ=11° 00′ N; λ=124° 36′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	758.77	25	30	22.5	90.2	N, SSW	0.2	6.8	Ci.-S.	Cu. E	8.1	●° ϟ T a. p.
2	58.86	26.6	32.7	21.8	78.8	SE quad.	.3	5.2	Ci. E, N	Cu. ENE, E	------	Ω ϟ T ⌒ d
3	59.19	28.2	33.7	23	69.3	ENE	.8	4.2	Ci. NW, N	Cu. E	------	
4	59.05	27	32.5	22.2	77.2	S	.7	3	Ci.	Cu. ENE	------	d a. ϟ p.
5	58.11	27.5	33.6	22.5	74.7	NE quad.	.7	4	Ci.	Cu. NE, ENE	1.5	ϟ T ●°
6	58.74	27.2	33.4	22.2	74.7	NE quad.	.3	3.7	Ci.	Cu. ENE, NE	------	ϟ p.
7	58.85	26.7	32.6	21.7	77.6	WSW	.2	4.7	Ci.-S.	Cu. ENE, E	------	d p.
8	58.10	26.7	32.1	24	79.2	Variable	.3	5.5	A.-Cu. S	Cu. ENE	.5	d ϟ p.
9	57.60	26.8	32.8	23.4	79.3	NE, NNE	.5	6.2	Ci.	Cu. E, ENE	------	d° a. p.
10	57.30	25.4	29.8	23.1	88.7	N, S	.2	8.5	Ci.-S.	Cu. ESE	4.8	●° a. ϟ p.
11	57.68	26.6	32.2	23	78.7	Variable	.3	6.2	Ci. ESE	Cu.	3.3	● a. ϟ p.
12	58.09	26.8	31.8	22.6	78.4	Variable	.3	3.3	Ci.	Cu. ENE	------	d p.
13	57.77	26.3	31.8	22	77.1	NE	.5	2.7	Ci. E	Cu. NE	------	Ω
14	57.04	24.8	30.4	19.5	80.7	S	.3	4.2	Ci. E, ENE	Cu. N, NNW	------	Ω
15	57.13	24.7	31.4	20.1	82.7	Variable	.3	3	Ci. E	Cu. NW	------	Ω
16	58.33	24.5	31	19.1	80.8	Variable	.5	3.2	Ci.-S.	Cu.	------	Ω ○°
17	59.80	25.4	31.3	18.7	76.2	Variable	.8	3.8	Ci.	Cu. NE	------	Ω
18	60.62	25.7	30.8	22.4	84.8	Variable	.3	8.7	A.-Cu. SE	Cu. E	3.8	● a. d ϟ p.
19	59.88	25.7	29.7	23.7	88.9	Variable	.3	8.5	Ci.	Cu. SE, ENE	16.7	● ϟ ⊕
20	58.39	24.9	30	22.2	83.4	NNW	.5	8.2	------	Cu. E	19.8	● p.
21	58.56	23.9	26.1	22	85.5	E	.3	9.5	Ci.-S.	Cu.-N. SE, E	17.3	d a. p. ⊕
22	58.03	26.6	32.6	22.6	77	NE	.7	5.8	Ci. SE	Cu. ENE	------	d ⌒ ϟ
23	58.09	24.2	27	22.5	94.5	NNE	.2	10	Ci.-S.	Cu.-N. E	72.6	● a. p. T
24	57.61	25.2	28	22.2	81.9	NE	.5	10	Ci.-S.	Cu. ENE	17.3	● a. d p.
25	57.78	25	28.9	22.8	87.2	Variable	.3	9	Ci.-S.	Cu.	9.9	d a. ● p.
26	57.35	24.9	29.7	21.8	85.8	NE	.3	5.7	Ci. E	Cu.	------	T ϟ p.
27	57.44	24.8	29.6	21.2	87	SSE	.3	3	A.-Cu. SW	Cu.	------	○°
28	57	25	30.8	20.9	86.5	S, SSE	.3	3.3	Ci.	Cu. ENE, NE	6.1	Ω a. ⌈ϟ p.
29	56.99	24.8	30.4	21.1	90.5	SW, SSE	.5	3	Ci.	Cu. NE	15.7	Ω ⌈ϟ
30	57.47	24.8	28.1	22.7	90.3	N, S	.2	5.2	Ci.-S.	Cu.	.5	T° ●° p.
Mean	758.19	25.7	30.8	22	82.3	------	.4	5.6	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	197.9	

TACLOBAN.

[ϕ=11° 15′ N; λ=125° 00′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	759.56	26.1	29.3	24.7	87.8	Variable	0.8	6.2	------	Cu.-N. E	0.5	ϟ d° a.
2	59.52	27.6	32.6	24.6	80.7	SSE, SE	1	5	Ci. SW	Cu. ENE, E	2	●° p. ○²
3	59.96	27.8	32.7	25	79	E	1.2	3.8	Ci.-S.	Cu. ENE, E	------	ϟ p.
4	59.68	27.7	32.5	24.8	80.1	NNW, E	.8	5	------	Cu. NE	4.6	● ⌒° a.
5	58.87	27.8	33	25.5	76.9	Variable	1.5	3.8	Ci.	Cu. ENE	------	ϟ p.
6	59.31	27.8	33	25	77.2	NNW	1.2	3.7	Ci.	S.-Cu.	3	● p.
7	59.40	28.1	33	25.3	75.8	NW, N	1.2	4.7	Ci.-S.	S.-Cu.	6.4	● p.
8	58.82	26.4	32.6	24	84.2	N, NE	1	7.8	A.-Cu.	Cu.-N. E	23.9	● a. p. ⌒
9	58.20	27.1	32	23.8	79.9	NE	1	7.5	Ci, Ci.-S.	Cu. ENE	8.3	● a p.
10	57.80	26.2	28.7	24.3	89.7	NW	.5	8.7	------	N. E	8.6	● a. p. T ○²
11	58.19	27.5	32.5	24.7	81.2	NW	1	6.3	Ci.-S. WSW, SW	Cu. E	8.2	● ϟ a. p.
12	58.68	27.2	33	24	81.3	NW, ENE	1	4.5	Ci. SW	Cu. E	.5	d ⊕° p.
13	58.22	27.4	32.7	24.6	79.7	NW	1	4.5	Ci.-S. SW	Cu. NE	.5	d a. ⊕° p.
14	57.28	27.1	31.5	24.6	77.2	NW, NNW	1.2	5.3	Ci. SE	Cu. WNW	------	○² ⊕²
15	57.52	26.6	31.5	23.3	79.2	NW	.8	4.7	Ci.-S.	Cu. NNW, NW	------	⊕² p.
16	59	26.2	32.2	22.5	77.5	NW	.7	5.7	Ci.-S. SSE	Cu. NNW, N	------	Ω² a.
17	60.54	26.7	32.5	23.3	78.4	Variable	1.2	2.5	Ci.-S.	Cu. ENE, NNE	------	◡² Ω² a.
18	61.26	27.2	30.8	24	80.8	NW	.7	8.3	Ci.-S.	Cu.-N. E	5.1	● a. ⊕² p.
19	60.48	26.6	29.8	25.2	85.3	NW, NNW	1	8.2	Ci.-S. SW	Cu.-N. E	16.2	● a. p. ⌒² ◡ ⊕
20	59.27	25	29.8	22.4	86.3	WNW	1	9.3	Ci.	Cu.-N. E	69.8	● a. p. ⊕² ◡²
21	59.60	23.2	24.7	22.5	93.2	N	.8	8.5	------	N. ENE	76.6	●² a. p. ⊕²
22	58.77	26.3	31.5	22	81.5	NE	1	5.7	Ci.-S. N	Cu. ENE, SE	9.1	● a. p.
23	58.61	25	27	23.5	89.5	NE, NNW	1	10	------	N. ENE	65.5	● a. p. T
24	58.69	25.2	29.7	23	87.7	N	.7	9.2	Ci.	N. ESE	22.6	● a. p.
25	58.46	25.1	29.8	23.3	90.7	NW, NNW	1	7.7	Ci.	Cu.-N. E	4.3	● a.
26	57.90	26	31.5	22.8	83	Variable	.7	6.5	Ci.-S. SSE, SW	Cu. E	------	⊕² Ω² a. ⌒ p.
27	57.65	26.7	32.3	23.2	80.2	NW	.8	6.3	A.-Cu. E, NE	S.-Cu., Cu.	------	
28	57.37	27	31.7	24.3	84.7	W, NW	1	4	------	Cu.-N. E	------	⊕² Ω² a.
29	57.46	26	30	24	87.5	NW	1	4.7	Ci. ESE	Cu., Cu.-N. N	1.8	Ω² a. ● ⌒° ϟ p.
30	57.95	26.1	30.6	24.5	85.5	NW, NNW	.7	8.2	Ci.-S. SW	Cu.-N. NE	1.3	d a. ● ⌒° p.
Mean	758.80	26.6	31.2	24	82.7	------	1	6.2	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	338.8	

METEOROLOGICAL DATA, ETC.—Continued.

CAPIZ.

[$\phi = 11° 35' N$; $\lambda = 122° 45' E$; barometer above sea, 6 meters; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	758.62	28.3	31.4	------	84.2	E	1.2	6.7	Ci.-S.	Cu.-N.	------	d° a. p. ⊤ ☇
2	59.16	28.3	31.2	------	81.4	E	1.2	6.3	Ci.	Cu.	------	⊤ p.
3	59.98	28.7	31.2	------	78.5	E	1.3	6.5	Ci.	Variable	------	d° ☇° p.
4	59.84	28.4	30.9	------	81.2	ENE	1.2	5.7	Ci.	Variable	3	● a.
5	59.01	28.7	31.2	------	81.3	NE quad.	1.7	5.3	Ci.-S., Ci.	Cu.	------	
6	59.45	28.4	31	------	79.3	ENE	1.7	5.8	Ci.	Cu.	------	d° a.
7	59.85	27.6	30.3	------	80	NE	1.3	5.8	Ci.	Cu.-N.	1.3	d p.
8	59.04	27.8	30.5	------	79.7	ENE	.8	6	Ci.	S.-Cu., Cu.	------	d° p.
9	58.67	27.4	30.4	------	81.8	ENE, NE	1.7	7.2	Ci.	N., Cu.-N.	2.5	p a.
10	58.23	27.6	29.6	------	84.9	NE, ENE	1.3	8	Ci.-S.	Cu.-N., N.	------	
11	58.52	27.8	32	------	83.8	NE	1.2	7.2	Ci.	N.	1.8	● a. d° p.
12	58.75	28	31.2	------	82.3	E, ENE	1	7.2	Ci., Ci.-S.	Cu.-N.	4.8	● p.
13	58.75	27.3	30.2	------	84.2	E, NNE	1	6.8	Ci.	Cu.-N.	2	d a. p.
14	58.01	26.6	30.5	------	82.3	NE	.5	6.3	Ci., Ci.-S.	S.-Cu.	------	●
15	58.30	25.4	28.9	------	88.8	NE	.7	6.5	Ci.	N.	22.8	● a.
16	59.14	25.6	30.6	------	88	NE	.3	4.3	Ci.	S.-Cu.	------	☊² a.
17	60.91	25.7	30	------	85.4	ENE	.3	3.2	Ci.	S.-Cu., Cu.	------	☊² a.
18	61.84	25.8	29.1	------	90.3	ENE	.5	8	Ci.-S.	N.	17.8	☊ d° a. ● ☇ p.
19	61.22	27	29.3	------	86.3	ENE	.8	8.8	Ci.-S.	N.	------	d° a. ⊎ ⊖ ☇ p.
20	59.82	26	29.4	------	87.3	NE	1.5	9.2	Ci.-S.	N., Cu.-N.	8.9	↙° d° a. p p.
21	59.46	25.6	28.3	------	90.3	E	.7	9.5	Ci.-S.	N.	3.6	d a. p.
22	59.56	27.4	30.6	------	84.2	NE	1.2	6.7	Ci.	Cu.-N.	------	d° a.
23	59.32	26.2	28.5	------	89.2	NE, E	1.8	10		N.	4.1	d a. ⌈☇ p.
24	59.17	25.8	28.2	------	91.2	NE quad.	1.7	10	Ci.-S.	N.	4.3	d a. p.
25	58.58	26	28.9	------	87.1	NE quad.	1.3	8.8	Ci.-S.	N., Cu.-N.	9.1	● a. d° p.
26	57.79	25.9	28.5	------	89.2	NE	.3	7	Ci.	Cu.-N.	3.3	● a.
27	57.44	25.2	30	------	89.7	ENE, NW	.3	9.5	Ci.-Cu., Ci.-S.	Cu.-N., N.	3.3	d a. p.
28	57.50	24.7	28.7	------	90.7	WSW, W	.2	7.2	Ci.	N.	24.6	● a.
29	57.58	26.5	29.6	------	87.5	N, NE	.3	7	Ci.	N.	5.8	● a. ⌈☇° p.
30	58.04	26.8	29.3	------	86.5	NE, ENE	1	8.8	Ci.-S.	N., Cu.-N.	8.1	● a.
Mean	759.04	26.8	29.9	------	85.2	------------	1	7.2	------------------	------------------	------	
Total	--------	------	------	------	------	------------	--------	--------	------------------	------------------	131.1	

CALBAYOG.

[$\phi = 12° 04' N$; $\lambda = 124° 36' E$; barometer above sea, 4.1 meters; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Upper.	Clouds. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	759.73	26.2	30	22.2	89.2	N, NE	1	6.3	Ci.	S.-Cu.	11.2	● ☇ p.
2	59.85	26.3	31	22.2	89	N	1	7	Ci.	S.-Cu.	1.3	p ☇ p.
3	60.37	26.5	32.5	22	82.7	N	1	6.7	Ci.	S.-Cu.	1	p ☇ p.
4	59.85	26.8	31.6	22.2	83.3	N, NE	1	5.7	A.-Cu.	S.-Cu.	.3	p a. ☇ p.
5	59.28	26.3	32	22.6	87.8	N, NNE	1	5.7	A.-Cu.	S.-Cu.	6.4	p a. ⌈☇ p.
6	59.73	26.8	31.5	22	81.8	N	1	5.5	A.-Cu.	S.-Cu.	.3	☇ p.
7	59.94	26.2	31.8	21	80.8	N, NNE	1.3	4.7	A.-Cu.	S.-Cu.	------	☇ p.
8	59.19	25.8	30.5	21.4	84.3	N, NNE	1	6.8	A.-Cu.	S.-Cu.	1	☇ p p.
9	58.71	26	31.6	22.7	82.7	N, NNE	1.5	5.8	A.-Cu.	S.-Cu.	------	d ☇ p.
10	58.31	25.4	29.4	22.6	91	NNE	1	7.8	Ci.-S.	Cu.-N.	9.4	● a. p ☇ p.
11	58.48	26	30.8	21.4	85.8	N, NNE	1	6	Ci.	S.-Cu.	------	p ☇ p.
12	59.03	25.9	30.5	22.4	90.2	NNE	1	6.2	A.-Cu.	S.-Cu.	13.2	● a. d ☇ p.
13	58.92	25.9	30.2	21.1	84	N, NNE	1	6	Ci.	S.-Cu.	------	☇ p.
14	57.86	25	30.6	20.5	86.3	N	1.2	6.7	Ci.	S.-Cu.	------	⊎² ☇ p.
15	57.96	25.2	30.5	21.1	83.7	N, NNW	1.2	6.5	Ci.	S.-Cu.	------	☇ p.
16	59.14	24.8	30.4	19	85.7	N	1	4.8	Ci.	S.-Cu.	------	☇ p.
17	60.82	25.2	30.5	19.5	85	N, WNW	1	4.5	A.-Cu.	S.-Cu.	------	⊎
18	61.51	25.2	29.5	21.2	88.2	N	1.2	7	Ci.	Cu.-N.	1.3	●° a. ⌈☇ p.
19	60.89	25.3	28	21.5	92.3	N	1.2	7.3	Ci.	Cu.-N.	10.4	● a. p ☇ ⊎ p.
20	59.74	24	27.7	21.4	94.7	N	1	9	A.-Cu.	Cu.-N.	29.5	● a. p. ☇
21	59.88	22.8	24.5	20.7	95.3	N	1.2	8.7	Ci.-S.	Cu.-N.	35.6	● a. p. ☇
22	59.20	25.6	30.5	21	87.7	N	1.2	4.7	A.-Cu.	S.-Cu.	1.8	↙ ● ☇ p.
23	59.02	24.4	26.5	22.5	94.8	N	1	9.2	Ci.-S.	Cu.-N.	24.6	● a. p. ☇
24	59.01	24.8	28.5	21.5	89.8	N, NE	1.2	9.2	Ci.-S.	Cu.-N.	6.9	●° a. p. ☇
25	58.82	24.2	26.5	21.8	92.7	N	1	8.7	Ci.-S.	Cu.-N.	.5	d a. p. ☇
26	58.27	24.6	29.7	21	91.2	N	1	7.2	Ci.	Cu.-N.	1.3	●° p.
27	58.03	25.5	29.6	22	89.3	N	1	6.8	Ci.	S.-Cu.	------	☇ p.
28	57.75	24.9	29.5	21.5	94.2	N	1	6.2	A.-Cu.	Cu.-N.	20.8	p a. ● ⊤ p.
29	57.90	25	30	21.4	93.3	N	1	6.3	A.-Cu.	S.-Cu.	7.9	d a. ● ☇ p.
30	58.36	24.5	30.2	21.5	93.8	N	1	6.3	Ci.	S.-Cu.	8.1	d a. ● ⊤ ☇ p.
Mean	759.18	25.4	29.9	21.5	88.4	------------	1.1	6.6	------------------	------------------	------	
Total	--------	------	------	------	------	------------	--------	--------	------------------	------------------	192.8	

METEOROLOGICAL DATA, ETC.—Continued.

LEGASPI.

[ϕ=13° 09′ N ; λ=123° 45′ E ; barometer above sea, 4.3 meters ; gravity correction not applied, —1.77 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.		Clouds. Prevailing form and its direction. Lower.		Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.					mm.	
1	760.16	27.1	30.5	24.5	87.8	NE quad.	1.2	9.2	Ci.-S.		Cu.-N.	ENE	50.6	● a. p ☇
2	60.44	27.9	30.9	25.1	83.8	NNE	1.5	6.2	Ci.-S.		Cu.-N.	ENE	16.5	● a. ☇ p.
3	60.98	28.7	31.5	26.8	74.3	NE quad.	2.2	1.5	------		Cu.	ENE	------	
4	60.59	28.3	32	25.6	74.7	NNE	1.8	1.7	Ci.		Cu.	ENE	------	p ☇ p.
5	59.73	28.5	32.1	26.4	76	NE	1.7	2.7	A.-Cu.	ENE	Cu.	NE	------	p ☇ p.
6	60.32	28.8	31.9	26.5	72.4	NE quad.	2	2.2	Ci.		Cu.	ENE	------	d° a.
7	60.52	27.7	31.5	25.5	76.5	NE, ENE	1.5	1.7	Ci.		Cu.-N.	ENE	.8	p a.
8	59.73	28.7	32	25.5	70.7	ENE	2.2	1.8	Ci.		Cu.	ENE	------	☇° p.
9	59.26	28.1	31.5	26	72.7	NE quad.	2.2	3	Ci.		Cu.	ENE	------	d p.
10	58.96	25.8	26.7	22.5	88.3	NE quad.	1.5	9.5	Ci.-S.		Fr.-N.	E	52.3	● ⊤° a.
11	59.08	26.5	29	24	86.7	N, NNE	1	6	------		Cu.-N.	NE	11	● a. p p.
12	59.48	26.9	31	23.6	83.5	ENE	1.7	5.7	Ci.		Cu.-N.	ENE	36.8	● a. p.
13	59.14	27.8	31.6	24	76.2	NE quad.	1.5	4.5	Ci.		Cu.	ENE	17	● a. p.
14	58.23	26.7	31	23.7	80.5	NE quad.	.5	5.5	Ci.		Cu., N.		2.5	d a. ● p.
15	58.02	26.9	31	22.2	73.7	NNE	1	3.7	Ci.		Cu.		------	
16	59.18	26.5	31.1	20.9	75.7	E quad.	.7	2	Ci.	S	Cu.		------	
17	60.98	26.8	31.5	21.4	78.2	E quad.	1.2	1	Ci.		Cu.	NE	------	☇° p.
18	62.12	27.7	31.8	24.4	75.8	NE quad.	1.5	5	Ci -S.		Cu.-N.	ENE	3	● p.
19	61.43	27.4	31	24.2	82.2	NE, ENE	1.7	5.8	Ci.		Cu.-N.	ENE	33.8	● a. p p.
20	60.22	25.7	27	23.2	88.5	NE quad.	1.2	9	Ci.-S.		N.	ENE	70.1	● a. p.
21	60.15	25.7	29.1	22.4	87.2	NE quad.	1.3	7	Ci.-S.		Cu.-N.	ENE	36.8	p a ● p.
22	59.78	27.7	30.5	25	77.7	NE	2.2	4.8	------		Cu.	ENE	------	p° p.
23	59.68	27.2	28.5	23.6	79.8	NNE, NE	2	8.3	Ci.-S.		Fr.-N.	ENE	21.8	● a. p. ☇
24	59.65	26	28.5	22.5	84	NE	1.7	10	Ci.-S.		Fr.-N.	ENE	41.7	● a.
25	59.25	25.8	28.9	24.2	82.2	NE quad.	1.2	8.7	Ci.-S.		Fr.-N.	ENE	3	p a. ● p.
26	58.62	26	29.5	22.6	83.8	NE, E	.8	8.2	A.-Cu.	SE	N.	ENE	33.5	● a. p.
27	58.74	24.8	27	22.8	91.7	E	.2	8.3	Ci.-S.		Fr.-N.		59.2	● a. d° p.
28	58.08	27.4	30.6	24.5	82.2	NE, ENE	1	2.5	------		Cu.	NE	------	
29	58.31	26.9	30.5	22	84.3	NE	.8	4.5	Ci.	NW	Cu., Cu.-N.	NE	6.4	● ☇ p.
30	58.76	27	30.1	24.2	81.3	NE quad.	1.3	4.2	Ci.		Cu.-N.	NE	5.8	● a. p.
Mean	759.65	27.1	30.3	24	80.4	------	1.4	5.1	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		502.6	

ATIMONAN.

[ϕ = 14° 00′ N ; λ = 121° 55′ E ; barometer above sea, 7.8 meters ; gravity correction not applied, —1.74 mm.]

	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.					mm.	
1	759.87	27.9	32.3	24	86.8	NE, ENE	1.7	8.2	Ci.	E	S.-Cu.	NE	6.6	●° a. p ⊍ ⊖ ☇
2	60.04	27.2	29.5	24.9	87.8	NE	1.3	9.2	Ci.	N	S.-Cu.	NE	10.2	d a. p. ☇
3	60.77	27.5	32.1	23.5	85.2	NE	1.7	4.5	Ci.		S.-Cu.	NE	3.8	Ω ⌈☇° a. d p.
4	60.60	28.6	33.4	26	82	NE	2.5	2.2	Ci.-Cu.	E, NE	Cu.	NE	------	↙° ☇° p.
5	59.97	28.7	33.4	26.1	82.2	NE	2.8	5.8	Ci.		Cu.	NE	1.5	↙° d° a. p. ☇
6	60.46	28.7	33.7	25.7	80.4	NE	2.5	4.2	Ci.		S.-Cu.	NE	------	d p.
7	60.49	29	33.3	26.3	80.2	NE	3	2.3	------		Cu.	NE	------	
8	59.65	28.5	32.7	26	78	NE	3.2	2.8	A.-Cu.	NE	Cu.	NE	------	
9	59.05	28.9	32.8	26.3	77.3	NE	3	2.8	Ci.		Cu.	NE	------	☇° p.
10	58.62	27.7	32.6	24.8	84.5	NE	2	6.3	A.-Cu.	ENE	S.-Cu.	NE	------	↙° d° a. p. ☇
11	58.81	28	33	24.9	84.3	NNE	2.2	7.2	Ci.	ENE	S.-Cu.	NE	3.3	d a.
12	59.40	28	32.6	25.5	83.5	NE	2.5	7	Ci.		Cu.	NE	7.1	↙° ●° a.
13	59.25	28	33	24.6	81.5	NE	2.5	4.3	Ci.		Cu.	NE	3.3	●° a. ↙° d° ⊖ p.
14	58.10	27.4	31	25.6	82.3	NNE	2	6	Ci.	ESE	Cu.	NE	1.5	d a. ⊍° ⊖²
15	58.02	26	30	23.3	87.1	NNW	1.2	6.5	Ci.-Cu.	NE	S.-Cu.	N	4.3	d ⌒° a. ☇ ⊍ ⊖ p.
16	58.77	25.9	32.8	21.8	87.3	SW, NE	1.2	1.3	Ci.	SE	Cu.		------	Ω° ⊍° ⊖°
17	60.74	26.6	32.2	22	84.5	SW, NNE	1.8	4.5	Ci.		Cu.	NE	------	Ω° d° ⊖² ⊍°
18	62.12	27.9	33.2	25.5	81.3	NE	2.3	7.3	Ci.-Cu.	E, NE	Cu.	NE	------	⊖ Ω ☇°
19	61.72	27.1	29.8	25.5	84.8	NE, NNE	2.7	9.2	Ci.-S.		S.-Cu.	NE	7.1	⊖° d a. p.
20	60.49	26	27.4	24.5	91.5	NNE	2.7	10	Ci.-S.		N.	NE	32.9	●° a. p. ⊖°
21	59.81	26.7	31.1	24	88	Variable	1.7	7.5	Ci.		S.-Cu.	ENE	4.3	●° a. d ⊤° p. ⊖
22	59.86	27.8	31.1	24	82.4	NE	2.7	6	Ci.		Cu.	NE	------	d p. ⊖°
23	59.80	27.8	32	25.9	83.3	NE	3.5	7.2	Ci.		Cu.	NE	------	↙° a. p. ⊖°
24	59.54	27.5	31.8	24.9	81.8	NE	2.8	8.5	Ci.		S.-Cu.	NE	4.3	⊖ ⊍ ●° a. ↙° p.
25	59.83	27	31.6	25	81.2	NE quad.	2.7	8.8	Ci.-S.		Cu.	NE	4.5	↙ ●° a. p.
26	58.75	25.5	27.5	23.8	90.7	NE quad.	3	10	Ci.-S.		N.	NE	28.3	↙° ● a. p.
27	58.02	25.7	27.8	24	89.5	E, NE	1	9.3	Ci.	NNW	S.-Cu.	NE	7.3	●° a. p.
28	57.71	27.4	32.9	24	85	E, NNE	1.3	2.7	Ci.		Cu.	NE	12.7	⊖ ● ☇° p.
29	58.27	26.7	30	24.8	87.5	N, NE	1.7	8.8	Ci.-Cu.	NE	Fr.-N.	NE	17.5	⊖ d a. ●² p.
30	58.57	26.1	30.9	23.3	89	N	1.8	9.2	Ci.-S.		Fr.-N.	NE	9.1	⊖ ● a. d p.
Mean	759.57	27.4	31.6	24.7	84.4	------	2.2	6.3	------		------		------	
Total	------	------	------	------	------	------	------	------	------		------		169.6	

METEOROLOGICAL DATA, ETC.—Continued.

OLONGAPO.

[ϕ=14° 49′ N ; λ=120° 15′ E ; barometer above sea, 3.5 meters ; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction.			
									Upper.	Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	759.68	26.9	34.2	23.4	86	ENE, NE	.5	7	Ci.-S.	Cu. ENE	4.1	Ω p a. ☈ p.
2	59.78	26.8	33.1	22.6	82.7	ENE, NE	.7	7	Ci.-S. SE	Cu.-N. E	------	
3	60.44	27.8	33.9	22.6	82.3	NE	.6	4.8	Ci.-S.	Cu. ENE	------	☇° p.
4	60.35	27.2	34.1	22.2	80.8	NE	.4	4.7	Ci.-S.	Cu. E	------	☇ p.
5	59.51	27.3	34.5	22.3	77.8	NE	.7	5.3	Ci.-S.	Cu. E	------	☇ p.
6	60.03	27.4	35.2	23.1	75.2	NE	.4	3	Ci.-S.	Cu. E	------	☇ p.
7	60.17	27	34.4	21.3	73.8	NNE, ENE	.5	2.5	Ci.-S.	Cu.	------	
8	59.30	27.1	34.4	22.1	74.8	ENE, NE	.6	3.8	Ci.-S.	Cu. ENE	------	∞
9	58.84	26.6	32.9	22	74.2	NNE. NE	.6	4.3	A.-Cu. ENE	Cu.	------	p ∞ ☇ p.
10	58.51	26.3	32.8	21.5	78.5	NE	.4	6.7	A.-Cu. E	Cu., Cu.-N.	------	Ω a. p ⊤ p.
11	58.54	27.2	33.4	22.6	76.7	ENE	.6	7.2	Ci.-S. E	Cu. E	------	☇ a.
12	59.06	27.5	33.6	23.2	72.3	ENE	.8	6	Ci.-S.	Cu. E	------	d a.
13	59.08	26.7	33.4	22.6	76.4	ENE	.8	5.7	Ci.-S.	Cu. E	------	∞
14	57.86	26.3	34	20.2	74.5	ENE	.6	7	Ci.-S.	Cu.	------	∞
15	57.58	25.4	28.9	21.7	85.7	ENE	.4	7.7	Ci.-S.	Cu. NW	------	∞
16	58.56	26.2	29	24.2	83	ENE, SW	.4	6.8	Ci.-S.	Cu.-N. SW	------	≡ ∞
17	60.33	27	33.1	23.2	81.7	ENE	.5	8.2	A.-Cu., Ci.-S.	Cu.	------	$\equiv^2$ p ⊤° p.
18	61.84	27.1	34	22.2	75.8	ENE	.4	4	A.-Cu. E	Cu. E	------	∞
19	61.31	27	34.5	21.6	73.8	ENE	.5	4.5	Ci.-S.	Cu. ENE	------	∞
20	59.54	26.7	32.7	22.1	76.2	N	.7	8.5	Ci.-S.	Cu. E	------	ψ ○°
21	59.02	27.4	32.6	25.4	72.9	ENE	1.1	8.2	Ci.-S.	Cu.-N. E	4.1	☈ p.
22	58.88	29	34.5	25.1	65	NE	.9	6	Ci.-S.	Cu. E	------	≡ ↙°
23	59.74	27.2	33.5	23.4	74.1	NE	.7	8.5	Ci.-S.	Cu. E	------	⊤ a. ∞ p.
24	58.88	27.5	33.3	23.4	69	NE	.8	7.5	A.-Cu. E	Cu. ENE	------	ψ ∞
25	59.06	27.4	32.4	24.7	62.9	NE	.8	7.5	Ci.-S.	Cu.	------	○° ∞
26	58.34	26.9	33.6	21.3	71.1	NNE, NE	.7	5.2	Ci.-S. N	Cu.	------	∞
27	57.90	25.9	31.1	22	81.5	NE	.5	8.2	Ci.-S.	Cu.	------	Φ d a. ∞ p.
28	57.37	26.6	33.2	22.2	80.7	NNE	.4	6	A.-Cu. ENE	Cu.	------	≡ a. ☇ p.
29	57.67	27.4	34.4	23	77	ENE, NE	.4	6.7	Ci.-S.	Cu. E	------	☇ d ⊤
30	58.48	28.5	34.3	23.6	69.4	NE	.4	6.3	A.-Cu. NE	Cu.	------	☇ ∞
Mean	759.19	27	33.3	22.7	76.2	------------	.6	6.2	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	8.2	

SAN ISIDRO.

[ϕ=15° 22′ N ; λ=120° 53′ E ; barometer above sea, 20 meters ; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temp. mean.	Temp. max.	Temp. min.	Relative humidity (mean).	Wind direction.	Wind force (mean).	Clouds amount (mean).	Clouds upper.	Clouds lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	759.89	26.6	33.6	23	81.8	ESE	0.3	5.8	Ci.-S.	Cu. NE	------	≡ Ω a. ☇ p.
2	60.50	24.1	28.4	22.2	90	N	0	7.2	Ci.-S.	Variable	3	d a.
3	61.04	25.7	31.2	22	85.2	NNW, ENE	.2	5.5	Ci.-S. E	S.-Cu.	------	≡ a. ○° ☇ p.
4	60.73	26.4	33.2	21.5	78.4	ENE	.2	4.3	A.-Cu. ESE	S.-Cu. E	------	d ☇ p.
5	60.02	26.9	33.7	22	75.7	ESE	.7	2.7	Ci.	S.-Cu.	------	≡ Ω a. ☇ p.
6	60.40	26.5	33	21.6	75.4	NNE, E	.2	2.5	A.-Cu. E	S.-Cu. NE	------	
7	60.50	26.2	33.1	21	76.8	E	.5	1.8	A.-Cu., Ci.	Cu. NE	------	
8	59.72	26.2	33.4	20.6	74.3	ENE	.5	2.3	A.-Cu. E	S.-Cu.	------	≡ Ω a.
9	59.28	26	33.7	21	72.3	NE quad.	.3	5.8	A.-Cu. SE	Variable	------	
10	59.02	26	31.5	21.5	78.5	N	.7	6.2	Ci.-S. SE	Cu. NE	.8	Ω ≡ a. p p.
11	59.20	25.7	31.8	22.4	81	NNE	.2	7.5	Ci.-S. SE	N. NE	------	
12	59.56	26.4	33.6	22.3	75	NNW	.8	7	A.-Cu. SE	Cu. E	------	
13	59.48	25.9	32.1	22.3	78	Variable	.2	6.5	Ci. E	Cu. NE	3	● a. ○°
14	58.08	25.5	33.5	19.3	72.4	NNW	.3	2.3	Ci.	S.-Cu. NE	------	Ω ≡
15	57.72	26.1	33.2	20.1	76.2	SW	.2	4.5	Ci.	Cu. NE, NW	------	Ω ≡ a. ⊤ ☇ p.
16	58.76	26.4	33	23.2	82.5	Variable	.3	8.5	A.-Cu.	Cu. E, SE	.8	d p.
17	60.57	26.7	33.1	23.9	78.8	ESE	.3	8.3	Variable	Cu. WNW, E	------	☇ $Φ^2$ p.
18	62.22	26.8	33.6	22.2	72.3	N, E	.5	3.8	Ci.	S.-Cu. NE	------	⊤° a.
19	61.69	26.5	33.9	21	72.9	Variable	.3	3.3	Ci. NE	Cu. E	------	Ω ≡ a.
20	60.24	25.8	33.7	20.8	74.8	Variable	.8	7	Ci.-S.	S.-Cu.	------	↙° ○°
21	59.84	26.6	34	22.5	73.7	Variable	.7	6	Ci.-S. SW, S	Cu. E	------	↙° a. p.
22	59.76	26.6	32.8	21.8	75.8	N quad.	0	5	Variable	S.-Cu. NE, ENE	------	Ω a.
23	60.46	26.6	33.2	22.7	73.6	N quad.	.7	7.3	Ci.-S. SE, S	S.-Cu. NE	------	Ω ↙° a.
24	59.68	26.1	33	22	72.8	NE	.7	6.7	Ci.-S. SE	Cu. E, NE	------	$Φ^2$ a. ↙°
25	59.90	25.8	33	22	69.7	N quad.	.8	5.2	Ci. SE	Cu. NE	------	↙° a.
26	58.83	25.8	33.9	19.2	70.8	NW, NE	.8	4	Ci. SE	S.-Cu.	------	≡ $Ω^2$ a.
27	58.24	25.3	31	21.5	81.2	SE, NE	0	7.7	Ci.-S. S, SE	N. NE, E	1	● p.
28	57.63	26.6	34.5	21.2	75	NW, ENE	0	3.5	A.-Cu. SE	S.-Cu.	------	Ω a. ⊤ ☇ p.
29	58.39	25.8	33.2	22.4	80.7	NW	.2	5.2	Ci. SE	S.-Cu.	1.8	Ω p ☇ p.
30	59	26.8	34.4	21.5	74.3	Variable	.2	4.2	Ci.	S.-Cu.	------	$Ω^2$ a.
Mean	759.68	26.1	33	21.7	76.7	------------	.4	5.3	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	10.4	

METEOROLOGICAL DATA, ETC.—Continued.

DAGUPAN.

[ϕ=16° 03′ N; λ=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force. (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	759.85	27.7	33.2	23.2	76.7	SE	1.2	4.5	Ci.	Cu.	------	Ω a. d ⚡ p.
2	59.81	27.4	33	23.4	75.3	SE	1.3	3.7	A.-Cu.	S.-Cu.	------	⚡ p.
3	60.67	27.2	32.1	22.7	77	E	.8	2.5	A.-Cu. SE	Cu.	------	
4	60.62	27.4	32.1	22.1	75.3	Variable	1.2	1	Ci.	Cu.	------	Ω a. ⚡ p.
5	59.89	27.4	34.1	22	75.7	S	.7	1.5	Ci.	Cu.	------	Ω a. ⚡ p.
6	60.40	27.7	33.5	22.9	75	SE, S	1.2	2.3	Ci.-S.	S.-Cu.	------	⚡ a.
7	60.26	27.8	34.7	22.8	70.9	SE, S	.8	1.7	------	S.-Cu. S	------	Ω a. d p.
8	59.60	27.3	33.8	22	74	Variable	1	3	Ci.	S.-Cu. E	------	Ω a.
9	58.91	27	33.9	22.2	73.2	Variable	1	1	Ci.	Cu.	------	
10	58.86	26.8	33.9	21.5	73.8	E	.8	3.3	Ci.	S.-Cu. E	------	ϖ p.
11	58.73	27.3	34.5	22.9	75.2	SE quad.	.8	5.7	A.-Cu.	S.-Cu.	6.1	p ϖ p.
12	59.19	27.2	32.4	22.3	75.7	Variable	1	3.8	Ci.-S.	S.-Cu.	------	
13	58.96	28.2	34.6	23.9	72	SSE	.8	5	Ci.	S.-Cu.	------	ϖ p.
14	57.64	27.7	33.8	22.2	68.9	S, NW	1	1.7	Ci.	Cu.	2	p ϖ p.
15	57.52	26.3	31.1	22.4	81.2	SE, NW	1	3.3	Ci.	S.-Cu.	1.8	p ϖ p.
16	58.57	27	31.3	22.4	82	SE, NW	1	4.7	Ci.-S.	S.-Cu.	.5	≡² a p° p.
17	60.11	27.2	32.1	23	80.2	NW	.7	7.2	Ci.	Variable	1	Γ⚡° p.
18	61.94	27.2	31.8	22.9	77.3	E	1.3	3.3	Ci.	S.-Cu.	------	ϖ p.
19	61.46	27.1	34	22.1	73.8	SE, N	1.2	1	Ci.	Cu.	------	ϖ p.
20	60.03	26.7	31.8	21.7	75.6	SE	1.2	4.3	Ci.	Cu.	------	ϖ ω p.
21	59.40	26.7	31	22.4	74.8	Variable	.8	5.5	Ci.	S.-Cu. E	------	ϖ a.
22	59.10	27.5	33.4	22	72	Variable	.8	2.2	Ci.	S.-Cu.	------	↙° a.
23	59.98	27.3	31.8	23	72.3	Variable	.8	4.3	Ci.	S.-Cu.	------	ϖ a.
24	59.20	27.2	34	23	67	SE	1.5	7.5	Ci.-S. S	S.-Cu. E	------	ω ↙° a.
25	59.56	26.5	32.9	21.6	64.8	Variable	1.3	1.8	Ci.	S.-Cu.	------	↙° a.
26	58.56	26.8	33.7	21.4	66.8	Variable	1	1	Ci.	Cu.	------	
27	57.92	26.9	33.4	22.1	78.5	SE, NNW	.5	4.2	Ci.	S.-Cu.	------	d ⊤ ⚡ p.
28	57.50	27	31.6	22.5	76.7	Variable	1.2	4.7	Ci.	Cu.	------	ϖ a. ⚡ ⊤ p.
29	58.07	27.2	31.6	23	77.4	E	.8	6	Ci.	Cu.	2.5	Γ⚡° p.
30	58.76	26.6	31.2	23.5	78.3	S	.8	7.5	Ci.	S.-Cu.	.5	⚡ d p.
Mean	759.37	27.2	32.9	22.5	74.6	------	1	3.6	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	14.4	

VIGAN.

[ϕ=17° 34′ N; λ=120° 23′ E; barometer above sea, 24 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind prevailing direction.	Force (mean).	Cloud amount (mean).	Upper.	Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	760.16	28.2	30.4	25.9	72.2	Variable	1	0.7	Ci.-S.	Cu.	------	⚡ p.
2	60.25	28	30.2	26	76.7	SE	1	.2	A.-Cu.	Cu.	------	⚡° p.
3	60.92	28.3	30.1	26	78.2	WNW	1	.5	A.-Cu.	Cu. NE by N	------	Ω ⊕ ⚡° p.
4	61.07	27.8	30.5	25.2	76.7	NW	.8	.2	Ci.	Cu. N	------	Ω a. ⚡° p.
5	60.19	28.1	30.6	25.5	70.3	Variable	1.3	0	Ci. NE by N	Cu.	------	⚡° a. p.
6	60.69	28.3	30.7	26	71.8	WSW	.7	.2	Ci.-Cu.	Cu.	------	Ω° a. ⚡° p.
7	60.88	28.4	30	26.5	72.5	ESE	.8	.3	Variable	Cu.	------	Ω° a. ⚡° p.
8	59 98	28.4	30.3	25.9	66.9	Variable	.8	.3	Ci.-S., Ci.	Cu.	------	⚡° p.
9	59.38	28.5	31	24.5	65.2	SE quad.	1	.2	Ci.	Cu.	------	⚡° p.
10	59.18	28.4	30.2	26.2	65.2	SE	.8	.2	Ci.	Cu.	------	ϖ p.
11	59.07	28	30.1	27	73.7	Variable	1	2.5	A.-Cu.	Cu. NE by N	1.5	● ⌒ p.
12	59.51	27.8	30.5	25.5	74.5	W	.3	.2	Ci. SE	Cu. NE	------	◯ ω p.
13	59.34	27.9	30.2	25.5	73.5	SE	.7	.3	Ci.	S.-Cu. E	------	
14	58.23	27.9	30.4	25.2	71.5	E	.8	3	Ci.	Cu. SW	------	⚡ ϖ p.
15	57.89	26.8	30	25.1	77.8	Variable	1	2.8	A.-Cu. SW by S	Cu.	.8	d ⚡ p.
16	59.08	26.9	29.5	24.5	78	S by W	1.5	2.2	A.-Cu SW by W	Cu. S	------	d a. ⚡ p. ⊕
17	60.77	27	29.8	24.6	75.4	SE	.8	0	Ci.	Cu.	------	⚡° p.
18	62.50	27.4	30	25	76.8	WNW	1.2	.2	Ci.-S.	Cu.	------	Ω a.
19	61.95	27.1	30	25	74.4	ESE	.8	.2	A.-Cu.	Cu.	------	Ω a.
20	60.50	26.6	30	23.2	79.2	E, NW	1.2	.8	Ci.	Cu.	------	Ω a. ω° p.
21	59.90	27.7	30.5	24.5	70.2	SE quad.	.8	.2	Ci. SSW	Cu.	------	
22	59.68	28.4	30.5	25.9	70.2	W	1	0	Ci.	Cu.	------	Ω a. ⚡ p.
23	60.28	28	31	25	61.4	Variable	.8	0	Ci.-S.	Cu.	------	
24	59.77	28.6	31.4	26	56.3	N quad.	.8	1.8	Ci.-S. S by E	Cu. NE	------	◯
25	59.92	28.6	31.2	26.9	47.3	NE	3.8	0	Ci.	Cu.	------	↙ a. p.
26	59.02	28.3	31.2	25	52.6	NNW	1.8	0	Ci.	Cu.	------	↙ a.
27	58.25	28	31.5	24.1	67.5	WNW	.8	.2	Ci.-S.	Cu. W	------	⊕ ⚡ p.
28	58.13	27.4	30	24.8	74.8	NW, N	2.7	1	Ci.	Cu.	------	⚡ p.
29	58.88	26.6	29.9	25	78.3	NNW	2.7	.7	Ci., Ci.-S.	Cu. NE	------	↙° a. p. ⚡
30	59.76	25.5	27.7	24	81	N	2.5	6.2	A.-Cu.	S.-Cu., Cu.	.8	↙° a. p. d
Mean	759.84	27.8	30.3	25.3	71	------	1.2	.8	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	3.1	

METEOROLOGICAL DATA, ETC.—Continued.

APARRI.

[ϕ=18° 22′ N; λ=121° 34′ E; barometer above sea, 5 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction. Upper.	Prevailing form and its direction. Lower.		
	mm.	°C.	°C.	°C.	P. ct.		0-12.	0-10.			mm.	
1	761.08	27.1	32.4	23.4	86.7	Variable	1.5	2	Ci.-S.	Cu.-N. SE	------	Ω ≡ a. ⊤ ↯ p.
2	61.68	27	31.4	23.4	85.9	W, NE	.7	.7	Ci. NW, SE	S.-Cu.	0.8	Ω a. p ⊤° ↯ p.
3	62.61	26.4	29.9	23	87.5	E	1	2.7	Ci.-S.	Cu.-N. SE	------	⌒ a. ⊤° ↯ p.
4	62.35	26.9	31.4	22.2	83.2	SW, E	.8	0	------	------	------	Ω a. ↯ p.
5	61.86	26.8	31.3	22.2	82.8	W, E	1.3	2.5	Ci. W	Cu.-N. NE	------	↙° p.
6	61.87	27	31.6	23.1	84.7	Variable	1.3	2.5	A.-Cu. S	Cu.-N. SE	------	Ω ⌒ a. ↯ p.
7	62.29	26.3	30.7	23.2	84.8	SW, E	1.2	1.7	Ci.-S.	S.-Cu. E	------	Ω ≡ a. ↙° p.
8	61.51	26.1	29.4	21.5	85	Variable	1.3	4	------	Cu-N. E	6.9	Ω ≡ a. ● ↯ p.
9	61.52	24.7	29.2	22.8	90.3	E, SW	1.3	5.3	------	S.-Cu. E	20.8	● a. p. ↯
10	60.87	25.4	30	22.1	89.5	Variable	1	3.7	A.-Cu. SE	S.-Cu.	2.3	● ⊤ p.
11	60.80	25.9	30.2	23	87.7	Variable	1	7.3	A.-Cu. SE, S	S.-Cu. S	------	● p.
12	61.30	26.3	30.5	23	86.5	Variable	1.2	2.2	A.-Cu. S	Cu. SE	5.3	● a. ↙° p.
13	60.78	26.3	30	23.4	87.1	Variable	1.3	5	------	Cu.-N. E	2.5	● a.
14	59.09	25.3	29.2	21	84.5	Variable	1	2.3	A.-Cu.	Cu.-N. E	------	
15	58.39	26.1	30.8	22	84.8	Variable	.7	2.2	A.-Cu. W	Cu.-N.	------	
16	59.15	26.3	30.6	22	82.1	SW, NE	1	1.8	------	S.-Cu.	------	Ω a.
17	61.15	26.8	31.3	24.5	86.3	SW	.8	2	------	Variable	------	↯ p.
18	63.44	26.4	31.3	21.4	85.2	Variable	1	1.7	------	Cu.-N.	------	Ω a.
19	62.94	26.6	31.3	23	86.5	S	1.2	.2	------	Cu. S	------	Ω a.
20	62.24	25.7	30.5	21.7	85	Variable	1.3	1	A.-Cu. E	S.-Cu.	------	Ω a.
21	61.92	24.6	28.5	21.5	91.1	SW, E	1.2	4.5	------	S.-Cu. E	1.3	d a. p.
22	62.10	26	30.5	21	87.7	SSE, E	1.3	.5	A.-Cu. SE	Cu.-N.	------	Ω ≡ ↯ p.
23	62.27	26.5	30.8	22.5	84.5	S, NE	1	2	------	S.-Cu.	------	Ω ≡ a.
24	62.10	26	29	22.7	86.7	E, NE	1	7.8	A.-Cu. S	Cu.-N. E	11.7	● a.
25	62.41	25.2	29.9	21.5	84.8	SW, E	1.2	.2	------	Cu.-N. E	------	Ω ≡ ⌒ a.
26	61.68	25.5	29.8	21	84.5	SE, ENE	1.5	5.3	------	Cu.-N. E	6.4	● a. p.
27	60.06	26.2	29.6	22.6	86.3	SW, ENE	1	5.7	------	Cu.-N. NE, S	------	↯ p.
28	59.86	25	26.1	23	91.8	NE	2.2	10	------	N. NE	62.4	↙° ● a. p.
29	60.82	24.6	25.9	22.6	91.2	NE	2	9.3	------	S.-Cu. ENE	26.2	↙° ● a. p.
30	61.83	23.8	25.4	22.3	89	NE	4	10	------	N. NE	14.2	↙ ● a. p.
Mean	761.40	26	30	22.4	86.5	------	1.3	3.5	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	160.8	

METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

JOLO.

[ϕ=6° 03′ N; λ=120° 59′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33.1	22.8	74	SW	2	7.6	ζ a. ● p.
2	29.8	23.4	86	SE	2	12.7	Ω ≡ ● a.
3	31.4	22.9	76	SW	1	.3	●° a.
4	30.8	22.8	77	Calm	------	3.6	ζ ●° a.
5	34.1	23.5	77	E	2	------	d a. ⊤ p.
6	30.9	22.1	75	Calm	------	2.3	●° p.
7	31.4	22.6	82	Calm	------	11.2	Ω a. ● a. p.
8	31.3	22.9	76	Calm	------	7.4	Ω ● a.
9	30	22.6	84	Calm	------	23.1	● a. ζ p.
10	30.5	22.4	77	SW	1	25.1	● a. p.
11	31.5	22.3	78	SW	2	------	
12	31.8	22.5	73	SW	1	------	d ⊍ p.
13	31.9	22.6	72	SW	2	------	Ω ≡ a. ⊍ p.
14	32.3	23.3	66	NE	2	------	
15	32	23	71	NE	3	1.5	●° a. ⊍ p.
16	31.2	22.8	70	NE	3	------	Ω ≡ a. ⊍ p.
17	32.1	22.7	74	SE	3	2.3	●° a. ● p.
18	31.7	23.9	72	ENE	2	24.9	⌈ ⊍ p. ●
19	29	23.5	74	SW	2	3	● d a.
20	31	23.8	75	NE	2	2.3	d a. ⊤ ●° p.
21	31.2	23.4	85	Calm	------	5.6	≡ a. ●° a. p.
22	30.4	22.5	79	SE	1	6.9	Ω ≡ ● a.
23	29.4	23.4	84	SW	2	4.3	d ● p.
24	30.3	22.8	80	Calm	------	3	⊍ ζ Ω ≡ ● a.
25	31.2	22.9	87	Calm	------	1.5	●° p.
26	31	22.2	84	NE	1	------	Ω ≡ a. d ζ p.
27	31.7	22.6	75	SW	1	------	
28	30.3	23.5	96	Calm	------	37.6	● a. p.
29	31.4	22.6	75	SE	2	------	Ω ≡ a.
30	32	23.1	84	SW	1	?	Ω ≡ d a. ● p.
Mean	31.2	22.9	77.9	------	1.3		
Total	------	------	------	------	------	186.2[1]	

ISABELA, BASILAN.

[ϕ=6° 43′ N; λ=121° 57′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30.5	22.5	84	W	------	0.8	Ω ≡ a. ●° ⊤ p.
2	30.2	22.6	72	W	------	------	Ω ≡ a. ⊤ p.
3	------	23	57	NE	------	------	Ω ≡ a.
4	30.5	23	68	NE	------	3.8	● a. p p.
5	32	22.5	69	W	------	------	Ω a.
6	30	22.5	74	NE	------	------	Ω a.
7	30.1	23.8	84	W	------	9.7	● d ⊤ a. p p.
8	31.4	23	67	W	------	.5	●° a. ζ p.
9	29.8	22.7	77	Calm	------	2.3	●° a.
10	30.3	23.5	74	Calm	------	6.9	Ω a. ● p.
11	29.7	22.6	78	W	------	7.6	Ω ● a.
12	30.6	22.2	78	Calm	------	.5	Ω ≡ a. p ⌒ p.
13	31.5	22.3	74	W	------	------	Ω a.
14	30.4	21.8	59	W	------	------	Ω ≡ a.
15	29.6	23	74	W	------	------	Ω a.
16	31.5	23	67	W	------	------	Ω ≡ a.
17	32	21.7	73	W	------	------	Ω ≡ a.
18	30.4	22.6	63	NE	------	5.1	Ω d a. ⌈ ● p.
19	31	23.2	77	W	------	29.7	Ω a. ● p.
20	30.2	22	75	NE	------	8.9	●° a. p. ⌒ p.
21	31.2	22.5	77	W	------	10.7	d a. ● p.
22	29.8	22.5	81	NE	------	5.1	≡ ⊤ a. ● p.
23	30.5	23.5	77	NE	------	6.6	r° ⊤ a.
24	29.6	22.5	78	Calm	------	7.1	≡ d a. p ⊤ p.
25	30	23.5	74	Calm	------	26.7	Ω a. ⌈ r p.
26	28.6	22	88	Calm	------	1.3	Ω p a.
27	29.5	22	77	Calm	------	------	Ω a.
28	30.2	22	81	W	------	1.5	≡ a. p p.
29	28.9	21.8	80	W	------	.8	Ω a. ↙ ●° p.
30	29.6	22.5	74	W	------	------	Ω a.
Mean	30.3	22.6	74.4	------	------	------	
Total	------	------	------	------	------	135.6	

ZAMBOANGA.

[ϕ=6° 54′ N; λ=122° 05′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30	23.2	74	SE	1	------	
2	31	23.4	72	W	1	0.8	● a.
3	30.5	24	76	SE	1	------	
4	31.7	23.5	75	W	1	------	
5	32	23.6	78	W	1	2	● a.
6	30.5	23.9	74	S	1	------	
7	30	23	79	S	1	7.9	● a.
8	31.5	23	79	SE	2	.8	● a.
9	29.5	23.2	75	W	1	2	● a.
10	29.5	23	76	S	1	------	
11	29.1	23.5	81	W	1	------	
12	30.4	23	76	SE	1	------	
13	30.7	23	72	W	2	------	
14	32.5	23	72	W	1	------	
15	31	20.7	67	W	2	------	
16	31.1	21.5	71	Calm	------	------	
17	30.6	22.5	75	ESE	1	1.5	● a.
18	32.5	22.7	73	W	1	1.8	● p.
19	28.8	23.1	83	W	2	2	● a.
20	30.9	22.4	66	SE	1	------	
21	30	22.9	73	Calm	------	7.9	● a.
22	29.6	22.9	80	W	1	------	
23	28	23.9	86	W	2	7.9	● p.
24	29	22.9	77	ESE	1	------	
25	29.8	23.5	73	SE	1	------	
26	29.6	23.4	74	Calm	------	------	
27	29.1	22.1	77	Calm	------	------	
28	28.6	22.5	82	W	1	------	
29	30	22.4	78	W	2	------	
30	30.5	22.9	78	W	3	------	
Mean	30.3	23	75.7	------	1.1	------	
Total	------	------	------	------	------	34.6	

DAVAO.

[ϕ=7° 01′ N; λ=125° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32	22.1	71	NNW	1	------	
2	35.7	22.3	71	NE	1	------	⊤ a. ⌈ p.
3	34.1	22.4	71	Calm	------	------	
4	35.2	22.1	72	NNE	2	17	● p.
5	33.3	22	72	NW	2	------	
6	33.9	22.1	70	Calm	------	------	ζ p.
7	33.1	23.1	70	WSW	2	------	
8	32.3	22.9	67	ENE	1	43.7	● p.
9	33.1	22.2	71	NNW	2	------	
10	33.2	22.1	66	WSW	1	------	
11	33.5	22.8	71	WSW	1	25.9	● ⊤ p.
12	32.2	22.1	75	Calm	------	------	
13	33.1	22	74	SE	1	------	
14	34.1	22.6	69	ENE	1	13.5	● p.
15	33.3	22.3	73	NNW	2	------	
16	31	22.5	78	NNW	2	------	
17	32.7	22.6	75	NNW	2	------	
18	34.2	21.5	75	ENE	1	29.5	● p.
19	31.3	22.7	74	Calm	------	------	
20	29.6	21.2	77	WNW	2	------	
21	29.8	21.3	77	Calm	------	------	
22	32.7	22.4	69	N	2	42.4	↙ ●² p.
23	29.2	22.8	82	Calm	------	------	
24	32.7	22	72	NE	2	------	
25	31.7	22.2	76	NW	3	------	
26	32.3	22.1	70	WNW	1	------	
27	31.8	22.3	79	Calm	------	------	
28	30.7	23.2	75	Calm	------	25.9	● p.
29	31.3	22.6	72	ENE	1	------	
30	31.8	22.8	81	Calm	------	------	
Mean	32.5	22.3	73.2	------	1.1	------	
Total	------	------	------	------	------	197.9	

[1] 29 days of observation.

METEOROLOGICAL DATA, ETC.—Continued.

COTABATO.
[ϕ=7° 13′ N; λ=124° 12′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	34.4	22.7	61	NE	2	2	Ω a. ●° ⊤ p.
2	35	21.9	56	E	3	------	≡ a. ⊤² p.
3	34.1	21.8	78	SSE	4	10.4	● a. d ⊤² p.
4	31.7	22.3	73	SE	3	------	≡ a. d p.
5	34.5	20.8	58	NNW	2	------	Ω ≡² a. ↯ p.
6	35	21.3	68	NW	2	1.3	Ω ≡ a. ● p.
7	32.7	23	75	NW	2	------	≡ a.
8	35.4	22	60	NE	2	21.1	Ω ≡ a. ⌒ ● p.
9	34.8	21	72	WSW	4	1.3	↯ ●° p.
10	32.2	22.7	66	WSW	3	8.6	↯ ● p.
11	34	21.7	70	WNW	4	25.9	≡ a. ⌒ ● ⊤ p.
12	34.2	22.1	67	ESE	2	------	≡ a.
13	34.8	22.7	63	Calm	------	------	≡² a.
14	30.6	22.5	68	WSW	3	------	≡ a.
15	34.3	21.5	59	W	3	------	Ω ≡ a. ○ ⊍ p.
16	34.3	21.5	70	SW	3	------	≡ a.
17	33.6	21.6	54	NW	2	------	
18	35.2	22.1	66	NW	3	3	⊤ ●° p.
19	33.9	22.8	88	NW	3	17.3	≡ a. ⊤ ● p.
20	31.5	22.2	72	ENE	5	------	≡² a.
21	31.8	22.2	72	ENE	1	------	Ω ≡ a.
22	33.7	22	71	WNW	4	------	Ω ≡ a. ⌈↯ p.
23	33.8	22.2	64	WNW	3	------	↯ p.
24	34.2	22	72	NW	4	12.2	≡² a. ● p.
25	31.7	21.5	66	W	2	------	≡ a.
26	34.1	22	66	W	3	40.4	≡° a. ● p.
27	33.5	21.9	59	NW	2	------	
28	33.9	20.7	67	SW	4	------	Ω ≡ a.
29	33.4	21.5	73	W	3	2.8	Ω ≡ a. ● p.
30	32.9	22.5	80	W	3	------	
Mean	33.6	22	67.8	------------	2.8	------	
Total	------	------	------	------------	------	146.3	

DAPITAN.
[ϕ=8° 38′ N; λ=123° 23′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	------	23.4	76	E	2	3.3	⌈↯ ● ⌒ a. ↯ p.
2	------	23	79	E	2	1.5	● a. ↯ ⊤ p.
3	------	24.2	79	E	3	------	↯ p.
4	------	24.3	79	E	2	------	
5	------	24.5	78	E	3	------	↯ p.
6	------	24.6	79	E	2	.8	⇙ ●° a. ↯ p.
7	------	24	74	E	2	3.8	● a. ↯ p.
8	------	24.1	79	E	2	------	↯ a. p. d° p.
9	------	23.8	73	E	3	1.5	● a.
10	------	24	73	E	2	1.3	● ⌒ a. ⌈↯ p.
11	------	23.6	73	E	2	2.3	≡ ● a. ⌈↯ ≡ p.
12	------	24.1	77	E	2	------	
13	------	24.3	78	E	2	.5	●° a. ⊕ p.
14	------	24.2	78	E	2	2	● ⌒ a.
15	------	23.7	78	N	2	------	Ω a. ⊍ p.
16	------	23.4	74	E	2	------	Ω a.
17	------	23.8	74	E	2	1.3	● a. ⊕ p.
18	------	23.9	76	E	3	3.6	● a. ⊕ ⇙ ●° ↯
19	------	23.7	69	E	3	4.8	d° a. ↯ ⇙ ● p.
20	------	23.7	70	E	2	1.5	● ↯ p.
21	------	23.5	72	E	1	------	d a. p.
22	------	23.5	64	E	3	27.9	● a. ↯ p.
23	------	23.2	74	E	3	2.3	● a.
24	------	23	79	E	3	29.7	● a. p.
25	------	22.9	71	Calm	------	1.8	● a. ⌈↯ p.
26	------	23.2	73	E	1	31.2	● ⌒ a. ⌈↯ p.
27	------	23.4	74	E	2	------	⊤ p.
28	------	------	------	------------	------	2	Ω a. ↯ ● p.
29	------	23.7	74	W	2	------	
30	------	23	84	Calm	------	30.7	● ⌈↯ p.
Mean	------	23.7	75.2	------------	2.1	------	
Total	------	------	------	------------	------	153.8	

BUTUAN.
[ϕ=8° 55′ N; λ=125° 31′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30	22.8	73	SE	1	0.3	p ○ p.
2	30.6	21.7	76	SE	1	1.8	Ω ≡ a. ● p.
3	31.1	21.7	65	N	2	.3	Ω ≡ a. p p.
4	29.3	20.8	79	SSE	2	------	Ω a. d° ⌈↯ p.
5	30.1	21.1	71	NNW	1	20.3	∞ a. ⌈↯ ●² p.
6	29	23	88	SW	1	4.1	Ω ∞ a. ● ⌈↯ p.
7	29.7	22.5	90	SSW	1	4.3	Ω ∞ a. ● p.
8	29.7	22.7	81	SSW	1	7.6	Ω ≡ a. ● d p.
9	28.5	22.6	80	N by W	1	10.2	● a. p.
10	29.8	22.6	85	Variable	1	20.1	Ω ≡ a. ● p.
11	29.5	22.2	92	Calm	------	9.4	Ω ∞ a. ⌈↯² ● p.
12	29.8	21	72	NNW	1	3.6	Ω ≡ a. ● p.
13	28.7	20.7	70	NW	2	------	Ω ≡ a.
14	29.7	20.3	69	N	2	------	Ω ∞ a.
15	29	20.3	70	NW	2	------	Ω ≡ a. ⊍ p.
16	29.3	20.3	63	NNW	2	------	
17	29.1	20.5	68	NNW	2	1.8	≡ a. ● p.
18	30.1	22.5	89	ESE	1	.5	p ⌈↯ p.
19	27.9	21.9	84	N	1	31.5	∞ a. ● a. p.
20	29.3	22.1	84	Variable	2	4.3	● p.
21	25.7	20.8	85	NNW	1	12.4	⇙ ● a.
22	29.3	20.7	68	NW	1	8.9	Ω ∞ a. ● ⌈↯ p.
23	25.8	22.6	96	E	1	53.1	⌈↯ a. ●
24	24.5	22.4	88	NW	1	3	○° a.
25	27.8	22.4	75	NNW	2	------	
26	29.8	22.6	66	NNW	2	------	Ω ≡ a. ⊤ ↯ p.
27	29.5	22	76	Variable	2	25.9	●² a.
28	29.7	22	70	NNW	2	------	⌒ ⊤ ↯ p.
29	29.5	23	73	NNW	2	------	∞ a. ⊤ d p.
30	25.7	23.2	93	NNW	1	11.5	● a. p.
Mean	28.9	21.8	78	------------	1.4	------	
Total	------	------	------	------------	------	234.9	

YAP (Western Carolines).
[ϕ=9° 29′ N; λ=138° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p.m. Direction.	Wind, 2 p.m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.3	24.3	74	NE	4	2.5	
2	30.5	24	76	NE	6	2.5	
3	29.8	24.2	80	NE	5	2.5	
4	28.1	24.3	81	NE	6	------	
5	30.7	23.7	81	NE	3	------	
6	31.7	24.2	74	E	3	2.5	
7	29.2	23.5	71	NE	3	1.8	
8	30.2	26.5	76	NE	5	.5	
9	30.7	24.9	89	NE	3	14.2	
10	30.4	24	71	NE	3	------	
11	31.8	23.3	69	NE	2	------	
12	33	22.8	69	W	3	------	
13	33.1	23	66	WSW	3	10.2	
14	------	------	------	------------	------	------	
15	32.9	23.7	82	S	2	------	
16	31.5	24	81	S	1	------	
17	30.5	23.8	78	ENE	4	7.9	
18	30.1	24	88	NE	4	------	
19	28.7	23.2	86	NE	5	------	
20	30.8	24.3	76	NE	4	------	
21	30	23	78	NE	4	8.6	
22	30	24.5	83	NE	4	11.4	
23	29.5	24.8	79	NE	5	------	
24	30	24.3	75	NE	4	70.6	
25	29.7	21.8	81	E	4	.5	
26	28.8	23.7	80	NE	4	14	
27	28.8	23	92	NE	4	50.8	
28	29.1	22.1	79	NE	3	------	
29	31.1	22	78	NNW	1	------	
30	32.8	23.5	76	W	3	9.1	
Mean	30.5	23.7	78.2	------------	3.6	------	
Total	------	------	------	------------	------	209.6	

METEOROLOGICAL DATA, ETC.—Continued.

MAASIN.

[ϕ=10° 08′ N; λ=124° 50′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.2	24.3	72	E	4	------	d ⊤ ↙° a. ↯ p.
2	32.4	23.8	78	NE	5	------	↯ a. p. ⊤ d p.
3	31.1	23.8	69	NE	1	8.6	p ⌒ d a. ↙° p.
4	30.6	22.5	73	E	3	------	↙° d a.
5	32	23.8	61	NE	3	------	⌒ ↙° a. d ↯ p.
6	32	23.5	68	NE	2	------	
7	29.5	23.6	76	NE	1	34.3	↯ r a. d a. p.
8	30.5	23.6	71	NE	1	12.7	⌒ p a. ⌈↯ p p.
9	29.5	23.3	74	NW	1	12.4	d p a. ↯ p.
10	29	23.6	86	W	1	14	p d a. ↯ a. p.
11	31.5	24	67	NE	2	------	d ⌈↯ a. ↯ ⊍ p.
12	32	23.1	67	E	1	------	↯ ↙° a. ↯ ⊍ p.
13	30.6	23	79	SW	3	------	⊍ ↯ p.
14	31	21.5	68	W	2	------	↯ ↙° a. p. ⊍ p.
15	31	23	65	NW	3	------	↙° ↯ p.
16	30.4	22.6	71	S	1	------	⊍ ⊕ ↯ p.
17	29.9	21.9	74	SSW	1	------	↯ a. p.
18	31	23.1	77	NW	1	8.6	p d a. p. ⌈↯ p.
19	29.5	23.8	85	W	1	48.5	⌒ a. ↯ p. ↙ ●
20	29.4	22.5	81	NW	1	35.1	d ↙ ● ⌈↯ p.
21	27.5	23.2	82	E	4	23.6	r a. d ↯ p.
22	31.5	23	64	N	1	71.9	⌒ ≡ ↙ ● d ⌈↯
23	25.9	23.1	92	N	1	127	r ≡ a. p.
24	26.9	23	81	W	1	------	d ≡ a. p. ⊕ ⊍ ↯
25	28.1	22.8	77	S	1	18.3	● a. d ≡ ⌒ ↯²
26	29.9	23.2	79	WSW	1	------	↯ a. ↯² ∞ p.
27	29.8	23.5	74	SE	1	------	↯ ⌒ ↙ d a. ∞
28	29.8	22.8	77	SE	1	------	d ≡ a.
29	29.4	23.7	88	NE	1	19.3	p ≡² ⌈↯ ⌒ ∞² p.
30	26.2	23.1	95	NW	1	17	p ⊤ ≡² a. ↯ p.
Mean	30	23.2	75.7	------------	1.7	------	
Total	------	------	------	------------	------	451.3	

BACOLOD.

[ϕ=10° 41′ N; λ=122° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.5	23.1	70	NNE	3	1	●° a. p. ↯ p.
2	32	23.6	72	NNE	3	.8	↯ ⊤ ●° p.
3	31.5	24	67	NNE	3	------	
4	31.9	23	62	NNE	3	------	⌒ a. ↯ p.
5	31.5	25.1	72	NE by N	4	.5	●° ⌒ a. ↙ ⌈↯ p.
6	31.1	24.7	69	N by E	4	6.6	↙ p p.
7	30.8	24.8	64	NNE	4	------	↙ ↯ p.
8	30.5	24.5	69	NE	4	.3	⌒ a. ↙ ⌈↯ ●° p.
9	30.7	24.3	70	NE	4	------	d° a. ↙ p.
10	29.6	24.4	76	NE	4	6.6	⊤ a. ⌈↯ p p.
11	30.6	23.4	82	NE	2	.8	⊤ ●° ↯ p.
12	31.6	22.6	73	NE	4	------	↯ p.
13	31.1	23.1	66	NNE	4	1.5	p a. ↙ p.
14	30.8	21.8	64	N	3	------	⊕ p.
15	30.7	21	74	NE	2	------	⊤ ⊕ p.
16	30.6	21	70	N by E	2	------	↯ ⊕ ⊍ p.
17	31	21.4	62	N by E	4	------	↙ p.
18	28.9	24.4	87	NE	2	14	d° a. ⌈↯ p p.
19	29.5	24.3	65	NE by N	4	11.9	● ⊤ a. ↯ p.
20	30	23.4	71	NE	4	6.9	p a. p. ↙ ⊤ p.
21	27	23.8	84	NE	2	.3	●° a. p. ⌒ ⊤ p.
22	29.9	23.5	70	NE	3	------	d a. p. ↯ p.
23	26	23.6	88	NE	1	14.2	p a. r° a. p.
24	28.2	23.5	78	NE	3	------	d° p.
25	29.8	24.4	75	NE	3	------	
26	29.7	23	76	N	3	5.6	⌈↯ p p.
27	30	21.6	93	Calm	------	3	⌈↯ p p.
28	29.5	21.9	82	NNW	1	.8	●° a. ⊤ p.
29	29.9	22.6	70	NNE	2	1.3	⌒ p a. ↯ p.
30	29.5	23.2	85	NE	2	20.8	● a. p. ↯ p.
Mean	30.2	23.3	73.5	------------	2.9	------	
Total	------	------	------	------------	------	96.9	

SAN JOSE BUENAVISTA.

[ϕ=10° 44′ N; λ=121° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.9	23.2	76	Calm	------	------	Ω a. ↯ p.
2	33.4	23.2	68	Calm	------	------	Ω a. ↯ p.
3	35	22.9	54	S	1	------	Ω a.
4	33.4	20.3	61	W	1	------	Ω a.
5	34.4	22.5	64	Calm	------	------	Ω a. ↯ p.
6	34.9	23.1	61	N	1	------	Ω ↙° a. ↯ p.
7	34.5	22.6	54	Calm	------	------	Ω ↙° a. ↯ p.
8	35	22.5	54	W	1	------	↯ p.
9	33.4	23	61	SSW	1	------	↯ p.
10	33.6	22.3	74	Calm	------	------	Ω a. ↯ p.
11	33.3	23.9	64	N	1	13.7	Ω a. ⊤ ● p.
12	32.9	22.5	66	W	1	------	↯ p.
13	33.2	23.6	63	Calm	------	------	
14	32.6	22.5	64	N	1	------	
15	32.6	22.5	70	N	1	------	Ω p.
16	33	23.5	64	Calm	------	------	Ω a. p. ⊍ p.
17	33.3	23	65	SW	1	------	Ω a. ↯ p.
18	33.3	22	70	Calm	------	4.3	● ⊤ ↯ d p.
19	31.1	23	68	N	1	------	Ω a. ↯ ⊕ p.
20	32.4	23.2	64	N	2	2.3	●° a. p p.
21	30.2	23.1	78	Calm	------	------	d° a. ↙° p.
22	33.8	21.9	70	Calm	------	------	d° ⊕ p.
23	27.7	22.8	91	N	1	4.3	●° a. p.
24	32.1	22.5	69	W	1	------	
25	33.5	22.5	68	Calm	------	------	
26	32.9	23	70	Calm	------	11.7	⊤ ● p.
27	32.9	22.5	69	Calm	------	23.9	● ⊤ p.
28	30.5	22.4	78	Calm	------	------	⌈↯ p.
29	31.8	22.3	81	N	1	------	⊤ d p.
30	29.3	22.8	78	N	2	------	d a. d° p.
Mean	32.8	22.7	67.9	------------	.6	------	
Total	------	------	------	------------	------	60.2	

TUBURAN.

[ϕ=10° 44′ N; λ=123° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	34.8	23.9	55	Calm	------	------	○² a. p. ↯² p.
2	35.1	23.4	47	E	2	------	○° a. ⊤² d ↯² p.
3	34.4	23.6	51	Calm	------	1	●° ⌒² a. ○² p.
4	34.4	21.9	68	NNE	2	------	⌒² a.
5	35	23.4	75	N	3	8.1	⌒² a. ● ⊤ ↯² p.
6	32	22.8	72	N	3	13.2	○² ⌒° ●² ↯² p.
7	33.1	23.9	71	N	4	.8	↙° ↯² ●° p.
8	31.2	24.9	79	N	2	2	⌒° d° a. ●° ⌈↯²
9	30.9	23.6	80	N	3	------	d ↯° p.
10	30.4	23.5	78	N	1	1.8	●° ⊤² a. ⊍² ↯²
11	33.6	23.5	54	Calm	------	------	⊤² d a. ○² ↯² p.
12	34.4	22.6	56	NE	1	2	⌈↯° p p.
13	31.1	22.7	67	NNW	2	------	⊕² p.
14	31.4	21.5	61	NNW	1	------	Ω² a. ○° p.
15	30 7	22.7	69	NNW	1	------	d° ⌒° a. ⊕° p.
16	31.	21.8	68	N by W	2	------	○² a. ⊍² p.
17	31.1	21.1	68	NNW	2	------	≡² a. ↯² p.
18	30.8	23.6	85	N by W	3	------	d ⊤ ↯² ⊍² p.
19	30.1	23.9	78	N	4	6.1	↙° ○² ⊍² ⌈↯ ● p.
20	30.2	22.5	85	N	2	13.2	d ⌈↯² ●² ⊍² p.
21	26.1	23.2	84	N	1	3.3	● a. d p.
22	31.6	21.4	74	N	2	------	Ω² ≡° a. d ⌈↯° p.
23	25.8	24.4	92	Calm	------	35.1	●² a. ● d ↯² p.
24	28.6	22.8	79	N	1	------	d p.
25	28.9	22.9	84	N	2	------	○² d p.
26	30.3	22.4	71	Calm	------	------	↯° p.
27	29.5	22.8	78	Calm	------	------	d° a. ⌒² p.
28	30.7	22.5	72	Calm	------	------	Ω² a. ↯² ⌒° p.
29	30.1	23.1	78	N	1	3	⌒ d° a. ⌈↯ ●° p.
30	29.3	23.9	79	N	1	3.3	●° a. p.
Mean	31.2	23	71.9	------------	1.5	------	
Total	------	------	------	------------	------	92.9	

METEOROLOGICAL DATA, ETC.—Continued.

BORONGAN.
[ϕ=11° 42′ N; λ=125° 25′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	28.8	24.2	82	SE	1	14.7	p a. p.
2	33.1	23.4	67	E	2	9.1	p a. p. ↯ p.
3	32.7	23.4	69	ENE	3	11.7	p ↯ a. p.
4	32.2	24.3	70	ENE	2	1.5	p a. ↯ a. p.
5	32.1	23.9	75	E	2	25.1	p a. p.
6	32.5	23.1	70	NE	2	2.8	↯ a. p. p p.
7	30.3	25.3	77	NE	3	48.8	↯ a. p. ☈ ●² p.
8	30.1	24.7	79	E by N	2	21.6	p a. p. ↯ p.
9	31.3	23.3	76	ENE	3	21.1	p ↯ a. p. ⊤ p.
10	29.3	23.1	79	SE	1	24.6	p a. ↯ p.
11	32.2	23.6	76	E	1		
12	31.4	23.1	72	E	2	12.7	Ω a. p a. p. ↯ p.
13	32.3	23.4	64	NNE	2	5.3	p a. ↯ p.
14	31	21.4	72	NNE	2	.5	p a. ↯ p.
15	32.2	21.7	66	W	2	------	↯ p.
16	32.2	19.7	71	ESE	1	------	Ω ≡ a. d p.
17	32.4	20.1	70	ENE	1	------	Ω ≡ a.
18	32.2	23.2	71	E	2	26.4	⌒ a. p ↯ a. p.
19	30.2	24.2	76	ENE	2	24.6	p ↯ a. p.
20	29.5	22.2	97	Calm	------	48.3	p a. ●² ⊤ p.
21	24.8	21.9	96	E	1	58.7	●² a. ● p.
22	30.2	20.8	84	NE	3	32.3	↯ a. p. ☇ p p.
23	28.8	23.3	86	NE	2	60.2	↯ ⊤ a. p² a. p.
24	29.3	22.1	87	NE	2	38.1	●² a. p p.
25	27.2	22.9	84	Calm	------	11.2	p a. p.
26	30.3	21.2	75	SE	1	5.3	d ≡ p a. ● p.
27	30.3	22.8	76	SE	1	------	Ω ≡ a.
28	31.1	22	77	NE	2	.5	Ω ≡ a. ●°
29	31.2	22.3	79	NE	2	5.8	p a. p. ↯ p.
30	29.7	22.9	76	NE	3	2.8	p a. p.
Mean	30.7	22.8	76.6	------------	1.8	------	
Total	------	------	------	------------	------	513.7	

GUBAT.
[ϕ=12° 55′ N; λ=124° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.3	23.8	67	E	2	43.2	● ⌒ a. ↯ ● ☈
2	32.4	24.8	62	E	2	17.8	● a. p.
3	32	25.9	67	E	3	------	d p.
4	32.2	25.4	66	NE	2	10.2	● a.
5	32.2	24.8	69	NE	1	?	d ● p.
6	32.1	25.6	64	NE	2	------	
7	31.6	24	68	NE	2	2.5	↯ ●° a.
8	32	25.5	67	NE	3	3.8	● p.
9	31.4	23.7	71	E	2	41.1	● a. ↯ ●² p.
10	28	22.4	84	E	1	52.1	●² a. r ↯ p.
11	30.5	23.9	78	E	2	33.5	⌒ ↯ ●² a. ● p.
12	31.5	23.8	71	NE	2	30.5	↯ ● a. p.
13	31.4	23.8	69	NE	2	3.3	●° a. p.
14	31	22.4	67	NE	1	------	d ⊍ p.
15	31.2	22.3	64	NNE	2	------	
16	32.1	20.5	65	E	1	------	Ω a. d p.
17	32	21.1	65	E	1	------	Ω a.
18	32.1	23.5	76	E	2	3.8	p p.
19	30.4	25	84	NE	2	28.7	d a. p. ●² p.
20	27	22.1	98	NE	1	86.4	r² a. p. ⊤ p.
21	30	21.8	75	SE	1	22.4	● a. p.
22	31.2	20.9	69	NE	2	12.7	↯ ●² p.
23	29	24.2	83	NE	4	30.5	↯ ● a. p. ☈ p.
24	30	21.7	84	NE	3	63.5	↯ ● a. p.
25	28.8	21.6	86	NE	2	17.8	↯ ● a. p.
26	31.5	22.2	68	E	1	------	d a.
27	26.7	22.5	92	E	-1	39.1	● a. p.
28	32	22.5	70	NE	1	------	d a.
29	30.9	21.4	77	NE	1	19	Ω a. ● p.
30	30.6	23.2	71	NE	1	2.3	●° p.
Mean	30.8	23.2	73.2	------------	1.8	------	
Total	------	------	------	------------	------	564.2[1]	

SUMAY, GUAM (Ladrones Islands).
[ϕ=13° 22′ N; λ=144° 45′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	29.8	25.4	75	ENE	5	------	
2	29.2	25	72	ENE	4	------	
3	29.6	24.8	67	ENE	5	------	
4	30	24.6	77	NNE	4	------	
5	30	23	78	NE	2	------	
6	30.2	24	73	ENE	4	------	☈² p.
7	30.4	24	74	E	4	------	
8	30	23	72	E	6	------	☈ a.
9	29.4	24.8	73	ENE	5	------	
10	29	25	80	NE	6	------	↯ ●² p.
11	29	25.4	78	NNW	6	------	
12	30.4	25	75	SSW	6	------	
13	31.4	26.2	68	S	2	------	
14	30	24.8	80	SE	2	------	
15	29	24.4	75	NE	2	------	
16	30.4	24	65	ESE	3	------	
17	30.4	25.2	65	ENE	4	------	
18	30.6	25	71	ENE	4	------	⊍ p.
19	29.8	25	77	ENE	5	------	
20	28	25	92	E	6	------	↯ ● a.
21	29.4	24.6	72	E	6	------	☈ a. ↯ ● a. p.
22	29.4	25	79	ENE	7	------	☈ a.
23	28.4	23.8	74	E	4	------	☈ a. ↯ ●² a. p.
24	30.2	25.2	70	E	3	------	
25	29.8	25	87	E	3	------	☈ p.
26	28	24.4	81	ENE	3	------	●² a. p.
27	29	24.2	81	ENE	4	------	● a.
28	29	25.4	71	E	5	------	
29	29.6	24.6	72	ESE	4	------	
30	30	24.2	66	S	4	------	
Mean	29.6	24.7	74.7	------------	4.3	------	
Total	------	------	------	------------	------	------	

BATANGAS.
[ϕ=13° 45′ N; λ=121° 03′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.5	22.4	85	SSE	3	2.3	↯° a. ●° p.
2	29.7	22.2	78	E	4	------	☈ a. ↯ p.
3	32.9	22	74	ESE	3	1	●° a. d° p.
4	32.7	22.1	59	E	3	------	
5	32.9	21.3	56	ESE	3	------	
6	32.8	21.6	61	ESE	3	------	
7	32.9	20.9	59	ESE	3	------	
8	32.5	19.9	59	ESE	3	------	
9	31.9	20	59	E	3	.3	●° a.
10	32.8	21.6	63	E	3	3	●° a. p. ⌒ p.
11	32.6	21.4	59	E	3	------	
12	32.8	22	54	ESE	3	.5	⌒ ●° a.
13	32.5	22.2	54	SE	3	.5	●° d ⌒ a.
14	32.6	19.1	70	SW	2	------	
15	30.9	19.7	65	WSW	2	.5	●°
16	31.2	20.9	66	SW	2	------	
17	31.9	21.1	64	W	2	.3	⊤ ●° p.
18	32.4	21.2	60	E	3	------	☈ ⊕ p.
19	32.6	21.3	59	E	2	------	○ ⊕ p.
20	29.3	21.6	92	SE	1	1.3	●° p.
21	31.8	22.1	80	E	3	1.8	● a.
22	32.4	21.2	58	SE	3	------	⌒ p.
23	33	21.3	58	SE	3	------	
24	31.3	21	62	SE	3	------	
25	32.5	21.9	54	E	3	------	
26	30.9	20.9	68	NE	2	------	
27	30.7	21.5	92	SW	2	5.3	●° a.
28	32.3	21.8	58	SE	3	------	p p.
29	31.5	20.9	75	WNW	2	------	☈ p.
30	32	22.4	76	S	1	6.6	●° a. p. ☈ p.
Mean	32	21.3	65.9	------------	2.6	------	
Total	------	------	------	------------	------	23.4	

[1] 29 days of observation.

METEOROLOGICAL DATA, ETC.—Continued.

SILANG.
[ϕ=14° 14′ N; λ=120° 58′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	29.8	21.5	77	E	2		Ω ≡ a. ↙° p.
2	28.9	21.3	78	E	4		d a.
3	29.2	22	78	E	2	9.4	d a. ●° p.
4	30.6	21.8	74	E	3		●° a. ↯ p.
5	29.9	19	77	E	4		p a.
6	30.7	21.6	74	NE	2	3.3	●° p.
7	30.4	22	70	E	1		Ω d a.
8	30.6	20.9	69	E	4		↙° p.
9	30.2	20.1	71	E	3	4.6	d a. ●° p.
10	30	21.2	70	NE	4		Ω ≡ a. ↙° p.
11	30.5	21.3	70	E	3	16.8	●² a.
12	30	21.5	72	E	4	5.6	d ● a.
13	30.3	21.2	73	E	2		Ω ≡ a.
14	29.2	19	73	E	1		↙° p.
15	30.4	20	69	E	2		Ω a. ↙° p.
16	31	18.2	73	E	3	3.6	≡ a. ●° p.
17	30	20	70	E	2		Ω ≡ a. ↙° p.
18	30.5	19.7	69	E	2		Ω ≡ a. ↙° p.
19	29	21	69	E	2		
20	29.8	21.2	69	E	3		d a.
21	29.2	19.2	71	E	3		Ω a.
22	29.6	20.8	71	E	3		≡ a.
23	29.5	21	70	E	4		
24	30	21.2	70	E	2		
25	28.1	20	73	E	3		≡ a. ↙° p.
26	29.4	21	72	E	4		Ω ≡ a. d p.
27	30	21	71	E	2	5.3	Ω ≡ ● a.
28	29.8	20.8	71	E	2		Ω a. T p.
29	29.8	20	71	E	4		Ω ≡ a. ↙° p.
30	29.8	20.2	71	E	3		≡ ↙° a. d p.
Mean	29.9	20.6	71.9		2.8		
Total						48.6	

SAN ANTONIO.
[ϕ=14° 23′ N; λ=121° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	29	21.5	85	NE	2	26.7	
2	28	21.8	89	SE	1	6.1	
3	27.5	21.5	85	E	4	14	
4	29	21.8	94	E	3	1.3	
5	29	22.4	84	E	3	9.9	
6	30.5	22.5	71	E	3	1.8	
7	29.5	22.2	69	E	4		
8	29.6	22.4	71	E	4	3.6	
9	29	22	87	E	4	4.6	
10	28	21.5	88	E	3	16.3	
11	29	21.6	78	E	2		
12	29	22	72	E	3	14.2	
13	28.2	21	87	E	3	10.2	
14	29.8	20	70	E	1		
15	29.5	20.5	68	E	1		
16	30.6	19.5	61	W	1		
17	30.5	18	73	E	2		
18	28.3	19.5	83	E	1	12.7	
19	28.6	21.4	78	E	3		
20	26.3	21	83	E	3	21.6	
21	27.6	19.8	78	NE	3	14	
22	28	18.2	84	E	5	26.9	
23	27	17.5	88	E	3	16.5	
24	27.1	20.7	79	E	5		
25	28.2	17.8	82	E	2	2.5	
26	25.6	20.1	89	NE	3	19.8	
27	24.5	20.5	88	E	1	8.1	
28	29	21.1	80	E	1	12.7	
29	29.2	22.2	87	E	3	4.8	
30	29	21.4	76	NE	3	9.1	
Mean	28.5	20.8	80.2		2.7		
Total						257.4	

CORREGIDOR.
[ϕ=14° 23′ N; λ=120° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C	°C.	P. ct.		0-12.	mm.	
1	30.5	24	78	NE	2		
2	30	24.3	68	NE	2		
3	31	24.5	67	NE	2		
4	30.7	24	69	N	2		
5	31.5	24.7	68	NE	2		
6	31.5	24	60	N	2		
7	31.2	23.7	65	NE	2		
8	31.2	24.5	61	NE	2		
9	30.5	23.8	64	NE	4		
10	30.2	24.3	68	NE	4		
11	30.2	24.2	72	NE	2		
12	31.3	23.8	66	NE	2		
13	30.7	24.4	71	E	1		
14	31.5	21.8	59	NE	1		
15	31.9	22.4	63	Calm			
16	31.2	22.3	56	Calm		23.4	● a.
17	30.7	23	71	NE	1		T a.
18	30.4	23.2	67	NE	1		
19	31.4	24.2	60	Calm			
20	29.2	22.5	74	NE	3	6.4	● a.
21	30.5	22.8	67	E	3		
22	31.2	24.2	64	NE	2		
23	30	23.8	60	NE	2		
24	30.2	23.3	67	NE	4		
25	29.2	23.3	71	NE	4		
26	30.3	23.4	75	NE	4		
27	29.4	23.3	72	E	1		
28	30.5	22.7	79	NE	2		
29	31.5	22.3	68	N	1		
30	31	23.7	75	N	1		
Mean	30.7	23.5	67.5		2		
Total						29.8	

BALANGA.
[ϕ=14° 41′ N; λ=120° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32.5	23.4	80	ESE	2		T ↯ p.
2	31	22.4	65	NNE	2		
3	32.9	22	62	NE	2		Ω² a. ↯ p.
4	32.4	21.9	67	Calm			Ω² a. d ↯ p.
5	33.4	22	62	NE	3		Ω² a. d ↯ p.
6	33.4	22.5	59	NE	2		
7	32.5	21	63	E	1		
8	33.4	21.2	60	NE	2		Ω a.
9	32	22.2	67	NE	3		↯ p.
10	32	21.8	68	NNE	2	18.3	● T p.
11	31	22	65	N	2		d p.
12	32	21.9	57	NE	2		
13	32	22.5	62	Calm			
14	32.1	19.4	54	NE	1		Ω² a.
15	31.6	20.6	61	SE	1	5.6	Ω² a. ●
16	31.3	23.4	68	SSE	2		
17	31.9	23	56	SE	1	.5	●° ⌈↯ p.
18	32.5	22	57	N	1		
19	33	21.5	57	N	2		
20	31.3	23.3	60	N	2		
21	32.9	22.6	76	Calm		4.6	d ● p.
22	33	21.7	61	NE	3		
23	32	22.9	57	NNE	4		↙° p.
24	32.5	22.6	64	NNE	3		
25	30.9	21	57	NNE	4		↙° p.
26	32.4	21.8	54	ENE	1		
27	30	22	71	N	2		d a. ↯ p.
28	32.1	21.3	65	Calm			↯ p.
29	30.4	22	74	NE	1		
30	33	22.4	53	E	1		↯ p.
Mean	32.1	22	62.7		1.7		
Total						29	

METEOROLOGICAL DATA, ETC.—Continued.

TARLAC.
[ϕ=15° 31′ N; λ=120° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	34.4	22.7	55	ESE	1		Ω² ≡° a. ⩽° p.
2	28.1	21.8	72	NE	1		Ω ≡° a. ⩽° p.
3	34.1	21.9	70	SW	1		Ω² ≡ a.
4	34	20.8	49	ENE	1		Ω ≡° a. ⩽° d° p.
5	34.2	21.8	47	ENE	1		≡ a. ∞ ⩽° p.
6	35	21.6	55	SW	1		Ω ≡ a.
7	33.8	20.7	54	S	1		Ω ≡ a.
8	33.8	20.8	51	NE	1		Ω ≡° a.
9	33.5	20.5	49	ESE	1		Ω ≡° a. ∞ p.
10	33.7	20.4	60	ESE	2		Ω ≡° a.
11	32.5	21	62	ESE	1		Ω a. ◯² p.
12	33.2	21.2	53	NE	1		⊕² p.
13	33.5	22	60	E by N	1		Ω d° a. v p.
14	33.9	19.2	54	NW by W	1		Ω a.
15	34.3	20	53	NW	1		Ω ≡° a. ⊕ p.
16	33.2	22.1	67	NW	1		Ω ≡° a. ⊤° ⩽° p.
17	34.8	23.1	55	NE	1		Ω ≡° a. ⩽° p.
18	34.5	22.4	50	WNW	1		Ω ≡° a.
19	34.7	20.9	48	SW by W	1		Ω ≡ a. ∞² p.
20	34.4	20.3	47	NNE	1		Ω a. ⊕ p.
21	34.2	20.8	59	ESE	1		Ω ≡ a. d° a. p.
22	34.2	20.6	61	NNE	2		≡° a. ⊕² p.
23	33.4	22	47	E by N	2		≡° a.
24	32.8	21.4	58	N by E	1		Ω° ≡° a.
25	33.2	20.7	55	ENE	2		Ω ≡° a. ∞² p.
26	33	19.4	42	NNE	1		Ω a. ∞² p.
27	34.2	20.5	63	SW	1		Ω ≡° a. ⩽° p.
28	34.7	21	57	WNW	1	8.6	Ω° a. ⌈⩽° ● p.
29	33.3	21.8	74	NNE	3	.8	≡ d° a. ●° ⩽° p.
30	34.2	21.6	58	N	1	4.1	⩽ ●° p.
Mean	33.7	21.2	56.2		1.2		
Total						13.5	

BALER.
[ϕ=15° 47′ N; λ=121° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32	22.5		NE		28.4	
2	28.4	21.8		NNE		15.2	
3	29.5	23.8		ENE			
4	30.6	23.6		NE			
5	31	22.4		NE			
6	30.9	24.9		NE			
7	31	21.5		ENE			
8	30.6	22		NNE			
9	30.3	22.4		NE		27.9	
10	28.5	23.1		N		29.2	
11	26	22		N		2.5	
12	29.5	23.6		NNE		29.2	
13	28.9	23.2		NNE			
14	29.7	20.8		N		12.7	
15	29.1	21.8		E		6.4	
16	28.7	22.9		NE		24.1	
17	29.4	23.6		NE		14.5	
18	29.7	23.4		E			
19	30	23		E			
20	30	22.9		E		21.8	
21	29.8	22.5		E		17.3	
22	29	23.5		E		25.4	
23	28.9	23.6		E		6.1	
24	28.3	22.4		ENE		13.2	
25	28.6	22.4		E			
26	29.9	20.5		E			
27	28.3	23.2		E		18.5	
28	29.5	22.3		E			
29	29	23		E			
30	29.5	22		E		18.5	
Mean	29.5	22.7					
Total						310.9	

BOLINAO.
[ϕ=16° 24′ N; λ=119° 53′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33.1	24.4	72	Calm			⊤ ⩽ p.
2	33.8	24.4	63	N by E	1		≡ a. ⩽ p.
3	34.2	23.6	64	NNE	1		
4	34.3	22.3	60	N by E	1		Ω² ≡² a. ⩽ p.
5	34.5	23.6	61	Calm			
6	33.9	22.8	64	NNE	1		⩽ p.
7	33	23	59	E by N	1		
8	33.9	22.4	61	Calm			Ω° ≡° a.
9	33.6	23	62	N	3		↙° p.
10	34	22.2	66	NNE	2		⩽ p.
11	33.8	23.1	70	Calm			
12	33.4	23	63	Calm			Ω ≡ a.
13	33.4	23.1	56	ESE	2		Ω° ≡° a.
14	33.6	23.6	71	W	3		↙° a. p.
15	33.6	24.3	67	W	4	2	●° ⌒ a. ↙° p p.
16	32.5	23.7	68	W by S	3		d ⊤° a. ↙° p.
17	31.6	23.2	66	NNE	2		Ω° ≡° a. ⩽² p.
18	33.8	23.4	63	ENE	2		
19	35.5	23.8	53	Calm			
20	35.7	23	65	NNE	1		≡ a.
21	33.7	22.2	66	N	1		∞² p.
22	32.8	22.9	59	NNE	3		Ω ≡ a. ∞° p.
23	35	22	69	Calm			
24	33.1	23.1	64	NNE	2		
25	32.9	22.5	55	WNW	3		∞² p.
26	33.1	22	55	WNW	3		↙° p.
27	35	21.9	66	N by E	1		
28	32.3	23.3	69	NNW	2		⌒ a.
29	34.6	26.3	78	NNE	4	.8	●° a. ↙° ⩽² p.
30	32	23	79	N	3	13.5	⊤° ●² a. ↙° ⩽ p.
Mean	33.7	23.2	64.5		1.6		
Total						16.3	

BAGUIO.
[ϕ=16° 35′ N; λ=120° 43′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	24	12.7	79	SW	0	1.3	●° p.
2	24.5	14.2	48	E	2		
3	24.8	13	60	NE	0		
4	25.1	11.3	71	WSW	0		≡ a.
5	23.6	12.2	84	WSW	0		
6	23.4	13.1	81	Calm			
7	22.8	12.7	89	Calm			
8	22.6	12	82	WSW	0		
9	24.6	10.9	75	WSW	0		
10	23.2	11.2	74	Calm		3	●° p.
11	24.9	12.1	89	Calm			
12	24	13.8	82	W	0		
13	23.5	13.3	87	W	0		
14	21.7	13.1	85	WSW	0		
15	19	12.7	93	WSW	0	6.4	● p.
16	22.1	13.2	80	Calm		2.5	●° ≡ p.
17	22.5	13.3	87	W	0		⊤ p.
18	23.6	14.2	86	WSW	0		
19	24.6	13	83	SW	0		
20	24.7	12.5	87	Calm			
21	24.5	15.2	64	ESE	2	2.3	●° ⌒ p.
22	26	15.4	74	SW	1		
23	24.1	12.5	72	WSW	1		
24	24.5	13.7	63	ESE	1		≡ p.
25	24	11	55	ESE	1		
26	24	11.5	70	WSW	0		≡ p.
27	24	14	81	WSW	0	10.7	● p.
28	23.5	13.1	81	Calm		13	● p.
29	22	14.4	88	Calm			
30	22.1	14.4	94	Calm		8.1	●° p.
Mean	23.6	13	78.1		.3		
Total						47.3	

METEOROLOGICAL DATA, ETC.—Continued.

SAN FERNANDO UNION.
[ϕ=16° 37′ N; λ=120° 18′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	33.2	22	64	N	2	------	Ω a. ☈ p.
2	32.5	22.4	73	NNW	3	------	Ω a.
3	31.4	21.6	73	NE	2	------	Ω a.
4	32.2	21.8	65	NE	2	------	Ω a.
5	32.4	21	64	SW	3	------	Ω a.
6	33	21.2	69	NE	2	------	Ω a.
7	31.5	21.8	69	SW	2	------	Ω a.
8	32.4	21.6	66	NE	2	------	Ω a.
9	32	21	61	NE	2	------	Ω a.
10	31.2	20.2	69	NE	2	------	Ω a.
11	31.3	21.6	72	NE	3	------	Ω a. ⊤ ⌒ p.
12	31.9	21.8	70	NE	2	------	Ω a.
13	33.6	22	58	NE	3	------	Ω a.
14	33.4	22.2	53	NE	2	1.3	Ω a. ●° p.
15	32.4	22.4	77	E	2	------	Ω a. ⊤ p.
16	32	21.8	71	NW	2	------	Ω a.
17	32.2	21.3	70	NW	3	------	Ω a.
18	31	21	74	NW	3	------	Ω a.
19	31.2	22.6	66	NW	2	------	Ω a.
20	31.4	21.4	74	NW	3	------	Ω a.
21	31.3	21.6	73	NW	2	------	Ω a.
22	31	21.4	72	NW	2	------	Ω a.
23	31.6	22.4	69	NW	2	------	Ω a.
24	30.4	21.2	74	NW	2	------	Ω a.
25	30.8	20	64	NW	2	------	Ω a.
26	31.8	20.8	60	W	2	------	Ω a.
27	32	21	69	NW	2	------	Ω a.
28	32.2	21.6	71	NW	3	------	Ω a. ⊤ ⌒ p.
29	31.2	22	70	NW	3	------	Ω a. ⊤ ⌒ p.
30	30.2	22.4	71	NW	2	1.5	Ω a. ●° ϟ p.
Mean	31.8	21.6	68.4	------------	2.3	------	
Total	------	------	------	------------	------	2.8	

ECHAGÜE.
[ϕ=16° 41′ N; λ=121° 39′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	------	------	------	------------	------	------	
2	------	------	------	------------	------	------	
3	------	------	------	------------	------	------	
4	------	------	------	------------	------	------	
5	------	------	------	------------	------	------	
6	------	------	------	------------	------	------	
7	30.6	20.1	72	SW	1	------	d a. ϟ p.
8	31.1	20	62	SSW	1	------	≡° a. ϟ p.
9	29.6	20.9	67	SW	1	2	Ω ≡° a. ◯ ⌒^{2} ●
10	28.7	20.1	81	ESE	1	4.6	≡^{2} a. d ● p.
11	25.9	21.7	97	SE	1	15	≡^{2} ●^{2} a. ⏀ p.
12	30.5	21.3	71	WNW	2	1.5	≡^{2} ●° a.
13	30.6	21.9	70	NNE	1	.8	●° a.
14	30.7	19.9	71	SE	2	------	Ω ≡ ◯ a. ⏀ p.
15	29.7	21.2	73	SSE	1	------	≡ ⊕ d a. ⏀ p.
16	30.9	22.3	71	SSE	1	------	≡ a. d° ☈ ψ p.
17	31.1	22.2	74	SSE	2	.5	●° ⊤ ◯ ⌒ ⏀^{2} ϟ
18	30.7	20.6	68	S	1	------	≡ a. d ◯ ⏀^{2} p.
19	31.3	20.8	62	SE	1	------	≡° a.
20	30.3	19.1	65	SE	1	------	Ω° ≡^{2} a.
21	31.2	21	69	NNE	1	8.9	≡° ⌒ ◯ ☈ ●^{2} ψ
22	30.7	20.1	76	SE	1	3	≡ ⌒ ◯ ☈ ● ψ
23	30.1	20	73	SE	1	.8	Ω ≡^{2} a. ●° p.
24	30.1	21.2	85	E	1	1.3	●° a. p. ψ p.
25	28.9	19.8	80	ESE	2	3.3	≡^{2} a. ● ↙° p.
26	28.6	20.2	77	NNE	2	2.5	p d a. p.
27	30	21.2	88	ESE	1	------	≡ a. ◯ ☈ p.
28	30.2	21.9	91	NW	1	21.8	≡° ● a. ☈ ●^{2} p.
29	28.4	22.2	91	ESE	1	8.4	d ↙° a. ☈ ◯ ●^{2}
30	26.9	21.2	97	NNW	4	7.6	≡° ● a. ↙ ●° p.
Mean	29.9	20.9	76.3	------------	1.3	------	
Total	------	------	------	------------	------	82 [1]	

CANDON.
[ϕ=17° 12′ N; λ=120° 26′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	31	23.6	------	SW by W	2	------	Ω^2 a. ↙° ⊤ ϟ p.
2	31.1	23.5	------	W	1	1.3	Ω a. ⊤° ● ϟ p.
3	30.7	23.4	------	WNW	1	------	Ω a. ⊤° p.
4	31.5	23.2	------	NW	2	------	Ω^2 a. ϟ p.
5	31.2	23.5	------	W	1	------	Ω^2 a. ϟ p.
6	31	23.1	------	WSW	2	------	Ω a.
7	30.8	23.7	------	W	1	------	Ω a. ⊤° p.
8	30.4	23.6	------	W	1	------	Ω^2 a. ⊤° ϟ p.
9	30.7	22.6	------	WSW	1	------	Ω^2 a.
10	31.2	22.6	------	W	1	------	Ω a.
11	30.5	25.1	------	W	0	------	⊤° d p.
12	30.8	24	------	W	1	------	Ω a.
13	31.2	24.2	------	SW	1	------	
14	30.7	25	------	SW	1	------	Ω a.
15	30.2	23.6	------	S	1	2.5	Ω ⌒ ↙° a. ● p.
16	29.5	22.6	------	S	1	------	⌒ d a.
17	30.2	23.5	------	SW	2	------	Ω a. ϟ p.
18	31	23.9	------	WNW	1	------	Ω^2 ≡ a. ϟ p.
19	30.7	23.5	------	WSW	1	------	Ω^2 ≡ a.
20	30	23.5	------	NW	2	------	Ω^2 ≡ a. ↙° p.
21	30.6	22	------	SSW	2	------	Ω a. ↙° p
22	30.7	22	------	SW	1	------	Ω^2 ≡ a.
23	31	21.8	------	SSW	2	------	Ω^2 ≡ a.
24	29.7	23	------	S	1	------	Ω a. ◯ ⌒° p.
25	30.5	22	------	SSW	1	------	≡ a.
26	30	21	------	WSW	2	------	Ω° ≡ a.
27	30.7	22	------	WSW	2	------	Ω ≡ a. ϟ p.
28	30.9	23.8	------	NW	1	------	Ω° ≡ a. ⊤° ϟ p.
29	31.8	23.8	------	N	3	------	Ω a. ↙° ϟ° p.
30	31.6	24.6	------	NE	4	------	≡ d a. ↙° p.
Mean	30.7	23.3	------	------------	1.4	------	
Total	------	------	------	------------	------	3.8	

SANTO DOMINGO.
[ϕ=20° 28′ N; λ=121° 59′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30	23.8	84	N	1	25.9	Ω^2 ● a. ≡ ●° p.
2	30.9	23.6	72	E	1	------	≡ p.
3	31.1	24.6	83	E	2	4.6	●° a. p. ≡ ↙° p.
4	30	25.5	74	ESE	2	------	≡ Ω^2 p.
5	29.9	22.4	72	NE	2	------	↙° p.
6	30.8	24.5	75	NE	2	------	⊤ p.
7	30.7	25.6	76	NE	1	34	●° a. d ●^{2} ϟ p.
8	26.6	23	88	NE	2	63	⊤ ●^{2} a. d ϟ p.
9	28.2	21.4	82	ENE	2	131.1	↙° a. ●^{2} a. p.
10	27.6	22.3	85	NE	2	63.5	● a. ↙° ●^{2} p.
11	27.8	22.9	77	E	1	11.2	d a. ● p.
12	29	23.9	72	ENE	2	.3	d° a. ↙° ●° p.
13	29.1	25.3	66	E	2	------	↙° a. p. Ω^2 p.
14	28.5	23.1	66	E	1	3.2	●° a. p. ≡ p.
15	28.9	23.5	68	NNE	1	------	↙° a. ≡ p.
16	29.2	21.5	70	ESE	1	------	Ω a.
17	29.5	22	73	E	1	------	Ω a. ≡ p.
18	29.3	25.5	71	ESE	2	------	↙° a. p.
19	29.5	25.6	74	ESE	2	------	↙° a. ≡ p.
20	29.3	25	68	E	2	------	d a. ↙° ≡ p.
21	29.9	24.6	79	E by S	2	8.9	↙° ●° a. p. ⌒° ☈°
22	29.9	25	74	E	2	1.5	↙° ≡ ●° p.
23	30	25	70	E	1	------	↙° ≡ p.
24	29.1	25	73	NE	2	------	↙° a. p.
25	28.1	23.2	90	NE	2	21	⌒ a. ● a. p. ↙°
26	28.5	23	69	E	2	6.5	↙° ●° a. p.
27	28.8	24.5	89	Calm	------	38.1	d a. p. ↙° ● p.
28	25.6	22.5	81	NE	4	7.1	↙° ●° a. p.
29	25.7	22.3	79	NNE	4	15.2	↙° ●° a. p.
30	23.3	21.1	78	NNE	4	2	↙° ●° a. p.
Mean	28.8	23.7	75.9	------------	1.8	------	
Total	------	------	------	------------	------	437.1	

[1] 24 days of observation.

NOTAS GENERALES DEL TIEMPO.

Presión y temperatura.—La ausencia de perturbaciones atmosféricas cerca de Filipinas ha sido la causa de que las medias mensuales de la presión atmosférica hayan resultado en todas las estaciones del Archipiélago superiores á las de Noviembre del año próximo pasado. Sin embargo, apenas sí difieren de la normal de este mes. Así, la media de Manila, por ejemplo, difiere de la de Noviembre, 1906, en +1.23 milímetros, pero sólo se diferencia de la normal en +0.01 milímetros. Las máximas presiones se observaron en todas las estaciones el día 18 y las mínimas del 14 al 15 ó del 28 al 29.

Las temperaturas han sido en general algún tanto superiores á las del año pasado. La máxima absoluta para Manila ha sido 33.9° C. y la mínima absoluta 19.7° C: la primera fué registrada el día 8 y la segunda el día 14.

Precipitación acuosa.—Sólo nueve estaciones dan este mes un total de lluvia superior al de Noviembre, 1906: las demás lo dan inferior siendo á veces las diferencias muy considerables, según puede verse en la tabla que como de costumbre acompaña el texto inglés. Los pueblos más castigados por la escasez de lluvia han sido los situados en la costa occidental de Luzón. Así, en Laoag, Vigan, Candón, San Fernando Unión y Olongapó sólo se han recogido 4.8 milímetros, 3.1 milímetros, 3.8 milímetros, 2.8 milímetros y 8.2 milímetros de agua respectivamente. En Manila la cantidad de lluvia de todo el mes se separa de la normal de Noviembre en—85.5 milímetros.

DEPRESIONES Y TIFONES.

Sólo dos tifones han sido anunciados durante este mes por el Observatorio de Manila: ambos recurvaron á gran distancia de Filipinas sin influir apenas en el tiempo del Archipiélago.

TIFÓN DE 4 Á 7 DE NOVIEMBRE, 1907.

Este tifón originado, según parece, el día 4 de Noviembre al este de las Marianas, se movió al principio hacia el NW, é inclinándose luego al NNW y N vino á pasar por el W y no lejos de Chichijima (Islas Bonín) la noche del día 6. El día 7 el tifón se movía decididamente al NE.

En las observaciones hechas en Sumay, Guam, Islas Marianas, notamos un descenso regular de los barómetros desde el día 4; pero los vientos continuaron soplando del NNE y NE. Esto es muy difícil de explicar si suponemos que el tifón se hallaba hacia el NE de aquella estación y que no existía á la sazón otra causa perturbadora. De más valor es la mar del NW observada en aquella estación el día 5, cuando el vórtice había cruzado ya la parte septentrional de las Islas Marianas y se movía al NNW.

En el texto inglés damos las preciosas observaciones hechas á bordo del vapor *Poona* los días 4, 5 y 6. El vórtice pasó á alguna distancia por el S, SW y W de dicho barco. Llamamos la atención de los lectores sobre las marejadas observadas el día 5: una del S y SSW, procedente según se ve, del vórtice ciclónico que demoraba en aquella dirección, y otra del E producida, sin duda, por los vientos duros que soplaban del ENE y E$\frac{1}{4}$NE.

En otra tabla que puede verse también en el texto inglés incluímos las observaciones hechas en Chichijima (Islas Bonín) las cuales demuestran claramente el paso y recurva del tifón al W de aquellas islas.

El vapor alemán *Lauschan* sintió toda la violencia de este tifón desde 6 a. m. hasta 5 p. m. del día 7. He ahí lo que leemos en el Hongkong Daily Press de 5 de Diciembre:

> La mañana del día 7 de Noviembre, á 6 a. m., un tifón vino á desfogar sobre el vapor alemán *Lauschan*, cuando se hallaba éste en 31° latitud N y 145° longitud E, es decir, cerca de las Islas Bonín. El tifón iba acompañado de pesadas lluvias y la tripulación se halló en gravísimas dificultades. El lado de estribor fué barrido por grandes olas y el barco sufrió bastante en la proa y dos de sus botes de salvamento fueron destrozados. El barco se inclinó 33 grados durante el huracán y aún hoy aquí en el puerto (de Yokohama) se halla

inclinado 22 grados habiendo penetrado el agua en grandes cantidades. Todos los camarotes de estribor así como la cámara se llenaron de agua, echándose á perder cuanto en ellos había. El departamento de las máquinas se inundó asimismo de agua: de suerte que el barco quedó completamente inutilizado por uno ó dos días. El tifón empezó á amainar á eso de 5 p. m.

El Observatorio de Manila hizo mención de este tifón en las notas ordinarias del tiempo de los días 6 y 7, aunque no fué posible entonces precisar su trayectoria. En la nota del día 7 se decía lo siguiente:

La depresión situada ayer mañana al sur de las Islas Bonín parece haber adquirido mayor desarrollo y aparece esta madrugada al NE de dichas islas moviéndose aparentemente al NNE.

TIFON DE 10 Á 18 DE NOVIEMBRE, 1907.

Véanse á continuación los anuncios que sobre este tifón envió el Observatorio de Manila á los Observatorios de Tokio, Zikawei, Taihoku, Hongkong y Phulien:

Día 11, 12.10 p. m.: Tifón al ESE ó E de Guam moviéndose aparentemente hacia el norte.

Día 12, 5.00 p. m.: El tifón pasó por el NE y N de Guam inclinándose al oeste. Aparece ahora al NW de Guam.

Día 13, 2.30 p. m.: El tifón ahora al norte de Yap en los alrededores de 15° latitud, moviéndose al oeste.

Día 15, 12.20 p. m.: El tifón ahora en los alrededores de 17° latitud y 132° ó 133° longitud inclinándose probablemente al norte.

En las notas ordinarias del tiempo de los días 16 y 17 añadía el Observatorio lo siguiente refiriéndose al curso ulterior de este tifón:

Día 16, 12.10 p. m.: El tifón del Pacífico se hallaba situado esta madrugada en los alrededores de 133° longitud y 21° latitud. Parece moverse al presente al NE ó NNE.

Día 17, 12.30 p. m.: El tifón del Pacífico se hallaba esta madrugada entre Japón y las Islas Bonín, en los alrededores de 30° latitud y 140° longitud.

Que este tifón se movió primero hacia el norte y luego hacia el W viniendo á hallarse sucesivamente al E, NE, N y NW de Guam parece estar fuera de toda duda si se examinan atentamente las observaciones hechas en Guam, las cuales publicamos en el texto inglés juntamente con las de Yap. Los vientos en Guam fueron rolando sucesivamente del NE al N, NW, W, SW, S y SE en el intervalo de tres días.

Á haber continuado el tifón en su movimiento hacia el oeste hubiera sin duda atravesado la Isla de Luzón del 16 al 17: mas afortunadamente volvió á inclinar su trayectoria al norte y después al nordeste, como lo anunció el Observatorio los días 15 y 16, asegurando en la nota ordinaria del tiempo del 15 que había desaparecido todo peligro para Filipinas. Las observaciones de las Islas Liukiu y Bonín señalaron perfectamente el paso del tifón por entre aquellos dos grupos de islas durante el día 16, en que aumentó considerablemente la velocidad del movimiento de traslación del vórtice ciclónico. En el mapa del tiempo de Japón de 6 a. m. del 17 se hallaba situado dicho vórtice en los alrededores de 31° 31′ latitud y 141° longitud.

DEPRESIÓN DE 29 Á 30 DE NOVIEMBRE, 1907.

Bajas presiones de poca importancia predominaron los días 28 y 29 de Noviembre en la región meridional de Filipinas. Casi simultáneamente se observaba un descenso barométrico de alguna mayor importancia en el sur de las Marianas y en las Carolinas Occidentales. El 29, parecía fuera de duda la existencia de una depresión hacia el ENE de Yap y SW de Guam, próximamente equidistante de ambas estaciones. En Yap se observaron vientos del NNW la tarde del día 29 y del SW y W el 30; pero las nubes bajas venían del W todo el día 30 y la tarde del 29. En cambio, en Guam los vientos soplaron del E y ESE todo el día 29 y del S el día 30. El barómetro de Guam alcanzó la mínima la tarde del 29, y el de Yap, la tarde del 30. La mínima de Guam fué 754.41 milímetros. No nos consta la mínima absoluta de Yap por no tener allí aparato registrador; pero la observación de 2 p. m. del 29 nos da 754.71 milímetros y la de 2 p. m. del 30, 754.49 milímetros. De todo esto parece deducirse que del 29 al 30 la depresión tuvo algún movimiento hacia el NW ó WNW: pero probablemente se deshizo muy pronto, pues no hallamos más rastros de ella en los días siguientes.

SEISMOLOGICAL BULLETIN FOR NOVEMBER, 1907.

By Rev. Miguel Saderra Masó, S. J.,
Assistant Director of the Weather Bureau

EARTHQUAKES FELT IN THE PHILIPPINES.[1]

4, 2^h 10^m. **Eastern Mindanao.** Earthquake of intensity III. The reports received from the stations at Butuan and Davao, situated respectively north and south of the extensive valley of the Agusan River, make us believe that the focus of this earthquake lay in the said valley, where the shock was much more perceptible. At Butuan it was noted that the oscillations had a SSW–NNE direction, while at Davao they were NNW–SSE and somewhat stronger than at Butuan.

5, 1^h 2^m. **Tagoloan** (N of Mindanao). Trepidatory earthquake of intensity III. The woodwork of the buildings creaked.

14, 2^h. **Butuan** (N of Mindanao). Oscillatory quake. Direction SSW–NNE; intensity II. The focus of this earthquake lay likewise in the valley of the Agusan River, about 100 kilometers south of Butuan. It was nowhere severe.

16, 13^h 15^m 35^s.* **Legaspi** (SE of Luzon). Oscillatory earthquake. Direction NW–SE; intensity II; duration 8^s.

16, 23^h 24^m 15^s.* **Central Luzon.** An earthquake which was perceptible at Manila and throughout the adjacent provinces north and south, as far as they are comprised between parallels 17° and 13° N and the meridians 119° and 122° E. Its intensity did not exceed V or VI of the Rossi-Forel scale. The direction, as well of the first shocks as of the principal oscillations, registered by the seismographs of the Observatory, was W–E and WNW–ESE. This circumstance, together with the fact that the disturbance was apparently more intense on the coast of Zambales and on the western coasts of Cavite and Mindoro, leads to the belief that the center lay to the west of Manila, either on the coast or very close to it. At 23^h 46^m 35^s occurred a repetition which was perceptible only in western Luzon, in Mindoro, and the Calamianes Islands.

17, 2^h 14^m 38^s.* **Southern Luzon.** Earthquake perceptible on the southern coasts of Luzon, in Mindoro, the Calamianes, and Cuyo; that is, in the region comprised between parallels 14° and 10° N and the meridians 119° and 122° E. It seems that its force did not exceed degree III, Rossi-Forel.

17, 6^h 7^m 3^s.* **Southern Luzon.** Earthquake of intensity III, which was perceptible within the same area as the preceding. Very slow waves having the direction WSW–ENE were distinguishable at Manila. These are characteristic of the earthquakes which have their center within the volcanic region represented by Taal Volcano.

After this earthquake, during the 17th and the following days, microseismic disturbances were very frequent, due to seismic shocks proceeding from the same focus. See "Records of the Microseismographs."

[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

21, $16^h\ 7^m$. **Butuan** (N of Mindanao). Earthquake of intensity II; perceptible also 50 kilometers south of Butuan, in the valley of the Agusan River.

24, $21^h\ 59^m\ 9^s$.* **Camarines** (SE of Luzon). Earthquake of intensity IX. At $22^h\ 11^m\ 56^s$ occurred another earthquake of intensity V, which was followed by a great number of repetitions during the night and the whole of the 25th. A more detailed discussion of these quakes will be found farther on.

25, $8^h\ 15^m$. **Butuan** (N of Mindanao). Oscillatory earthquake. Directions SSE–NNW; intensity III; duration short. It is certain that it was felt with the same force throughout the valley of the Agusan River.

26, $23^h\ 30^m$. **San Isidro** (Central Luzon). Oscillatory earthquake. Direction E–W; intensity III; duration 10^s.

27, $1^h\ 45^m$. **Tacloban** (NE of Leyte). Oscillatory earthquake. Direction NNE–SSW; intensity II; duration 3^s.

27, $6^h\ 16^m$. **San Isidro** (Central Luzon). Earthquake of intensity II; duration 2^s.

27, $23^h\ 3^m$. **Iloilo** (E of Panay). Oscillatory earthquake of intensity II; duration 7^s.

29, $5^h\ 25^m$. **Borongan** (E of Samar). Oscillatory earthquake of intensity IV; duration 5^s.

30, $6^h\ 3^m$. **Vigan** (NW of Luzon). Earthquake of intensity II; duration 3^s.

RECORDS OF THE MICROSEISMOGRAPHS.

[Time of the one hundred and twentieth meridian east of Greenwich. Midnight = 0^h.]

No.	Date.	Component.	Beginning.			Maximum range of motion.			End.	Instrument.	Remarks.
			First preliminary tremors.	Second preliminary tremors.	Principal portion.	Hour.	Amplitude (2 a.).	Period.			
			h. m. s.	h. m. s.	h. m. s.	h. m. s.	mm.	s.	h. m. s.		
203	8	WSW-ENE	10 28 47	----------	10 29 04	10 29 39	0.12	2.4	10 33 00	V. M.	Vertical component; amplitude 0.05 mm.
		WSW-ENE	10 28 54	----------	10 29 12	10 29 38	.10	6	10 33 00	H. P.	
204	10	NNW-SSE	11 01 50	----------	----------	11 03 00	.03	2.2	11 06 00	V. M.	Do.
205	16	WSW-ENE	13 15 35	----------	13 16 04	13 16 27	.12	1.6	13 24 00	V. M.	Vertical component; amplitude 0.08 mm. Earthquake, intensity II at Legaspi (SE of Luzon).
		NNW-SSE	13 15 35	----------	13 16 10	13 16 24	.12	2	13 24 00	V. M.	
206	16	WSW-ENE	23 24 15	----------	23 24 19	23 24 52	2.80	1	----------	V. M.	Vertical component; amplitude 1.80 mm. Earthquake, intensity V in the southwestern part of Luzon and Mindoro Island.
		NNW-SSE	23 24 15	----------	23 24 19	----------	------	------	----------	V. M.	
207	16	WSW-ENE	23 46 36	----------	23 46 19	23 47 53	.90	2	23 59 00	V. M.	Vertical component; amplitude 0.88 mm. Earthquake, intensity II in the southwestern part of Luzon.
		NNW-SSE	23 46 34	----------	23 46 19	23 47 26	1.20	2	23 59 00	V. M.	
208	17	WSW-ENE	2 14 38	----------	2 14 59	----------	------	------	2 35 00	V. M.	Vertical component; amplitude 1.08 mm. Earthquake, intensity II in the southern part of Luzon.
		NNW-SSE	2 14 38	----------	2 14 59	2 15 28	1.70	1.6	2 35 00	V. M.	
209	17	NNW-SSE	----------	----------	3 44 41	----------	------	------	3 47 00	V. M.	Vertical component; amplitude 0.04 mm.
210	17	WSW-ENE	5 14 24	----------	5 14 33	5 14 48	.03	2	5 18 00	V. M.	Vertical component; amplitude 0.03 mm.
211	17	WSW-ENE	6 07 03	----------	6 07 13	6 08 04	2.60	1.4	----------	V. M.	Vertical component; amplitude 2.10 mm. Earthquake, intensity II in the southern part of Luzon and Mindoro.
212	17	WSW-ENE	6 30 02	----------	6 30 23	6 30 57	.12	2.4	----------	V. M.	Vertical component; amplitude 0.19 mm.
		NNW-SSE	6 30 01	----------	6 30 21	6 30 41	.21	2.2	----------	V. M.	
213	17	WSW-ENE	6 52 56	----------	6 53 14	6 53 41	.17	2.6	6 59 00	V. M.	Vertical component; amplitude 0.04 mm.
		NNW-SSE	6 52 55	----------	6 53 12	6 53 38	.08	2.8	6 59 00	V. M.	
214	17	NNW-SSE	7 42 30	----------	----------	7 43 16	.08	1.8	7 47 00	V. M.	
215	17	NNW-SSE	7 54 49	----------	7 55 16	7 55 25	.44	2.4	8 02 00	V. M.	Vertical component; amplitude 0.40 mm.
216	17	NNW-SSE	12 17 08	----------	12 17 24	12 17 37	.10	2	12 20 00	V. M.	Vertical component; amplitude 0.05 mm.
217	17	WSW-ENE	17 42 41	----------	17 43 03	17 43 31	.13	2.4	17 49 00	V. M.	Vertical component; amplitude 0.22 mm.
		NNW-SSE	17 42 41	----------	17 43 04	17 43 22	.33	2.4	17 49 00	V. M.	
218	17	WSW-ENE	18 28 17	----------	18 28 43	18 29 01	.24	2.6	18 35 00	V. M.	Vertical component; amplitude 0.06 mm.
		NNW-SSE	18 28 17	----------	18 28 43	18 29 33	.45	2.4	18 35 00	V. M	
219	17	WSW-ENE	18 47 40	----------	18 47 56	18 48 11	.04	2	18 50 00	V. M.	Vertical component: amplitude 0.03 mm.
		NNW-SSE	18 47 40	----------	18 47 55	18 48 10	.08	2.2	18 50 00	V. M.	
220	17	WSW-ENE	----------	----------	19 53 17	----------	------	------	19 56 00	V. M.	
221	17	WSW-ENE	20 07 35	----------	20 07 51	20 08 52	.39	2.4	20 15 00	V. M.	Vertical component; amplitude 0.20 mm.
		NNW-SSE	20 07 35	----------	20 07 51	20 08 49	.74	2.6	20 15 00	V. M.	
222	17	NNW-SSE	21 58 47	----------	21 59 11	21 59 27	.04	2.4	22 02 00	V. M.	Vertical component; amplitude 0.03 mm.

RECORDS OF THE MICROSEISMOGRAPHS—Continued.

No.	Date.	Component.	Beginning. First preliminary tremors.	Beginning. Second preliminary tremors.	Beginning. Principal portion.	Maximum range of motion. Hour.	Maximum range of motion. Amplitude (2 a.).	Maximum range of motion. Period.	End.	Instrument.	Remarks.
			h. m. s.	h. m. s.	h. m. s.	h. m. s.	mm.	s.	h. m. s.		
223	17	WSW-ENE	22 30 09	----------	22 30 32	22 30 39	.13	2	22 37 00	V. M.	Vertical component; amplitude 0.30 mm.
		NNW-SSE	22 30 09	----------	22 30 31	22 30 49	.42	2.2	22 37 00	V. M.	
224	18	NNW-SSE	0 55 21	----------	0 55 47	0 55 56	.09	2.4	1 01 00	V. M.	Vertical component; amplitude 0.04 mm.
225	18	NNW-SSE	2 41 39	----------	2 41 53	2 42 05	.12	2.4	2 45 00	V. M.	Do.
226	18	WSW-ENE	----------	----------	3 58 28	----------	------	------	4 01 00	V. M.	
227	18	WSW-ENE	9 08 58	----------	9 09 40	9 10 05	2.10	1.2	9 22 00	V. M.	Vertical component; amplitude 0.78 mm.
		NNW-SSE	9 08 57	----------	9 09 29	9 09 54	2	1.4	9 22 00	V. M.	
228	18	WSW-ENE	----------	----------	9 29 30	----------	------	------	9 33 00	V. M.	
229	18	WSW-ENE	----------	----------	16 23 00	----------	------	------	16 26 00	V. M.	
230	18	NNW-SSE	16 54 36	----------	16 54 50	16 54 53	.08	2.4	17 00 00	V. M.	Vertical component; amplitude 0.05 mm.
231	20	WSW-ENE	5 35 45	----------	----------	----------	------	------	6 20 00	V. M.	
		NNW-SSE	5 35 50	----------	----------	----------	------	------	6 20 00	V. M.	
		WSW-ENE	5 35 55	----------	----------	----------	------	------	6 25 00	H. P.	
232	21	WSW-ENE	----------	----------	8 56 26	----------	------	------	9 00 00	V. M.	
233	22	WSW-ENE	4 09 12	4 13 42	4 18 11	4 22 01	.04	11.2	5 16 00	V. M.	Earthquake in Japan.
		NNW-SSE	4 09 11	4 13 43	4 18 22	4 20 23	.05	11.6	5 16 00	V. M.	
		WSW-ENE	4 09 15	4 13 48	4 18 27	4 22 09	.73	9.9	5 20 00	H. P.	
		NNW-SSE	4 09 11	4 13 43	4 18 36	4 22 39	.37	11.4	5 10 00	H. P.	
234	22	WSW-ENE	14 17 24	----------	----------	----------	------	------	14 40 00	V. M.	
		WSW-ENE	14 17 30	----------	----------	----------	------	------	14 52 00	H. P.	
235	23	WSW-ENE	2 20 05	----------	2 20 21	2 20 41	.07	3	2 24 00	V. M.	Vertical component; amplitude 0.04 mm.
		NNW-SSE	2 20 04	----------	2 20 21	2 20 37	.13	2.4	2 24 00	V. M.	
236	23	WSW-ENE	----------	----------	19 27 43	----------	------	------	19 32 00	V. M.	
		NNW-SSE	----------	----------	19 27 44	----------	------	------	19 32 00	V. M.	
237	24	WSW-ENE	21 59 09	----------	21 59 35	22 00 16	2.10	1.4	----------	V. M.	Vertical component; amplitude 1.38 mm. Earthquake, intensity VIII in Camarines (SE of Luzon).
		NNW-SSE	21 59 10	----------	21 59 37	21 59 58	2.04	1.2	----------	V. M.	
		WSW-ENE	21 59 13	----------	21 59 40	----------	------	------	23 25 00	H. P.	
		NNW-SSE	21 59 14	----------	21 59 41	----------	------	------	23 20 00	H. P.	
238	24	WSW-ENE	22 11 56	----------	22 12 21	22 13 01	.90	2.2	23 15 00	V. M.	Vertical component; amplitude 0.50 mm. Second earthquake in Camarines.
		NNW-SSE	22 11 56	----------	22 12 22	22 13 24	1.48	1.6	23 18 00	V. M.	
239	25	WSW-ENE	----------	----------	6 12 28	----------	------	------	6 14 00	V. M.	
240	25	NNW-SSE	9 13 38	----------	9 13 52	9 14 18	.05	2.8	9 17 00	V. M.	Vertical component; amplitude 0.03 mm.
241	25	WSW-ENE	15 09 04	----------	15 09 22	15 11 03	.94	2	15 17 00	V. M.	Vertical component; amplitude 0.32 mm.
		WSW-ENE	15 09 14	----------	15 09 31	15 11 11	.15	6.6	15 17 00	H. P.	
		NNW-SSE	15 09 13	----------	15 09 30	15 11 19	.19	5.4	15 18 00	H. P.	
242	25	WSW-ENE	15 48 45	----------	15 49 31	15 49 39	.05	2.4	15 53 00	V. M.	After-shock in Camarines.
		NNW-SSE	15 48 46	----------	15 49 30	15 49 32	.05	2.4	15 53 00	V. M.	
243	25	WSW-ENE	16 22 44	----------	16 23 13	16 23 24	.11	2.4	16 27 00	V. M.	Vertical component; amplitude 0.05 mm.
		NNW-SSE	16 22 45	----------	16 23 13	16 23 23	.08	2.2	16 27 00	V. M.	
244	25	WSW-ENE	21 50 56	----------	21 51 27	21 52 07	.04	2.8	21 56 00	V. M.	After-shock in Camarines.
245	26	WSW-ENE	21 09 53	----------	21 10 13	21 10 37	.03	2.4	21 13 00	V. M.	Vertical component; amplitude 0.04 mm.

Instrumental constants.—Vicentini microseismograph (V. M.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record: NNW–SSE component, 50 times; WSW–ENE component, 50 times.

Horizontal Pendulums (H. P.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation, NNW–SSE pendulum, T=7 seconds; WSW–ENE pendulum, T=6.4 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

Foundation and location.—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above the sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above the sea level.

Geological structure.—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters, which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

THE EARTHQUAKE OF AMBOS CAMARINES.

(November 24, 1907; 21h 59m 3s.)

Area and effects of the earthquake.—The meizoseismal area of this earthquake comprised only the southeasternmost part of the region in which the disturbances of April 14 of the current year had exercised their greatest force, being only about 30 kilometers in length and 20 in width. The whole of it lay east of Bato Lake, in such manner that it was bounded in the north by the volcanoes Masaraga and Iriga and in the south by the southern Cordillera. The towns which suffered most are those to the south of Iriga Volcano and along the Quinali River. Within this area nearly all the stone buildings which had successfully withstood the earthquakes during April came to the ground this time. Many fissures opened in the ground and huge landslides occurred on the mountain sides. As regards the physiographic and geological conditions of the region comprising the Provinces of Camarines and Albay, we have nothing to add to the information contained in the Bulletin for April, 1907, page 172, to which the reader is referred. The map (fig. 2) given there represents the region in question.

Number of earthquakes and propagation of the seismic waves.—Only one violent earthquake was felt which, to judge from its effects, must have reached force IX of the scale of De Rossi-Forel. Thirteen minutes after the first followed a second shock of intensity V or VI and then numerous repetitions of less force during the night and a great part of the 25th. Naturally the area within which these shocks were perceptible was much smaller than in the case of the disturbances during April. On the Island of Luzon they were felt distinctly up to parallel 15° N, to a distance of 350 kilometers. On their travel toward the south the waves lost their energy faster, since at a distance of 200 kilometers from the meizoseismal region they were no longer perceptible. At the Observatory, some 300 kilometers northwest from the region of maximum intensity, the seismographs registered oscillations of only force IV and one repetition having force II. Outside of the Archipelago the waves traveled as far as Europe, but were so weak on their arrival, that the microseismographs could pick up only the second preliminary and the principal waves, but failed to register the first preliminary movements. The velocities of propagation were respectively: $V_2=7.2$ and $V=3.5$ kilometers per second; values which are in close agreement with the velocities found for the earthquake waves of April, which were: $V_2=7.21$ and $V=3.80$.

Probable cause of the earthquake.—If we consider only the small extent of the meizoseismal region and its close proximity to the most active volcanoes of the Archipelago, we are tempted to pronounce the earthquake to have been of volcanic origin. Nevertheless we adhere to the opinion voiced in the Bulletin for April, to wit, that the earthquake of November as well as those of April were of tectonic origin and had nothing in common with the nearby volcanoes, except that they took place in the region occupied by the latter. The reasons which we then adduced hold good also for the most recent disturbance, although the region affected by it was incomparably smaller. The only statement which possibly does not apply to the latter case is this, that besides the initial movement in the fault line there took place a sliding movement in the southern Cordillera.

The meizoseismal area of the November earthquake was likewise confined to the alluvium traversed by the Quinali River and by numerous other smaller water courses which latter descend from the southern Cordillera and the volcanic ground in the north and empty into the Quinali or into Lake Bato. Hence the cause of the disturbance must be sought rather in the fault line indicated by these depressions than in the volcanoes situated to the north thereof.

According to reports received from several of the towns most severely affected, the direction of the most violent shocks was, without exception, from some point of the northeastern quadrant toward southwest, that is, almost perpendicular to the faults which seem to exist in this part of the Archipelago. The Camarines earthquake of November 24 was preceded on the 16th and 17th by three earthquakes of great extension and small intensity, whose epicenters were situated respectively in the neighborhood of the southwestern coast of Luzon and in the southern sea inclosed by southern Luzon and the Islands of Mindoro, Romblon, and Marinduque, a region which appears to constitute the northwestern continuation of the fault lines of southeastern Luzon. These earthquakes as well as those of the Camarines may reasonably be ascribed to tectonic movements along the line of least resistance which divides Luzon from the Visayan Islands and is indicated by the deep channels and steep coasts and by the almost uninterrupted chain of volcanoes which stretches from the Taal to the Mayon.

Eruptions of Mayon and earthquakes.—The municipal president of Ligao, one of the towns which suffered most heavily from the earthquakes of April as well as from that of November, in answer to an inquiry addressed to him by this Bureau, says:

> According to my humble opinion, which is shared by several members of this community, these earthquakes must be ascribed to the fact that Mayon Volcano is not in eruption, but seems to have the vent or funnel of its crater obstructed.

As this belief is quite general throughout the Provinces of Ambos Camarines and Albay, and has repeatedly been expressed on previous occasions, it seemed to be worth while to study the catalogue of eruptions of Mayon in connection with that of Philippine earthquakes, which for this purpose we brought up to date from the year 1890, in order to ascertain whether the popular belief had any foundation in facts or not.

The result of this comparative study of the list of eruptions of Mayon Volcano [1] is decidedly negative. Not one of the eruptions which are on record has been preceded by earthquakes similar to those which were felt during the present year of 1907. Some writers maintain indeed that the outburst of July, 1766, had been heralded and accompanied by earthquakes; but I do not believe that too much faith should be placed on their assertion, because the Alcalde of Albay fails to make any mention of these earthquakes in his narrative which he wrote as an eyewitness and which is the only authentic report of the occurrence. The real course of events was probably similar to what took place in connection with the most important outbreak known, the eruption of 1814. On this occasion seismic movements began to be felt on the eve of the event, which increased in violence and frequency until 8 o'clock of the following forenoon, at which time the principal explosion took place. On May 13, one month before the great eruption of 1897, an earthquake of force VI shook the Provinces of Albay, Camarines, and Sorsogon, followed by numerous repetitions, whose center was undoubtedly south of Mayon Volcano, in the neighborhood of Masbate Island. Nevertheless, Father Coronas, in the monograph mentioned, considers this earthquake as a forerunner of the eruption which took place a month later, or at least as something intimately connected with it. This case appears, therefore, to contradict the statement which we made before as being deduced from facts. But the very same reasons which Father Coronas gives in support of his opinion demonstrate that on this occasion it happened exactly the same as in 1814, that is, that the earthquake preceded the eruption by a very short interval of time, if it did not mark the actual beginning of same. The testimonies given in the work mentioned make it clear that the eruption which was so noisy and terrific on June 25 and 26 had in reality begun on May 13 with the ejection of a gigantic column of smoke and the flow of molten lava accompanied at intervals by detonations. It would seem to me that this case is merely one of coincidence of an eruption with an earthquake, the focus of which latter appears beyond doubt to have been in the deep Strait of Masbate, more than 60 kilometers south of Mayon Volcano; both phenomena having evidently been due to a more general and deeper lying cause.

From the study of the list of earthquakes, which list begins to be fairly complete with the year 1862, result the following conclusions: Although the region which comprises the Provinces of Ambos Camarines and Albay shows a great seismic activity, violent earthquakes like the last ones during 1907 have been less frequent there during the last two centuries than in other regions which exhibit a smaller seismicity. The region in question frequently experiences seismic periods of two, three, and more days with slight earthquakes. Since 1860 more than 40 periods of this character have been recorded. If we compare the dates of these periods with those of the 17 or more eruptions

[1] "La Erupción del Volcán Mayón en los días 25 y 26 de Junio de 1897."—P. José Coronas, S. J.; Manila, 1898.

which have occurred during the same interval of years, we find the greatest possible discordance; so much so that it would be unreasonable to try to establish any relation between the two classes of phenomena. Moreover, if the popular belief before mentioned had some foundation, every eruption would necessarily be followed by a period of seismic calm. Still the catalogues show that frequently the contrary has happened. For instance, the eruption of August, 1872, was preceded by seismic periods in February and July, but also followed by similar disturbances in September and November. The outbreak which lasted from February 22 to March 9, 1887, was succeeded by a seismic period on the 24th and 25th of the latter month, and by several earthquakes on April 1, 22, 27, and October 1. The eruptions of September, 1890, and October, 1891, were each followed by a seismic period during October and November of the respective years. After the great outburst of 1907, far from a period of seismic calm ensuing, several slight earthquakes followed as early as July and September, and finally October brought an important seismic period with several violent earthquakes, whose focus was near the northern end of Samar, at a distance of less than 200 kilometers from the Mayon Volcano. Thus we could multiply instances; but those given are deemed sufficient to show that there is very little relation of cause and effect, if any at all, between the volcanic eruptions and the earthquakes which occur in this part of Luzon.

The popular belief which we are trying to show to be unfounded is entirely in keeping with the older ideas about the close connection between earthquakes and volcanoes. The writer himself when writing "La Seismología en Filipinas" shared these views to a great extent. But with the great progress of seismology in recent years, the notion that volcanoes are safety valves against earthquakes has lost considerable ground. This is so true that the eminent French Seismologist, Count de Montessus de Ballore, did not hesitate to say that of all those theories nothing remains but the assignment of a cause common to both phenomena, which consists in the contraction of the earth's nucleus, due to the slow loss of heat, and in the resulting mechanical effects represented by the folds and fractures in the earth's crust—in other words, as viewed by the modern observer, volcanoes and earthquakes have nothing in common except that both occur along the lines of least resistance in the earth's crust, that is, along the geosynclinal lines.

TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

4, 2^h 10^m. **E de Mindanao.** Temblor de tierra de intensidad III. Las notas recibidas de las estaciones de Butúan y Dávao, situadas respectivamente al N y al S del extenso valle del Río Agusan, nos hacen suponer que el origen de este terremoto se hallaba en dicho valle, donde fué mucho más perceptible. En Butúan se distinguieron oscilaciones de SSW–NNE, mientras que en Dávao fueron de NNW–SSE y de alguna mayor intensidad que en Butúan.

5, 1^h 2^m. **Tagoloan** (N de Mindanao). Temblor de tierra susultorio de intensidad III. Crujía el maderamen de los edificios.

14, 2^h. **Butúan** (N de Mindanao). Temblor oscilatorio. Dirección SSW–NNE; intensidad II. Su origen se hallaba también en el valle del Río Agusan, á unos 100 kilómetros al S de Butúan. No tuvo mucha intensidad en ninguna parte.

16, 13^h 15^m 35^s.* **Legaspi** (SE de Luzón). Temblor oscilatorio. Dirección NW–SE; intensidad II; duración 8^s.

16, 23^h 24^m 15^s.* **Centro de Luzón.** Temblor de tierra perceptible en Manila y en todas las provincias vecinas del N y del S, comprendidas entre los paralelos 17° y 13° latitud N y los meridianos 119° y 122° longitud E. Su intensidad no pasó de los grados V y VI Rossi-Forel. La dirección tanto de los primeros choques como de las oscilaciones principales, registrada por los seismógrafos del Observatorio, fué W–E y WNW–ESE. Ésta circunstancia y el haber tenido al parecer mayor intensidad en las costas de Zambales y en las occidentales de Cavite y Mindoro, hace suponer que el origen se hallaba hacia el W de Manila dentro ó muy cerca de la costa. Á 23^h 46^m 35^s hubo una repetición solo perceptible en la parte occidental de Luzón, en la Isla de Mindoro y en las Calamianes.

17, 2^h 14^m 38^s.* **Sur de Luzón.** Temblor de tierra perceptible en las costas S de Luzón, en Mindoro, Calamianes y Cuyo; esto es, en el área comprendida entre los paralelos 14° y 10° latitude N y los meridianos 119° y 122° longitud E. Parece que su intensidad no pasó de grado III Rossi-Forel.

17, 6^h 7^m 3^s.* **Sur de Luzón.** Temblor de tierra de intensidad III, perceptible en la misma área que el precedente. En Manila se distinguieron ondas muy lentas en la dirección WSW–ENE, características de los terremotos que tienen su origen en la región volcánica representada por el Taal.

Después de este temblor durante el día 17 y siguientes fueron muy frecuentes las perturbaciones microséismicas debidas á choques séismicos del mismo origen. Véase "Records of the Seismographs."

21, 16^h 7^m. **Butúan** (N de Mindanao). Temblor de tierra de intensidad II; perceptible también á 50 kilómetros al S de Butúan en el valle del Río Agusan.

24, 21^h 59^m 9^s.* **Camarines** (SE de Luzón). Terremoto de intensidad IX. Á 22^h 11^m 56^s otro terremoto de intensidad V, seguido de multitud de repeticiones durante la noche y todo el día 25. Véase acerca de estos terremotos la nota que sigue más abajo.

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[1] La intensidad de los terremotos se indica conforme á la conocida escala de De Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Arhipiélago que es el del meridiano 120 E de Greenwich.

25, 8^h 15^m. **Butúan** (N de Mindanao). Temblor oscilatorio. Dirección SSE–NNW; intensidad III; duración corta. Consta que se sintió con la misma intensidad en todo el valle del Río Agusan.

26, 23^h 30^m. **San Isidro** (Centro de Luzón). Temblor oscilatorio. Dirección E–W; intensidad III; duración 10^s.

27, 1^h 45^m. **Tacloban** (NE de Leyte). Temblor oscilatorio. Dirección NNE–SSW; intensidad II; duración 3^s.

27, 6^h 16^m. **San Isidro** (Centro de Luzón). Temblor de intensidad II; duración 2^s.

27, 23^h 3^m. **Iloílo** (E de Panay). Temblor oscilatorio de intensidad II; duración 7^s.

29, 5^h 25^m. **Borongan** (E de Sámar). Temblor oscilatorio de intensidad IV; duración 5^s.

30, 6^h 3^m. **Vigan** (NW de Luzón). Temblor de intensidad II; duración 3^s.

REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

TERREMOTO DE CAMARINES.

(24 Noviembre, 1907; 21^h 59^m 3^s.)

Área y efectos del terremoto.—El área meizoséismica comprende tan solo la parte extrema SE de la de los terremotos del 14 de Abril último, en una extensión aproximada de 30 kilómetros de largo por 20 de ancho: toda ella cae al E del lago Bato, de manera que por el norte está limitada por los volcanes Masaraga é Iriga, y por el sur por la cordillera meridional. Los pueblos que sufrieron más son los situados hacia el sur del volcán Iriga y á lo largo del Río Quinali. Dentro de esta área casi todos los edificios de mampostería que habían resistido á los terremotos del mes de Abril se vinieron ahora al suelo. Abriéronse muchas grietas en el terreno y se produjeron en las vertientes de los montes grandes derrumbamientos. Acerca de las condiciones fisiográficas y geológicas de la región de Camarines y Albay nada añadiremos á lo expuesto en el Boletin del mes de Abril, pág. 178, á donde remitimos el lector. Véase allí mismo el mapa fig. 2 que la representa.

Número de terremotos y propagación de las ondas séismicas.—Se experimentó un solo terremoto violento, que por los efectos que produjo debió llegar á fuerza IX de la escala Rossi-Forel. Trece minutos después de éste ocurrió otro de fueza V ó VI, y luego numerosas repeticiones de menor intensidad durante toda la noche y gran parte del día 25. Estos terremotos fueron perceptibles en un área mucho menos extensa que los del mes de Abril; dentro de la Isla de Luzón se percibieron bien hasta el paralelo 15° latitud N, á distancias de 350 kilómetros. En dirección al sur las ondas séismicas perdieron más pronto su intensidad, puesto que ya no fueron perceptibles á la distancia de 200 kilómetros del área meizoséismica. Los seismógrafos del Observatorio, situado á 300 kilómetros hacia el NW, solamente registraron oscilaciones de intensidad IV y una repetición de intensidad II. Fuera del Archipiélago las ondas se propagaron hasta Europa, pero llegaron tan debilitadas que los seismógrafos registraron solamente las segundas ondas preliminares y las ondas principales, pero no las primeras preliminares. La velocidad con que se propagaron fué respectivamente $V_2=7.2$ y $V=3.5$ kilómetros por segundo; valores que concuerdan perfectamente con los hallados para los terremotos de Abril, $V_2=7.21$ y $V=3.80$.

Causa probable del terremoto.—Si se considera tan solo lo muy reducido del área meizoséismica y su proximidad á los volcanes más activos del Archipiélago, la mente se inclina á declararlos de origen volcánico. Insistimos sin embargo en la opinión expuesta en el Boletin del mes de Abril: tanto el terremoto de Noviembre como los de Abril son de origen tectónico, sin que tengan más relación con los vecinos volcanes que la coexistencia en la misma región. Las razones que entonces adujimos militan también en favor del último terremoto, por más que su área meizoséismica sea incomparablemente menor. Lo único que no puede tal vez admitirse es que además del movimiento inicial en las líneas de fractura haya existido resbalamiento alguno en la cordillera meridional.

El área meizoséismica estuvo también en Noviembre circunscrita dentro de los terrenos de aluvión atravesados por el Río Quinali y otros numerosos riachuelos procedentes de la cordillera meridional y de los terrenos volcánicos de la parte norte y que afluyen al mismo Quinali y al lago Bato. La causa por consiguiente debe buscarse más bien en las líneas de fractura que revelan estas depresiones que en los volcanes situados al norte.

La dirección de las sacudidas violentas, según datos recibidos de varias de las poblaciones más castigadas, fué uniformemente de algún punto del cuadrante NE al SW, es decir, casi normal á la dirección de las fallas que parecen existir en esa parte del Archipiélago. Al terremoto de Camarines del día 24 habían precedido el 16 y 17 tres terremotos de grande área y poca intensidad, cuyos epicentros se hallaban respectivamente hacia la costa SW de Luzón y en los mares del sur entre la parte meridional de esta isla y las Islas de Mindoro, Romblón y Marinduque; región que parece constituir la continuación hacia el NW de las líneas de fractura del SE de Luzón. Tanto estos terremotos como los de Camarines pueden racionalmente atribuirse á movimientos tectónicos en la línea de menor resistencia que separa la Isla de Luzón de las Visayas, representada por profundos canales y costas abruptas y también por la faja casi no interrumpida de volcanes que corre desde el Taal hasta el Mayón.

Erupciones del Volcán Mayón y terremotos.—El Señor Presidente Municipal de Ligao, uno de los pueblos más castigados tanto por los terremotos del mes de Abril como por el de Noviembre, dice al contestar á una nota que le enviamos:

> Según mi humilde opinión y de algunos vecinos de este pueblo, estos temblores deben atribuirse á no estar el Volcán Mayón en erupción por tener al parecer obstruído su crater.

Siendo esta creencia muy general en las provincias de Camarines y Albay y la que se ha propalado en esta y en otras muchas ocasiones, nos ha parecido oportuno revisar el catálogo de erupciones del Mayón y el de temblores filipinos que desde el año 1890 venimos completando, con el fin de investigar si tal creencia popular tiene algún fundamento en los hechos.

Del examen del catálogo de erupciones del Volcán Mayón [1] resulta que ninguna de las que se conocen ha sido anunciada por terremotos parecidos á los experimentados este año 1907. Algunos escritores dicen que la de Julio de 1766 fué precedida y acompañada de terremotos; pero como nada dice de ellos el Sr. Alcalde de Albay en la única relación auténtica que como testigo ocular escribe de ella, no creo pueda dárseles mucho crédito. Sucedería probablemente en dicha erupción lo que en la más importante de todas, la de 1814. En ésta comenzaron á sentirse movimientos séismicos la víspera del suceso, los cuales aumentaron en intensidad y frecuencia hasta las ocho de la mañana siguiente en que ocurrió la explosión principal. Un mes antes de la grande erupción de 1897, el 13 de Mayo, se sintió en las Provincias de Albay, Camarines y Sorsogón un terremoto de intensidad VI, seguido de numerosas repeticiones, cuyo centro parece indudable que estaba al sur del Volcán Mayón cerca de la Isla de Masbate. Sin embargo el Padre Coronas en la memoria citada admite que el tal terremoto fué señal precursora de la erupción, que tuvo lugar un mes después, ó por lo menos que tenía íntima relación con ella. Este caso por consiguiente sería una excepción de la afirmación que más arriba hicimos, deducida de los hechos. Mas las mismas razones aducidas por el P. Coronas para probar su opinión convencen de que esta vez ocurrió lo mismo que en 1814, esto es, que los terremotos precedieron inmeditamente á la erupción ó señalaron ya su principio. En efecto, por los testimonios que allí se aducen se ve que la erupción, tan ruidosa y terrible los días 25 y 26 de Junio, había realmente principiado ya el 13 de Mayo con eyección de una columna extraordinaria de humo y derrame de candente lava acompañados á intervalos de algunas detonaciones. Á mi modo de ver tenemos aquí una coincidencia de erupción y un terremoto, cuyo centro parece indudable se hallaba hacia el profundo estrecho de Masbate á más de 60 kilómetros al sur del Volcán Mayón: ambos fenómenos fueron sin duda provocados por otra causa más general y profunda.

[1] "La Erupción del Volcán Mayón en los días 25 y 26 de Junio de 1897."—P. José Coronas, S. J.; Manila, 1898.

Del estudio de los catálogos de terremotos, los cuales comienzan á ser bastante completos desde 1862, se deducen las siguientes conclusiones: La región de Camarines y Albay tiene una seismicidad muy alta, y sin embargo los terremotos violentos como los últimos de 1907 han sido en los dos últimos siglos más raros allí que en otras regiones de menor seismicidad. En dicha región son frecuentes los períodos séismicos de dos, tres y más días de temblores de poca intensidad: dede el año 1860 se han registrado más de cuarenta períodos de esta clase. Confrontando las fechas de tales períodos con las de las 17 ó más erupciones ocurridas en el mismo período de años se encuentra la mayor discordancia posible, de manera que sería irracional el deducir relación alguna entre unos y otros fenómenos. Además si la creencia popular más arriba mencionada tuviera algún fundamento, después de cada erupción debería seguirse como consecuencia natural un período de calma seísmica. Sin embargo los catálogos nos demuestran frecuentemente lo contrario. Por ejemplo: á la erupción de Agosto de 1872 precedieron períodos seísmicos en Febrero y Julio y después los hubo semejantes en Septiembre y Noviembre. Á la que duró desde el 22 de Febrero al 9 de Marzo de 1887 sucedió un período seísmico el 24 y 25 del mismo mes, y varios temblores el 1, 22 y 27 de Abril y el 1 de Octubre. Á las de Septiembre de 1890 y de Octubre de 1891, siguió un período seísmico en Octubre y Noviembre respectivamente de los mismos años. Después de la grande erupción de 1897, lejos de suceder un período de calma, se sintieron ya en Julio y Septiembre varios temblores de poca intensidad, y luego en Octubre hubo un período muy importante con algunos terremotos violentos, cuyo origen se hallaba cerca del norte de la Isla de Sámar, á menos de 200 kilómetros al ESE del volcán Mayón. Podríamos multiplicar los ejemplos; pero creemos que los aducidos bastan para convencerse de la poca ó ninguna relación de causa y efecto que existe entre las erupciones volcánicas y los terremotos que tienen lugar en esa parte de Luzón.

La creencia popular que tratamos de desvirtuar está muy conforme con las antiguas ideas acerca de la íntima relación entre terremotos y volcanes. Nosotros mismos al escribir "La Seismología en Filipinas" participábamos bastante de ellas. En nuestros días con los grandes progresos que ha hecho la Seismología, la opinión de que los volcanes actúan como de válvula de seguridad contra los terremotos, ha perdido mucho terreno. Tanto es así, que el eminente seismólogo francés, Compte de Montessus de Ballore, no duda en asegurar que de tales teorías ya no queda más que la unidad de causa de ambos fenómenos, consistente en la contracción del núcleo terrestre, á causa de la pérdida lenta de su calor, y en las acciones mecánicas que de esto resultan, representadas en los pliegues y fracturas: lo cual significa, en otros términos, que los volcanes y los terremotos ya no tienen en las observaciones modernas otro enlace recíproco que su localización común á lo largo de las líneas de menor resistencia de la corteza terrestre, ó sea de los geosinclinales.

CROP BULLETIN FOR NOVEMBER, 1907.

By Rev. George M. Zwack, S. J.,
Secretary of the Weather Bureau.

GENERAL NOTES.

The yield of the agricultural products which have been harvested during the month of November may be characterized as "good." The complaints reported are by far fewer than for the preceding month. The rice crop has been fair in general, and abundant in a few places. But on the other hand it has been more or less a failure throughout nearly the whole Island of Panay, on the western coast of Luzon above parallel 15°, and in Pangasinan Province. Thus in Iloilo the loss reached locally as high as 90 per cent, in La Union 66 per cent, in Ilocos Sur 50 per cent (90 in the neighborhood of Vigan), and in Pangasinan likewise 50 per cent of an average yield. The causes were generally drought and insects, to which on Panay were added the ravages of rodents. No wonder that the price of this cereal was relatively high; only Batangas reports a falling of ₱0.60 per cavan, in consequence of the good crop harvested there. Hemp and cocoanuts have been plentiful, but, unfortunately, the prices remained too low to encourage activity, and thus the planters failed to a great extent to derive the full benefit from the abundant crop. Tubers, sugar cane, corn, and vegetables gave good results nearly everywhere, Aparri being the only station which reports that "even corn" is becoming scarce.

With few exceptions all the stations reported that the growing crops were in a flourishing condition at the end of the month; even Cebu was able to state that corn and sugar cane were doing well, Iloilo and Sorsogon that the late rice had revived with the advent of rain. The exceptions mentioned are, aside from mere local complaints, the center and western coast of northern Luzon above 15° latitude, where the prospects are dark enough, owing to the scarcity of water and, in most cases, the destruction wrought by insects. Zambales expects about one-half of an ordinary rice crop, Nueva Ecija one-third, while Tarlac, La Union, the Ilocos Provinces, and northern Cagayan report severe damages to their crops, especially to the tobacco. Southern Cagayan states that tobacco, rice, and corn are normal, but in the neighboring Province of La Isabela whole tobacco fields have been ruined by an insect called *arabat*.

Except in the regions just mentioned as suffering from drought, the rainfall, though not abundant, has been generally sufficient for the crops, owing to its distribution over many days. Slight damages have been caused by it in Jolo (rice), Occidental Negros and southern Leyte (hemp and tobacco). On November 19 Ilaya (above Dapitan) had a flood, but the damage was not great.

As to animals injurious to the crops, rodents and birds completely destroyed the rice crop in the district of Lamitan, Basilan Island. The Island of Panay continued to be infested by locusts: the damage which they, together with drought and rodents, did in Iloilo Province has been mentioned before. Occidental Negros and northern Samar suffered likewise, though only slightly, from their voracity. Various kinds of insects and worms, which attacked the rice or tobacco, have been reported from Leyte and northern Luzon. The hopes of a good crop of cacao entertained in the district of Butuan have, at least locally, been blasted by an insect called *bugtoc*.

By the end of the month epizoötia had disappeared from the Provinces of Batangas and La Laguna. In Tayabas no deaths occurred among the stock, and only a few among the smaller animals. A few cases have been reported from western Leyte, northern Cebu, Iloilo (less than 5 per cent of work animals), Sorsogon (hogs and poultry), Tarlac (carabaos and hogs), and Ilocos Sur (hogs only). At Santo Niño, Cagayan, 19 head of cattle succumbed to the disease. Conditions were worst in the northern part of Zambales and in Pangasinan. In the former province sickness carried off: Carabaos, 30 per cent; horses, 40 per cent; hogs and poultry, 15 per cent. Anthrax appeared at Alaminos; extent of loss not known. In the Province of Pangasinan epizoötia and surra killed 52 horses at Mangaldan, 20 at Asingan, 12 at Pozorrubio, and a few in several other towns.

SPECIAL NOTES.

DISTRICT I.

Borongan.—During this month the majority of the people have been occupied in preparing the rice fields, a task which was greatly facilitated by the abundant rainfall. For this reason the output of copra has decreased, as there were not enough hands available for the work.

Tacloban.—The present state of the crops is quite satisfactory and is improving further, owing to the copious and well-distributed rains. The products which have been harvested are hemp, cocoanuts, gabe, palauan, tomatoes, sincamas, and eggplant, all of which gave fair returns. The price of rice is going up, while those of hemp and copra have fallen. Nothing has been heard of animal sicknesses.

Ormoc.—The rice harvest is still in progress. The yield is small, due to the ravages of worms, rats, and *cabyawan* (a species of bats), which have been mentioned in the report for October. Sugar cane, hemp, and some corn have likewise been harvested. The price of hemp continues to be low. The rainfall has been normal. A few cases of epizoötia have occurred among the stock.

Tuburan.—Corn, cocoanuts, hemp, and some sugar cane have been harvested. The price of corn is ₱3 per cavan, that of cocoanuts ₱2 per hundred. The condition of the crops is fair. The transplanting of tobacco is going on at present; but the greater part of the fields will have to remain unplanted, since there is a lack of seedlings, due to the fact that a large proportion of those which had been raised during the preceding month has been killed by drought. There is sickness among the animals, the losses per month being 2 or 3 head of cattle and 4 to 8 hogs.

Cebu.—The corn fields show a healthy growth, and there is hope that the crop will be, if not precisely abundant, at least fair. Similar prospects are held out by the sugar cane, whose state is quite satisfactory. The neighboring villages supply the market with sweet potatoes, uve, peanuts, and fruit such as chico, nanca, etc.

Maasin.—The farming population is, as a rule, occupied in thrashing rice. Some have finished this task, while others are still reaping the grain on the highland fields. At Malitbog, Bato, Matalom, and Hilongos the crop has been abundant, surpassing those of the preceding years. Copra has been plentiful during this month. Sweet potatoes, gabe, and mongo are being harvested at present. The rain has damaged several crops, especially hemp and tobacco; the damage was afterwards increased by the advent of harmful insects.

Surigao.—Hemp, cocoanuts, sugar cane, and tubers have been harvested, giving fair results. The rainfall has been abundant and highly beneficial to the rice fields. There were neither injurious insects nor animal diseases.

Tagbilaran.—No cereals have been harvested in this province during the month, except a very small quantity of rice in the municipalities of Balilihan, Corella, Vilar, and probably one or two others. Corn, imported from the Island of Cebu, costs ₱2.90. The towns mentioned in last month's report continue to ship to Cebu large amounts of copra. Maguey is being stripped at a few points, but chiefly for local use, such as the making of ropes of various thicknesses and some fabrics.

Butuan.—The present aspect of the rice fields gives hopes of a good crop during the next month. During November a great quantity of *lumbia* has been prepared. This is a product very much like sago as to origin, qualities, and use, and is highly priced as a substitute for rice whenever the latter is scarce, as is the case with sweet potatoes in other parts of the Archipelago. At Cabarbaran the yield of cacao has been bad, due to an insect called *bugtoc* which attacked the cacao plants in said municipality.

Cotabato.—The harvest of early rice is finished, while late rice is just beginning to produce ears. The trade in gums and gutta-percha continues the same as in the preceding month, without change in the prices.

Davao.—There is great activity in planting and stripping hemp, especially in Davao and the surrounding country, where hemp is by far the most important product. During November the following articles have been shipped from this port: Hemp, 3,562 piculs; gum mastic, 796 piculs; biao, 122.5 piculs; wax, 10.15 quintals (@ 46 kilos); copra, 153.05 piculs, and hides, 5.8 piculs.

DISTRICT II.

Capiz.—The rice harvest is still continuing, and although the harvesters have to do the work without the aid of carabaos, they are quite satisfied on account of the good crop which their fields have produced. Mr. L. A. Medina, of New Washington, reports that in said place ₱17 to ₱18.50 per picul are being paid for hemp and ₱6 to ₱7.50 for copra. In other townships of the province—for instance, Balete, Banga, and Jimeno—the rice crop has been less good. In Capiz there is a very abundant supply of uve, sweet potatoes, gabe, etc.

San Jose Buenavista.—During the month began the crushing of the small amount of sugar cane harvested and the cutting of early rice. The crop of the latter is likewise rather small, for reasons stated in the report for October. The reapers are looking for work, coming hither from as far as the Province of Iloilo, which is invariably a sign that the crop is bad. In reality, lands which in normal years require four days' work, are being harvested in one day. At the same time the owners do not cede to the workmen one-tenth or one-ninth of the product as in other years, but only one-twelfth. Rice costs 23 to 25 centavos per ganta (3 liters), and there are days on which it is impossible to obtain it in the market. If this occurs at the time of harvest, what will happen later? The locusts are still hovering about in the mountains.

Iloilo.—According to information kindly furnished by the municipal presidents of Janiuay, Cabatuan, Santa Barbara, and Barotac Nuevo, agriculture continues to be in the same critical state as during the preceding months, owing to the prevalence of the same pests, viz. mice and locusts. As compared with the amount harvested in other years, Janiuay has lost about 90 per cent of its crop of early rice. About the only solace of the farmers consists in the rains, which have been somewhat more copious during November, especially during the second half, and have greatly contributed toward a vigorous development of late rice and garden products. It is said that at Pototan, a large town and principal center of agricultural production, only about one-third of the available ground could be cultivated, owing to the great scarcity of rain prevailing this year. People throughout the province are now generally occupied with the crushing of sugar cane and the preparation of the tobacco fields. There were cases of epizoötia among the work animals, but the loss did not exceed 5 per cent.

Bacolod.—The scarcity of rain, which lasted until well into the first half of November, has destroyed the bright prospects of a good crop next December, which had been held out by the splendid condition of late rice. On the other hand, the dry weather greatly facilitated the crushing of sugar cane, which gave good results. According to information received from various points, the raising of sugar cane is decreasing from year to year, owing to the scarcity of work animals. On the level ground along the shore cocoanut trees are being raised on a large scale, while the slopes of the mountains are being covered more and more by hemp plantations, whose yield is generally good. Mr. J. P. Vinson, of Manapla, reports that in his municipality the crops of sugar, rice, corn, and hemp are fair, in spite of the fact that the rains had been somewhat excessive and that the locusts had invaded the fields and done considerable harm to rice, corn, and sugar cane.

Dapitan.—The majority of the farmers have been occupied with the thrashing of rice, while the rest were finishing the cutting of theirs. The hemp strippers are greatly discouraged, because on account of the bad prices there is no movement in the hemp trade. Large quantities of the fiber are at present stored in this province, in the hope of a rise in prices. On the 19th of this month Ilaya had a flood, which, however, thanks be to God, did not cause much damage to the fields.

Zamboanga.—The cutting of mountain rice has begun. The current prices paid here are: Rice, ₱7.20 to ₱8.15 per picul; palay, ₱3.25 per cavan; corn, ₱3 per cavan; coffee, ₱42 per picul; cocoanuts, ₱3 per hundred; copra, ₱7.20; hemp, first class, ₱21, second class, ₱18, per picul; gum mastic, ₱22, ₱14, and ₱8.50 per picul, according to quality.

Isabela, Basilan.—The harvest of mountain rice which has been finished during November, resulted in a good crop at Isabela, although rodents and rice birds (maya) had attacked the grain; but at San Pedro, Lamitan, all the rice sown on high ground has been destroyed completely by these pests. During this month about 30 piculs of hemp and 25 of copra have been produced.

Jolo.—Some heavy downpours of rain have harmed the rice just a little, but peanuts, squash, and tomatoes to quite an extent. The cutting of the rice is finished and people are only awaiting favorable weather to begin with the thrashing.

DISTRICT III.

Legaspi.—Hemp, sweet potatoes, gabe, bananas, and cocoanuts yielded fair crops in nearly all parts of this province. The products now growing in the fields are generally in an excellent state, due to the rains which fell during the month. Especially at Ligao, Oas, and Polangui rice promises a good crop.

Gubat.—It might be said that during November it never ceased raining. This state of affairs greatly helped the growth of hemp and saved the newly planted rice, which revived and now appears to promise a better crop than those of the preceding years. There is a great abundance of hemp in the market, but the price is very low and still continues to fall, while that of rice goes up. A few cases of sickness have occurred among the hogs and poultry.

Calbayog.—The amount of hemp produced in this region during November reached only 3,728 piculs. The falling off is apparently due to the low price which is being offered for the fiber at present, which during this month oscillated between ₱17 and ₱18, while during the preceding month it had been ₱21 to ₱22 per picul. The rice harvest continues throughout this municipality and gives fair returns. Owing to the lack of work animals and to the high wages demanded by the laborers quite extensive tracts of rice land are lying fallow. As to wages, even the lowest day laborer will not accept less than ₱1 per day. On the 4th an immense swarm of locusts passed through this place, its passage lasting more than an hour.

DISTRICT IV.

Santo Domingo, Batanes Islands.—Toward the end of the month garlic and onions have been planted, which are growing well. At present people are clearing their fields and preparing them for the coming planting of uve and corn. The corn planted during October between the rows of sweet potatoes, as is customary, has suffered somewhat from the northeast and north-northeast winds.

Aparri.—Owing to the scarcity of rain, the greater part of the rice has withered in Aparri as well as in Camalaniugan, Lalloc, and some other places; hence a bad crop is feared. A scarcity of corn is likewise becoming noticeable, and the price is rising.

Tuguegarao.—The development of tobacco, corn, and rice is normal, their state being rather fair. Sitao, peanuts, and garden products are plentiful. According to information received from the ranches of Bangag and San Isidro, municipality of Santa Maria, in the Province of La Isabela, the tobacco has there been attacked by worms called *arabat*. A few days after having been transplanted, the greater part of the young plants on several fields was found dead, the stems having been eaten into by a countless number of said worms. As these carry on their destructive work during the night, and are hiding in the ground during daytime, it is difficult to catch them. Rinderpest is disappearing from this part of Cagayan, but at Santo Niño 19 cases occurred among the cattle. Mad dogs are very numerous; in Tuguegarao alone some 13 or 15 of these animals have been attacked by hydrophobia within one month.

Laoag.—During this month began the stripping of maguey. In the beginning the product brought ₱9 per picul, but at present only ₱8 are being paid, and the price shows a tendency to fall further. Maguey leaves are worth ₱1 to ₱1.20 per thousand, according to size. Cotton and mongo have been planted during the month.

Vigan.—During the month the rice harvest took place; yield very poor. Some farmers say that, owing to the great scarcity of water during the preceding months, they have harvested only about 10 per cent of an average crop. Growing in the fields are corn and cotton, which have likewise suffered to some extent from the drought, at least in some districts. No cases of rinderpest have occurred.

Candon.—The crop of early rice is a failure, due to the drought during the preceding months. The presidents of Santa Lucia and Santa Cruz report that in their municipalities only one-half of an ordinary crop has been obtained. The price of rice is ₱6.25 per cavan, with an upward tendency; that of cocoanuts, ₱3.50 per hundred. The drought has prevented the preparation of the fields for the coming planting of sugar cane and corn. Late rice is suffering severely from the lack of water. A few cases of sickness occurred among the hogs.

San Fernando, Union.—Owing to the scarcity of rain, the rice crop is bad throughout this region. At San Fernando only the low-lying fields gave some returns. At Namapacang the yield amounts to approximately one-third of last year's crop. The tobacco should now be transplanted, but the drought renders the work impossible, and the greater part of the seedlings is dying in the seed beds. Similar conditions prevail at Bagnotan and in other parts of the province. As to Balaoan, the whole blame for the miserable rice crop is being thrown upon the municipal authorities, who, it is claimed, did absolutely nothing toward putting the existing irrigation ditch into working shape. It is maintained that this ditch, if kept in good condition, would render the greater part of the rice fields independent of the rains. Surra has disappeared; but another calamity has appeared, viz. the insect called *catao*, which damages the rice. The cultivation of maguey is spreading considerably throughout the province.

Baguio.—The preparation of the seed beds for irrigation rice has commenced. The yield of potatoes, sweet potatoes, and vegetables has been fair.

Bolinao.—According to reports received from Bani, Zaragoza, Alaminos, and Anda, nearly one-half of the rice planted has withered. The same holds true with regard to Bolinao. Cocoanuts and maguey are being harvested. The price of cocoanuts is ₱2.50 per hundred; that of rice, best quality, ₱4.30, second quality, ₱3.60 to ₱3.85 per cavan. Epizoötia continues in the municipalities mentioned, the losses sustained up to the present being estimated: Carabaos, 30 per cent; horses, 40 per cent; hogs, 15 per cent. Anthrax is spreading in the municipality of Alaminos.

Dagupan.—In the municipality of Dagupan the rice crop will not be more than fair. The prices prevailing in the local market are: Rice, ₱5 per cavan; sugar, ₱5 per pilon; cocoanuts, ₱2.50 per hundred.

Manaoag, Balungao, Santa Barbara, San Nicolas, San Fabian, and Urdaneta are complaining that by reason of the lack of rain, nearly one-half of the rice and corn crops has been lost. Urbiztondo suffered also from the ravages of the insect called *purpursac* and of a kind of bats. San Manuel, Agno, Pozorrubio, Asingan, and Mangaldan had the additional misfortune of sustaining heavy losses through rinderpest and glanders, which carried off 52 horses at Mangaldan, 20 at Asingan, 12 at Pozorrubio, and a few in each of the other places mentioned. San Carlos and Binmaley report an exceedingly small crop of rice, while the yield of garden products has been fair.

Tarlac.—The cutting of the variety of rice whose local name is *catlong-bolan* has begun. Some fields yielded a good crop, the rest one of average proportions. Camiling reports a fair crop of rice, but it is feared that the municipalities of Moncada and Paniqui will be less fortunate, owing to the prolonged drought which reigned in these districts. Epizoötia is extinct at Camiling, but continues at the other infected points, the victims being carabaos and hogs.

San Isidro.—In consequence of the scarcity of water during the month, the rice crop will not amount to one-third of the one harvested last year. Hence the price of this cereal is even now ₱6.25 per cavan, and is bound to rise. People are busy preparing the tobacco fields for planting.

Olongapo.—The state of the crops is middling. Rice is suffering from drought and is, moreover, being attacked by worms. To the north of Olongapo sickness is prevalent among the stock.

Balanga.—Although the rain which fell during the month has not been entirely sufficient, the crops in the fields are in a fairly good condition. The rice has already fully developed spikes. Strange to say, there are people who fear that damage may yet result from the earthquake which took place during the night of November 16–17.

Silang.—The rice crop is only fair, but nevertheless better than that of last year. Some ripe oranges are now being gathered, but this fruit is not plentiful. The rainfall has not been very large, but highly beneficial to hemp, corn, and tobacco.

San Antonio, Laguna.—The harvest of mountain rice is finished, that of irrigation rice will begin during the first days of December and last until January. Very little hemp has been stripped, since the price paid for same is only ₱9 per picul. Since November 15 there is no longer any epizoötia in the province.

Atimonan.—Thanks to the rains which fell during the month, it has been possible to harvest a relatively satisfactory crop, both of mountain and irrigation rice. Of the latter some has, however, been lost, as is always the case when the irrigation water can not be changed sufficiently often and therefore becomes stagnant on the fields. The rains facilitated likewise the preparation of the rice fields for a second planting. The price of copra is ₱5 to ₱5.50. The hemp industry is still almost at a standstill, owing to the excessively low price of ₱9 per picul of second quality fiber. No deaths occurred among the draft animals, but there were a few among the other domestic animals. The monsoon which blew during the last third of the month has destroyed all the fish weirs in the bay.

Batangas.—Thanks to the good crop harvested in this province, the price of rice has gone down from ₱6.60 to ₱6 per cavan, with a tendency to fall further. It is believed that during the whole year only small quantities of this cereal will have to be imported from Saigon and Pangasinan. Small oranges, sincamas, and peanuts have likewise been harvested. Nothing untoward happened to the crops at present growing. Rinderpest has disappeared completely, nor is there any other sickness among the animals.

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ESTADO GENERAL DE LAS COSECHAS.

El rendimiento de los productos agrícolas cosechados durante el mes de Noviembre, puede calificarse de bueno. Las quejas recibidas son mucho menos que las del mes anterior. La cosecha de arroz ha sido regular en general, y abundante en algunos pocos lugares; pero ha fracasado más ó menos casi en toda la Isla de Panay, en la costa occidental de Luzón, arriba del paralelo 15°, y en la Provincia de Pangasinán. Así, por ejemplo, en Iloílo la pérdida local llegó á 90 por ciento, en la Unión á 66 por ciento, en Ilocos Sur á 50 por ciento (90 por ciento en los alrededores de Vigan). También en Pangasinán sufrieron una pérdida de 50 por ciento. Las causas de estas pérdidas fueron generalment la sequía y los insectos, á los cuales se han de añadir en Panay los destrozos de los roedores. No es, pues, extraño que el precio de este cereal haya sido relativamente alto; solo Batangas da cuenta de una rebaja de ₱0.60 por caván, como consecuencia de la buena cosecha recogida en aquella provincia. El abacá y los cocos han sido abundantes, pero desgraciadamente los precios han permanecido demasiado bajos para infundir actividad, y de ahí que no sacasen ni de mucho el partido que hubieran podido sacar de tan abundante cosecha. Los tubérculos, la caña-dulce, el maíz y las legumbres dieron buenos resultados casi en todas partes, siendo Aparri la única estación que da cuenta de que aún el maíz es escaso.

Con pocas excepciones, todas las etaciones aseguran que las plantas crecientes estaban en condición floreciente al fin del mes; Cebú mismo pudo afirmar que el maíz y la caña-dulce estaban bien; Iloilo y Sorsogón que el palay tardío ha revivido con la caída de la lluvia. Las excepciones mencionadas son, fuera de las quejas meramente locales, el centro y la costa occidental de Luzón arriba del paralelo 15° latitude N, donde la perspectiva es bastante oscura, debido á la escasez de agua, y en la mayoría de los casos á los destrozos de los insectos. Zambales espera recoger la mitad de una cosecha ordinaria de arroz; Nueva Écija una tercera parte, mientras Tárlac, La Unión, las provincias ilocanas y el N de Cagayán dan cuenta de grandes daños en su cosechas especialmente en el tabaco. Del sur de Cagayán se dice que el tabaco, el palay y el maíz están en su estado normal, pero en las provincias vecinas á la Isabela todo los campos de tabaco han sido arruinados por un insecto llamado *arabat*.

Excepto en las regiones que según queda dicho han sufrido de la sequía, la lluvia aunque no abundante, ha sido generalmente suficiente para las plantas, debido á su distribución en muchos días. Ha causado ligeros daños en Joló (arroz), en Negros Occidental y en el S de Leyte (abacá y tabaco). El 19 de Noviembre hubo una inundación en Ilaya (arriba de Dapitan), pero el daño no fué grande.

Por lo que respecta á los animales dañinos á las plantas, los roedores y los pájaros han destruído por completo la cosecha de palay en el distrito de Lamitan, Isla de Basilan. La Isla de Panay ha seguido siendo infestada por las langostas: el daño que éstas juntamente con la sequía y los roedores han causado en la Provincia de Iloílo, ya queda mencionado arriba. Negros Occidental y el N de Sámar han sufrido también algo de su voracidad. De varias clases de insectos y gusanos, que atacaron el palay ó el tabaco se ha dado cuenta desde Leyte y desde el N de Luzón. Un insecto llamado "bugtoc" ha defraudado, al menos localmente, las esperanzas de una buena cosecha de cacao en el distrito de Butúan.

Hacia el fin del mes la epizotia ha desaparecido de las Provincias de Batangas y La Laguna. En Tayabas no ha ocurrido ninguna muerte en el ganado mayor y solo unos cuantos en el menor. Se han registrado algunos casos en la región occidental de Leyte, en el N de Cebú, en Iloílo (menos de

5 por ciento de los animales de labor), en Sorsogón (cerdos y aves de corral), en Tárlac (carabaos y cerdos) y en Ilocos Sur (cerdos solamente). En Sto. Niño, Cagayán, 19 cabezas de ganado sucumbieron víctimas de la enfermedad. Las condiciones han sido peores en la parte N de Zambales y en Pangasinán. En la primera provincia murieron de enfermedad el 30 por ciento de carabaos, el 40 por ciento de caballos y el 15 por ciento de cerdos y aves de corral. El ántrax ha aparecido en Alaminos, ignorándose el número de pérdidas. En la Provincia de Pangasinán han sucumbido víctimas de la epizotia y la zurra 52 caballos en Mangaldang, 20 en Asingan, 12 en Pozorrubio y unos cuantos en otros varios pueblos.

NOTICIAS PARTICULARES.

DISTRITO I.

Borongan.—La generalidad de la gente se ha ocupado este mes en preparar los terrenos para plantíos de palay, favoreciendo mucho á este clase de trabajo la abundancia de lluvia. La cosecha del cóprax ha disminuido algún tanto en este mes, por falta de brazos que lo beneficien.

Tacloban.—El estado actual de las plantaciones es satisfactorio y va mejorando, debido á la abundancia y oportuna distribución de las lluvias. Los productos que se han cosechado son abacá, cocos, gabe, palauan, tomates, síncamas, y berengenas, dando resultados regulares. El precio del arroz sigue subido, mientras los del abacá y cóprax han bajado. No se oye nada de enfermedades entre el ganado.

Ormoc.—Continúa la recolección del palay, siendo los rendimientos escasos por causa de los gusanos, ratones, y los cabaywan (una especie de murciélagos) ya mencionados en el mes de Octubre. También se han cosechado caña dulce, abacá, y algo de maíz. El precio del abacá continúa bajo. Las lluvias han sido regulares. Hubo algunos casos de epizotia en el ganado.

Tuburan.—Se han cosechado maíz, cocos, abacá, y un poco de caña dulce y palay. El precio del maíz es de ₱3 el caván, el del coco ₱2 el ciento. El estado de las cosechas es regular. En la actualidad se verifica el transplante del tabaco, pero la mayor parte de los campos quedará sin siembra, por falta de semillas, pues muchas de las preparadas en los meses anteriores han perecido por falta de agua. Hay enfermedades de animales, muriendo dos ó tres cabezas al mes entre los animales de labor y de 4 á 8 entre los cerdos.

Cebú.—Los sembrados de maíz se encuentran bastante desarrollados y se espera en su día una cosecha, si no abundante, á lo menos regular. Las mismas esperanzas da la caña dulce, cuyo estado es satisfactorio. De los barrios y pueblos cercanos se traen al mercado de este pueblo camote, uve, y maní, con algunas frutas como chico, nanca, y plátanos.

Maasin.—La gente agricultora está generalmente ocupada en la trilla del palay; algunos ya han terminado este trabajo, mientras otros todavía están segando en los terrenos altos. En Malitbog, Bató, Matalom, é Hilongos la cosecha de este cereal ha sido abundante, superior á la de los años anteriores. El cóprax ha sido muy abundante este mes. Actualmente se cosechan camote, gabe, y mongo. Las lluvias han perjudicado varias clases de plantas, especialmente el abacá y el tabaco. Después de las lluvias vinieron insectos dañinos aumentando los destrozos en las plantaciones.

Surigao.—Se han cosechado abacá, cocos, caña dulce, y tubérculos con resultados regulares. Las lluvias han sido abundantes y favorables á los terrenos palayeros. No hubo insectos dañinos á las plantas ni enfermedades entre los animales.

Tagbilaran.—En este mes no ha habido en esta provincia cosecha de granos, fuera de un poco de palay en los pueblos de Balilihan, Corella, Vilar, y tal vez en algún otro. El maíz procedente de la Isla de Cebú se cotizaba á ₱2.90. Continúa la exportación de cóprax á Cebú desde los pueblos citados el mes de Octubre. El maguey está beneficiándose en algunos puntos para usos locales, como para mecate de diferentes tamaños y algún que otro tejido.

Butúan.—El estado del palay da esperanza de reogerse una buena cosecha en el próximo mes de Diciembre. Durante el mes de Noviembre se ha cosechado buena cantidad de lumbia. Este producto, muy semejante al sagú, es muy apreciado cuando hay escasez de arroz al cual sustituye á semejanza del camote en otras regiones. En Cabarbaran el cacao ha dado malos resultados, debido al insecto llamado *bugtoc*, que allí atacó á las plantas de cacao.

Cotabato.—La cosecha del palay temprano está terminada; el tardío está echando espigas. El comercio de goma y guttapercha sigue lo mismo que en los meses anteriores sin cambio en los precios.

Dávao.—Hay mucha actividad en el cultivo y beneficio del abacá, sobre todo en este pueblo y sus alrededores donde puede decirse que es este el producto principal. Durante el mes de Noviembre se han exportado de este puerto los siguientes artículos: abacá 3,562 picos, almáciga 796 picos, biao 122.5 picos, cera 10.15 quintales, cóprax 153.05 picos, y cuero 5.8 picos.

DISTRITO II.

Cápiz.—Todavía continúa la siega del palay y, á pesar de que los cosecheros debieron hacer todo el trabajo por falta de animales de labor, sin embargo se tienen por bien pagados con la abundante cosecha que han obtenido. El Señor D. L. A. Medina de New Washington informa que allí el abacá se paga de ₱17 á ₱18.50 el pico y el cóprax de ₱6 á ₱7.50. En los demás pueblos como Balete, Bañga, y Jimeno, no es tan buena la cosecha. En la cabecera se ven grandes cantidades de uve, camote, gabe, etc.

San José de Buenavista.—En este mes se ha empezado la molienda de la poca caña dulce que hay, y la recolección del palay temprano cuyos rendimientos son bastante pequeños por las razones expuestas el mes de Octubre. Los segadores están buscando trabajo, llegando aquí hasta de la Provincia de Iloílo, lo cual es siempre señal de que las cosechas son malas. En efecto, terrenos que en tiempos normales han requerido cuatro días de trabajo, se cosechan hoy en un solo día. Además los propietarios no pagan á los jornaleros la séptima ó novena parte, como en otros años, sino tan solo la duodécima. El arroz cuesta ahora de 23 á 25 centavos la ganta y hay días en que no se encuentra en el mercado. Si esto ocurre durante la cosecha, qué será después? Las langostas están todavía en los montes.

Iloílo.—Según los informes suministrados por los atentos presidentes de Janiuay, Cabatúan, Santa Bárbara, y Barotac Nuevo, la agricultura continúa en la misma crisis que el mes próximo pasado, por causa de las mismas pestes de ratones y langostas. En comparación con las cantidades recogidas en los años pasados se ha perdido un 90 por ciento de la cosecha del palay temprano en Janiuay. El único consuelo de los agricultores son las lluvias que han caído con más abundancia, especialmente durante la segunda quincena de Noviembre, las cuales favorecieron mucho el desarolló del palay tardío y de las hortalizas. Se cuenta que en Pototan, pueblo grande y principal en producción agrícola, no se ha podido sembrar más que una tercera parte de lo ordinario, por la escasez de las lluvias de este año. La molienda de caña dulce y la preparación de los terrenos tabacaleros es general en esta provincia. Ha habido casos de epizotia entre los animales de labor, pero las pérdidas no han pasado de un 5 por ciento.

Bacolod.—La escasez de lluvias, que duró hasta bien entrada la primera quincena de este mes, ha echado á perder las buenas esperanzas que había dado el buen estado del palay tardío, el cual debe cosecharse durante el mes de Diciembre. En cambio el tiempo seco ha favorecido mucho la molienda de la caña dulce, la cual ofrece un rendimiento regular. Según varios informes recibidos, disminuye cada año en está provincia el cultivo de la caña dulce, debido á la escasez de animales de labor. Por la parte del litoral se beneficia en grande escala el cóprax, y en las laderas de las montañas se extienden más y más las plantaciones de abacá, cuya cosecha es por lo general buena. Según refiere el Señor D. J. P. Vinson, del pueblo de Manapla, la cosecha del azúcar, palay, maíz, y abacá es regular en este pueblo, á pesar de las lluvias algo escasas y de las langostas que invadieron los campos y han causado daños notables al palay, maíz, y caña dulce.

Dapitan.—Los agricultores se han ocupado en su mayor parte en la trilla del palay, mientras algunos pocos estaban aún segando. Los trabajadores de los abacales están muy desanimados, pues no ha habido movimiento en el beneficio del abacá por causa de los malos precios. En esta región hay ahora gran cantidad de abacá en depósito hasta que suba el precio. En Ilaya hubo avenida en el río el día 19 de Noviembre, pero gracias á Dios, no hizo mucho daño en las plantaciones.

Zamboanga.—Ha empezado la siega del palay de secano. Los precios corrientes en plaza son los siguientes: arroz de ₱7.20 á ₱8.15 el pico, palay ₱3.25 el caván, maíz ₱3 el caván, café ₱42 el pico, cocos ₱3 el ciento, cóprax ₱7.20 el pico, abacá de primera clase ₱21 el pico, el de la segunda ₱18, almáciga ₱22, ₱14 y ₱8.50 el pico, según la clase.

Isabela de Basilan.—Durante el mes de Noviembre, se ha terminado la recolección del palay de secano, el cual, aunque había sido atacado por los ratones y las mayas, ha dado una buena cosecha. Pero en la visita de San Pedro, Lamitan, todos los sembrados de palay en terrenos secanos han sido destrozados por dicha plaga de animales. En este mes se han cosechado unos 30 picos de abacá y 25 de cóprax.

Joló.—Las lluvias algo pesadas que han caído en determinados días han perjudicado un poco al palay y bastante al cacahuete, calabaza, y tomates. La siega del palay está terminada, y sólo se espera tiempo oportuno para su trilla.

DISTRITO III.

Legaspi.—El abacá, camote, gabe, los plátanos y cocos han dado cosecha regular en casi todos los pueblos de esta provincia. Las plantas que se encuentran en los campos se presentan por lo general en buen estado, debido á las lluvias caídas durante el mes. El estado del palay en Ligao, Oas, y Polangui sobre todo promete buenos rendimientos.

Gúbat.—Se puede decir que durante el mes de Noviembre no ha dejado de llover. Esto ha favorecido mucho al desarrollo del abacá y también á las nuevas semillas de palay que reverdecen y parecen prometer mejor cosecha que los años pasados. Hay grande abundancia de abacá en los mercados, mas su precio está muy bajo, y sigue bajando, mientras el del arroz sube. Hubo algunos casos de enfermedades entre los cerdos y aves de corral.

Calbayog.—La producción de abacá en esta región durante el mes de Noviembre sólo ha llegado á 3,728 picos. Esta disminución parece ser efecto del precio bajo con que hoy se compra este producto. Dicho precio ha oscilado en este mes entre ₱17 y ₱18 el pico, mientras que en el mes anterior era de ₱21 á ₱22. Continúa la cosecha del palay en todo este municipio, con resultados regulares. Por causa de la falta de animales de labor y de los subidos jornales, aún existen grandes y extensos terrenos palayeros que están sin ser sembrados. Por lo que toca á los jornales, aún el último jornalero no recibe menos de un peso diario. El día 4 de este mes ha pasado por aquí una bandada de langostas, empleando en pasar más de una hora.

DISTRITO IV.

Santo Domingo, Islas Batanes.—Á fines de este mes se sembraron ajos y cebollas, que crecen bien. Por ahora la gente empieza á limpiar las sementeras y prepararlas para la próxima siembra de uve y maíz. El maíz sembrado á intercalación del camote, según costumbre, se resiente algo de los vientos del NE y NNE.

Aparri.—Por la escasez de lluvias se han secado en su mayor parte los sembrados de palay tanto en la cabecera como en Camalaniugan, Lalloc, y otros pueblos, por lo cual se teme que la cosecha será mala. También se nota escasez de maíz, cuyo precio va subiendo.

Tuguegarao.—El desarrollo del tabaco, maíz, y palay sigue su curso natural, siendo su estado bastante regular. Abundan sitao, cacahuete, y hortalizas. Según noticias recibidas de las rancherías de Bangag y San Isidro del pueblo de Santa María, Provincia de La Isabela, el tabaco ha sido allí invadido por los gusanos llamados *arabat*. Pocos días después de haber sido trasplantadas la mayor parte de las semillas de tabaco se han encontrado muertas en varias sementeras, por haber sido roídos los troncos por un sin número de dichos gusanos. Como éstos atacan durante la noche y de día se esconden en la tierra, es difícil encontrarlos. La epizotia tiende á desaparecer de esta parte de la provincia; pero en Santo Niño hubo en el ganado 19 casos de esta enfermedad. Abundan los perros hidrófobos. Sólo en el pueblo de Aparri unos 13 á 15 han sido atacados por este mal durante el mes.

Laoag.—Durante este mes se ha principiado á beneficiar el maguey. Al principio este artículo se ha pagado á ₱9 el pico, pero ahora su precio es de ₱8 con tendencia á bajar. Las hojas de maguey valen de ₱1 á ₱1.20 el millar, según su tamaño. En este mes se han sembrado algodón y mongos.

Vigan.—En este mes se ha recolectado en estas comarcas el palay, cuyos rendimientos son muy malos, pues algunos labradores aseguran que han recogido tan sólo un 10 por ciento de la cosecha ordinaria, debido á la mucha falta de agua en los meses anteriores. Están creciendo maíz y algodón, que también quedan algo perjudicados por la sequía, á lo menos en algunos puntos. No ha habido casos de epizotia.

Candon.—La cosecha del palay temprano es mala, debido á la sequía de los meses anteriores. Los Señores Presidentes de Santa Lucía y Santa Cruz informan que en sus pueblos se ha recogido solo un 50 por ciento de una cosecha regular. El precio del arroz es de ₱6.25 el caván, con tendencia á subir; el del coco ₱3.50 el ciento. La sequía ha impedido la preparación de los terrenos para la próxima plantación de caña dulce y de maíz. El palay tardío sufre mucho por falta de agua. Hubo algunos casos de enfermedad entre los cerdos.

San Fernando, Unión.—Por razón de la escasez de lluvia, la cosecha del palay es mala en toda esta región. En San Fernando sólo se ha podido recoger algo en los terrenos bajos. En Namapacáng los rendimientos representan próximamente una tercera parte de la cosecha del año pasado. Las semillas del tabaco ya debían ser trasplantadas, pero este trabajo es imposible por causa de la grande sequía, y las tiernas plantas en su mayor parte perecen en los semilleros. Lo mismo sucede en Bagnotan y otros pueblos de la provincia. En Baláoan la culpa de la deplorable cosecha de palay se echa al municipio, el cual no ha hecho nada para arreglar la presa ya existente y que, bien acondicionada, hubiera hecho la mayor parte de los terrenos palayeros independientes de la lluvia. La surra ha desaparecido, pero en cambio hay algunos insectos llamados *catao* que perjudican al palay. El beneficio del maguey va aumentando en los pueblos de la provincia de una manera considerable.

Baguio.—Se ha empezado la preparación de los semilleros de palay en los terrenos de regadío. Las cosechas de patatas, camote y hortalizas son regulares.

Bolinao.—Según informes recibidos de los pueblos de Bani, Zaragoza, Alaminos, y Anda, se ha secado casi la mitad del palay sembrado. Lo mismo puede decirse de Bolinao. Se cosechan cocos y maguey. El precio de los cocos es de ₱2.50 el ciento; el del arroz de primera clase ₱4.30 y de segunda ₱3.60 á ₱3.85 el caván. Continúa la epizotia en los pueblos citados, y se calculan las pérdidas sufridas hasta la fecha en 30 por ciento de los carabaos, 40 por ciento de los caballos, y 15 por ciento de los cerdos. En Alaminos se está propagando el ántrax.

Dagupan.—En este municipio la cosecha del palay no pasará de regular. Los precios en plaza son: arroz ₱5 caván, azúcar ₱5 pilón, cocos ₱2.50 el ciento.—Manaoag, Balungao, Santa Bárbara, San Nicolás, San Fabián, y Urdaneta se quejan de la falta de lluvia que ha reducido casi á la mitad la cosecha de palay y maíz. Urbiztondo ha sufrido además de los destrozos hechos por los insectos llamados *purpursac* y por una especie de murciélagos. San Manuel, San Jacinto, Agno, Pozorrubio, Asingan y Mangaldan han tenido también el infortunio de sufrir pérdidas de animales por la epizotia y el muermo, sucumbiendo 52 caballos en Mangaldan, 20 en Asingan, 12 en Pozorrubio, y algunos en los demás pueblos mencionados. San Carlos y Binmaley han tenido escasez de hortalizas y tubérculos.

Tárlac.—Se ha comenzado la recolección del palay que llaman aquí *catlang-bolan*, siendo los rendimientos buenos en algunas sementeras y regulares en las demás. Camiling tiene regular cosecha de palay, pero se teme que será mala en los municipios de Moncada y Paniqui, por razón de la prolongada sequía. La epizotia ha desaparecido en Camiling, mientras continúa en otros puntos entre los carabaos y cerdos.

San Isidro.—Debido á la escasez de agua durante este mes, la cosecha de palay no llegará á la tercera parte de la recogida el año anterior. Por eso el precio del arroz ya es de ₱6.25 el caván y subirá más. La gente está ocupada en preparar los terrenos tabacaleros.

Olongapó.—El estado de las cosechas es mediano. El palay sufre por la falta de agua y además es atacado por gusanillos. Al norte de este pueblo hay enfermedades entre el ganado.

Balanga.—Aunque durante este mes las lluvias no han sido del todo suficientes, sin embargo los sembrados presentan un aspecto regular. El palay ya tiene espigas. Lo raro es, que hay quienes temen que los temblores ocurridos del 16 al 17 de este mes hayan de causar daño!!!

Silang.—La cosecha de palay es solamente regular, pero con todo es mayor que la del año anterior. Ya se recogen algunas naranjas, las cuales no son abundantes. Las lluvias han sido suficientes y favorecido los sembrados de abacá, maíz y tabaco.

San Antonio, Laguna.—Se ha terminado la cosecha del palay de secano. En los terrenos de regadío la siega comenzará los primeros días del mes de Diciembre y durará hasta el mes de Enero. Del abacá se ha beneficiado muy poco, por lo bajo de su precio, pues es sólo de ₱9 el pico. Desde el 15 de Noviembre ya no ha habido casos de epizotia en esta provincia.

Atimonan.—Gracias á las lluvias que han caído durante este mes se ha podido recolectar una cosecha relativamente satisfactoria tanto del palay de secano como del de regadío. De éste se ha perdido cierta cantidad, lo que suele suceder cuando el agua no se puede cambiar con bastante frecuencia. Las lluvias también han favorecido la preparación de los terrenos para la segunda siembra. El precio del cóprax es de ₱5 á ₱5.50. El beneficio del abacá queda muy paralizado, debido al precio excesivamente bajo, pues es sólo ₱9 el pico de segunda clase. No ha habido mortandad en los animales de labor, pero sí en los demás animales domésticos. La monzón que ha reinado durante la tercera década del mes ha destrozado todos los corrales de pesca en la bahía.

Batangas.—Gracias á la buena cosecha de palay en esta provincia ha bajado el precio del arroz de ₱6.60 á ₱6 el caván, con tendencia á bajar más, y se cree que en todo el año que viene no habrá necesidad de importar este grano de Saigón y Pangasinán sino en pequeña cantidad. Además se han cosechado naranjitas, síncamas, y cacahuete. En las siembras no ha habido contratiempo. La epizotia ha desaparecido por completo y no hay otras enfermedades entre los animales.

O

BULLETIN FOR DECEMBER, 1907.

METEOROLOGICAL BULLETIN FOR DECEMBER, 1907.

By Rev. José Coronas, S. J.,
Assistant Director of the Weather Bureau.

GENERAL WEATHER NOTES.

Pressure and Temperature.—For all the meteorological stations in the Philippines the mean atmospheric pressure for December is found to have been considerably below the normal value for the month, and likewise lower than the mean for December, 1906. Thus, for instance, at Manila it differed from the normal by —1.16 millimeters, and from the mean for December of the preceding year by —1.05 millimeters. Nearly everywhere the lowest pressures during the month have been observed on the 18th and 19th; that is to say, during the only typhoon of any importance which occurred this month, and which will be discussed further on. With few exceptions the maxima of pressure took place between the 22d and 25th.

The monthly means of temperature have likewise been slightly below those of the corresponding month of 1906. As regards Manila, the mean differed from the normal value for the month by —0.5° C., and from that for December of the preceding year by —0.3° C. The extremes of temperature at Manila have been 32.5° C. and 19.0° C., which have been registered respectively on the 15th and 28th.

PRESSURE AND TEMPERATURE AT THE FIRST AND SECOND CLASS STATIONS, DECEMBER, 1907.

Station.	Pressure.						Temperature.					
	Mean.	Departure from December, 1906.	Highest mean.	Day.	Lowest mean.	Day.	Mean.	Departure from December, 1906.	Highest.	Day.	Lowest.	Day.
	mm.	*mm.*	*mm.*		*mm.*		°*C.*	°*C.*	°*C.*		°*C.*	
Tagbilaran	757.50	—1.01	758.74	25	754.52	18	26.3	—0.1	32.5	6, 7	21.4	25
Surigao	57.78	—1.13	59.12	25	54.49	18	25.5	— .9	31.7	20	19.7	24
Cebu	58.25	— .79	59.40	25	54.72	18	26	— .9	30.6	8, 17	22	2, 3, 17
Iloilo	57.96	— .67	59.14	25	54.73	19	26.1	— .2	31.9	12	22	5
Ormoc	57.59	—1.04	58.78	25	54.07	18	25.1	— .6	31.7	30	20	24, 25
Tacloban	58.23	----------	59.44	31	54.10	18	25.8	— .5	31.8	13	22.2	4
Capiz	58.54	—1.18	59.69	4	55.09	19	26.3	— .5	30.1	12	21	28
Calbayog	58.62	----------	59.98	25	54.14	18	24.9	----------	31.8	20	19	4
Legaspi	59.14	—1.24	60.35	24	54.24	19	26	— .6	31.1	1	21.1	7
Atimonan	59.48	—1.25	60.88	23	55.63	19	25.6	— .4	32.3	7	22	20, 22, 23, 24
Olongapo	58.76	—1.30	59.95	4	55.75	19	26.2	— .1	34.4	8	20.1	6
San Isidro	59.56	----------	60.55	23	56.44	19	25.1	----------	35.4	8	18.5	4, 5
Dagupan	59.15	—1.09	60.22	5	56.24	19	26.1	+ .1	33.2	16	18.1	5
Vigan	59.81	—1	60.60	5	57.56	19	26.5	+ .3	31.5	2, 18	21	7
Aparri	62.25	— .53	65.20	22	60.36	7	23.7	— .3	29.7	10	18.2	29

Precipitation.—Of all the stations distributed over the Archipelago only five report a total rainfall below that of December, 1906. The amount of rain collected by the rain gauges of the Central Observatory differs from the normal rainfall for December, deduced from many years' observations, by +15.6 millimeters, and exceeds the total for December of the preceding year by 29.7 millimeters.

RAINFALL AT VARIOUS STATIONS OF THE WEATHER BUREAU DURING THE MONTH OF DECEMBER, 1907.

District.	Station.	Total.	Departure from December, 1906.	Rainy days.	Departure from December, 1906.	Greatest rainfall in a single day.	Day.
		mm.	*mm.*			*mm.*	
I	Yap	255.4	— 46.8	20	— 6	61.5	15
I	Davao	280	+104.5	10	+ 3	54.9	27
I	Cotabato	188.9	-------	13	------	46.5	22
I	Butuan	277.1	+ 66.8	21	+ 4	49.3	28
I	Tagbilaran	159.5	— 73.4	19	— 3	45	28
I	Surigao	699.9	— 47.1	26	— 1	130.8	28
I	Maasin	501.4	+305.6	13	0	136.1	2
I	Cebu	194.5	+ 95.9	16	+ 2	67.3	2
I	Tuburan [1]	201.4	+ 95	17	+ 5	60.2	2
I	Ormoc	275.7	+173.6	19	0	85.6	2
I	Tacloban	507.5	-------	23	------	130	2
I	Borongan	706.4	+282	29	0	144.8	7
II	Jolo	209.9	-------	20	------	38.1	15
II	Isabela, Basilan	331.9	+231.3	22	+13	80	30
II	Zamboanga	89.8	+ 61.1	12	+ 5	55.9	30
II	Dapitan	292	— 48.4	17	— 1	66.5	28
II	Bacolod	173.2	+ 79.2	17	+ 4	73.1	28
II	Iloilo	218.1	+160.5	20	+ 7	50.5	20
II	S. Jose Buenavista	73.6	+ 56.3	13	+ 7	23.6	20
II	Cuyo	45.1	+ 45.1	6	+ 6	15.2	18
II	Capiz	201.8	+130.5	18	+ 9	87.3	2
III	Calbayog	426.5	+290.9	29	+10	92.7	18
III	Palanoc	289.6	+233.5	23	+12	69.3	22
III	Gubat	682.4	+471.3	29	+ 7	75.7	19
III	Legaspi	753.6	+478.1	27	+ 1	115.1	24
III	Virac [2]	514.5	-------	24	------	64	31

District.	Station.	Total.	Departure from December, 1906.	Rainy days.	Departure from December, 1906.	Greatest rainfall in a single day.	Day.
		mm.	*mm.*			*mm.*	
IV	Batangas	101.3	-------	15	------	42.9	1
IV	Atimonan	776.2	+460.2	28	+ 7	217.6	19
IV	Silang	346.3	+336.9	17	+15	56.4	31
IV	S. Antonio, Laguna	531.6	+281.7	28	+11	58.4	11
IV	Corregidor	18.8	+ 18.8	2	+ 2	15	1
IV	Manila	74.3	+ 29.7	17	+ 2	15.9	1
IV	Balanga	43.7	+ 20.6	6	+ 4	24.4	1
IV	Olongapo [3]	3.6	-------	4	------	1.6	20
IV	San Isidro	41.3	-------	10	------	15.5	21
IV	Tarlac	25.4	+ 17.5	5	+ 1	10.2	10
IV	Baler	351.1	-------	14	------	61	19
IV	Dagupan	11.6	+ 6.8	4	+ 2	5.1	11
IV	Bolinao	20.9	-------	7	------	12.4	12
IV	Baguio	67.8	+ 55.6	3	— 1	62.7	11
IV	Candon	7.9	+ 4.9	2	+ 1	6.9	17
IV	Echague	236.3	-------	26	------	49	14
IV	Vigan	1.5	+ 1.5	1	+ 1	1.5	17
IV	Tuguegarao	132.5	— 2.4	15	+ 8	49.8	14
IV	Laoag	7.2	-------	3	------	5.1	11
IV	Aparri	298.6	+232.6	20	+ 2	138.2	12
IV	Santo Domingo	279.5	— 82.4	24	+ 4	71	17

[1] 30 days only. [2] 29 days only. [3] 23 days only.

DEPRESSIONS AND TYPHOONS.

Only one real typhoon has made itself felt in the Philippines during the month, and even this one was of little importance, at least at the time when it penetrated into the Archipelago. Nevertheless we must mention several other depressions which influenced the Philippines, the Ladrones Islands, or the western Carolines.

THE DEPRESSION OR TYPHOON OF DECEMBER 2 TO 5, 1907.

In the weather notes of December 3 and 4 the Observatory said:

December 3, 12.20 p. m.: Pressure appears to be in defect over the western Carolines, south-southwest of the Ladrones Islands.

December 4, 12.15 p. m.: The depression situated yesterday over the western Carolines south-southwest of the Ladrones Islands, seemed to lie this early morning about north of Yap and west of Guam, moving probably to north-northwest.

These announcements were based upon a few cablegrams sent by the observers of the stations which the Weather Bureau has on Guam and Yap. The detailed observations which arrived later by mail, fully bore out the statements made in the weather notes. At Sumay, Guam, northeast, east-northeast, and east winds had been successively observed on the 2d. These veered to east-southeast on the 3d, and to southeast on the 4th. On the contrary, for Yap we find recorded the following wind directions: West, in the afternoon of the 2d; south-southwest, in the afternoon of the 3d and morning of the 4th; southwest, in the afternoon of the 4th; and south, in the morning of the 5th. At Yap the barometer fell 2 millimeters lower than at Sumay, Guam, reading 752.89 millimeters at 2 p. m. of the 3d, which was 1.36 millimeters below the reading for the same hour of the preceding day.

After carefully comparing these observations among themselves and with those made in the Philippines, we consider it probable that the depression or typhoon moved in a northwesterly direction from the 3d to 4th, inclined thereafter toward the west, and finally broke up east of the Philippines. The area of low pressure, which on the weather map for 2 p. m. of the 7th was seen to cover a considerable portion of our Archipelago, might possibly be considered as a remnant of this typhoon.

THE TYPHOON OF DECEMBER 14 TO 20, 1907.

Concerning this typhoon Manila Observatory sent the following cablegrams to the directors of the several meteorological services in the Far East:

December 15, 3 p. m.: Typhoon south of Yap, western Carolines.
December 17, 4 p. m.: Typhoon approaching northern Mindanao and Visayas.
December 18, 4.15 p. m.: Typhoon near eastern Visayas.
December 19, 9 a. m.: Typhoon about 13° lat. and between 122° and 123° long., moving west-northwest.
December 20, 5 p. m.: Typhoon seems to have been filling up since yesterday.

The original position of this disturbance to the south of Yap seems to be shown with sufficient clearness by the observations made at the said station from December 12 to 17, which are given in the following table:

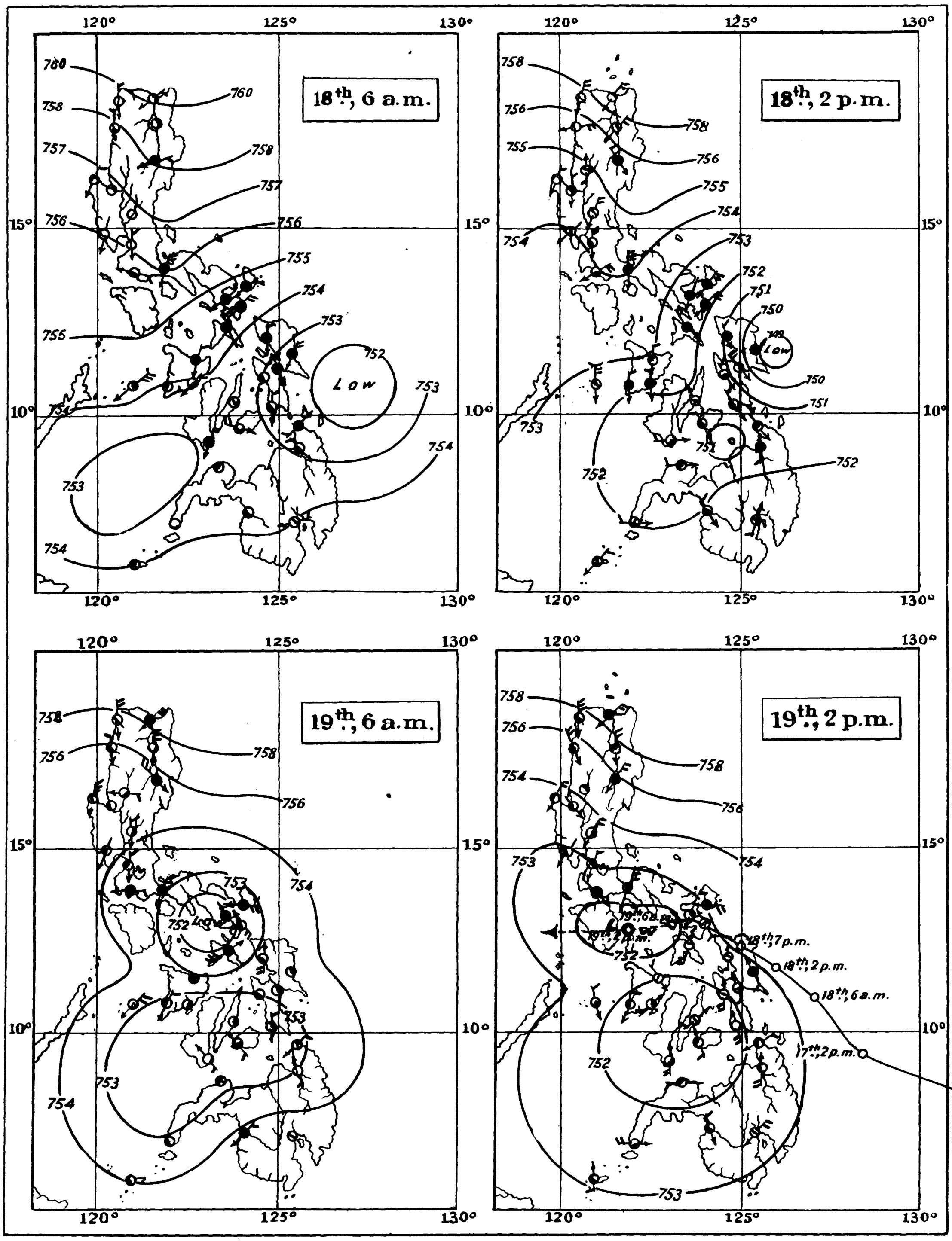
METEOROLOGICAL OBSERVATIONS AT YAP, WESTERN CAROLINES. DECEMBER 12 TO 17, 1907.

Date and hour.	Pressure.	Wind.		Clouds.			Sea.	Rainfall.
		Direction.	Force.	Amount.	Form.	Direction.		
Dec. 12:	mm.		0–12.					mm.
6 a. m.	758.66	NE	3	8	A.-Cu.; Cu.	NE	L.	----
2 p. m.	57.11	NE	5	3	A.-Cu.; Cu.	NE	L.	1.3
Dec. 13:								
6 a. m.	57.49	NE	2	4	A.-Cu.; Cu.	NE	L.	----
2 p. m.	56.56	NE	4	6	N.	NE	L.	.8
Dec. 14:								
6 a. m.	57.33	ENE	6	10	A.-S.; Cu.-N.	ENE	T.	----
2 p. m.	55.66	NE	6	7	Ci.-Cu.; Cu.	NE	T.	----
Dec. 15:								
6 a. m.	57.38	NE	7	10	N.	NE	T.	----
2 p. m.	55.30	ENE	8	10	N.	ENE	T.	61.5
Dec. 16:								
6 a. m.	57	NE	9	10	N.	NE	T.	----
2 p. m.	54.50	E	5	6	Ci.; Cu.-N.	E	----	8.4
Dec. 17:								
6 a. m.	56.69	E	3	8	Ci.; Cu.-N.	E	L.	----
2 p. m.	55.18	NE	4	8	A.-S.; Cu.	----	L.	5.1

The four small sketch maps of the Philippines (see plate) show the distribution of the isobars and the position of the cyclonic vortex at 6 a. m. and 2 p. m. of the 18th, and at 6 a. m. and 2 p. m. of the 19th. The reader will see in the last of these maps a good portion of the path of the storm. As the typhoon appeared first to the east of Surigao, the track followed from its original position, south of Yap, must have a strong westerly inclination, having probably been west-northwest.

It is not possible to decide with certainty whether the typhoon had already split into two, when it entered the Archipelago. The isobars for 2 p. m. of the 18th certainly convey the impression that at the time there existed a secondary center. Be this as it may; during the afternoon of the 17th and on the 18th the typhoon, or at least its more important center, was moving in a northwestern direction, but inclined more and more toward west when it encountered the southernmost end of Luzon Island on the early morning of the 19th. As shown by the observations made at Borongan and Calbayog, the storm passed north of both these stations. Said observations, together with those of Virac, Palanoc, Gubat, and Legaspi, are given in the following table. A comparison of these data shows that the typhoon was of very small diameter, and of no great violence, at least when it passed very near south of Gubat. It, moreover, appears, that it nearly filled up while crossing the Archipelago, because on the 20th hardly a trace of its existence could be discovered.

TYPHOON OF DECEMBER 18TH-19TH, 1907.



N.B. The barometer has been corrected to standard gravity.

Date and hour.	Borongan.					Virac.					Palanoc, Masbate.				
	Pressure.	Wind.		Rainfall.	Weather.	Pressure.	Wind.		Rainfall.	Weather.	Pressure.	Wind.		Rainfall.	Weather.
		Direction.	Force.				Direction.	Force.				Direction.	Force.		
Dec. 17:	*mm.*		*0–12.*	*mm.*		*mm.*		*0–12.*	*mm.*		*mm.*		*0–12.*	*mm.*	
6 a. m	757.44	Calm			r.	759.24	NE	2		o.	758.38	ENE	3		c.
2 p. m	55.21	NNW	2	14	r.	56.75	NE	4	25.4	c.	57.67	NE	4		o.
Dec. 18:															
6 a. m	54.59	NNE	3		r.	56.53	NE	1		o.	56.29	NW	4		o.
2 p. m	51.17	SW?	2		o.	54.71	NE	4		q.	54.19	NW	4		o.
6 p. m						54.55	NE	2		q.					
10 p. m				15.2		54.92	NE	5–6	55.1	q.				25.7	
Dec. 19:															
2 a. m						52.77	NE	5–6		o.					
4 a. m						53.56	NE	5–6		o.					
6 a. m	54.90	Calm			r.	54.36	E	5–6		o.	53.96	SW	6		o.
7 a. m						55.88	E	5–6		o.					
10 a. m						56.07	E	4–5		q.					
2 p. m	54.57	SSE	1		r.	55.05	E	4		o.	53.90	SW	4		o.
5 p. m				34					23.1		55.03	SW	4	28.4	o.
Dec. 20:															
6 a m	57.24	Calm			r.	57.18	E	2		o.	56.79	SE	2		o.
2 p. m	55.94	SSE	1	7.6	p.	56.71	NE	2	3.6	d.	55.85	SE	2	1	c.

Date and hour.	Calbayog.					Gubat.					Legaspi.				
Dec. 17:															
6 a. m	57.93	N	1		c.	57.37	NE	2		c.	58.51	NNE	2		b.
10 a. m	57.96	NE	2		c.						59.10	NNE	1		o.
2 p. m	55.44	NE	2		c.	55.78	NE	3		o.	56.95	NNE	2		c.
5 p. m	55.98	N	1		d.										
6 p. m	56.08	NNW	2		d.						57.21	N	3		c.
10 p. m				2.3					46.7		57.48	NE	3		o.
Dec. 18:															
6 a. m	55.42	N	1		d.	55.26	NE	3		r.	56.49	NE	2		o.
10 a. m											56.85	NE	1		o.
11 a. m	54.85	NW	1		d.										
2 p. m	55.03	NNW	1		r.	53.23	NE	3		o.	54.42	NNE	2		d.
4 p. m	52.73	NNW	1		d.										
6 p. m	52.05	W	2		r.	53.12	NE	3		q.					
7 p. m	51.55	W	3		q.										
8 p. m	52.39	W	3		q.						55.06	NNE	1		r.
10 p. m	53.76	WSW	3		q.	52.44	NE	4		r.	54.49	N	2		r.
Midnight				92.7		50.46	NE	5	54.4	o.	52.87	NNE	3	57.9	q.
Dec. 19:															
1 a. m						49.01	E	6		o.					
2 a. m	53.99	S	3		d.	48.26	E	5		q.	51.28	NNE	3		q.
3 a. m						50.52	SE	3		q.	49.77	ENE	5		q.
4 a. m						51.85	SE	3		d.	49.76	SSE	3		r.
6 a. m	54.95	S	3		d.	52.84	SE	3		o.	52.77	SE	2		o.
10 a. m	55.76	S	2		o.						55.12	S	1		o.
2 p. m	54.39	S	1		c.	53.36	SE	1		c.	54.09	NNE	1		o.
6 p. m	56.03	SE	1		d.						55.69	N	2		o.
10 p. m	56.66	N	1	25.4	o.				75.7		56.47	NE	1	49.8	o.
Dec. 20:															
6 a. m	57.23	N	1		c.	56.04	SE	1		d.	56.99	NNE	1		o.
10 a. m	57.24	SE	1		c.						57.69	NE	1		o.
2 p. m	55.60	SE	1		c.	55.41	SE	1		c.	55.98	ENE	2		c.
6 p. m	56.79	N	1		c.						57	NNE	1		b.
10 p. m	57.71	N	1	1.8	b.				5.1					6.6	

THE DEPRESSION OR TYPHOON OF DECEMBER 18 TO 22, 1907.

In the afternoon of December 18 Manila Observatory sent the following dispatch to Tokio, Zikawei, Taihoku, Hongkong, and Phulien:

December 18, 4.15 p. m.: Another typhoon south Yap.

The ordinary daily weather notes of the 19th to 22d contained these references to the typhoon or depression:

December 19, 12.15 p. m.: According to a report received from the western Carolines, a new typhoon appeared yesterday south of Yap.

December 20, 12.30 p. m.: The exact position of the typhoon situated day before yesterday south of Yap, western Carolines, can not yet be ascertained.

December 21, 12.20 p. m.: The depression or typhoon of the Pacific seems to be situated between the western Carolines and the Philippines, moving rather slowly.

December 22, 3.30 p. m.: The typhoon of the Pacific seems to be filling up east of the Visayas Islands.

We have little more to say about this disturbance, owing to the lack of data. Its existence and successive positions south and southwest of Yap are indicated by the observations made at the station and cabled to the Central Observatory. According to these, the barometer had not yet regained its normal height after the preceding typhoon, when on the 18th and 19th a new fall was observed, which was accompanied by fresh and gusty winds. The latter blew from northeast on the 18th and in the morning of the 19th, but from east-southeast in the afternoon of the latter date. The Philippine weather maps for the 21st and for 6 a. m. of the 22d seem to indicate a depression in the Pacific to the east of the Visayas, but in the afternoon map of the 22d, all that remains is a low-pressure area which covers Mindanao and a part of the Sulu Sea and of the southernmost Visayas. The inundations on the 23d, mentioned in the crop report of Dapitan (see Crop Bulletin), may have been due to the rains caused by this depression.

THE DEPRESSION OF DECEMBER 26 TO 29, 1907.

On the 26th a new and somewhat pronounced falling of the barometer was observed at Yap, without, however, a change taking place in the direction of the wind which continued to be northeast, as it had been during the preceding days. On the 28th, our weather map showed a center of low pressure in the Pacific, to the east of Mindanao, which may have been identical with the one which had lain south of Yap on the 26th. On the weather map for 6 a. m. of the 29th this depression was still discernible over western Mindanao, but it seems to have entirely disappeared after entering the Sulu Sea. This depression was responsible for the heavy rainfalls and consequent inundations mentioned in the crop reports from Surigao and Dapitan (see Crop Bulletin).

THE DEPRESSION OF DECEMBER 30 AND 31, 1907.

The weather map for 6 a. m. of the 30th indicated the existence of a new depression situated east of Jolo and southeast of Zamboanga, both these stations having observed a considerable fall of the barometer, amounting to 2 millimeters, or a little more, within twenty-four hours. In the early morning of the following day, the depression lay over the southern part of the Sulu Sea, and moved apparently toward Balabac Strait. It is, however, probable that it filled up rather quickly, since the observations of Indo-China made during the next days show no indications of any atmospheric disturbance.

METEOROLOGICAL DATA FOR MANILA CENTRAL OBSERVATORY.[1]

[ϕ=14° 34′ 41″ N; λ=120° 58′ 33″ E; barometer above sea, 14.2 meters; gravity correction not applied, —1.72 mm.]

Date.	Pressure, mean.	Temperature.									Relative humidity, mean.	Vapor pressure, mean.	Evaporation.	
		Open air.[2]			Underground.								Free exposure, total.	Shelter, total.
					0.25 meter.		0.50 meter.		1.50 meters.	2.50 meters.				
		Mean.	Maximum.	Minimum.	8 a. m.	2 p. m.	8 a. m.	2 p. m.	8 a. m.	8 a. m.				
	mm.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	°C.	Per ct.	mm.	mm.	mm.
1	759.29	25	30.6	22	27.1	28.3	27.9	27.1	28.1	28.2	90.2	21.2	2.2	1.5
2	59.80	24.9	29.3	22.1	27.1	28	27.8	28	28	28.3	86.1	20.1	2.3	1
3	59.84	24.1	28.5	21	27	27.9	27.7	27.9	28	28.3	81.8	18.1	4	1.8
4	60.42	23.8	29.3	20.5	26.6	27.6	27.5	27.9	28	28.3	80.2	17.4	5.6	2.6
5	60.42	23.2	27.9	20.4	26.2	26.9	27.3	27.6	28	28.2	83.1	17.5	5.4	2.4
6	59.67	24.8	30.2	19.8	26	27.9	27.2	27.6	28	28.2	79.6	18.4	5.6	2.4
7	58.51	25.7	30.4	20.6	26.5	28.3	27.3	27.6	28	28.3	81.1	19.7	6	2.5
8	58.90	26.3	31.7	22.4	27	28.8	27.5	27.9	28	28.3	81.5	20.6	6	2.5
9	59.32	25.8	31.6	20.5	27	29	27.6	28	28	28.3	80.2	19.6	4.8	2.4
10	59.56	25.4	30	21.7	27.2	28.7	27.7	27.9	28	28.3	85.5	20.5	5.3	2.2
11	59.77	25	28.6	22.6	27.2	27.8	27.7	27.9	28	28.3	91.5	21.4	1.9	1
12	59.20	25.9	31	22.4	27	27.9	27.6	27.9	28	28.3	88.9	21.8	3.1	1.4
13	59.87	25.1	30.9	20.4	27	28.2	27.6	27.9	28	28.2	82.9	19.4	4.3	1.9
14	60.10	25.4	31.1	21.7	26.9	28.2	27.6	27.8	28	28.2	84.4	20.3	4.8	1.9
15	59.40	25.4	32.5	21.8	26.9	28.4	27.6	27.8	28.1	28.2	83.8	20	4.4	2
16	59.32	25.1	31.1	20.6	26.8	28.7	27.5	27.9	28	28.2	83.1	19.4	5.2	2.5
17	58.52	25	31.7	21.2	26.7	28.9	27.4	27.9	28	28.3	78	18	5.8	2.5
18	57.15	25.3	31.4	20.6	26.6	28.4	27.4	27.8	27.9	28.2	74.7	17.7	9.9	3.7
19	55.93	24.1	26.7	22.1	26.3	26.8	27.2	27.3	27.9	28.2	88	19.6	6.1	2.9
20	57.53	23.4	25.8	21.9	25.8	26.3	26.9	27	27.8	28.1	95.2	20.4	5.9	3.4
21	58.26	24.1	28.6	21.2	25.7	26.3	26.8	26.9	27.8	28.1	82.1	18.2	3.9	1.2
22	59.72	22.5	24	20.5	25.4	25.8	26.8	26.8	28	28.3	85.2	17.2	2.5	1.8
23	60.32	24.2	29	19.8	25	26.2	26.4	26.8	27.9	28.2	81	18	5.2	2.4
24	59.95	24.4	29.2	20.5	25.3	26.6	26.4	26.8	27.8	28.2	83.7	18.9	4	1.9
25	60.26	25.1	30.9	21.5	25.8	27	26.6	26.8	27.9	28.2	84	19.8	4	2
26	60.19	25.2	30.8	21.7	26	27.5	26.7	27	27.8	28.1	83.1	19.6	4.5	2.4
27	60.17	24.1	30.3	20.4	26	27.3	26.8	27	27.7	28.2	83.5	18.5	3.9	1.9
28	60.03	24.3	30.7	19	25.8	27	26.7	26.9	27.7	28.1	80.2	17.9	5.3	2.5
29	59.59	24.6	29.4	20.9	26	27	26.8	26.9	27.8	28.2	81	18.6	5.8	2.6
30	59.51	24	29.1	19.8	25.6	27	26.6	27	27.7	28	82.1	18.1	4.3	2.4
31	60.14	24.8	28	21.8	25.8	26.9	26.6	26.9	27.6	28.1	86.8	20.1	2	1.2
Mean	759.38	24.7	29.7	21.1	26.4	27.6	27.2	27.4	27.9	28.2	83.6	19.2	4.6	2.2
Total													144	
Departure from normal	—1.16	—0.5	0.0	—0.2							+2.5	—0.1	—7.7	

Date.	Wind.				Clouds.			Sunshine.	Rainfall.	Miscellaneous.
	Prevailing direction.	Total movement.	Maximum hourly velocity.	Direction at the time of the maximum velocity.	Amount, mean.	Prevailing form and its direction.				
						Upper.	Lower.			
		Km.	Km.		0–10.			h. m.	mm.	
1	NE	89.5	11	N	9	A.-Cu. NE	N. ENE	3 05	15.9	≡ d° a. ● d p.
2	NNE	190	15	NNE	9.2	A.-Cu. SE	N.-cf. ENE	3 45	11.2	● a. d p.
3	NNE	186	17	N by E	8.8	Ci.	S.-Cu. ENE	1 15	.3	d ⌒ a.
4	NE	121	14.5	N by E	8.3	Ci.-S. ESE	S.-Cu. E	3 15		≡ a. ◯° p.
5	NNE	240.5	25	N by E	9.4	A.-Cu. SSE	Fr.-N. ENE	1 45	.1	≡° d² a. d p.
6	NNE	131.5	14.5	WSW	4.2	Ci.	Cu. NE	7 20		≡ a.
7	W	160	15	W by S	1.5	Ci.-S. E	Cu.	9 05		≡° a.
8	S, WSW	128	12	WSW	3.2	Ci.-S.	Cu. ENE	9 00		Ω ≡° a.
9	Variable	106.5	10	WSW	2.8	Ci. E	Cu.	8 40		≡ a. ⊍° p.
10	E	115.5	13.5	WNW	8.7	Ci.-S. E	Cu.	0 35	.3	≡° ◯° a. d ⌐↯ p.
11	NW	97	10	NW	9.5	A.-Cu. ESE	Cu.-N. E	1 15	9.5	≡ d a. ●² p.
12	NNE	135	14	W by S	6.2	Ci.-S. NW by N	Cu. ENE	6 30	3.8	≡° d a. ● ⊕ p.
13	E	114.5	13	WNW	6.8	Ci.-S. SE, NE	Cu. E by N	3 20		≡ a.
14	NE	157.5	15	ESE	6.5	Ci.	Cu. E	6 10	.8	≡° ●° a. ●° ⊍° p.
15	NNE	119	11	NNE	7.4	A.-Cu. NE	Cu. E	3 30	.5	●° a. p.
16	NE	185	21	NE	5.8	A.-Cu. SSE	Cu. E	5 50	.1	≡ a. p p.
17	ENE	181.5	17.5	SE	7.6	Ci.-S. SE by E	Cu. E by N	4 45		≡° a. p p.
18	NNE	423	29.5	N	7.2	Ci. SE	S.-Cu. NE	3 50	.6	◯° d p. ↯° a. p.
19	N	420	31.5	NNE	10		Fr.-N. NE by E	0 00	12.4	●° a. p.
20	N	232.5	21.5	N	10		N. E	0 00	14.1	●° a. p.
21	N	436	31	N	8.9	A.-Cu. E	S.-Cu. NE by E	1 40	3.1	≡° ●° d° a. ↯° p.
22	N	222.5	27.5	N	10	Ci.-S.	Fr.-N. SE	0 00	.8	≡° ●° a. d° a. p.
23	NE, NNE	167	19.5	N	8.2	A.-Cu. NE	N.-cf. E by N	3 20		≡ a.
24	ESE	136.5	18.5	ESE	8.5	A.-Cu. E by S	S.-Cu. E, ENE	3 00		Ω° ≡ a. p p.
25	ENE	85.5	13	WNW	6.4	A.-Cu. E by S	S.-Cu. E	4 05		≡° a.
26	ESE	129	16.5	SE	6.8	A.-Cu. ENE	Cu. E	5 40		⌒ d a.
27	ENE	121.5	15.5	ENE	5.7	A.-Cu.	Cu. ENE	5 45		Ω ≡ a. d° p.
28	NE	137.5	12	WSW	6.4	Ci.-S.	Cu. ENE	6 55		≡ a.
29	NNE	147	16.5	N	8	A.-Cu. E	Cu. E	1 50		≡° a.
30	NNE	107.5	9	SSW	9.5	Ci.-S. NW	S.-Cu. E by N	4 35	.3	Ω ≡° d° a. d p.
31	NNE	86.5	9	SE	8.6	A.-Cu. ESE	Cu. E by N	1 45	.5	d ≡° a. p° p.
Mean		171.3	16.8		7.4			3 49		
Total								118 30	74.3	
Departure from normal		+15.1			+1.5			—46 03	+15.6	

[1] All the mean values given in this table are deduced from hourly observations.
[2] These values are taken from instruments mounted in the Observatory park, 1.5 meters above ground.

METEOROLOGICAL DATA FOR FIRST AND SECOND CLASS STATIONS.[1]

TAGBILARAN.

[ϕ=9° 38′ N; λ=123° 53′ E; barometer above sea, 21.8 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°*C.*	°*C.*	°*C.*	*Per ct.*		*0–12.*	*0–10.*			*mm.*	
1	757.61	26.5	31.5	22.9	81.8	NNE, NW	1.2	6.7	A.-S.	Cu.-N. E	------	
2	57.95	25	26.6	22.3	85.2	NNE, N	1.3	10	------------	N. N	10.4	●° a. p.
3	57.69	25.2	28.5	22.1	82.5	N	1.2	8.8	A.-S.	N. NE	10.4	●° a.
4	58.32	25.4	28.5	22.4	77.9	NNE, N	1.2	7.3	A.-S.	S.-Cu. E	------	○^{2}
5	58.17	26.5	31.6	22.5	77	NNE, N	1.2	7.5	Ci.-S., A.-S.	S.-Cu.	------	
6	58.07	26.7	32.5	23.4	82.6	NNE, NW	1.3	7.8	A.-S.	Cu.-N. NE	------	
7	57.72	26.8	32.5	24.1	83.3	NNE	1	8.2	A.-S.	Cu.-N. NE	2.5	p a. d T ⌒° p.
8	57.99	26.3	30.8	23.4	85.3	NNE	1	6.5	Ci.-S.	Cu.-N. E	7.4	⌈⚡ p.
9	58.13	26.5	30.8	24	86.7	NNE	1	7.8	A.-S.	Cu.-N., N. E	4.3	● p.
10	58.10	26.7	30.5	23.9	84.1	NNE, N	1.2	7.5	A.-S.	Cu.-N. E	11.2	● p.
11	58.35	27	32.3	23.3	83.1	NW	1.3	6.5	Ci.-S.	N., Cu.-N. E	.5	d p.
12	57.93	26.9	31.7	23	81.1	NNE, N	1.3	5	A.-S.	Cu.-N. E	------	
13	57.87	27.1	30.9	23.9	79.2	NNE	1	7.8	Ci.-S., A.-S.	Cu.-N. E	------	d° ⚡ p.
14	57.99	25.9	30.4	22.4	80.5	N, NNE	1.2	9.3	Ci.-S.	N. E	16	●^{2} p.
15	57.48	25.8	30	22.2	81.8	NNE, N	1.2	9	A.-S.	N. E	5.3	● a. d p.
16	57.28	26.2	28.9	23.1	83.1	NNE	1	10	Variable	N., Cu.-N. E	------	○° a. ⊕^{2} d° p.
17	56.31	27	32.4	23.2	76.2	N	1.2	9.2	A.-Cu	Cu. E	------	
18	54.52	27.3	32.3	24	78.7	NW	1.8	9.8	A.-S.	Cu.-N. NE, NW	.5	↙° d a. ⊕ ⚡° p.
19	54.61	26.7	29.3	24.4	85.5	SE	1.5	9.7	Ci.-S.	Cu.-N. E	7.9	d° a. ● p.
20	55.60	27.1	31.6	24.2	84.5	N quad.	1.2	8.5	Ci.-S., A.-S.	Cu.-N. E	2.3	d° a. ⚡^{2} T° p.
21	56.02	27.1	32	23.5	83.3	N quad.	1.3	7.3	Ci.-S. NNE	Cu.-N. E	.5	d p.
22	56.92	25.9	30.4	23.6	85.5	NNE	1.3	8.5	------------	N. NE	10.7	T ⌒° ● p.
23	58.28	26.3	30.6	23.1	77.9	NNE	1.2	7.3	A.-S.	Variable	.5	d p.
24	58.37	26.7	31.7	22.3	72.4	N, NNE	1	4.2	Ci.-S.	Cu. E	------	
25	58.74	26	31.5	21.4	77.8	NNE	1.3	4.7	A.-S.	Variable	------	
26	58.51	26.1	31.3	22.4	81.7	NNE	1.5	8.3	Ci.-S., A.-S.	N. E	6.6	● T^2 p.
27	58.07	25.6	27.6	23.4	84	NNE, N	.8	10	Ci.-S.	N. E	11.7	d a. ●° p.
28	57.13	25.2	26.7	23	86.9	N	1.3	10	------------	N. E	45	● a. d p.
29	57.28	25.3	27.5	23.1	83.7	NNE	1.2	10	------------	N. E	5.8	d a.
30	57.07	26.3	30	23.5	77.2	NNE	1.5	8.8	A.-Cu.	S.-Cu. E	------	
31	58.36	26.6	32.2	22	75.7	N, SE	1	6.8	Variable	Cu. E	------	⚡^{2} T° p.
Mean	757.50	26.3	30.5	23.1	81.5	------------	1.2	8	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	159.5	

SURIGAO.

[ϕ=9° 48′ N; λ=125° 29′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°*C.*	°*C.*	°*C.*	*Per ct.*		*0–12.*	*0–10.*			*mm.*	
1	757.76	25.2	28.6	21	91	N	1	4.3	Ci.-S.	Variable	0.5	Ω ≡ a. ↙ ●° p.
2	57.59	23.6	24.9	22.1	97.2	N	1.3	9.7	------------	N.	94.2	⚡ ●^{2} ↙°
3	57.82	25	27.2	21.9	85.7	E	2.3	8.8	Ci.-S.	Fr.-N. ENE	68.6	●^{2} a. Ω p.
4	58.18	25.3	27.7	21.8	85.7	NE, E	1.3	7.5	Ci.	S.-Cu. NE	------	Ω p.
5	58.13	25	27.5	21	84.8	Variable	.7	6.3	Ci.-S.	Fr.-N. NNW	------	Ω a. p.
6	58.17	25.3	29.2	21.3	86.4	N	1	4.3	Ci.	Cu. WSW	------	Ω a. p.
7	58	26	29	22.1	89	N	.8	3.3	Ci.-S.	Cu.-N. NNE	------	Ω a. p.
8	58.30	26.2	28.9	22.5	88.5	N	.8	3.7	Ci.	Cu. N	2.3	⌒ a. ●° p. Ω
9	58.65	25.8	27.8	22.3	91.3	N, NE	.8	9.3	Ci.-S.	Fr.-N. NE	12.2	Ω a. ● p.
10	58.50	25.7	27.8	22.2	91.8	NE	.8	10	A.-S.	Fr.-N.	20.1	● a. p.
11	58.92	26.6	28.9	23.6	88.7	E	.8	6.5	Ci.	Cu. E	1.5	●° a. ○ ⌒ Ω p.
12	58.45	26.9	30.4	22.2	83.8	E	1.7	6.7	Ci.-S.	Fr.-N. NE	.8	Ω d a. ↙° p.
13	58.46	26.6	28.3	23.2	89	E	2.7	9.5	Ci.-S.	Cu.-N E, NE	3.3	●° ↙° a. d ⚡ p.
14	58.13	25.5	27.8	22.6	90.8	E, NE	1.7	10	Ci.-S.	N. NNE	46.7	● a. p. ⚡ ↙
15	58.24	23.9	25.9	22.2	93.2	NE, ENE	1	10	Ci.-S.	N. ENE	74.7	●^{2} a. p.
16	57.66	24.2	26.2	22.2	93.3	Variable	1	10	Ci.-S.	Fr.-N. NE	14.5	● a. p.
17	56.09	25.1	27.7	22	88.3	NW	1.3	9	Ci.-S.	Fr.-N. NW	9.4	Ω ⌒ d a. ● p.
18	54.49	25.9	28.8	22.1	87.2	SW, NW	1	9	Ci.-S., Ci.	Fr.Cu. NE, NW	3.6	●° a. p.
19	55.08	26.4	28.9	21.6	87.7	NE	.7	7.3	Ci.-S.	Variable	1	Ω a. d p.
20	56.20	26.7	31.7	22.9	87.2	E	.5	5.3	Ci.	Cu.	1.8	d a. Ω p.
21	56.57	25.7	29.8	21.8	92	NE, NW	.3	7.2	Ci.-S.	Fr.-N.	5	Ω ●° a. p.
22	57.28	26.2	29.2	22.3	88.5	ENE, E	1.3	7.7	Ci., Ci.-S.	Variable	8.9	Ω ●° a. p.
23	58.66	26.4	29	22.4	86	E	.8	8.2	Ci.	Cu. E by N	13.5	p a. d Ω p.
24	58.81	25.1	30.8	19.7	85.5	E, NE	.7	3.5	Ci.	Cu. E, NE	.8	Ω a. d p.
25	59.12	25.4	29.7	21	88	Variable	.7	6.2	Ci.	Cu. E	3.8	●° a. Ω p.
26	58.97	24.2	26.7	21.4	92	NE	.5	7.5	Ci.-S.	N.-cf. NE	16.2	● a. p. Ω
27	57.85	25	26.4	22.2	91.7	N quad.	1.5	10	Ci.-S.	Fr.-N. N, NNE	50	● a. p.
28	56.87	23.9	25.8	22.2	95.3	NNW	1.7	10	Ci.-S.	N. NW	130.8	●^{2} a. p. ⌈⚡
29	57.51	24.6	25.6	22.3	93.6	NE	2	10	Ci.-S.	N.	114.9	●^{2} a. p. ⌈⚡
30	57.91	26.5	30.8	23.3	86.8	ENE, NE	1.3	5.3	Ci. SE	Cu. E, NE	------	Ω p.
31	59.04	26.3	29.1	22.5	85.8	NE	1.8	3.5	Ci. Variable	Cu.-N. E, NE	.8	Ω d ↙° p.
Mean	757.78	25.5	28.3	22.1	89.2	------------	1.2	7.4	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	699.9	

[1] All the mean values given in these tables are deduced from six daily observations.

METEOROLOGICAL DATA, ETC.—Continued.

CEBU.

[ϕ=10° 18′ N; λ=123° 54′ E; barometer above sea, 6 meters; gravity correction not applied, —1.85 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction.			
									Upper.	Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	758.31	26.3	30	22.8	82.2	ENE, E	0.3	4.5	Ci., Ci.-S.	Cu. NE	------	⌓² ≡ ○
2	58.78	23	24	22	92.2	NNE	.5	9.2	Ci.-S.	N. E	67.3	● a. p. ⌓² ≡
3	58.42	25.5	28	22	82.2	NE	1	8.3	Ci.-S.	N.-cf. ENE	10.4	● ≡ a.
4	59.05	25.6	28.1	23.6	76.7	NE	1	6.2	A.-Cu. E	Cu. NE	------	⌓² ≡ ○
5	58.88	26	30	22.3	81.3	E, SW	.3	6	Ci.-S.	Variable	------	⌓ ≡ ○ a. d° p.
6	58.94	25	28.4	22.6	90.8	Calm	0	7.2	Ci.-S.	S.-Cu. NE	13.7	● a. p. ⌓ ≡ ⊤ ↯
7	58.48	26.1	30	23	84.2	E	.5	4.3	Ci. NNW	Cu. NE	------	⌓² ≡ a. ↯ p.
8	58.54	26.4	30.6	23	85.2	E, ENE	.5	3.7	Ci.	Cu. NE	------	⌓ a. ↯ p.
9	58.89	26.4	29	24	85.7	ENE	.5	5.2	Ci.-S.	Cu. NE	------	⌓ ≡ a.
10	58.94	26.3	29.5	23.7	86.5	NE	.7	6.2	A.-Cu. E	N.-cf. NE	.5	⌓ d ≡ a.
11	59.22	27	30	23.5	84	ENE	.5	3.5	Ci.-S.	Cu. E	------	⌓ ≡ a.
12	58.86	26.7	30.1	24.1	84.3	ENE, E	.8	4	Ci.	Cu. E	7.1	⌓ ≡ a. ↙ ●° p.
13	58.96	26.5	29.2	23.9	84.1	NE	.5	6.3	Ci.-S. E	N.-cf. NE	------	⌓ ≡ a.
14	59.02	25.7	30	22.5	83.2	NE	1	8.5	Ci.-S. E	N.-cf. ENE	17	d ≡ a. ↙ ●° p.
15	58.33	25.7	28.9	23.2	82.8	NE	.8	8	Ci.-S.	N.-cf. ENE	1.8	⌓ ≡ a. ↙ ●° p.
16	58	25.8	28.5	23.8	82	NE	.8	6.5	Ci.-S.	N.-cf. ENE	.3	⌓ ≡ p a. ᴗ p.
17	56.79	26.6	30.6	22	78	NE, NNW	.3	6.5	A.-Cu. E	Cu. NE, N	.3	⌓ ≡ a. d p.
18	54.72	26	29	23.4	89	Calm	.3	8	Ci.-S. ESE	N.-cf. N, NW	8.1	● ↙° a. p. ≡ ⊤ ↯
19	55.04	26	30	23.4	85.8	Variable	.5	7.7	Ci.-S. SSE	Cu.-N. S	23.4	⌓ ≡ ● ↙° ⛈ ᴗ
20	56.27	26.5	29	24.3	85.8	ENE	.5	6.5	Ci.	N.-cf. SE	1.3	⌓ ≡ ●° a. ↯ p.
21	56.72	27	30	24.5	83.5	E	1	4.2	Ci.-S.	Cu. E	------	⌓ ≡ a.
22	57.56	25.8	27.4	24.3	87	NE, NNE	.8	7.7	Ci.-S.	Cu.-N. E, NE	6.9	⌓ ϖ ≡ ● ⊤ a.
23	59.27	25.9	29	23.1	82.7	NE	1	5.2	Ci.-S.	Cu. E	4.6	⌓ ≡ p a.
24	59.08	26.2	29.6	22.9	78.2	E	.3	2.5	Ci.	Cu. E	------	≡ a.
25	59.40	26.2	30	22.9	80.8	Variable	.7	3.8	Ci.	Cu. ENE	------	⌓ ≡ a. ∞ p.
26	59.16	26.5	29.8	22.3	81.7	NE, E	.5	6.8	Ci.-S.	Cu. ENE	------	⌓² ≡ a.
27	58.74	25.9	28.4	23.9	83.5	NE	.3	9	Ci.-S. E by N	N.-cf. NE	------	⌓ ≡ a. d p.
28	58.05	24.5	27	23.5	88.5	NNE	.8	9.8	------	N. NE	21.6	● a. p. ≡
29	58.11	25.3	27	23.1	88.8	NE	1	9.7	Ci.-S.	Cu.-N. ENE	10.2	● ↙° ≡ a.
30	58.09	26.6	29.4	24.6	78.9	ENE	1.3	4.8	Ci.-S.	Cu. E	------	ϖ ⌓ ≡ a.
31	59.28	26.5	30	23.3	79.8	ENE, E	.7	3.8	Ci.	Cu. E, ENE	------	⌓² ≡ a.
Mean	758.25	26	29	23.3	83.9	------	.6	6.2	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	194.5	

ILOILO.

[ϕ=10° 41′ N; λ=122° 34′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction.			
									Upper.	Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	758.12	26.5	31.4	23	79.7	NE	1.3	5.5	Ci.-S.	N.-cf. NE	------	⌓ ⊕
2	58.40	24	25	22.5	92.8	NE, N	1	9.2	Ci.-S.	N.	11.7	⌓ d a. ● p.
3	58.13	25.3	29.4	23	82.9	NE, N	2	9	Ci.-S.	Variable	24.3	● a.
4	58.88	25.2	29.9	22.4	73.2	N	2.2	7.2	Ci.-S. E, SE	Cu.	------	○° ⊕²
5	58.83	25.3	30.5	22	82.4	NE	1.8	6.8	Ci., Ci.-S.	S.-Cu. ENE	4.3	○² ⊕ ● p.
6	58.68	25.6	29	23	87.2	NE, N	1.2	8.2	Variable	N.-cf. NNE	17.5	d a. ● p.
7	58.07	26.7	31	23.9	83	NNE, E	1.3	4.7	Ci.	Cu.-N.	------	↯ p.
8	58.30	26.8	31	23.4	80.6	NE	1.2	2.3	Ci.	N.-cf. NE	------	p° ↯ p.
9	58.58	26.6	30.3	23.9	83.3	NE	1.3	7.5	Ci.-S.	Cu. NE	2.5	● a. ○ ⊕
10	58.44	26.8	31	24.5	84.3	N, NE	1.3	6.8	A.-Cu. E	N.	4.6	● ϖ p.
11	58.62	27.4	31.6	24	81.1	N, NE	1.2	5.8	Ci.	Cu.	------	ϖ ↯ p.
12	58.29	27.3	31.9	24.5	79	N	1.2	3.3	Ci.-S.	Cu.	------	d° ⌒ a.
13	58.58	26.5	30.5	24	79.8	NE	2	7.3	Ci.-S.	S.-Cu.	12.7	● a. p. ⌒° ⊕
14	58.68	26.6	31.1	24	81.2	NE	1.7	9	Ci.-S.	Cu. NE	11.4	● p.
15	57.68	26.3	30.5	23.5	80.7	NE	2	9	A.-Cu. E, NE	S.-Cu.	2	● ϖ ᴗ p.
16	57.68	26.3	31.5	23.5	80.8	N, NE	2	8.7	A.-S.	Variable	.2	d a. p.
17	56.96	26.3	30.2	23.1	77.2	N	1.7	5.3	Ci.	Cu. NE	1.3	⌓ p a. ᴗ² ϖ² p.
18	55.13	25.6	28.4	23.5	87.5	NE, N	.5	9.3	Variable	N. N	26.9	● a. p. ⊕ ᴗ
19	54.73	25.9	30	22.9	85.9	SW	.3	9.2	Ci.-S.	N.	------	⊕ a. d ϖ² p.
20	55.87	26.4	30.9	23	84.8	NE	.8	8.8	A.-Cu. SE	Cu. N	50.5	⊤° ●² p.
21	56.48	26.9	31	24	82.8	NE	1.5	7.3	Ci., A.-Cu.	------	3.6	●° a. p.
22	57.41	25.3	28.5	23.8	89.2	N	2.3	9.5	Ci.-S., Ci.	N. NE	5.3	● a. p p.
23	58.75	25.8	29.9	23.4	83.8	N, NE	1.8	6.8	Ci.-Cu.	S.-Cu.	.5	d° a. p° p.
24	58.66	26.3	30.5	23.1	78.7	N, NE	1.3	4.5	Ci.	Cu. NE	------	
25	59.14	26.3	31.2	23.3	79.3	N, NE	1.5	5.3	Ci.	S.-Cu. NE	------	⌓ a.
26	59.05	26	30	23.7	82.2	N	1.5	5.7	Ci.	S.-Cu. NE	1.3	●° a.
27	58.78	25.3	28.5	23.4	84.9	N, NE	1.3	8.3	A.-S.	Variable	------	⊕ p.
28	58.10	24.6	26	23.5	92.5	NE	1.8	10	------	N.	10.7	●° a. d p.
29	57.76	25.6	29	23	88.4	NE	2	9.8	Ci. S., A.-Cu.	N. NE	26.6	● a. d p.
30	57.46	26.6	30	23.6	79.6	NE	2	7.2	A.-Cu.	S.-Cu. NE	.2	d a.
31	58.47	26.7	30.6	23.5	76.4	NE	1.7	3.2	A.-Cu. SE, E	S.-Cu., Cu.	------	↯ p.
Mean	757.96	26.1	30	23.4	82.7	------	1.5	7.1	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	218.1	

METEOROLOGICAL DATA, ETC.—Continued.

ORMOC.

[ϕ=11° 00′ N; λ=124° 36′ E; barometer above sea, 4.5 meters; gravity correction not applied, —1.83 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°*C.*	°*C.*	°*C.*	*Per ct.*		*0-12.*	*0-10.*			*mm.*	
1	757.66	24.8	29.4	20.9	86.3	E	0.3	5.7	Ci., Ci.-S.	Cu. NE	------	Ω a.
2	58.03	23.1	24.7	22.2	97	Variable	.2	9.2	Ci.-S.	N. NE, ENE	85.6	● a. p.
3	57.88	24.5	28	22.1	84.2	N	.2	9.7	Ci.-S.	Cu. ENE	.5	d a.
4	58.34	24.6	29.4	22.2	79.3	Variable	.7	8.3	Ci. SE	Cu. ENE	------	
5	58.04	24.4	29.4	20.5	88	Variable	.3	8.5	Ci. SE	Cu. NE, NW	------	Ω d$^\circ$ a.
6	57.95	24.9	29	22.3	88.9	SW, SSE	.2	7.7	Ci.-S.	Cu.	5.1	Ω d$^\circ$ a. ● ↯ p.
7	57.72	25.7	30.2	22.2	85.8	S, SE	.3	3.7	Ci.	Cu. NE	------	Ω a. ⊤ ↯ p.
8	57.89	26.2	30.6	22.2	85.7	WSW, S	.3	4.2	Ci.	Cu. NE, ENE	3	Ω a. ⌈↯ p.
9	58.21	25.6	30.4	21.9	87.8	WSW, SSW	.3	6.5	Ci.-S.	Cu. E	8.1	Ω ○ a. ● ↯ p.
10	58.27	25.2	29.5	22.8	90.2	NNE	0	6.5	Ci.-S.	Cu.	2.8	Ω ● a. d ↯ p.
11	58.55	25.6	30.9	22.5	86	NNE, SE	.3	5.3	Ci.-S., Ci.	Cu. NE	.5	Ω d a. ⊤ ↯ ⊖ p.
12	58.26	26.1	30.7	21	78.7	S	.7	4.7	Ci.	Cu. E	------	Ω a.
13	58.30	25.9	30.1	23	82.9	N, S	.5	9.3	Ci.-S.	Cu. E	.8	d a. p. ↯
14	58.47	25.4	30.5	23	85.8	N	.3	8.2	Ci.-S.	Cu. E	22.9	d a. ⊤ ● p.
15	57.59	24.5	27.5	22.8	89.2	NE	.7	10	Ci.-S.	Cu. ENE	14.5	● a. d p.
16	57.43	24.3	27.5	22.2	89.2	N quad.	.2	9.2	Ci.-S.	Cu. E	4.3	● a.
17	56.07	24.8	30.7	21.2	85.2	N quad.	.5	7.2	Ci.-S.	Cu. NE	------	Ω a. d$^\circ$ p.
18	54.07	25.2	28.7	23.2	89.2	N quad.	.5	9	Ci.-S.	Cu. NW	3.8	● p.
19	54.66	25.9	29.5	23.5	86.5	SSE, S	.5	8	Ci. E	Cu. S, SE	5.8	● ○ a. ⊖ ⊤ p.
20	55.72	26.2	31.5	22.7	80.7	SE, ESE	.5	4.2	Ci.	Cu. ESE	------	Ω d$^\circ$ a. ⊖ p.
21	56.46	25	31.4	22	90.7	Variable	.3	6.8	Ci. SE	Cu. ENE	41.4	Ω d a. ⌈↯ p.
22	56.97	25.8	27.6	23.8	82.5	Variable	.5	9.7	Ci.-S.	Cu.-N. ENE, E	10.4	● a. p. ⌒
23	58.43	25.8	30.4	22.2	78.1	E, S	.3	5.7	Ci. SSW	Cu. ENE	------	d$^\circ$ a. p. ⌒
24	58.46	25	31.6	20	79.8	E	.7	4.7	Ci.	Cu. ENE, E	4.3	Ω a. ● p.
25	58.78	25.2	30.2	20	84	NW, SSW	.5	6	Ci. E	Cu. E	------	⊍ Ω a.
26	58.34	25.9	30.5	22.8	80.5	E, ENE	.3	8.8	Ci.-S.	Cu. E, ENE	------	Ω a.
27	58	24.5	27.6	22.4	90.3	N	.2	9.8	Ci.-S.	Cu. ENE	8.9	● p.
28	57.25	23.7	25	22.2	95.5	Variable	.3	10	Ci.-S.	Cu.-N.	27.9	● a. p.
29	57.60	25	28	22.8	83.7	NE quad.	.5	9.8	A.-S.	Cu. E	25.1	● a.
30	57.64	24.8	31.7	20.4	79.3	Variable	.3	3.8	Ci.	Cu. E	------	Ω a.
31	58.37	26	31.5	20.5	75	Variable	.7	5	Ci.	Cu. E	------	d$^\circ$ ↯$^\circ$ p.
Mean	757.59	25.1	29.5	22	85.4	------------	.4	7.3	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	275.7	

TACLOBAN.

[ϕ=11° 15′ N; λ=125° 00′ E; barometer above sea, 6 meters; gravity correction not applied, —1.83 mm.]

	mm.	°*C.*	°*C.*	°*C.*	*Per ct.*		*0-12.*	*0-10.*			*mm.*	
1	758.16	26.1	29	23.5	86.2	NW, WNW	1	5.5	Ci. SW	Cu. E	------	○^{2}
2	58.42	24.5	26	23.4	93.5	NW quad.	1	9.5	------------	N. E by N	130	●^{2} a. p.
3	58.62	25.6	28.6	23.3	79.9	N quad.	1.3	7.7	Ci. SW	Variable	------	○^{2}
4	58.96	25.7	29	22.2	77.7	NNW	1	5.8	Ci.-S. WSW	Cu. NE, ENE	------	○^{2} p$^\circ$ p.
5	58.56	24.9	28	23.3	89.8	NNW	1.2	9	Ci.-S.	Cu.-N. NE	14.7	⌒ ○^{2} a. ● p.
6	58.37	25.4	29.6	23.4	89	NW, WNW	1	7.5	Ci.-S.	N. WNW	1.5	p p.
7	58.16	26.3	31.2	23.3	87.2	NNW, NW	.7	4.3	Ci.-S. S by W	Cu. N	1.5	●$^\circ$ ⊤ p.
8	58.42	26.2	31.6	23.8	87.3	NW, NNW	.7	4.3	Ci.-S. SW	Cu. NE	21.8	● ⊤$^\circ$ p.
9	58.73	26.8	30.9	23.9	84.6	E	.7	7	Ci.-S. SW	S.-Cu. NE	1.3	○^{2} p p.
10	58.96	25.7	29.5	24	89	WNW	.7	8.2	Ci.-Cu. W	Cu. ESE	30.2	●^{2} a. p.
11	59.22	26.6	30.6	23.9	86.3	S	.3	5.5	Ci.-S.	Cu.-N., Cu. SE	1.8	p a. ⊖$^\circ$
12	58.89	26.6	31	23.7	84.2	ESE	.8	4	------------	Cu. E	7.6	Ω a. ● p.
13	59.05	26.1	31.8	23.9	86.5	E	1	6.2	------------	Variable	4.3	●$^\circ$ a. p. ○$^\circ$ ⌒
14	59.19	25.2	30.5	23.4	87.8	N, NE	1	7.3	Ci.-S. ESE	N. E	30	●^{2} a. p. ⌒
15	58.30	25.5	28.6	23.5	87.5	NW, E	1	9.3	Ci.-Cu.	Cu.-N. E	17.5	● a. p. ⌒
16	58.98	25.4	28	23.5	87.1	NW, N	.8	9	Ci.	Cu.-N. ENE	15	● a.
17	56.38	25.6	29.2	23.3	85.5	N	1.7	7.7	Ci. SSW	Variable	------	d$^\circ$ a. p.
18	54.10	25.5	28.9	23.7	86.2	NNW	1.7	9.3	Ci. SW	Cu.-N. N	4.5	● a. ○^{2} ⊕ d p.
19	55.12	26.4	30.7	23.4	87.6	SSE	1.2	7.5	Ci. N	Cu.-N. S	------	○^{2} ⊖^{2} ⊍^{2}
20	56.48	26.6	31.5	24	85.7	ESE	.7	5.5	Ci.-Cu. NNW	Cu.-N. SE	2	p a.
21	56.78	26	30.5	24.1	86.8	Variable	.5	7.2	Ci.-S. NE	Cu.-N. W, SE	11.7	●$^\circ$ a. p. ⌒ ⊤
22	58.04	24.8	28	23.5	91.5	ENE	.8	10	------------	N. SE	55.6	● a. p.
23	59.02	26	31	23.6	84.1	Variable	1.2	6	Ci.-S. WSW	Cu.-N. E	------	d$^\circ$ a.
24	59.07	26	31.6	22.8	85.3	NW	1	5.3	------------	Cu. E	10.7	Ω^2 ≡$^\circ$ a. ● p.
25	59.36	26	31.5	22.5	84.2	NW quad.	.7	6.8	Ci.-S. WSW	Cu.-N., Cu. E	.8	⊍$^\circ$ ⊖$^\circ$ ⌒ a. d p.
26	59.02	26	30.7	24	83.2	N quad.	1.3	8.3	Ci. SW	Variable	------	⊖^{2} d$^\circ$ a.
27	58.64	25.4	27	24	88.5	NNW	1.2	9.2	Ci.	N. ENE	40.9	●^{2} a. p.
28	57.89	24.6	26	23.6	93	NW	1	10	------------	N. ENE, NE	64.7	● a. p.
29	58.33	25.8	30.2	23.7	85.3	NW	.7	7.7	Ci.	Cu.-N. E	29.5	● a. ○^{2} p.
30	58.38	26.3	31.6	23.5	81.3	NW, SE	1.2	4.3	Ci. SW, WSW	Cu. E	------	⊖$^\circ$ Ω ⊕$^\circ$ a.
31	59.44	26.2	30	23.2	84	SE	.8	4.8	Ci.-S.	Cu.-N. ESE	9.9	Ω^2 d a. ● p.
Mean	758.23	25.8	29.8	23.5	86.3	------------	1	7.1	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	507.5	

METEOROLOGICAL DATA, ETC.—Continued.

CAPIZ.

[ϕ = 11° 35′ N; λ = 122° 45′ E; barometer above sea, 6 meters; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction.			
									Upper.	Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	758.48	26.8	29.4	22.7	84.7	NE	1	7.2	Ci.-S.	Cu.-N.	3	● p.
2	59.02	24.8	26	21.8	94.2	NNE	1.2	10	Ci.	N.	87.3	●² a. p.
3	58.91	26.1	27.9	22.3	81.5	NE	2.3	8.3	Ci.	Cu.-N.	1.8	p a.
4	59.69	26.4	28.5	22.2	77.8	NE	1.5	7.2	Ci.-S., Ci.	Cu.-N.	------	
5	59.40	26.2	27.9	22.5	82.2	NE	1.2	8.8	Ci.-S.	Cu.-N.	1.3	d a.
6	58.96	26.8	28.9	23.4	84.8	NE	2	8.2	Ci.	N., Cu.-N.	------	d° a. p.
7	58.41	26.5	28.9	22.5	87.4	N	.7	6	Ci.-S., Ci.	Cu.-N.	------	d° a. ↯ p.
8	58.80	26.7	29.1	21.2	85.8	NE	1	7.3	Ci.-S.	Cu.-N.	------	d° a.
9	58.94	26.9	29	23.1	85.2	N, NE	1.2	9	Ci.-S.	Cu.-N.	3.6	● p.
10	58.65	26.6	29.4	22.2	88.7	NE quad.	.7	7.8	Ci.	Cu.-N.	------	d° a.
11	58.68	27.2	29.8	22.6	88.3	ENE	.7	7.2	Ci.	Cu.-N.	1.8	d a. ↯° ☈² p.
12	58.64	27.7	30.1	23	82.7	NE quad.	.8	7.3	Ci., Ci.-S.	Cu.-N.	------	☈² p.
13	59.45	27	29.9	22.6	83.8	ENE, NE	1.2	9.3	Ci.	N., Cu.-N.	------	d° a. p. ☈
14	59.64	26.8	29.3	22	85.2	ENE, NE	.8	8.5	Ci.-S., Ci.	Cu.-N.	6.1	p a. d° p.
15	59.16	26.7	29.7	21.7	88.5	NE	1	9	Ci.	Cu.-N., N.	2	d p.
16	58.81	26.9	28.9	22.9	83.7	NE	1.3	5.7	Ci.	Cu.-N.	6.1	● p.
17	57.86	26.6	28.9	22.5	82.8	NE	1.3	8.7	Ci.-S., Ci.	N.	------	d° p.
18	55.70	26.1	27.9	22.6	89.7	N quad.	2.2	10	Ci.-S.	N.	3.3	p a. d° p.
19	55.09	26.1	27.9	22	89.2	SW, NW	.5	9.7	Ci.-S.	N.	3.8	d° a. p.
20	56.17	26	28.5	21.8	91.7	ESE, E	.3	9	Ci.-S.	N.	12.4	d° a. ●² p.
21	56.76	26.8	29.3	22.4	87.8	ENE	.8	8.2	Ci.-S.	Cu.-N.	3.6	d° a. ● p.
22	58.26	25	27.2	21.9	95.7	ENE, NE	.7	10	------------	N.	13.9	● a. p. ↙°
23	59.38	25.8	28	22.2	89.8	NE	1.8	9	Ci.-S.	N., Cu.-N.	1.8	●° ↙° a. ⌒° p.
24	58.96	26.4	29.3	22	85	NE quad.	1	5.5	Ci.	S.-Cu.	------	d° p.
25	59.54	26.2	28.6	22.4	86.8	NE, ENE	.8	7.2	Ci.-S.	N.	5.6	d° a. ● p.
26	59.39	26.5	28.9	22.3	85.3	NE	1	9	Ci.-S.	N., Cu.-N.	------	
27	59.26	26	28.5	22.9	85.7	NE	1.2	9.5	Ci.-S.	N.	------	d° p.
28	58.88	24.9	26	21	90.8	NE	1.3	10	------------	N.	41.1	● a. p. ↙°
29	58.71	25.8	27.5	21.9	91.7	NE	1	10	------------	N.	3.3	● a. d° p.
30	58.25	26.1	28.4	22.8	89.5	NE	1	6.3	Ci.-S.	Cu.-N.	------	d° p.
31	58.90	26.3	29.1	22	90	ENE	.3	6	Ci.	Cu.-N., Cu.	------	d° ↯ p.
Mean	758.54	26.3	28.6	22.3	87	------------	1.1	8.2	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	201.8	

CALBAYOG.

[ϕ=12° 04′ N; λ=124° 36′ E; barometer above sea, 4.1 meters; gravity correction not applied, —1.80 mm.]

Day.	Pressure (mean).	Temperature, mean.	Temperature, maximum.	Temperature, minimum.	Relative humidity (mean).	Wind, prevailing direction.	Wind, force (mean).	Clouds, amount (mean).	Clouds, upper.	Clouds, lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0–12.	0–10.			mm.	
1	758.61	24.7	29.5	20.3	89.8	N	1	6.7	A.-Cu.	S.-Cu.	1	p ↯ p.
2	58.66	24.8	27.2	22.5	92.3	N	1.2	9.2	Ci.-S.	Cu.-N.	6.9	●° a. p.
3	59.12	24.6	28.9	21.2	84.8	N, NE	1.2	7.3	A.-Cu.	S.-Cu.	.5	p a. d ↯ p.
4	59.39	23.4	28.5	19	86.5	N	1	7	A.-Cu.	S.-Cu., Cu.-N.	3.8	p a. ↯ p.
5	58.97	24.1	27	20.5	92.8	N	1.2	8.2	Ci.	S.-Cu., Cu.-N.	6.9	d a. ● p.
6	58.75	24.4	28.5	22.5	95.2	N	1.2	8.3	Ci.-S.	Cu.-N.	7.1	● a. d ↯ p.
7	58.45	25.4	29.2	21	89	N	1	5	A.-Cu.	S.-Cu.	------	d° ↯ p.
8	58.86	25.6	29.5	22	90.7	N	1.2	5.3	A.-Cu.	S.-Cu.	2.5	d ↯ p.
9	59.24	25.4	30.3	22	93.3	N	1	5.2	Ci.	S.-Cu., Cu.-N.	2.5	d a. ● ↯ p.
10	59.26	24.6	29.5	22.5	95.2	N	1	7.5	Ci.	S.-Cu., Cu.-N.	28.2	d a. ● ↯ p.
11	59.58	24.9	30	22.5	94.7	N	1	7.7	A.-Cu.	S.-Cu., Cu.-N.	21.8	d a. ● ↯ p.
12	59.32	25.6	29	22.5	89.2	N	1	5.8	A.-Cu.	S.-Cu., Cu.-N.	3.3	p a. ↯ p.
13	59.60	24.6	28.5	22	92.5	N	1	7.5	Ci.	S.-Cu.	21.6	● ↯ p.
14	59.65	24.9	28.9	21.5	92.2	N	1	8.2	Ci.	S.-Cu., Cu.-N.	37.1	● ↯ p.
15	58.78	25.4	28.5	22.6	88.3	N, NE	1.3	8.5	A.-Cu., Ci.-S.	Cu.-N.	.5	d a. p ⌒° ↯
16	58.44	25.2	29.8	22.5	87	N	1	6.7	A.-Cu.	S.-Cu.	------	↯ p.
17	56.98	24.8	29.3	21.1	89.2	N quad.	1.5	7.3	Ci.	S.-Cu.	2.3	● ↯ p.
18	54.14	24.1	26	23	96	N	1.5	9.8	Ci.-S.	Cu.-N.	92.7	● a. p. ↙°
19	55.30	25.7	30	23.5	90.7	S	1.8	8.5	Ci.-S.	S.-Cu.	25.4	● a. p ↯ p.
20	56.78	26	31.8	22	88.8	N, SE	1	5.3	Ci.	S.-Cu.	1.8	●° a. ↯ p.
21	57.42	25.4	29.6	23	92.8	N, NE	1	7.5	A.-Cu., Ci.-S.	S.-Cu., Cu.-N.	13.5	⊤ ● p.
22	58.58	23.6	25	22	94.5	N, NNE	1	8.7	Ci.-S.	Cu.-N.	56.9	● a. ↯ p.
23	59.62	25.2	29	22.3	89.7	N	1	6.2	Variable	S.-Cu.	24.1	● a. p ↯ p.
24	59.62	23.8	29.4	20.5	90.2	N	1	6.7	A.-Cu.	S.-Cu., Cu.-N.	10.9	p a. ● ⌒° ↯ p.
25	59.98	23.8	27.7	20.5	94.8	N	1	7.7	Ci.-S.	S.-Cu., Cu.-N.	12.2	☈ ●° ⌒° ↯
26	59.51	25.7	29.5	22.6	85.5	N	1	7.2	A.-Cu.	S.-Cu.	1.3	d a. ↯ p.
27	59.03	25.2	28.5	22.1	88.3	N	1.2	7.5	Ci., Ci.-S.	S.-Cu., Cu.-N.	.5	d p.
28	58.50	24.9	26.9	23.4	94.8	N, NE	1	8.8	Ci.-S.	Cu.-N.	32.8	● a. d ↯ p.
29	58.67	25.6	28.8	23.7	89.2	N, NNE	1	7.3	Ci.-S.	S.-Cu.	.8	d a. ↯ p.
30	58.63	25.3	31.2	21	87.3	N quad.	1	6	A.-Cu.	S.-Cu.	7.4	● ↯ p.
31	59.71	25	31.7	20.2	85.3	NE quad.	1	4.7	Ci.	S.-Cu.	.2	d ↯ p.
Mean	758.62	24.9	28.9	21.9	90.7	------------	1.1	7.2	------------	------------	------	
Total	------	------	------	------	------	------------	------	------	------------	------------	246.5	

METEOROLOGICAL DATA, ETC.—Continued.

LEGASPI.

[ϕ=13° 09′ N; λ=123° 45′ E; barometer above sea, 4.3 meters; gravity correction not applied, —1.77 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	758.90	27.2	31.1	24	79.3	NE quad.	1.7	6.2	Ci. NW	Cu. NE	25.4	⛈ p.
2	59.42	25.7	28.8	22.9	81.9	NE quad.	2	8.3	------	Cu.-N., Fr.-N. NE	74.7	●² a. p p.
3	59.85	26.2	28.5	23.5	72	NE quad.	2.2	7.2	Ci.-S.	Cu.-N. NE	.8	d a.
4	60.17	25.9	29.7	23.3	70.3	NNE	1.5	7.2	Ci.-S., Ci.	Cu., Cu.-N. NE	2.3	p a. p.
5	59.56	25.3	28	24	85	NE	1.5	9	Ci.-S.	Cu.-N. NE	3.8	d a.
6	59.06	26.2	29.2	23	80.7	NE	1.7	7.5	Ci.-S.	Cu. NNE	15	● a.
7	58.61	25.7	30.5	21.1	84.3	NE	.2	4.2	------	Cu.-N. NW	------	≡ a. d p.
8	59 11	26	30.6	22.1	82.2	NE	1.5	2.2	Ci.	Cu. N	------	≡ a.
9	59.52	26.4	31	22.2	83.6	NE	1	4.7	Ci.-S. SE	Cu. NE	------	d° p.
10	59.69	26.4	29.5	24.4	86	NE	1.2	9.5	Ci.-S.	Cu.-N. NE	5.8	● a. p.
11	59.90	26.4	29.9	24	86	N	1.2	6	Ci.-S.	Cu.-N. ENE	1.3	d a.
12	59.41	26.8	30.5	24	82.8	N, NE	1.2	3.7	Ci.-S.	Cu., Cu.-N. ENE	12.2	d° a. ● p.
13	59.97	26.3	29.6	24	81.7	NE	1.8	6.3	Ci., Ci.-S.	Variable	5.8	● p.
14	60.25	27.1	30.2	23	80.5	NE	2	7	Ci., Ci.-S.	Cu.-N. ENE	9.1	● a. p.
15	59.40	26.3	28.7	22.9	85.3	NE	2.5	7.3	Ci.-S.	Cu. E, ENE	8.1	● a. p p.
16	59.25	26.8	29.7	22.6	81.1	NE quad.	2.3	4.2	Ci.	Cu. ENE	6.6	●° a. p.
17	57.98	27	29.5	25.1	79	NNE	2.2	6.2	Ci.-S. ESE	Cu. NE	------	d p.
18	55.58	25.2	26.5	23	91.5	NE, NNE	2	10	Ci.-S.	N.	57.9	● a. p.
19	54.24	25.8	28.3	22.7	93.7	NNE	1.7	9.5	------	N., Cu.-N. S, SE	49.8	● a. p p.
20	57.07	27.1	30.1	25	84.5	NE quad.	1.3	6.5	A.-Cu., Ci.	Cu.-N. E	6.6	● a.
21	57.91	26	28.9	23.6	90	NE	1.8	7.3	------	Cu.-N. ENE	60.7	●² a. p.
22	59.42	24.4	25.6	21.7	92.8	NE	1.5	10	------	N.	102.1	●² a. p.
23	60.34	24.7	26.5	23.6	91	ENE	2.5	10	------	Fr.-N. ENE	12.2	d a. ● p.
24	60.35	24.3	25.9	22	92	NE	2.2	10	Ci.-S.	N.	115.1	●² a. p.
25	60.27	25.8	28	23	85.7	NE	1.8	4.7	A.-Cu.	Cu.-N. ENE	2.8	d a. p.
26	60.16	26.6	29.6	24.4	79	N	1.7	4.2	Ci.	Cu. NE	1	d a.
27	59.93	25.6	28.4	24.2	83.6	NNE	1.7	8.3	Ci.-S. SE	N. NE	2.3	d a. ● p.
28	59.21	25.2	26.6	22.4	90.7	N, NE	2.7	8.8	Ci.-S.	N. NE	50.5	● a. p.
29	59.39	25.5	27.1	24	88.5	N, NNE	1.8	10	Ci.-S.	Fr.-N. E	44.7	d a. ● p.
30	59.31	25	28.8	22.9	90	N	1.2	8.2	Ci.-S.	N.	55.4	● a. d p.
31	60.14	25.6	28.5	23.1	87	NE	1.7	8	------	Cu.-N. E	21.6	● a. d ⚡ p.
Mean	759.14	26	28.8	23.3	84.6	------	1.7	7.2	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	753.6	

ATIMONAN.

[ϕ = 14° 00′ N; λ = 121° 55′ E; barometer above sea, 7.8 meters; gravity correction not applied, —1.74 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	759.02	26.1	29.2	24.1	90.7	NE	2.7	9.7	Ci.-S.	Fr.-N. N	28.7	d a. ● ↙ p.
2	59.69	26.1	29.3	23.5	86.3	NE	3.8	9.3	Ci.-S.	S.-Cu. NE	27.4	● ↙° a. p. ⌒°
3	59.93	26.4	30	23.5	80.1	NE	3.8	8.3	Ci.	S.-Cu. NE	3.6	↙° a. p. d
4	60.41	26.1	30.3	23.7	76.2	NE	3.7	8.7	Ci.	S.-Cu. NE	2.5	↙° a. p. ●°
5	60.24	25.6	26.4	22.5	80.2	NE	3.8	9.2	Ci.-S.	S.-Cu. NE	12.4	● ↙° a. p.
6	59.75	25.6	28.1	23.3	87.2	N	2.7	9	Ci.	Fr.-N. N, NE	14.7	● ↙° a. p.
7	58.52	27.4	32.3	22.6	78.8	NE	1	2	Ci. NE	Cu.	------	d° p.
8	59.23	26.9	31.3	22.9	84.4	NE, NNE	3	5.7	Ci. NE	Cu. NE	3.3	d ↙°
9	59.43	27.4	31.5	24.4	82.5	NE	1.8	4.7	Ci.	Cu. NE	------	⌒° Φ° ⊥° p.
10	59.60	26.3	29	24.4	90	NNW	1.2	8.8	Ci.-S.	Cu., S.-Cu. NE	2	d a. p. ⚡
11	59.67	26.2	30.8	23	90.8	N	1.2	8	Ci.	Cu. NE	17.8	Ω a. ●° ⚡ p.
12	59.45	26.2	28.8	24.3	90.2	N, NE	1.7	7.3	Ci.	S.-Cu. NE, N	12.9	● a. d Φ° p.
13	60.11	27	30.9	24.6	83.1	ENE	2.5	6.2	Ci. NE	Cu. NE	5.1	d a. p ⌒° Φ²
14	60.24	26.9	30.7	24.5	86.4	NE quad.	2.5	7.5	Ci.	Cu. NE	6.3	d a. ●° Φ° p.
15	59.54	26.9	29.3	24.4	86.7	NE	3	7.8	Ci.	S.-Cu. NE	4.5	d a. ↙° Φ° p.
16	59.37	25.5	28	24.1	88.5	E	2.2	7.2	Ci. E	Cu. NE	11.2	●° a. p. ↙° Φ°
17	58.39	26.3	29.5	23.7	84	NE	3.2	4.7	Ci. S	Cu. NE	8.9	d a. ● ↙° Φ° p.
18	56.83	25	27	23.1	92.7	NNE	4.2	9.8	Ci., Ci.-S.	N. N	33.2	● ↙° a. p.
19	55.63	23.8	24.8	23	97.3	NNE	4.8	10	Ci.-S.	N. N	217.6	↙ ●² a. p.
20	57.42	24.7	26.3	22	95	NNE	2.5	9.8	Ci.-S.	N. NE	48.8	● ↙° a. p.
21	58.48	24.4	25.6	22.5	93.7	NE	5.2	10	Ci.-S.	N. NE	111.8	● ↙° a. p.
22	60.58	23	23.4	22	93.8	NE	5.5	10	Ci.-S.	N. NE	48.5	● ↙° a. p.
23	60.88	23.5	24.8	22	94.3	NE	4.3	10	Ci.-S.	N. NE	21.5	● ↙° a. p.
24	60.44	24.5	26.3	22	92.8	ENE	2.8	10	Ci.-S., Ci.	Fr.-N., S.-Cu.	8.3	d a. p.
25	60.46	25	29.8	23.5	88.9	NE	2	8.7	Ci.	S.-Cu. NE	------	d° a. p. Φ°
26	60.36	26.1	30.6	24	88.8	NE quad.	2.3	7.7	Ci. E	Cu. NE	2.3	d a. p. Φ²
27	60.50	25.4	28.6	24	90.3	NNE	3	8.2	Ci. ESE	Cu. NE	2.5	d a. p. Φ°
28	60.10	25.1	27	23.5	88.9	NNE	3.2	10	Ci.-S.	S.-Cu. NE	7.5	d a. p. ↙°
29	59.91	24.4	25.4	23.5	94	NE quad.	3	10	Ci.-S.	N., Fr.-N. NE	39.8	● a. p. ↙°
30	59.72	23.8	24.6	22.6	93.8	NE	2.5	10	Ci.-S.	N., Fr.-N. NE	37.8	●° a. p. ↙°
31	59.98	24.6	27	22.6	94.3	NE	.8	10	Ci.	S.-Cu. NE	35.3	●° a. p. ⚡
Mean	759.48	25.6	28.3	23.3	88.5	------	2.9	8.3	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	776.2	

METEOROLOGICAL DATA, ETC.—Continued.

OLONGAPO.

[ϕ=14° 49′ N; λ=120° 15′ E; barometer above sea, 3.5 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature.			Relative humidity (mean).	Wind.		Clouds.			Rainfall.	Miscellaneous.
		Mean.	Maximum.	Minimum.		Prevailing direction.	Force (mean).	Amount (mean).	Prevailing form and its direction.			
									Upper.	Lower.		
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	758.89	27	32.9	23.8	75.3	NE	0.7	8.2	A.-Cu. E	Cu.-N. ENE	------	≡ a. ↯ p.
2	59.37	25.1	28.4	22.6	82.1	NE	.5	9.2	Ci.-S.	Cu.-N. E	1	d a. ↯ p.
3	59.12	25.5	31.9	21.2	74.5	NE	.6	8.2	Ci.-S. NE	Cu. E	------	≡ a.
4	59.95	25.4	30.8	21.8	70.2	NE	.8	7.8	Ci.-S.	Cu. E	------	≡ a.
5	59.88	25.4	32.1	20.2	68.3	NE	.7	5.7	Ci.-S.	Cu.	------	≡ a. ∞ p.
6	59.39	25.8	33.9	20.1	75.8	ENE	.5	4.5	Ci.-S.	Cu.	------	≡ a. p.
7	58.42	25	28.5	21.1	84.3	ENE	.6	3.3	Ci.-S.	Cu.	------	≡ a. ∞ p.
8	58.62	26.7	34.4	22.7	83.8	ENE, N	.7	4.5	Ci.-S.	Cu. E	------	≡ a. ∞ p.
9	59.10	25.9	32.5	21.6	81.8	ENE	.5	5	Ci.-S.	Cu.	------	≡ a. ∞ p.
10	59.21	26.2	32.9	22.5	87.5	ENE	.6	6.8	Ci.-S.	Cu., Cu.-N. NE	------	≡ a. ↯ p.
11	59.34	26.3	33	23.6	85.3	ENE	.5	8.7	Ci.-S.	Cu.-N. ESE	.8	d ↯ a. p.
12	58.91	27	32.8	23.4	82.1	NE quad.	.5	8.5	Ci.-S.	Cu.	------	↯ a. p ○
13	59.32	27.3	32.5	24	73.2	ENE	.5	6.2	Ci.-S.	Cu.	------	≡ a. ○ ∞ p.
14	59.71	27.7	32.9	24	72.6	NE quad.	.8	8.5	Ci.-S.	Cu.-N., Cu. E	------	d° a.
15	59.12	26.7	33	22.9	76.5	NE, E	.5	9.5	A.-Cu. ESE	Cu.-N. E	------	∞ ψ p.
16	58.98	27.5	33.4	24.2	71.3	NE	.5	7.8	Ci.-S.	Cu., Cu.-N.	------	≡ a. ∞ p.
17	58.17	27.4	33	23.6	71.8	NE quad.	.7	7.8	Ci.-S.	Cu. E	------	≡ a. ∞ ψ² p.
18	57.04	26.6	34.2	21.2	72.7	NE	.6	5.5	Ci.-S.	Cu. E	------	≡ Ω a. ∞ ψ² p.
19	55.75	26.8	32.5	22.9	74.8	NNE	.7	10	Ci.-S.	Cu.-N. NE	------	•
20	57.13	25.7	28.5	23.2	81	NE	.8	10	Ci.-S.	Cu.-N. E	1.6	↙° a. d p.
21	57.75	26	31.3	22.6	76.3	ENE	.8	9.7	Ci.-S.	Cu.-N. ESE	.2	d a. ψ p.
22	58.98	23.8	26.2	22.4	74.8	NE	1	10	Ci.-S. ESE	Cu.-N.	------	d° a. p.
23	59.28	25.8	31.2	22.5	69.6	NE	1.5	6.5	A.-Cu. SE	Cu. SE	------	↙° a. p.
24	------	------	------	------	------	------	------	------	------	------	------	
25	------	------	------	------	------	------	------	------	------	------	------	
26	------	------	------	------	------	------	------	------	------	------	------	
27	------	------	------	------	------	------	------	------	------	------	------	
28	------	------	------	------	------	------	------	------	------	------	------	
29	------	------	------	------	------	------	------	------	------	------	------	
30	------	------	------	------	------	------	------	------	------	------	------	
31	------	------	------	------	------	------	------	------	------	------	------	
Mean	758.76	26.2	31.9	22.5	76.8	------	.7	7.5	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	3.6	

SAN ISIDRO.

[ϕ=15° 22′ N; λ=120° 53′ E; barometer above sea, 20 meters; gravity correction not applied, —1.70 mm.]

Day.	Pressure (mean).	Temperature: Mean.	Maximum.	Minimum.	Relative humidity (mean).	Wind: Prevailing direction.	Force (mean).	Clouds: Amount (mean).	Upper.	Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	759.40	25.9	33	21.3	77.2	N quad.	0.4	4.8	Ci. SE	Cu. NE	1.5	Ω² a. ●° ↯ p.
2	59.89	26	31.5	23	73.3	NNE	.9	8.3	A.-Cu. SE	Cu. NE	------	Ω a.
3	60.04	24.7	31.2	20.7	72.5	N	.7	6.5	Ci. E,SE	S.-Cu.	------	○° ↙°
4	60.52	23.5	30.5	18.5	73.5	NNW, NNE	.4	5.7	Ci.-S. E,SE	Cu. NE, N	------	Ω ○² ↙°
5	60.53	23.5	29.3	18.5	73.3	N, NE	.6	6	C.-S. SE	Cu. NE, E	------	↙° p.
6	59.88	24.7	33	19	73.2	NE	.7	4.8	Variable	S.-Cu, Cu. NE	------	Ω² a. ↙° p.
7	58.42	26.2	34.2	20.6	72.8	Variable	.4	3.8	A.-Cu., Ci. E	Cu. N, NE	------	Ω ≡ a.
8	58.97	26.9	35.4	20.9	72.2	NE quad.	.2	2.8	Ci.	Variable	------	Ω ≡² a.
9	59.35	26.4	34.7	19.6	73.2	NE	0	3.8	A.-Cu. E	Cu.-N. NE	------	Ω² ≡² a.
10	59.58	26.8	34.1	21.7	75.3	ENE	.8	5.2	Ci. SE	Cu. E, NE	------	Ω² a. ○ p.
11	59.81	24.7	27.6	23.5	92.7	Variable	.1	9.2	C.-S.	N. E, NE	7.6	d a. p.
12	59.41	26	32.8	22.5	82.7	N	.3	6	Ci.-S. SE	Cu. NE	2	● ≡ a.
13	60.06	25.6	31.3	21.5	75.2	E	.5	3.7	Ci. SE		------	Ω² a. ↙° p.
14	60.51	24.8	29.5	21.8	84.8	Variable	.2	7.3	A.-Cu. E	Variable	4.8	d a. ⊕² ψ² p.
15	59.80	25.6	32	21.5	79.5	N	.4	8.2	A.-Cu. SE	Cu. NE	------	
16	59.58	25.9	31.8	21.5	72.8	NNE	1.2	6	A.-Cu. E	Cu. NE	------	↙°
17	58.72	25.2	32.6	20	74	NE	.7	5.2	Ci.-S.	S.-Cu.	------	Ω² a. Φ² p.
18	57.49	25.6	31.8	20	69.7	NNE	1.8	5	Ci.-S. S	Cu. NE, E	------	Φ² ≡ a. ○° ↙° Φ p.
19	56.44	25.8	28.4	23.4	73.4	NNE	2.3	9.8	Ci.-S.	N. NE	------	↙° a. p. d°
20	57.84	23.7	25.4	22.4	87.5	NNE, NE	1.5	10	A.-S.	N. E	6.1	d ↙° a. ● p.
21	58.70	24.2	28.6	21.4	77.2	NNE	1.2	8.8	Ci.-S.	N. E	15.5	d a. ↙° ψ° p.
22	60.05	22.9	26.2	20.2	74	N quad.	.7	10	A.-S.	N. NW	.8	d° a. p.
23	60.55	23.5	30	18.9	75.7	SSE	.7	7.5	Ci.-S. SE	Cu.-N. E	------	≡ Ω² ○° ↙° a.
24	60.09	24.7	31.3	20.4	76.3	NE, E	.5	9	A.-Cu. SE	Cu.-N. E	2	≡ Ω a. ●° p.
25	60.29	24.7	30	21.5	82	E	.8	6	A.-Cu. SE	Cu. E, NE	------	↙° p.
26	60.18	25	32.1	19.8	74.3	E	.8	3.5	Ci.-Cu. SE	Cu. NE	------	Ω² a. ↙° p.
27	60.22	25.5	32.7	19.8	73.8	Variable	.3	4	Ci. SE	Cu.-N. NE, E	------	Ω² a. ↙° p.
28	60.11	25.2	32.7	19.5	71.7	N	.4	4.8	C.-S. SE	S.-Cu. NE	------	Ω² a.
29	59.88	24.6	32.3	20.2	74.3	N, E	.8	5.2	Ci.-S. S	Cu. NE	------	Ω a. ○° p.
30	59.69	25.3	31.8	19.5	73	Variable	.2	6.8	Ci.-S. S	S.-Cu.	.5	Ω ≡ ○° a. d p.
31	60.30	24.9	30.4	21.9	78.7	E	.7	6.7	Ci.-S.	N., Cu. E	.5	d a.
Mean	759.56	25.1	31.2	20.8	76.1	------	.7	6.3	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	41.3	

METEOROLOGICAL DATA, ETC.—Continued.

DAGUPAN.

[ϕ=16° 03′ N; λ=120° 20′ E; barometer above sea, 2.7 meters; gravity correction not applied, —1.67 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force. (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	759.04	26.6	32.1	22.5	76.5	SE	0.8	5	Ci.	S.-Cu. E	------	⚡ p.
2	59.35	26.6	33.1	22.7	71.2	S	1.3	3.7	A.-Cu. E	S.-Cu.	------	⚡ p.
3	59 49	25.8	32.2	22.3	69.2	SSE	1.7	4.3	A.-Cu.	S.-Cu. E	------	
4	59.98	25.3	31.1	21.4	65	S	1.5	4.2	Ci.-S., Ci.	S.-Cu. SE	------	
5	60.22	25	30.7	18.1	65.9	S	.7	3	A.-Cu.	S.-Cu., Cu.	------	
6	59.63	25.5	31	19.5	70.6	NW, NNW	.5	2.3	Ci.	S.-Cu., Cu.	------	
7	58.31	26.4	30.4	21	79.2	NW	.8	.8	Ci.	S.-Cu., Cu.	------	
8	58.63	26.6	31.5	22.5	78.6	NNW	1	1.3	Ci., A.-Cu.	S.-Cu., Cu.	------	
9	59.13	26.4	30.3	21.6	81.1	NW	.8	2	Ci.	S.-Cu., Cu.	------	⌓ p.
10	59.42	26.7	31.3	22.8	82.8	NW	.2	3.3	Ci.	S.-Cu., Cu.	------	↙° ⌓ p.
11	59.72	25.9	31.1	22.9	85.7	NW, S	.3	6.3	A.-Cu. SE	S.-Cu.	5.1	T° ● p.
12	59.17	26.3	30.1	22.9	84.7	NNW	.2	7.3	A.-Cu., Ci.-S.	S.-Cu. SE	------	≡ a. ⌒ d° p.
13	59.40	26.6	31.2	22.6	74.7	S	1	3	Ci.	S.-Cu.	------	⌓ p.
14	59.82	25.5	32.3	21.5	80.3	SE	1	5.7	A.-Cu.	S.-Cu.	.5	d ⌓ p.
15	59.38	25.9	30.7	21.9	78.8	Variable	.8	6.3	Variable	S.-Cu.	------	⌓ p.
16	59.16	26.7	33.2	21.7	69.7	S	1	5.5	A.-Cu.	S.-Cu., Cu.	------	↙° a.
17	58.50	26.4	31.3	21.4	72	Variable	.7	6	Ci.	S.-Cu.	------	⊍ ⌓ p.
18	57.34	25.8	31	21	73.8	Variable	.7	3	Ci.	S.-Cu., Cu.	------	⊍ p.
19	56.24	25.6	29.4	21.1	78.5	NW, S	.3	9.7	A.-S.	S.-Cu.	------	⊍ p.
20	57.45	26.1	30.1	23.2	80.2	S	.7	9.8	A.-Cu.	N. SE	3	●° p.
21	58.15	25.4	30.2	21.9	76.9	SE	.8	9.2	A.-Cu.	S.-Cu. SE	3	d a. ⊍ p.
22	59.25	24.4	27.5	22	61.4	SSE	1.7	9.8	A.-Cu.	S.-Cu.	------	d° a. p ⊍
23	59.68	25.6	31.9	21.8	63.8	S	2	5.7	A.-Cu.	S.-Cu.	------	⌓ a.
24	59.36	25.9	33	21.5	69.3	S	1.5	7	Ci., A.-Cu.	S.-Cu.	------	⊍ a. ⌒ d° p.
25	59.92	26.6	31	23.1	70.6	S, N	1.3	5.3	A.-Cu.	S.-Cu.	------	d° a.
26	59.96	26.2	31.5	21	75	S, SE	1.2	2.7	Ci.-S.	S.-Cu.	------	⌓ a.
27	59.84	26.4	31.4	20.4	74.2	SE	.7	1.8	Ci.	Cu.	------	
28	59.56	26.2	32.7	21.4	70.2	S, N	1.3	3	Ci., Ci.-S.	S.-Cu., Cu.	------	
29	59.60	25.6	30.4	20.6	73.7	SE	1.2	2.7	Ci.	S.-Cu., Cu.	------	
30	59.26	25.8	30.9	20.1	72.5	SE	1	4.7	Ci.	S.-Cu., Cu.	------	
31	59.61	27.8	32.4	23.3	64.7	S	1.2	5.5	A.-Cu.	S.-Cu. NE, E	------	
Mean	759.15	26.1	31.2	21.7	73.9	------------	1	4.8	------------------	------------------	------	
Total	--------	------	------	------	------	------------	------	------	------------------	------------------	11.6	

VIGAN.

[ϕ=17° 34′ N; λ=120° 23′ E; barometer above sea, 24 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force. (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	Per ct.		0-12.	0-10.			mm.	
1	760.03	27.2	31	24.3	66.3	NW quad.	1.8	8.5	A.-Cu., Ci.-S.	S.-Cu., Cu.	------	⌒ a. ○ ⚡ p.
2	59.90	28.1	31.5	25.5	51.3	NE	2.7	.7	Ci. SE by S	S.-Cu., Cu.	------	↙° a. p. ⚡°
3	59.73	27.2	30	24	60	Variable	1.2	.7	Ci.-S. SSE	Cu.	------	
4	60.39	27.4	30.5	25	51.2	NE	1.2	.7	Ci.-S.	Cu.	------	○°
5	60.60	26.5	29.5	24	57.8	ENE	1.2	.2	Ci.	Cu.	------	
6	60.20	26.3	30.1	22.8	65.2	Variable	1.2	0	A.-Cu. NE	Cu.	------	
7	59.14	25.6	30	21	76.3	N quad.	1.5	0	Ci., A.-Cu.	Cu.	------	↙° p.
8	59.61	25.4	28.9	22	77.3	NNW	1.7	0	Variable	Cu.	------	↙° p.
9	60	25.2	28	22.3	88.2	NNW	2.5	.5	Ci.-S.	Cu.	------	Ω a. ↙° ⚡ p.
10	60.10	26.4	29.8	24	86	NW quad.	.8	2.2	Ci.-S.	Cu. NW	------	Ω a. ⌓ p.
11	60.34	25.7	29.6	22.8	85.8	NW	1.7	3.5	A.-Cu., Ci.-S.	Cu.	------	Ω a. ↙° ⌓ p.
12	59.94	24.9	28.6	23	82.8	NNW, NW	3.3	7.2	Ci.-S.	S.-Cu. ENE	------	↙° ⌓ p.
13	59.80	27	30.3	23	72.7	WNW	.8	1	Ci.-S., A.-Cu.	Cu. ENE	------	⌓ p.
14	60.41	26.7	29.5	23	80.8	W quad.	.7	3.3	A.-Cu.	Cu. ENE	------	Ω a. ⌓ p.
15	59.82	27.3	30.5	23.8	73.5	WNW	.7	6.7	Ci.-S.	S.-Cu., Cu.	------	Ω a. ⌓ p.
16	59.65	27.5	30.5	24	63.2	Variable	.8	.7	A.-Cu. E	Cu.	------	⌓ p.
17	58.96	26.9	30.5	23	68.8	Variable	.8	3.2	Ci.	Cu.	1.5	●° ⌓ p.
18	58.24	27.4	31.5	24.5	54.2	N quad.	2.7	1.8	Ci.	Cu.	------	↙° ⊍ p.
19	57.56	25.8	29.5	23	66.7	N quad.	3.3	6.3	Ci.-S. S by E	Cu.	------	↙° a. p. ⌓
20	58.73	25	28	23	75.8	N	4.3	8.8	A.-Cu. SE by E	Cu. NE	------	↙° a. p. ⌓
21	59.80	24.9	27	22.8	68.3	N quad.	3.5	9.3	A.-Cu. SE by S	Cu.	------	d° a. ↙°
22	60.25	25.6	27.5	24	46.5	NE	4.3	9.2	Ci.-S.	S.-Cu.	------	↙° a. p.
23	60.23	27.3	31	25	44.3	NE	4.7	8.2	A.-Cu SSE	S.-Cu., Cu.	------	↙° a. p.
24	59.71	27.4	30.1	25.9	58.2	ENE, WSW	1	3.7	A.-Cu. S	Cu.	------	⊍ a. ⊕ p.
25	60.26	26.7	30	23	68.8	WSW	1.3	4.3	A.-Cu. SW	S.-Cu., Cu.	------	⌓ ⌒ a.
26	60.43	26.8	29.8	24	73.2	Variable	1.2	.3	Ci.	Cu. N	------	
27	60.44	27.3	29.5	25	73	Variable	1.2	1.5	A.-Cu.	Cu. NNW	------	
28	60.15	26.8	29	24.5	65.2	WNW	1	1.3	Ci.-S. SSE	S.-Cu., Cu.	------	○
29	60.09	26.4	29	23.5	67	NW	1	0	Ci. S	Cu.	------	○
30	59.55	27.5	30.5	24	58	NW	1.5	0	Ci.	Cu.	------	Ω ↙°
31	60.20	26.8	30	23	65.8	ENE	1	1.7	A.-Cu. SE by E	Cu.	------	
Mean	759.81	26.5	29.7	23.6	67.5	------------	1.8	3.1	------------------	------------------	------	
Total	--------	------	------	------	------	------------	------	------	------------------	------------------	1.5	

METEOROLOGICAL DATA, ETC.—Continued.

APARRI.

[ϕ=18° 22′ N; λ=121° 34′ E; barometer above sea, 5 meters; gravity correction not applied, —1.59 mm.]

Day.	Pressure (mean).	Temperature. Mean.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity (mean).	Wind. Prevailing direction.	Wind. Force (mean).	Clouds. Amount (mean).	Clouds. Prevailing form and its direction. Upper.	Clouds. Prevailing form and its direction. Lower.	Rainfall.	Miscellaneous.
	mm.	°C.	°C.	°C.	P. ct.		0–12.	0–10.			mm.	
1	763.23	23.6	25.5	21.8	87.7	NE	4	10	------	N. NE	3	d ↙° a. p.
2	63.52	23.5	25.6	21.5	84	NE	3	10	------	N, S.-Cu. ENE	3.3	d ↙° a. p.
3	62.52	23.6	26.8	20.8	88.2	E	1	9.3	------	Cu.-N. E	1.3	d a.
4	62.60	23.2	28.1	20	85	E, S	.8	5.8	Ci. SE, SW	S.-Cu.	------	Ω ≡ a.
5	62.70	23.5	28	20	84.8	S, E	1	8	A.-Cu. E	S.-Cu.	------	
6	62.43	24.8	28	21.2	84.8	NE	1.5	7.5	A.-Cu.	Cu.-N. NE	7.9	● a. d p.
7	60.36	24.9	27.4	22.4	88.7	NE	1.8	8	A.-Cu. E	Cu.-N. NE	8.4	●° a. p. ↙°
8	61.36	25.3	28.2	22.7	85.2	N	1.3	6.7	Ci.	Cu.-N. NE	2.5	p a. ↙°
9	59.99	24.6	26	23	94.3	N	1.8	7.8	------	Cu.-N. NE	10.6	d a. p. ↯
10	60.60	25.8	29.7	23	91.7	S, NE	1.5	4.5	Ci. NW	Variable	1.3	p p.
11	61.67	24.4	25.4	22.6	93.5	NE	2.5	8.8	------	N. NE	63.5	d a. ●^{2} p. ↙°
12	62.13	23	24	21.2	92.7	NE	3	10	------	N. NE	138.2	●^{2} a. p. ↙°
13	62.45	23.8	26	21	92.1	NE	2	8.5	Ci. E	N. NE	1.8	d a. ↙° ⌒ p.
14	62.37	35.2	27.9	22.8	90.7	E	.7	8.3	A.-Cu.	------	1.5	d a.
15	61.70	23.9	29	21.7	92.2	S	.5	7.3	Ci.-S. SE	------	------	Ω ≡ a.
16	61.81	24.1	28.5	20.1	90.3	S, NE	.7	3.8	A.-Cu. S	Cu.-N., S.-Cu. E	------	Ω^2 ≡ a.
17	61.19	23.5	25.7	21.9	91.5	SW, NE	1.2	9.7	------	S.-Cu. E	3	d ↙° p.
18	61.42	25.7	28.2	21.5	84.5	NE	2.5	5.2	A.-Cu. SE	Cu.-N. NE	.8	p a. ↙° p.
19	60.86	23.9	25	21	85.5	NE	3.7	10	------	N. NE	13.7	●° ↙° a. p.
20	61.97	23.1	24.3	20.7	88	NE	3.5	10	------	N. NE	15.2	●° ↙ a. p.
21	64.45	20.4	23	18.6	88.7	NE	4	10	------	N. NE	11.2	●° ↙° a. p.
22	65.20	20	21.5	18.4	87.7	ENE	3.2	10	------	N. NE	7.1	●° ↙° a. p.
23	65.09	20.8	22.9	18.5	89.2	NE, ENE	2.7	10	------	S.-Cu. E	3	d ↙° a. p.
24	62.94	22.4	25.2	19.5	88.8	E	1.2	8.7	Ci.-S. SE	S.-Cu. ENE, E	1.3	d a.
25	62.41	23.6	26	20.7	88.8	E quad.	.8	8.3	A.-Cu. E	S.-Cu. E	------	
26	61.76	24	28.8	20	87.3	E	1	.3	------	Cu.-N.	------	Ω a.
27	62.32	23.8	28	20	86.5	E	1	4.2	------	S.-Cu. E	------	
28	62.32	23.4	28	20	87	SW, E	1	3.3	A.-Cu. S	S.-Cu. E	------	
29	62.18	23.7	27.6	18.2	85.2	ENE	.8	3.3	------	Cu.-N. E	------	Ω ≡ a.
30	62.10	25	27.9	23	84.3	NE, ENE	1.8	4.3	A.-Cu. E	S.-Cu. ENE	------	Ω a. ↙°
31	62.19	24.2	27.9	21.6	88	E	.8	8.8	A.-Cu. SSE	S.-Cu., Cu. E	------	⌒ a.
Mean	762.25	23.7	26.6	20.9	88.3	------	1.8	7.4	------	------	------	
Total	------	------	------	------	------	------	------	------	------	------	298.6	

METEOROLOGICAL DATA FOR THIRD AND FOURTH CLASS STATIONS.

JOLO.

[ϕ=6° 03′ N; λ=120° 59′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.3	23.2	73	NE	2	21.1	Ω ≡ a. ● a. p.
2	31.8	22.8	73	SW	2	3.6	Ω ≡ a. ●° a. p.
3	31.5	25.3	73	NE	2	2	⌒ a. ●° p.
4	29.9	23.4	73	NE	2	4.3	Ω ≡ ● a.
5	31.3	24.6	68	NE	3		
6	31.7	22.4	72	ENE	1		Ω ≡ a.
7	31.2	22.4	77	ENE	1		Ω ≡ Γ↯ a ⌒ d
8	31.8	22	76	NE	2		Ω ≡ a.
9	32	21.9	74	E	2		Ω ≡ a. Γ↯ ⊕ p.
10	31	22.6	80	SW	2		Ω ≡ a. ⊕ p.
11	31.8	22.2	75	E	1	.8	Ω ≡ a. Γ↯ ●° ⊕
12	31.1	22	77	SSW	1	.5	Ω ≡ ●° a. ∪ p.
13	31.6	22.4	76	Calm			Ω° ⊤ a. Γ↯ ⊕ p.
14	30	23.3	78	NE	1	22.4	Ω Γ↯ a. ● ∪ ⊕
15	29.9	22.8	90	Calm		38.1	Ω ●° a. ● p.
16	30	23.1	82	SW	2	2.5	Ω a. ●° ⊕ p.
17	31.3	22.2	72	NW	2	3.3	Ω a. Γ↯ ⊕² ● p.
18	31.3	23.1	71	NE	3	.8	Ω ●° a. Γ↯ ⊕° p.
19	31.4	23	77	S	2		Ω a.
20	32.1	23.6	75	SW	2		Ω a.
21	32	23.3	87	SE	2	13.5	Ω ●° a. ● Γ↯ p.
22	31.8	22.7	90	Calm		27.9	Ω a. ●² p.
23	32.1	23.2	64	SSW	2		< p.
24	31.8	24.3	80	NE	2	10.4	Ω a. d ● p.
25	31.3	23.6	76	SW	3	12.2	●° a. p. ↙ ●° p.
26	31.5	24.5	70	NE	2		
27	31.3	26.6	78	NE	2	2.3	●° p.
28	26.6	23	82	SSW	5	27.7	d a. ●² p.
29	28.2	23	89	W	6	1.5	↙° a. ●° p.
30	28.5	23.7	89	Calm		13.2	● a. p.
31	29	24	81	SW	2	1.8	●° a. d p.
Mean	30.9	23.2	77.4		1.9		
Total						209.9	

ISABELA, BASILAN.

[ϕ=6° 43′ N; λ=121° 57′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31	22.5	66	NE			Ω a.
2	29.6	23	75	W			Ω a.
3	30.6	22.5	68	W			Ω a.
4	30.5	23.5	68	NE		0.5	Ω a. p p.
5	31.2	21.5	66	W			Ω ≡° a.
6	31.3	21.8	71	W		.5	Ω ≡° a. p p.
7	29.8	22	73	Calm		29	Ω a. r ⊤ p.
8	30.2	22	78	W		.5	Ω ≡° a. p p.
9	31.5	22.5	72	W		1	≡° a. ●° p.
10	29.8	23.2	84	W		6.1	Ω a. r° a. p.
11	29.5	22.5	82	Calm		27.9	Ω a. r p.
12	30.1	21.4	78	Calm		1	≡ a. ●° a. p.
13	30	23.8	68	NE			Ω a. Γ↯ p.
14	30.5	24	87	W		6.6	● a. p p.
15	30.6	22.4	70	NE		2.5	Ω a. p p.
16	30.5	23	92	W		19.8	● d a. p.
17	31	22	74	W			Ω ≡ a.
18	30	22	77	W		6.6	Ω a. ↙ ●° p.
19	29.8	22.6	93	W		34.5	↙ ● d a. p.
20	31.5	22.6	79	W		.8	●° a.
21	32	22.4	79	W		6.9	Ω ≡° r° ⊤ a. ⌒
22	31.6	23.6	81	W		5.8	Ω a. r° p.
23	31.7	23	92	NE		6.9	d a. p. ● ⊤ p.
24	31	23.5	86	NE		16.3	Ω a. ● ⊤ d p.
25	30.2	23	76	W			Ω ≡ a.
26	30.3	22	78	NW			Ω a.
27	30	23	87	NE			Ω a.
28	29.7	21.5	96	W		48.3	d ↙ ● r a.
29	30.1	22.5	96	W		21.8	r a. d p.
30	30	23.5	96	W		80	↙° ● ⊤ a. ● Γ↯
31	31.5	22.5	89	NE		8.6	d ● a. ↙° p.
Mean	30.6	22.6	79.9				
Total						331.9	

ZAMBOANGA.

[ϕ=6° 54′ N; λ=122° 05′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	29.9	22.6	76	W	1		
2	30.2	22.5	78	W	1		
3	32.3	22.5	54	NNE	1		
4	30.4	23.5	66	ENE	1		
5	31.9	22.4	66	W	1		
6	30.1	22	67	W	1		
7	30.1	22.5	72	SE	1		
8	31.9	22.9	75	W	1		
9	30.2	24.5	79	SE	1	0.8	● p.
10	29.5	24	71	SE	1		
11	31	23.4	62	E	1	1.3	● p.
12	30.5	22.9	68	W	1		
13	31.9	22.7	74	SE	1		
14	29.8	23.5	81	W	1	3.8	● a.
15	29.8	22.5	72	SE	1	2	● p.
16	27.2	23.5	92	N	1	.8	● p.
17	29.1	23	78	SE	1	.8	● a.
18	30.9	21	68	W	1		
19	28.5	24.8	70	W	4		
20	30	23.5	79	W	1	5.3	● p.
21	32.1	23.2	75	SE	1		
22	29	23	86	Calm			
23	30.8	23.2	74	E	1	3.6	● p.
24	30.5	23	68	E	1		
25	29.5	23.2	81	W	3		
26	29.8	20.8	66	W	1		
27	29.7	23.5	76	WSW	1		
28	26.5	23.8	91	W	3	5.6	● p.
29	27.2	23.5	85	W	1	4.1	● a.
30	25.1	22.2	98	ENE	1	55.9	● a. p.
31	25.9	22.9	97	Calm		5.8	● p.
Mean	29.7	23	75.6		1.2		
Total						89.8	

DAVAO.

[ϕ=7° 01′ N; λ=125° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.5	22.8	78	NE	3		
2	31.4	22.8	76	NNW	1		
3	27.9	22.7	82	NE	2		
4	27.5	22.5	86	Calm			
5	31.4	21.2	73	NE	2		
6	32.2	22.9	77	ENE	3		
7	32.5	23.4	74	WNW	2		
8	32.7	22.7	75	SW	1	24.4	● p.
9	31.1	22.1	78	Calm		14.2	● a.
10	30.7	22.5	76	NNE	2		
11	32.9	22.4	71	NNW	1		⊤ p.
12	32.7	22.8	69	N	2	43.4	⊤ ● p.
13	32.7	22	72	NE	2	14.5	⊤ ● p.
14	31.6	22.3	77	NNE	1		
15	28.6	21.5	92	Calm		20.8	● p.
16	30.3	21.9	83	NE	2		
17	30.3	22.1	73	NE	3	14.5	● p.
18	32.2	22.5	76	SSW	2		
19	31.9	21.5	72	NE	4		
20	32.2	22.6	73	Calm		26.2	● p.
21	32.9	23.5	72	NNE	4		⊤ p.
22	33.7	23.2	78	NE	3	39.9	● a.
23	30.7	22.1	72	Calm			
24	31.2	21.3	70	ENE	2		
25	30.9	22	73	NNE	4		
26	28.4	22.3	78	WNW	2		
27	25.7	22.6	92	NE	3	54.9	r a. r° p.
28	29.7	22.5	95	Calm		27.2	r a.
29	26.7	21.7	94	Calm			
30	30.2	22.3	76	N	3		
31	31	21.5	78	SE	2		
Mean	30.9	22.3	77.8		1.8		
Total						280	

METEOROLOGICAL DATA, ETC.—Continued.

COTABATO.

[ϕ=7° 13′ N; λ=124° 12′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	33	22.3	71	Calm	------	------	
2	32.6	22.5	73	WNW	3	------	d ≡ a.
3	32.8	22	67	SE	3	------	≡ a. ○ p.
4	33.4	21.5	68	NNW	2	------	≡ a.
5	33.5	22	79	NW	4	------	d a. ⊤ p.
6	33.1	21.8	64	NW	3	------	≡ a.
7	34.4	21.8	64	W	3	------	≡ a. ⊤ ⚡ d p.
8	34.1	22.2	69	WSW	3	5.8	≡° a. ⛈ ●° p.
9	32.7	22.2	68	NE	2	------	d a. ○ p.
10	33.1	21.8	74	NW	3	2.5	⌓ ≡² a. ●° p.
11	33.5	22	60	NE	2	7.6	●° ⊤ p.
12	34.8	22.8	61	SE	2	10.9	≡ ⊤° a. ⛈ ● p.
13	34.3	22.4	65	ENE	2	8.1	≡ a. ● p.
14	34.2	22	71	SW	3	3.8	≡ a. ● p.
15	34.5	21.5	68	E	1	------	
16	33.1	21.7	74	NW	3	------	≡° a.
17	32.8	23	75	WNW	5	------	⌓ ≡ a.
18	32.3	22.1	70	NW	4	------	≡ a.
19	31.8	21.5	80	NNW	2	8.4	● a. d a. p.
20	33.5	22.3	69	SW	3	------	≡ a.
21	34.5	23	76	WSW	3	------	≡ a. ⊤ p.
22	34.7	22.4	67	SW	3	46.5	≡° a. ⛈ ● p.
23	33.4	22.3	64	ESE	3	18.3	≡ a. ● p.
24	33.2	21.8	59	WNW	2	------	≡ a.
25	33.5	21	63	WNW	3	------	≡ a.
26	32.1	21.5	57	ENE	2	------	≡ a.
27	30.5	22	72	ESE	1	------	≡ a.
28	29.5	22.7	78	NW	1	16.5	≡ a. ● p.
29	32.8	21.9	72	SW	3	1.8	●° ⛈ p.
30	33.3	22.1	87	SSW	3	31.5	↙ ● a. d p.
31	34.2	22	62	SSE	3	27.2	● p.
Mean	33.2	22.1	69.3	------------	2.6	------	
Total	------	------	------	------------	------	188.9	

DAPITAN.

[ϕ=8° 38′ N; λ=123° 23′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	------	23.8	65	E	2	4.8	● ≡² ⌒ a. ⚡ p.
2	------	23.1	81	E	2	8.6	⌓ a. ● p.
3	------	23	79	E	3	31.2	● a. ↙° p.
4	------	23.1	72	E	2	2.3	● a. ⚡ p.
5	------	23.2	68	E	2	------	⚡ p.
6	------	23.4	69	W	2	------	⌓ a ⚡ p.
7	------	23.9	73	E	2	------	≡ a. ⚡ p.
8	------	------	------	------------	------	.3	⚡ ●° p.
9	------	24.3	75	E	2	1	⌒ ●° a. ⚡ p.
10	------	24	73	Calm	------	28.4	● a. p. ⚡ p.
11	------	23.7	68	E	2	------	≡ a. ⚡ p.
12	------	23.9	71	E	2	------	⊤ a.
13	------	23.9	72	E	3	------	⛈ p.
14	------	23.7	75	E	2	1	⚡ ●° p.
15	------	23.5	77	E	3	------	●° a. ⚡ p.
16	------	------	------	------------	------	------	d° a.
17	------	23.2	73	E	2	------	≡ ⊖ p.
18	------	23	71	W	2	------	⌓ a. d p.
19	------	23.1	72	W	2	.5	⌓ a. ●° a. p. ⊖ p.
20	------	23.3	68	W	2	------	⚡ ⊖ p.
21	------	23.2	70	E	3	------	
22	------	23.1	67	Calm	------	54.9	● ⌒ a. ⛈ ↙ ● p.
23	------	22.7	72	Calm	------	4.3	● a. ⚡ p.
24	------	23	74	E	3	1.3	● a.
25	------	------	------	------------	------	------	⌓ a.
26	------	23.2	80	E	3	------	⌓ a. ⚡ p.
27	------	23	73	E	3	2.8	d ● p.
28	------	22.8	83	E	1	66.5	r a. p. ↙ ● p.
29	------	22.6	80	E	1	47	⛈ r a. ↙ ● p.
30	------	22.9	72	E	3	4.8	● p.
31	------	23.2	74	E	3	32.3	● ⛈ p.
Mean	------	23.3	73.1	------------	2	------	
Total	------	------	------	------------	------	292	

BUTUAN.

[ϕ=8° 55′ N; λ=125° 31′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	28.5	22.9	78	NW	2	9.7	● a. d p.
2	25.3	22.9	95	NW	1	13	● a. p.
3	25.6	22.6	92	ESE	3	42.4	● a. p.
4	27	21.2	80	W	2	.5	●° ∞ a.
5	27.7	21.1	75	NW	4	------	⌓ ≡ a.
6	27.7	21.8	84	N	3	------	⌓ ∞ a.
7	29.1	21.9	74	N	3	3.8	● a. p p.
8	29.1	22.8	74	N	4	3.6	⌓ ≡ a. ⌒ ● p.
9	27.3	23.5	86	E	1	.1	∞ ●° a. ⌒ p.
10	29.5	23.9	83	E by N	3	12.7	≡ a. ●² ○ p.
11	29.8	22.9	75	ENE	3	1.3	d ● p.
12	29.6	20.2	72	N by W	3	------	≡ a.
13	28.6	22.7	85	E	2	1	● ≡ a. ⊥² p.
14	24.8	22.6	96	Variable	2	31.2	∞ ⛈ a. ● p.
15	25.3	22	95	S	2	14.7	● a. p.
16	26.5	22.1	86	NE	2	1.8	≡ a. ●° a. p.
17	28.1	23	73	NW	6	------	≡ a. ⊖ p.
18	27.7	23	90	S	1	7.4	● ≡ a. d ⊖ p.
19	30.2	23	71	S	3	------	
20	30.2	21.8	79	NE	2	------	⌓ a. ⊖ ⚡ p.
21	29.7	22	85	N	2	.3	●° ⌒ ⊤ p.
22	30.3	23	79	NNE	4	15.2	⌓ a. ⛈ ● p.
23	29	21.4	78	S	3	10.9	●° a. ↙ ● p.
24	28.5	21	58	N	2	------	⌓ ∞ a.
25	28.3	20	72	NW by W	3	------	⌓ ∞ a.
26	27	20.3	88	NW	2	8.1	⌓ ≡ a. ● p.
27	25.7	23	96	NW	2	35.6	● a. ↙ ● p.
28	24.5	23.2	98	NW	2	49.3	● a. p.
29	25.1	21.6	94	WSW	2	14.5	● a. p.
30	29	22	77	SE	3	------	d p.
31	30.3	22	72	S	5	------	↙° a. ⛈ d p.
Mean	27.9	22.2	81.9	------------	2.6	------	
Total	------	------	------	------------	------	277.1	

YAP (Western Carolines).

[ϕ=9° 29′ N; λ=138° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32	23.2	91	NNE	1	7.6	
2	30.9	23.5	79	W	2	------	
3	30.7	23.7	92	SSW	1	22.4	
4	30.8	23.2	78	SW	2	------	
5	31	24.5	92	E	4	------	
6	30.5	25.7	75	NE	5	1	
7	32.4	24.3	77	E	4	------	
8	30.7	------	------	------------	------	28.4	
9	30.4	22.3	76	E	3	2	
10	29	24.3	93	NNE	4	9.9	
11	27.3	23	96	NE	3	22.9	
12	29.8	23.8	75	NE	5	1.3	
13	29.8	24.2	84	NE	4	.8	
14	29	24	82	NE	6	------	
15	27.2	22.2	93	ENE	8	61.5	
16	29.8	23	86	E	5	8.4	
17	28.1	23.5	82	NE	4	5.1	
18	27.6	23.3	89	NE	5	10.7	
19	29.3	23.7	84	ESE	4	------	
20	30	24.1	82	E	4	3	
21	30	24.9	77	NE	4	------	
22	31	24	87	NE	5	------	
23	29.2	24.1	92	NE	5	18.8	
24	26.8	24.2	88	NE	6	4.6	
25	28.5	22.8	74	NE	5	29.5	
26	27.8	23.8	84	NE	5	13.7	
27	28.9	23.2	77	NE	6	.8	
28	28.2	23.6	74	NE	5	3	
29	29.3	22.7	78	NE	4	------	
30	28.6	22.5	79	NE	3	------	
31	29.5	22.7	76	NE	4	------	
Mean	29.5	23.6	83.1	------------	4.2	------	
Total	------	------	------	------------	------	255.4	

METEOROLOGICAL DATA, ETC.—Continued.

MAASIN.

[ϕ=10° 08′ N; λ=124° 50′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	29	22.1	83	SW	1	17	↙ ● ↯ p.
2	24.4	22	87	N	2	136.1	≡ a. r a. p.
3	28.2	22.5	72	N	1	29.5	↙ ● a. d p.
4	29.4	21.7	69	NE	1	------	≡ a.
5	28.9	21.6	74	NW	2	------	↯ a. p. ↙° ∞ p.
6	29.5	23.4	82	WSW	1	------	d ∞ ↯² p.
7	30.3	22.6	80	NE	1	------	↯² a. p. ∞ p.
8	28.8	23.5	85	NW	1	4.6	●° a. p. ≡ ↯² p.
9	29	23	84	NW	1	------	↯² ↙° d a. ↯ p.
10	29	23.4	79	E	4	------	↯² a. ↙° d ⏑ p.
11	30.4	24	74	E	5	------	⏑ ↯ p.
12	31	23.1	72	NE	2	------	↯ a. p. d ⏑ p.
13	29.5	22.7	76	N	1	------	d a. p. ∞ ↯ p.
14	28.1	22.9	91	NE	1	29	↯² d ↙ ●² ≡ ⏑
15	26.8	22.5	85	E	1	30.2	≡² d a. r d p.
16	26.6	22.6	89	SW	1	12.2	≡² a. ↙° ⏑ ↯ ●°
17	29.6	22	77	NW	2	13	↯ ⏑ ↙ ● ≡² d
18	28.9	23.8	84	NW	2		≡² ↙° d [↯ ⏑
19	29	24.1	85	SE	3	------	≡² ⌒ d a. ↯ ⏑
20	30.5	24.3	83	SE	1	------	↙° a. d ↯ ⏑ p.
21	29.1	23.3	85	SW	1	------	d ≡ [↯ ⏑ ⊖ p.
22	30	24.1	75	NE	1	31.5	↯ ≡ ⌒ ● d ↙° ⏑
23	29.1	22.8	79	E	4	------	d ≡ a. ↙° ↯² p.
24	30	22.2	77	SW	2	------	↯² a. ↯ p.
25	29.7	22.2	69	SW	2	------	↯² a.
26	28.8	22.3	84	NW	1	------	↙° d a. p. ↯ p.
27	26.4	23.4	88	N	1	84.3	↯ d ≡ a. r p.
28	25.5	23.1	97	NW	1	66	r a. ↙ ● [↯ p.
29	27.5	22.7	83	NE	1	43.4	r a. d ↙° ≡² ↯²
30	29.4	23.7	69	E	2	------	d a. ↯ ↙ a. p.
31	29.6	23.4	68	E	4	4.6	⏑ ↙° d a. p ↯
Mean	28.8	22.9	80.2	------------	1.7	------	
Total	------	------	------	------------	------	501.4	

BACOLOD.

[ϕ=10° 41′ N; λ=122° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	30	23.6	70	NE	2	------	
2	26	21.2	93	NNE	1	10.9	●° a. p.
3	28.3	23	77	NE	4	5.1	●° a. ↙ p.
4	27.9	22.8	73	NE	4	------	
5	28.2	22.4	79	N by E	3	.3	⌒ a. ●° a. p.
6	29.1	23	73	NE	3	------	d° a.
7	29.2	23.7	78	N	3	------	[↯ p.
8	30.5	23	72	N	4	------	↙ ↯ p.
9	29.2	24.7	80	NNE	3	------	↯ p.
10	29.7	24.6	92	NNE	3	15.2	↙ ● ⊤ p.
11	30.3	22.8	83	N	3	------	⊖ p.
12	30.1	23.1	77	N	3	------	⊖ p.
13	29.9	23.6	79	NE	3	------	↙ ↯ p.
14	30.1	23.9	79	NE	3	13.5	↙ p r° p.
15	29.6	23.4	76	NE by N	4	------	↙ d° ⏑ p.
16	28.9	23.6	89	NE	2	4.8	● p.
17	28.8	23.1	73	N by E	4	1.3	↙ ⊖ p p.
18	28	22.8	79	N	4	15.5	●° a. p a. p.
19	29	22.8	76	N	1	5.6	●° a. p ⊖ p.
20	29.7	23.1	81	N	2	1.8	●° ⌒ a. d° [↯ ⊖
21	30.6	23.7	81	NNE	3	1	●° p.
22	26.3	24	94	N by E	6	11.4	d° ⌒ a. p ↙ p.
23	28.6	24.1	82	NE	2	2	●° d° a.
24	29.7	21.7	80	N	3	------	
25	30	23.1	78	N	3	------	
26	29	24.1	78	N	3	4.8	d° a. ↙ p p.
27	27.9	23.8	78	N	3	6.6	d° a. p. p r° p.
28	25.7	23	94	N	3	73.1	↙ ● a. r p.
29	27.9	23.1	78	NE	3	.3	●° a. d p.
30	29.5	24	79	N	3	------	↙ p.
31	32.1	22.6	53	ESE	1	------	↯ p.
Mean	29	23.3	79.2	------------	3	------	
Total	------	------	------	------------	------	173.2	

SAN JOSE BUENAVISTA.

[ϕ=10° 44′ N; λ=121° 56′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	32.3	22	68	WSW	1	------	d° p.
2	27.6	22.2	92	N	1	5.1	d a. ●° a. p.
3	31.4	22.6	55	NNE	3	------	↙° p.
4	31.6	20.4	57	Calm	------	------	
5	31.9	20.2	65	NW	1	------	
6	30.8	22.3	76	NNE	3	------	↙° p.
7	32.4	22.4	73	Calm	------	2.8	● [↯ p.
8	32.5	22	69	WSW	1	.5	⌒ ●° p.
9	31.8	22.8	76	N	1	.5	●° p.
10	31.4	22.7	88	Calm	------	6.6	●° a. p.
11	31.8	22.5	68	N	1	------	[↯ p.
12	32.6	23.3	65	N	1	------	
13	31.7	22.5	68	NNE	1	------	↙° p.
14	33.5	22.3	63	Calm	------	2.8	● ⏑ p.
15	32.3	23.1	81	Calm	------	3.6	● d ⏑ p.
16	32.1	22.4	67	NNE	1	------	⊖ p.
17	32.9	20.2	66	WSW	1	------	⏑ p.
18	26.7	22.7	89	N	2	.5	↙° ●° a.
19	29.8	23.1	76	NNE	2	4.6	● a. ⊕ ⏑ p.
20	32.1	23	79	Calm	------	23.6	d ● ↯ p.
21	31.9	23.6	68	W	2	------	d° p.
22	28.5	23.5	89	N	3	9.1	d ● a. ↙° ●° p.
23	32.6	22.2	57	NE	3	------	⌓ a. ↙° p.
24	32.4	20.7	58	NNE	1	------	⏑ p.
25	32.1	21	65	W	1	------	
26	30.4	22.6	75	Calm	------	------	
27	30.5	20	80	Calm	------	------	⌓ a.
28	25.8	23	93	N	1	9.1	● a. p.
29	28.8	21.9	81	Calm	------	4.8	● a. d p.
30	31.7	22.9	73	N	2	------	
31	33.1	22.7	61	W	2	------	↯ p.
Mean	31.2	22.2	72.3	------------	1.1	------	
Total	------	------	------	------------	------	73.6	

TUBURAN.

[ϕ=10° 44′ N; λ=123° 48′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0-12.	mm.	
1	29.4	22.2	76	N	1	------	◯² ↯² p.
2	24.8	22.4	96	Calm	------	60.2	●² d a. ● d p.
3	29.2	22.4	66	N by E	2	------	◯² d° p.
4	29	22.5	77	N	4	------	◯° p.
5	28.4	21.4	80	N by W	2	5.6	◯° d ● p.
6	28.4	24.3	82	N	2	2.5	● d a. ◯° ↯° p.
7	29.5	23.5	78	N	1	------	◯° ↯² p.
8	29.9	22.7	77	N	1	9.1	⌓° ≡° a. ● [↯²
9	29.2	23.8	84	N	2	------	d° a. ◯² ⊖° p.
10	30.2	23.1	73	NNE	1	------	⏑° ↯² p.
11	33.6	23.4	54	Calm	------	------	⏑² ↯° p.
12	30.1	22.9	77	N	2	1.5	≡° a. ↯° ●° p.
13	29.8	22.6	78	N	2	------	◯² a. [↯° d p.
14	30.5	22.4	88	Calm	------	16.8	●² d ⊤° p.
15	29.2	22.7	84	Calm	------	7.6	● a. p. d p.
16	29.5	21.8	79	N by E	1	------	◯° ⏑² p.
17	29	21.3	77	N by W	2	?	⌓² ≡° a. ↙ ● p.
18	28.5	24.1	83	NNW	2	13.2	● d a. ◯° d° p.
19	29.6	23.8	88	Calm	------	19.6	●² ⌒ a. p p.
20	29.7	23.6	82	Calm	------	1.5	●° a. ↯² p.
21	30.7	22.9	86	N by W	2	2.8	●° [↯² d p.
22	28.6	24	90	N	2	13	● d a. p.
23	30	22.8	72	Calm	------	2	●° ⌒° a. ↯° p.
24	29.5	21.2	78	N	2	------	⌓² ≡° a. d° p.
25	29.6	22.4	78	N	1	------	⌓° a.
26	30.8	23.4	66	N	2	1	●° p.
27	27.5	23.5	85	N	2	6.9	● d p.
28	26	23.4	93	N	2	29	●² a. d ● p
29	26.8	22.2	88	Calm	------	9.1	● a. d a. p.
30	31.2	22	69	N	1	------	⌓² ≡° a.
31	31.2	20.9	62	NNE	2	------	⌓² ≡² a. ↯² d
Mean	29.3	22.8	78.9	------------	1.3	------	
Total	------	------	------	------------	------	201.4[1]	

[1] 30 days of observation.

METEOROLOGICAL DATA, ETC.—Continued.

BORONGAN.
[ϕ=11° 42′ N; λ=125° 25′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.4	22.4	73	Calm	------	12.7	p a. p.
2	28.8	23.6	81	NNE	4	42.4	↯ ● a. p.
3	29.6	24.1	66	NE	3	1.5	↯ p a. p.
4	29.7	21.8	65	NNE	3	3.8	↯ p a. ↯ ● p.
5	27.8	23	90	NNE	1	65.5	●² a. p.
6	30.8	22.8	97	Calm	------	25.9	d ≡ a. ●² ⊤ p.
7	30.7	21.8	77	SW	1	144.8	Ω ≡ a. ●² p.
8	30.5	22.2	76	NE	1	------	Ω ≡ a. d p.
9	29.8	22.2	77	NE	1	15.5	Ω ≡ a. p² p.
10	30.4	23.2	93	Calm	------	14.5	● a. p p.
11	30.1	23.3	69	SE	1	7.1	p a. p.
12	30.7	22.3	75	NE	2	13.2	● a. p p.
13	30.8	22.4	84	ENE	2	11.9	● a. p p.
14	29.3	23.6	95	E	5	59.2	p a. ↯ ●² ⊤ ⊎
15	30.3	22.7	82	ENE	4	13	↯ ● a. p ⊎ p.
16	29.3	22.9	78	NE	4	7.6	↯ p a. p. ⊎ p.
17	29.4	22.7	84	NNW	2	14	●° a. ● p.
18	28.6	23.3	81	SW	2	15.2	● a. ↯ ⊎² p.
19	28.7	22.7	83	SSE	1	34	d ● a. ● ⊎² p.
20	30.4	22.8	87	SSE	1	7.6	≡ ●° a. p ⊎ p.
21	30.7	23.5	86	E by S	2	30.5	● a. ↯ ● p.
22	27.6	23.8	81	NE	3	31	↯ ● a. p.
23	30.7	24.8	76	ENE	3	11.4	↯ p a. ↯ ● p.
24	30.2	22	95	NE	1	19	Ω ≡ a. ●² p.
25	29.7	21.7	79	NE	1	11.7	● a. ↯ ● p.
26	29.5	23.3	77	NE	3	3.8	● a. ↯ p.
27	27.3	23.4	90	N by E	2	46.7	● a. ↯ ●² p.
28	27.1	23.1	90	NNE	1	37.8	≡ ● a. ↯ ●² p.
29	28.8	22.8	83	E by N	2	.5	≡ ●° a d p.
30	30.9	22.7	74	E by S	2	------	Ω ≡ a. ↯ p.
31	30.8	22.4	77	E by S	4	4.6	↯ p a. ● p.
Mean	29.7	22.9	81.3	------------	2	------	
Total	------	------	------	------------	------	706.4	

GUBAT.
[ϕ=12° 55′ N; λ=124° 08′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.5	22.5	71	NE	1	17	● p.
2	30	23.6	75	NE	3	5.8	↯ a. ● p.
3	29.1	23.7	73	NE	2	3.6	↯ a. ●° a. p.
4	28.6	22.6	69	NE	2	15.2	↯ ● p.
5	27.6	22.1	92	NE	3	27.9	↯ ● a. p.
6	29.5	23	82	NE	2	.8	d a. p. p p.
7	30.5	21.2	74	NE	1	------	
8	30.2	22.5	80	N	2	2.5	d ⌒ a. p d p.
9	31.4	22.2	74	NE	1	------	
10	30	23.4	85	NE	1	36.1	● a.
11	30.7	23.2	76	NE	2	24.1	d a. ● a. p.
12	30.7	23.6	74	NE	1	4.1	d ● a.
13	30	24.2	86	NE	2	14.7	● p.
14	30	23.6	77	NE	3	16	↯ ● a. p.
15	29.7	22.7	80	NE	3	12.2	d a. ↯ ● p.
16	30.5	22.8	78	NE	2	9.7	↯ ● a.
17	29.6	23.2	79	NE	3	46.7	↯ ● p.
18	28	23.2	96	NE	3	54.4	↯ ● a. p. r p.
19	28.9	21.7	88	SE	1	75.7	↯ ● a. p.
20	31.8	24	65	SE	1	5.1	● d a.
21	29.4	24.2	94	NE	3	38.1	⌒ a. ● a. p.
22	26	23.2	96	NE	4	73.2	↯ ● a. p.
23	27.5	22.9	89	NE	4	57.1	↯ ● a. p.
24	26.7	22.6	98	NE	4	54.1	↯ ● a. p.
25	28.2	22.4	95	E	1	8.1	● a.
26	30.4	24.4	71	NE	1	2.5	● p.
27	28	23.2	86	NE	2	21.1	d a. ● a. p.
28	27	23.5	88	NE	3	15.2	● a. p.
29	27.8	23	87	NE	2	14.7	d a. p. ● p.
30	29.6	22.9	87	NE	2	10.7	p a. p. ● p.
31	30.3	23	72	NE	2	16	● a.
Mean	29.3	23	81.8	------------	2.2	------	
Total	------	------	------	------------	------	682.4	

SUMAY, GUAM (Ladrones Islands).
[ϕ=13° 22′ N; λ=144° 45′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.4	23.8	69	SE	2	------	
2	28.4	23.6	95	E	1	------	●² a.
3	30	23.6	71	ESE	3	------	
4	30	24.8	77	SE	3	------	
5	30	23.4	74	NNE	2	------	●² a.
6	29.8	23.8	74	SE	5	------	
7	29.4	23.2	74	ENE	4	------	
8	29	23.6	73	E	4	------	
9	29.6	25	70	ENE	4	------	↯ ● ⊎ p.
10	28.8	25.2	73	E	5	------	
11	29.2	24.6	72	ESE	5	------	●² a.
12	29	24.4	84	E	5	------	
13	29.8	24.6	71	ENE	5	------	
14	29.8	24.6	70	E	6	------	
15	29.4	24.6	71	E	5	------	
16	28	24.6	77	E	6	------	↯ ●
17	29.4	24.2	68	E	3	------	
18	28.8	24.2	68	E	4	------	
19	29.8	24.2	71	E	5	------	
20	29.6	24	70	SE	4	------	
21	29	24.8	71	ENE	5	------	
22	27	23.8	81	ENE	4	------	↯ ●² a.
23	28	24.4	63	ENE	6	------	
24	27.2	24.6	74	ENE	6	------	
25	29	25	72	E	4	------	↯ ● a. p.
26	29.6	25	71	ESE	4	------	
27	29	24.2	70	E	4	------	
28	29.2	24.6	76	ENE	4	------	r a. p.
29	28.6	24	73	NE	3	------	
30	27	23	77	NE	4	------	
31	28.8	23.4	76	ENE	5	------	
Mean	29.1	24.2	73.4	------------	4.2	------	
Total	------	------	------	------------	------	------	

VIRAC.
[ϕ=13° 34′ N; λ=124° 14′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p.m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	------	------	------	------------	------	------	
2	------	------	------	------------	------	------	
3	28.5	22.8	67	NE	3	1	●° a. p.
4	29.5	22.2	79	NE	1	.3	d° a. p. ●° p.
5	29.5	22.4	78	NE	2	2.3	●° a. d a. p.
6	30.3	21.8	76	SW	2	5.3	● a. ●° p.
7	30.1	21.8	80	SW	1	------	d° a.
8	31.5	22.5	85	NE	1	------	d° a. p.
9	31.5	21.8	74	NE	2	.8	Φ ⊎ ● p.
10	31.6	22.6	90	N	1	22.4	d ● a. ↯ ● p.
11	31.5	23.7	75	N	2	.3	d a. ●° ⌒ p.
12	31.2	21.7	73	NE	2	4.6	d° ⌒ a. ● ⊎ p.
13	31.3	22.3	80	NNE	2	13.5	● Φ p.
14	31.2	23.5	71	NE	3	31.7	Ω a. ↯ ●² ⊓ p.
15	31.4	22.6	75	NE	3	3	⌒² a. Φ ⊎ ↯ ●
16	31.6	22.7	81	NE	4	5.6	d a. ↯ ● p.
17	30.7	22.4	68	NE	4	25.4	d° ● ↯ p.
18	29.4	22.2	92	NE	4	55.1	↯ ●² a. p.
19	30.3	22.1	92	E	4	23.1	↯ ●² a. ● p.
20	30.3	23.4	83	NE	2	3.6	d a. p. ⌒ ● ⊎ p.
21	30.9	22.6	87	E	1	36.3	⌒² a. ↯ ● a. p.
22	26.1	22.5	90	E	5	48.3	↯ ● a. p. Φ p.
23	27.6	22.5	92	E	4	26.4	⌒² a. ● a. p. ↯
24	26.6	22.8	91	E	4	36.1	↯ ● a. p.
25	30.3	22.8	74	NE	3	------	d° a. p.
26	30.5	22.4	72	NE	2	------	d° p.
27	28.8	21.2	78	E	2	------	d° a. p.
28	28.5	22.9	85	E	2	44.2	d a. ● p.
29	29.8	22.8	81	NE	1	.5	d a. ○ ●° p.
30	30.5	22.5	87	E	2	60.7	● d ⌒ a. p.
31	28.1	22	84	E	4	64	↯ ●² a. ⌒ ●° p.
Mean	30	22.5	80.7	------------	2.5	------	
Total	------	------	------	------------	------	514.5	

[1] 29 days of observation.

METEOROLOGICAL DATA, ETC.—Continued.

BATANGAS.

[ϕ=13° 45′ N; λ=121° 03′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.2	21.7	72	S	2	42.9	● ⊤ p.
2	29.8	22.2	76	ENE	4	1.8	● ⌒ a. ↯° d p.
3	30.1	21.2	63	ENE	3	------	
4	29.2	20.3	65	SE	3	------	
5	27.7	20.1	84	N	1	.3	●° a.
6	29.8	18.9	72	WSW	1	------	
7	30.4	19.4	68	SW	1	------	
8	32	21	65	SE	2	------	⊏↯ p.
9	31.6	20.2	67	W	1	------	⊏↯ ⊍ p.
10	31.5	21.2	69	NW	1	------	○ p.
11	32.5	22.4	66	SSE	1	1	⊏↯ ●° p.
12	32.6	22.2	63	E	2	------	⌒ a.
13	31.6	21	58	ESE	3	------	
14	31.7	19.9	61	ESE	3	3	● ⌒ a. ⊍ p.
15	32	22.6	66	E	4	------	↯° p.
16	30.8	22.1	86	E	2	1	d a. ●° p.
17	31	20.4	89	ENE	1	4.3	↯ ● p.
18	29	20.2	69	NE	4	------	↯° p.
19	26.3	22.1	90	NW	1	22.1	● ≡° a. ⌒ ● ↯ p.
20	26.4	21.6	96	Calm	------	11.7	d a. ● p.
21	29.1	22.5	94	E	1	9.1	● a. p. ↯° p.
22	24.9	21.2	84	NE	1	1	●° a. p.
23	28.8	21.3	74	E	4	------	↯° a.
24	28.7	21.7	79	E	2	------	
25	30.8	22.2	70	ENE	3	1	●° a.
26	30	22.6	69	ENE	3	------	
27	29.8	20.7	66	E	1	------	
28	30.2	19.1	72	NW	2	------	
29	27.8	22	76	E	1	.3	●° a.
30	27.6	21	88	E	1	1.5	● a.
31	30.5	21.6	64	E	2	.3	●° a.
Mean	29.9	21.2	73.6	------------	2	------	
Total	------	------	------	------------	------	101.3	

SILANG.

[ϕ=14° 14′ N; λ=120° 58′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	29.5	21	82	E	3	18.5	d a. ●° p.
2	28.5	21.5	88	NE	2	6.9	●° a.
3	27.8	19.6	82	NE	4	------	Ω ≡ a.
4	26.8	18.6	82	E	4	------	
5	26.8	17.7	86	E	1	1.8	●° a. d p.
6	30.5	19.3	73	E	2	------	Ω ≡ a. d p.
7	30.5	20	70	E	2	------	≡ a.
8	30	19.2	74	E	1	------	
9	29.5	18	74	E	2	------	Ω a.
10	30.8	20	70	E	3	------	≡ a.
11	28.8	19.6	82	E	2	28.7	Ω a. ●^{2} ⊤ p.
12	29.2	19	73	E	3	8.4	Ω ≡ a. ●° p.
13	29.5	20.2	71	E	3	------	d a.
14	29.6	19.6	72	E	3	33	Ω a. ●^{2} p.
15	29	20	77	E	4	6.9	●° p.
16	28.8	21.2	76	E	1	11.2	● p.
17	27	20	75	E	2	------	d p.
18	28.2	19.3	72	NNE	3	18.3	● a. p.
19	27	18.8	74	E	3	26.2	Ω a. ● p.
20	27.8	20.2	71	NE	4	52.6	● a. p.
21	27	20	74	NNE	3	------	↯° a. p p.
22	27.1	20.3	73	Calm	------	8.1	d a. ● p.
23	27.6	20.3	73	E	2	------	d a. ⊤ p.
24	27	19	74	E	2	8.6	Ω a. ● p.
25	27.8	19.8	70	E	3	------	Ω a.
26	27.5	20.2	69	NE	3	------	Ω a. d p.
27	26.6	20	76	NE	4	4.8	d a. ●° p.
28	26.6	19.8	77	E	2	19.6	Ω a. ● p.
29	27.5	20.6	74	E	2	------	
30	27.3	20.8	73	E	2	36.3	Ω a. ● p.
31	27	20	77	E	3	56.4	●^{2} a. p.
Mean	28.2	19.8	75.3	------------	2.5	------	
Total	------	------	------	------------	------	346.3	

SAN ANTONIO.

[ϕ=14° 23′ N; λ=121° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	26.6	21	88	E	3	50.8	
2	25.4	19.9	89	E	5	29.5	
3	26	18.4	81	E	2	2.5	
4	26	18	68	E	5	6.4	
5	25.1	19	88	NE	4	6.9	
6	27	20	78	NE	3	------	
7	29	17.5	73	NW	1	------	
8	28.5	19.4	88	E	1	1.8	
9	29.2	19.5	71	E	2	------	
10	30	19.1	92	E	1	15.2	
11	25.5	19.4	96	E	1	58.4	
12	28	21.6	92	E	1	12.7	
13	27.6	21.5	82	E	2	15	
14	28	21.4	85	E	3	20.3	
15	26.5	21.1	91	E	2	15.2	
16	27	20.4	88	E	4	11.2	
17	26.4	21.4	86	E	4	15.7	
18	24.5	21.3	89	NE	3	39.6	
19	23	21	96	E	5	17.8	
20	23.8	19.8	92	NE	3	40.6	
21	24.9	18.2	96	NE	6	30.5	
22	24.4	16.1	96	E	5	22.1	
23	23.8	16.2	95	NE	4	29.2	
24	24.2	18.4	94	E	4	11.2	
25	28.9	20	85	E	3	8.4	
26	28.6	21	78	E	8	7.1	
27	26.3	20.7	95	E	2	3.6	
28	26.5	20.5	82	NE	3	1.5	
29	25	20.5	91	NE	4	4.1	
30	24.2	20.8	94	NE	2	26.4	
31	25	20.2	91	NE	4	27.9	
Mean	26.3	19.8	87.4	------------	3.2	------	
Total	------	------	------	------------	------	531.6	

CORREGIDOR.

[ϕ=14° 23′ N; λ=120° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30	23.2	78	NE	2	15	d ⊤ ● p.
2	28	21.3	80	NE	4	3.8	d ● p.
3	28.5	22.5	75	NE	4	------	
4	28.5	21.7	62	NE	2	------	
5	28.5	21.9	64	NE	2	------	
6	30.7	22.2	58	Calm	------	------	
7	30.2	20.8	53	Calm	------	------	
8	30.3	21.7	66	N	1	------	
9	31	21.2	60	N	1	------	
10	31.4	22.5	65	N	1	------	
11	29.8	23.5	72	NE	2	------	
12	30.3	23.1	74	Calm	------	------	
13	30.1	22.3	65	NE	2	------	
14	28.6	23.3	80	NE	4	------	
15	30	23.2	71	N	2	------	
16	29.5	22.6	71	N	4	------	
17	29.5	22.3	71	NE	4	------	
18	30.5	22.4	79	NE	4	------	
19	28.3	24	73	NE	4	------	d p.
20	26.2	22	88	NE	4	------	
21	28.2	21.3	70	NE	4	------	
22	25.7	21.5	78	NE	4	------	
23	28.5	22	75	NE	4	------	
24	30.2	22.3	63	NE	4	------	
25	29.2	22.8	72	NE	2	------	
26	29.7	22.9	70	NE	2	------	
27	29.8	22.5	68	NE	2	------	
28	28.7	21.8	73	NE	2	------	
29	28.2	23.2	73	NE	4	------	
30	28.9	23.2	69	NE	4	------	
31	27.7	22	75	NE	4	------	d p.
Mean	29.2	22.4	70.7	------------	2.7	------	
Total	------	------	------	------------	------	18.8	

METEOROLOGICAL DATA, ETC.—Continued.

BALANGA.
[ϕ=14° 41′ N; λ=120° 32′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.6	22.1	65	NE	2	24.4	● p.
2	29.1	22.1	77	N	3	------	< p.
3	29	21	70	E	1	------	
4	29.5	21	60	NNE	2	------	
5	29.3	19.1	62	NE	2	------	
6	31.6	20	57	N	2	------	
7	31.6	20.1	60	E	1	------	
8	32.6	22.1	60	N	1	------	
9	32.4	20.4	60	Calm	------	------	Ω a.
10	32.1	22.3	62	N	1	.5	●° < p.
11	30.5	23.5	80	N	2	1	⊤ ●° p.
12	31.5	23	69	N	1	------	
13	31.4	22.9	66	N	2	------	
14	31.1	22.4	71	N	2	2.3	●° p.
15	31	21.8	66	NE	2	------	
16	30.9	21.5	65	NE	3	------	
17	31.4	21.6	62	NE	3	------	d° ⊍ p.
18	32.9	20.4	54	NNE	2	------	⌒ ⊍² ⊖² p.
19	29.4	22.1	72	N	2	------	↯° p.
20	25.6	22.8	92	N	2	10.4	d a. ⊤° p.
21	28.9	21.1	67	NE	4	5.1	●° a.
22	24.8	20	87	N	1	------	d° p.
23	29.9	20.3	68	NE	4	------	↯° p.
24	31	22.1	75	SE	2	------	⌒ p.
25	30.6	21.4	71	E	1	------	
26	31.5	22.4	59	NE	1	------	
27	31.1	20	62	E	1	------	
28	31	19.7	56	NE	1	------	
29	30	21.3	65	N	1	------	
30	30.6	20	61	NE	2	------	
31	29.8	20	68	NE	2	------	
Mean	30.4	21.3	66.7	------------	1.8	------	
Total	------	------	------	------------	------	43.7	

TARLAC.
[ϕ=15° 31′ N; λ=120° 35′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	32.4	21.1	58	NE	1	------	<° p.
2	31.9	21.8	57	ENE	2	------	
3	31.3	19.4	57	ENE	2	------	○² a. ∞ p.
4	29.6	18.7	51	E	2	------	Ω ≡° ○² a. ∞²
5	31	16.5	56	E by N	2	------	Ω ≡° a.
6	33	18.3	48	N by W	1	------	Ω a.
7	33.5	19.6	52	N	1	------	Ω ≡° a.
8	34.1	21.1	50	ENE	1	------	Ω ≡° a. <° p.
9	34.5	19.6	49	NE	1	------	Ω ≡ a.
10	33.7	21.5	56	WNW	1	10.2	Ω ≡ ○ a. ⌐↯° ●
11	28.8	23.1	92	WNW	1	8.6	≡° d a. ●° a. p.
12	32.9	22.3	61	ESE	1	------	d° a. p. ⊖² p.
13	32.6	21	59	SE	2	------	≡° a. d° p.
14	32.2	21.7	88	N by W	1	.5	Ω ●° a. ⊍² p.
15	32	20.7	55	NE	1	------	
16	32.5	20.4	50	E by N	3	------	Ω ≡° a. ∞ p.
17	32.5	19.7	48	ENE	3	------	Ω ≡° a. ∞° ⊍ p.
18	32.9	18.7	44	ESE	2	------	Ω ≡° ⊕ ∞° ⊍² ⊖
19	30	20	64	NW	1	------	Ω ≡° a. d° a. p.
20	27.6	21.5	84	N	1	5.6	d° a. ●° p.
21	30.3	21.1	63	ESE	1	.5	●° a ⊖² ↯° p.
22	27.6	18.2	60	ENE	2	------	↯° a. p.
23	31	18.6	52	NE	2	------	
24	32	19.6	52	NE	1	------	↯° a. d° p.
25	31.7	20.7	62	SE	1	------	≡° a.
26	33.9	19.4	50	N by E	1	------	Ω ≡° a. ∞² p.
27	32.2	19.2	52	NNE	1	------	Ω ≡° a.
28	32.5	19	44	E	2	------	Ω ≡° a. ∞ p.
29	32.5	18.8	53	ENE	3	------	Ω ≡° a.
30	32.9	18.5	51	NE	2	------	Ω ≡° a.
31	31.6	21.2	65	E by N	1	------	Ω° a.
Mean	31.8	20	57.5	------------	1.5	------	
Total	------	------	------	------------	------	25.4	

BALER.
[ϕ=15° 47′ N; λ=121° 34′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12	mm.	
1	29	22.7	------	ESE	------	18.8	↯ a. r a. p.
2	26	21.9	------	SE	------	.3	↯ a. ●° p.
3	25	22.6	------	ENE	------	------	d° a. ↯ p.
4	27.3	22.1	------	ENE	------	------	↯ a.
5	26.5	20.9	------	ENE	------	------	
6	29.4	21.5	------	E	------	------	
7	30.5	21.4	------	SE	------	------	⌒ p.
8	30.2	21.4	------	ESE	------	------	
9	30.3	20.1	------	ESE	------	------	
10	29.5	22.7	------	ESE	------	45.7	●
11	25.8	24.2	------	ENE	------	------	d a. ↯ p.
12	28.5	22.7	------	ENE	------	30.2	⌒ p ●
13	27.8	21.9	------	E	------	31.7	d p ●
14	26.5	23.4	------	N	------	.3	●°
15	28	23	------	E	------	16.5	↯ ● a. d° p.
16	27.5	22.2	------	E	------	------	
17	28.4	21.8	------	E	------	------	
18	28.8	21.9	------	E	------	17.8	● p.
19	27.5	23.5	------	NE	------	61	≡ a. d p. ●²
20	24.5	22.7	------	ENE	------	13	● a. p.
21	25.7	21.5	------	ENE	------	------	≡ d° a.
22	25	22.5	------	E	------	------	
23	25.5	22.5	------	E	------	7.6	↯ p ●
24	24.7	22.9	------	E	------	7.9	d° p ●
25	27	22.5	------	E	------	------	d p.
26	28	21.5	------	E	------	------	d a.
27	28.4	22.2	------	ESE	------	------	
28	28.4	20.7	------	ESE	------	------	
29	28.8	21.4	------	E	------	------	
30	26.8	22	------	E	------	54.6	●
31	26	23	------	ENE	------	45.7	● a. p.
Mean	27.5	22.2	------	------------	------	------	
Total	------	------	------	------------	------	351.1	

BOLINAO.
[ϕ=16° 24′ N; λ=119° 53′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	30.4	23	71	Calm	------	------	
2	31.4	23.5	75	NNE	1	------	
3	31.5	22.6	68	SSE	1	------	⊤° p.
4	31.6	22.3	62	Calm	------	------	
5	31.3	21.6	64	SW	1	------	
6	30.8	19.3	71	NE	2	------	
7	30.5	20.8	70	NNE	2	------	Ω° ≡° a.
8	30.8	25.8	66	NNE	2	------	
9	31.3	25.4	75	NNE	3	3.6	⊖ p ●°
10	31.5	25.8	90	N	3	2.8	d a. <° ⊖ p. ●°
11	29.5	23.4	75	NNE	2	------	⊤° d° p.
12	30.6	23.6	76	NE by E	2	12.4	↯ ● < a.
13	30.6	23.4	67	N by E	1	------	∞ ⊍² p.
14	32.2	22.2	67	Calm	------	.5	Ω ≡ a. ●° p.
15	32.3	22.9	70	Calm	------	------	Ω ≡ a. ⊍² p.
16	31.2	21.7	72	NNE	1	.3	∞² a. d° p. ●°
17	31	22.4	67	N by E	1	------	Ω° ≡° a. ∞ p.
18	31.3	24.4	66	NNE	1	------	
19	30.3	25.4	71	NNE	4	------	↯° a. p.
20	29.5	25.9	74	NNE	5	1	↯° a. p. ●° p.
21	29.8	24.5	73	ENE	5	------	↯° p.
22	28.8	22.6	70	SE	1	------	
23	28.5	22.2	67	NNW	1	------	Ω° ≡° a.
24	30.5	21.7	63	NNE	1	.3	Ω° ≡° a. ●° p.
25	32.1	22.5	61	SE	1	------	
26	32.4	20.8	65	E	1	------	
27	32	22.1	59	E	2	------	
28	33	21	60	Calm	------	------	Ω ≡ a.
29	31.8	19.8	70	NNE	1	------	Ω° ≡° a. ∞° p.
30	31	21.6	65	NNE	1	------	∞² p.
31	30.8	22.5	57	E	1	------	∞² p.
Mean	31	22.8	68.6	------------	1.5	------	
Total	------	------	------	------------	------	20.9	

METEOROLOGICAL DATA, ETC.—Continued.

BAGUIO.
[ϕ=16° 35′ N; λ=120° 43′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	22	14.6	85	Calm	------	------	≡ p.
2	23	14.5	82	Calm	------	------	
3	23	12.3	74	Calm	------	------	
4	22	11.5	92	SE	0	------	≡ p.
5	19.6	9.5	97	SW	0	------	
6	21.5	9.5	62	Calm	------	------	
7	22.6	14.5	83	SW	0	------	
8	21.6	13.2	89	Calm	------	------	≡ a.
9	22	14.7	91	WSW	0	------	
10	22.4	14.2	79	WSW	1	------	
11	22.4	13	99	Calm	------	62.7	●^{2} p.
12	23	14.5	86	Calm	------	------	
13	24	13.7	82	SSW	0	------	
14	22.8	13	82	E	1	1.5	●° a.
15	23	13.1	67	E	1	------	
16	23.2	12.7	77	W	1	------	
17	22.7	12.4	60	SE	1	------	
18	23	12.1	79	S	1	------	
19	22.8	14	63	Calm	------	------	
20	22.1	15.2	68	NE	1	------	
21	23	14.7	60	NNE	2	3.6	● a.
22	18.1	12.3	68	NE	2	------	
23	22.4	13.7	55	NNE	2	------	
24	23.5	13.7	54	ENE	2	------	
25	24	14	79	NE	0	------	
26	24	13	78	SW	1	------	
27	21.6	12.5	88	SW	0	------	
28	23	12.5	89	WSW	0	------	≡ p.
29	21.6	12.2	80	SW	0	------	
30	23.5	11.9	85	Calm	------	------	
31	22	12.5	80	SW	0	------	
Mean	22.4	13.1	77.8	------------	.5	------	
Total	------	------	------	------------	------	67.8	

ECHAGÜE.
[ϕ=16° 41′ N; λ=121° 39′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	24.6	19.7	98	NNW	3	26.7	● ↙° a. p.
2	25.2	19.2	91	NNW	3	3.6	↙ ●° a. d p.
3	25.2	19.2	90	ESE	2	2.8	⌈↯ ●° a. p. ○ p.
4	26.5	19.2	85	NW	1	.8	≡^{2} ●° a. ⌈↯ p.
5	26.2	19.1	88	S	1	2.5	≡° ⌈↯ ●° a. ○ p.
6	25.1	20.2	98	ESE	1	3.3	≡^{2} d° a. ●° p.
7	25.5	19.4	95	SE	2	2.5	≡° ●° a. ⌒^{2} p.
8	27.7	20.2	90	NNW	5	------	≡° ⌈↯ a.
9	27.2	20.5	92	SSE	2	5.8	●° a. p. ⌒^{2} p.
10	31.7	20.2	69	E	1	3	≡° ○ a. ●° ⊕°
11	28.4	22.2	99	NE	1	32.3	≡^{2} a. ⊤ ⌒ p. ●^{2}
12	27.4	21.4	96	N	5	15.7	●° a. d ●^{2} p.
13	25.6	19.7	97	SE	1	5.3	≡^{2} a. ⊕^{2} p. ●°
14	25.4	21	96	WNW	1	49	≡^{2} ●° a. ●^{2} p.
15	27.2	20.8	74	NNW	2	1	≡^{2} ●° a. ⊕ p.
16	28.9	20.1	80	SE	2	.8	●° ≡^{2} a. d p.
17	28	19.7	84	NNE	2	2	≡^{2} ●° a. ⌒° ⊍ p.
18	29.6	19.4	83	NW	1	7.6	●° a. ↙ ● p.
19	23.5	20.2	96	NNE	4	18	↙ ● a. p.
20	23	19.8	97	ENE	3	33.3	↙ ● a. p.
21	22.8	19	93	NNE	5	8.4	●° a. p.
22	22.6	16.6	88	NNE	3	.8	●° a. p.
23	24.9	17.1	86	NE	3	2	d° a. ● p.
24	28.7	16.9	81	E	2	4.3	≡° a. ●° a. p.
25	30.4	19.7	75	E by N	1	------	≡ a. ⊕ p.
26	31.4	18.7	61	NW	2	------	Ω^2 ≡^{2} a. ⊕^{2} p.
27	29.5	18.7	85	ENE	2	1	⌈↯ Ω^2 ≡° ●° a.
28	30.1	18.8	76	SW	1	------	⌈↯ ≡° a.
29	------	17	78	E	2	------	Ω^2 ≡^{2} a. ⌈↯ p.
30	------	19.9	91	ENE	2	3	≡^{2} a. ⌈↯ ●° a. p.
31	------	20.3	83	ENE	1	.8	Ω° ≡^{2} ●° a. ⌈↯
Mean	26.9	19.5	86.9	------------	2.2	------	
Total	------	------	------	------------	------	236.3	

CANDON.
[ϕ=17° 12′ N; λ=120° 26′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	31.8	25.5	64	S	1	------	↙° a.
2	32.1	24.5	50	SSW	2	------	Ω ≡ ↙° a.
3	30	22.5	59	S	2	------	
4	29.6	22.6	60	SW	1	------	Ω° ≡ a.
5	29.5	21	58	WSW	2	------	≡° a. ↙° p.
6	30	21	61	WNW	1	------	Ω^2 ≡^{2} a.
7	31	21.9	67	NW	4	------	≡ a. ↙° p.
8	30.5	22.4	62	NW	5	------	Ω° ≡ a. ↙° p.
9	30.5	22	68	NW	4	------	≡° a. ↙° p.
10	29.7	24	74	NW	2	------	Ω ≡ a.
11	30.2	23.6	70	NW	1	------	Ω^2 ≡ a. ⌒ ⌈↯ d
12	31	23.7	65	W	1	------	Ω° ≡ a. ⊤° p.
13	31	23.5	72	SW	1	------	⌈↯° p.
14	29.2	22.9	70	Calm	------	1	Ω^2 ≡ a. ●° p.
15	30.5	22.9	70	WNW	1	------	d p.
16	29.8	22.1	64	SW	1	------	Ω^2 ≡ a.
17	29.5	23	63	W	1	6.9	Ω° ≡ a. ●° p.
18	31.4	23.1	59	NE	4	------	↙° a. p.
19	30.4	23.9	56	NNE	6	------	↙° a. p.
20	30	25.5	56	N	5	------	↙° a. p.
21	28.8	25	51	NNE	6	------	d a. ↙° a. p.
22	27.8	22.8	66	S	1	------	d p.
23	30.1	22.8	59	S	1	------	
24	29.5	22	74	SW	1	------	d p.
25	29.8	24.6	64	W	1	------	
26	30.2	23	69	NW	1	------	Ω ≡ a.
27	29.7	24.8	68	NW	1	------	Ω ≡ a.
28	29.6	22.9	71	NW	1	------	Ω^2 ≡ a.
29	29.5	22.9	72	WNW	2	------	Ω^2 ≡° a.
30	29.9	21	62	SSW	1	------	Ω ≡^{2} a.
31	30	22.8	72	W	1	------	Ω ≡ a.
Mean	30.1	23.1	64.4	------------	2	------	
Total	------	------	------	------------	------	7.9	

SANTO DOMINGO.
[ϕ=20° 28′ N; λ=121° 59′ E]

Day.	Temperature. Maximum.	Temperature. Minimum.	Relative humidity, 2 p. m.	Wind, 2 p. m. Direction.	Wind, 2 p. m. Force.	Rainfall.	Miscellaneous.
	°C.	°C.	P. ct.		0–12.	mm.	
1	24	20.6	70	NE	3	4.7	●° a. ↙° a. p.
2	24.5	20.6	64	ENE	2	1.3	↙° p. ●°
3	26.7	21.3	62	ENE	1	------	
4	27.2	21.5	69	E	1	.6	●° a.
5	27	21.5	66	E by N	2	6.1	⌒ ↙° a. ●° a. p.
6	27	21.2	67	NNE	2	1.1	↙° a. p. ●° p.
7	25.4	23.2	78	NNE	2	4.5	●° a. p. ⌒^{2} p.
8	26.5	22.4	73	N	3	------	d a. ↙° a. p.
9	25.9	23.5	94	NE	2	8.6	↙° ●° a. ⌒ < p.
10	27.3	22	85	N	4	35.1	⌒ ↙ ● a. ↙° p.
11	23.8	19.4	84	NNE	3	5	●° ↙° a. p.
12	22	20.5	77	NNE	3	3.4	●° ↙° a. p.
13	23.7	19.9	81	NE	1	1.5	●° a. p.
14	27.7	22.4	75	E	2	3.3	d a. ↙° ●° p.
15	25.3	22.6	83	E	2	22.1	● d a. ●° p.
16	25.7	21	83	NE	1	66.8	●^{2} d a. ↙° ● p.
17	23	21.9	91	NE	3	71	↙° ● a. p.
18	22.4	20.5	89	NNE	4	25.4	↙° ●° a. p.
19	22.7	20.7	74	NE	3	.3	●° a. ↙° p.
20	23.8	21	71	NE	2	------	d a. ↙° p.
21	20.6	18.2	65	NE	4	.8	●° a. ↙° a. p.
22	20.2	17.5	69	NE	3	1.5	●° a. ↙° a. p.
23	21.1	18	68	NE	2	1.5	●° a. ↙° a. p.
24	24.9	19	72	E	2	------	⌒ a. ≡ p.
25	25.6	21.5	77	E	1	------	
26	27	22.1	76	E	1	1.8	●° a. p. ⌒^{2} p.
27	25.2	22.1	85	ENE	2	2.5	●° a. p.
28	26.9	21.6	74	E	1	3.4	●° a.
29	26.5	21.6	77	NE	1	------	
30	25.6	20.6	76	ENE	2	7.2	≡ ↙ ●° p.
31	26.9	21	69	ESE	2	------	≡ p.
Mean	24.9	21	75.6	------------	2.2	------	
Total	------	------	------	------------	------	279.5	

NOTAS GENERALES DEL TIEMPO.

Presión y temperatura.—La media de la presión atmosférica para todas las estaciones de Filipinas resulta este mes bastante inferior á la normal así como también á la media de Diciembre del año próximo pasado. La media de Manila, por ejemplo, se diferencia de la normal en —1.16 mm. y de la media de Diciembre, 1906, en —1.05 mm. Las menores presiones se observaron casi en todas partes el 18 ó 19, es decir, durante el tifón más importante de este mes, de que hablaremos más abajo. Las máximas presiones tuvieron lugar, salvas pocas excepciones, del 22 al 25.

Las medias mensuales de la temperatura son también un poco inferiores á las del año pasado. La de Manila se aparta de la normal en —0.5° C. y de la media de Diciembre, 1906, en —0.3° C. Los valores extremos para Manila han sido 32.5° C. y 19.0° C., habiendo sido registrados respectivamente los días 15 y 28.

Precipitación acuosa.—Sólo cinco estaciones en todo el Archipiélago dan cuenta de un total de lluvia inferior al de Diciembre del año pasado. La cantidad de agua recogida en los pluviómetros de Manila difiere de la normal de Diciembre deducida de muchos años de observación en +15.6 mm. y supera al total de Diciembre, 1906, en 29.7 mm.

DEPRESIONES Y TIFONES.

Sólo un tifón propiamente tal se ha sentido este mes en Filipinas, y aun éste era de poca importancia, al menos desde que penetró en el Archipiélago. Haremos, sin embargo, mención de otras depresiones que han influído algo en Filipinas, en las Islas Marianas ó en las Carolinas Occidentales.

DEPRESIÓN Ó TIFÓN DE 2 Á 5 DE DICIEMBRE.

Decía el Observatorio en las notas del tiempo de los días 3 y 4:

Día 3, 12.20 p. m.: La presión atmosférica parece hallarse algo baja en las Carolinas Occidentales, al SSW. de las Islas Marianas.

Día 4, 12.15 p. m.: La depresión, situada ayer en las Carolinas Occidentales al SSW de las Islas Marianas, parecía hallarse esta madrugada hacia el N de Yap y W de Guam moviéndose probablemente al NNW.

Se fundaba el Observatorio para estos anuncios en unos pocos telegramas trasmitidos por los observadores de las dos estaciones del Weather Bureau establecidas en aquellas islas. Las observaciones más detalladas recibidas posteriormente vinieron á confirmar dichos anuncios. En Sumay, Guam, se observaron vientos del NE, ENE y E el día 2, rolando al ESE el 3 y al SE el 4. Al contrario, en Yap hallamos anotados vientos del W la tarde del 2, del SSW la tarde del 3 y mañana del 4, del SW la tarde del 4, y del S la mañana del 5. El barómetro alcanzó en Yap una altura mínima menor en dos milímetros á la de Sumay, Guam. Dicha lectura fué 752.89 mm., 1.36 mm. más baja que la del día anterior, y fué observada á 2 p. m. del día 3.

Tenemos como probable, después de examinar atentamente estas observaciones y las de Filipinas, que esta depresión ó tifón se movía del 3 al 4 al NW, que se inclinó luego más al W y que vino á deshacerse al este de Filipinas; pudiendo tal vez considerarse como restos de ella el área de baja presión que cubría buena parte de nuestro Archipiélago la tarde del día 7, según se ve en el mapa del tiempo de 2 p. m. de aquel día.

TIFÓN DE 14 Á 20 DE DICIEMBRE.

Acerca de este tifón envió el Observatorio de Manila los siguientes telegramas á los Jefes de los varios Servicios Meteorológicos del Extremo Oriente:

Día 15, 3 p. m.: Tifón sud Yap, Carolinas Occidentales.

Día 17 4 p. m.: Tifón acercándose ahora al norte de Mindanao y sur de Visayas.

Día 18, 4.15 p. m.: Tifón cerca Visayas Orientales.

Día 19, 9 a. m.: Tifón alrededores 13° lat. y entre 122° y 123° long., moviéndose WNW.

Día 20, 5 p. m.: Tifón parece haber estado deshaciéndose desde ayer.

La existencia de este tifón al sur de Yap parecen indicarla con bastante claridad las observaciones hechas en aquella estación del 12 al 17, las cuales publicamos en el texto inglés. Allí mismo damos en cuatro mapitas de Filipinas las isobaras y posición del vórtice ciclónico á 6 a. m. y 2 p. m. del 18, 6 a. m. y 2 p. m. del 19. En el último de estos mapitas incluímos la trayectoria de este tifón, el cual, como se ve, se presentó primero por el este de Surigao á 2 p. m. del 17; de donde se sigue que desde su aparición al sur de Yap hubo de moverse bastante inclinado al W, probablemente al WNW. Es difícil averiguar con certeza si el tifón se dividió en dos centros parciales aun antes de penetrar en el Archipiélago. Las isobaras que tenemos á la vista parecen indicar ya la existencia de un centro secundario á 2 p. m. del 18. Sea de esto lo que fuere, el tifón, ó cuando menos el centro más importante, se movía la tarde del 17 y todo el 18 hacia el NW; pero se inclinó más y más al W, al encontrarse con la extremidad más meridional de la Isla de Luzón poco después de media noche del 18. Las observaciones hechas en Borongan y Calbáyog indican el paso del vórtice por el norte de aquéllas dos estaciones la tarde del 18. Publicamos dichas observaciones en el texto inglés juntamente con las de Palanoc, Gubat, Virac y Legaspi. Estos datos meteorológicos comparados mutuamente indican que el vórtice era de muy pequeño diámetro y de no mucha intensidad, al menos cuando pasaba cerca y por el sur de Gubat. Parece ser además que mientras atravesó el Archipiélago se deformó en gran manera, pues el día 20 apenas se notan indicios de su existencia.

DEPRESIÓN Ó TIFÓN DE 18 Á 22 DE DICIEMBRE.

El Observatorio de Manila enviaba la tarde del 18 el siguiente telegrama á Tokio, Zikawei, Taihoku, Hongkong y Phulien:

Día 18, 4.15 p. m.: Otro tifón sud Yap.

En las notas ordinarias del tiempo de los días 19 á 22 se dieron los siguientes anuncios referentes á este tifón ó depresión:

Día 19, 12.15 p. m.: Según un telegrama recibido de Carolinas Occidentales, un nuevo tifón apareció ayer tarde al sur de Yap.

Día 20, 12.30 p. m.: No se puede precisar aún la posición exacta del tifón situado antes de ayer al sur de Yap, Carolinas Occidentales.

Día 21, 12.20 p. m.: La depresión ó tifón del Pacífico parece estar situado entre las Carolinas Occidentales y las Filipinas moviéndose lentamente.

Día 22, 3.30 p. m.: El tifón del Pacífico parece estar deshaciéndose al este de las Visayas.

Poco más podemos añadir aquí sobre esta depresión por falta de datos suficientes. Su existencia al S y SW de Yap la indicaron las observaciones hechas en aquélla estación y telegrafiadas á este Observatorio. No había aún alcanzado el barómetro su altura normal después del tifón de que hemos hablado antes, cuando se observó un nuevo descenso el 18 y 19 con vientos frescos y racheados del NE el 18 y mañana del 19, y del ESE la tarde del 19. Los mapas del tiempo de Filipinas correspondientes al 21 y mañana del 22 parecían indicar una depresión en el Pacífico hacia el E del sur de las Visayas: pero la tarde del 22 no aparecía ya más que un área de baja presión que cubría la Isla de Mindanao y parte del Mar de Joló y de las Visayas más meridionales.

Las inundaciones del 23 de que se habla en el report de cosechas de Dapitan (véase el Crop Bulletin) fueron tal vez debidas á esta depresión.

DEPRESIÓN DE 26 Á 29 DE DICIEMBRE.

Un nuevo y regular descenso de los barómetros se observó en Yap el día 26 aunque no nos consta se observase cambio en los vientos, sino que siguieron soplando del NE como los días anteriores. El día 28 aparece en nuestro mapa del tiempo un centro de baja presión en el Pacífico al este de Mindanao, el cual bien podía ser el mismo que el 26 se hallaría al S de Yap. En el mapa de 6 a. m. del 29 se distingue todavía un centro de baja presión sobre la región occidental de Mindanao, el cual acabó probablemente de deshacerse en el Mar de Joló. Esta depresión fué causa de abundantes lluvias é inundaciones, según se menciona en los reports del servicio de cosechas de Surigao y Dapitan (véase el Crop Bulletin).

DEPRESIÓN DE 30 Y 31 DE DICIEMBRE.

El mapa del tiempo de 6 a. m. del 30 indica la existencia de una nueva depresión hacia el E de Joló y SE de Zamboanga, habiéndose notado en ambas estaciones un descenso regular de los barómetros con una diferencia de unos dos milímetros ó algo más en el intervalo de 24 horas. Esta depresión se hallaba en la madrugada del día siguiente en la parte meridional del Mar de Joló moviéndose al parecer en dirección al estrecho de Balabac. Es probable que no tardó en deshacerse, pues las observaciones de Indochina de los días siguientes no dieron señales algunas de perturbación atmosférica.

SEISMOLOGICAL BULLETIN FOR DECEMBER, 1907.

By Rev. MIGUEL SADERRA MASÓ, S. J.,
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EARTHQUAKES FELT IN THE PHILIPPINES.[1]

1, 6^h 32^m. **Butuan** (N of Mindanao). Trepidatory earthquake of 20^s duration. It was likewise perceptible at Talacogon, in the Agusan River Valley.

9, 10^h 20^m 37^s. **Aparri** (N of Luzon). Oscillatory earthquake. Direction NE–SW; intensity II; duration 3^s.

19, 19^h 30^m. **Butuan** (N of Mindanao). Earthquake. Direction of the oscillations SSE–NNW; intensity III.

21, 6^h 37^m 2^s.* **Aparri** (N of Luzon). Oscillatory earthquake. Direction E–W; intensity III; duration about 18^s.

24, 0^h 30^m. **Davao** (SE of Mindanao). Oscillatory earthquake of 5^s duration.

25, 6^h. **Butuan** (N of Mindanao). Earthquake. Direction of the waves S–N; intensity III. Perceptible at Talacogon, in the valley of the Agusan River.

27, 9^h 43^m 49^s.* **Capiz** (N of Panay). Oscillatory earthquake. Direction NW–SE; intensity II; duration 3^s.

RECORDS OF THE MICROSEISMOGRAPHS.

(Time of the one hundred and twentieth meridian east of Greenwich. Midnight = 0^h.)

No.	Date.	Component.	Beginning. First preliminary tremors.	Beginning. Second preliminary tremors.	Beginning. Principal portion.	Maximum range of motion. Hour.	Maximum range of motion. Amplitude (2 a.).	Maximum range of motion. Period.	End.	Instrument.	Remarks.
			h. m. s.	*h. m. s.*	*h. m. s.*	*h. m. s.*	*mm.*	*s.*	*h. m. s.*		
246	1	WSW-ENE	11 01 17	—	11 01 43	11 01 54	0.07	2.4	11 04 00	V. M.	Vertical component; amplitude 0.10
		NNW-SSE	11 01 16	—	11 01 41	11 01 48	.08	2.6	11 04 00	V. M.	mm.
247	3	WSW-ENE	10 46 06	—	—	10 47 05	.03	2.4	10 51 00	V. M.	
		WSW-ENE	10 46 11	—	—	10 47 32	.02	5.2	10 50 00	H. P.	
		NNW-SSE	10 46 05	—	—	10 47 04	.09	2.8	10 51 00	V. M.	
248	4	WSW-ENE	3 19 30	—	—	—	—	—	3 22 00	V. M.	Vertical component; amplitude 0.04
		NNW-SSE	3 19 29	—	—	—	—	—	3 22 00	V. M.	mm.
249	5	NNW-SSE	16 47 40	—	—	16 48 25	.06	2.4	16 52 00	V. M.	
250	5	NNW-SSE	20 42 02	—	—	—	—	—	20 45 00	V. M.	
251	16	NNW-SSE	1 40 56	—	1 50 34	1 56 03	.21	7.2	2 39 00	H. P.	
		WSW-ENE	1 40 56	—	1 50 27	1 55 01	.21	13.2	2 54 00	H. P.	
252	21	WSW-ENE	6 37 02	—	6 37 57	6 38 09	.14	2.4	6 43 00	V. M.	Earthquake, intensity II at Aparri
		NNW-SSE	6 37 01	—	6 37 54	6 38 05	.12	2.4	6 42 00	V. M.	(N of Luzon).
253	22	WSW-ENE	4 52 42	—	4 53 01	4 53 16	.12	2.4	4 55 00	V. M.	Vertical component; amplitude 0.05
		NNW-SSE	4 52 40	—	4 52 58	4 53 16	.14	2.4	4 55 00	V. M.	mm.
254	23	WSW-ENE	9 19 49	—	—	9 21 04	.10	2.8	9 27 00	V. M.	
		NNW-SSE	9 19 47	—	—	9 21 01	.14	2.5	9 27 00	V. M.	
255	23	NNW-SSE	19 43 17	—	—	19 43 45	.07	2.4	19 45 00	V. M.	
256	26	WSW-ENE	18 17 17	—	18 17 34	18 17 42	.12	2.8	18 20 00	V. M.	Vertical component; amplitude 0.04
		NNW-SSE	18 17 16	—	18 17 31	18 17 42	.21	2.5	18 20 00	V. M.	mm.
257	27	WSW-ENE	9 43 49	—	—	—	—	—	9 47 00	V. M.	Earthquake, intensity II at Capiz
		NNW-SSE	9 43 47	—	—	—	—	—	9 47 00	V. M.	(N of Panay).
258	28	NNW-SSE	16 39 06	—	16 39 57	16 40 21	.14	2.8	16 43 00	V. M.	
259	30	WSW-ENE	13 46 30	—	13 53 25	13 56 43	.01	9.6	14 53 00	V. M.	
		NNW-SSE	13 46 30	—	13 52 50	13 59 37	.01	11	14 46 00	V. M.	

[1] The intensity of earthquakes is given in the notation known as the scale of De Rossi-Forel. The time is stated as indicated by the seismographs at the Central Observatory whenever the disturbance has been registered by them. This fact is denoted by an asterisk (*). Otherwise the time is that noted by the observers who sent the notice. All time indications are in the official time of the Archipelago, which is that of the one hundred and twentieth meridian east of Greenwich.

Instrumental constants.—Vicentini microseismograph (V. M.): Length of the pendulum, 1.50 meters; weight of the bob, 100 kilograms; period of simple oscillation, 1.2 seconds. Magnification of the record: NNW–SSE component, 50 times; WSW–ENE component, 50 times.

Horizontal Pendulums (H. P.): Vertical distance between the point of suspension and the point of support, 1.05 meters; horizontal distance between the point of support and the center of the heavy bob, 0.77 meter; weight, 20 kilograms; period of oscillation, NNW–SSE pendulum, T=7 seconds; WSW–ENE pendulum, T=6.4 seconds. Magnification of the record: NNW–SSE, 15 times; WSW–ENE, 15 times.

These seismographs have no damping arrangement.

Foundation and location.—The instruments are mounted against a solid cut-stone pier measuring 5 by 5 meters at its base and 3.30 by 3.30 at the top, with a foundation about 4 meters deep, and insulated from the surrounding walls of the building by a space, 2 meters wide, filled with sand. The Vicentini microseismograph stands at a height of 9.5 meters above the ground and 10.5 above the sea level, while the horizontal pendulums stand at 1.50 meters above the ground and 2.50 above the sea level.

Geological structure.—The geological formation of the ground is alluvium and beach sand to a depth of some 14 meters, which extends many kilometers toward north and south and only 4 to the east, where volcanic tuff outcrops. To the west there lies the Manila Bay at a distance of some 300 meters. The alluvial plain of Manila is crossed by creeks in many directions and by the Pasig River, which flows in an E–W direction, at a distance of 1.5 kilometers to the north of the Observatory.

TEMBLORES DE TIERRA SENTIDOS EN FILIPINAS.[1]

1, 6^h 32^m. **Butúan** (N de Mindanao). Temblor de tierra susultorio; duración 20^s. Fué también perceptible en Talacogon, en el valle del río Agusan.

9, 10^h 20^m 37^s. **Aparri** (N de Luzón). Temblor oscilatorio. Dirección NE–SW; intensidad II; duración 3^s.

19, 19^h 30^m. **Butúan** (N de Mindanao). Temblor de tierra. Dirección de las oscilaciones SSE–NNW; intensidad III.

21, 6^h 37^m 2^s.* **Aparri** (N de Luzón). Temblor oscilatorio. Dirección E–W; intensidad III; duración unos 18^s.

24, 0^h 30^m. **Dávao** (SE de Mindanao). Temblor oscilatorio; duración 5^s.

25, 6^h. **Butúan** (N de Mindanao). Temblor de tierra. Dirección de las ondas S–N; intensidad III. Perceptible también en Talacogon del valle del Agusan.

27, 9^h 43^m 49^s.* **Cápiz** (N de Panay). Temblor oscilatorio. Dirección NW–SE; intensity II; duración 3^s.

REGISTROS DE LOS MICROSEISMÓGRAFOS.

Véase en el texto inglés la tabla correspondiente que contiene una lista completa de estos registros.

[1] La intensidad de los terremotos se indica conforme á la conocida escala de De Rossi-Forel. Cuanto á la hora de su ocurrencia, adoptamos la indicada por los seismógrafos de este Observatorio siempre que los hayan registrado, distinguiéndola por medio de un asterisco (*). En caso contrario copiamos la apuntada por los observadores que nos envían las notas. Todas las indicaciones del tiempo se refieren al tiempo oficial del Archipiélago que es el del meridiano 120 E de Greenwich.

CROP BULLETIN FOR DECEMBER, 1907.

By Rev. GEORGE M. ZWACK, S. J.,
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GENERAL NOTES.

As was to be expected in view of the bad state of the rice fields at the end of November, the rice crop harvested during December (chiefly of the irrigated variety) has been bad precisely in the most important rice-producing provinces of the Islands, viz., those of the central and western parts of northern Luzon. In some districts of Pangasinan the losses caused by drought and insects or worms reached 75 and even 90 per cent as compared with a normal crop. The latter figure is likewise given as representing the shortage in some municipalities of Ilocos Sur. Tarlac reports an unsatisfactory crop, Nueva Ecija losses ranging from 80 to 90 per cent, and Zambales from 50 to 65 per cent. Better results have, as a rule, been obtained south of parallel 15°, except in Antique, Iloilo, and the southern part of Cebu. The latter region had lost all hope of a rice crop some time ago, and had largely substituted other crops, especially corn, for the dried-up rice. Iloilo, with a few local exceptions, reports an utterly bad crop, owing to rodents, insects, and the belated advent of rain. Results have been fair in Bataan Province, Capiz, Tayabas, northern Leyte, Jolo, and generally in Mindanao, though in the neighborhood of Davao the crop has been completely destroyed by locusts. A good crop has been reported from the interior of Bohol, from Occidental Negros, and the districts of Butuan and Cotabato, Mindanao. The station at Maasin, southern Leyte, is the only one which reported an abundant yield of rice. As a result of the general shortage, the price of rice is high; the most remarkable instance being probably the price reported from Vigan. There the usual price during harvest time is ₱5 per cavan; this year it is ₱7.50! In the hemp-growing districts there was no lack of material for the hemp strippers to work upon, but rain, other agricultural work, and the low price of the finished product combined to keep the total output small, Albay alone reporting the production of a large amount of hemp despite the conditions mentioned. The price of the fiber has fallen further. An idea of this calamity may be formed from the fact, that, for instance, in western Leyte, hemp which at the beginning of the year sold for ₱28 per picul, brought only ₱16.50 during December. At Zamboanga the price fell from ₱21 during November, to ₱18 at the end of December. Cocoanuts have been plentiful, as a rule; the only complaint having come from Jolo, where insects caused the fruit to fall before it was of any value. The same conditions, however, which kept the hemp production small, prevented likewise special activity in the making of copra. Complaints of the low price of this article have been well-nigh general; Albay alone reports a slight rise. Tubers and corn have likewise been abundant. Benguet had a smaller coffee crop than last year, and Zambales reports very poor results given by cacao, the greater part of the fruits having been ruined by insects.

The growing crops, consisting chiefly of hemp, tobacco, sugar cane, and corn, are reported as having been flourishing at the end of the month, with the following exceptions: The central part and the western coast of northern Luzon, between Olongapo and Vigan, where they had suffered from drought; San Antonio, Gubat, Iloilo, and Dapitan, where excess of water, in the form of rains or floods, had damaged them; Bohol and Occidental Negros, which report an unsatisfactory appearance of the crops, without stating the cause.

The rainfall has been abundant throughout the Archipelago, except on the Island of Cebu, where it was nearly normal; in Bataan Province, where water was somewhat scarce; and in the Provinces of Zambales, Tarlac, Nueva Ecija, Pangasinan, and Ilocos, which complain of drought. On the Island of Basilan and in La Laguna the abundance of water threatened to rot the rice. Inundations occurred on the Island of Bohol and in Sorsogon. The heavy rains, which on December 27, 28, and part of the 29th, fell over the district of Surigao, caused a heavy flood and consequently much loss. Tuguegarao reports that the Cagayan and Pinacanauan Rivers rose 3 to 4 meters above their usual level. But worst of all fared some villages above Dapitan, which suffered frightfully from floods on December 23 and 29. (See "Special Notes," Dapitan.)

Relatively few stations reported injurious insects or worms. The rice crop has been damaged by one, or the other, or both of these pests in the neighborhood of Davao, in the Provinces of Iloilo, Zambales (locally), Nueva Ecija, and Pangasinan (locally). On Jolo the cocoanut trees suffered severely from the attacks of insects, and the cacao plants in Zambales. Rodents did considerable harm to the sugar plantations of northern Cebu.

Animal diseases have been prevalent in the following provinces: Moro (district of Zamboanga, new outbreak), Leyte, Iloilo, Antique, Capiz, Albay, Tarlac, and Ilocos Sur. Of these Albay reported surra, the rest epizoötia. The losses have been heavy in Zamboanga (40 head of cattle), in the Province of Capiz (cattle and some horses), and near Candon, Ilocos Sur (10 per cent of cattle, hogs, and poultry).

SPECIAL NOTES.

DISTRICT I.

Borongan.—All along the eastern coast of Samar people have been busy planting rice, which has been greatly benefited by the copious rainfall of this month. Copra making is flagging somewhat for the present, but the trees are laden with nuts, and it is hoped that the crop will be abundant in the coming year. The other plantations are likewise in a flourishing state.

Tacloban.—The products harvested during the month were palauan, gabe, tomatoes, and some others of less importance. Precipitation has been very abundant and of great benefit to all kinds of crops; to rice, sugar cane, corn, and hemp as well as to tubers and greens. The price of rice continues high, while those of hemp and copra remain low.

Ormoc.—The crops have been generally fair, with the exception of that of rice, whose yield has been small, owing to the destruction wrought by mice, worms, and bats, which invaded the fields when the grain was ripe. Hence many country people are already now forced to buy rice, at prices varying between ₱6 and ₱7 per cavan. Hemp has fallen from ₱28 per picul, paid during the first months of the year, to ₱16.50, its present price. The number of cattle left is so small that rinderpest is hardly noticeable, nevertheless the mortality is estimated at about 5 per cent.

Tuburan.—Sugar cane, corn, and tobacco have been harvested. On account of the small rainfall during October and November, the yield of the first two products mentioned has not been good. In addition to scarcity of water, the sugar cane had also suffered from the ravages of rodents.

Cebu.—The rainfall has been about normal and a blessing to the sugar-cane and corn fields; it has likewise benefited the maguey which had been planted on some tracts of land. As regards rice, hardly any crop could be expected, since so great a part of the seedlings had been ruined by drought during August and September. There is a goodly supply of bananas, but only small quantities of mangoes, chicos, nanca, and tubers are to be seen.

Maasin.—The rice crop harvested during this month has been abundant, and will probably cover local consumption. Of fruits have been gathered macolpa, sampaloc, and lanzones; of tubers, sweet potatoes, gabe, and uve. From Macrohon, Malitbog, and several places on the Bay (seno Lion), comes the information that large quantities of copra are being made in said regions.

Surigao.—The rainfall has been heavy during December, especially on the 27th, 28th, and half of the 29th. As a result, the village of Cagdianao, municipality of Dinagat, had an inundation, which destroyed many dwellings. A large number of hemp and banana plants have been swept away by the river of like name. Bacod and Malico suffered likewise the loss of many of the plants mentioned, caused by a flood in the Surigao River, which also damaged the bridge erected near Malico. The tilling of the fields is greatly handicapped by the scarcity of carabaos. At present sweet potatoes, gabe, uve, and some sincamas are being harvested. The cocoanut trees are laden with fruit. The present price of copra is ₱7 the picul, of hemp ₱16 per picul, and of rice ₱7.25 per cavan.

Tagbilaran.—The principal crop of this month consisted of cocoanuts. The trees bore abundant fruit, and large quantities of copra have been shipped to Cebu from nearly every coast town on the island. Panglao and Loay are said to possess the greatest number of cocoanut trees, and it is estimated that Loay alone produces at present from 800 to 1,400 piculs of copra per month. In the interior of the island rice is being harvested, but the results do not reach those obtained ten years ago. The planting of maguey is being carried on with zeal. The locusts made their appearance at Tagbilaran on exactly the same dates as last year, viz., on the last two days of the year. They have done some harm to the cocoanut trees and the crops in the fields of those places which they touched on their march, especially where they spent the nights. During the last third of the month the very abundant rains have ruined such portions of the crops as had not yet been brought in at Tubigon, Antequera, and Maribojoc. The Usao River carried away several bridges.

Butuan.—The rice crop which is being harvested at present, is good; even the poorest have something to bring in. Hemp is growing vigorously, but some planters have suspended operations until the rainy season will be over. The price of hemp is ₱10 per picul. The cocoanut trees give nearly always good returns. Hence many people prefer them to other crops, such as cacao, coffee, and sugar cane, which are being displaced by them more and more.

Cotabato.—The harvest of late rice is not yet completely finished. Nevertheless some people have already begun thrashing, and are selling the unhulled rice at ₱1.60 per cavan. Unlike in the preceding months, no gums or gutta-percha have been brought hither during December.

Davao.—The inhabitants of this district are devoting their energies considerably to the planting of corn, despite the fact that the last crop has not been encouraging, worms having attacked the ears. A few fields in the vicinity of Davao excepted, the rice fields of this region have been infested by locusts, which left no crop whatever. Hemp is abundant, but its price has fallen very much during the last months of the year, being at present only ₱15 per picul.

DISTRICT II.

Capiz.—The crops harvested in this province consisted of rice, corn, and sugar cane. Epizoötia is creating havoc among the carabaos and has attacked also some horses. There are farmers who have not a single carabao left. It is said that the inoculated animals die as well as those which have not been treated (?).

San Jose, Buenavista.—During the month have been harvested rice, sugar cane, tomatoes, and a few other products of small importance. Every one of these crops has been smaller than last year. Hence the ganta of rice (3 liters) sells now for 21 to 22 centavos, instead of 14 to 16, which is the usual price at this time of the year, whenever the crop has been good. Epizoötia continues to carry off animals.

Iloilo.—Nothing intervened to avert the bad rice crop which could be foreseen during the preceding months on account of the weak growth of the plants and the worms which threatened to ruin them. The rains came too late, and the rats, locusts, and worms never stopped their work of destruction. The president of Cabatuan reports that the farmers obtained hardly enough of late rice to cover the seed sown and the cost of labor expended on it. The informations sent by the presidents of Janiuay and Barotac Nuevo show indeed that in their municipalities the rice crop has been less of a failure, but in general the crop has been bad throughout the province. The heavy rains which fell during the last days of the month have hindered the planting of tobacco and corn, and have done considerable damage to the tobacco which had already been planted. They have made it likewise necessary to interrupt the crushing of sugar cane. Epizoötia continues to appear from time to time among the work animals in various parts of the province.

Bacolod.—Within the municipality of Bacolod the rice crop has surpassed that of last year by about 10 per cent. The cutting of sugar cane continued throughout the month, and some fields remain still to be harvested. The planting of a new crop of sugar cane, which is in progress at present, is hampered by the lack of work animals. At Murcia the crops of rice and sugar cane have been fair, but corn and the newly planted sugar cane present a rather unsatisfactory appearance. From other points have come lamentations that the rice crop has been greatly diminished by the prolonged drought which prevailed during the preceding months and by the destruction wrought by locusts and grubs.

Dapitan.—After finishing the cutting of rice, the farmers were resting from their labors and constructing granaries in which to store their crop, when on December 23 a great flood inundated the fields and swept away hemp plants, cocoanut and other fruit trees. In the villages of Suangon, Totuay, and Tamion, municipality of Dapitan, the loss amounts to about ₱3,000. At Ilaya (San Lorenzo) the disaster has been very much worse. According to the councilman of said village, the water rose to a height of 2.63 meters within the village. Describing the flood in a report addressed to the President of Dapitan, he says: "It is with tears in my eyes that I comply with my duty * * *. During the said flood I saw with my own eyes swept through the village heaps of hemp, large trunks of trees, pieces of bamboo, carabaos, hogs, chickens, some sacks of rice, small boats, and other objects which I do not remember. The inundation lasted eight hours. Thanks be to God, no human lives were lost. * * * The damages done may reach as high as ₱50,000." Still more disastrous to the same place proved a second flood on December 29. On this ocasion the water attained the height of about 4 meters. The current destroyed three buildings of strong materials, which stood near the river, and many nipa constructions; swept away 3,000 cavans of rice and a very large number of hemp plants, moreover, 83 carabaos, 10 head of other cattle, 1,410 arrobas (1 arroba=11.5 kilos) of stripped hemp, and a large quantity of building material, much of the latter consisting of molave wood. Outside of the village twenty-three dwellings were ruined.

Zamboanga.—The rice harvest has begun. Although the crop is fair, the price shows a tendency to rise. On the other hand, hemp has fallen from ₱21 per picul of first quality fiber during November to ₱18 at present. Epizoötia has reappeared in this region, about 40 cases among the cattle having been registered.

Isabela, Basilan.—On account of the heavy rainfall, the cutting of irrigated rice is not yet finished and it is feared that the final result will be bad, as part of the crop is rotting in the fields.

Jolo.—The thrashing of rice is now beginning. Some farmers maintain that the yield of rice, hemp, sugar cane, and other agricultural products is about equal to last year's crop. But the cocoanut crop has been diminished by a kind of insect, called bañgañgan, which caused the fruit to drop before it was sufficiently developed to be of any use. Bananas are plentiful. The very abundant rains have benefited the hemp plantations and cornfields.

DISTRICT III.

Legaspi.—The frequent and copious rains during this month are responsible for a falling off in the output of copra, whose price has risen somewhat. On the other hand they enabled some farmers to till their rice lands, which was done, although the proper season for planting rice in this province had passed. Rain and low prices notwithstanding, a considerable amount of hemp has been stripped. Surra has appeared among the horses.

Gubat.—During this month it rained nearly every day. As a consequence the rivers overflowed now and then, ruining rice fields and destroying irrigation ditches. In addition to this, the strong winds, which blew during the second half of the month, threw down banana plants and papayas. The price of rice is rising continually, being at present ₱6.80 per picul, while that of hemp is falling.

Calbayog.—Hemp production seems to have flagged somewhat during December, since the amount bought by the merchants of this city reached only 2,996 piculs. This falling off is due partly to the present low price of the product, partly to the continual rains which prevailed during the month. The latter interfere greatly with the work, as they make it impossible to dry the stripped fiber in the sun. Owing to the rains, the rice harvest is likewise somewhat backward. The crop of the various kinds of tubers has been fair.

DISTRICT IV.

Santo Domingo, Batanes Islands.—People are harvesting sweet potatoes and some corn which had been planted on the land which bore last year's crop of uve. About the middle of the month began the planting of a new crop of uve and sweet potatoes. Neither insects nor strong winds have done any damage.

Aparri.—The rains which fell during this month have saved the rice fields. These had been parched and dried up for lack of water, but they have revived at the advent of rain and are now in a good state. In some places the cutting has already begun, while in others the grain is not yet entirely ripe, though well advanced. It is, however, the general opinion, that the total yield will be small.

Tuguegarao.—The fields planted in tobacco are numerous and at present in a flourishing condition throughout the province, although the heavy rains during the first half of the month had done some harm to a few of them which are situated on low ground along the banks of the Cagayan and Pinacanauan Rivers. These rivers rose from 3 to 4 meters above their ordinary levels, with the corresponding effects upon the adjoining fields. But when, on the following day, the waters had subsided, the ruined tobacco plants were immediately replaced by fresh seedlings, which are at present well advanced. The rice harvest is now in progress; corn has not yet been planted. It appears that epizoötia has died out, since nothing is being heard of it any longer.

Laoag.—The variety of rice called "saynd" has been harvested and cotton planted. The stripping of maguey is continuing, but the price is very low.

Vigan.—The yield of vegetables and sugar cane has been below the average, and that of rice rather bad than fair; all on account of the drought which is likewise being felt by all the other crops. As a result, the price of rice of current quality is already ₱7.50 per cavan, and this during harvest time, when it usually is lowest, and does not exceed ₱5 in normal years. The strong, dry, northerly winds, which blew during the second half of the month, have also done their share in reducing vegetation to its miserable condition.

Candon.—The rice harvest is finished, but, owing to the extraordinary drought experienced, the result is very poor. It is estimated that the shortage amounts to about 90 per cent of an average crop. Hence rice costs now ₱7.50 per cavan. The crushing of sugar cane has begun, the price of the product being ₱2 per picul, with a tendency to rise. Cocoanuts cost ₱3.50 per hundred. Aside of the damage done to rice, the drought impeded the preparation of the ground for the planting of a new crop of sugar cane and of corn, and severely hurt the garden products and bananas. For this reason these are at present very dear. Sickness carried off about 10 per cent of the stock, hogs, and poultry.

Baguio.—The rice to be harvested next June has been sown. Sweet potatoes, potatoes, uve, and garden products are growing well. The neighboring settlements are at present harvesting their coffee crop, which gives results below those obtained last year.

Bolinao.—People are occupied in cutting rice, the yield of which is in keeping with the bad condition of the fields during the preceding month. Cacao has been attacked by an insect which causes the fruit to become spotted and then dry up. The cocoanut trees have not yet recovered their full fruit-bearing capacity. The price of maguey fiber is ₱7.50 to ₱8 per picul. The strong northerly winds of December 19 and 20 have destroyed all the fish weirs. Hence fish of whatever kind is at present an expensive article in Bolinao.

Dagupan.—Dagupan has finished the rice harvest; yield middling, since the rains ceased very early. Some farmers preferred to sell their rice as green fodder for mules, and actually realized more than double the amount of money which the crop would have been worth if allowed to ripen and harvested. The corn which is being planted in this municipality, serves exclusively as fodder for draft animals, being cut when still green and tender. The work of making sugar is now at its height. The price of sugar is ₱7 to ₱8 per pilon, according to weight. From the municipalities of San Carlos, Balungao, Alcala, and Tayug sad news has been received, the first mentioned having lost 90 per cent of its rice crop on account of excessive drought, and the other three about 75 per cent. The remaining municipalities of the province had more or less middling crops. In addition to the drought, the crops at Santa Barbara suffered from the inroads of an insect called "dangues."

Tarlac.—Owing to drought, the crop of early rice has not been entirely satisfactory. At present the farmers of this province are occupied in harvesting late rice and in making sugar. The yield of these products, especially that of rice, will not be good, as the drought has damaged them severely. In some places the corn harvest is in progress. There still occur cases of sickness among carabaos, hogs, and poultry. At Bamban the loss amounted to 5 to 7 per cent, at Capas to 3 per cent.

San Isidro.—During this month the cutting of rice began. In general it may be said that the results vary between 10 and 20 per cent of a normal crop. In addition to the effects of the drought, some of the low-lying fields suffered from the ravages of worms and of an insect called "alutañgia." At present rice (preceding crop) is already ₱7.50 per cavan. The planting of tobacco and corn is finished, and people are now occupied in planting sweet potatoes, gabe, and other tubers.

Olongapo.—The cutting of rice is finished. The crop is very inferior, as in some places the loss caused by drought and insects reached 50, in others even 65 per cent.

Balanga.—During the first two-thirds of the month people were busy with cutting rice. It would appear, that on an average the crop has been fair. For, while it is true, that on lands which had been inundated, the yield has been below the average; on the other hand those irrigated fields, which escaped flooding, gave a good crop, and the latter are of greater extent than the former. The sugar cane plantations are in a fair condition, as a rule; only to those with sandy soil and those which, on account of the lack of draft animals, had not been cultivated sufficiently, the drought has done severe harm.

Silang.—Very little hemp has been stripped during this month. This is due to both the prevailing rainy weather and the more pressing work of planting tobacco, squash, and tomatoes. The squally winds from north-northeast have damaged many plants.

San Antonio, La Laguna.—The strong winds and heavy showers which prevailed after the 16th of the month have done great harm to the crops growing on irrigated land, and likewise to hemp, bananas, and cocoanut trees. The rice could not be cut, as it was covered by water. Hence the crop will be very small.

Atimonan.—After having harvested the first crop of rice, which gave pretty fair results, some of the farmers are at present very busy with preparing their irrigated land for the second planting, which is usually effected about this time of the year. This second planting is not general; only those can hope for results whose fields are low and swampy. The continual rains of this month, accompanied by more or less strong winds, have cleaned the cocoanut trees to some extent, such cleaning being considered beneficial to their productivity. The price of copra is middling, being ₱5.50 to ₱5.75 per picul. Saigon rice costs ₱6.65 per picul. The price of hemp continues the same as during last month and shows no disposition to rise. There is no infectious disease among the work animals; a few deaths occurred among the poultry.

Batangas.—During the second half of December sugar making began in several towns of this province. The municipalities of Lipa and Cuenca had a better crop of hemp than for several years past. In consequence of this success the farmers are enlarging their plantations, substituting hemp for coffee, the yield of which has been very small. Tobacco and corn, which at present are growing in the fields, look very healthy and vigorous. Vegetables and bananas are very abundant. There has been no sickness among the stock during this month.

NOTICE.

The Weather Bureau having been relieved of the duty of crop reporting by legislative action, the publication of reports on this subject in the "Monthly Bulletin" will hereafter be discontinued.

The Weather Bureau desires to make use of this opportunity to express its sincerest thanks to the municipal presidents and other gentlemen, who have hitherto aided it in performing the work, by furnishing information to the meteorological observers of their respective districts.

ESTADO GENERAL DE LAS COSECHAS.

Como era de esperar en vista del mal estado en que se encontraban los campos de palay á fines de Noviembre, la cosecha recogida durante el mes de Diciembre (principalmente del palay de regadío) ha sido mala precisamente en las más importantes provincias productoras de este cereal en las islas, á saber: las del centro y norte de Luzón. En algunos distritos de Pangasinán las pérdidas causadas por la sequía y los insectos ó gusanos han llegado al 75 y aún al 90 por ciento de una cosecha normal. Este último número representa también la pérdida que han sufrido algunos municipios de Ilocos Sur. Tárlac dice que la cosecha no es satisfactoria. Las pérdidas de Nueva Écija varían de 80 á 90 por ciento, y las de Zambales de 50 á 65 por ciento. Por regla general se han obtenido mejores resultados al Sur del paralelo 15°, excepto en Antique, Iloílo y en la parte meridional de Cebú. Esta última región hace algún tiempo que había perdido toda esperanza de cosechar palay, y lo había sustituído por otras plantas principalmente el maíz. Iloílo, con algunas excepciones locales, da cuenta de una cosecha enteramente mala, debido á los roedores é insectos y á lo tardío de la lluvia. Los resultados han sido regulares en la Provincia de Bataán, en Cápiz, en Tayabas, en el norte de Leyte, en Joló, y generalmente en Mindanao, aunque en los alrededores de Dávao la cosecha ha sido completamente destruída por las langostas. Según los reports, se ha recogido una buena cosecha en el interior de Bohol, en Negros Occidental, y en los distritos de Butúan y Cotabato, Mindanao. La estación de Maasin, Sur de Leyte, es la única que ha dado cuenta de una abundante cosecha de palay. Como resultado de la deficiencia general, el precio del arroz está alto, siendo probablemente el precio dado por Vigan el ejemplo más notable. Allá el precio ordinario durante el tiempo de la cosecha es ₱5 por caván; este año es ₱7.50. En los distritos productores de abacá no ha habido falta de material para el trabajo de los desfibradores de este producto, sino que la lluvia ú otro trabajo agrícola y el bajo precio del abacá ya terminado, todo ha contribuído al poco rendimiento obtenido, siendo Albay el único que da cuenta de la producción de una gran cantidad de abacá á pesar de las condiciones mencionadas. El precio de la fibra ha bajado más. Puede dar una idea de esta calamidad el hecho de que, por ejemplo, en el W de Leyte, el abacá que al principio del año se vendía á ₱28 el pico, sólo producía ₱16.50 durante el mes de Diciembre. En Zamboanga ha bajado el precio de ₱21 que era durante el mes de Noviembre, á ₱18 á fines de Diciembre. Los cocos han sido abundantes por regla general, habiendo llegado la única queja de Joló, donde los insectos han hecho caer las frutas antes de tiempo. Sin embargo, las mismas condiciones que fueron causa de que la producción del abacá fuese escasa han disminuído también la actividad en la preparación del cóprax. Las quejas por lo bajo del precio de este artículo han sido casi generales. Solo Albay da cuenta de una ligera subida. Los tubérculos y el maíz han sido abundantes. La cosecha de café recogida en Benguet ha sido más escasa que el año pasado, y en Zambales han sido muy pobres los resultados de la cosecha de cacao, habiéndose perdido la mayoría de las frutas á causa de los insectos.

Según los informes recibidos, las plantas crecientes en los campos que son abacá, tabaco, cañadulce y maíz, estaban florecientes á fines del mes, con las siguientes excepciones: la parte central y costa occidental del Norte de Luzón, entre Olongapó y Vigan, donde dichas plantas han sufrido de la sequía; San Antonio, Gubat, Iloílo y Dapitan en donde las mismas han sido dañadas ya por las excesivas lluvias ya por las avenidas; Bohol y Negros Occidental, las cuales, sin determinar la causa, dicen que no es satisfactorio el aspecto de las cosechas.

La lluvia ha sido abundante en todo el Archipiélago, excepto en la Isla de Cebú donde ha sido casi normal, en la Provincia de Bataán donde el agua ha escaseado algo, y en las Provincias de Zambales, Tárlac, Nueva Écija, Pangasinán é Ilocos desde donde han llegado quejas de sequía. En la Isla de Basilan y en La Laguna la abundancia de agua ha amenazado con podrir el palay. Inundaciones han tenido lugar en la Isla de Bohol y en Sorsogón. Las fuertes lluvias, que en los días 27, 28 y parte del 29 de Diciembre han caído sobre el distrito de Surigao han sido causa de una fuerte avenida y, por consiguiente, de muchas pérdidas. Tuguegarao refiere que los ríos de Cagayán y Pincanauan subieron hasta unos 3 ó 4 metros más alto que su nivel ordinario. Pero peor que todos lo pasaron los pueblos situados arriba de Dapitan, los cuales sufrieron espantosamente á causa de las avenidas ocurridas el 23 y 29 de Diciembre. Véase en "Noticias especiales," Dapitan.

Son relativamente pocas las estaciones que han dado cuenta de insectos y gusanos. Unos ú otros ó ambos á la vez han hecho daño á la cosecha de palay en los alrededores de Dávao, en las Provincias de Iloílo, Zambales (localmente), Nueva Écija y Pangasinán (localmente). Los cocoteros en Joló y las plantas de cacao en Zambales han sufrido mucho por los ataques de los insectos. Los roedores han causado gran daño á las plantaciones de caña dulce en el norte de Cebú.

Las enfermedades de animales han prevalicido en las siguientes provincias: Mora (distrito de Zamboanga, nuevo ataque), Leyte, Iloílo, Antique, Cápiz, Albay, Tárlac é Ilocos Sur. De entre estas, Albay ha dado cuenta de la surra, el resto de la epizotia. Las pérdidas han sido grandes en Zamboanga (40 cabezas de vacunos), en la Provincia de Cápiz (vacunos y algunos caballos), y cerca de Candón, Ilocos Sur (10 por ciento de vacunos, cerdos y aves de corral).

NOTICIAS PARTICULARES.

DISTRITO I.

Borongan.—En toda esta costa oriental de Sâmar la gente se ha ocupado en plantar palay, el cual ha sido muy favorecido por las abundantes lluvias caídas durante el mes. El beneficio del cóprax está algo paralizado por ahora, pero los cocoteros se hallan cargados de frutas y es de esperar que la cosecha del año entrante será buena. Las otras plantaciones se hallan también en buen estado.

Tacloban.—Se han cosechado palauan, gabe, tomates, y otros artículos de importancia secundaria. La precipitación acuosa ha sido abundantísima y ha favorecido notablemente á toda clase de plantaciones, tanto de palay, caña dulce, maíz, y abacá, como de los tubérculos y verduras. Sigue muy subido el precio del arroz y bajos los del abacá y cóprax.

Ormoc.—La cosecha de este año ha sido en general regular, excepto la del palay, cuyos rendimientos han sido escasos á causa de los daños hechos por los ratones, gusanos, y murciélagos, que aparecieron en los campos en la época de la recolección. Por eso muchos campesinos compran ya arroz, cuyo precio oscila entre ₱6 y ₱7 el caván. El abacá ha bajado de ₱28 el pico durante los primeros meses de este año, á ₱16.50 en la actualidad. Por el escaso número del ganado apenas se han notado en él la epizotia; con todo se calcula la mortandad causada en un 5 por ciento.

Tuburan.—Se han cosechado caña dulce, maíz, y tabaco. Debido á la escasez de las lluvias en los meses de Octubre y Noviembre, los rendimientos de la caña dulce y del maíz no han llegado á ser buenos. Además, las plantaciones de caña dulce han sido dañadas por los ratones.

Cebú.—Las lluvias han sido regulares y han favorecido mucho á los campos de maíz y de caña dulce, lo mismo que al maguey que se había plantado en algunos terrenos. Con respecto al palay, casi nada puede esperarse por haber sido arruinada gran parte de los semilleros en los meses de Agosto y Septiembre. Hay bastantes plátanos, y pequeñas cantidades de manga, chico, nanca, y tubérculos.

Maasin.—La cosecha de palay en este mes ha sido abundante y tal vez será suficiente para el consumo del pueblo. También se han cosechado frutas como macopa, sampáloc, y lanzones, y una pequeña cantidad de camote, gabe, y uve. De Macrohón, Malitbog, y varios pueblos del seno Lión informan que allí se beneficia gran cantidad de cóprax.

Surigao.—Durante el mes de Diciembre ha habido muchas lluvias, sobre todo en los días 27, 28, y mediodía del 29. En su consecuencia se ha inundado el barrio de Cagdianao, municipio de Dinágat, con pérdida de algunos hogares, y muchas plantas de abacá y plátanos arrastradas por el río Cagdianao. Bacod y Malico también han sufrido la pérdida de muchas de estas plantas á causa de la avenida del río Surigao, la cual ha dañado además el puente cercano á la última de las dos poblaciones citadas. Se nota muchísimo la escasez de carabaos para la labranza de los campos. Se cosechan actualmente camote, gabe, uve, y algo de síncamas. Los cocos se hallan cargados de frutas. El precio del cóprax es de ₱7 el pico, el del abacá de ₱16, y el del arroz de ₱7.25 el caván.

Tagbilaran.—La cosecha principal de este mes ha sido el cóprax. Los cocoteros han dado abundantes frutas y grandes cantidades de cóprax se han exportado á Cebú desde casi todos los pueblos costeros. Panglao y Loay tienen la fama de poseer el mayor número de cocos. Se calcula que Loay solo, produce en la actualidad de 800 á 1,400 picos de cóprax cada mes. En el interior de la isla se está cosechando el palay, pero nunca con la abundancia de unos 10 años atrás.—Continúa sembrándose con actividad el maguey. La langosta hizo su aparición en Tagbilaran exactamente en las mismas fechas que el año pasado: los dos últimos días del año! Ha hecho algún daño en los cocos y demás sembrados de las poblaciones que ha tocado durante su paso, especialmente donde ha pernoctado. En la última década del mes las abundantísimas lluvias han arruinado las cosechas que quedaban en los campos de Tubigon, Antequera, y Maribojoc. El río Usao ha arrastrado algunos puentes.

Butúan.—La cosecha del palay que está recogiéndose por ahora, es buena. Hasta los más pobres tienen algo que recoger. El abacá crece con mucha lozanía, pero algunos cosecheros han suspendido el trabajo hasta que pase el tiempo que llaman *amihan* (tiempo lluvioso). El precio del abacá es de ₱10 el pico. Los cocos casi siempre dan buenas rendimientos; por este motivo muchos los prefieren á los demás productos, como cacao, café, y caña dulce, que desaparecen más y más.

Cotabato.—No se ha terminado todavía por completo la cosecha del palay tardío. Sin embargo, algunos ya están trillando y venden el palay á ₱1.60 el caván. En este mes no se han visto gomas ni guttaperchas en este pueblo como en los meses anteriores.

Dávao.—Los moradores de este distrito se han dedicado con ahinco al cultivo del maíz, á pesar de que la cosecha no ha producido buenos resultados, debido á los gusanillos que han atacado á las mazorcas. Los terrenos palayeros, con pocas excepciones en los alrededores de Dávao, han sido infestados por la langosta, que no ha dejado cosecha alguna de palay. El abacá es abundante, pero su precio ha sufrido gran rebaja en estos últimos meses del año, siendo ahora de ₱15 el pico.

DISTRITO II.

Cápiz.—Las cosechas de esta provincia han sido palay, maíz, y caña dulce. La epizotia está haciendo grandes estragos en los carabaos y ha matado algunos caballos. Hay propietarios á quienes no les ha quedado ninguno. Se dice que mueren tanto los inoculados como los que no lo están.

San José de Buenavista.—Se han cosechado durante el mes palay, caña dulce, tomates, y otros productos de menor importancia. Los rendimientos son menores que el año anterior. Por consecuencia la ganta de arroz se vende ahora á 21–22 centavos, en vez de 14–16, precio corriente cuando la cosecha es buena. La epizotia continúa causando muertes en la provincia.

Iloílo.—No se pudo remediar la mala cosecha de palay que se auguraba en los meses anteriores con motivo de su raquítico crecimiento y de los gusanos que la amenazaban. Las lluvias cayeron tarde; las langostas, ratas, y gusanos no han dejado de hacer sus destrozos. El Señor Presidente de Cabatúan participa, que del palay *macan* apenas pudieron recoger los agricultores lo bastante para recobrar las semillas y los gastos de la siembra. Las comunicaciones de los Señores Presidentes de Janiuay y Barotac Nuevo indican que en aquellos pueblos la cosecha ha sido menos escasa; pero en general puede decirse que ha sido mala en esta provincia. Las lluvias intempestivas que cayeron en los últimos días del mes de Diciembre han impedido la siembra del tabaco y maíz, y causado daños considerables en el tabaco ya sembrado y en las demás plantas crecientes; también han interrumpido la molienda de la caña dulce. La epizotia continúa apareciendo periódicamente en todas partes entre los animales de labor.

Bacólod.—Dentro del municipio de Bacólod la cosecha del palay ha excedido á la del año anterior casi en un 10 por ciento. La recolección de la caña dulce ha continuado durante este mes, pero todavía quedan algunas siembras de este producto. La nueva plantación de caña dulce que es ahora la ocupación de la gente, sufre algún retardo por la falta de animales de labor. En Murcia las cosechas de palay y caña dulce han sido regulares, pero el maíz y la nueva siembra de la caña dulce presentan por ahora un aspecto poco satisfactorio. De otros puntos llegaron quejas de una gran disminución de la cosecha de palay á causa de la prolongada sequía que ha reinado en los meses anteriores y de los destrozos causados por las langostas y loctones.

Dapitan.—Terminada la cosecha de palay, los agricultores estaban descansando de sus trabajos y construyendo depósitos para los productos recogidos, cuando el día 23 de Diciembre vino una gran avenida, que inundó las sementeras y arrastró plantas de abacá, cocos, y otros árboles frutales. En los sitios de Suañgon, Totuay, y Tamion, pertenecientes al municipio de Dapitan, la pérdida llegará á unos ₱3,000. En Ilaya ó San Lorenzo, las desgracias han sido muchísimo mayores. Según el Señor Concejal de dicho pueblo, el agua subió hasta 2.65 metros dentro de la población. Describiendo dicho Señor la avenida en una relación al Presidente de Dapitan dice: "* * *. Cumplo con mis deberes con lágrimas en los ojos. * * * En dicha avenida ví pasar en la misma población, con mis propios ojos, montones de abacá, troncos grandes de árboles, cañas, carabaos, cerdos, algunos sacos de palay, embarcaciones pequeñas, y otros objetos que no recuerdo más. el agua duró en la población 8 horas. Desgracias personales no hubo, gracias á Dios! * * * La pérdida puede llegar hasta la suma de ₱50,000." Todavía más desastrosa ha sido en el mismo pueblo la avenida del día 29 del mismo mes, pues el agua llegó hasta unos 4 metros dentro de la población. La corriente derrumbó 3 casas de materiales fuertes que estaban próximas al río, y muchas de materiales ligeros, arrastró 3,000 cavanes de palay y un sin número de plantas de abacá, 83 carabaos, 10 vacas, 1,410 arrobas de abacá beneficiado, una grande cantidad de materiales para edificios, y 23 casas fuera de la población.

Zamboanga.—Se ha comenzado la siega del palay; pero á pesar de ser la cosecha regular, el precio del arroz tiende á subir, mientras el del abacá ha bajado de ₱21 el pico del de primera clase durante el mes de

Noviembre á ₱18 en la actualidad. La epizotia ha aparecido de nuevo en esta región, habiéndose registrado unos 40 casos en el ganado vacuno.

Isabela de Basilan.—Debido á las muchas lluvias caídas durante este mes, todavía no se ha terminado la recolección del palay de regadío, y se teme que los rendimientos serán malos, pues la cosecha se está pudriendo en las sementeras.

Joló.—Por ahora está empezando la trilla del palay. Algunos agricultores dicen que los rendimientos de palay, abacá, caña dulce, y otros productos han sido casi iguales á los recogidos el año próximo pasado. En cambio los cocos han sido perjudicados durante el mes por los insectos llamados *bañgañgan*, que los hacen caer antes de tiempo. Hay abundancia de plátanos. Las lluvias copiosas han favorecido los sembrados de abacá y maíz.

DISTRITO III.

Legaspi.—Por las frecuentes y abundantes lluvias caídas este mes ha disminuído algo el beneficio del coco y ha subido su precio. En cambio algunos propietarios lograron labrar parte de sus terrenos, aunque la época de la siembra del palay en esta provincia ya había terminado. Del abacá se ha beneficiado una cantidad regular no obstante las lluvias y el precio bajo. En el ganado caballar se ha notado la enfermedad de la surra.

Gubat.—Ha llovido casi todos los días de este mes, siendo esto causa de que de vez en cuando desbordasen los ríos, arrastrando sembrados de palay y destrozando presas. Además, los fuertes vientos del nordeste durante la segunda quincena del mes han derribado plátanos y papayas. El precio del arroz sube cada vez más, siendo al presente de ₱6.80 el pico, mientras el del abacá baja.

Calbayog.—En el presente mes de Diciembre ha sido algo escasa la cosecha de abacá, pues la cantidad comprada por varios comerciantes sólo ha llegado á 2996 picos. Fué debido esto, parte al precio bajo que hoy tiene este producto, y parte á las continuas lluvias que han reinado este mes, las cuales son perjudiciales á los trabajadores, por serles imposible asolear los filamentos beneficiados. Las lluvias también han retrasado algo la recolección del palay. La cosecha de varias clases de tubérculos ha sido regular.

DISTRITO IV.

Santo Domingo, Islas Batanes.—Los agricultores están cosechando camote y un poco de maíz que se había sembrado en las parcelas donde se cosechó el uve en Septiembre último. Á mediados del mes han comenzado á hacer nueva siembra de uve y camote. No ha habido insectos ni vientos fuertes que hayan causado daño á los campos.

Aparri.—Las lluvias caídas durante el mes han favorecido los terrenos palayeros, que estaban marchitos y secos por falta de agua, pero han reverdecido con las lluvias y ahora se hallan en buen estado. En algunos sitios el palay está bien espigado, en otros ya ha empezado la siega. Con todo es opinión general que la cosecha será escasa.

Tuguegarao.—La siembra de tabaco se presenta hermosa y abundante en toda la provincia, si bien las aguas de la primera quincena han perjudicado en algo á algunas plantaciones que se hallan en terreno bajo junto á los ríos Grande y Pinacanauan. Subieron estos ríos á una altura de 3 á 4 metros sobre su nivel ordinario; pero al retirarse las aguas el día siguiente, las semillas arruinadas fueron repuestas inmediatamente y hoy se encuentran bastante crecidas.—El palay se está recolectando; el maíz aún no se ha sembrado. Parece que la epizotia ha desaparecido, pues no se oye nada de ella.

Laoag.—En este mes se ha cosechado el palay llamado *saynd*, y sembrado algodón. Sigue el beneficio del maguey, pero con precio muy bajo.

Vigan.—Las cosechas de legumbres y caña dulce han sido algo menos que regulares, y la del palay más bien mala que regular: todo por efecto de la sequía, de la cual se resienten también las demás siembras. Por consecuencia, el precio del arroz de calidad regular ya es de ₱7.50 el caván, y esto en la época de la cosecha, cuando suele ser más barato, siendo sólo de ₱5 ó menos en tiempos normales. Los vientos fuertes del norte, que soplaron durante la segunda y tercera década, no han dejado de aumentar el mal estado de la vegetación.

Candon.—Se ha terminado la recolección del palay, que ha dado resultados muy malos, por efecto de la extraordinaria sequía. Se calcula la pérdida en un 90 por ciento de una cosecha ordinaria. Por eso, el precio del arroz ha subido ya hasta ₱7.50 el caván.—La molienda de caña dulce ha comenzado; el precio del azúcar es de ₱2 el pico con tendencia á subir. Los cocos se pagan á ₱3.50 el ciento. La sequía ha impedido la preparación de los terrenos para la siembra de caña dulce y maíz, y ha causado grandes daños á las hortalizas y á los plátanos, por lo cual estos artículos se venden muy caros. Hubo enfermedades de ganados, cerdos, y aves de corral, con una pérdida de 10 por ciento.

Baguio.—Se ha terminado la siembra del palay para la cosecha del mes de Junio venidero. Las plantaciones de camote, patatas, uve, y hortalizas son regulares. En los pueblos vecinos se cosecha actualmente el café, cuyos rendimientos son menores que el año pasado.

Bolinao.—El vecindario se halla ocupado en la recolección del palay, cuyos rendimientos corresponden al estado malo en que se hallaba el mes anterior. El cacao ha sido atacado por un insecto, que hace que las frutas se manchen y sequen. Los cocos todavía no han recobrado el estado fructífero en que se hallaban en los años anteriores. El precio del maguey beneficiado es de ₱7.50 á ₱8 el pico. Los vientos fuertes del norte en los días 19 y 20 del mes de Diciembre destruyeron los corrales de pesca, por lo cual toda clase de pescado se vende por ahora muy caro en plaza.

Dagupan.—Dagupan ha terminado la cosecha del palay, la cual ha resultado mediana á causa de haber cesado muy temprano las aguas. Algunos propietarios han preferido venderlo para forrage de mulas, alcanzando así más que duplicado el precio que hubiese tenido la cosecha recolectada. El maíz que se siembra en este municipio no sirve más que para alimento de los animales de labor, siendo cortado cuando está todavía verde y tierno. La molienda de la caña dulce está en su apogeo, y cuesta el pilón de azúcar de ₱7 á ₱8, según sea el peso.—De los municipios de San Carlos, Baluñgao, Alcala, y Tayug se tienen noticias desconsoladoras, habiendo perdido el primero un 90 por ciento de la cosecha del palay, por la excesiva sequía, y los otros tres casi un 75 por ciento. Los demás pueblos de la provincia tuvieron cosecha más ó menos mediana. En el pueblo de Santa Barbara ha causado daño en las plantaciones, además de la sequía, el insecto llamado *dañgues*.

Tárlac.—Debido á la sequía, la cosecha del palay temprano no ha sido del todo satisfactoria. Al presente la gente de esta provincia se halla ocupada en la recolección del palay tardío y en la molienda de la caña dulce. Los rendimientos de estos dos productos, especialmente del palay, no serán buenos por causa de dicha sequía. También está cosechándose el maíz en algunos puntos. Todavía hay casos de enfermedades en los carabaos, cerdos, y aves de corral. En Bamban las pérdidas llegaron á 5 ó 7 por ciento y á 3 por ciento en Capas.

San Isidro.—Durante este mes se dió principio á la siega del palay. En general puede decirse que la cosecha oscila entre 10 y 20 por ciento de la ordinaria. Además de los efectos de la sequía, algunos terrenos palayeros bajos han sufrido los destrozos de los gusanos y de un insecto llamado *alutañgia*. Al presente el arroz (antiquo) tiene ya el precio de ₱7.50 el caván! Se ha terminado la siembra del tabaco y del maíz y por ahora la gente está ocupada en plantar camote, gabe, y otros tubérculos.

Olongapó.—Se ha terminado la siega del palay y la cosecha ha sido muy inferior á la ordinaria, pues en algunos terrenos la pérdida causada por la sequía y los insectos ha llegado á 50 por ciento; en otros hasta 65 por ciento.

Balanga.—Durante las dos primeras décadas de este mes los labradores se ocuparon en la recolección del palay. La cosecha parece haber sido regular en general; porque si bien es verdad que en los terrenos que no son de regadío y en los que han sido inundados, los rendimientos han sido menores que los ordinarios, en cambio han sido buenos en los de regadío, y estos son de mayor extensión que aquellos. Los sembrados de caña dulce se presentan regulares en general, pero en los terrenos arenosos ó menos preparados por falta de ganados, la sequía ha hecho mucho daño.

Silang.—Se ha beneficiado muy poco abacá durante este mes, á causa no solo de las lluvias, sino también de la ocupación precisa de sembrar tabaco, sandía y tomates. Los vientos racheados del NNE han dañado muchas plantas.

San Antonio, Laguna.—Los vientos fuertes y los aguaceros que reinaban desde el 16 de Diciembre han perjudicado las siembras en todos los terrenos de regadío, así como también el abacá, los cocos, y plátanos. El palay no puede recogerse por estar sumergido en el agua. Por consiguiente, habrá muy poca cosecha.

Atimonan.—Recolectado en cantidad bastante regular el palay de la primera siembra, parte de la gente se halla ahora ocupadísima en preparar sus terrenos de regadío para la segunda, cuyo tiempo ordinario es durante esta época. Esta segunda siembra no es general, pues sólo pueden hacerla los que tienen terrenos bajos y cenagosos. Las continuas lluvias acompañadas de vientos más ó menos fuertes de este mes han limpiado en cierto modo los cocales; limpieza que se considera señal de mejoramiento en los mismos. El cópraх tiene precio bastante mediano; cotízase el pico de ₱5.50 á ₱5.75. El arroz de Saigón cuesta ₱6.65 el pico. El abacá tiene el mismo precio que el mes anterior, sin tendencia á subir. No hay enfermedades propiamente tales en los animales de labor, pues sólo han ocurrido algunos casos de muerte en las aves de corral.

Batangas.—Durante la segunda quincena de Diciembre ha comenzado el beneficio de la caña dulce en algunos pueblos de esta provincia. Los municipios de Lipa y Cuenca han tenido mejor cosecha de abacá que en los años anteriores y en vista de este buen resultado obtenido en dichos pueblos, los agricultores van extendiendo cada vez más sus plantaciones de este producto, relevando las del café, cuya cosecha ha sido muy escasa. El tabaco y el maíz, que ahora crecen en los campos, tienen aspecto muy bueno. Hay gran abundancia de legumbres y plátanos. No ha habido enfermedad en los ganados.

AVISO.

Habiendo sido relevada la Oficina Meteorológica del cargo del servicio de cosechas por disposición legislativa, suspenderá desde ahora la publicación de datos sobre esta materia en el "Monthly Bulletin."

La Oficina Meteorológica aprovecha esta ocasión para dar sus más expresivas gracias á todos los presidentes municipales y á cuantos hasta la fecha la han ayudado en este trabajo, proporcionando informaciones á los observadores meteorológicos de sus respectivos distritos.

APPENDIX TO THE MONTHLY BULLETIN FOR 1907.

APPENDIX TO THE MONTHLY BULLETIN FOR 1907.

ANNUAL SUMMARY OF METEOROLOGICAL DATA FOR MANILA, DEDUCED FROM TWENTY-FOUR DAILY OBSERVATIONS DURING THE YEAR 1907.

Month.	Pressure.		Air temperature.						Wind.			
										Velocity.		
	Mean.	Departure from normal.	Mean.	Departure from normal.	Maximum, mean.	Departure from normal.	Minimum, mean.	Departure from normal.	Prevailing direction.	Mean.	Departure from normal.	Hourly maximum.
	mm.	*mm.*	*°C.*	*°C.*	*°C.*	*°C.*	*°C.*	*°C.*		*Km.*	*Km.*	*Km.*
January	760.53	—0.59	23.9	—1.1	29.3	—0.6	19.2	—1.3	NNE	165.4	— 5.1	36.5
February	60.74	— .72	24.7	— .6	31	+ .4	19.3	—1	ESE	158.6	—35.7	29
March	60.73	+ .13	26.1	— .7	32.7	+ .4	19.8	—1.7	SE	212	—17.9	35.5
April	59.28	— .18	27.7	— .6	33.8	+ .1	21.7	—1.2	SE	233.8	— 6.4	32.5
May	58.44	+ .01	28.8	+ .2	34.2	+ .8	23.7	— .3	SE, WSW	230.1	— 2.6	38.5
June	56.98	— .93	27.9	— .1	32.5	+ .3	23.8	— .2	SW quad.	231.7	— 7.7	35
July	57.04	— .29	26.9	— .3	31.2	+ .4	23.3	— .4	WSW	220.1	—56.6	40.5
August	55.93	—1.49	26.3	— .8	29.4	—1.1	23.5	— .2	SW	361.1	+75.4	50
September	56.85	— .69	26.7	— .3	30.3	— .3	23.6	— .1	SW	283	+11	48.5
October	59.19	+ .51	26.5	— .4	31.7	+ .7	22.5	— .6	E quad.	135.3	—42.5	55
November	59.49	+ .01	26	0	31.6	+1.4	21.8	— .5	NE quad.	150.1	—11	27.5
December	59.38	—1.16	24.7	— .5	29.7	0	21.1	— .2	NNE	171.3	+15.1	31.5
Annual	758.71	— .45	26.4	— .4	31.4	+ .2	21.9	— .6	----------	212.7	— 7	55

Month.	Relative humidity.		Cloudiness.		Evaporation.			Sunshine.		Rainfall.			
					Free exposure.								
	Mean.	Departure from normal.	Mean.	Departure from normal.	Total.	Departure from normal.	Shelter, total.	Total.	Departure from normal.	Total.	Departure from normal.	Rainy days.	Departure from normal.
	Per ct.	*Per ct.*	*0–10.*		*mm.*	*mm.*	*mm.*	*h. m.*	*h. m.*	*mm.*	*mm.*		
January	79.8	+2.1	6.8	+1.7	188.5	+10.3	88	177 15	—17 08	21.4	— 6.4	3	— 2
February	73.9	+ .2	5.9	+1.4	206.6	+ 6.9	101	206 05	+ 0 17	1.5	— 8.4	2	— 1
March	69.1	—2.7	5.2	+1	270.3	+ 3.6	133.2	267 50	+20 12	7.2	— 9.9	2	— 1
April	67.1	—2.7	4.4	+ .5	280.6	— 2	139.7	277 50	+11 31	4.9	— 25.5	3	— 1
May	72.7	—3.1	6.2	+ .7	277.8	+41.2	141.7	264 50	+27 07	62.2	— 39.9	8	— 1
June	79.9	—1.2	8	+1.1	180.6	+ 8.1	97.4	172 20	— 2 57	146.7	—100.1	14	— 2
July	84.1	— .5	7.8	+ .2	141.4	+ .8	79.9	185 10	+28 24	504	+112.5	23	+ 2
August	88.2	+3.2	9.3	+1.5	97.6	—44.8	61.1	87 55	—52 12	473.9	+121	30	+ 9
September	86.4	+ .7	7.7	+ .1	121.8	— 4.9	65.3	168 15	+26 04	278.7	— 87.8	19	— 1
October	84.7	+1.2	6.3	— .3	127.4	—13.6	66.2	199 00	+24 46	221.9	+ 30.7	16	0
November	81.1	—1.4	6.2	0	168	+29.9	77	190 50	+27 11	44.1	— 85.5	13	+ 1
December	83.6	+2.5	7.4	+1.5	144	— 7.7	66.8	118 30	—46 03	74.3	+ 15.6	17	+ 8
Annual	79.2	— .1	6.8	+ .8	2,204.6	+27.8	1,117.3	2,315 50	+47 12	1,840.8	— 83.7	150	+11

TROMOMETRIC MOVEMENTS OR PULSATORY OSCILLATIONS.

By Rev. Miguel Saderra Masó, S. J.,
Assistant Director of the Weather Bureau.

In view of the fact that several recent publications give a prominent place to observations of the faint movements recorded by the microseismographs and to their discussion, it may not be devoid of interest if we publish a résumé of the work done in this line at Manila Observatory, and give our views regarding the causes of these tremors; especially since these views are the fruit of many years of experience.

These movements are called "tromometric movements" (Bertelli) or "pulsatory oscillations" (Omori), and consist of very small and rapid oscillations which are usually recorded by the microseismic pendulums. Occasionally they continue for many hours, and even days, having frequent periods of maximum and minimum intensity. It is now generally admitted that the cause of these oscillations is not, properly speaking, of a seismic nature; but that they are rather connected with the changes in air pressure and with several other atmospheric phenomena. But as to their immediate cause or causes, no final agreement has as yet been reached, at least as far we know.

From 1882 to 1901 Manila Observatory published the observations made with the Bertelli tromometer. According to Count Montessus de Ballore,[1] this series is one of the longest and most complete of those which are available for the study of the phenomenon.[2]

Since the year 1890 I have given my attention to the investigation of the immediate cause of the frequent tromometric movements in Manila. On several occasions I have shown in the seismic review of the Monthly Bulletin of this Observatory that, although the movements observed at Manila have some relation to the force of the wind, still, owing to the manner in which the instruments are mounted, the effect of the wind can be only indirect, either by causing the mountain ranges of Luzon to oscillate, or by agitating the adjacent seas.

Concerning the influence of the ocean waves which set the island in vibration, the experience of years has strengthened our views to such an extent, that it appears to us almost evident, that the waves of the neighboring oceans constitute the chief cause of the tromometric movements observed at Manila; nor does it seem to us improbable that the same holds true with regard to other stations which are not too far remote from the sea.

At Manila, the effect of commotion in the sea, especially in the Pacific Ocean, is so pronounced, that hardly appear the first signs of the existence of a typhoon toward the east, when the microseismographs begin to show it, long before the barometers undergo any marked changes and the winds develop: at a time when the only indication consists in the ocean swell, which, coming from the direction in which the cyclonic center lies, breaks with force against the eastern coasts of the island. After the existence and direction of the typhoon have been ascertained, the movements of the microseismographs alone often enable the observer to form an idea of its extent and intensity, at a time when the vortex is still hundreds of miles distant from Luzon.

[1] "La Science Seismologique," Chap. XII, Les microseismes.

[2] "Observatorio Meteorológico de Manila, bajo la dirección de los P. P. de la Compañía de Jesús. Boletín Mensual."

As to the tromometric movements evidently due to the vibrations of the mountain ranges of Luzon while these are being furiously assailed by the winds of a cyclone passing over them, we may say that the connection has been fully proved by Rev. José Algué in his book "Tifones ó Ciclones de 1894" (published in 1895), and still more conclusively in the work "The Cyclones of the Far East".[1] The latter instances are, however, infrequent; wherefore our attention has been directed chiefly to the investigation of the effect produced by the ocean waves which seem to be the usual cause of the movements in question.

In the seismic reviews contained in the MONTHLY BULLETINS for the year 1895 I made an exhaustive study of the influence which the following conditions exercise upon the frequency and amplitude of tromometric movements: (1) Local winds whenever they pass beyond 4 meters per second; (2) the winds at Aparri, the station closest to the northeastern extremity of Luzon, when they reach force three or more; (3) the state of the sea in the various stations of the island; and (4) the barometric gradient over Luzon Island. The result is shown in the following table. I have prescinded from the intensity of the movements, and considered only the relative frequency as determined from the observations.

RELATION BETWEEN PULSATORY OSCILLATIONS AND WEATHER CONDITIONS.

Month.	Atmospheric pressure, mean.	Barometric gradient, mean.	Wind.		Frequency of the microseismic movements.								
			Mean daily velocity.	Prevailing direction.	Monthly.	With local wind 4 m. p. s. or more.	With rough sea.	With moderate sea.	With barometric gradient.		With barometric gradient.		With wind at Aparri force 3 or more.
									Millimeters.	Per cent.	Millimeters.	Per cent.	
1895.	*mm.*	*mm.*	*km.*		*Per ct.*	*Per ct.*	*Per ct.*	*Per ct.*					*Per ct.*
January	760.7	2.3	192.6	NE	62	72	74	56	3	81	1	53	72
February	61.4	2.1	214.4	E	67	61	81	53	2	77	1	55	71
March	60.1	2	250.5	ESE	54	64	76	55	3	95	1	51	57
April	59.4	1.3	265.1	SE	27	25	72	------	2	68	1	31	41
May	57.8	.9	286.5	SW	30	39	[a c] 100	35	2	58	1	29	38
June	57.5	.4	255.8	SW	21	32	[a d] 95	28	4	[a] 100	1	21	30
July	56.4	.2	291.2	SW	23	32	[b e] 84	48	2	57	------	------	23
August	56.9	.4	299.5	SW	30	30	[b f] 91	------	3	[b] 87	2	55	30
September	56.4	.8	391.5	SW	49	44	[b g] 95	52	2	34	------	------	[b] 81
October	58.7	2.2	182	NNE	40	40	[a h] 68	------	3	68	------	------	45
November	60.4	2.5	179.9	NE	81	81	91	86	4	85	3	80	86
December	61	3.2	171.9	NE	79	84	93	62	4	93	2	79	88

[a] During a small typhoon which crossed the Islands.

[b] Distant typhoon northeast of Manila.

[c] Maximum of the pulsatory oscillations from 23^h of the 10th to 7^h of the 11th, while a typhoon was crossing the Island of Luzon south of Manila and entering the China Sea; greatest force of the wind from 11^h of the 13th to 6^h of the 14th.

[d] Maximum of the pulsatory oscillations from 20^h of the 23d to 2^h of the 24th, during which time a typhoon in the Pacific was at its shortest distance from Manila, while another was forming in the China Sea, to the northwest of the city. Maximum force of the wind between 12^h and 18^h of the 24th.

[e] Maximum of the pulsatory oscillations and of the force of the wind from 9^h to 15^h of the 23d.

[f] Maximum of the pulsatory oscillations from 3^h to 22^h, and maximum force of the wind from 14^h to 21^h of the 22d.

[g] Maximum of the pulsatory oscillations and of the wind on the 14th, during the day.

[h] Maximum of the pulsatory oscillations during the 29th while a typhoon crossed the meridian south of Manila and entered the China Sea; wind very moderate, its maximum occurred on the 27th, 28th, and 30th.

I shall not give a detailed discussion of this table, as it appears to me to point of itself with sufficient clearness to the prepondering influence of the agitation of the sea, especially of the Pacific Ocean. The maxima show the following characteristics: (1) They occur throughout the year whenever the sea is boisterous, whether this be the effect of northers or of a typhoon; (2) with equal wind velocities at Manila, they nevertheless crowd together in the winter months, in which the northeast winds predominate; (3) they follow the changes in the barometric gradient, which under normal circumstances is greatest during the winter months and causes the northeast monsoon, which latter greatly agitates the Pacific Ocean.

[1] Bureau of Public Printing, Manila, 1904; Part II, Chap. X.

Lately I have examined all the records traced during the year 1907 by the Vicentini microseismograph and the horizontal pendulums. The more important instances in which both instruments registered pulsatory oscillations were noted and then an investigation was made of the weather conditions which at the time prevailed in the Archipelago. The results are embodied in the subjoined table.

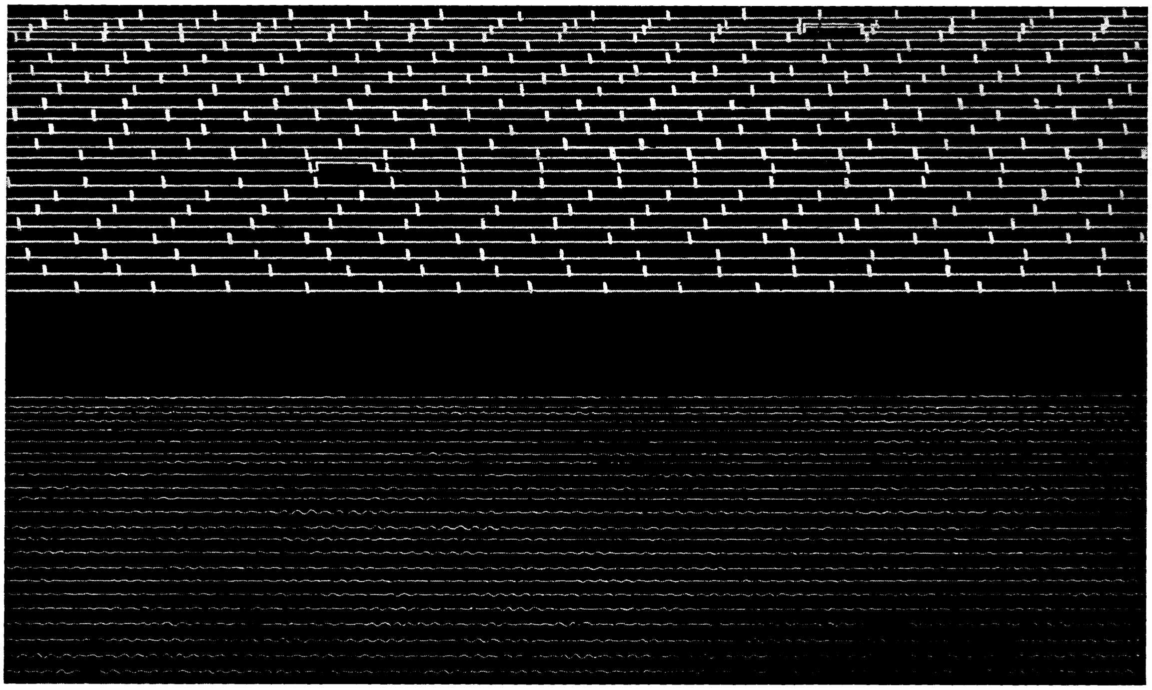
PULSATORY OSCILLATIONS, 1907.

Date.	Intensity.	Remarks.
January:		
2–4	Moderate	High pressure, moderate northers.
7–13	Strong	Strong northers, high pressure in the north, depression in the Visayas.
February:		
5–6	Light	Barometer rather low; moderate northers.
23–25	do	Highest pressure in the month; northers.
March:		
4–9	Moderate	Do.
30–31	Very light	Barometer apparently normal.
April:		
1–3	Light	Pressure rather high; monthly maximum, with moderate northers.
5–9	do	
May:		
26–28	Moderate	Low pressure over Formosa and the China Sea; rains in northern Luzon; some earthquakes.
June:		
21–23	do	Depression over China, developing into a typhoon which moved toward north.
25–28	do	
July:		
16–20	Light	Typhoon passing far off to the northeast; heavy sea from southwest.
23–25	do	Typhoon passing at great distance to the northeast; heavy southwestern sea.
August:		
21–27	Moderate	Typhoon passing far to the northeast; rough southwestern sea.
29–31	do	Second typhoon to the northeast.
September:		
4–9	do	Typhoon to the northeast, southwest sea.
27–29	do	Extensive depression; southwest wind rather strong.
October:		
25–27	Strong	Typhoon crosses Luzon on the 26th.
November:		
14–16	Moderate	Steep gradient between Formosa and Luzon; strong northers.
16–17	Light	Barometer normal; some earthquakes.
23–27	do	High pressure in the north; northers.
29–30	do	Northers.
December:		
7–9	do	Barometer normal, moderate northers.
11–13	do	Steep gradient between Formosa and Luzon; northers.
17–19	Moderate	Strong northers; depression in the Visayas.
21–25	Strong	High pressures; strong northers.
29–31	Light	Barometer normal; moderate northers.

The data of this table confirm those given in the preceding, to wit: the frequency of pulsatory oscillations is greatest during winter, when high pressures are usually prevalent and induce strong northers. During the spring and summer months they occur only when typhoons cross the Archipelago or run in the adjacent seas. It must be mentioned that the northers which accompany high pressures never acquire any considerable force in the interior of Luzon Island; as to Manila, it can hardly be said that they are especially noticeable. On the eastern and northern coasts of the island they attain indeed greater force, but the latter can never be compared with the violence of the wind in a typhoon. Nevertheless, the waves of the Pacific caused by these northers dash with great fury against these coasts, and render navigation very hazardous.

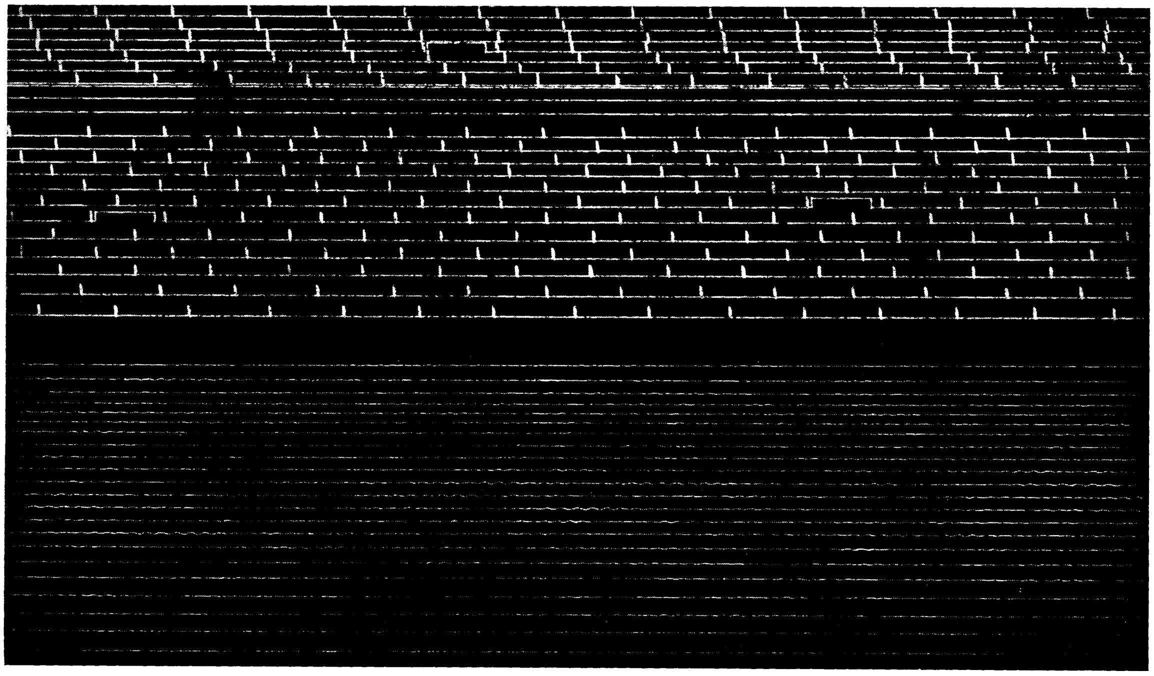
Finally we present photographic reproductions of two records made by the horizontal pendulum microseismograph. One of these was traced during a typhoon which passed northwest of Manila at a distance of some 300 miles, the other during a norther. A careful examination shows that they are nearly identical. In both cases the period of oscillation is almost equal to the period of the pendulums, which is six seconds. The same happens with the Vicentini microseismograph, which on such occasions registers oscillations of a period exactly equal to its own. In both instruments the periods of maximum and minimum intensity follow each other at intervals varying from thirty seconds to two minutes.

In concluding I desire to call attention to the following fact. In No. I of Volume XIII of "Terrestrial Magnetism and Atmospheric Electricity," corresponding to March, 1908, Mr. John E. Burbank published a valuable paper: "Some microseismic tremors and their apparent connection with barometric variations." In this article the author shows, that of the seventy-five cases which he presents and discusses, those were the most pronounced which coincided with the passage of a storm center either from land to sea or vice versa. He likewise points out that on these occasions the powerful waves caused by the storm must exert considerable influence. I have no doubt whatever, that the highest and most powerful waves are found near the center of the extensive, so-called "cyclone wave," which occupies the area of minimum pressure in a typhoon while the latter passes over water. Whence it follows, that the coasts receive the hardest battering from the waves at the time when the vortex passes from land to sea or from sea to land. Some of the instances given by the writer mentioned were connected with centers of high pressure; unfortunately, the state of the sea at the time is not stated. It would appear that the same happens in America as here in the Philippines, and that pulsatory oscillations are produced with both, low and high pressures; also that there as well as here, the ocean waves exercise the predominant influence upon these movements.



Portion of Seismogram, E–W Component, May 26–28, 1908.

Typhoon to the NW of Luzon some 300 miles distant from Manila.



Portion of Seismogram, E–W Component, January 2–4, 1908.

High pressure in the north, northern monsoon and rough seas in the north and east of Luzon.

MOVIMIENTOS TROMOMÉTRICOS Ú OSCILACIONES PULSATORIAS.

Habiendo visto que en varias recientes publicaciones se da lugar preferente á la observación y discusión sobre esta clase de movimientos registrados por los microseismógrafos, juzgamos de interés el hacer un resumen de lo que en este Observatorio se ha observado y manifestar el juicio que sobre sus causas nos hemos formado después de muchos años de experiencia.

Llámanse movimientos tromométricos (Bertelli) ú oscilaciones pulsatorias (Omori) las pequeñas y rápidas oscilaciones que suelen registrar los péndulos seismométricos, á veces durante muchas horas y aun días continuos, con frecuentes períodos de máximos y mínimos. Está generalmente admitido que la causa de tales oscilaciones no es propiamente séismica. Se ha demostrado que están más bien en relación con los movimientos barométricos y con diversos fenómenos atmosféricos. Mas hasta ahora no se ha llegado, que sepamos, á un acorde definitivo sobre su única ó principal causa inmediata.

En el Observatorio de Manila desde el año 1882 hasta 1901 se han venido publicando las observaciones hechas con el Tromómetro Bertelli, constituyendo, como dice el Señor Montessus de Ballore,[1] una de las series más largas y completas que pueden estudiarse.[2]

Desde el año 1890 yo mismo dirigí especial atención en las "Revistas Séismicas" del Boletín Mensual á investigar la causa inmediata de los frecuentes movimientos tromométricos. En diferentes ocasiones demostré que si bien dichos movimientos tenían en Manila alguna relación con la fuerza del viento, este, atendida la sólida instalación del aparato, solo obraba de un modo indirecto, ya haciendo oscilar las montañas de la isla, ya perturbando los mares vecinos.

Respecto de la influencia de las olas del mar, que ponen en vibración á la isla, nuestro juicio se ha ido robusteciendo con los años y la experiencia, de tal manera que hoy nos parece poco menos que evidente que las olas de los mares vecinos son la principal causa de los movimientos tromométricos observados en Manila, ni nos parece inverosímil que lo sean también en otras partes no muy lejanos del mar.

Es tan notable en Manila la influencia del alboroto del mar principalmente del Pacífico, que apenas hay indicio alguno de la existencia de ciclón hacia el E, cuando ya lo revelan los microseismógrafos: mucho antes de que el barómetro sufra cambio alguno y de que sople el viento; notándose solamente el oleaje procedente de la dirección del centro ciclónico, el cual rompe con fuerza sobre las costas orientales de la isla. Una vez confirmada la existencia y dirección del ciclón frecuentemente con solo el movimiento de los seismógrafos se puede juzgar de su magnitud, estando aún centenares de millas distante de Luzón.

Respecto de los movimientos tromométricos evidentemente producidos por las vibraciones de las cordilleras de Luzón al ser atravesadas por un ciclón y terriblemente azotadas por los vientos, puede decirse que ya está el asunto plenamente probado por el R. P. Algué en su libro "Tifones ó Ciclones de 1894," publicado en 1895, y más concluyentemente en su obra "Cyclones of the Far East."[3] Mas tales casos son raros, por consiguiente nuestra atención se ha dirigido principalmente á la investigación del efecto de las olas del mar como causa más constante y frecuente.

[1] "La Science Seismologique" Chap. XII, Les microseismes.

[2] Observatorio Meteorológico de Manila bajo la dirección de los P. P. de la Compañía de Jesús. Boletín Mensual.

[3] Bureau of Public Printing, Manila, 1904. Part II, Chap X.

Durante el año 1895 procuré hacer en las Revistas Séismicas, una minuciosa investigación sobre la influencia que ejercían en la mayor ó menor frecuencia y amplitud de los movimientos tromométricos: 1.° el viento local al pasar de 4 metros por segundo; 2.° el de Aparri, estación más próxima al NE de Luzón, al llegar á fuerza 3 ó más; 3.° el estado del mar en diferentes estaciones de Luzón y 4.° el graduante barométrico en la Isla de Luzón. Los resultados pueden verse en la tabla que damos en el texto inglés, en la cual prescindimos de la intensidad del movimiento, considerando tan solo su frecuencia con relación al número de observaciones.

No haré detenido examen de este cuadro puesto que me parece que habla por sí mismo en confirmación de la principalísima influencia de la agitación del mar y sobre todo de la del Pacífico. Los máximos: 1.° se repiten todo el año con mar alborotada, ya proceda esto de nortada ya de tifón; 2.° con la misma fuerza del viento local se agrupan en los meses de invierno en que dominan los del nordeste; 3.° siguen al mayor graduante barométrico, el cual en tiempo normal ocurre durante los meses de invierno y es causa de la monzón del NE que agita grandemente el mar Pacífico.

Recientemente he examinado todos los registros del microseismógrafo Vicentini y del de péndulos horizontales, correspondientes al año 1907 y anotado los principales casos en que ambos aparatos registraron oscilaciones pulsatorias é investigando luego las condiciones del tiempo en el Archipiélago. El resultado está contenido en la segunda tabla inserta en el texto inglés.

Los datos del dicho cuadro confirman los presentados en el cuadro anteriormente mencionado; la frecuencia de las oscilaciones pulsatorias es mayor en los meses de invierno, en que suelen dominar altas presiones y provocan fuertes nortadas. Durante los meses de primavera y verano solo las hay cuando algún tifón cruza el Archipiélago ó corre por los mares vecinos. Es de advertir que los nortes que soplan durante las altas presiones nunca adquieren en el interior de la isla de Luzón fuerza notable, y en Manila apenas puede decirse que se sienten. Sobre las costas orientales y del norte tienen mayor fuerza pero nunca comparable con la de los vientos de un tifón. En cambio las olas del Pacífico producidas por ellos se precipitan sobre dichas costas con furia y hacen muy dificil la navegación.

En el texto inglés presentamos también copias de dos registros del microseismógrafo de péndulos horizontales correspondientes uno á un ciclón que corría por el NW de Manila á la distancia de unas 300 millas, y otro á una nortada. Si se examinan con atención se verá que son casi idénticos. El período de oscilación es en ambos casos casi igual al propio de los péndulos, 6^s. Lo mismo sucede con el microseismógrafo Vicentini el cual registra en tales casos oscilaciones de período igual al suyo propio. Los períodos de máxima y mínima se suceden en ambos instrumentos con intervalos que varían entre 30 segundos y 2 minutos.

Antes de terminar llamaremos la atención sobre el siguiente hecho. En el número I, vol. XIII del "Terrestrial Magnetism and Atmospheric Electricity" correspondiente á Marzo 1908, ha publicado Mr. John E. Burbank un valioso artículo titulado "Some microseismic tremors and their apparent connection with barometric variations," en el cual hace notar que de los 75 casos que se presentan y discuten los más pronunciados son los que corresponden al paso de centros tempestuosos de la tierra al mar y viceversa. Además se indica que en tales casos deben ejercer no poca acción las grandes olas que la tempestad ocasiona. No hay duda para mí de que las más altas y potentes olas se hallan no lejos del vórtice de la grande ola ó levantamiento de las aguas correspondiente al centro de mínima presión; de donde se deduce que las costas deben sufrir el máximo embate de las olas cuando el centro pasa de la tierra al mar y viceversa. Algunos de los casos presentados están relacionados con centros de alta presión, mas no se indica el estado del mar. Parece por consiguiente ocurrir en America lo mismo que en Filipinas que las oscilaciones pulsatorias se producen tanto en las bajas como en las altas presiones, y que las olas del mar ejercen también allí una influencia principalísima como en Manila.

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