WEATHER BUREAU
GEOPHYSICAL DIVISION
Manila

1952

No. 37

January 1952

ϕ = 14° 40' N λ = 121° 05' E h = 70.4 m. Tuff

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INSTRUMENTS

2 Sprengnether horizontal seismometers, Series H (for microseismic work). Sprengnether seismometers, Series D-H: 1 N-S horizontal component and 1 vertical component. 1 Wood-Anderson torsion seismometer.

Data taken from Sprengnether, Series D-H unless otherwise stated.

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	JAN.						
1	1	e	15	20	15		
2	2	iP	19	41	27	125	
		iS			39		
3	3	e	15	52	29		
4	3	iP	20	42	14		
		e			31		
		i		43	17		
5	4	e	05	57	56		Teleseismic.
6	5	eP	04	55	21	240	
		eS			49		
7	6	eP	14	05	08		
8	7	iP	15	35	22	250	
		iS			46		
9	8	iP	12	24	35		Traces disappeared due to large amplitudes. Epicentral distance by Ambulong: 290 kms.
10	9	eP	11	44	45		
11	9	iP	11	51	23		Traces disappeared. Felt at Baler, Int. III Infanta, Int. III Baguio, Int. II Manila, Int. II Casiguran, Int. I Epicenter: 15°5N; 121°8E
12	9	eP	12	42	02	140	Felt at Baler, Int. II
		iS			19		
13	9	eP	18	38	34	140	Same as No. 12.
		iS			51		
14	9	iP	19	35	27	280	Felt at Casiguran, Int. I
		eS		36	00		
15	10	iP	12	17	29	260	
		eS		18	00		

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No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	JAN.						
16	11	iP	04	07	12	3700	Normal depth.
		i			18	or	
		iPR_1		08	21	33°3	
		iS		12	17		
		iSR_1		13	57		
17	12	iP	06	04	59	2950	
		iPR_1		05	40	or	
		iS		09	23	26°4	
18	12	iP	20	22	36	7750	
		ePR_1		25	12	or	
		eS		31	34	69°6	
		eSR_1		36	17		
19	12	iP	21	33	43	170	
		iS			59		
20	12	iP	21	39	20	370	
		iS			55		
21	12	iP	22	58	06	170	Probably same as No. 19.
		iS			22		
22	12	iP	23	02	23	170	Do.
		iS			39		
23	12	e	23	04.7			Local. Covered by previous tremor.
24	12	iS	23	07	32		Local. P covered by previous tremor.
25	13	iP	04	05	52		Teleseismic. Trace disappeared due to large amplitude.
26	13	iP	11	20	08	170	Same area as No. 19.
		iS			24		
27	13	iP	13	23	16	170	Do.
		iS			32		
28	13	iP	22	33	36	190	
		iS			53		
29	16	iP	03	37	05	170	Felt at Manila, Int. II Epicenter: 14°3N; 119°7E
30	17	eP	04	39	21		Local.
31	17	eP	18	53	26	135	
		iS			44		
32	21	e	03	53	49		Teleseismic.
33	21	eP	14	55	41	210	Felt at Calapan Int. III
34	21	eP	20	05	38	140	
		iS			54		

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SEISMOLOGICAL BULLETIN ... Cont'd

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No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Km.	REMARKS
	Jan.						
35	23	eP	03	36	05		Teleseismic.
36	24	eP	03	00	12	190	Felt at Baguio, Int.II
		eS			34		
37	24	eP	06	29	08	145	
		eS			25		
38	28	eP	21	55	13	500	Felt at Dumaguete, Int. III
		eS		56	12		Iloilo, Int. I
39	29	iP	00	56	54		Felt at Iloilo, Int. III
40	29	eP	03	22	06		Dumaguete, Int. II
							Felt at Iloilo, Int. I
41	29	eP	06	24	08	490	
		eS		25	06		
42	30	iP	01	52	29	160	
		iS			44		
43	31	eP	07	08	10	370	
		eS			54		
44	31	iS?	08	10	32		
45	31	iS?	15	33	08		
46	31	iP	20	16	53	505	Felt at Virac, Int. III
		iS		17	41		

The following tremors, presumably of volcanic origin, were reported felt at Dumaguete, Negros Oriental, but were not re - corded at Diliman, Quezon City.

		h	m		
Jan.	7	06	14	(GMT)	Int. II
	7	14	19		IV
	8	20	51		I
	10	11	38		I
	17	02	54		I
	28	23	40		II

Department of Commerce and Industry
WEATHER BUREAU
GEOPHYSICAL DIVISION
Manila

No. 38

February 1952

ϕ = 14° 40' N λ = 121° 05' E h = 70.4 m. Tuff

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INSTRUMENTS

2 Sprengnether horizontal seismometers, Series H (for microseismic work). Sprengnether seismometers, Series D-H: 1 N-S horizontal component, 1 E-W horizontal component, and 1 vertical component. 1 Wood-Anderson torsion seismometer.

Data taken from Sprengnether, Series D-H, unless otherwise stated.

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 FEB.						
47	1	eP	01	14	19		Felt at Catbalogan, Int. II Tacloban, Int. II
48	2	iP iS	01	11	08 36	290	
49	2	eP	10	22	15		
50	2	eP eS	11	23	07 25	150	
51	2	eP	23	09	05		Teleseismic.
52	5	iP iS	02	45 46	42 18	380	
53	5	iP iS	16	52 54	46 23	1000 or 900	Magnitude 6. Felt at Hinatuan, Int. V Butuan, Int. V Davao, Int. IV Mambajao, Int. III
54	7	iP ePR$_1$ eS	14	43 44 46	47 02 47	1750 or 1507	
55	9	eP	05	31	11		Teleseismic?
56	9	e	19	06	37		Teleseismic?
57	11	iP e	07	05 08	26 03		
58	11	iP iS	08	22 23	55 17	230	
59	11	iP iS	11	28	07 17	105	
60	11	iP	16	30	31		
61	11	eP eS	23	48 49	38 03	210	
62	12	iP	05	46	50	1070	

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No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms	REMARKS
	1952 FEB.						
63	12	iP	20	22	22	3600	
		iPR_1		23	30	or	
		iS		27	21	32°4	
		eLq		29	07		
64	13	iP	06	04	19	340	
		iS			51		
65	13	eS?	22	20	02		
66	14	iP	03	43	18		Local masking teleseismic.
67	14	iP	08	38	29		
68	14	iP	12	26	35		
69	16	iP	13	35	23	2600	
		ePR_1			59	or	
		iS		39	33	23°5	
70	16	iP	21	10	06	2650	
		iPR_1			41	or	
		iS		14	18	23°8	
71	17	iS?	07	00	59		
72	17	eP	08	59	56	450	Felt at Calayan, Int. IV.
		eS	09	00	49		
73	18	iP	08	24	51	200	
		iS		25	10		
74	18	eP	18	38	02	425	Felt at Virac, Int. II.
		eS			52		
75	20	iP	18	13	02	680	Magnitude $5\frac{1}{4}$.
		iS		14	07		Felt at Catbalogan, Int. II Borongan, Int. IV.
76	22	eP	02	01	27	535	
		eS		02	30		
77	22	iP	08	17	20	560	Magnitude 5 $\pm$
		iS		18	13		Felt at Tacloban, Int. II.
78	22	eP	09	22	20	535	Probably same epicentral area as No. 76.
		eS		23	23		
79	22	eP	10	34	44	460	
		eS		35	38		
80	22	eP	19	11	33	570	Magnitude $4\frac{1}{2}$.
		eS		12	26		Felt at Cuyo, Int. III.
81	23	eP	01	17	05	195	
		iS			28		
82	24	eP	13	02	33		

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No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms	REMARKS
	1952 FEB.						
83	24	eP	23	00	57		
84	25	eP	01	28	30		Teleseismic.
		e			48		
85	26	iP?	10	55	32		
86	26	iP	11	50	43	10000	Readings doubtful.
		ePR_1		53	32	or	
		eSPP		56	21	90?0	
		eS	12	00	13		
		eSR_1		01	39		
87	26	eP	12	52	12	600	Felt at Tacloban, Int. II
		eS		53	22		
88	27	iP	10	20	03	290	
		iS			31		

The following macroseismic tremors were reported but were not recorded at Manila:

		h	m (GMT)	
Cebu	Feb. 4	07	01	Int. II
Mambajao	Do			Int. III
Catbalogan	Feb. 9	20	36	Int. II
Daet	13	09	24	Int. III
Tacloban	23	00	05	Int. II
Virac	23	05	39	Int. II
Tacloban	28	02	15	Int. III
Hinatuan	25	13	00	Int. II

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Department of Commerce and Industry
WEATHER BUREAU
Geophysical Division
Manila

JUL 7 1952

No. 39

March 1952

ϕ = 14° 40' N λ = 121° 05' E h = 70.4 m. Tuff

International Seismological Centre

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INSTRUMENTS

2 Sprengnether horizontal seismometers, Series H (for microseismic work). Sprengnether seismometers, Series D-H: 1 N-S horizontal component, 1 E-W horizontal component, and 1 vertical component. 1 Wood-Anderson torsion seismometer.

Data taken from Sprengnether, Series D-H, unless otherwise stated.

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 MAR.						
89	1	iP iS	06	07 10	42 14	1500 or 1397	
90	1	iP iS	10	02 03	51 43	590	
91	1	iP	15	37	41		Teleseismic.
92	2	eP	02	50	05		
93	2	eP iS	06	41 42	29 32	535	Felt at Calayan, Int. III Aparri, Int. III Epicenter: 19°.1N; 122°.5E Didicas volcano.
94	3	iP iS	05	43 44	56 14	190	
95	3	eP	07	24	09		Teleseismic.
96	3	iP iS	15	48	27 45	190	
97	4	iP iS	01	29 35	44 16	3800 or 3490	Hokkaido earthquake. Deta from Ambulong Seismic Station.
98	4	iP eS	16	37 43	48 17		Aftershock Hokkaido quake.
99	4	iP	19	39	07		Teleseismic.
100	4	iP eS	20	03 08	06 38		Aftershock Hokkaido quake.
101	4	eP eS	20	50 56	47 10		Do.
102	5	iP	01	27	10		
103	5	eP	02	55	47		Local.
							Aftershock Hokkaido quake.

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 Mar.						
105	5	eP eS	04	30 31	37 01	200	
106	5	eP eS	08	22 23	43 31	410	
107	5	eP eS	09	23 29	52 11		Aftershock Hokkaido quake.
108	5	iP	10	57	38		
109	5	iP eS	16	01 06	07 47		Aftershock Hokkaido quake.
110	5	iP	18	04	33		
111	5	eP	20	47	50		
112	5	iS?	22	53	00		
113	6	eP eS	18	00 01	42 49	570	Felt at Catbalogan, Int. II Tacloban, Int. II
114	7	iP iS	07	38 42	09 44	2950 or 26°5	
115	7	eP eS	09	51 56	15 57		Aftershock Hokkaido quake?
116	7	i	11	51	24		
117	7	eP eS	13	47 49	49 06	650	Felt at Tacloban, Int. II
118	7	eP	14	24	47		Felt at Tacloban, Int. II
119	7	eP	14	55	21		
120	7	eP eS	16	48 49	28 40	610	
121	7	eP	18	22	55		Teleseismic.
122	7	eP	19	50	51		Teleseismic.
123	8	e	02	00	26		
124	8	eP iS	04	21 22	52 22	250	
125	8	e	04	32	12		
126	8	eS?	07	32	30		Teleseismic.
127	8	eP	13	43	15		Teleseismic?
128	8	iP iS	18	26	28 45	180	

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No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 Mar.						
129	9	e	07	01.5			
130	9	iP	17	10	25		Aftershock Hokkaido quake.
		iS		15	48		
		iLq		17	23		
131	9	iP	19	51	42	95	
		iS			51		
132	9	iP?	20	12	49		
133	10	iP	07	16	16	240	
		iS			39		
134	10	e	17	44	50		
135	10	i	18	07	57		Teleseismic.
136	11	eP	21	51	21		Felt at Iloilo, Int. I
137	12	iP	01	08	12	160	Felt at Manila, Int. II
		iS			27		Iba, Int. II
138	12	eP	05	44	24		
139	12	eP	08	13	27	430	
		eS		14	17		
140	12	eP	13	45	02	590	
		eS		46	11		
141	13	eP	01	28	40		
142	13	iP	14	01	01	1700 or 15°3	
		iS		03	51		
143	14	iP	21	02	13	3770 or 33°9	
		ePR_1		03	14		
		ePR_2			34		
		iS		07	44		
144	15	iP	01	17	55	320	
		iS		18	25		
145	15	eP	01	23	13	400	Previous quake still recording.
		eS		24	00		
146	15	iP	05	11	55		Possibly two quakes.
		i		12	30		
		i		15	52		
147	15	e	05	50	xx		
148	15	e	07	19	49		

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No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 Mar.						
149	15	eP	11	21	30	2735	
		ePR_1		22	01	or	
		iPR_2			14	24°6	
		iS		25	53		
		eL		26	55		
		F	12.2				
150	15	e	11	59	50		
		e	12	00	51		
151	16	iP	16	54	22	170	
		iS			38		
152	17	iP	05	23	02	280	
		iS			39		
153	18	eP	11	05	47		Teleseismic.
154	19	iP	07	41	52.	260	
		iS		42	17		
155	19	e	08	05	30		Felt at Aurora, Int. II
156	19	eP	09	09	35	2735	
		ePR_1		10	06	or	
		iS		13	58	24°6	
157	19	eP	10	59	09	720	Felt at Butuan, Int. VI; Surigao, V; Mambajao, V; Tacloban, IV; Cebu, IV; Cagayan, IV; Dipolog, IV; Catbalogan, IV; Davao, IV; Dadiangas, III; Virac, III; Hinatuan, III; Borongan, III; Iloilo II; Malaybalay, II. Epicenter: 9°4N; 125°1E
		eS	11	00	34		
158	19	eP	14	41	31		Teleseismic?
159	19	eS?	19	27	48		Teleseismic?
160	20	iS	05	25	41		
161	20	eP	06	17	40	830	
		eS		19	18		
162	20	eP	07	56	12	820	
		eS		57	48		
163	20	eS?	15	00	36		
164	20	e	15	33	xx		
165	20	eP	20	58	25	810	
		eS	21	00	00		
166	20	eP	23	48	08		Teleseismic.

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No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 Mar.						
167	21	e	00	51	20		
168	21	eP	03	48	34		
169	21	eP	04	14	46	130	
		eS		15	01		
170	21	eP	08	53	05		
171	21	eP	16	19	39		Teleseismic.
		e		21	45		
		e		26	54		
172	22	eP	09	08	27	370	
		eS		09	10		
173	22	eP	12	00	42	830	Felt at Hinatuan, Int. II Surigao, Int. I
		eS		02	20		
174	22	eP	13	55	27	910?	
		eS?		57	14		
175	22	eP	14	25	40	820	Felt at Surigao, Int. III Hinatuan, Int. II Epicenter: 9°7N; 126°6E
		eS		27	16		
176	22	eP	18	26	17		
177	22	eP	19	03	13		
178	22	eP	22	33	11		
179	22	eP	23	09	20		
180	23	eP	07	59	51		
181	24	eP	13	26	39	110	
		eS			52		
182	24	eP	15	52	43	630	
		eS		53	57		
183	25	eP	04	19	06	6900	Interpretation doubtful.
		ePR_1		21	31	or	
		eS		27	40	62°5	
184	25	eP	09	36	50		
185	25	eP	18	31	28	150	
		eS			46		
186	26	eP	09	16	38	190	
		eS		17	00		
187	26	eP	21	31	52		
188	28	eP	05	50	08		Teleseismic?
189	28	e	08	39	08		Felt at Zamboanga, Int. II

SEISMOLOGICAL BULLETIN ... Cont'd

International Seismological Centre

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 Mar.						
190	28	iP	21	48	14	190	
		iS			32		
191	29	eP	08	57	40		
192	29	eP	21	44	30		Possibly two quakes.
		i		45	02		
		e		50	00		
193	30	eP	06	32	18		
194	30	e	21	48	xx		Teleseismic.
195	31	iP	06	22	48		
196	31	iP	08	12	55	250	
		iS		13	19		
197	31	e	19	19	25		

The following macroseismic tremors were reported but were not recorded at Manila:

		h	m	(GMT)	
Tacloban	Mar. 6	17	51		Int. II
Butuan	20	06	10		Int. I Aftershock of #157.
do	20	08	00		Int. I Do.
do	20	21	00		Int. III Do.
do	20	22	30		Int. III Do.
do	21	03	00		Int. I Do.
do	22	12	00		Int. II Do.
do	22	13	42		Int. II Do.
do	22	14	03		Int. III Do.
do	22	14	06		Int. II Do.

THE BUTUAN EARTHQUAKE OF MARCH 19, 1952

This earthquake which occurred at about seven o'clock Wednesday evening, March 19th, was felt practically all over the Visayas and Mindanao. Its center has been placed in the Mindanao Sea and approximately fifty kilometers northnorthwest of Butuan City. It was most likely caused by movement along a fault zone passing west of Surigao Province and into the Agusan River Valley in which Butuan City is located.

No appreciable damage caused by the earthquake has been reported. At Butuan, where the intensity was highest, the only known structural damage according to information were the cracks produced in one of the East-West walls of the church. A two by three meters section of the wall fell and broke some of the church pews. No agitation of the sea or river water was noted.

Seismological Station 208 Campus

Geophysical Division
Manila

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No. 40

April 1952

ϕ = 14° 40' N λ = 121° 05' E h = 70.4 m. Tuff

International Seismological Centre

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INSTRUMENTS

2 Sprengnether horizontal seismometers, Series H (for microseismic work). Sprengnether seismometers, Series D-H: 1 N-S horizontal component, 1 E-W horizontal component, and 1 vertical component. 1 Wood-Anderson torsion seismometer.

Data taken from Sprengnether, Series D-H, unless otherwise stated.

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 APR.						
198	1	eP	09	51	30		
199	1	eP	13	44	01		
200	1	e	14	19	50		Teleseismic.
201	2	e	08	32	19		
202	2	eP iS	10	39	40 58	150	
203	2	iP	13	07	01		
204	2	iP	20	50	42		Local. Deep seated?
205	3	eS?	04	00	45		
206	3	eP	08	32	49		
207	3	eP	12	35	42		
208	3	eP?	15	47	55		Teleseismic.
209	4	iP i	03	01 08	38 31		Teleseismic?
210	4	eP	04	58	59		
211	4	iP iS	07	51 53	36 15	1050	
212	4	e	18	19	xx		Felt at Hinatuan, Int. II.
213	5	eP?	03	14	54		Teleseismic.
214	5	eP e	08	43 46	43 58		Teleseismic.
215	5	e	11	13	33		
216	5	iP eS	19	44 45	42 29	400	
217	6	eP	04	10	25		Teleseismic?

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No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 APR.						
218	8	iP eS	10	02 03	01 22	690	Felt at Dipolog, Int. VI Dumaguete, Int. IV Iloilo, Int. III Mambajao, Int. III Cagayan, Int. III Zamboanga, Int. II Butuan, Int. II Epicenter: 8°.5N; 122°.7E Magnitude: 5½
219	8	eP eS?	20	20 21	41 53	610?	
220	9	iP iS	01	32 33	08 16	710	Felt at Butuan, Int. II.
221	9	e	20	12	55		Teleseismic.
222	10	eP e	03	45 47	37 39		Teleseismic?
223	10	iP i	04	46 49	14 55		Teleseismic.
224	10	iP eS	05 06	59 01	45 38	960	
225	12	eP	01	37	24		
226	13	eP eS	13	21 22	48 16	240	
227	13	eP eS	16	04	15 30	130	
228	14	eP eS	10	53 54	11 04	450	
229	14	eP eS	21	14	32 46	120	
230	14	iP e	23	52 55	50 17		Teleseismic.
231	15	eP e	06	06 11	27 42		Teleseismic.
232	15	eP e	09	26 34	13 48		Teleseismic.
233	15	e	19	24	xx		
234	16	eP	08	30	33		Teleseismic?
235	17	eP e	04	00 04	24 05		Teleseismic.
236	19	iP e	10	18 20	45 50		Teleseismic.

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 APR.						
237	19	iP	11	18	22		Teleseismic.
238	20	iP	16	28	25	85	
		iS			33		
239	20	eP	16	29	30	290	Previous quake still recording.
		iS		30	04		
240	20	eP	17	03	21		Teleseismic.
241	21	eP	01	12	23	250	
		eS			53		
242	21	eP	06	17	08		
243	21	eP	22	25	04	290	
		eS			38		
244	22	eP	19	48	03	2800	
		iS		52	29	or 25°4	
245	23	eP	02	38	28	290	Felt at Cuyo, Int. III
		eS		39	02		
246	23	e	16	01	xx		
247	24	eP	01	52	01		
248	25	eP	06	21	47		Teleseismic?
249	25	iP	16	44	37	1200	
		iS		46	33	or 10°8	
250	26	iP	02	05	01		
251	26	eP	12	33	19		
		e		35	08		
252	26	eP	12	42	15		Felt at Butuan, Int. III
		e		43	57		
253	26	e	21	01	21		Teleseismic.
254	27	eP?	13	37	11		Felt at Cantilan, Surigao
		e		39	30		
255	27	e	14	59	xx		Teleseismic.
256	28	iP	10	59	54	4900	
		ePR_1	11	00	27	or	
		ePR_2		03	08	44°0	
		eS		06	33		
		F	11	20			
257	29	iP	02	38	00	1250	
		iS		40	02	or 11°2	

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SEISMOLOGICAL BULLETIN ... Cont'd

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No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 APR.						
258	29	iP	03	19	40		Teleseismic
		eL		30	xx		
259	30	eP	01	31	12	480	
		eS		32	09		

The following macroseismic tremors were reported but were not recorded at Manila:

			h	m	(GMT)	
Cantilan	Apr.	3	20	55		Slight earthquake.
Basco		10	16	19		Int. II.

THE DIPOLOG EARTHQUAKE OF APRIL 8, 1952

Dipolog, Capital of Zamboanga Province in Mindanao, was rocked by an earthquake of fairly strong intensity (R.F. VI) at six o'clock in the evening of April 8, 1952. The macroseismic area of the tremor covered western Mindanao, Bohol, Cebu, Negros and southern Panay Island. Its epicenter has been placed at 8°5N; 122°7E, or approximately 40 kilometers west of Dipolog and in the Sulu Sea. Probable cause of the tremor was movement along a NE-NW trending fault zone passing between Negros and Cebu Islands and down along the western coast of Zamboanga Province.

No structural damages have been reported for this earthquake.

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Campus

Department of Commerce and Industry
WEATHER BUREAU
Geophysical Division
Manila

International Seismological Centre

No. 41

ϕ = 14° 40' N λ = 121° 05' E h = 70.4 m. Tuff

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INSTRUMENTS

2 Sprengnether horizontal seismometers, Series H (for microseismic work). Sprengnether seismometers, Series D-H: 1 N-S horizontal component, 1 E-W horizontal component, and 1 vertical component. 1 Wood-Anderson torsion seismometer.

Data taken from Sprengnether, Series D-H, unless otherwise stated.

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 MAY						
260	1	iP	01	33	57		
261	1	eP	02	28	00		Teleseismic.
		e		31	25		
262	1	iP	08	38	02	190	
		iS			20		
263	1	iP	11	16	01	190	
		iS			19		
264	1	e	16	52	19		
265	2	eP?	06	49	22		
266	2	eP	11	19	26		
267	3	eP	04	08	57	700	Felt at Surigao, Int. IV
		eS		10	19		Butuan, Int. III
268	3	e	10	26	30		
269	3	iP	11	08	16	730	
		eS		09	42		
270	3	iP	18	44	39		Teleseismic.
271	4	iP	14	26	42	7600	
		iPR_1		29	24	or	
		ePR_2		31	09	69°0	
		eS		35	50		
272	4	iP	15	36	30	30	
		iS			33		
273	5	iP	01	19	32		Teleseismic.
275	5	iP	04	51	56		Teleseismic.
276	6	e	03	34	50		
277	6	iP	08	18	24	160	Tentative epicenter:
		iS			39		15°.2N; 121°.6E

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No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 MAY						
278	6	eP	19	10	59		
		e		11	31		
279	7	iP	00	01	22		
280	7	eP?	16	01	14		Teleseismic.
		ePR1		02	21		
		eS		07	42		
281	7	iP	16	15	33	2800	
		e		16	11	or	
		eS		19	55	2500	
282	7	iP	19	17	18		Teleseismic.
283	7	eP	19	45	31		Teleseismic?
284	8	eP	01	04	19		Teleseismic.
		e		05	44		
		e		07	17		
		e		15	11		
285	8	eP?	14	56	51		
		eS		58	59		
286	8	iP	21	13	58	1650	h = 100 Kms. ±
		ePR_1		14	41	or	
		eS		16	33	1409	
		eP_cP		18	46		
287	8	eP	21	55	59		Previous quake still recording.
		eS?		56	37		
288	9	iP	03	39	45		Teleseismic.
289	9	iP	17	55	14	4200	
		e		56	34	or	
		eS	18	01	09	3800	
		eSR_1		03	19		
		eSR_2			49		
		F	19				
290	9	iP	21	21	57	350	
		eS		22	38		
291	10	eP	08	43	57		Teleseismic?
292	10	iP	17	07	34	2300	Deeper than normal.
		isP			57	or	
		iPR_1		08	05	2007	
		eS		11	01		
293	11	eP	14	35	53	390	Felt at Legaspi, Int. III
		eS		36	39		
294	11	eP	18	14	56	390	Felt at Legaspi, Int. II
		eS		15	42		

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SEISMOLOGICAL BULLETIN ... Cont'd

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 MAY						
295	13	iP	19	51	14		Teleseismic.
		e		54	28		
296	14	iP	00	43	44		Teleseismic.
		e		44	13		
		eS?		53	57		
297	15	iP	10	26	33	530	Felt at Aparri, Int. IV, Lacag, Int. III.
		eS		27	34		
298	15	eP	12	29	01	480	
		eS			58		
299	16	eP	00	23	19	140	
		eS		24	35		
300	16	e	09	16	xx		
301	16	iP	10	09	35	610	
		iS		10	33		
302	16	e	16	31	04		
303	16	eP	17	09	37		
304	16	e	18	07	34		
305	16	iP	21	05	31		Teleseismic.
306	17	eP	02	37	59	1200?	
		eS?		39	59		
307	17	eP	06	03	56	3900	Interpretation doubtful.
		i		04	36	or	
		i		06	37	35°0	
		iS?		09	32		
308	17	eP	09	54	56	3900	
		ePR_1		56	00	or	
		ePR_2			36	35°0	
		iS	10	00	36		
		iSR_1		02	38		
		iL		05	07		
309	17	iP	12	29	08	480	
		iS			54		
310	17	eP	12	37	34	480	Previous qunke still recording.
		iS		38	20		
311	19	eP	03	19	31	370	
		eS		20	14		
312	19	eP	05	15	37		
		eS?		16	42		
313	19	eP	18	39	03	3900	
		ePR_1		40	08	or	
		ePR_2			43	35°0	
		iS		44	43		
		iSR_1		49	12		

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No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE kms.	REMARKS
	1952 MAY						
314	20	eP	02	38	02	480	
		eS			58		
315	20	eP	08	09	49	420	
		eS		10	39		
316	20	eP	13	42	43		
317	20	iP	15	13	16	500	Felt at Aparri, Int. IV
		iS		14	04		
318	21	e	08	58	xx		
319	21	e	13	00	18		
320	21	eP	17	05	07	130	
		iS			22		
321	22	eP	18	16	08		Teleseismic.
322	22	iP	23	12	24	1800.	
		iPR_1			38	or	
		ePR_2			41	16°0	
		iS		15	30		
		eSR_1		16	00		
		eL			42		
323	23	iP	04	25	52	2600	
		ePR_1		26	19	or	
		ePR_2			33	23°3	
		iS		30	05		
		iSR_1		31	03		
		eL		32	38		
324	23	eP	05	54	23	370	
		eS		55	07		
325	23	e	20	34	57		Teleseismic.
326	24	eP	02	19	18	3700	
		ePR_1		20	17	or	
		ePR_2			34	33°0	
		iS		24	17		
		eSR_1		26	06		
		iLq		30	56		
327	24	iP	16	11	37	3700	
		iPR_1		12	29	or	
		iPR_2			57	33°0	
		eS		16	33		
		eSR_1		18	19		
		iLr		20	07		
		eLq		23	27		
328	25	eP	01	54	25	250	
		eS			55		

NO.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 MAY						
329	25	iP	05	30	19	160	
		iS			34		
330	25	e	06	08	05		
331	25	iP	07	06	30	2000 or 1800	t Interpretation doubtful.
		e			48		
		e			52		
		eS		09	56		
332	25	eP	16	02	13		Teleseismic.
		e		03	12		
333	25	eP	23	31	40	320	
		eS		32	18		
334	25	eS	23	34	57		
335	26	eP	02	44	34	450	Felt at Aparri, Int. III
		eS		45	27		
336	27	eP	00	46	44	140	
		iS		47	00		
337	28	eP	04	07	05	150	
		eS			23		
338	28	iP	08	03	49	150	
		iS		04	03		
339	28	eP?	08	04	57		Teleseismic.
		e		07	39		
340	29	e	20	36	35		
341	30	eP	01	19	01	670	
		eS		20	20		
342	30	eP	05	21	52		
343	31	eP	05	06	50		Teleseismic.
		eS?		12	48		

The following macroseismic tremors were reported but were not recorded at Manila:

		h	m	(GMT)	
Carigara, Leyte	May 4	12	32		(PNS report)
Tacloban, Leyte	6	15	10	Int. II	
Aparri	16	08	26	Int. III	
Claveria	do	do			
Basco	29	17	18	Int. II	

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REPUBLIC OF THE PHILIPPINES
Department of Commerce and Industry
WEATHER BUREAU
GEOPHYSICAL DIVISION
Manila

SEP 26 1952

International Seismological Centre

No. 42

June 1952

ϕ = 14° 40' N λ = 121° 05' E h = 70.4 m. Tuff

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INSTRUMENTS

2 Sprengnether horizontal seismometers, Series H (for microseismic work). Sprengnether seismometers, Series D-H: 1 E-W horizontal component and 1 vertical component; Series H for N-S horizontal component (long period). 1 Wood-Anderson torsion seismometer.

Data taken from Sprengnether Series D-H and Series H N-S component.

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 JUNE						
344	2	eP eS	00	19	33 48	130	
345	2	e	03	00	32		
346	2	eP	16	09	43		
347	2	iP	18	09	22		Traces disappeared after P. Felt at Davao, Int. V and Hinatuan, Int. II.
348	3	eP	18	56	47		Teleseismic.
349	4	iP iS	04	03	38 47	95	Felt at Infanta, Int. III Epicenter: 14°.5N; 122°.0E
350	5	iP eS iL	09	15 16 17	35 36 40	520	Felt at Surigao, Int. IV Butuan, Int. IV Hinatuan, Int. III Cebu, Int. I
351	6	eP eS? iL	09	47 48	12 15 48	530?	
352	6	iP	19	00	08		
353	7	iP iS	02	07	22 47	260	Epicenter: 12°.7N; 119°.8E
354	7	eP iS	02	20 21	33 08	300	
355	9	iP iS	15	21	08 31	240	
356	9	eP iS	22	44 45	59 11	100	
357	10	eP eS	06 07	59 00	50 13	200	From the 10th to the 12th, microseisms were large due to a Tropical Depression that formed in the China Sea and W of Luzon.
358	10	eP eS	12	49 50	00 16	650	

SEISMOLOGICAL BULLETIN ... Cont'd

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 JUNE						
360	12	iP	05	10	28	320	Masked by microseisms.
		eS		11	06		
361	14	iP	21	50	15		
362	16	iP	16	28	44		Teleseismic?
		eS?		30	48		
363	17	iP	12	08	19	2400	
		ePR1			43	or	
		eS		12	17	21?6	
		eL		14	14		
364	17	eP	14	07	10		
365	18	e	05	29	18		Felt at Valencia, Negros Int. II.
366	18	eP	11	18	44		
367	18	iP	13	19	05		
		iM		22	26		
368	19	eP	08	20	35	25	
		iS			38		
369	19	iP	12	17	50	3000	
		ePR1		18	17	or	
		eS		21	10	27?0	
		eL		22	05		
370	19	eP	12	54	53		Previous quake still recording.
371	19	e	14	26	08		
372	20	eP	05	48	39		Teleseismic.
		eL		57.8			
		F	07				
373	20	eP	09	14	26	430	Felt at Calayan, Int. IV.
		eS		15	16		
374	21	eP	21	49	50	2800	
		ePR1		50	23	or	
		ePR2			40	25?0	
		eS		54	05		
		eM		59	15		
375	23	eP	12	05	47	720	
		eS		07	12		
		iL		08	09		
376	25	iP	23	25	03	2800	
		ePR1			30	or	
		ePR2			40	25?0	
		eS		29	12		
		eL		30	19		

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SEISMOLOGICAL BULLETIN ... Cont'd

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No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms	REMARKS
	1952 JUNE						
377	27	eP eS	19	51	02 21	160	
378	28	iP iS	03	52	23 44	220	
379	28	eP eS?	19	09	21 51	250?	
380	28	e	22	02	03		

The following macroseismic tremors were reported but were not recorded at Manila:

			h	m	(GMT)	
Surigao	June	3	21	11		Int. V
Butuan		20	04	15		
Surigao		20	13	44		Int. III
Surigao		23	02	30		Int. V
Butuan		24	21	10		Int. III

SIGNIFICANT EARTHQUAKES OF JUNE 1952

1. DAVAO EARTHQUAKE, June 3 - At 2:08 (local time) in the morning of June 3, Davao City in Mindanao Island felt an earthquake of Intensity V R.F. The tremor lasted 28 seconds and the direction of oscillation was E-W. Hinatuan, 170 kilometers to the NE felt the same earthquake as Intensity II R.F.

Traces of Manila seismometers disappeared after "P", thus no epicentral determination has been possible by that Station. From what is known of the seismicity in Mindanao, however, it is possible to venture the guess that the Davao Earthquake of June 3 could have been caused by movement along the fault passing through the Agusan Valley of Eastern Mindanao and down along the eastern border of Davao Gulf.

2. SURIGAO-BUTUAN EARTHQUAKE, June 5 - At 17:15 (local time) in the afternoon of June 5, Surigao and Butuan, both of northeastern Mindanao, experienced an earthquake of Intensity IV R.F. The same earthquake was felt at Hinatuan, Intensity III, and at Cebu City, Intensity I.

Seismic information on this earthquake is insufficient to establish its epicenter. Again, however, judging from known seismicity of the region affected, it is likely that the cause of the tremor could have been further adjustment along the same fault mentioned in the Davao quake. It seems plausible to view this Surigao-Butuan earthquake as the result of strain produced on that segment of the fault along the Agusan Valley by the Davao quake. Further tremors in the Surigao-Butuan area during the rest of the month were no doubt associated with movements along the said fault.

3. No. 368 - This tremor was a microseismic one, but it is held significant because its epicentral distance was only 25 kilometers from Manila. No. 272 that occurred on the 4th of May previous, was also microseismic and 30 kilometers distant from Manila. If these two tremors were related in some manner and signified minor adjustments along one of several faults in the vicinity of Manila, then further tremors of the same character bear watching.

REPUBLIC OF THE PHILIPPINES
Department of Commerce and Industry
WEATHER BUREAU
GEOPHYSICAL DIVISION
Manila

OCT 31 1952

International Seismological Centre

No. 43

July 1952

$\phi = 14^\circ 40'$ N $\lambda = 121^\circ 05'$ E h = 70.4 m. Tuff

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INSTRUMENTS

2 Sprengnether horizontal seismometers, Series H (for microseismic work). Sprengnether seismometers, Series D-H: 1 E-W horizontal component and 1 vertical component; Series H for N-S horizontal component (long period). 1 Wood-Anderson torsion seismometer.

Data taken from Sprengnether Series D-H and Series H N-S component.

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 JULY						
381	2	eP eS	01	07	17 54	310	
382	3	eP	04	42	51		
383	3	eP eS	12	00	02 20	150	Microseisms large from July 3rd, 1500 GMT, to July 6th, 0000 GMT due to Typhoon "EMMA".
384	5	eP	17	28	20		
385	6	e	13	49	14		
386	7	eP eS	04	24 25	57 16	160	
387	7	eP eS	19	39	17 42	210	
388	7	iP eS	23	30 31	56 23	230	Epicenter: 10°.7N; 120°.9E. Intersection with Baguio Station (Manila Obs.).
389	9	eP eS	01	51	18 29	95	
390	9	e	18	35	08		
391	9	iP iS	18	49 50	48 14	270	
392	10	eP eS	15 16	55 03	23 25	6500 or 58°.5	
393	12	eP eS	03	14 15	42 17	300	
394	12	eP eS	14	21	06 40	290	
395	12	eP eS	14	39 40	47 20	280	

SEISMOLOGICAL BULLETIN ... Cont'd

International Seismological Centre

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms	REMARKS
	1952 JULY						
396	13	iP	12	08	03	6450	h = 100 Kms. ±
		epP			29	or	
		$ePcP$			49	58°0	
		ePR_1		10	16		
		iPR_2		11	38		
		iS		15	45		
		esS		16	40		
397	13	iS	16	35	25		Local.
398	13	iP	17	38	49	1900	
		ePR_2		39	07	or	
		iS		42	02	17°0	
		iSR_1			31		
399	16	eP	12	15	57		
400	16	eP	14	29	03		
401	17	e	08	31	58		
402	17	iP	16	15	00	2800	Deeper than normal.
		epP			19	or	Compression.
		isP			33		Magnitude: 7½
		iPR_1			43		
		iS		19	17		
403	18	eP	08	47	27		
404	18	iP	09	01	08	315	Felt at Baguio, Int. I
		iS			38		Felt also at Bagabag, N.Viz.
405	19	iP	15	52	57		
406	21	eP	09	09	03	270	
		eS			35		
407	21	e	12	06	20		Southern California Quake.
		eS		09	37		
		eSR_1		10	37		
408	21	eP	13	58	55		
409	21	eP	19	50	13	380	Epicenter: 18°0N; 121°0E
		iS			58		Intersection with Baguio Station (Manila Obs.)
							Felt at Aparri Int. IV
							Vigan Int. IV
							Laoag Int. IV
							Tuguegarao Int. III
							Baguio Int. II
							Also felt at Tuao and Claveria, Cagayan.
410	24	e	10	41	14		Teleseismic.
411	24	i	22	16	13		

SEISMOLOGICAL BULLETIN ... Cont'd

International Seismological Centre

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE	REMARKS
	1952 JULY						
412	25	eP	23	56	54	100	No record from 0619 to 0822 GMT, July 26th, due to power failure.
		eS		57	06		
							Microseisms large from July 25th, 2100 GMT to July 31st, 0300 GMT due to Typhoon "Harriet".
413	26	eS	12	17	55		
414	26	e	14	32.5			
415	26	eP	17	53	51	370	
		eS		54	35		
416	27	iP	08	33	48	7400	Slightly deeper than normal?
		epP		34	20	or	
		iPR_1		36	21	66°6	
		esPP		37	03		
		iS		42	25		
		esS		43	06		
417	28	eP	14	02	29	290	
		eS		03	03		

The following macroseismic tremor was reported but was not recorded at Manila:

		h	m	(GMT)	
Surigao	July 24	12	42		Int. IV

THE NORTHWESTERN LUZON EARTHQUAKE OF JULY 22, 1952

This earthquake was felt at 3:50 o'clock Tuesday morning by the Provinces of Ilocos Norte, Ilocos Sur and Cagayan, and by the City of Baguio. Laoag, Vigan and Aparri reported the tremor as Intensity IV R.F. (adapted), Tuguegarao reported Intensity III, and Baguio City reported Intensity II.

By intersection using the epicentral distances of Baguio (Manila Observatory data) and Manila, and with the aid of macroseismic reports, the epicenter of the tremor has been placed at 18°0N; 121°0E or midway between Vigan and Aparri.

The tremor is noteworthy in that its epicenter, if calculations were correct, was located on land. The epicenters of most northwestern Luzon tremors have been in the China Sea off the northwestern tip of the Island.

REPUBLIC OF THE PHILIPPINES
Department of Commerce and Industry
WEATHER BUREAU
GEOPHYSICAL DIVISION
Manila

DEC 5 1952

International Seismological Centre

No. 44

August 1952

ϕ = 14° 40' N λ = 121° 05' E h = 70.4 m. Tuff

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INSTRUMENTS

2 Sprengnether horizontal seismometers, Series H (for microseismic work). Sprengnether seismometers, Series D-H: 1 E-W horizontal component and 1 vertical component; Series H for N-S horizontal component (long period). 1 Wood-Anderson torsion seismometer.

Data taken from Sprengnether Series D-H and Series H N-S component.

No.	DATE 1952 AUG.	PHASE	Greenwich TIME h	m	s	DISTANCE Kms	REMARKS
418	2	e	06	27	40		
419	2	e	09	12.7			
420	3	eP eS	03	41	23 39	135	
421	3	iP iS	21	46	11 26	155	Epicenter: 13°.9N; 120°.1E. Intersection with Baguio Station (Manila Obs.) and Ambulong. Felt at Manila, Int. II. Dilatational from SW.
422	4	iP eS?	12	21	41 59		
423	5	eP iS	07	52	29 45	140	
424	5	eP eS	21	51 55	27 28	2450 or 22°.0	Microseisms above normal from Aug. 5th to 8th due to typhoon "IVY".
425	6	e	04	43	17		
426	7	eP eS	09	05 06	46 03	145	
427	7	eP eS	12	48	02 31	250	Tentative epicenter: 16°.4N; 119°.5E. Intersection with Baguio (Manila Obs.) and Ambulong Stations. Felt at Baguio, Int. I, and at Bagabag, Nueva Viscaya.
428	7	eP iS	13	25	27 56	250	Possibly from same area as No. 427.
429	8	eP	13	23	54		
430	9	eP eS?	15	05 06	48 32	370	
431	9	eP	23	08	39	240	

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No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms	REMARKS
	1952 Aug.						
432	10	iP iS	03	01	33 48	160	
433	11	iP iS	06	15	13 31	190	
434	11	eS	20	52	27		Microseisms above normal on Aug. 12th and again from Aug. 15th to 16th due to Typhoon "KAREN".
435	14	eP eS eL	05	15 16 17	30 36 07	730	
436	14	iP ePR1 eS eL	06	29 30	06 18 20 52	630	Felt at Mambajao, Int. V Butuan, Int. IV Cagayan, Int. III Iligan, Int. III Malaybalay, Int. I Magnitude: 5¼
437	14	eP ePR1 eS eL	16	06 07 08	43 52 54 29	600	Possibly caused by movement along the same line of weakness as that of No. 437.
438	16	e	13	59	27		Teleseismic.
439	17	eP eS	05	36	03 40	310	
440	17	iP	16	08	36		Teleseismic. Tentative epicenter: 30½°N, 91½°E (USCGS
441	18	iP	19	24	14		
442	18	e	23	18	01		
443	19	eP	10	06	06		Teleseismic.
444	19	iP	10	42	25		
445	20	eP e	21	49 50	16 06		Teleseismic.
446	21	e	15	49	28		
447	21	e	16	29	16		
448	21	ePR1 iS iSR1 eL	22	30 35 36 37	54 04 29 50	3300 or 29?7	
449	22	iP iS	04	20 21	46 04	190	Compression from S.

SEISMOLOGICAL BULLETIN ... Cont'd

International Seismological Centre

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms	REMARKS
	1952 AUG.						
450	22	eP	05	26	58	150	
		eS		27	16		
451	22	e	05	46.5			
452	22	e	18	15.5			
453	22	eP	20	41	00		
454	23	i	05	46	48		Possibly two quakes.
		i		48	20		
455	23	e	14	42.5			
456	23	eP	17	25	45	400	
		eS		27	32		
457	23	eP	23	16	59	300	
		iS		17	34		
458	24	e	02	29.5			
459	24	iP	10	04	28		
460	24	eP	12	50	38		Teleseismic.
		iL		56	41		
461	25	e	15	40	xx		Masked by thunderstorm microseisms.
462	26	eP	08	29	14		
463	27	eP	11	39	13		
464	28	eP	11	04	06	150	
		eS			24		
465	28	eP	12	19	18	340	
		eS			58		
466	29	eP	05	34	02		Teleseismic.
		e		38	16		
		e		40	xx		
467	31	eP	12	42	28	160	
		eS			47		
468	31	iP	23	42	07	115	
		iS			18		

SEISMOLOGICAL BULLETIN ... Cont'd

International Seismological Centre

The following macroseismic tremors were reported but were not recorded at Manila:

		h	m	(GMT)	
Tacloban	Aug. 5	17	55		Int. II
Tacloban	5	18	12		Int. II
Virac	6	15	55		Int. II
Claveria, Cag.	20	14	10		

THE MAMBAJAO EARTHQUAKE OF AUGUST 14 1952

This tremor was felt strongly (Intensity V, adapted R.F.) at Mambajao, Misamis Oriental at 2:28 o'clock Thursday afternoon on August 14th. Its macroseismic area covered the provinces of Misamis Oriental, Bohol, Surigao, Agusan and southern Leyte.

By its epicentral distance from Manila and with the aid of macroseismic reports, the epicenter of the tremor has been placed at approximately 9°.3N; 124°.8E or just off the northeastern coast of Camiguin Island.

The tremor was noteworthy in that its center was very close to the active Hibok-Hibok Volcano. In consequence, the crateral activity of the volcano was closely watched for any changes that could be associated with the tremor. Except, however, for a slight increase in the volume of smoke being emitted, no other significant change was observed.

On August 7th, or a week previous to the tremor, a slide of considerable scale occurred at the volcano's slopes. While the slide could have been precipitated by other causes, it could also have been due to or hastened along by preliminary tremors. Two tremors of apparently local character and accompanied by deep rumbling noises were reported by Mambajao on July 27th.

It is further interesting to note that this Mambajao quake of August 14th came at the start of what is considered by the Committee on Volcanology (now a Commission) as a critical period for the volcano, i.e., a period nine to fourteen months after its/paroxysmal activity which was December 4-6, 1951.

Department of Commerce and Industry
WEATHER BUREAU
GEOPHYSICAL DIVISION
Manila

JAN 5 1953

International Seismological Centre

No. 45

ϕ = 14° 40' N λ = 121° 05' E h = 70.4 m. Tuff

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INSTRUMENTS

2 Sprengnether horizontal seismometers, Series H (for microseismic work). Sprengnether seismometers, Series D-H: 1 E-W horizontal component and 1 vertical component; Series H for N-S horizontal component (long period). 1 Wood-Anderson torsion seismometer.

Data taken from Sprengnether Series D-H and Series H N-S component.

No.	DATE 1952 SEPT.	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
469	1	e	01	04	21		No record from 1149 GMT to 1353 GMT and from 2133 GMT to 2220 GMT Sept. 1st; and from 0934 GMT to 1150 GMT Sept. 2nd due to power failure
470	2	eP	03	46	22	315	
		eS			59		
471	2	e	19	49	XX		
472	3	iP	06	15	18	135	*Epicenter: 15?7 N; 121?7 E. *Intersection with Baguio Station (Manila Obs.) Dilatational.
		iS			35		
473	3	iP	10	27	41	165	*Epicenter: 15?6 N; 119?9 E. Compressional. Felt at Iba, Int. II.
		iS		28	01		
474	3	eP	17	44	01		
475	5	e	18	37	XX		Teleseismic?
476	6	eP	10	51	49	255	
477	7	e	01	02	18		
478	7	eS	13	31	06		
479	7	iP	16	32	10	255	
		iS			40		
480	7	iP	16	40	35	255	From same area as NO. 479.
		iS		41	05		
481	8	i	06	47	13		
482	8	iP	15	04	28	2400	
		eS		08	26	or 2196	
483	9	iP	12	55	47		
484	9	iP	13	14	25		Teleseismic.
		e		16	29		
		i		17	46		
		M	14	18	XX		
485	10	iP	07	37	33	150	

SEISMOLOGICAL BULLETIN ... Cont'd

International Seismological Centre

NO.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 Sept.						
486	10	eP	12	38	00	555	Felt at Calayan, Int. V
		eS			59		
487	10	eP	18	48	17	515	Epicenter: 10°5 N, 123°6 E.
		iPR_1			25		Felt at Cebu,Int. V;
		eS		49	12		Iloilo,Int.IV; Roxas,Int.II;
							Romblon,Int.II; Cuyo,Int.II;
							Dumaguete, Int. II;
							Tacloban, Int.II.
							Magnitude = 5
488	11	iP	22	07	04	1075	Compressional.
		iS		08	56		
489	12	iP	06	12	12	2460 or 22?1	Teleseismic.
		iS		16	14		
490	13	eP	02	23	43		Felt at Tacloban, Int. II.
491	13	i	05	43	48		
492	13	eP	08	14	38	210	
		iS		15	02		
493	14	eP	03	36	27	575	Felt at Tacloban, Int. III.
		iS		37	28		
494	14	eS	06	34	05		
495	14	eP	10	17	25	580	Felt at Tacloban, Int. III.
		eS		18	27		
496	14	eP	11	22	10	630	Felt at Tacloban, Int. III.
		eS		23	17		
497	15	e	12	56.5			
498	15	iP	18	16	02	170	*Epicenter: 1599 N, 12199 E
		iS			22		
499	16	e	01	59	48		
500	16	e	06	29	51		
501	16	eP	10	28	12	305	
		eS			46		
502	16	eP	23	42	17		
503	17	eP	00	55	32		
504	17	eP	01	35	29	140	
		eS			46		
505	17	eP	20	17	37	100	
		eS			50		
506	18	eP	06	03	12		
507	18	iS?	07	55	12		

SEISMOLOGICAL BULLETIN ... Cont'd

International Seismological Centre

NO.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 Sept.						
508	18	eP	11	09	29		
509	18	i	12	19	03		
510	18	iP	17	50	19	455	
		iS		51	08		
511	18	iP	21	15	50	130	
		iS		16	06		
512	18	iP	21	19	42	130	From same area as No. 511.
		iS			58		
513	18	eP	23	56	14		
	19	e	00	00	22		
514	19	eP	04	10	32		
515	19	e	05	28.8			
516	19	e	10	49	42		
		e		50	12		
517	19	eP	17	31	53	580	Felt at Catbalogan, Int.V; Masbate, Int. III; Catarman, Int. II; Roxas City, Int. I. Dilatational from SE. Magnitude = 5 1/2- 5 3/4.
		iS		32	55		
518	20	eP	10	47	22	170	
		iS			42		
519	20	eP	13	09	09		Teleseismic.
520	21	iP'	02	50	44		Teleseismic.
		ipP'		51	34		Deeper than normal.
		eSPP	03	01	40		
521	21	eP	06	27	51	670	
		eS		29	02		
522	21	eS	07	51	35		
523	21	eP	10	14	09	385	
		eS			51		
524	21	e	11	17	41		Teleseismic.
525	21	iP	22	48	14	1190?	Reading doubtful.
		iS		50	25	or 1097?	
526	22	eP	00	35	55		
527	22	eP	01	15	19		Teleseismic.
		eS?		19	38		
528	22	iP	05	30	06	270	
		iS			37		

SEISMOLOGICAL BULLETIN ... CONT'D

International Seismological Centre

NO.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 Sept.						
529	22	e	09	34	17		Teleseismic.
530	23	eP	02	34	40	400	
		eS		35	24		
531	23	eP	15	03	23	515	
		eS		04	18		
532	23	iS	19	54	21		
533	24	eP	03	49	00	149	
		eS			18		
534	24	eP	16	10	57	175	
		eS		11	18		
535	24	iP	20	40	42	8330	Teleseismic. h = 100 Kms.
		esS		50	01	or 7590	
536	24	eP	23	24	20		
537	25	e	14	03	35		
538	25	eP	15	03	31	2120	
		eS		07	06	or 1991	
539	26	e	17	28	08		Teleseismic.
540	26	e	17	40.2			"
541	26	e	17	52.5			"
542	27	eP	02	31.5			
543	27	eP	04	32.6			
544	27	eS	05	00	40		
545	27	iP	10	32	45	305	Dilatational from NW.
		iS		33	19		Felt at Tuguegarao, Int. II.
546	27	e	10	42	45		Previous Quake still recording Aftershock of No. 545.
547	27	eP	10	44	30		Previous quake still recording Aftershock of No. 545.
548	27	e	11	27.3			"
549	27	eP	11	39	30		"
550	27	e	11	58	48		"
551	27	eP	12	40	06	140	
		eS			23		
552	27	eP	14	08	54	140	
		eS		09	11		
553	27	eP	15	05	00	325	Same area as No. 545.
		eS			36		

SEISMOLOGICAL BULLETIN ... Cont'd

NO.	DATE	PHASE	Greenwich TIME H	m	s	DISTANCE Kms.	REMARKS
	1952 Sept.						
554	27	iP	17	25	00	287	Teleseismic.
		eS			32		
555	27	eP	18	19	40	228	
		eS		20	06		
556	27	iP	19	14	07	5000	Teleseismic.
		eS		20	52	or 45°	
557	28	e	12	38	02		
558	28	eP	14	38	50		
559	28	e	19	06.2			
560	28	iP	19	55	49	159	
		iS		56	08		
561	29	eP	08	09	12	290	
		eS			44		
562	30	eP	05	40	06	110	
		eS			20		
563	30	eP	12	48	12	160	
		eS			31		
564	30	e	12	53	10		
		eS			19		
565	30	iP	12	57	00	2370	Teleseismic.
		eSR_1	13	01	50	or 2394	Magn. 6 1/2 - 6 3/4.
		L		10.5			

The following macroseismic tremors were reported but were not recorded at Manila:

		h	m (GMT)	
Butuan	Sept. 18	03	50	Int. II
Butuan	18	06	40	Int. II

CEBU EARTHQUAKE OF SEPTEMBER 11, 1952

On Sept.11. at 2:48 in the morning an earthquake occured which shook most of the Visayas islands. Reports indicated that the macroseismic area extended as far as Romblon to the north, Tacloban to the east, Dumaguete to the south, and Cuyo to the west; these places having felt the tremor of Int. II (R.F.) The highest intensities were reported by Cebu and Iloilo, of Int. V and Int. IV respectively. From macroseismic data and the readings of the Diliman seismographs the center was placed at 10°5 N, 123°6 E in the vicinity of the area where a probable major structural line passes between Cebu and Panay Islands. No damage to structure or lives were reported.

CAGAYAN VALLEY EARTHQUAKES OF SEPTEMBER 27, 1952

A slight tremor was felt in the Cagayan Valley at 6:32 P.M. of Sept. 27. Tuguegarao, the nearest station to this area reported Int. II. Significance is attached to this tremor because of the fact that it was followed closely by several aftershocks. Seven of these aftershocks, all microseismic, were detected by the instruments at Manila. Furthermore, this series of earthquakes originated from the same area as the destructive quake which occured on December 1949.

Department of Commerce and Industry
WEATHER BUREAU
GEOPHYSICAL DIVISION
Manila

FEB 1 . 1953

No. 46

October 1952

ϕ = 14° 40' N λ = 121° 05' E h = 70.4 m. Tuf

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INSTRUMENTS

2 Sprengnether horizontal seismometers, Series H (for microseismic work). Sprengnether seismometers, Series D-F: 1 E-W horizontal component and 1 vertical component; Series H for N-S horizontal component (long period). 1 Wood-Anderson torsion seismometer.

Data taken from Sprengnether Series D-H and Series H N-S component.

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 OCT.						
566	1	eP	07	58	42		Telesciamic.
		e	08	02	20		
567	1	e	09	04.5			
568	2	e	06	42.5			
569	3	eP	01	05	04	200	
		eS			27		
570	3	eS	01	07	06		Previous quake still recording. Probably same epicentral area as No. 569.
571	3	eP	04	24	51	183	Felt at Baguio, Int. II
		iS		25	12		
572	3	e	05	06	XX		
573	3	e	07	56	35		Telesciamic.
574	3	e	10	10	XX		
575	3	iP	12	53	54	174	Compressional.
		eS		54	14		
576	3	e	19	54	XX		
577	3	eP	21	20	20		
		e		21	06		
578	4	eP	00	22	41	525	Compressional/
		eS		23	40		
579	4	eP	07	12	13		
		e		16	24		
580	4	eP	21	38	20		
581	5	eP	06	44	52		
582	5	eP	13	04	38	310	
		eS		05	13		

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SEISMOLOGICAL BULLETIN ... Cont'd

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NO.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 OCT.						
583	5	eP	13	12	16	290	
		eS			49		
584	5	eP	13	15	27		Previous quake still recording.
585	5	eP	20	16	36	345	
		eS		17	15		
586	5	e	21	27	46		
587	5	e	22	11	12		Teloseismic.
588	5	e	22	55	07		
589	6	e	07	08	38		
590	6	e	07	12	32		
591	6	e	10	30	43		
592	6	eS	10	34	51		Previous quake still recording.
593	6	eP	22	38	26	5445	Teloseismic.
		eS		45	35	or 49°0	
594	7	eP	06	12	09	145	
		eS			26		
595	7	eP	19	19	59	430	Epicenter: 10°7 N; 121°3 E.
		eS		20	50		Felt at: Cuyo, Int. IV, Romblon, Int. III, Iloilo, Int. II.
596	8	eP	14	29	30		Teloseismic.
597	8	eP	18	49	09	180	
		eS			30		
598	9	eS	06	26	18		
599	9	e	09	45.7			Teloseismic.
600	10	eP	05	10	50		
601	10	e	05	20	XX		
602	10	e	13	09.2			
603	10	e	13	22	35		
604	10	eP	16	06.7			Teloseismic.
605	10	eP	18	56	31	5510	Teloseismic.
		e		57	03	Or 49°6	
		eS	19	03	44		

SEISMOLOGICAL BULLETIN ... Cont'd

International Seismological Centre

NO.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 OCT.						
607	10	e	20	36.1			
608	10	eP	21	15	16		Teleseismic.
609	11	eP	00	20	47		Teleseismic.
610	11	e	03	40.3			
611	11	e	04	53.8			
612	11	eP	08	02	30	300	
		eS		03	04		
613	11	e	12	16	43		
614	11	e	17	04	01		
615	11	eP	18	23	17	175	
		eS			37		
616	11	eP	20	37	26	210	
		eS			50		
617	12	eS	07	30	18		
618	12	eS	08	05	50		
619	12	eP	20	08	08		
620	13	eP	20	09	12	165	
		eS			31		
621	13	eP	20	54	40		
622	14	eS	03	45	58		
623	15	e	00	15	50		
624	15	e	02	49.0			
625	15	e	19	10	54		
626	16	eP	19	02	40		Since the 16th to the end of October, Manila microseisms have been large due to typhoons "TRIX" and "WILMA".
627	17	e	02	21.5			
628	17	e	02	52.0			
629	17	eP	06	03	10		
		eS?		04	01		
630	17	eP	07	41	24	140	
		eS			40		
631	17	e	12	17	32		
632	17	e	20	47	46		
633	18	eP	05	32	09		Teleseismic.

SEISMOLOGICAL BULLETIN ... Cont'd

International Seismological Centre

NO.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 OCT.						
634	20	eP	03	45	46	155	
		eS		46	04		
635	20	e	14	33	16		Teleseismic.
636	20	e	15	10	46		Teleseismic.
637	20	eS	18	27	26		
638	21	eP	09	21	22		Teleseismic.
639	22	eP	06	30.8			
640	22	eP	08	23	38		
641	22	iP	22	32	12	192	Epicenter: 15.9 N; 122.1 E
		iS			34		(Based on intersection with Manila Obsy. data.) Felt at Casiguran, Int. II.
642	24	iP	05	19	26		
643	24	e	16	17	43		
644	26	iP	08	45	57	2380	
		iS		49	53	or 21.4	
645	26	e	15	15.7			
646	26	eS	15	59.5			Teleseismic.
647	26	e	18	08.5			
648	26	e	19	25	42		Teleseismic.
649	27	eP	01	55	32		
650	27	e	03	23.6			
651	27	e	10	40.0			
652	27	e	13	31.0			
653	28	eP	06	37	08		
654	28	iP	09	21	18		
655	29	iP	19	45	24		Teleseismic.
656	30	eP	22	18	42		
		i		19	46		
		e		20	14		
657	31	e	14	01.8			
658	31	eP	16	43	38	3445	
		eS		4	50	Or 31?0	Teleseismic.
659	31	iP	16	56	55	1180	
		eS		59	05	or 10?6	Teleseismic; Dilatation.

SEISMOLOGICAL BULLETIN ... Cont'd

NO.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 OCT.						
661	31	e	19	22	36		
662	31	eP	23	57	15	2800 or 25°.2	Teleseismic.
		eS	24	01	44		

The following macroseismic tremors were reported but were not recorded at Manila:

		h	m (GMT)	
Minatuan	Oct. 11	04	40	Int. II
Surigao	21	09	17	Int. IV
Cantilan, Surigao	2	21	00	Slight earthquake
Butuan	30	04	30	Int. III

EARTHQUAKE OF OCTOBER 6 1952

At 3:20 A. M., October 6, an earthquake occurred affecting Western Visayas. Cuyo reported intensity IV (R. F.). Romblon intensity III and Iloilo intensity II. Based on records of the Dilimon Station and the data of the Manila Observatory in Baguio City, epicenter was placed at 10°7 N 121°; E on Cuyo East Pass or about 30 kilometers southeast of Cuyo Island. The epicenter is just a few kilometers west of the epicentral area of the January, 1948 Iloilo earthquake.

208 BACHMAN CAMPUS

Department of Commerce and Industry
WEATHER BUREAU
GEOPHYSICAL DIVISION
Manila

No. 47

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ϕ = 14° 40' N λ = 121° 05' E h = 70.4 m. Tuff

--- ooo ---

INSTRUMENTS

2 Sprengnether horizontal seismometers, Series E (for microseismic work). Sprengnether seismometers, Series D-E: 1 E-W horizontal component and 1 vertical component; Series E for N-S horizontal component (long period). 1 Wood-Anderson torsion seismometer.

Data taken from Sprengnether Series D-E and Series E N-S component.

No.	DATE	PHASE	Greenwich T.C. h	m	s	DISTANCE kms.	REMARKS
	1952 NOV.						
663	1	e	05	39	24		
664	1	eP	23	56	41		Teleseismic.
665	2	eP	06	20	46		
666	3	eP	01	22	10		
667	3	iP	08	39	28	170	
		eS			48		
668	3	eP	09	44	09	327	
		eS			46		
669	4	eP	17	07	08	3510	Magnitude 6¼
		eS		14	17	Or 4976	
		eL		22.1			
		F	19.5				
670	4	e	17	30	XX		Previous quake still recording. Probable aftershock of No. 669.
671	4	eP	17	44	28		Probable aftershock of No. 669
672	4	iP	18	37	18		" " " " " "
673	4	e	20	36	42		" " " " " "
674	4	iP	20	57	18	3060	" " " " " "
		eS	21	04	03	or 4925	
675	4	eP	21	09	42		Previous quake still recording. Probable aftershock of No. 669.
676	4	e	22	01	XX		Probable aftershock of No. 669
677	4	e	22	30	XX		" " " " " "
678	4	eP	22	45	36		" " " " " "
679	4	eP	23	37	30		" " " " " "

SEISMOLOGICAL BULLETIN ... Cont'd

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No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE kms.	REMARKS
	1952 Nov.						
681	5	iP	03	38	19		Probable aftershock of No.669
682	5	eP	04	24	56		" " " " " "
683	5	iP	06	06	03		" " " " " "
684	5	e	06	44	19		" " " " " "
685	5	eP	07	15	21		" " " " " "
686	5	e	07	43	53		" " " " " "
687	5	e	08	47	10		" " " " " "
688	5	eP	09	07	02		" " " " " "
689	5	e	09	39	14		" " " " " "
690	5	e	10	07	45		" " " " " "
691	5	e	10	23	54		" " " " " "
692	5	e	11	26	04		" " " " " "
693	5	e	11	43	24		" " " " " "
694	5	eP	11	54	52	5000 or 45?0	" " " " " "
		eS	12	01	34		
695	5	eP	13	15	11		" " " " " "
696	5	eP	14	16	49		" " " " " "
697	5	iP	14	57	00		" " " " " "
698	5	e	16	12	52		" " " " " "
699	5	e	17	12	47		" " " " " "
700	5	e	17	14	16		" " " " " "
701	5	eP	19	17	24		" " " " " "
702	5	eP	19	43	38		" " " " " "
703	5	eP	19	59	43		" " " " " "
704	5	eP	20	19	27		" " " " " "
705	5	eP	20	38	49		" " " " " "
706	5	eP	21	17	05		" " " " " "
707	5	iP	21	54	21		" " " " " "
708	5	eP	22	54	44		" " " " " "
709	6	iP	01	07	18		" " " " " "

SEISMOLOGICAL BULLETIN ... Cont'd

International Seismological Centre

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE kms.	REMARKS
	1952 NOV.						
711	6	eP	04	02	51		Probable aftershock of No.669 Note: No record from 060532 to 070717 GMT due to power failure.
712	7	eP	12	18	05	5200	Probable aftershock of No.669.
		eS		24	57	or 46°8	
713	7	eP	13	50	42		" " " " " "
714	7	eP	14	16	53	5250	" " " " " "
		eS		23	48	or 47°3	
715	7	eP	22	13	18	4860	" " " " " "
		eS		19	52	or 43°7	
716	7	iP	23	23	47		Teleseismic.
		i	23	26	46		
717	8	e	03	09.8			
718	8	e	17	13.0			Probable aftershock of No.669
719	8	iP	18	31	38	130	
		eS			53		
720	8	eP	19	41	40		" " " " " "
721	8	e	20	23.5			" " " " " "
722	9	eP	04	43	27		" " " " " "
723	9	eP	05	15	18		" " " " " "
724	9	eP	05	40	44		" " " " " "
725	9	eP	06	05	20	4970	" " " " " "
		eS		12	00	Or 44°7	
726	9	eP	15	31	30	5530	" " " " " "
		eS		38	40	or 49°8	
727	10	e	00	34	40		" " " " " "
728	10	eP	01	03	48	4890	" " " " " "
		eS		10	24	or 44°0	
729	10	eP	05	04	08		Teleseismic?
730	10	e	20	35	19		Probable aftershock of No.669.
731	10	e	22	02	XX		" " " " " "
732	11	e	19.5				Masked by microseisms. Probable aftershock of No.669.
733	12	e	14	25.6			Masked by microseisms.
734	13	eP	08	06.9			" " " " Probable aftershock of No.669.

SEISMOLOGICAL BULLETIN ... Cont'd

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE	REMARKS
	1952 NOV.						
735	13	eP	22	34.0			Masked by microseisms. Probable aftershock of No.669.
736	14	eP	03	14	44		Masked by microseisms.
737	14	eP	11	24	13		
738	15	e	05	10.5			Probable aftershock of No.669.
739	15	eP eS	05	31 39	50 XX		" " " " " "
740	15	eP	12	15	XX		
741	16	eP	01	56	40		" " " " " "
742	16	eP	06	44	01		
743	16	eP	07	45	18		Teleseismic.
744	16	e	10	28	XX		
745	17	eP	11	41	14		
746	17	iP eS	13	35	13 37	210	Felt at Baguio Int. II
747	18	e	07	58.6			
748	18	eS	08	28.5			Probable aftershock of No.669.
749	18	e	08	54.4			" " " " " "
750	19	eP eS?	12	06 07	44 45		
751	19	eP eS	20	06	00 22	190	
752	19	eP eS	20	07 08	44 06	190	
753	19	eP eS	20	34	18 40	190	Probably from same epicentral area as No. 751.
754	20	iP eS	05	06	44 59	120	Dilatational. Felt at Manila Int. II.
755	21	e	07	43	16		
756	22	eP	14	02	58		
757	22	eP	18	36	41		
758	22	eP e	21	32	24 52		
759	22	eP	23	50	10		
760	23	eP	07	04	22		Masked by microseisms.

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SEISMOLOGICAL BULLETIN ... Cont'd

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No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE kms.	REMARKS
	1952 NOV.						
761	24	e	08	10.2			Masked by microseisms.
762	24	e	15	09	46		" " " "
763	26	eP	21	06	50	1620	" " " "
		eS		09	32	or 14°6	
764	27	eP	07	29	13		Teleseismic.
765	27	e	09	38	07		
766	27	e	12	02	50		
767	28	eP	05	40	00		
768	28	iP	08	14	17	5290	
		ePR_2		16	35	or 47°6	
		eS		21	18		
769	28	iP	14	42	45		Teleseismic?
		e		45	22		
770	28	eP	21	09	06	4500	Depth = 100 kms.
		epP			34	or 40°5	
		eS		15	10		
771	28	e	22	57.0			
772	29	eP	08	31	23	5500	
		iS		38	36	Or 49°5	
773	29	eP	23	58	12	8330	
		eS	24	07	54	or 75°	
774	30	eP	19	37	36		

The following macroseismic tremors were reported but were not recorded at Manila:

		h	m (GMT)	
Masbate	November 5	02	55	Int. IV
Butuan	12.	Undetermined		Int. II
Butuan	29	06	30	Int. II

WEATHER BUREAU
GEOPHYSICAL DIVISION
Manila

No. 46

December 1952

ϕ = 14° 40' N = 121° 05' E h = 70.4 m. Tuff

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INSTRUMENTS

2 Sprengnether horizontal seismometers, Series H (for microseismic work). Sprengnether seismometers, Series D-H: 1 E-W horizontal component and 1 vertical component; Series H for N-S horizontal component (long period). 1 Wood-Anderson torsion seismometer.

Data taken from Sprengnether Series D-H and Series H N-S component.

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE kms.	REMARKS
	1952 DEC.						
775	1	e	20	34.0			
776	2	e	02	01	22		
777	3	eP	05	52	57	75	
		eS		53	06		
778	3	eP	21	29	08		
779	4	iP	04	01	25		Teleseismic.
780	4	iP	06	17	37	130	Dilatational.
		eS			52		
781	4	e	07	09	13		Teleseismic.
782	6	eP	07	08	20	112	
		eS			33		
783	6	iP	10	49	10	4720	Magnitude 7½.
		ePR_1		50	50	or 42°.5	
		ePR_2		51	25		
		eS		55	29		
		eL	11	00.5			
784	6	e	12	49.0			
785	6	eP	20	35	32	140	
		eS			48		
786	6	eP	20	58	28	4720	Aftershock of No. 783.
		eS	21	04	48	or 42°.5	
787	7	eP	01	00	00	6300	
		ePR_1		01	50	or 56°.7	
		eS		07	51		
788	7	eP	11	01	23		
789	7	e	16	41.9			
790	7	e	17	13.9			
791	7	eP	20	27	48	4720	Aftershock of No. 783.
		eS		34.0		or 42°.5 ca.	

SEISMOLOGICAL BULLETIN ... Cont'd.

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE kms.	REMARKS
	1952 DEC.						
793	8	eP	03	46	33		Teleseismic.
		e		51	03		
794	8	eP	15	14	22	2450	
		eS		18	20	or 22°0	
795	9	e	00	28	57		Felt at Calayan Int. II.
796	9	eP	09	24	46		
		eS		32	21	6120	
						or 55°1	
797	10	eP	17	08	59		
798	10	e	18	57	51		
799	10	eP	19	10	30		
		eS		11	02		
800	11	eP	03	32	54	280	
		eS		33	08		
801	11	eP	05	14.0			
802	11	eP	09	06	23	4890	h = 100 kms:-
		ePR_1		08	08	or 44°0	
		eS		12	45		
803	12	iP	08	11	48	140	
		eS		12	04		
804	12	eP	17	26	04		Teleseismic.
805	13	eP	11	18	53	290	
		eS		19	26		
806	14	e	04	54	38		Teleseismic.
807	15	eP	03	02	18	275	
		eS			49		
808	16	iP	04	05	37	147	
		iS			54		
809	16	eP	06	39	26	230	
		eS			52		
810	16	eP	20	02	24	280	
		eS			56		
811	17	iP	01	56	48		
812	17	eP	23	16	46	9780	
		eS		27.5		Or 88°0	
813	18	eP	01	49	28	130	
		eS			43		
814	18	eP	08	42	40		
815	18	e	09	29	30		Teleseismic.

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SEISMOLOGICAL BULLETIN ... Cont'd.

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
816	18	e	10	39.9			
817	18	eP	17	03	01		Teleseismic.
818	18	eP	21	08	45		
819	19	aP eS	17	31	00 10	85	
820	19	eP	19	17	10		
821	20	eP	08	38	30		
822	21	e	01	02	04		
823	21	eP eS	05 06	56 00	15 20	2600 or 23°4	
824	22	e	10	07	21		
825	22	eP eS	19	13 14	06 10	570	
826	22	eP	22	33	40		Teleseismic.
827	23	e	19	07.2			Felt at Virac, Int. III.
828	23	e	23	10	46		
829	24	e	01	08	13		
830	24	eP eS	06	07	34 51	148	
831	24	iP e	08	40 42	32 26		Teleseismic.
832	24	eP eS	14	31 34	28 39	1911 or 17°2	
833	24	eP	18	07	28		Teleseismic.
834	24	e	18	22	47		
835	24	eP ePcP	18	46 48	46 21		Teleseismic.
836	24	eP	21	28	22		
837	24	eP	21	44	17		Teleseismic.
838	25	eP	02	35	49		Teleseismic.
839	25	e	02	46	47		
840	25	eP eS	03	07	35 50	130	
841	25	eP	03	26	59		Teleseismic.
842	25	eP	03	58	11		Teleseismic.
843	25	eP eS	08	20 21	59 23	210	

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SEISMOLOGICAL BULLETIN ... Cont'd.

No.	DATE	PHASE	Greenwich TIME h	m	s	DISTANCE Kms.	REMARKS
	1952 DEC.						
844	25	iP	08	39	12	210	Probably the same epicentral area as No. 843.
		iS			36		
845	25	iP	08	43	16	210	"
		iS			40		
846	25	eP	08	55	03		
847	25	e	09	21	10		
848	25	eS?	09	22	39		
849	25	eP	15	03	50		Teleseismic.
850	25	e	17	05.1			
851	25	eP	22	31	37		Teleseismic.
852	26	iP	04	04	19	355	Felt at Iloilo, Int. II.
		iS			59		
853	26	eP	05	27	06	355	Probably the same epicentral area as No. 852.
		eS			46		
854	26	e	11	25	15		Teleseismic.
855	26	eP	20	11	44	210	
		eS		12	05		
856	26	eP	21	40	47		
857	27	eP	01	34	28		
858	27	eP	07	02	47		
859	27	eP	18	16	00		Felt at Mambajao, Int. V; Surigao, Int. IV.
860	28	eP	14	51.8			Felt at Davao, Int. IV.
861	28	eP	15	03	53		Felt at Davao, Int. V Dadiangas, Int. IV. Previous quake still recording.
862	28	e	15	17.1			Felt at Davao, Int. III; Dadiangas, Int. III. No. 862 still recording.
863	28	e	17	37	38		
864	29	eP	07	33	30	280	
		eS		34	02		
865	29	~~eP~~	09	21	35		
866	29	e	18	14	17		
867	29	eP	23	31	38		
868	30	e	06	22	08		Teleseismic.
869	30	e	09	28.8			
870	31	eP	21	52	13		

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SEISMOLOGICAL BULIETIN ... Cont'd.

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The following macroseismic tremors were reported but were not recorded at Manila:

			h	m(GMT)	
Ormoc City	Dec.	2	20	34	Int. VI
Dadiangas		5	02	25	I
Davao		15	22	10	I
Butuan		25	11	12	III
Masbate		27	07	25	III
Butuan		27	15	00	II
Mambajao		28	19	23	III
Mambajao		28	19	37	I
Butuan		31	11	12	III

THE MINDANAO EARTHQUAKES OF DECEMBER 27 - 31, 1952

The island of Mindanao was rocked by a series of earthquakes of varyin intensities betweem Dec. 27 and Dec. 31. The first of this series of nine tremors occured at 11 P.M. (Manila Time) of the 27th and was reported by Butuan of intensity II (R.F.). The second tremor which was of greater magnitude was reported felt of Int. V by Mambajao and Int. IV by Surigao at 2:16 A.M. the following day. This tremor was succeeded by three, coming one after the other, at 10:51 P.M. Reported by Davao of Int.IV; at 11:02 P.M. Davao, Int. V, Dadiangas, Int. IV; and at 11:16 P.M.,Davao,Int. III, Dadiangas, Int. III. On the 29th, three tremors, also occuring within a few minutes to each other were felt at Mambajao: at 3:11 AM, Int. II; at 3:23 AM, Int. III; and at 3:37 AM, Int. I. The last one at 7:12 P.M. Dec. 31st was reported by Butuan of Int. III.

All the tremors except the three Mambajao quakes on the 29th, which may be volcanic, are believed to be of tectonic origin. They can be attributed to adjustments along the probable major structural line crossing the island of Mindanao, N-S through Agusan and Cotobato Provences,

No casualty or damage to property were reported in connection with these earthquakes.