M.O. 340
(Richmond)

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Air Ministry

METEOROLOGICAL OFFICE

THE OBSERVATORIES' YEAR BOOK 1930

Comprising the meteorological and geophysical results obtained from autographic records and eye observations at the observatories at Lerwick, Aberdeen, Eskdalemuir, Cahirciveen (Valentia Observatory), and Richmond (Kew Observatory), and the results of soundings of the upper atmosphere by means of registering balloons.

RICHMOND (KEW OBSERVATORY)

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1932

RICHMOND (KEW OBSERVATORY).

Latitude	51° 28′ N.
Longitude	0° 19′ W.
G.M.T. of Local Mean Noon	12h 1m.

Heights in Metres above Sea Level.

Barometer	10·4
Raingauge Site	5·5
Dines Tube Anemograph	25

Heights in Metres above Ground.

Thermometer Bulbs	3·0
Sunshine Recorder	13·3
Dines Tube Anemograph	20
Beckley Raingauge Rim	0·53

INTRODUCTION.

The Observatory was built in 1769 as the private observatory of King George III. Since 1842 it has been devoted to physics and meteorology. The meteorological records are continuous from 1854. The Observatory is in the Old Deer Park, Richmond (Surrey), about 10 miles (16 km.) to the west of the City of London. The Observatory stands on a low artificial mound whose level is about 1½ metres higher than that of the surrounding park. Round the Observatory a golf course has been laid out. The river Thames is distant about 300 metres on the north and west. Kew Gardens, which are extensively wooded, lie to the east-north-east, the nearest point of the Gardens being about 600 metres away. The town of Richmond, to the south-east, is about 1,100 metres distant. On the east side of the Park is the main road from Richmond to Kew; on the south side the railway from Richmond to Twickenham. An open area partly wooded, Syon Park, lies to the north-north-east across the river. Richmond Park is about 1½ miles (2½ km.) to the south-east. General views of the Observatory building and the exposure lawn are to be found in the 1928 volume. The photographs were taken in 1925, but the only changes (before the end of 1930) which need be noted are the substitution of other experimental screens for the small marine screens which were being tested in 1925, the removal in 1929 of the hedge near the North-wall screen and the erection in place of the Robinson anemometer of the New Dines anemometer with its vane 5·3 metres above the dome. For the early history of the Observatory reference may be made to papers by S. P. Rigaud (The Observatory 1882, p. 279), R. H. Scott (Royal Society's Proceedings, Vol. 39 (1885), pp. 37–86), C. Chree (The Record of the Royal Society, 1897), and R. S. Whipple (Proceedings of the Optical Convention, 1926).

METEOROLOGY.

The elements dealt with in the following tables are: atmospheric pressure, temperature, humidity, rainfall, sunshine, solar radiation, wind speed and direction, earth temperature, minimum temperature on the grass, level of underground water; there is also a diary of cloud and weather.

For brief descriptions of most of the instruments from which values of the above elements have been obtained and of the methods of tabulating the records, reference should be made to the General Introduction. The following notes supplement, where necessary, the information contained therein.

ATMOSPHERIC POLLUTION.

The Owens atmospheric pollution recorder or air filter No. 1* is situated in the Clinical House, and the level of the intake is about 1½m. above that of the adjacent ground. The weight of the pollution is not obtained directly but is deduced from shade numbers 0, 1, 2, etc., assigned to the deposit left on the filter paper through which the air is drawn. The equivalents of the shade numbers are allotted in accordance with the results of an investigation carried out for the Atmospheric Pollution Committee by Mr. J. G. Clark.† When the normal volume of air, 2 litres, is aspirated (it is drawn through a hole 3·2 mm. in diameter) shade number 1 answers to 0·32 milligrams per cubic metre. The Owens apparatus was designed in the first place for dealing with the air of cities and the amount of pollution at the Observatory is usually so small that the shade recorded when the 2 litres are aspirated is either 0 or 1.

Preliminary experiments with a spare recorder having justified the assumption that increasing the volume of air would increase the shade number in proportion an auxiliary tank was brought into use at the beginning of July, 1928. With this tank in operation each spot on the filter paper corresponds with 6·4 litres of air. The unit shade is therefore equivalent to 0·1 mg./m³. When fog prevails the auxiliary tank is put out of action and the unit shade reverts to the value 0·32 mg/m³.

This improvement in the recording system must of itself introduce a discontinuity in the published data. It is anticipated however that the results will be much more reliable.

In this connection it is to be noted that new scales of shades were taken into use on the following dates :—

June 7, 1925 ; July 1, 1926 ; (retrospectively) January 1, 1928 ; and August 1, 1930.

The highest estimate of pollution was 3·2 mg/m³ on December 22nd at 20h. There were 25 days on which the pollution reached 1·0 mg/m³ ; the number of hours credited with 1·0 mg/m³ or more being 137. The months in which these days and hours occurred are given in the accompanying table.

	days	hours
Jan.	4	19
Feb.	4	17
Apr.	1	1
Nov.	6	21
Dec.	10	79
Year	25	137

Table 543 gives mean hourly values derived from all the days of the month for which complete records were obtained. There were 362 such days in the year. The highest and lowest of these hourly values are in heavy type.

Table 544 gives diurnal inequalities derived from the data in Table 543 after the application of non-cyclic corrections. The principal reason for computing the diurnal inequalities was to facilitate comparison with the corresponding diurnal variations in barometric pressure and the potential gradient of atmospheric electricity.

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* A description of the instrument is given in the *Report of the Advisory Committee for Atmospheric Pollution*, 4th Report, 1917–1918, p. 20.

† *Report of the Advisory Committee for Atmospheric Pollution*, 3rd Report, 1916–1917, p. 20.

The mean values computed for the several years since the recorder has been in operation are given in the following table, together with the means for the summer months (May to August) for the equinoctial months (March, April, September, October) and for the winter months. The unit is 1 mg/m³.

	1921	1922	1923	1924	1925	1926	1927	1928	1929	1930
Summer	·13	·27	·27	·25	·15	·08	·06	·07	·06	·06
Equinox	·27	·45	·30	·50	·24	·25	·13	·15	·18	·13
Winter	·53	·46	·35	·39	·39	·27	·24	·23	·30	·23
Year	·31	·39	·31	·32	·26	·20	·14	·15	·18	·14

In any discussion of these mean values it should be borne in mind that before the introduction of the auxiliary tank the great majority of estimates were shade 0 or shade 1. To discriminate between these two shades is difficult, and the decision depends on the "personal equation" of the observer as well as on the colour of the scale of shades. Some change in standard from year to year has been inevitable.

The nature of the diurnal variation is most easily recognised in Table 544. There is always a well defined minimum during the night and another in the early afternoon. The first maximum of the day usually occurs about 9h and the second one follows about 12 hours later. This double oscillation is apparently due to two causes, the variation in human activity in producing pollution and the variation in the wind which disperses it. In 1930 the principal maximum was in the evening from February to April and in October and December; in the forenoon in the remaining months. The principal minimum occurred in the afternoon from May to August; in the early morning in the remaining months. Curves illustrating the diurnal variation of atmospheric pollution will be found in the Annual Reports of the Advisory Committee on Atmospheric Pollution and in a paper by Dr. F. J. W. Whipple in the Quarterly Journal of the Royal Meteorological Society, Volume 55 (1929), No. 231.

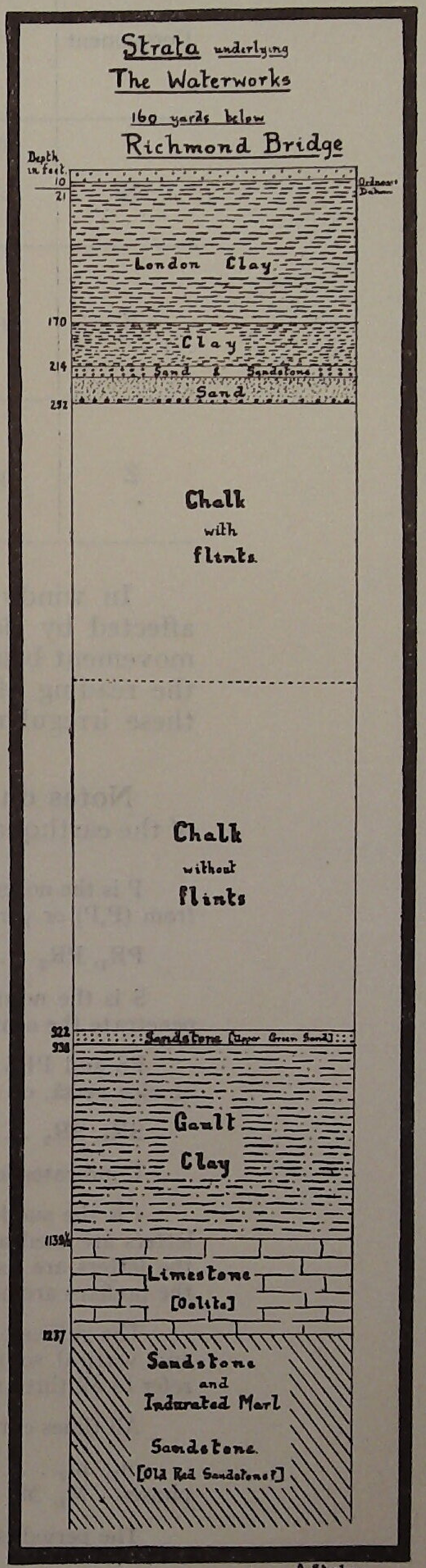
SEISMOLOGY.

Notes on Instruments.—The seismographs, three Galitzin pendulums with galvanometric registration, were transferred from Eskadelmuir Observatory during the latter part of 1925 and have been in regular operation since the beginning of 1926. Earth movements in the north, east and vertical directions are recorded. The pendulums, which are in the old magnetograph room, are mounted on a massive concrete pillar, separated from the floor. The galvanometers and recording apparatus are accommodated on slate slabs in the old seismograph room, which housed the Milne instrument until it was put out of action on June 17th, 1925. To eliminate temperature variation as far as possible, the windows of the pendulum room are provided with triple glass and also shielded by louvred screens from direct sunshine which might fall on them morning and evening. The annual range of temperature variation is about 10° C. and the mean daily range about 0·2° C. To diminish the sensitivity of the vertical pendulum to temperature changes the steel controlling spring was replaced in May, 1928, by one made of elinvar, an alloy which has a temperature coefficient of elasticity about one-tenth that of steel.* A detailed report on the behaviour of the spring has been published in a paper† by F. J. Scrase. The difficulties usually associated with the operation of the vertical pendulum have been greatly diminished.

* Y. Dammann. "Contribution à l'étude des propriétés élastiques de l'élinvar. Son utilisation dans les séismographes," *Publ. Bur. Cent. Seis. Int., Strasbourg*, Ser. A, Fasc. No. 5, 1927, pp. 122–129.

† *London, Inst. Physics, J. Sci. Instr.*, **6**, 1929, p. 385.

The concrete pillar rests on gravel. The underlying geological strata are shown in the diagram on this page. The diagram is based on the results obtained * in sinking a well near Richmond Bridge. The Richmond boring terminated at a depth of 440 metres in Old Red Sandstone. At Stonebridge Park, 8 km. to the north, a boring was carried down † to a depth of 600 metres, the last 280 metres being in Old Red Sandstone. There is no information as to deeper strata near Richmond. It may be noted, however, that the sandstone beds dip at about 30° and that a boring at Little Missenden, Bucks, entered Silurian rocks at a depth of 370 metres with no evidence of the presence of Old Red Sandstone.



A. Strahan
Prof. Paper No 10, Survey of India.

For detailed description of the Galitzin seismograph and for particulars of interpretation of the records, reference may be made to Fürst B. Galitzin's "Vorlesungen über Seismometrie" (Leipzig, 1914), or to G. W. Walker's "Modern Seismology" (London, 1913).††

Timing is controlled by a half-seconds clock (Morrison 8587) which is rated daily by comparison with the Greenwich wireless time-signal relayed from Daventry. Time breaks are made electro-magnetically every minute and seismometric readings can be determined to the nearest second.

The free periods of the galvanometers (T_1), were determined in November, 1925, and were found to have suffered very little change since the original determinations at Eskdalemuir were made. The lengths of the simple equivalent pendulums (l), are assumed to have remained unaltered.

The values of the other constants which are used for deriving the scale values were determined in March and September for the vertical pendulum, and in September for the horizontal instruments. In the case of the horizontal instruments it was found that the magnifications agreed closely with those obtained from the previous tests in September 1929. Some adjustments to the vertical pendulum were carried out on March 27th and September 10th.

The table given below summarises the values of the constants. T is the free period of the pendulum, μ is a damping coefficient which vanishes when the free movement of the pendulum is just aperiodic, A is the length of the beam of light from the galvanometer mirror to the recording drum (usually about 1100 mm), and k is the "transmission" factor. The quantity $\frac{kA}{\pi l}$ may be regarded as a relative measure of the nominal magnification. With the instrument properly adjusted $\frac{kAT}{4\pi l}$ is the magnification factor for regular earth movements with a period equal to that of the pendulum.

* *London. J. Geol. Soc.*, **40**, 1884, **41**, 1885, p. 523.

† Records of London Wells, *Mem. Geol. Surv. Eng., London*, 1913.

†† The graphical method adopted at Kew for determining the constants of the pendulums is explained in a memoir by F. J. Scrase, *Geophysical Memoirs*, No. 49, 1930.

Component	l	T_1	1930	T	μ^2	$\frac{kA}{\pi l}$	$\frac{kAT}{4\pi l}$
	mm.	sec.		sec.		sec.$^{-1}$	
N	118	24·68	Jan. 1 to Sept. 9	25·5	0·00	46·8	298
			Sept. 9 to Dec. 31	25·2	−0·01	47·3	298
E	118	24·80	Jan. 1 to Sept. 10	24·7	+0·09	43·5	269
			Sept. 10 to Dec. 31	25·2	−0·04	44·2	278
Z	360	13·04	Jan. 1 to Mar. 20	12·9	+0·10	113	364
			Mar. 20 to Sept. 10	13·0	0·00	109	354
			Sept. 10 to Dec. 31	13·5	+0·12	106	358

In windy weather the seismographs, especially the horizontal components, are affected by slow oscillations, which are attributed to the tilting of the ground, the movement being conveyed through the foundations of the Observatory. On occasions the reading of an earthquake record is rendered very difficult, if not impossible, by these irregular disturbances.

Notes on Tables.—The *Seismological Diary*, Table 545, contains the particulars of the earthquakes recorded at the Observatory. The notation employed is as follows :—

P is the normal first phase (longitudinal waves). Special cases of P occur when the waves are reflected from (P_cP) or penetrate (P′) the earth's central core.

PR_1, PR_2 . . . are longitudinal waves reflected once, twice . . . near the earth's surface.

S is the normal second phase (transverse waves). S_cP_cS is a special case of S in which the waves penetrate the central core and pass through it as longitudinal vibrations.

PS and PPS are waves which suffer a change or changes from longitudinal to transverse oscillation or vice versâ, on reflection near the surface.

SR_1, SR_2 . . . are transverse waves reflected once, twice . . . near the surface.

L indicates long waves (surface waves).

i is the sudden commencement of a phase. *e* means a gradual or indistinct commencement. These letters are used as prefixes to the phase symbols, but where the character of the phase is not assignable the letters are used as independent symbols. When the commencement of a phase is moderately clear the prefixes are not used.

The suffixes N, E, Z indicate that the estimates refer to the records from the north-south, east-west and vertical seismographs respectively. The absence of all these suffixes indicates that the estimates refer to all three records.

All times entered against the above phases are the times of arrival of the phases at the station.

m_1, m_2 . . . are successive prominent maxima of sinusoidal waves occurring in the preliminary phases. M_1, M_2 . . . are successive prominent maxima occurring during the principal or surface phase.

The period is the duration of a double oscillation (to and fro movement).

A_N, A_E, A_Z are the amplitudes, in microns (μ=0·001 mm.), of the components of the true displacement of the ground from the position of rest. Displacements to the north, east and upwards are regarded as being positive. When successive positive and negative displacements have the same magnitude the time of occurrence is given for the positive one. When no sign is given the measurement refers to a long group of waves the amplitudes of which are the same.

The following formulæ due to Galitzin are employed for computing the times of the maxima and the amplitudes of sinusoidal waves :—

(1) Lag of the displacement shown by the galvanometer after the maximum displacement of the ground

$$\tau+\tau_1=\frac{T_p}{2\pi}\left[\tan^{-1}\frac{2u\,(1-\mu^2)^{\frac{1}{2}}}{u^2-1}+\tan^{-1}\frac{2u_1}{u_1^2-1}+\frac{\pi}{2}\right]$$

each inverse tangent being taken as between o and π.

(2) Magnification of record =

$$\frac{kAT_p}{\pi l}\cdot\frac{1}{(1+u^2)(1+u_1^2)\left\{1-\mu^2 f(u)\right\}^{\frac{1}{2}}}$$

where T_p is the period of the earth wave considered,

$$u=\frac{T_p}{T},\quad u_1=\frac{T_p}{T_1},\quad \text{and } f(u)=\left[\frac{2u}{1+u^2}\right]^2.$$

Δ is the distance in kilometres of the epicentre measured along the arc of the great circle passing through the station. This distance is derived from the interval between P and S, by the tables, due to Zeissig, given in Klotz's "Seismological Tables" (Publication of the Dominion Observatory, Ottawa, Vol. III, No. 2). The azimuth of the epicentre (0° to 360°) is measured from north through east. When an estimation of the azimuth is possible, it is used, together with Δ, for provisional determination of the co-ordinates of the epicentre. In other cases where co-ordinates are given, the information has been obtained from other sources ; the origin of the determination is inserted in brackets.

Brackets enclosing figures or phase symbols indicate that the information is uncertain.

The total number of shocks recorded during the year was 301. The phases being sufficiently well defined, estimates of the epicentral distances were obtained for 56 shocks, whilst in 6 cases the records of the initial impulses were sufficiently sharp to allow of computations of azimuth and so of estimates of the co-ordinates of the epicentres. There were 8 earthquakes which produced a disturbance at the observatory with an amplitude exceeding 0·1 mm. in a horizontal component. These earthquakes originated in Burma (May 5th, December 3rd), in north-west Persia (May 6th), in Assam (July 2nd), in southern Italy (July 23rd), in Kachin (September 21st), in the Pacific Ocean north of Marianne Islands (October 24th), and in Japan (November 25th).

For comparison the statistics for all the years in which the Galitzin seismographs have been in operation at Kew Observatory are given :—

Year.	Shocks recorded.	Epicentral distances.	Azimuths. estimated	Shocks exceeding 0·1 mm.
1926	306	55	—	10
1927	314	78	6	9
1928	339	97	19	18
1929	320	74	6	12
1930	301	56	6	8

Microseisms.—In Table 546 are given the amplitude (A) and period (T_p) of the microseisms shown by the north component seismograph on each day at 0h, 6h, 12h, and 18h. On a few occasions (less than 2 per cent. of the total number) when the north component record was not available measurements of the east component record have been included. The group of waves of greatest amplitude occurring in the 30 minutes centring at the hour in question is selected, and the amplitude tabulated is the mean obtained from the three largest complete waves in that group. The period is derived from a measurement made on the same group*, but the procedure adopted in 1926 and 1927 was slightly modified from January 1st, 1928, in order to diminish

* F. J. W. Whipple and F. J. Scrase, "On the Frequency of Microseisms of Different Periods at Eskdalemuir and at Kew," *London, Mon. Not. R. Astr. Soc. Geophys. Supp.* **2**, No. 2, 1928.

the tendency on the part of the tabulator to give preference to certain periods. The total time, to the nearest second, for a number of complete consecutive waves is measured, the number of waves being chosen so that the time is between 23 and 30 seconds. The period is then derived from the following division table :—

Number of Waves.	Time interval in seconds.							
	30	29	28	27	26	25	24	23
3	10	9·7	9·3	9·0	8·7	8·3	8·0	7·7
4	7·5	7·3	7·0	6·7	6·5	6·3		
5	6	5·8	5·6	5·4	5·2			
6	5	4·8	4·7	4·5				
7	4·3	4·1	4·0	3·9				
8	3·7	3·6	3·5					
9	3·3	3·2	3·1					
10	3·0	2·9	2·8					
11	2·7	2·6						
12	2·5							

In computing the mean period occasions of zero amplitude are omitted. The mean values of amplitude and period for each month of 1930 and for the year, together with the corresponding mean values for the period 1926 to 1929 are given below :—

MICROSEISMS—MONTHLY AND ANNUAL MEANS.

1926 to 1929.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Amplitude (μ)	2·4	2·0	1·5	1·0	0·5	0·6	0·5	0·7	0·7	1·2	1·9	2·2	1·3
Period (sec.)	6·6	6·3	6·0	5·4	4·7	4·5	4·3	4·5	5·1	5·3	6·1	6·3	5·4
1930.													
Amplitude (μ)	2·7	1·2	1·4	0·9	0·5	0·4	0·3	0·5	0·6	1·3	1·8	1·9	1·1
Period (sec.)	6·7	5·8	5·6	5·4	5·2	4·9	4·3	4·5	4·6	5·4	5·8	6·5	5·4

The means for the several hours are as follows :—

MICROSEISMS—MEANS AT SPECIFIED HOURS.

1926 to 1929.	0h. (G.M.T.)	6h.	12h.	18h.
Amplitude (μ)	1·27	1·27	1·23	1·26
Period (sec.)	5·45	5·43	5·37	5·41
1930.				
Amplitude (μ)	1·15	1·11	1·12	1·15
Period (sec.)	5·33	5·42	5·39	5·45

These figures indicate that there is no regular diurnal variation in amplitude or period of the microseisms recorded at Kew Observatory.*

* F. J. W. Whipple and A. W. Lee, "Studies in Microseisms," *London, Mon. Not. R. Astr. Soc. Geophys. Supp.* **2**, No. 7, 1931.

SEISMOLOGICAL DIARY.

Galitzin Seismographs, three components.

545. Richmond (Kew Observatory). Lat. 51° 28′ N. Long. 0° 19′ W. Height above M.S.L. 5 metres. **1930.**

Date.	Phase.	Time. G.M.T.	Period	Amplitudes.			△	Remarks.
				A_N.	A_E.	A_Z.		
Jan.		h. m. s.	s.	μ	μ	μ	km.	
5	eP_Z	1 31·5	...	...	...	...	...	Disturbed by wind and
	eL	57	...	...	...	...	...	microseisms.
	F	2 30	...	...	...	...	...	Kamtchatka.
								51° N., 156° E.(J.S.A.)
5	eP_Z	19 4·5	...	...	...	...	8900	Kurile Islands.
	eS_E	14·6	...	...	...	...	...	46° N., 149° E.
	eL	34	...	...	...	...	...	(J.S.A.)
	F	20 15	...	...	...	...	...	
9	eP_Z	19 39 43	...	...	...	...	370	Disturbed by wind and
	e_{NE}	40 19	...	...	...	...	...	microseisms.
	$e(S)_Z$	40 24	...	...	...	...	...	Brittany.
	e(S*)	40 35	...	...	...	...	...	Felt at North Okendon,
	$e(Sg)_{NE}$	40 52	...	...	...	...	...	Essex.–Kew File 52/30
	m_E	40 55	...	...	42⊙	...	...	⊙Amplitude as read
	e_N	41 3	...	...	...	...	...	in mm.*
	e_{NE}	41 9	...	...	...	...	...	
	F	44·6	...	...	...	...	...	
14/15	e_E	22 47·3	...	...	...	...	...	Tonga Islands.
	L_{NE}	23 12	...	...	...	...	...	19° S., 175° W.
	L_Z	15	...	...	...	...	...	(U.R.S.S.)
	F	0 0	...	...	...	...	...	
16	eL_N	0 11	...	...	...	...	...	Traces on "E" and
	F	20	...	...	...	...	...	"Z" records.
17	eL	17 38	...	...	...	...	...	
	F	18 10	...	...	...	...	...	
18	eL	7 31	...	...	...	...	...	
	F		...	...	...	...	...	Overlapped by next
								shock.
18	eL	8 4	...	...	...	...	...	West of Solomon
	M_1	5 28	40	...	−33	...	...	Islands.
	M_2	12 19	30	−26	...	...	...	5° S., 153° E.
	F	9 20	...	...	...	...	...	(J.S.A.)
20	eL_{NE}	8 11	...	...	...	...	...	
	eL_Z	19	...	...	...	...	...	
	F	55	...	...	...	...	...	
25	eL_{NE}	2 28	...	...	...	...	...	South-east of Philip-
	eL_Z	43	...	...	...	...	...	pine Islands (Manila).
	F	3 5	...	...	...	...	...	
28	eL	7 30	...	...	...	...	...	Near Soloman Islands.
	F	8 0	...	...	...	...	...	12° S., 163° E.
								(U.R.S.S.)
Feb. 1	eL	19 41	...	...	...	...	...	Disturbed by large
	F	20 5	...	...	...	...	...	microseisms.
2	eP_Z	15 7·7	...	...	...	...	8800	Aleutian Islands.
	eS_{NE}	17·7	...	...	...	...	...	49° N., 177° E.
	L	24	...	...	...	...	...	(J.S.A.)
	F	40	...	...	...	...	...	
7	eL	7 32	...	...	...	...	...	
	F	8 10	...	...	...	...	...	
7	e	17 30	...	...	...	...	...	
	F	18 10	...	...	...	...	...	
8	eL	6 53	...	...	...	...	...	Afghanistan.
	F	7 20	...	...	...	...	...	37° N., 69° E.
								(U.R.S.S.)
12	$e(P^1)_Z$	6 41·7	...	...	...	...	...	New Zealand.
	L_{NE}	7 44	...	...	...	...	...	41° S., 177° E.
	L_Z	54	...	...	...	...	...	(Wellington.)
	F	8 50	...	...	...	...	...	
14	iP	18 43 20	...	...	...	...	2510	Dilatation.
	iPR_1	43 42	...	...	...	...	...	Amplitudes of iP as
	iS_{NE}	47 26	...	...	...	...	...	read in mm.:
	iS_Z	47 29	...	...	...	...	...	N. E. Z.
	m_1	47 30	10	−69	+99	...	...	−0·95 +1·1 −3·0
	m_2	47 37	9	...	...	−63	...	Azimuth=129° ±2°.
	m_3	47 52	13	+48	−43	...	...	
	m_4	48 15	9	...	...	+33	...	
Feb.		h. m. s.	s.	μ	μ	μ	km.	
14 cont.	L	49·5	...	...	...	...	...	
	M_1	51 35	23	...	−32	...	...	Destructive in Crete.
	M_2	51 48	21	+57	...	...	...	36° N., 25° E.
	M_3	52 5	10	...	...	−14	...	(Strasbourg.)
	F	19 55	...	...	...	...	...	
14	$e(P)_Z$	21 0·9	...	...	...	...	...	East of Kermadoc
	L_{NE}	55	...	...	...	...	...	Islands.
	L_Z	22 4·6	...	...	...	...	...	30° S., 175° W.
	F	23 20	...	...	...	...	...	(Manila).
15	e	19 25	...	...	...	...	...	Persia.
	eL_{NE}	31	...	...	...	...	...	29° N., 51° E.
	F	50	...	...	...	...	...	(U.R.S.S.).
18	e	2 22	...	...	...	...	...	Antarctic.
	eL_{NE}	45	...	...	...	...	...	73° S., 5° E.
	eL_Z	53	...	...	...	...	...	(U.R.S.S.).
	F	3 45	...	...	...	...	...	
18	e	6 34	...	...	...	...	...	
	F	7 35	...	...	...	...	...	
23	iP	18 23 50	...	...	...	...	2510	Destructive in Greece.
	iS	27 56	...	...	...	...	...	Compression.
	L	29·4	...	...	...	...	...	Amplitudes of iP as
	M_1	30 41	18	−56	...	...	...	read in mm.:
	M_2	31 27	14	...	−19	...	...	N. E. Z.
	M_3	32 24	8	...	...	−14	...	+1·8 −1·95 +3·4
	F	19 20	...	...	...	...	...	Azimuth=131° ± 1°.
								38° N., 24·5° E.
								(Strasbourg).
24	e	21 9	...	...	...	...	...	Sea of Celebes.
	L_{NE}	47	...	...	...	...	...	3° N., 122° E.
	L_Z	54	...	...	...	...	...	(U.R.S.S.)
	F	22 20	...	...	...	...	...	
27	eL	7 57	...	...	...	...	...	
	F	8 5	...	...	...	...	...	
28	eP_Z	1 7 (0)	...	...	...	...	(5730)	P confused by
	eS_{NE}	14 22	...	...	...	...	...	microseisms.
	L_{NE}	18	...	...	...	...	...	Atlantic Ocean,
	L_Z	21	...	...	...	...	...	north-west of St.
	M_1	24 23	18	+ 7	...	...	...	Paul's Rock.
	M_2	24 43	17	...	+ 8	...	...	(Strasbourg).
	M_3	25 53	17	...	...	+10	...	
	F	2 20	...	...	...	...	...	
28	eL	19 26	...	...	...	...	...	
	F	20 5	...	...	...	...	...	
Mar. 1	eL	6 3	...	...	...	...	...	
	F	30	...	...	...	...	...	
6	e	0 2·0	...	...	...	...	...	Very small.
	F	10	...	...	...	...	...	
6	L	8 31·6	...	...	...	...	...	
	F	50	...	...	...	...	...	
6	eP	9 24 4	...	...	...	...	2410	Ægean Sea
	eS	28 2	...	...	...	...	...	(Strasbourg).
	L	30	...	...	...	...	...	
	F	45	...	...	...	...	...	
6	e	15 55·1	...	...	...	...	...	Felt in New Zealand
	F	16 45	...	...	...	...	...	(Strasbourg).
6	eL	17 0	...	...	...	...	...	Near New Zealand.
	F	55	...	...	...	...	...	40° S., 180°
								(Wellington).
7	L	6 49·4	...	...	...	...	...	Atlantic Ocean between
	F	7 10	...	...	...	...	...	Spain and Madeira
								(Strasbourg).
7	eL	11 45	...	...	...	...	...	
	F	12 5	...	...	...	...	...	
8	iP	3 57 11	...	...	...	...	8300	Compression.
	iS_{NE}	4 6 46	...	...	...	...	...	Destructive in Panama
	L	21	...	...	...	...	...	(Granada).

* The notation is that of Jeffreys:—"The Earth," 2nd Edition, Cambridge University Press, 1929, p. 100. *London, Mon. Not. R. Astr. Soc. Geophys. Supp.*, **1**, No. 8, 1926.

SEISMOLOGICAL DIARY.—*continued.*

Galitzin Seismographs, three components.

545. Richmond (Kew Observatory). Lat. 51° 28′ N. Long. 0° 19′ W. Height above M.S.L. 5 metres. **1930.**

Date.	Phase.	Time. G.M.T.	Period	Amplitudes. A_N.	A_E.	A_Z.	△	Remarks.
Mar.		h. m. s.	s.	μ	μ	μ	km.	
8 cont.	M_1	25 31	20	+ 2	...	...	...	
	M_2	26 11	20	...	...	+ 4	...	
	M_3	26 17	20	...	− 4	...	...	
	F	5 0	...	...	...	...	...	
10	eL	14 25	...	...	...	...	...	
	F	40	...	...	...	...	...	
10	$e(PR_1)_Z$	16 40·5	...	...	...	...	...	Kurile Islands.
	$i(S)_{NE}$	47 0	...	...	...	...	...	44° N., 147° E.
	L_{NE}	17 3	...	...	...	...	...	(Manila).
	L_Z	10	...	...	...	...	...	
	F	40	...	...	...	...	...	
16	eL	5 49	...	...	...	...	...	
	F	6 10						
20	eL	13 58	...	...	...	...	...	Disturbed by wind
	F	14 15	...	...	...	...	...	and microseisms.
26	$e(P)_Z$	7 27·3	...	...	...	...	(13300)	Banda Sea.
	iPR_1	32 12	...	...	...	...	...	9° S., 127° E.
	eS_{NE}	40 3	...	...	...	...	...	(Manila).
	iPS	41 55	...	...	...	...	...	
	iPPS	43 8	...	...	...	...	...	
	eSR_1	48 35	...	...	...	...	...	
	L_{NE}	8 1·8	...	...	...	...	...	
	L_Z	13·1	...	...	...	...	...	
	M_1	14 59	28	−52	...	...	...	
	M_2	16 49	26	...	+28	...	...	
	M_3	21 58	24	−51	...	...	...	
	M_4	22 3	24	...	...	+29	...	
	M_5	23 52	23	...	−25	...	...	
	M_6	27 3	22	...	+29	...	...	
	M_7	27 19	19	...	...	+21	...	
	M_8	28 10	24	+40	...	...	...	
	eL_2	9 12	...	...	...	...	...	Via Antipodes.
	F	10 5	...	...	...	...	...	
26	eL	12 32	...	...	...	...	...	No records, 26^d 14^h
	F	13 0	...	...	...	...	...	10^m to 16^h 47^m, 27^d 9^h 30^m to 17^h 9^m, 28^d 9^h 35^m to 13^h 8^m, during standardisation of "Z" instrument.
30	eL	1 20	...	...	...	...	...	
	F	50	...	...	...	...	...	
30	e	8 54·6	...	...	...	...	...	North of Sandwich
	eL	9 15	...	...	...	...	...	Islands. Near 55°S.,
	F	10 50	...	...	...	...	...	28° W. (J.S.A.).
30	$e(PR_1)$	15 39 36	...	...	...	...	...	Probably repetition
	e(PS)	49 17	...	...	...	...	...	of 26^d 7^h.
	eL_{NE}	16 17	...	...	...	...	...	
	eL_Z	25	...	...	...	...	...	
	F	17 40	...	...	...	...	...	
31	eP	12 38 30	...	...	...	...	2230	Felt at Volo, Greece.
	iP	38 33	...	...	...	...	...	39·5° N., 23° E.
	eS	42 13	...	...	...	...	...	(Strasbourg).
	L	43·3	...	...	...	...	...	
	M_1	44 51	25	...	+26	...	...	
	M_2	45 27	14	−69	...	...	...	
	M_3	45 33	12	...	+23	...	...	
	M_4	46 21	19	−48	...	...	...	
	M_5	47 36	10	...	...	−18	...	
	M_6	50 33	10	...	...	−16	...	
	F	13 35	...	...	...	...	...	
April 2	eL_{NE}	5 14	...	...	...	...	...	No "Z" record, 1^h
	F	40	...	...	...	...	...	37^m to 9^h 46^m. East of Mindanao. 8° N., 130° E. (Manila).
2	e_{NE}	20 42	...	...	...	...	...	8° N., 130° E.
	eL	49	...	...	...	...	...	(Manila).
	F	21 30	...	...	...	...	...	

Date.	Phase.	Time. G.M.T.	Period	Amplitudes. A_N.	A_E.	A_Z.	△	Remarks.
April		h. m. s.	s.	μ	μ	μ	km.	
4	eL	10 33	...	...	...	...	...	
	F	11 0	...	...	...	...	...	
5	e	12 3	...	...	...	...	...	
	F	25	...	...	...	...	...	
9	e	5 41	...	...	...	...	...	
	F	55	...	...	...	...	...	
10	eL	14 50	...	...	...	...	...	
	F	15 25	...	...	...	...	...	
15	e	11 45	...	...	...	...	...	Horizontal components disturbed by wind.
	F	12 5	...	...	...	...	...	
15	e	12 46	...	...	...	...	...	
	F	13 0	...	...	...	...	...	
15	e	15 56	...	...	...	...	...	
	F	16 5	...	...	...	...	...	
16	eL	4 39	...	...	...	...	...	
	F	5 0	...	...	...	...	...	
16	e_Z	13 49 31	...	...	...	...	...	
	eL	54	...	...	...	...	...	
	F	14 20	...	...	...	...	...	
16	eL	15 7	...	...	...	...	...	West of Vancouver.
	F	40	...	...	...	...	...	50° N., 132° W. (J.S.A.).
17	iP	20 11 31	...	...	...	...	2430	Compression.
	e_{NE}	15 23	...	...	...	...	...	
	iS_Z	15 30	...	...	...	...	...	Destructive in Greece.
	L_{NE}	16·2	...	...	...	...	...	37·5° N., 23·5° E.
	M_1	18 46	20	+42	+17	...	...	(Strasbourg).
	M_2	18 56	18	−43	...	...	...	
	L_Z	19·3	...	...	...	...	...	
	M_3	19 19	14	...	+19	...	...	
	M_4	21 2	10	...	...	−31	...	
	M_5	21 5	11	...	−29	...	...	
	M_6	22 10	12	...	...	+12	...	
	F	21 5	...	...	...	...	...	
18	e	13 8	...	...	...	...	...	
	F	20	...	...	...	...	...	
21	e(P)	10 31 23	...	...	...	...	...	
	e_{NE}	39 35	...	...	...	...	...	
	L	11 5	...	...	...	...	...	
	F	40	...	...	...	...	...	
21	e	12 5	...	...	...	...	...	North of Sandwich
	$e(S)_{NE}$	16·0	...	...	...	...	...	Islands. Near 55° S.,
	L	47	...	...	...	...	...	28° W. (J.S.A.).
	M_1	48 57	22	+14	...	...	...	
	M_2	49 18	19	...	+ 7	...	...	
	M_3	52 11	18	+15	...	...	...	
	M_4	52 50	18	...	+ 7	...	...	
	M_5	54 46	16	...	...	−13	...	
	eL_2	14 7	...	...	...	...	...	Long waves via the
	F	15 0	...	...	...	...	...	Antipodes.
22	e	14 44	...	...	...	...	...	
	F	55	...	...	...	...	...	
23	eL	19 7	...	...	...	...	...	
	F	25	...	...	...	...	...	
23/24	eP_{NZ}	22 1 7	...	...	...	...	8800	Kurile Islands (J.S.A.).
	ePR_{1Z}	4·3	...	...	...	...	...	Confused by micro-
	eS_{NE}	11·1	...	...	...	...	...	seisms.
	ePS	12·3	...	...	...	...	...	
	eSR_{1NE}	17·0	...	...	...	...	...	
	L_{NE}	24	...	...	...	...	...	
	L_Z	32	...	...	...	...	...	
	M_1	32 45	26	...	−18	...	...	
	M_2	35 15	20	−13	...	...	...	
	M_3	36 29	20	...	+14	...	...	
	M_4	37 56	20	−15	...	...	...	
	M_5	38 11	20	...	+17	...	...	
	M_6	41 0	19	...	+15	...	...	

SEISMOLOGICAL DIARY.—*continued.*

Galitzin Seimographs, three components.

545. Richmond (Kew Observatory). Lat. 51° 28′ N. Long. 0° 19′ W. Height above M.S.L. 5 metres. **1930.**

Date.	Phase.	Time. G.M.T.	Period	Amplitudes. A_N.	A_E.	A_Z.	△	Remarks.
April		h. m. s.	s.	μ	μ	μ	km.	
23/24 cont.	M_7	44 13	19	+13	...	...	...	
	M_8	53 24	17	...	...	+16	...	
	F	?	...	...	...	...	...	Overlapped by next shock.
24	eL	1 3	...	...	...	...	...	
	F	55	...	...	...	...	...	
25	e	11 50	...	...	...	...	...	
	F	12 0	...	...	...	...	...	
25	e	13 1	...	...	...	...	...	
	F	30	...	...	...	...	...	
25	eP_Z	15 16 53	...	...	...	...	...	
	L_{NE}	51	...	...	...	...	...	
	L_Z	55	...	...	...	...	...	
	F	16 25	...	...	...	...	...	
26	eL_{NE}	7 5	...	...	...	...	...	5^h 35^m to 9^h 35^m— No " Z " record.
	F	45	...	...	...	...	...	
26	iP_{NZ}	16 30 9	...	...	...	...	8580	Amplitudes of iP as read in mm.—
	eS_{NE}	39 58	...	...	...	...	...	N. E. Z.
	PS_N	40 56	...	...	...	...	...	−0·7 0·0 +1·1
	SR_{1N}	45·6	...	...	...	...	...	Azimuth approximately north giving epicentre near 51° N., 180° (Aleutian Islands).
	L_{NE}	50	...	...	...	...	...	
	L_Z	55	...	...	...	...	...	
	M_1	17 9 33	20	...	+20	...	...	
	M_2	10 0	18	+17	...	...	...	
	M_3	11 30	19	...	...	−16	...	
	M_4	13 0	20	+31	...	...	...	
	M_5	13 15	18	...	...	+24	...	
	M_6	13 25	18	...	+18	...	...	
	M_7	15 41	18	...	−16	...	...	
	M_8	16 15	16	...	...	+14	...	
	eL_2	18 34	...	...	...	...	...	Long waves via the Antipodes.
	F	19 20	...	...	...	...	...	
27	eP_Z	14 40·1	...	...	...	...	...	Indian Ocean, south-east of Madagascar. 34° S., 57° E. (J.S.A.).
	eL	15 21	...	...	...	...	...	
	F	17 0	...	...	...	...	...	
28	e	13 29	...	...	...	...	...	Very small.
	F	14 45	...	...	...	...	...	
28	iP_Z	18 46 23	...	...	...	...	8400	Compression.
	iS	56 3	...	...	...	...	...	Kachin. 26° N., 98° E. (Manila).
	$e(SR_2)$	19 4·7	...	...	...	...	...	
	L_{NE}	12	...	...	...	...	...	
	L_Z	16	...	...	...	...	...	
	M_1	16 29	24	...	−15	...	...	
	M_2	16 30	25	+27	...	...	...	
	M_3	22 48	15	...	...	−12	...	
	F	20 40	...	...	...	...	...	
30	e(P)	16 25 33	...	...	...	...	...	
	iz	25 37	...	...	...	...	...	
	ez	26 11	...	...	...	...	...	
	F	18 35	...	...	...	...	...	
May 1	iP_Z	1 10 37	...	...	...	...	9470	Compression.
	eS_{NE}	21 11	...	...	...	...	...	Aleutian Region (Strasbourg).
	L_{NE}	36	...	...	...	...	...	
	L_Z	42	...	...	...	...	...	
	M_1	46 13	27	...	+ 9	...	...	
	M_2	51 39	20	− 7	...	...	...	
	M_3	51 43	23	...	...	+ 9	...	
	F	2 50	...	...	...	...	...	
1	e	11 0	...	...	...	...	...	
	F	15	...	...	...	...	...	
2	eP_Z	2 1 4	...	...	...	...	...	
	e_{NE}	22·5	...	...	...	...	...	
	L_{NE}	54	...	...	...	...	...	
	L_Z	3 1	...	...	...	...	...	
	F	4 0	...	...	...	...	...	
2	eP_Z	6 21 12	...	...	...	...	...	
	eP^1_Z	24·4	...	...	...	...	...	
	L_{NE}	7 10	...	...	...	...	...	
	L_Z	15	...	...	...	...	...	
	F	8 25	...	...	...	...	...	

Date.	Phase.	Time. G.M.T.	Period	Amplitudes. A_N.	A_E.	A_Z.	△	Remarks.
May		h. m. s.	s.	μ	μ	μ	km.	
5	iP	13 58 11	...	...	...	...	8870	Compression.
	ePR_1	14 1·3	...	...	...	...	...	
	iS_{NE}	8 15	...	...	...	...	...	Destructive in Burma. 17° N., 95° E. (U.S.C. & G.S.).
	e	9 40	...	...	...	...	...	
	SR_{1NE}	14·4	...	...	...	...	...	
	SR_{2NE}	17·7	...	...	...	...	...	
	L	24·0	...	...	...	...	...	
	M_1	32·3 to 33·6	(27)	±330*	...	...	...	*Positive and negative maxima off chart.
	M_2	32 34	24	...	+190	...	...	
	M_3	33 29	25	...	+170	...	...	
	M_4	34 30	22	+220†	...	...	...	†Positive maximum off chart.
	M_5	34 33	22	...	−150	...	...	
	M_6	36 39	21	+175†	...	...	...	
	M_7	37 45	19	−165	...	...	...	
	M_8	38 39	17	−150	...	...	...	
	M_9	38 40	21	...	...	+145	...	
	M_{10}	40 55	17	...	...	+130	...	
	M_{11}	41 30	19	...	−160	...	...	
	M_{12}	42 41	17	−140	...	...	...	
	M_{13}	43 10	15	...	...	−98	...	
	M_{14}	44 41	15	...	...	−98	...	
	F	18 25	...	...	...	...	...	
6	eL	7 17	...	...	...	...	...	
	F	45	...	...	...	...	...	
6/7	iP_{EZ}	22 41 9	...	...	...	...	3750	Dilatation.
	eS	46 42	...	...	...	...	...	Azimuth about east, giving epicentre near 40° N., 45° E.
	ePS_Z	47·5	...	...	...	...	...	
	L	49·6	...	...	...	...	...	
	M_1	52 33	33	+510†	...	...	...	
	M_2	54 7	27	+430*	...	...	...	Destructive in N.W. Persia.
	M_3	55 36	17	+300*	...	...	...	
	M_4	55 39	24	...	−360*	...	...	*Positive and negative maxima of chart.
	M_5	55 46	16	−300*	...	...	...	
	M_6	56 2	19	−310*	...	...	...	†Negative maxima off chart.
	M_7	56 2	21	...	−320*	...	...	
	M_8	57 35	17	...	...	−350	...	
	M_9	57 59	18	...	...	+360	...	
	M_{10}	23 0 12	18	+280	...	...	...	
	M_{11}	0 25	14	...	...	−185	...	
	F	3 5	...	...	...	...	...	
7	eL	14 9	...	...	...	...	...	
	F	30	...	...	...	...	...	
8	eL	5 50	...	...	...	...	...	
	F	6 0	...	...	...	...	...	
8	ez	13 55·1	...	...	...	...	...	
	eL	14 49	...	...	...	...	...	
	F	?	...	...	...	...	...	Overlapped by next shock.
8	iP	15 42 12	...	...	...	...	3600	
	eS_{NE}	47 36	...	...	...	...	...	
	L	49·4	...	...	...	...	...	
	M_1	55 45	23	−25	...	...	...	
	M_2	56 42	22	...	−22	...	...	
	M_3	58 24	17	+23	...	...	...	
	M_4	58 27	13	...	...	+18	...	
	M_5	58 52	16	...	+21	...	...	
	M_6	16 2 33	14	...	...	−15	...	
	F	17 30	...	...	...	...	...	
9	eP_Z	7 13·2	...	...	...	...	(2900)	
	eS_{NE}	17·8	...	...	...	...	...	
	L	21	...	...	...	...	...	
	F	8 0	...	...	...	...	...	
9	e	14 45	...	...	...	...	...	
	F	15 5	...	...	...	...	...	
10	eL	22 51	...	...	...	...	...	
	F	23 10	...	...	...	...	...	
11	iP	22 44 24	...	...	...	...	5250	Compression.
	ePR_1	46·4	...	...	...	...	...	Turkestan. 41° N., 68° E. (Stuttgart).
	eS	51 20	...	...	...	...	...	
	SR_{1NE}	54·7	...	...	...	...	...	
	L	55	...	...	...	...	...	
	M_1	23 3 54	22	− 8	...	...	...	
	M_2	4 55	23	...	+ 6	...	...	
	M_3	10 5	20	...	...	+ 7	...	
	F	50	...	...	...	...	...	

SEISMOLOGICAL DIARY.—*continued.*

Galitzin Seismographs, three components.

545. Richmond (Kew Observatory). Lat. 51° 28′ N. Long. 0° 19′ W. Height above M.S.L. 5 metres. **1930.**

Date.	Phase.	Time. G.M.T.	Period	Amplitudes. A_N.	A_E.	A_Z.	△	Remarks.
May		h. m. s.	s.	μ	μ	μ	km.	
12	iP	0 29 49	...	...	...	...	5310	Compression.
	eS	36 48	...	...	...	...	...	Probably repetition of
	L	48	...	...	...	...	...	11[d] 22[h].
	F	1 15	...	...	...	...	...	
14	e	0 6	...	...	...	...	...	Not very distant.
	F	10	...	...	...	...	...	
14	eL	20 14	...	...	...	...	...	
	F	21 5	...	...	...	...	...	
15	—	— — —	...	...	...	...	...	2[h] 0[m] to 7[h] 33[m]. No records.
16	eL	3 22	...	...	...	...	...	
	F	4 0	...	...	...	...	...	
16	eL	21 1	...	...	...	...	...	Japan. 35° N., 139° E.
	F	20	...	...	...	...	...	(Kôti).
18	eL	1 8	...	...	...	...	...	Disturbed by wind
	F	30	...	...	...	...	...	and microseisms.
19	ez	3 40·8	...	...	...	...	...	
	L	4 2	...	...	...	...	...	
	M_1	13 50	17	...	+ 4	...	...	
	M_2	14 11	17	...	...	+10	...	
	M_3	14 25	17	+ 6	...	...	...	
	F	5 25	...	...	...	...	...	
19	ez	15 28 43	...	...	...	...	...	Felt in northern Luzon.
	L_{NE}	51	...	...	...	...	...	20° N., 121° E.
	L_Z	58	...	...	...	...	...	(Manila).
	M_1	16 3 7	16	− 8	...	...	...	
	M_2	3 11	16	...	...	+10	...	
	F	30	...	...	...	...	...	
20	eL	8 42	...	...	...	...	...	
	F	9 20	...	...	...	...	...	
20	eP	11 26 55	...	...	...	...	8570	Aleutian Islands.
	eS_{NE}	36 44	...	...	...	...	...	51° N., 180°. (U.S.C.
	e	42 15	...	...	...	...	...	& G.S.).
	L	55	...	...	...	...	...	
	M_1	56 48	24	+ 9	...	...	...	
	M_2	57 9	27	...	+11	...	...	
	M_3	12 8 43	19	+12	...	...	...	
	M_4	11 57	17	...	+10	...	...	
	M_5	12 18	17	...	...	−14	...	
	F	14 5	...	...	...	...	...	
21	e	12 23	...	...	...	...	...	Very small.
	F	13 0	...	...	...	...	...	
21	eP	22 14 4	...	...	...	...	2550	Compression.
	i_N	14 12	...	...	...	...	...	Atlantic Ocean
	i	14 26	...	...	...	...	...	(Strasbourg).
	S_{NE}	18 13	...	...	...	...	...	
	L	19·4	...	...	...	...	...	
	M_1	20 40	12	+11	...	...	...	
	M_2	20 51	15	...	− 9	...	...	
	M_3	20 55	15	...	...	− 7	...	
	F	23 10	...	...	...	...	...	
23	eL	0 40	...	...	...	...	...	
	F	1 10	...	...	...	...	...	
23	eL	10 8	...	...	...	...	...	} Horizontal components disturbed by wind.
	F	30	...	...	...	...	...	
23	eP_Z	16 51 17	...	...	...	...	8420	
	eS_{NE}	17 0 58	...	...	...	...	...	
	e	1 15	...	...	...	...	...	
	e	2 16	...	...	...	...	...	
	L	28	...	...	...	...	...	
	F	18 5	...	...	...	...	...	
24	eP_Z	22 6 24	...	...	...	...	...	Near M. Cimone, Italy
	L	7 57	...	...	...	...	...	(Strasbourg).
	F	20	...	...	...	...	...	
26	e	23 4	...	...	...	...	...	
	F	20	...	...	...	...	...	
May.		h. m. s.	s.	μ	μ	μ	km.	
29	eL	17 29	...	...	...	...	...	
	F	18 10	...	...	...	...	...	
31	eL	10 57	...	...	...	...	...	
	F	11 25	...	...	...	...	...	
31	eP_Z	18 11 (4)	...	...	...	...	9830	In minute break.
	eS_{NE}	21·9	...	...	...	...	...	Felt in Kwanto
	L_{NE}	38	...	...	...	...	...	(Kôti).
	L_Z	42	...	...	...	...	...	
	M_1	43 30	34	+ 6	...	...	...	
	M_2	43 56	34	...	−11	...	...	
	F	19 15	...	...	...	...	...	
June 1	eS_{NE}	13 34·4	...	...	...	...	...	No " Z " record.
	e_E	56·6	...	...	...	...	...	1[d] 11[h] 35[m] to 2[d] 9[h]
	eL_{NE}	14 15	...	...	...	...	...	45[m]. Near New
	M_1	34 43	23	− 4	...	...	...	Hebrides.
	M_2	41 48	21	...	− 5	...	...	18° S., 170° E.
	F	15 55	...	...	...	...	...	(Wellington).
4	eP_{EZ}	7 34 58	...	...	...	...	3590	
	eS_N	40 21	...	...	...	...	...	
	eL	46	...	...	...	...	...	
	F	8 30	...	...	...	...	...	
4	eP_{EZ}	10 9 59	...	...	...	...	7600	
	PR_{1EZ}	11·9	...	...	...	...	...	
	eS_{NE}	19·0	...	...	...	...	...	
	L	47	...	...	...	...	...	
	M	51 7	26	− 6	...	...	...	
	F	11 30	...	...	...	...	...	
5	iP_Z	12 2 24	...	...	...	...	...	Compression.
	L	51	...	...	...	...	...	Horizontal components
	M	13 6 2	22	+ 8	− 6	...	...	disturbed by wind.
	F	14 25	...	...	...	...	...	West of Fiji. 17° S., 175° E. (Wellington).
5	e	22 9	...	...	...	...	...	
	F	25	...	...	...	...	...	
7	e	10 58	...	...	...	...	...	} Very small.
	F	11 20	...	...	...	...	...	
8	e	14 5	...	...	...	...	...	
	F	20	...	...	...	...	...	
9	e_{ZN}	4 48	...	...	...	...	...	No " E " record.
	F	55	...	...	...	...	...	4[h] 0[m] to 9[h] 15[m].
11	eP_Z	1 8·9	...	...	...	...	...	New Guinea.
	i_Z	10 57	...	...	...	...	...	6° S., 144° E.
	i_{NE}	12 13	...	...	...	...	...	(Wellington).
	e_N	18·0	...	...	...	...	...	
	L_{NE}	29	...	...	...	...	...	
	L_Z	32	...	...	...	...	...	
	M_1	57 16	26	+41	...	...	...	
	M_2	58 22	26	...	+45	...	...	
	M_3	59 33	24	...	−42	...	...	
	M_4	2 1 13	26	+57	...	...	...	
	M_5	3 0	24	+64	+51	...	...	
	M_6	3 43	23	...	...	+77	...	
	M_7	10 25	20	...	...	−38	...	
	F	3 40	...	...	...	...	...	
11	e	11 30	...	...	...	...	...	} Very small.
	F	35	...	...	...	...	...	
11	e	14 42	...	...	...	...	...	
	F	50	...	...	...	...	...	
13	eP_Z	1 5 50	...	...	...	...	8820	Compression.
	eS_{NE}	15 51	...	...	...	...	...	Aleutian Islands.
	L	36	...	...	...	...	...	52° N., 172° W.
	M_1	46 33	18	+ 4	+ 3	...	...	(U.S.C. & G.S.).
	M_2	46 36	19	...	...	− 9	...	
	F	3 0	...	...	...	...	...	
13	ez	21 28	...	...	...	...	...	
	F	40	...	...	...	...	...	

SEISMOLOGICAL DIARY.—*continued.*

Galitzin Seismographs, three components.

545. Richmond (Kew Observatory). Lat. 51° 28′ N. Long. 0° 19′ W. Height above M.S.L. 5 metres. **1930.**

Date.	Phase.	Time. G.M.T.	Period	Amplitudes. A_N.	A_E.	A_Z.	△	Remarks.
June		h. m. s.	s.	μ	μ	μ	km.	
15	e	8 51	...	...	...	...	...	
	F	9 45	...	...	...	...	...	
15	ez	21 30·4	...	...	...	...	...	
	L	22 15	...	...	...	...	...	
	M_1	16 48	28	...	+ 7	...	...	
	M_2	17 51	27	...	...	+ 8	...	
	F	23 35	...	...	...	...	...	
17	eL	20 41	...	...	...	...	...	
	F	21 5	...	...	...	...	...	
18	e	16 30	...	...	...	...	...	Very small.
	F	45	...	...	...	...	...	
19	e	13 53	...	...	...	...	...	Felt in western Java and southern Sumatra.
	L	14 10	...	...	...	...	...	
	F	15 25	...	...	...	...	...	
21	e	21 55	...	...	...	...	...	
	F	22 10	...	...	...	...	...	
22	eL	19 21	...	...	...	...	...	
	F	22 0	...	...	...	...	...	
23	—	— — —	...	...	...	...	...	No records, 9ʰ 20ᵐ to 10ʰ 36ᵐ.
23	ez	20 5	...	...	...	...	...	
	eL	40	...	...	...	...	...	
	F	21 50	...	...	...	...	...	
25	ePz	10 30 55	...	...	...	...	(10300)	Compression.
	PR_1z	34 36	...	...	...	...	...	Pacific Ocean near Peru. 16° S., 75° W. (U.S.C. & G.S.).
	eScPcS	41 32	...	...	...	...	...	
	ePS	43 24	...	...	...	...	...	
	L	11 4	...	...	...	...	...	
	M_1	11 52	17	+ 7	+ 9	...	...	
	M_2	11 56	17	...	...	+15	...	
	F	?	...	...	...	...	...	Overlapped by next shock.
25	ePz	12 16 9	...	...	...	...	6460	Leeward Islands. 18° N., 63° W. (U.S.C. & G.S.).
	eS_{NE}	24 10	...	...	...	...	...	
	L	33	...	...	...	...	...	
	M_1	35 17	22	...	...	+ 6	...	
	M_2	35 21	24	...	+ 7	...	...	
	F	13 30	...	...	...	...	...	
25	e	13 50	...	...	...	...	...	
	F	14 15	...	...	...	...	...	
25	eP	21 34 53	...	...	...	...	(10900)	Pacific Ocean near Peru. 16° S., 79° W. (U.S.C. & G.S.).
	PR_1	38·6	...	...	...	...	...	
	eScPcS	45 28	...	...	...	...	...	
	eS_E	46·5	...	...	...	...	...	
	L_{NE}	22 1	...	...	...	...	...	
	Lz	6	...	...	...	...	...	
	M_1	10 29	23	−18	−29	...	...	
	M_2	10 47	22	...	...	+34	...	
	M_3	14 51	17	+20	...	...	...	
	M_4	15 26	17	...	+29	...	...	
	M_5	15 39	17	...	...	...	−43	
	F	0 30	...	...	...	...	...	
26	e	4 34	...	...	...	...	...	
	F	45	...	...	...	...	...	
27	e	19 53	...	...	...	...	...	Very small.
	F	20 10	...	...	...	...	...	
July 1	ePz	1 20 21	...	...	...	...	(7700)	N. Pacific Ocean off British Columbia. 52° N., 137° W. (U.S.C. & G.S.).
	eSR_{2NE}	37·8	...	...	...	...	...	
	L_{NE}	40	...	...	...	...	...	
	Lz	45	...	...	...	...	...	
	M_1	51 24	15	...	...	+ 7	...	
	M_2	51 37	15	− 6	...	...	...	
	M_3	52 9	13	...	+ 4	...	...	
	F	2 55	...	...	...	...	...	
1	—	— — —	...	...	...	...	...	No records. 10ʰ 11ᵐ to 11ʰ 49ᵐ.
2	iP	21 14 58	...	...	...	...	7780	Compression.
	i	15 8	...	...	...	...	...	Destructive in Gauhati, Assam. 27·5° N., 90°E. (Strasbourg).

Date.	Phase.	Time. G.M.T.	Period	Amplitudes. A_N.	A_E.	A_Z.	△	Remarks.
July		h. m. s.	s.	μ	μ	μ	km.	
2 cont.	PR_1	17·8	...	...	...	...	...	
	PR_2	19·3	...	...	...	...	...	
	iS	24 7	...	...	...	...	...	
	SR_1	29·1	...	...	...	...	...	
	SR_2	32·3	...	...	...	...	...	
	L_{NE}	33	...	...	...	...	...	
	Lz	40	...	...	...	...	...	
	M_1	45 46	23	+135	...	...	...	
	M_2	47 53	23	...	−110	...	...	
	M_3	49 24	20	+100	+130	...	...	
	M_4	49 30	20	...	...	−190	...	Overlapped by next shock.
	F	?	...	...	...	...	...	
3	ePz	0 30 15	...	...	...	...	7700	Probably repetition of preceding shock.
	eL	49	...	...	...	...	...	
	F	1 20	...	...	...	...	...	
3	e	14 57	...	...	...	...	...	Very small.
	F	15 10	...	...	...	...	...	
4	e	21 11	...	...	...	...	...	Felt in Switzerland.
	F	15	...	...	...	...	...	
5	e	18 18 4	...	...	...	...	...	
	eL	56	...	...	...	...	...	
	F	20 10	...	...	...	...	...	
5	ez	23 18 2	...	...	...	...	...	Felt in southern Spain.
	M	19 47	15	+ 3	− 6	...	...	
	F	40	...	...	...	...	...	
7	eL	14 6	...	...	...	...	...	Guatemala (J.S.A.).
	M_1	19 7	19	...	− 7	...	...	
	M_2	19 12	18	...	...	− 8	...	
	F	15 0	...	...	...	...	...	
7	e	20 42	...	...	...	...	...	Very small. (July 7 to July 11)
	F	21 5	...	...	...	...	...	
7	e	21 17	...	...	...	...	...	
	F	40	...	...	...	...	...	
8	e	10 27	...	...	...	...	...	
	F	40	...	...	...	...	...	
10	e	17 26	...	...	...	...	...	
	F	40	...	...	...	...	...	
11	e	7 47	...	...	...	...	...	
	F	8 5	...	...	...	...	...	
11	e	15 14	...	...	...	...	...	
	F	20	...	...	...	...	...	
13	eL	1 33	...	...	...	...	...	Overlapped by next shock.
	F	?	...	...	...	...	...	
13	eL	2 10		...	...	...	...	
	M_1	25 2	18	...	...	− 6	...	
	M_2	25 8	19	+ 4	+ 4	...	...	
	F	3 45	...	...	...	...	...	
13	eL	13 58	...	...	...	...	...	
	F	14 20	...	...	...	...	...	
13	ez	14 33	...	...	...	...	...	
	L	43	...	...	...	...	...	
	F	15 5	...	...	...	...	...	
13	eP	19 38 5	...	...	...	...	7370	Dilatation.
	iP	38 7	...	...	...	...	...	
	PR	42·1	...	...	...	...	...	Nan Shan, China. 38° N., 98° E. (Strasbourg).
	eS_{NE}	46 53	...	...	...	...	...	
	SR_{1NE}	51·3	...	...	...	...	...	
	SR_{2NE}	53·9	...	...	...	...	...	
	L_{NE}	58	...	...	...	...	...	
	Lz	20 4	...	...	...	...	...	
	M_1	4 51	14	+30	...	...	...	
	M_2	9 20	14	...	−29	...	...	
	M_3	9 24	13	...	...	+32	...	
	F	21 40	...	...	...	...	...	
14	e	21 14	...	...	...	...	...	Very small.
	F	20	...	...	...	...	...	

SEISMOLOGICAL DIARY.—*continued.*

Galitzin Seismographs, three components.

545. Richmond (Kew Observatory). Lat. 51° 28′ N. Long. 0° 19′ W. Height above M.S.L. 5 metres. **1930.**

Date.	Phase.	Time. G.M.T.	Period	Amplitudes.			△	Remarks.
				A_N.	A_E.	A_Z.		
July		h. m. s.	s.	μ	μ	μ	km.	
14/15	eP_{EZ}	22 52 42	...	...	...	...	8710	Compression.
	PR_{1E}	55·5	...	...	...	...	...	Azimuth about west.
	eS	23 2 38	...	...	...	...	...	Pacific Ocean south of
	SR_{1NE}	7·7	...	...	...	...	...	Salvador. 13° N.,
	L	17·6	...	...	...	...	...	90° W. (J.S.A.)
	M_1	19 54	23	+50	...	...	...	
	M_2	26 38	19	...	−58	...	...	
	M_3	26 43	18	...	...	−72	...	
	M_4	31 3	17	...	...	−62	...	
	F	0	...	...	...	...	...	
15	e	9 40	...	...	...	...	...	Very small.
	F	10 5	...	...	...	...	...	
15	e	15 17·6	...	...	...	...	...	
	F	35	...	...	...	...	...	
20	e	0 3	...	...	...	...	...	
	F	20	...	...	...	...	...	
20	e	11 20	...	...	...	...	...	
	F	35	...	...	...	...	...	
22	e	11 57	...	...	...	...	...	
	F	12 5	...	...	...	...	...	
22	ePz	19 37 50	...	...	...	...	8730	Compression.
	iP_{NZ}	37 52	...	...	...	...	...	Kurile Islands.
	iPcPz	38 23	...	...	...	...	...	47° N., 151° E.
	iS_E	47 47	...	...	...	...	...	(U.S.C. & G.S.)
	L_{NE}	20 1	...	...	...	...	...	
	L_Z	7	...	...	...	...	...	
	M_1	11 13	24	...	−24	...	...	
	M_2	11 56	23	+17	...	...	...	
	F	21 30	...	...	...	...	...	
23	eP	0 12 11	...	...	...	...	1700	Destructive in southern Italy.
	i	12 16	...	...	...	...	...	
	iz	15 0	...	...	...	...	...	
	iS_E	15 7	...	...	...	...	...	41·1° N., 15·4° E.
	i_{EZ}	16 7	...	...	...	...	...	(Strasbourg).
	L	16·8	...	...	...	...	...	
	M_1	18 20	15	>+29	0*...	...	...	*Positive and negative maxima off chart.
	M_2	19 11	13	...	...>	−260†	...	†Positive maxima off chart.
	M_3	19·1 to 19·6	12	>±30	0*...	...	...	⊙Negative maxima off chart.
	M_4	19 23	(15)	...>	+320	⊙...	...	
	M_5	20 41	14	...	+160	...	...	
	M_6	21 17	11	+115	...	...	...	
	M_7	21 33	10	...	...	+135	...	Very large oscillations on "Z" component,
	M_8	23 31	11	...	+55	...	...	19·2m to 19·8m; trace too faint for these to
	F	2 20	...	...	...	...	...	be measured.
23	e	5 39	...	...	...	...	...	Very small. Repetitions from the Italian epicentre.
	F	45	...	...	...	...	...	
23	e	14 2	...	...	...	...	...	
	F	10	...	...	...	...	...	
23	e	18 40	...	...	...	...	...	
	F	45	...	...	...	...	...	
23	e	19 37	...	...	...	...	...	
	F	45	...	...	...	...	...	
24	e	8 29	...	...	...	...	...	
	F	35	...	...	...	...	...	
24	e	12 14	...	...	...	...	...	
	F	20	...	...	...	...	...	
25	e_{NE}	20 4	...	...	...	...	...	No "Z" record, 25d 9h 33m to 26d 9h 37m.
	F	10	...	...	...	...	...	
25	e_{NE}	22 14	...	...	...	...	...	
	F	35	...	...	...	...	...	
27	ePz	19 10 58	...	...	...	...	9050	Pacific Ocean south of
	eS	21 11	...	...	...	...	...	Guatemala. 12° N.,
	L	37	...	...	...	...	...	91° W. (U.S.C. &
	F	20 35	...	...	...	...	...	G.S.).

Date.	Phase.	Time. G.M.T.	Period	Amplitudes.			△	Remarks.
				A_N.	A_E.	A_Z.		
July		h. m. s.	s.	μ	μ	μ	km.	
29	eS_{NE}	6 46·2	...	...	...	...	...	12° N., 89° W. (J.S.A.)
	L	7 1	...	...	...	...	...	No "Z" record, 28d
	F	30	...	...	...	...	...	12h 30m to 29d 9h 55m.
31	e	0 35	...	...	...	...	...	
	F	45	...	...	...	...	...	
Aug. 1	e	0 58	...	...	...	...	...	
	F	1 15	...	...	...	...	...	
2	e	16 23	...	...	...	...	...	
	F	?	...	...	...	...	...	Overlapped by next shock.
2	eL	17 19	...	...	...	...	...	
	F	18 35	...	...	...	...	...	
3	e	22 25	...	...	...	...	...	Very small.
	F	35	...	...	...	...	...	
4	ePz	5 16 7	...	...	...	...	8090	Felt at Lima, Peru.
	ez	18 22	...	...	...	...	...	(Strasbourg).
	eS_E	25 29	...	...	...	...	...	
	eS_{NZ}	25 31	...	...	...	...	...	
	i_{NE}	25 42	...	...	...	...	...	
	e_{ZN}	26 49	...	...	...	...	...	
	L	28	...	...	...	...	...	
	F	6 10	...	...	...	...	...	
4	e	16 33	...	...	...	...	...	
	F	17 15	...	...	...	...	...	
5	e	0 55	...	...	...	...	...	
	F	1 5	...	...	...	...	...	
5	e	23 33	...	...	...	...	...	
	F	50	...	...	...	...	...	
8	eL	0 34	...	...	...	...	...	
	F	55	...	...	...	...	...	
9	eP	18 13 36	...	...	...	...	...	
	L	19	...	...	...	...	...	
	F	35	...	...	...	...	...	
9	e	20 34	...	...	...	...	...	Very small.
	F	45	...	...	...	...	...	
9	e	22 5	...	...	...	...	...	
	F	10	...	...	...	...	...	
9	e	23 9	...	...	...	...	...	
	F	20	...	...	...	...	...	
10	eL	0 57	...	...	...	...	...	
	F	1 40	...	...	...	...	...	
13	ez	22 18	...	...	...	...	...	Very small.
	F	25	...	...	...	...	...	Sirola Ancona, (Strasbourg).
17	iPz	12 38 6	...	...	...	...	5130	No "E" record; 9h 25m to 12h 49m.
	eS_N	44 55	...	...	...	...	...	Persian Gulf.
	eSR_{1N}	47 55	...	...	...	...	...	(Strasbourg).
	L_{NE}	56	...	...	...	...	...	
	L_Z	59	...	...	...	...	...	
	F	13 25	...	...	...	...	...	
18	ePz	10 8 9	...	...	...	...	11800	North of Sandwich
	ePR_{1Z}	12·7	...	...	...	...	...	Islands.
	$iScPcS_N$	18 38	...	...	...	...	...	52° S., 25° W.
	eS_E	20 23	...	...	...	...	...	(Strasbourg).
	ePPS	22 20	...	...	...	...	...	
	SR_{1N}	28·5	...	...	...	...	...	
	L_E	38	...	...	...	...	...	
	L_{NZ}	43	...	...	...	...	...	
	M_1	47 48	27	+58	...	...	...	
	M_2	47 52	26	...	−37	+40	...	
	M_3	50 23	22	...	−33	...	...	
	M_4	52 59	23	+31	...	...	...	
	M_5	55 9	18	...	...	−27	...	
	F	13 25	...	...	...	...	...	
19	e	5 52	...	...	...	...	...	
	F	6 10	...	...	...	...	...	

SEISMOLOGICAL DIARY.—*continued.*

Galitzin Seismographs, three components.

545. Richmond (Kew Observatory). Lat. 51° 28′ N. Long. 0° 19′ W. Height above M.S.L. 5 metres. **1930.**

Date.	Phase.	Time. G.M.T.	Period	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	△	Remarks.
Aug.		h. m. s.	s.	μ	μ	μ	km.	
19	e	14 35	...	...	...	...	...	Very small.
	F	45	...	...	...	...	...	
20	eP_Z	21 7 6	...	...	...	...	9750	Felt in Formosa. 24° N., 123° E. (Manila).
	S_N	17 53	...	...	...	...	...	
	SR_1	23 40	...	...	...	...	...	
	L	35	...	...	...	...	...	
	M_1	42 54	23	+81	−82	...	...	
	M_2	45 12	16	−49	...	...	...	
	M_3	48 48	19	...	+46	...	...	
	M_4	48 52	19	...	...	−38	...	
	M_5	49 36	19	+39	...	...	...	
	M_6	50 44	15	...	...	−33	...	
	F	23 25	...	...	...	...	...	
23	iP_{ZE}	11 1 51	...	...	...	...	5170	Compression. Persia. 29° N., 58° E. (Strasbourg).
	ePR_{1ZE}	3 51	...	...	...	...	...	
	iS	8 42	...	...	...	...	...	
	eSR_{1NE}	11·7	...	...	...	...	...	
	L	16	...	...	...	...	...	
	M_1	20 45	23	+17	...	...	...	
	M_2	23 21	17	...	+11	...	...	
	M_3	27 16	15	...	...	− 8	...	
	F	12 55	...	...	...	...	...	
23	e	14 51	...	...	...	...	...	Small movements masked by wind disturbance on horizontal components.
	F	17	...	...	...	...	...	
24	eL	10 18	...	...	...	...	...	
	F	11 10	...	...	...	...	...	
24	e	11 25	...	...	...	...	...	
	F	45	...	...	...	...	...	
25	e	15 32	...	...	...	...	...	
	F	16 0	...	...	...	...	...	
29	eL_{NZ}	7 41	...	...	...	...	...	No "E" record; 28ᵈ 9ʰ 14ᵐ to 30ᵈ 9ʰ 35ᵐ.
	F	55	...	...	...	...	...	
29	eL_{NZ}	8 55	...	...	...	...	...	
	F	10 5	...	...	...	...	...	
Sept. 1	e	5 56	...	...	...	...	...	
	F	6 15	...	...	...	...	...	
1	eP_Z	17 53 (9)	...	...	...	...	6050	Destructive near Stalinabad, Tajikistan.
	eS_{NE}	18 1 (15)	...	...	...	...	...	
	ez	7·1	...	...	...	...	...	
	L_{NE}	13	...	...	...	...	...	
	M_1	15 58	21	−13	...	...	...	
	L_Z	17	...	...	...	...	...	
	M_2	21 0	17	...	−10	...	...	
	M_3	21 4	17	...	...	+12	...	
	F	55	...	...	...	...	...	
2	eL	16 32	...	...	...	...	...	
	F	55	...	...	...	...	...	
2	i	19 6 57	...	...	...	...	...	
	e	13 23	...	...	...	...	...	
	e	16·7	...	...	...	...	...	
	eL	25	...	...	...	...	...	
	F	20 0	...	...	...	...	...	
3	e	16 20	...	...	...	...	...	Not very distant.
	F	25	...	...	...	...	...	
5	e	16 46	...	...	...	...	...	
	F	17 10	...	...	...	...	...	
7	e	11 9	...	...	...	...	...	
	F	30	...	...	...	...	...	
7	e	14 56	...	...	...	...	...	
	F	15 5	...	...	...	...	...	
8/9	—	— — —	...	...	...	...	...	No records, 8ᵈ 12ʰ 23ᵐ to 16ʰ 21ᵐ and 9ᵈ 8ʰ 25ᵐ to 17ʰ 12ᵐ during adjustments and standardisation.
11	e	3 26	...	...	...	...	...	
	F	40	...	...	...	...	...	
11	eP	12 42 18	...	...	...	...	3250	Destructive near Corinth. (Strasbourg).
	eS	47 19	...	...	...	...	...	
	L	49	...	...	...	...	...	

Date.	Phase.	Time. G.M.T.	Period	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	△	Remarks.
Sept.		h. m. s.	s.	μ	μ	μ	km.	
11 cont.	M_1	51 51	17	+46	...	...	...	
	M_2	54 0	15	...	...	−15	...	
	F	14 0	...	...	...	...	...	
12	e	8 27	...	...	...	...	...	Not very distant.
	F	40	...	...	...	...	...	
12	e	9 25	...	...	...	...	...	
	F	40	...	...	...	...	...	
12	e	13 45	...	...	...	...	...	
	eL_{NE}	58	...	...	...	...	...	
	F	14 25	...	...	...	...	...	
13	e	20 14	...	...	...	...	...	
	F	30	...	...	...	...	...	
13	e	23 37	...	...	...	...	...	Very small.
	F	50	...	...	...	...	...	
14	e	0 40	...	...	...	...	...	
	F	1 25	...	...	...	...	...	
14	e	3 21	...	...	...	...	...	
	eL	4 27	...	...	...	...	...	
	F	5 35	...	...	...	...	...	
14	e	13 57	...	...	...	...	...	
	F	14 5	...	...	...	...	...	
14	e	15 22	...	...	...	...	...	
	F	35	...	...	...	...	...	
14	e	17 32	...	...	...	...	...	
	F	18 0	...	...	...	...	...	
16	e	0 32	...	...	...	...	...	
	F	1 35	...	...	...	...	...	
17	e	3 52	...	...	...	...	...	
	F	4 5	...	...	...	...	...	
21/22	eP	23 16 1	...	...	...	...	8380	Compression. Kachin. 27° N., 98° E. (Strasbourg).
	PR_1	18·6	...	...	...	...	...	
	eS	25 40	...	...	...	...	...	
	ez	34·1	...	...	...	...	...	
	L_{NE}	39	...	...	...	...	...	
	M_1	45 55	27	−120	+76	...	...	
	L_Z	46	...	...	...	...	...	
	M_2	46 11	25	+135	...	...	...	
	M_3	48 48	17	− 50	...	...	...	
	M_4	49 43	23	...	−48	...	...	
	M_5	52 36	22	...	...	+50	...	
	M_6	55 11	15	...	...	+27	...	
	F	1 50	...	...	...	...	...	
22	iP_Z	1 51 24	...	...	...	...	...	Ner Kermadec Islands. 32° S., 178° W. (Wellington).
	e$_E$	2 16·5	...	...	...	...	...	
	L	3 2	...	...	...	...	...	
	M_1	16 20	17	+ 8	...	...	...	
	M_2	29 15	16	...	− 9	...	...	
	M_3	29 42	16	...	...	−10	...	
	F	5 5	...	...	...	...	...	
22	eL	5 35	...	...	...	...	...	
	F	55	...	...	...	...	...	
22	e	13 26	...	...	...	...	...	
	F	40	...	...	...	...	...	
22	iP_Z	14 30 42	...	...	...	...	8050	Assam. 26° N., 92° E. (Manila).
	eS_{NE}	40 4	...	...	...	...	...	
	e	40 32	...	...	...	...	...	
	eSR_{1NE}	44·9	...	...	...	...	...	
	L_{NE}	52	...	...	...	...	...	
	L_Z	15 0	...	...	...	...	...	
	M_1	0 17	25	+18	...	...	...	
	M_2	5 7	22	...	− 7	...	...	
	M_3	7 19	16	...	...	− 5	...	
	F	50	...	...	...	...	...	
22	e(P)	16 42 34	...	...	...	...	...	
	eL	53	...	...	...	...	...	
	F	17 30	...	...	...	...	...	

SEISMOLOGICAL DIARY.—*continued.*

Galitzin Seismographs, three components.

545. Richmond (Kew Observatory). Lat. 51° 28′ N. Long. 0° 19′ W. Height above M.S.L. 5 metres. **1930.**

Date.	Phase.	Time. G.M.T.	Period	Amplitudes.			△	Remarks.
				A_N.	A_E.	A_Z.		
Sept.		h. m. s.	s.	μ	μ	μ	km.	
22	e	22 0	...	...	...	...	...	
	F	10	...	...	...	...	...	
23	e	12 51	...	...	...	...	...	Very small.
	F	13 0	...	...	...	...	...	
24	e	0 22	...	...	...	...	...	
	F	50	...	...	...	...	...	
24	e	8 38	...	...	...	...	...	
	eL	43	...	...	...	...	...	
	F	9 0	...	...	...	...	...	
24	ez	12 34 27	...	...	...	...	...	
	eL	13 3	...	...	...	...	...	
	M_1	8 57	22	...	+ 8	...	...	
	M_2	17 28	17	...	...	+ 6	...	
	F	55	...	...	...	...	...	
25	e	12 42	...	...	...	...	...	
	eL	48	...	...	...	...	...	
	F	13 5	...	...	...	...	...	
25	e	17 43	...	...	...	...	...	
	F	50	...	...	...	...	...	
25	ez	18 45 (13)	...	...	...	...	...	
	eE	54 (59)	...	...	...	...	...	
	eL_{NE}	19 13	...	...	...	...	...	
	eL_Z	17	...	...	...	...	...	
	F	20 30	...	...	...	...	...	
29	eL	14 3	...	...	...	...	...	
	F	25	...	...	...	...	...	
30/1	ePR_1	21 42	...	...	...	...	...	Near New Guinea. 3° S., 148° E. (Manila).
	$ePR_{2}z$	44·5	...	...	...	...	...	
	eSR_{1NE}	58·7	...	...	...	...	...	
	eL_{NE}	22 16	...	...	...	...	...	
	eL_Z	22	...	...	...	...	...	
	M_1	25 3	25	−25	...	...	...	
	M_2	25 14	25	...	−26	...	...	
	M_3	37 45	19	...	...	+17	...	
	F	0 50	...	...	...	...	...	
Oct. 1	eL	3 39	...	...	...	...	...	
	F	4 5	...	...	...	...	...	
1	e	14 40	...	...	...	...	...	
	F	15 0	...	...	...	...	...	
2	eNE	1 32	...	...	...	...	...	
	L	50	...	...	...	...	...	
	F	2 5	...	...	...	...	...	
2	eNE	15 40·7	...	...	...	...	...	
	L	53	...	...	...	...	...	
	F	16 15	...	...	...	...	...	
3	e	19 15	...	...	...	...	...	
	F	40	...	...	...	...	...	
3/4	eZE	23 49 13	...	...	...	...	...	
	L	53	...	...	...	...	...	
	F	0 20	...	...	...	...	...	
4	e	6 57	...	...	...	...	...	Very small.
	F	7 5	...	...	...	...	...	
5	e	19 57	...	...	...	...	...	
	F	20 15	...	...	...	...	...	
7	eP_Z	23 29 50	...	...	...	...	860	Felt in Central Europe. 47·3° N., 10·5° E. (Strasbourg).
	ez	31 12	...	...	...	...	...	
	eS_{NE}	31 23	...	...	...	...	...	
	eN	31 28	...	...	...	...	...	
	L	31 43	...	...	...	...	...	
	M_1	31 56	9	−11	...	...	...	
	M_2	32 1	10	...	+ 5	...	...	
	M_3	32 47	7	...	...	+ 4	...	
	F	35	...	...	...	...	...	

Date.	Phase.	Time. G.M.T.	Period	Amplitudes.			△	Remarks.
				A_N.	A_E.	A_Z.		
Oct.		h. m. s.	s.	μ	μ	μ	km.	
8	e	11 6	...	...	...	...	...	Badly disturbed by wind and microseisms.
	e	12 38	...	...	...	...	...	
	eL	22	...	...	...	...	...	New Hebrides. 16° S., 169° E. (J.S.A.)
	M_1	28 18	26	...	−17	...	...	
	M_2	42 29	21	...	...	+31	...	
	F	12 55	...	...	...	...	...	
9	eL_{NE}	22 4	...	...	...	...	...	
	eL_Z	9	...	...	...	...	...	
	F	20	...	...	...	...	...	
10	e	1 11	...	...	...	...	...	
	L_{NE}	18	...	...	...	...	...	
	L_Z	24	...	...	...	...	...	
	F	40	...	...	...	...	...	
11	iP_{NZ}	3 11 7	...	...	...	...	2410	Compression. Amplitudes of iP as read in mm :— N. E. Z. −1·0 0·0 +1·3. Azimuth about north giving epicentre near 73° N., 0°. (Greenland Sea).
	iS_{NZ}	15 5	...	...	...	...	...	
	L	16 27	...	...	...	...	...	
	M_1	17 27	16	...	−13	...	...	
	M_2	17 49	18	+17	...	...	...	
	M_3	18 54	14	...	...	+15	...	
	F	4 5	...	...	...	...	...	
12	e	15 38	...	...	...	...	...	
	F	45	...	...	...	...	...	
16	eL	22 21	...	...	...	...	...	
	F	45	...	...	...	...	...	
17	eScPcS	9 11 9	...	...	...	...	...	No "Z" record 4^h 20^m to 9^h 38^m.
	eS_{NE}	11 45	...	...	...	...	...	
	L_E	27 4	...	...	...	...	...	
	—	— — —	...	...	...	...	...	Record lost between 9^h 32^m and 9^h 38^m during changing of charts.
	L_Z	40	...	...	...	...	...	
	M_1	42 24	24	...	+ 9	...	...	Chile. 33° S., 72° W. (U.S.C. & G.S.)
	M_2	46 22	18	...	...	+ 8	...	
	M_3	46 57	20	+ 7	...	...	...	
	F	10 25	...	...	...	...	...	
21	eEZ	19 10 44	...	...	...	...	...	No "N" record 21^d 17^h 40^m to 22^d 6^h 53^m. Disturbed by microseisms.
	eE	14 43	...	...	...	...	...	
	L_{EZ}	16·2	...	...	...	...	...	
	F	25	...	...	...	...	...	
22	eL	19 15	...	...	...	...	...	
	F	30	...	...	...	...	...	
23	eEZ	9 15 (21)	...	...	...	...	...	
	ez	16 (49)	...	...	...	...	...	
	eNE	26 33	...	...	...	...	...	
	iNE	49 53	...	...	...	...	...	
	L	10 9	...	...	...	...	...	
	F	11 30	...	...	...	...	...	
24	e	0 57	...	...	...	...	...	Apennines. (Strasbourg). Disturbed by microseisms.
	F	1 0	...	...	...	...	...	
24	e	11 15	...	...	...	...	...	
	F	40	...	...	...	...	...	
24	eP	20 29 34	...	...	...	...	(10700)	Confused by microseisms. North of Marianne Islands. 24° N., 145° E. (U.S.C. & G.S.)
	ePR_1	33 19	...	...	...	...	...	
	ePR_{2NE}	35 44	...	...	...	...	...	
	$i(ScPcS)_{NE}$	39 49	...	...	...	...	...	
	$i(S)_{NE}$	41 3	...	...	...	...	...	
	$i(PS)_{NE}$	42 37	...	...	...	...	...	
	iSR_{1NE}	48 25	...	...	...	...	...	
	L_{NE}	58	...	...	...	...	...	
	L_Z	21 5	...	...	...	...	...	
	M_1	6 33	36	−90	+120	...	...	
	M_2	9 57	26	...	+100	...	...	
	M_3	12 3	23	+59	...	...	...	
	M_4	12 48	21	...	−80	...	...	
	M_5	15 52	23	−74	...	...	...	
	M_6	18 12	17	+58	...	...	...	
	M_7	26 7	17	...	...	−39	...	
	M_8	30 20	17	...	...	+33	...	
	F	23 10	...	...	...	...	...	
25	e	12 32	...	...	...	...	...	Alaska. 60° N., 155° W. (U.S.C. & G.S.).
	F	13 20	...	...	...	...	...	

SEISMOLOGICAL DIARY.—*continued.*

Galitzin Seismographs, three components.

545. Richmond (Kew Observatory). Lat. 51° 28′ N. Long. 0° 19′ W. Height above M.S.L. 5 metres. **1930.**

Date.	Phase.	Time. G.M.T.	Period	Amplitudes. A_N.	A_E.	A_Z.	△	Remarks.
Oct.		h. m. s.	s.	μ	μ	μ	km.	
26	e	7 19 47	...	...	...	...	...	Felt in Italy (Strasbourg).
	eNE	20 36	...	...	...	...	...	
	F	23	...	...	...	...	...	
26	e	7 36 8	...	...	...	...	...	
	eNE	37 9	...	...	...	...	...	
	F	41	...	...	...	...	...	
27/28	eL	23 52	...	...	...	...	...	
	F	0 35	...	...	...	...	...	
28	e(PR$_1$)Z	21 28 43	...	...	...	...	...	North-east of New Guinea. 1° N., 150° E. (Manila).
	e(PS)NE	36 13	...	...	...	...	...	
	LNE	22 2	...	...	...	...	...	
	LZ	10	...	...	...	...	...	
	M$_1$	11 6	20	...	−14	...	...	
	M$_2$	11 23	23	+15	...	...	...	
	M$_3$	19 24	19	...	...	+13	...	
	F	23 45	...	...	...	...	...	
30	ePZ	7 16 7	...	...	...	...	1760	Destructive round Ancona, Italy.
	eSN	19 8	...	...	...	...	...	
	eSE	19 21	...	...	...	...	...	
	iNE	19 49	...	...	...	...	...	
	M$_1$	21 9	13	−75	...	...	...	
	M$_2$	21 37	15	...	−56	...	...	
	M$_3$	22 16	9	...	...	+34	...	
	F	8 20	...	...	...	...	...	
31	eNE	11 4 28	...	...	...	...	...	
	LNE	34	...	...	...	...	...	
	LZ	44	...	...	...	...	...	
	M$_1$	50 46	21	...	+ 6	...	...	
	M$_2$	51 54	20	+ 6	...	...	...	
	F	12 40	...	...	...	...	...	
Nov. 3	eL	19 45	...	...	...	...	...	Confused by micro-seismas.
	F	20 5	...	...	...	...	...	
4	eL	16 19	...	...	...	...	...	
	F	30	...	...	...	...	...	
8	eZ	3 40 28	...	...	...	...	...	Small. Record disturbed by wind and microseisms. Asia Minor (Strasbourg).
	iNE	45 26	...	...	...	...	...	
	eZ	48 27	...	...	...	...	...	
	F	55	...	...	...	...	...	
9	ePR$_1$	19 28 21	...	...	...	...	(14000)	Phases doubtful. Gilbert Islands. 0°., 170° E. (Wellington).
	ePSZ	37 16	...	...	...	...	...	
	ePPSNE	39 13	...	...	...	...	...	
	eSR$_1$NE	44 21	...	...	...	...	...	
	eSR$_2$E	47 20	...	...	...	...	...	
	eN	48 8	...	...	...	...	...	
	eN	54 27	...	...	...	...	...	
	LNE	55 10	...	...	...	...	...	
	LE	20 2 48	...	...	...	...	...	Rayleigh waves.
	LNZ	3 26	...	...	...	...	...	
	M$_1$	5 42	33	−92	+91	...	...	
	M$_2$	8 35	29	−60	...	...	...	
	M$_3$	9 1	27	...	+59	...	...	
	M$_4$	11 37	27	−52	...	...	...	
	M$_5$	20 54	23	−44	...	...	...	
	M$_6$	22 7	19	...	...	−42	...	
	M$_7$	26 40	19	...	...	+44	...	
	M$_8$	26 44	19	...	+40	...	...	
	F	22 30	...	...	...	...	...	
10	e	14 12	...	...	...	...	...	Banda Sea. 5° S., 130° E. (Wellington).
	ePR$_1$NZ	15 12	...	...	...	...	...	
	eSR$_2$N	34 3	...	...	...	...	...	
	LNE	40	...	...	...	...	...	
	LZ	44	...	...	...	...	...	
	M$_1$	49 2	24	...	+32	...	...	
	M$_2$	49 3	22	−22	...	...	...	
	M$_3$	15 6 2	16	...	...	+14	...	
	F	16 30	...	...	...	...	...	
11	e	21 12	...	...	...	...	...	Very small.
	F	30	...	...	...	...	...	
12	e	19 32	...	...	...	...	...	
	eLNE	50	...	...	...	...	...	
	eLZ	57	...	...	...	...	...	
	F	20 40	...	...	...	...	...	

Date.	Phase.	Time. G.M.T.	Period	Amplitudes. A_N.	A_E.	A_Z.	△	Remarks.
Nov.		h. m. s.	s.	μ	μ	μ	km.	
17	e	12 42	...	...	...	...	...	Confused by micro-seisms.
	eLNE	13 2	...	...	...	...	...	
	eLZ	8	...	...	...	...	...	
	M	16 48	23	− 9	...	...	...	
	F	45	...	...	...	...	...	
20	—	— — —	...	...	...	...	...	9^h 50^m to 13^h. No records.
21	ePE	2 4 37	...	...	...	...	2120	No records of "N" and "Z." Destructive near Valona, Albania. 40·5° N., 19·5° E. (Strasbourg).
	iSE	8 11	...	...	...	...	...	
	LE	10 55	...	...	...	...	...	
	M$_1$	12 15	16	...	−17	...	...	
	M$_2$	14 6	15	...	+27	...	...	
	F	40	...	...	...	...	...	
22	eEZ	15 25	...	...	...	...	...	No "N" record. Confused by wind and microseisms.
	F	16 5	...	...	...	...	...	
24	eEZ	4 16	...	...	...	...	...	No "N" record. Very small.
	F	30	...	...	...	...	...	
25	ePZ	19 15 40	...	...	...	...	9440	No "N" record. Destructive in Izu Peninsula, Japan. 35° N., 139° E. (Strasbourg).
	eSE	26 12	...	...	...	...	...	
	eSZ	26 15	...	...	...	...	...	
	eE	31 52	...	...	...	...	...	
	eE	36 58	...	...	...	...	...	
	eEZ	39 4	...	...	...	...	...	
	LE	41	...	...	...	...	...	
	LZ	45	...	...	...	...	...	
	M$_1$	47 23	31	...	+95	...	...	
	M$_2$	50 10	27	...	−115	...	...	
	M$_3$	53 24	28	...	−145	...	...	
	M$_4$	58 7	17	...	−64	...	...	
	M$_5$	20 2 1	13	...	...	−74	...	
	M$_6$	4 4	13	...	...	−46	...	
	M$_7$	5 38	13	...	...	−41	...	
	F	22 25	...	...	...	...	...	
28	eZ	7 46	...	...	...	...	...	No "N" record. Pacific Ocean off Mexico. 18° N., 105° W. (U.S.C. & G.S.).
	eSE	56 10	...	...	...	...	...	
	eLEZ	8 5	...	...	...	...	...	
	ME	16 16	25	...	+11	...	...	
	F	9 5	...	...	...	...	...	
30	eSNE	21 53 59	...	...	...	...	...	Repetition of 28^d 7^h.
	eLNE	22 9	...	...	...	...	...	
	eLZ	13	...	...	...	...	...	
	F	35	...	...	...	...	...	
Dec. 2	eNE	7 23	...	...	...	...	...	Confused by micro-seisms.
	eL	38	...	...	...	...	...	
	M	43 33	23	+19	...	...	...	Kachin. 27° N., 97° E. (Manila).
	F	8 5	...	...	...	...	...	
3	iPNZ	19 4 1	...	...	...	...	8910	No "E" record.
	ePR$_1$Z	7 (4)	...	...	...	...	...	PR$_1$ in time break.
	iSN	14 2	...	...	...	...	...	
	iSZ	14 7	...	...	...	...	...	Destructive in Burma. 18° N., 96·5° E. (Strasbourg).
	PSNZ	14 42	...	...	...	...	...	
	iSR$_1$NZ	18 53	...	...	...	...	...	
	iSR$_2$N	20 24	...	...	...	...	...	
	LN	22 17	...	...	...	...	...	
	LZ	32 38	...	...	...	...	...	
	M$_1$	35 42	31	+470	...	...	...	
	M$_2$	36·2 to 38·7	(24)	>360*	...	...	...	*Positive and negative maxima off chart.
	M$_3$	40 24	22	...	...	+165	...	
	M$_4$	40 54	(23)	−330†	...	...	...	†Positive maxima off chart.
	M$_5$	43 57	19	...	...	+265	...	
	M$_6$	43 59	23	+290	...	...	...	
	M$_7$	46 21	20	+180	...	...	...	
	M$_8$	48 5	15	...	...	−115	...	
	F	22 30	...	...	...	...	...	
6	eL	7 41	...	...	...	...	...	
	F	8 25	...	...	...	...	...	
8	eL	7 5	...	...	...	...	...	
	F	30	...	...	...	...	...	

SEISMOLOGICAL DIARY.—*continued.*

Galitzin Seismographs, three components.

545. Richmond (Kew Observatory). Lat. 51° 28′ N. Long. 0° 19′ W. Height above M.S.L. 5 metres. **1930.**

Date.	Phase.	Time. G.M.T.	Period	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	△	Remarks.
Dec.		h. m. s.	s.	μ	μ	μ	km.	
8	eL	8 44	...	...	...	...	...	Destructive in Formosa. 23° N., 120° E. (Manila).
	F	9 30	...	...	...	...	...	
8	ez	17 42 8	...	...	...	...	...	
	L	18 46	...	...	...	...	...	
	F	19 40	...	...	...	...	...	
10	eL	10 44	...	...	...	...	...	Destructive in Erzindjan, Asia Minor (Strasbourg).
	F	11 5	...	...	...	...	...	
15	e	16 48	...	...	...	...	...	Formosa. 23° N., 120° E. (Manila).
	F	17 0	...	...	...	...	...	
20	eL	14 47	...	...	...	...	...	
	F	15 10	...	...	...	...	...	
21	eL_{NE}	13 0	...	...	...	...	...	
	F	15	...	...	...	...	...	
21	iP_Z	15 4 20	...	...	...	...	...	Destructive in Formosa. 20° N., 122° E. (Manila).
	iPR_{1Z}	8 5	...	...	...	...	...	
	L_{NE}	35	...	...	...	...	...	
	F	16 15	...	...	...	...	...	
Dec. 22	eL_{NE}	0 37	...	...	...	...	...	Formosa. 23° N., 121° E. (Manila).
	M	1 4 54	17	+13	...	...	...	
	F	1 42	...	...	...	...	...	
22	eL	5 5	...	...	...	...	...	Formosa. 23° N., 120° E. (Manila).
	F	44	...	...	...	...	...	
23	eL	22 37	...	...	...	...	...	
	F	23 0	...	...	...	...	...	
24	eL_{NE}	6 41	...	...	...	...	...	No " Z " record.
	F	7 30	...	...	...	...	...	
25	ez	13 20	...	...	...	...	...	
	L	49	...	...	...	...	...	
	F	14 0	...	...	...	...	...	
30	e(L)	19 8	...	...	...	...	...	Confused by microseisms.
	F	15	...	...	...	...	...	

MICROSEISMS OF NORTH COMPONENT: AMPLITUDE (μ = ·001 mm.) AND PERIOD (seconds).

Derived from readings for the period of thirty minutes centring at the exact hour, Greenwich Mean Time.

546. Richmond (Kew Observatory). **1930.**

Month	January.							
Hour, G.M.T.	0 h.		6 h.		12 h.		18 h.	
	A.	Tp.	A.	Tp.	A.	Tp.	A.	Tp.
Day.	μ	s.	μ	s.	μ	s.	μ	s.
1	1·3	5·6	1·3	5·6	1·4	5·2	1·5	5·4
2	1·6	6·3	2·4	6·0	2·8	7·3	2·5	7·3
3	2·3	6·5	2·0	6·3	3·5	6·5	2·4	6·7
4	2·9	6·5	2·6	7·3	2·7	7·0	1·9	6·5
5	...	...	2·3	5·2	...	...	2·8	6·7
6	2·5	6·3	4·2	5·8	2·5	6·5	2·1	5·6
7	2·3	5·8	1·8	6·0	1·8	5·0	2·0	8·0
8	2·1	7·5	2·4	8·3	2·8	7·5	2·9	7·5
9	2·2	7·5	1·8	7·0	2·3	6·5	2·0	6·0
10	1·7	6·5	1·5	6·5	2·2	6·3	2·7	6·0
11	3·8	6·7	3·7	6·3	7·4	7·5	10·0	7·7
12	8·8	7·7	7·1	7·7	6·0	7·0	4·1	8·0
13	4·3	6·7	3·7	6·7	3·7	6·5	3·0	6·7
14	3·9	6·5	3·3	6·5	3·1	6·5	1·9	6·7
15	2·1	6·5	1·7	6·7	1·8	5·4	1·4	6·5
16	1·8	7·0	2·1	5·8	3·1	5·8	2·9	6·5
17	3·5	6·5	2·5	6·3	2·2	6·0	1·8	6·0
18	1·4	6·5	1·2	6·3	1·2	5·8	1·4	6·0
19	2·0	6·0	2·5	6·5	2·9	6·0	2·1	5·8
20	2·1	6·5	1·7	6·7	2·0	6·0	2·0	7·0
21	1·9	6·7	2·4	7·0	3·4	6·7	3·7	6·5
22	2·9	7·0	2·6	7·3	2·1	7·5	2·9	7·0
23	2·5	8·0	2·8	7·5	2·8	7·5	2·4	7·0
24	2·9	7·0	3·1	6·5	2·4	7·0	2·5	6·5
25	2·3	6·5	2·0	6·3	1·6	6·3	1·6	6·0
26	2·0	6·0	3·7	6·0	2·9	6·0	4·1	6·0
27	4·5	5·2	2·6	5·6	2·0	6·3	1·8	7·0
28	1·6	6·0	1·5	5·6	1·9	6·5	1·9	7·5
29	1·8	7·0	3·1	7·0	3·6	7·7	3·5	8·3
30	3·5	8·0	3·4	8·3	3·5	8·7	4·2	8·3
31	3·0	8·7	2·5	8·0	3·2	8·3	3·7	7·7
Mean ...	2·7	6·7	2·6	6·6	2·8	6·6	2·8	6·8
Mean for day ...	A = 2·7μ ; Tp = 6·7s.							

Month	February.							
Hour, G.M.T.	0 h.		6 h.		12 h.		18 h.	
	A.	Tp.	A.	Tp.	A.	Tp.	A.	Tp.
Day.	μ	s.	μ	s.	μ	s.	μ	s.
1	3·3	6·3	2·7	8·3	3·5	6·5	3·0	8·0
2	3·2	8·0	2·7	6·5	1·9	6·5	1·5	5·8
3	1·3	8·0	1·9	6·5	1·2	8·0	1·3	7·0
4	1·3	5·6	1·5	7·0	2·3	6·5	2·2	6·3
5	1·7	6·7	1·5	6·7	0·9	5·0	1·0	6·0
6	0·7	4·8	0·5	5·0	0·4	5·4	0·5	4·5
7	0·3	4·0	0·5	4·8	0·5	4·8	0·7	4·8
8	0·7	4·7	1·4	5·2	1·0	4·8	0·7	5·0
9	0·7	5·2	0·5	4·7	...	...	1·9	5·2
10	1·8	5·6	2·2	5·8	...	...	2·1	6·5
11	1·9	6·3	1·6	6·7	1·4	6·0	0·7	4·8
12	1·4	6·3	1·3	7·0	0·9	7·3	1·4	7·5
13	1·4	6·3	1·2	6·5	1·0	6·0	0·8	6·0
14	0·6	6·0	0·4	6·5	0·6	6·5	0·6	6·3
15	0·8	6·0	1·0	6·5	1·3	5·6	1·4	5·2
16	1·1	5·6	0·9	5·6	0·6	6·0	0·8	4·3
17	0·7	5·4	0·6	5·8	0·4	5·8	0·7	5·0
18	0·9	5·2	0·6	5·8	0·5	4·1	0·7	5·0
19	0·7	5·0	1·1	5·2	1·6	6·3	1·5	5·8
20	1·9	7·3	1·9	7·3	1·8	7·0	1·8	7·3
21	1·8	7·3	1·9	6·7	1·8	7·0	1·8	7·0
22	2·1	6·7	2·1	6·7	1·5	6·7	0·9	7·0
23	0·6	6·0	0·6	5·8	1·0	6·0	0·4	6·0
24	0·5	5·2	0·6	6·0	0·5	5·2	0·4	5·8
25	0·7	4·7	0·7	5·2	2·4	4·8	2·3	5·2
26	2·4	4·7	1·4	4·1	1·2	5·0	0·8	4·5
27	1·5	4·5	1·6	4·3	0·8	4·0	0·8	4·0
28	0·6	4·0	0·5	4·3	0·9	5·4	0·6	6·3
29								
30								
31								
Mean ...	1·3	5·8	1·3	5·9	1·2	5·9	1·2	5·8
Mean for day ...	A = 1·2μ ; Tp = 5·8s.							

Month	March.							
Hour, G.M.T.	0 h.		6 h.		12 h.		18 h.	
	A.	Tp.	A.	Tp.	A.	Tp.	A.	Tp.
Day.	μ	s.	μ	s.	μ	s.	μ	s.
1	0·9	5·4	0·9	5·4	1·0	6·3	1·0	5·8
2	...	...	...	...	1·8	7·3	1·7	6·5
3	1·5	6·5	1·5	5·8	0·8	5·8	1·3	6·7
4	0·6	5·8	0·6	6·5	0·6	5·8	0·2	5·4
5	0·4	5·4	0·5	5·0	0·2	5·0	0·5	5·0
6	0·4	5·4	0·4	5·4	0·4	5·6	0·2	5·2
7	0·2	5·2	0·2	5·2	0·2	5·0	0·2	5·0
8	0·5	5·0	0·4	5·4	0·5	5·0	0·2	4·8
9	0·5	4·3	0·7	4·8	0·7	5·0	1·0	4·7
10	0·5	4·7	0·9	5·4	0·9	5·0	1·7	4·8
11	1·6	5·2	2·2	6·0	2·2	6·7	1·8	6·0
12	1·6	5·2	1·7	5·8	2·0	5·2	1·8	6·0
13	2·1	5·6	2·3	5·2	2·3	5·6	2·0	6·0
14	1·5	5·6	1·7	5·8	1·6	5·2	1·2	5·0
15	1·8	6·3	1·1	5·2	1·2	4·8	1·5	5·6
16	1·3	4·3	1·7	5·8	1·8	6·0	2·0	5·2
17	1·9	4·8	...	...	1·3	4·3	2·9	4·7
18	3·4	4·8	1·9	4·8	1·7	5·6	1·5	5·8
19	1·4	5·2	1·4	6·5	1·7	6·7	1·5	5·4
20	2·5	6·5	2·2	6·7	1·5	6·5	2·1	6·5
21	2·1	6·7	2·1	6·7	2·5	6·5	3·3	6·5
22	3·5	6·3	3·5	7·0	2·1	6·5	1·6	7·0
23	1·7	6·5	1·3	5·6	1·0	5·8	1·0	6·0
24	1·0	5·8	1·1	5·4	1·7	5·8	1·1	5·4
25	0·7	4·7	1·3	5·4	1·2	5·8	1·3	5·4
26	1·1	5·6	1·0	4·8	0·8	6·0	0·9	5·0
27	0·7	5·4	0·6	6·0	...	...	0·6	5·6
28	0·6	5·6	1·8	5·2	...	...	2·1	5·8
29	2·2	6·0	2·2	6·0	2·5	5·8	2·2	5·4
30	2·3	5·0	2·0	6·0	2·2	4·8	2·4	4·7
31	2·2	4·8	1·8	5·0	2·0	4·7	1·0	5·8
Mean ...	1·4	5·5	1·4	5·7	1·4	5·7	1·4	5·6
Mean for day ...	A = 1·4μ ; Tp = 5·6s.							

Month.	April.							
Hour G.M.T.	0 h.		6 h.		12 h.		18 h.	
	A.	Tp.	A.	Tp.	A.	Tp.	A.	Tp.
Day.	μ	s.	μ	s.	μ	s.	μ	s.
1	2·0	5·4	1·9	6·5	2·1	6·7	1·9	6·5
2	3·3	7·0	2·7	7·7	3·3	7·0	2·6	7·5
3	2·1	5·6	1·9	6·7	2·8	5·0	2·7	6·0
4	2·8	5·0	2·5	5·2	2·9	4·3	2·3	5·0
5	2·1	5·0	1·3	4·5	0·8	4·0	0·5	4·7
6	0·5	4·5	0·5	5·2	0·3	3·5	0·3	4·1
7	0·3	4·5	0·2	5·0	0·2	6·7	0·2	7·0
8	0·2	6·0	0·2	6·0	0·8	8·0	1·2	8·0
9	0·9	7·5	1·0	7·5	1·1	7·0	1·1	6·7
10	1·2	6·5	1·4	6·3	0·8	6·5	1·0	6·5
11	0·5	4·3	0·4	5·8	0·5	5·0	0·5	5·0
12	0·7	5·0	0·5	5·0	0·9	5·4	1·2	6·3
13	1·5	6·5	1·6	6·3	1·0	5·8	1·8	6·0
14	1·7	5·8	1·1	5·2	1·2	6·3	1·2	6·0
15	1·5	5·8	0·9	6·7	1·5	5·6	0·6	5·8
16	0·5	4·7	0·6	5·8	0·4	5·4	0·5	5·2
17	0·7	5·2	0·5	5·2	0·3	4·0	1·6	5·2
18	0·6	4·0	0·6	4·0	0·3	4·5	0·5	4·5
19	0·7	4·7	1·1	5·2	1·2	4·7	0·8	4·0
20	0·6	4·0	0·3	4·3	0·3	4·5	0·3	4·5
21	0·2	4·7	0·2	5·0	0·0	—	0·0	—
22	0·2	5·0	0·2	5·8	0·8	6·0	0·4	5·4
23	0·5	4·5	0·7	5·0	1·2	5·0	2·0	6·3
24	2·7	6·0	3·3	6·3	2·9	6·5	2·1	5·8
25	1·9	5·6	0·8	5·8	0·2	5·0	0·2	5·0
26	0·3	4·3	0·3	4·3	0·5	5·0	...	...
27	0·2	4·8	0·3	4·3	0·0	—	0·0	—
28	0·0	—	0·0	—	0·0	—	0·0	—
29	0·3	3·3	0·0	—	0·0	—	0·3	3·6
30	0·3	3·2	0·3	4·0	0·0	—	0·0	—
31								
Mean ...	1·0	5·1	0·9	5·5	0·9	5·5	1·0	5·6
Mean for day ...	A = 0·9μ ; Tp = 5·4s.							

Month.	May.							
Hour G.M.T.	0 h.		6 h.		12 h.		18 h.	
	A.	Tp.	A.	Tp.	A.	Tp.	A.	Tp.
Day.	μ	s.	μ	s.	μ	s.	μ	s.
1	0·0	—	0·0	—	0·0	—	0·0	—
2	0·0	—	0·0	—	0·0	—	0·2	7·3
3	0·5	7·7	0·9	7·3	1·2	6·0	0·8	6·5
4	0·8	6·0	0·6	6·0	0·4	6·0	0·4	5·6
5	0·2	5·0	0·4	5·6	0·7	5·2	...	...
6	0·6	6·0	0·7	5·0	0·6	5·6	0·4	5·4
7	...	...	0·5	5·2	0·3	3·7	0·3	3·6
8	0·3	3·3	0·3	4·1	0·5	5·0	0·5	5·0
9	0·3	3·7	0·3	3·9	0·3	4·3	0·3	4·3
10	0·2	5·0	0·3	3·7	0·2	4·8	0·8	4·3
11	0·7	5·0	1·0	4·8	1·2	5·0	1·0	4·5
12	0·9	5·0	0·5	5·0	0·5	5·0	0·5	4·7
13	0·5	5·2	0·5	5·0	0·5	4·5	0·7	5·2
14	0·5	4·3	0·9	5·4	0·7	5·4	0·7	5·0
15	0·9	5·0	...	...	0·5	5·0	0·7	5·2
16	0·9	5·4	0·4	5·4	1·4	6·0	1·0	6·0
17	1·0	6·0	0·7	4·7	1·1	5·6	2·1	5·0
18	2·1	5·0	1·9	5·8	1·6	5·2	2·0	5·2
19	1·7	5·6	0·9	5·2	1·0	4·7	0·7	5·0
20	0·7	5·0	0·5	5·0	...	...	0·4	6·0
21	0·4	5·6	0·2	6·0	0·2	4·8	0·2	5·4
22	0·2	5·4	0·2	5·0	0·4	6·0	0·4	6·3
23	0·5	5·0	0·2	5·4	0·2	5·8	0·5	7·5
24	0·2	5·6	0·2	5·0	0·0	—	0·2	6·5
25	0·0	—	0·0	—	0·0	—	0·0	—
26	0·0	—	0·0	—	0·0	—	0·0	—
27	0·0	—	0·0	—	0·0	—	0·2	6·0
28	0·4	5·4	0·5	5·0	0·7	5·4	0·7	5·2
29	0·7	5·4	0·2	5·0	0·2	5·2	0·3	4·5
30	0·2	5·0	0·2	6·0	0·0	—	0·3	3·7
31	0·4	5·4	1·0	4·7	0·9	5·4	0·7	5·0
Mean ...	0·5	5·2	0·5	5·2	0·5	5·2	0·6	5·3
Mean for day ...	A = 0·5μ ; Tp = 5·2s.							

Month.	June.							
Hour G.M.T.	0 h.		6 h.		12 h.		18 h.	
	A.	Tp.	A.	Tp.	A.	Tp.	A.	Tp.
Day.	μ	s.	μ	s.	μ	s.	μ	s.
1	0·7	5·4	0·5	5·0	0·2	5·4	0·2	4·7
2	0·3	4·3	0·3	4·3	0·2	5·0	0·2	4·7
3	0·3	4·1	0·3	4·1	0·2	4·8	0·2	4·8
4	0·2	5·0	0·2	5·4	0·2	5·8	0·5	7·3
5	0·7	7·5	0·6	5·8	0·7	7·3	0·5	5·0
6	0·2	5·8	0·2	4·7	0·3	4·3	0·2	5·4
7	0·2	4·8	0·0	—	0·3	4·0	0·0	—
8	0·3	3·3	0·0	—	0·0	—	0·3	3·7
9	0·3	3·9	0·3	4·5	0·3	4·3	0·3	4·3
10	0·5	4·7	0·7	4·8	1·4	6·0	1·6	7·3
11	1·2	6·3	1·0	6·0	0·6	5·8	0·6	5·6
12	0·7	5·4	0·7	5·2	0·4	5·6	0·2	6·0
13	0·6	5·6	0·2	5·6	0·2	5·0	0·2	5·4
14	0·0	—	0·2	5·0	0·0	—	0·0	—
15	0·3	4·3	0·3	4·3	0·0	—	0·3	4·0
16	0·3	4·1	0·3	4·3	0·3	4·0	0·3	4·0
17	0·3	4·3	0·3	4·5	0·2	4·7	0·0	—
18	0·0	—	0·3	4·5	0·0	—	0·3	4·3
19	0·2	4·7	0·2	4·7	0·2	4·7	0·2	4·7
20	0·5	4·3	0·7	5·0	0·9	6·7	1·0	6·0
21	1·1	6·7	0·7	5·0	0·6	6·0	...	...
22	0·5	5·2	0·4	5·4	0·2	4·8	0·2	4·7
23	0·5	4·8	0·5	5·0	0·5	5·0	0·5	5·0
24	0·5	4·5	0·2	5·0	0·5	5·0	0·2	5·0
25	0·3	4·5	0·3	4·5	...	...	0·3	3·9
26	0·3	3·7	0·6	4·0	0·3	3·3	0·3	3·6
27	0·3	3·5	0·3	4·0	0·3	4·0	0·2	5·0
28	0·5	5·0	0·5	4·8	0·3	4·5	0·3	4·5
29	0·5	4·8	0·5	4·3	0·7	4·8	0·7	5·0
30	0·5	5·0	0·7	4·8	0·5	5·0	0·3	4·3
31								
Mean ...	0·4	4·8	0·4	4·8	0·4	5·0	0·3	4·9
Mean for day ...	A = 0·4μ ; Tp = 4·9s.							

NOTE.—The symbol ... indicates that microseisms were not measured, either by reason of occurrence of earthquakes or lack of record.

Derived from readings for the period of thirty minutes centring at the exact hour, Greenwich Mean Time.

546. Richmond (Kew Observatory). **1930.**

Day	July 0 h. A. (μ)	0 h. Tp. (s.)	6 h. A. (μ)	6 h. Tp. (s.)	12 h. A. (μ)	12 h. Tp. (s.)	18 h. A. (μ)	18 h. Tp. (s.)
1	0·2	4·7	0·2	4·8	0·3	4·0	0·2	5·0
2	0·3	3·3	0·2	5·0	0·3	3·3	0·3	3·7
3	0·3	4·3	0·3	3·7	0·2	4·7	0·3	4·3
4	0·3	4·3	0·2	4·7	0·2	4·7	0·0	—
5	0·0	—	0·0	—	0·0	—	0·0	—
6	0·0	—	0·0	—	0·0	—	0·4	6·0
7	0·4	5·6	0·8	6·3	0·9	5·6	0·7	5·4
8	0·5	4·8	0·5	5·0	0·2	4·8	0·3	4·5
9	0·2	5·0	0·3	4·5	0·2	5·0	0·2	4·8
10	0·2	4·8	0·2	4·8	0·3	4·5	0·2	4·7
11	0·0	—	0·0	—	0·0	—	0·0	—
12	0·3	3·1	0·3	3·9	0·3	4·1	0·6	4·0
13	0·3	3·7	0·3	3·2	0·0	—	0·0	—
14	0·0	—	0·0	—	0·0	—	0·0	—
15	...	...	0·0	—	0·0	—	0·3	3·7
16	0·3	3·9	0·3	4·3	0·3	4·3	0·2	5·0
17	0·3	3·7	0·3	4·1	...	...	0·3	4·3
18	0·3	4·0	0·3	4·0	0·5	4·7	0·3	4·0
19	0·3	4·5	0·3	3·7	0·2	4·7	0·2	5·0
20	0·3	3·7	0·3	3·5	0·3	4·3	0·3	4·3
21	0·3	3·3	0·3	4·3	0·7	3·3	0·9	3·9
22	0·6	3·9	0·6	4·0	0·5	4·1	0·3	4·1
23	...	...	0·3	3·6	0·3	3·2	0·3	3·7
24	0·3	3·3	0·3	3·3	0·0	—	0·3	3·1
25	0·3	4·3	0·3	4·3	0·2	4·7	0·5	4·5
26	0·2	4·7	0·5	4·8	0·3	4·3	0·5	4·7
27	0·5	5·0	0·6	4·0	0·5	5·0	0·5	5·0
28	0·5	4·8	0·5	4·8	0·3	4·3	0·5	5·0
29	0·2	5·0	0·3	4·1	0·3	4·3	0·2	5·0
30	0·3	3·7	0·3	3·7	0·3	3·7	0·3	3·6
31	0·3	3·3	0·0	—	0·0	—	0·0	—
Mean ...	0·3	4·2	0·3	4·3	0·3	4·3	0·3	4·5
Mean for day ...	A = 0·3μ ; Tp = 4·3s.							

Day	August 0 h. A. (μ)	0 h. Tp. (s.)	6 h. A. (μ)	6 h. Tp. (s.)	12 h. A. (μ)	12 h. Tp. (s.)	18 h. A. (μ)	18 h. Tp. (s.)
1	0·3	4·3	0·3	4·3	0·3	3·7	0·3	4·3
2	0·3	4·3	0·8	4·0	0·9	3·7	0·9	5·0
3	0·8	4·3	1·0	4·7	0·9	5·4	0·8	4·3
4	0·8	4·5	0·5	4·1	0·3	4·1	0·2	5·0
5	0·5	5·0	0·8	4·5	0·8	4·3	0·5	4·3
6	0·7	4·8	0·5	4·8	0·3	4·5	0·5	4·7
7	0·3	4·3	0·3	4·1	0·3	3·7	0·3	4·5
8	0·2	4·8	0·2	6·0	0·3	4·5	0·2	4·7
9	0·3	4·3	0·3	4·3	0·3	4·0	0·2	5·0
10	0·4	6·7	0·2	6·3	0·2	6·0	0·2	5·4
11	0·4	6·0	0·4	5·4	0·3	4·0	0·3	4·3
12	0·3	4·3	0·3	4·3	0·3	4·5	0·5	4·1
13	0·5	4·3	0·6	4·0	0·3	4·3	0·3	4·5
14	0·3	3·9	0·3	4·0	1·2	3·7	1·1	5·4
15	1·0	4·7	0·6	4·0	0·6	3·7	0·3	3·9
16	0·3	3·7	0·4	6·0	0·3	4·3	0·3	4·5
17	0·5	4·3	0·6	5·8	0·9	5·4	0·8	4·5
18	0·7	4·7	1·1	4·0	0·3	3·5	0·3	4·3
19	0·3	4·0	0·3	4·3	0·5	4·3	0·3	4·1
20	0·2	4·8	0·3	4·0	0·8	4·0	0·9	5·2
21	1·3	4·5	1·3	4·5	0·8	4·1	2·1	4·3
22	1·5	4·7	1·1	4·1	1·4	4·1	0·6	3·7
23	0·3	4·0	0·3	4·3	0·3	3·9	0·3	3·6
24	0·6	4·0	0·5	4·5	0·3	3·7	0·3	4·5
25	0·2	5·0	0·5	4·5	0·6	4·0	0·5	5·0
26	0·5	4·5	0·3	4·0	0·3	4·0	0·3	4·3
27	0·3	4·0	0·3	4·1	0·0	—	0·3	4·0
28	0·0	—	0·0	—	0·0	—	0·0	—
29	0·0	—	0·0	—	0·0	—	0·0	—
30	0·2	5·4	0·2	6·0	0·2	6·0	0·2	6·5
31	0·2	6·0	0·2	6·0	0·0	—	0·2	7·0
Mean ...	0·5	4·6	0·5	4·7	0·5	4·3	0·5	4·7
Mean for day ...	A = 0·5μ ; Tp = 4·5s.							

Day	September 0 h. A. (μ)	0 h. Tp. (s.)	6 h. A. (μ)	6 h. Tp. (s.)	12 h. A. (μ)	12 h. Tp. (s.)	18 h. A. (μ)	18 h. Tp. (s.)
1	0·2	6·0	0·4	7·0	0·2	6·7	0·4	6·0
2	0·2	6·7	0·2	6·7	0·0	—	0·3	3·5
3	0·3	3·7	0·0	—	0·0	—	0·0	—
4	0·0	—	0·3	3·7	0·0	—	0·3	4·1
5	0·3	3·7	0·3	3·9	0·3	4·0	0·3	4·0
6	0·3	4·0	0·3	4·5	0·3	3·9	0·3	4·3
7	0·3	4·0	0·3	3·5	0·0	—	0·3	3·7
8	0·3	3·7	0·3	3·5	...	...	0·3	3·9
9	0·3	3·7	0·3	3·9	...	...	0·5	4·7
10	0·3	3·9	0·3	4·1	0·3	3·6	0·3	4·3
11	0·3	4·0	0·3	4·5	0·3	3·9	0·3	3·7
12	0·3	3·7	0·3	3·7	0·3	3·9	0·3	3·5
13	0·3	4·3	0·3	4·1	0·5	4·7	0·3	3·7
14	0·5	4·3	0·3	3·7	0·3	4·1	0·2	4·5
15	0·3	4·1	0·3	3·5	0·3	3·3	0·3	3·5
16	0·3	4·3	0·2	5·2	0·2	6·5	0·4	5·4
17	0·4	6·3	0·4	6·7	0·6	6·7	0·6	5·6
18	0·3	3·5	0·3	3·3	2·5	4·0	2·3	4·5
19	1·0	4·3	1·3	5·4	2·1	4·3	2·4	4·7
20	1·9	5·2	1·8	7·5	1·7	4·8	2·1	4·8
21	1·6	5·0	1·6	4·3	1·2	3·7	0·9	3·5
22	...	...	0·3	3·9	0·2	4·7	0·3	3·9
23	0·3	3·7	0·3	4·3	0·5	4·3	0·5	4·7
24	0·2	4·7	0·5	4·5	0·7	5·0	1·1	5·6
25	2·2	4·7	1·7	5·6	2·3	5·0	1·5	5·6
26	1·1	5·0	1·0	4·3	0·7	5·4	1·1	5·4
27	1·7	4·7	0·3	3·3	0·5	4·5	0·3	3·1
28	0·2	4·8	0·2	4·8	0·5	4·3	0·2	4·7
29	0·2	4·8	0·2	5·2	0·2	6·0	0·3	4·3
30	0·2	5·4	0·2	5·0	0·2	6·0	0·2	4·7
31								
Mean ...	0·5	4·5	0·5	4·6	0·6	4·7	0·6	4·4
Mean for day ...	A = 0·6μ ; Tp = 4·6s.							

Day	October 0 h. A. (μ)	0 h. Tp. (s.)	6 h. A. (μ)	6 h. Tp. (s.)	12 h. A. (μ)	12 h. Tp. (s.)	18 h. A. (μ)	18 h. Tp. (s.)
1	0·3	4·3	0·3	4·0	0·8	4·3	0·8	4·1
2	1·0	4·3	0·9	3·7	1·1	4·1	0·8	3·9
3	1·1	5·2	0·5	4·7	0·5	4·7	0·5	4·7
4	0·3	4·5	0·3	4·5	0·3	3·9	0·3	4·1
5	0·3	4·1	0·5	4·5	1·0	4·3	1·2	3·6
6	0·8	4·1	0·5	4·7	1·0	4·7	1·9	6·3
7	1·7	4·8	1·0	4·7	0·9	5·0	0·8	4·3
8	0·8	4·0	2·1	5·0	1·6	5·0	2·1	5·0
9	3·7	4·5	1·3	5·2	0·7	5·0	1·1	5·0
10	0·9	3·7	0·5	4·1	0·5	4·3	0·5	4·7
11	0·5	4·7	0·7	5·2	0·7	5·2	0·7	5·2
12	0·7	5·2	0·7	5·4	0·7	4·7	0·5	4·0
13	1·5	5·6	1·5	6·7	1·8	5·0	2·0	5·2
14	2·0	5·4	2·5	5·2	4·4	6·5	5·2	6·3
15	3·7	6·3	3·0	6·0	1·8	6·0	2·1	5·6
16	1·5	5·6	1·3	5·6	1·1	5·0	0·6	5·8
17	0·7	4·7	0·5	5·0	0·7	5·4	1·1	5·4
18	0·9	5·0	0·7	4·7	0·7	5·2	1·1	5·2
19	1·7	4·8	1·7	4·7	1·9	5·6	2·7	5·0
20	2·3	5·0	2·6	5·4	2·5	5·8	2·8	6·7
21	2·4	6·7	2·1	8·0	2·2	7·0	1·7	7·0
22	1·2	6·7	1·5	6·3	1·0	6·5	0·6	6·0
23	0·5	4·8	0·5	5·0	0·7	4·7	1·4	7·3
24	2·1	7·5	2·0	7·0	2·2	6·7	2·4	7·0
25	2·6	6·7	1·9	6·5	2·0	6·0	1·9	6·3
26	1·7	6·3	1·5	5·4	2·0	6·0	1·4	6·0
27	1·2	6·0	1·2	6·3	0·7	6·7	0·4	5·4
28	...	...	0·2	5·4	0·2	5·6	0·2	5·6
29	1·5	5·6	0·7	5·4	0·6	5·8	1·1	5·4
30	0·6	6·0	1·1	5·4	0·9	6·7	1·2	7·3
31	1·6	6·3	1·5	6·7	...	...	1·8	7·0
Mean ...	1·4	5·3	1·2	5·4	1·2	5·4	1·4	5·5
Mean for day ...	A = 1·3μ ; Tp = 5·4s.							

Day	November 0 h. A. (μ)	0 h. Tp. (s.)	6 h. A. (μ)	6 h. Tp. (s.)	12 h. A. (μ)	12 h. Tp. (s.)	18 h. A. (μ)	18 h. Tp. (s.)
1	1·8	7·0	1·9	6·7	1·9	7·5	1·7	7·5
2	1·4	7·3	1·9	6·7	2·6	6·0	2·5	6·5
3	2·7	5·8	2·9	6·5	2·2	5·4	2·1	5·8
4	1·9	6·5	1·9	5·6	2·1	5·0	1·8	6·0
5	1·5	6·7	1·5	6·7	2·5	4·5	2·4	5·4
6	4·1	5·0	3·9	5·0	3·7	5·0	2·8	5·4
7	2·4	4·7	2·9	5·8	1·0	4·5	1·1	5·0
8	1·6	5·0	1·9	5·8	2·6	6·0	2·1	5·8
9	2·0	5·2	2·2	5·2	1·7	6·3	1·9	5·6
10	2·3	6·3	1·7	7·3	1·7	7·3	2·2	7·0
11	1·8	7·0	2·9	5·2	2·0	6·7	1·9	6·3
12	2·1	5·8	2·7	5·8	1·6	6·0	1·8	5·2
13	1·9	6·7	1·9	6·5	2·2	6·7	2·1	7·3
14	2·0	6·0	1·6	5·2	1·4	5·0	1·2	6·0
15	1·2	6·0	1·6	5·8	1·0	4·5	0·8	4·3
16	0·5	4·3	0·5	4·3	0·7	4·8	1·1	4·1
17	1·0	6·0	1·1	6·7	1·7	6·5	2·0	7·0
18	2·7	5·2	2·8	6·7	2·0	6·0	2·0	6·0
19	2·2	5·4	2·2	5·4	1·7	6·3	1·9	6·3
20	2·0	6·0	2·1	5·8	...	...	0·7	5·2
21	1·0	5·0	1·8	5·6	2·2	5·8	3·0	6·0
22	2·6	6·0	3·5	5·8	4·1	5·6	3·5	5·8
23	2·9	5·0	2·8	5·4	1·9	6·0	0·8	4·3
24	0·5	5·0	0·5	5·0	2·0	4·3	1·6	5·4
25	1·6	5·4	1·6	5·6	1·6	5·6	1·5	6·0
26	1·5	6·0	1·5	6·0	2·0	5·6	2·2	6·0
27	2·0	6·7	1·9	7·0	2·0	6·7	1·9	7·0
28	1·5	6·3	1·0	7·0	1·1	4·3	1·1	4·3
29	1·1	4·5	0·8	4·8	0·7	5·0	0·7	4·8
30	0·5	4·7	0·5	4·8	0·4	5·2	0·4	5·8
31								
Mean ...	1·8	5·7	1·9	5·9	1·9	5·7	1·8	5·8
Mean for day ...	A = 1·8μ ; Tp = 5·8s.							

Day	December 0 h. A. (μ)	0 h. Tp. (s.)	6 h. A. (μ)	6 h. Tp. (s.)	12 h. A. (μ)	12 h. Tp. (s.)	18 h. A. (μ)	18 h. Tp. (s.)
1	1·4	7·5	1·9	7·5	1·8	7·0	1·9	7·7
2	2·9	7·7	3·4	7·7	3·1	7·3	2·8	7·5
3	3·1	7·5	1·7	7·3	1·7	7·3	1·5	6·7
4	1·4	6·0	1·7	6·5	1·9	6·7	1·9	7·5
5	1·8	8·0	2·5	8·0	1·9	7·5	2·0	7·5
6	2·1	7·3	1·7	6·3	1·1	7·0	1·7	6·5
7	1·2	6·0	0·9	6·7	0·8	6·5	0·8	6·3
8	1·3	6·5	0·8	5·8	0·4	5·6	0·6	6·0
9	0·6	5·6	0·6	6·5	1·5	6·5	1·4	7·0
10	1·1	6·5	0·5	4·7	0·5	4·5	0·5	5·0
11	0·6	6·5	0·5	4·7	0·9	5·0	1·6	5·0
12	1·6	5·2	1·6	6·0	1·6	7·0	2·0	5·8
13	1·7	6·7	2·0	7·0	2·1	6·3	4·0	7·3
14	4·7	7·0	5·4	7·3	4·1	7·7	4·7	7·3
15	4·0	7·0	2·6	7·5	2·0	7·0	1·3	6·7
16	1·2	7·5	1·6	5·2	0·9	5·2	1·7	6·7
17	2·8	8·0	2·0	7·7	1·7	7·5	1·7	7·5
18	2·5	7·7	1·6	8·3	3·7	8·3	3·1	8·7
19	2·5	8·0	1·8	7·0	1·9	6·7	1·7	7·5
20	1·7	6·5	1·0	6·3	0·4	6·0	0·4	6·0
21	0·6	5·8	0·6	5·6	0·6	5·6	0·8	6·3
22	1·5	6·7	0·6	6·3	0·9	5·4	0·7	5·4
23	0·5	4·5	0·4	5·4	0·7	4·5	0·6	6·0
24	0·5	4·8	0·5	5·0	0·2	5·0	0·3	4·3
25	0·3	4·5	0·7	5·4	0·7	5·4	0·9	5·2
26	1·0	4·8	1·8	5·0	1·9	5·8	3·6	5·6
27	3·7	7·3	4·0	6·5	3·3	6·7	3·5	7·3
28	4·9	7·0	5·8	6·3	4·0	7·0	3·6	6·7
29	2·4	6·7	2·1	6·0	3·7	6·7	2·6	6·7
30	2·0	7·0	2·1	6·5	1·9	6·5	2·7	6·5
31	3·1	6·3	1·9	6·3	1·9	6·7	3·4	6·5
Mean ...	2·0	6·6	1·8	6·4	1·7	6·4	1·9	6·5
Mean for day ...	A = 1·9μ ; Tp = 6·5s.							

NOTE.—The symbol ... indicates that microseisms were not measured, either by reason of occurrence of earthquakes or lack of record.

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