

550.34

SECTION V.—SEISMOLOGY.

SEISMOLOGICAL REPORTS FOR MAY, 1917.

W. J. HUMPHREYS, Professor in charge.

[Dated: Weather Bureau, Washington, D. C., July 3, 1917.]

TABLE 1.—Non-instrumental earthquake reports, May, 1917.

Date.	Approximate time, Greenwich Civil.	Station.	Approximate latitude.	Approximate longitude.	Intensity Rossi-Forel.	Number of shocks.	Duration.	Sounds.	Remarks.	Observer.
CALIFORNIA.										
1917. May 11	H. m. 22 36	Markleeville.....	38 42	119 46	5	1	M. s. 8	Rumbling...		W. S. Coyan.
		Towle.....	39 14	120 48	5	2				F. L. Harmon.
18	6 06	Calxico.....	32 41	115 30	3	1	1	Rumbling...	Sounds before shock.....	C. N. Perry.
19	6 35	Yorba Linda.....	33 51	117 50	5	2	3	Faint.....	Awakened people.....	W. A. Walker.
19	7 19	Yorba Linda.....	33 51	117 50	4	3	3	Faint.....		W. A. Walker.
20	9 45	Yorba Linda.....	33 51	117 50	5	1		Rumbling...	Shook buildings.....	W. A. Walker.
27	9 30	Brawley.....	32 59	115 40	5	1		Loud.....		M. D. Witter.
28	6 07	Barrett Dam.....	32 40	116 40	5	1		None.....		R. Wieste.
		Blythe.....	33 35	114 38	5	1		None.....		C. L. Suits.
		Brawley.....	32 59	115 40	6	1		Loud.....	Many frightened.....	M. W. Witter.
		Calxico.....	32 41	115 30	4-5	2		Rumbling...	Lifting motion noted.....	I. R. Ralston.
		Coachella.....	33 40	118 10	4-5	2				Frank McCarroll.
		Indio.....	33 43	116 12	3-4	1	1 00	None.....		Bruce Drummond.
		Julian.....	33 05	116 37	5	2	20	Rumbling...		J. H. L. Vogt.
		Mecca.....	33 34	116 05	5	1		None.....		E. A. Palmer.
		Mesa Grande.....	33 11	116 42	3	1	2	Rumbling...		E. H. Davis.
		Mount Wilson.....	34 13	118 16	2	2		None.....	Observed in telescope.....	Wendell P. Hoge.
		Nellie.....	33 22	116 52	3-4	2	10	Faint.....		Esther Hewlett.
		Point Loma.....	32 43	117 15	3	1	3	None.....		F. J. Dick.
		Riverside.....	33 58	117 21	5	1		None.....	People awakened.....	Press report.
		Warner Springs.....	33 17	116 37	3	1	1 00	None.....		J. A. Ream.
28	7 05	Calxico.....	32 41	115 30	3	1	12	None.....		H. M. Rouse.
28	10 17	Julian.....	33 05	116 37	5	1	10	Rumbling...		W. J. Norman.
31	2 10	Brawley.....	32 59	115 40	5	1		None.....		M. D. Witter.
		Calxico.....	32 41	115 30	3	2	1	Rumbling...		H. M. Rouse.
31	4 35	Cahuilla.....	33 32	116 43	5	1	4			Dr. W. L. Shawk.
MISSOURI.										
9	9 —	Hendrickson.....	36 50	90 26	4	1	1 —	Rumbling...		Geo. Magill.
9	15 —	Hendrickson.....	36 50	90 26	3	1				Geo. Magill.
NEW YORK.										
22	8 59	Alexandria Bay.....	44 22	75 54	3	1	6	Rumbling...	A few people awakened.....	Douglas F. Manning.
		Canton.....	44 36	75 10	4	1	12	Faint.....	Many awakened.....	U. S. Weather Bureau.
		Malone.....	44 51	74 18	4-5	1	10			Press report.
		Watertown.....	43 57	75 53	4-5	1			Shook furniture.....	Press report.
22	9 19	Canton.....	44 36	75 10	3	1				U. S. Weather Bureau.
VERMONT.										
22	8 59	Ferrisburg.....	44 13	73 15	3-4	1			Windows rattled.....	Rev. J. H. Long.
		Montpelier.....	44 16	72 34	3	1			People awakened.....	Press report.

TABLE 2.—Instrumental reports, May, 1917.

[Time used: Mean Greenwich, midnight to midnight. Nomenclature: International.]

[For significance of symbols see REVIEW for January, 1917, p. 26.]

Date.	Char-acter.	Phase.	Time.	Period. T.	Amplitude.		Dis-tance.	Remarks.
					A _m	A _N		
Alaska. Sitka. Magnetic Observatory. U. S. Coast and Geodetic Survey. J. W. Green.								
Lat., 57° 03' 00" N.; long., 135° 30' 06" W. Elevation, 15.2 meters.								
Instruments: Two Bosch-Omori, 10 and 12 kg.								
V T ₀								
Instrumental constants... $\begin{cases} E & 10 & 16.7 \\ N & 10 & 15.4 \end{cases}$								
1917.			H. m. s.	Sec.	μ	μ	km.	S and L uncertain. It may be that two earthquakes overlap.
May 1	eP _m		18 38 32					
	eF _m		18 39 46					
	S _m		18 50 16	10				
	S _m		18 51 24	10				
	eF _m		18 57 38					
	L _m		19 06 57	28				
	L _m		19 09 16	28				
	M _m		19 09 48	28		160		
	M _m		19 11 16	28	160			
	C _m		19 18 —	15				
	F _m		21 19 —					
	F _m		21 24 —					
9	P _m		16 16 18	11				
	L _m		16 24 31	22				
	M _m		16 30 30	13		30		
	C _m		16 42 —	14				
	F _m		17 04 —					
31	eP _m		8 50 54	3				
	eL _m		8 53 39	20				
	eL _m		8 54 28	20				
	M _m		8 55 25	16		520		
	M _m		8 57 20	17	1,620			
	C _m		9 06 —	12				
	F _m		10 23 —					
	F _m		11 12 —					

Arizona. Tucson. Magnetic Observatory. U. S. Coast and Geodetic Survey. F. P. Ulrich.

Lat., 32° 14' 48" N.; long., 110° 50' 08" W. Elevation, 769.6 meters.

Instruments: Two Bosch-Omori, 10 and 12 kg.

Instrumental constants... $\begin{matrix} V & T_0 \\ E & 10 & 13.9 \\ N & 10 & 18.9 \end{matrix}$

1917.		H. m. s.		Sec.	μ	μ	km.	S and L doubtful.
May	1	P _N	18 39 36	4				
		P _m	18 39 40	4				
		S _m	18 50 01	11				
		S _m	18 50 08	14				
		L _m	19 02 41	14				
		L _m	19 03 01	16				
		M _m	19 08 43	21		170		
		M _m	19 29 52	16	280			
		C _m	19 42 —	16				
		F _m	22 46 —					
25		eP _m	14 42 33	2				
		eP _m	14 42 45	4				
		M _m	14 43 50	6		100		
		M _m	14 44 05	12	140			
		F _m	14 57 —					
		F _m	15 02 —					
28		e _m	6 06 42	4				
		e _m	6 06 44	2				
		M _m	6 08 05	5	10			
		M _m	6 08 10	6		20		
		F _m	6 13 —					
		F _m	6 15 —					
31		P _m	8 55 24	4				
		eP _m	8 55 39	8				
		eS _m	9 01 41	10				
		eS _m	9 01 41	4				
		L _m	9 04 40	22				
		M _m	9 08 26	12	20			
		M _m	9 09 57	22		80		
		F _m	10 52 —					
		F _m	10 56 —					

Date.	Char-acter.	Phase.	Time.	Period. T.	Amplitude.		Dis- tance.	Remarks.
					A _H	A _V		
California. Berkeley. University of California.								
Lat., 37° 52' 16" N.; long., 122° 15' 37" W. Elevation, 85.4 meters.								
(See Bulletin of the Seismographic Stations, University of California.)								

California. Mount Hamilton. Lick Observatory.								
Lat., 37° 20' 24" N.; long., 121° 38' 34" W. Elevation, 1,281.7 meters.								
(See Bulletin of the Seismographic Stations, University of California.)								

California. Point Loma. Raja Yoga Academy. F. J. Dick.								
Lat., 32° 43' 03" N.; long., 117° 15' 10" W. Elevation, 91.4 meters.								
Instrument: Two-component, C. D. West seismoscope.								

Date.	Char-acter.	Phase.	Time.	Period. T.	Amplitude.		Dis- tance.	Remarks.
					A _m	A _N		
1917. May 2			H. m. s.	Sec.	*100	*100		Tremors recorded during 24 hours ending 15 ^h on dates given, except the record of a local shock on the 28th.
3					*100	*100		
6					*100	*100		
10					*500	*100		
16					*100	*100		
22					*100	*100		
24					*100	*200		
26					*50	*100		
28			14 — —		*400	*400		
30					*50	*50		

* Amplitude on instrument.

California. Santa Clara. University of Santa Clara. J. S. Ricard, S. J.								
Lat., 37° 26' 36" N.; long., 121° 57' 03" W. Elevation, 27.43 meters.								
(See record of the Seismographic Station, University of Santa Clara.)								

Colorado. Denver. Sacred Heart College. Earthquake Station. A. W. Forstall, S. J.								
Lat., 39° 40' 39" N.; long., 104° 56' 54" W. Elevation, 1,655 meters.								
Instrument: Wiechert 80 kg.; astatic, horizontal pendulum.								

Date.	Char-acter.	Phase.	Time.	Period. T.	Amplitude.		Dis- tance.	Remarks.
					A _m	A _N		
1917. May 1	P.		18 49 —					P and S somewhat obscured. Three sets of waves appear on record. Waves appear in sharp, well-defined groups with periods of calm between.
	S.		19 04 —					
	L _m		19 09 —	30-32	*2,300			
	L _m		19 09 —	28-30	*2,700			
	M _m		19 10 —	32	*2,800			
	M _m		19 10 —	30	*2,800			Another maximum at 19 ^h 15 ^m .
	C.		19 51 —	20	*1,000	*1,000		
	F.		19 55 —					
9	L _m		16 38 —					Very regular sinusoidal waves. Three well-defined groups. No preliminaries visible.
	L _m		16 41 —					
	M _m		16 48 —	20	*750			
	M _m		16 50 —	20		*750		
	F _m		16 50 —					
17	L _m		16 51 —					Wavelets at intervals from 3 ^a to 13 ^a of long period and small amplitude.
	F _m		8 50 —					
31	L _m		8 43 —					Very distinct and regular sinusoidal waves. Time doubtful; clock stopped. No record on E-W.
	F _m		8 50 —					

* Trace amplitude.

TABLE 2.—Instrumental reports, May, 1917—Continued.

Date.	Char-acter.	Phase.	Time.	Period. T.	Amplitude.		Dis- tance.	Remarks.
					A _m	A _N		

District of Columbia. Washington. U. S. Weather Bureau.
 Lat., 38° 54' 12" N.; long., 77° 03' 03" W. Elevation, 21 meters.
 Instrument: Marvin vertical pendulum, undamped. Mechanical registration.
 Instrumental constants $V = 110$, $T_0 = 6.4$

1917.	May	1	II _u	P	H. m. s.	Sec.	μ	μ	km.	
				S	18 36 30				8,760	
				SR	18 46 28					
				L	18 52 16					
				L	18 57 08	24				
				L	19 29 30	19				
				L	19 50 00	16				
				L	20 33 00	15				
				L	20 44 00	20				
				F	23 00 00					
	4			eL	1 46 00					
				F	2 35 00					
	9			eL	16 18 20					
				L	16 48 00	20				
				F	17 40 00					
	14*			e	21 57 30					
				L	22 02 00	20				
				F	22 35 00					
	25			i	14 58 03					
				F	15 08 00					
	25			e	6 21 46					
				F	6 24 00					
	29*			eL	6 56 00					
				F	7 40 00					
	31			II _u	P	8 56 56			6,140	
				S	9 04 40					
				L	9 13 00					
				F	10 35 00					
	31			eL	19 54 17					
				F	20 05 00					

(*) Phases uncertain.
 In California. Phases indistinguishable.
 L waves very irregular.

Hawaii. Honolulu. Magnetic Observatory. U. S. Coast and Geodetic Survey. Frank Neumann.
 Lat., 21° 19' 12" N.; long., 158° 03' 48" W. Elevation, 15.2 meters.
 Instrument: Milne seismograph of the Seismological Committee of the British Association.
 Instrumental constant $T_0 = 18.6$

1917.	May	1		P	H. m. s.	Sec.	μ	μ	km.	
				L	18 35 54					
				M	18 44 00	21				
				C	18 58 48					
				F	20 05 00					
				F	23 37 00					
	2			P	1 38 12					
				L	1 48 00	18				
				M	1 52 18					
				C	1 58 42					
	2			e	3 21 30					
				M	3 37 00	18				
				C	3 30 00					
				F	4 24 00					
	2			eP	4 39 00					
				eL	4 49 48					
				M	4 53 06	21				
				C	4 56 00					
				F	5 28 00					
	2			L	14 27 12	20				
				M	14 39 18					
				F	15 34 00					
	3			L	13 17 30					
				M	13 29 54	19				
				F	13 27 00					
	4			P	0 52 54					
				L	0 59 24					
				M	1 14 00	19				
				C	1 26 00					
				F	2 35 00					
	6			P	23 14 00					
				L	23 23 54	21				
				M	23 25 00					
				C	23 32 00					
				F	24 14 00					
	7			e	8 28 00					
				M	8 28 48	19				
				F	8 47 00					
	9			eP	16 05 24					
				eS	16 13 54					
				L	16 21 18					
				M	16 25 00	20				
				C	16 49 00					
	9			eP	19 50 06					
				L	20 00 06	20				
				M	20 03 48					
				C	20 06 00					
				F	21 57 00					
	10			eP	22 54 18					
				M	23 05 18	20				
				C	23 09 00					
				F	23 18 00					
	14			L	0 40 24					
				M	0 42 12					
				F	0 57 00					
	14			eP	22 17 54					
				eL	22 25 36	20				
				M	22 30 42					
				C	22 33 00					
				F	23 28 00					
	18			P	19 12 12					
				L	19 21 54					
				M	19 30 00	21				
				C	19 34 00					
				F	20 14 00					
	21			L	9 41 00					
				M	9 43 48	15				
				C	9 46 00					
				F	9 54 00					
	23			L	21 53 06					
				M	21 57 06	21				
				F	22 13 00					
	24			eP	19 37 00					
				eS	19 43 00					
				L	19 49 18					
				M	19 52 18	19				
				C	19 57 00					
				F	20 43 00					

* Trace amplitude.

District of Columbia. Washington. Georgetown University.
 F. A. Tondori, S. J.
 Lat., 38° 54' 25" N.; long., 77° 04' 24" W. Elevation, 42.4 meters. Sub-soil: decayed diorite.
 Instruments: Wiechert 200 kg. astatic horizontal pendulums, 80 kg. vertical.
 Instrumental constants $E = 165$, $V = 5.4$, $T_0 = 0$, $N = 143$, $T_0 = 5.2$, $Z = 80$, $T_0 = 0$

1917.	May	1		eP	H. m. s.	Sec.	μ	μ	km.	
				S _N	18 46 06					
				S _N	18 56 10					
				S _N	18 56 26					
				eL _N	19 02 11					
				eL _N	19 02 17					
				M _N	19 29 47					
				M _N	19 34 17					
				F _N	21 40					
	3			F	13 48 00					
	4			e	1 40 55					
				L _N	1 46 10	20				
				L _N	1 47 18	15				
				F	2 23 00					
	9			e _N	16 36 20					
				e _N	16 36 30					
				eL _N	16 47 42					
				eL _N	16 47 43					
				L _N	16 57 07	20				
				L _N	16 57 40	20				
				F	17 30 00					
	25			e?	14 52 19					
				S _N	14 57 49					
				S _N	14 57 56					
				F	15 11 00					
	31			P	8 57 05					
				S _N	9 04 42					
				S _N	9 04 43					
				L	9 15 38	18				
				M _N	9 20 02					
				M _N	9 22 38					
				F	11 05					
	31			eL	19 54 02					
				F	20 10					

Microseisms present.
 Microseisms present. Sheet put on at 12^h 58^m; at 12^h 59^m long waves show.
 Microseisms present.
 Very heavy microseisms present. No distinct maximum.
 All phases doubtful.
 Vertical shows P at 8^h 57^m 9^s. Other phases indistinct.
 Microseisms present.

Time of P doubtful. Observer entered room at time of maximum.

TABLE 2.—Instrumental reports, May, 1917—Continued.

Date.	Char-acter.	Phase.	Time.	Period. T.	Amplitude.		Dis- tance.	Remarks.
					A _m	A _N		
Hawaii. Honolulu. Magnetic Observatory—Continued.								
1917.								
May 24	-----	eL.....	H. m. s. 23 50 30	Sec. 20	μ *100	μ	km.	
		M.....	23 56 12					
25		F.....	0 05 00					
26	-----	eL.....	4 29 00					
		M.....	4 36 00	20	*100			
		F.....	4 41 00					
29	-----	P.....	6 19 24					
		S.....	6 24 12					
		L.....	6 26 54	22				
		M.....	6 31 06		*1000			
		F.....	7 09 00					
31	-----	eP.....	8 54 42					
		L.....	9 00 12					
		M.....	9 09 48	21	*6000			
		C.....	9 12 00					
		F.....	12 18 00					

* Trace amplitude.

Kansas. Lawrence. University of Kansas. Department of Physics and Astronomy. F. E. Kester.

Lat., 38° 57' 30" N.; long., 95° 14' 53" W. Elevation, 301.1 meters.

Instrument: Wiechert.

Instrumental constants. $\begin{cases} E & 177 & 3.4 & 4:1 \\ N & 205 & 3.4 & 4:1 \end{cases}$

Date.	Char-acter.	Phase.	Time.	Period. T.	Amplitude.		Dis- tance.	Remarks.
					A _m	A _N		
1917.			<i>H. m. s.</i>	<i>Sec.</i>	μ	μ	<i>km.</i>	
May 1	-----	eP _N	18 40 51	-----	-----	-----	-----	Very faint record. P _N not discern- ible.
		S.....	18 51 20	-----	-----	-----	-----	
		L.....	19 09 27	55-60	-----	-----	-----	
		L ₂	19 11 07	30	-----	-----	-----	
		M.....	19 26 17	18	17	-----	-----	
		M _N	19 27 23	17	-----	14	-----	
		F.....	22 09 ..	-----	-----	-----	-----	
9	-----	eP _N	16 13 04	-----	-----	-----	-----	Record on E-W very illegible. iP _N may be building shock.
		iP _N	16 14 00	-----	-----	1	-----	
		eS _N	16 19 14	-----	-----	-----	-----	
		L _N	16 27 33	-----	-----	-----	-----	
		M _N	16 48 50	23	-----	1	-----	
		F.....	17 37 ..	-----	-----	-----	-----	
31	-----	eP _N	8 55 46	-----	-----	-----	-----	N-S not recording properly.
		iP _N	8 55 54	-----	-----	-----	-----	
		S _N	9 02 17	-----	-----	-----	-----	
		S _N	9 06 08	-----	-----	-----	-----	
		iL _N	9 09 25	-----	-----	-----	-----	
		L _N	9 10 15	20-25	-----	-----	-----	
		M _N	9 13 25	-----	8	-----	-----	
		F.....	10 00 ..	-----	-----	-----	-----	

Maryland. Cheltenham. Magnetic Observatory. U. S. Coast and Geodetic Survey. George Hartnell.

Lat., 38° 44' 00" N.; long., 76° 50' 30" W. Elevation, 71.6 meters.

Instruments: Two Bosch-Omori, 10 and 12 kg.

Instrumental constants. $\begin{cases} E & 10 & 33 \\ N & 10 & 25 \end{cases}$

Date.	Char-acter.	Phase.	Time.	Period. T.	Amplitude.		Dis- tance.	Remarks.
					A _m	A _N		
1917.			<i>H. m. s.</i>	<i>Sec.</i>	μ	μ	<i>km.</i>	
May 1	-----	eP _N	18 45 24	2	-----	-----	-----	S and L doubtful; it may be that there are two earthquakes over- lapping.
		S.....	18 56 03	-----	-----	-----	-----	
		S _N	18 56 28	-----	-----	-----	-----	
		L _N	19 02 30	-----	-----	-----	-----	
		L _N	19 03 32	-----	-----	-----	-----	
		L _N	19 22 34	20	-----	-----	-----	
		L _N	19 24 12	22	-----	-----	-----	
		M.....	19 25 37	24	*1100	-----	-----	
		M _N	19 34 20	17	-----	*450	-----	
		C.....	19 47 ..	17	-----	-----	-----	
		F.....	20 33 ..	-----	-----	-----	-----	
31	-----	P _N	8 57 03	4	-----	-----	-----	
		P _N	8 57 06	4	-----	-----	-----	
		S _N	9 04 46	8	-----	-----	-----	
		S _N	9 04 49	8	-----	-----	-----	
		eL _N	9 13 24	19	-----	-----	-----	
		eL _N	9 13 35	19	-----	-----	-----	
		M _N	9 20 27	21	*500	-----	-----	
		M _N	9 22 46	21	-----	*300	-----	
		C _N	9 39 ..	14	-----	-----	-----	
		C _N	9 46 ..	14	-----	-----	-----	
		F _N	10 21 ..	12	-----	-----	-----	
		F _N	10 26 ..	-----	-----	-----	-----	

Date.	Char-acter.	Phase.	Time.	Period. T.	Amplitude.		Dis- tance.	Remarks.
					A _m	A _N		

Massachusetts. Cambridge. Harvard University Seismographic Station, J. B. Woodworth.

Lat., 42° 22' 36" N.; long., 71° 08' 59" W. Elevation, 5.4 meters. Foundation: Glacial sand over clay.

Instruments: Two Bosch-Omori 100 kg. horizontal pendulums (mechanical registration).

Instrumental constants. $\begin{cases} V & T_0 & \epsilon \\ E & 80 & 23 & 0 \\ N & 50 & 25 & 4:1 \end{cases}$

(Report for May, 1917, not received.)

Missouri. Saint Louis. St. Louis University. Geophysical Observatory. J. B. Goesse, S. J.

Lat., 38° 38' 15" N.; long., 90° 13' 53" W. Elevation, 160.4 meters. Foundation: 12 feet of tough clay over limestone of Mississippi system, about 300 feet thick.

Instrument: Wiechert 80 kg. astatic, horizontal pendulum.

Instrumental constants. $\begin{cases} V & T_0 & \epsilon \\ E & 80 & 7 & 5:1 \end{cases}$

Date.	Char-acter.	Phase.	Time.	Period. T.	Amplitude.		Dis- tance.	Remarks.
					A _m	A _N		
1917.			<i>H. m. s.</i>	<i>Sec.</i>	μ	μ	<i>km.</i>	
May 1	III _u	eP.....	18 45 01	-----	-----	-----	-----	Times uncertain; wireless time serv- ice suspended.
		eS.....	19	-----	-----	-----	-----	
		eL.....	19 16 ..	-----	-----	-----	-----	
		F.....	22 17 ..	-----	-----	-----	-----	
4	I _u	eP.....	1 20 ..	-----	-----	-----	-----	
		F.....	2	-----	-----	-----	-----	
9	I _u	e _N	16 50 ..	-----	-----	-----	-----	
		F.....	17 40 ..	-----	-----	-----	-----	
25	I _u	e.....	14 52 ..	-----	-----	-----	-----	
		F.....	15 02 ..	-----	-----	-----	-----	
31	II _u	eP.....	8 56 ..	-----	-----	-----	5,100	
		S _?	9 02 04	-----	-----	-----	-----	
		L.....	9 08 ..	-----	-----	-----	-----	
		M.....	10 10 03	20	5	-----	-----	
		F.....	10 20 ..	-----	-----	-----	-----	

New York. Buffalo. Canisius College. John A. Curtin, S. J.

Lat., 42° 53' 02" N.; long., 78° 52' 40" W. Elevation, 190.5 meters.

Instrument: Wiechert, 80 kg., horizontal.

Instrumental constants. $\begin{cases} V & T_0 & \epsilon \\ E & 80 & 7 & 5:1 \end{cases}$

(Report for May, 1917, not received.)

New York. Fordham. Fordham University. Daniel H. Sullivan, S. J.

Lat., 40° 51' 47" N.; long., 73° 53' 08" W. Elevation, 23.9 meters.

Instrument: Wiechert, 80 kg.

Instrumental constants. $\begin{cases} V & T_0 & \epsilon \\ E & 72 & 7.2 & 1.5:1 \\ N & 72 & 7.2 & 3.8:1 \end{cases}$

(Report for May, 1917, not received.)

TABLE 2.—Instrumental reports, May, 1917—Continued.

Date.	Char-acter.	Phase.	Time.	Period. T.	Amplitude.		Dis- tance.	Remarks.						
					A _m	A _N								
New York. Ithaca. Cornell University. Heinrich Ries.														
Lat., 42° 26' 58" N.; long., 76° 29' 09" W. Elevation, 242.6 meters.														
Instruments: Two Bosch-Omori, 25 kg. horizontal pendulums (mechanical registration).														
Instrumental constants. $\begin{cases} V & T_0 & e \\ E & 13 & 22 & 4:1 \\ N & 14 & 25 & 4:1 \end{cases}$														
1917. May 1		eP _N	18 45 54	6				Instrument out of order during later part of April.						
		eP _S	18 46 10	6										
		P _N	18 51 58	7										
		S _N	18 55 57	20										
		S _N	18 56 08	20										
		eS _N	19 02 18	22										
		eS _N	19 02 28	17										
		L _N	19 14 50	56										
		M _N	19 35 02	18		340								
		M _N	19 38 42	17	250									
		F _N	22 16											
		F _N	22 57											
2		eL _N	2 25 38	16										
		F _N	2 53											
2		eL _N	4 01 15	16										
		F _N	4 44											
2		eL _N	5 34 24	17										
		F _N	5 55											
4		eL _N	1 34 15	20										
		F _N	2 23											
9		e _N	16 40 35	24										
		F _N	17 46											
9		e _N	20 36 05	17										
		F _N	20 49											
25		e _N	14 57 57	3-9										
		F _N	15 09											
31		P _N	8 56 34	4										
		P _N	8 56 40	4										
		S _N	9 04 02	7										
		S _N	9 04 05	6										
		eL _N	9 13 07	7-20										
		eL _N	9 13 10	7-18										
		F _N	10 58											
		F _N	11 13											

Panama Canal Zone. Balboa Heights. Isthmian Canal Commission.
 Lat., 8° 57' 39" N.; long., 79° 33' 29" W. Elevation, 27.6 meters.
 Instruments: Two Bosch-Omori, 100 kg.
 $\begin{matrix} V & T_0 \\ E & 10 & 17.5 \\ N & 10 & 18.0 \end{matrix}$
 Instrumental constants.
 (Report for May, 1917, not received.)

Porto Rico. Vieques. Magnetic Observatory. U. S. Coast and Geodetic Survey. F. L. Adams.
 Lat., 18° 09' N.; long., 65° 27' W. Elevation, 19.3 meters.
 Instruments: Two Bosch-Omori.
 $\begin{matrix} V & T_0 \\ E & 10 & 17.5 \\ N & 10 & 18.0 \end{matrix}$
 Instrumental constants.

Date.	Char-acter.	Phase.	Time.	Period. T.	Amplitude.		Dis- tance.	Remarks.
					A _m	A _N		
1917. May 1		eP _N	18 37 35	7				S and L uncertain. It may be that two earthquakes overlap.
		eN	18 46 43	7				
		S _N	18 56 25	12				
		S _N	18 56 27	18				
		L _N	19 21 50	30				
		L _N	19 22 27	20				
		M _N	19 22 55	27	*130			
		M _N	19 25 27	23		*270		
		M _N	19 40 07	18		*270		
		M _N	19 40 15	17	*130			
		C _N	20 00	16				
		C _N	20 04	15				
		F _N	21 05					
		F _N	21 27					
9		eP _N	16 35 00					
		M _N	17 12 30	26		*30		
		F _N	18 08 00					
31		P _N	9 09 10					
		M _N	9 33 40	20	*30			
		M _N	9 33 45	18		*180		
		C _N	9 39	16				
		C _N	9 42	16				
		F _N	10 25					
		F _N	10 30					

Date.	Char-acter.	Phase.	Time.	Period. T.	Amplitude.		Dis- tance.	Remarks.						
					A _m	A _N								
Vermont. Northfield. U. S. Weather Bureau. Wm. A. Shaw.														
Lat., 44° 10' N.; long., 73° 41' W. Elevation, 256 meters.														
Instruments: Two Bosch-Omori, mechanical registration.														
Instrumental constants. $\begin{matrix} V & T_0 \\ E & 10 & 15 \\ N & 10 & 16 \end{matrix}$														
1917. May 1	II _u	P	18 37 28				8,360							
		S	18 47 04											
		L	18 57 00	20										
		L	19 23 20	34										
		L	19 27 20	20										
		F	22 40 00											
9		e	16 13 13											
		L	16 46 45	34										
		F	17 25 00											
25		e	14 59 23											
		F	15 10 00											
31	II _u	P	8 56 57				5,680							
		S	9 04 16											
		L	9 13 26	20										
		F	11 00 00											
31		e	19 57 00											
		F	20 00 00											

Canada. Ottawa. Dominion Astronomical Observatory. Earthquake Station. Otto Klotz.
 Lat., 45° 23' 38" N.; long., 75° 42' 57" W. Elevation, 83 meters.
 Instruments: Two Bosch photographic horizontal pendulums, one Spindler & Hoyer 80 kg. vertical seismograph.
 $\begin{matrix} V & T_0 \\ E & 120 & 26 \end{matrix}$
 Instrumental constants.

Date.	Char-acter.	Phase.	Time.	Period. T.	Amplitude.		Dis- tance.	Remarks.
					A _m	A _N		
1917. May 1		O	18 27				12,900	O and distance approximate.
		eP _N	18 42 00					
		S _N	18 54 58					
		eN	18 56 28	20				
		L _N	18 56 54					
		eN	19 15	56-48				
		eN	19 21	40-26				
		eL _N	19 23 36	30				
		eL _N	19 24 00	24				
		M _N	19 35 00	18		180		
		L	19 40 00	18				
		L	19 47 00	16				
		L	20 00 00	16				
		L	20 19 00	15				
		LR1 _N	20 25 00	40				
		LR1 _N	20 26 00	24				
		L	20 31 00	25				
		L	20 42 00	20				
		F	21 40 00					
2		eL	2 28 00					
		L	{ 2 40 —			16		
		L	{ 2 50 —					
2		eL	4 01 —					
		L	{ 4 01 —			20-16		
		L	{ 4 15 —					
2		eL _N	15 08 18					
		L	{ 15 17 —			20		
		L	{ 15 30 —					
3		eL _N	12 56 00					
		L	{ 13 08 00			18		
		F	{ 13 35 00					
4		eP _N	1 33 23				5,000?	
		eP _N	1 33 26					
		S _N	1 40 06					
		S _N	1 40 10					
		eL _N	1 47 36	18				
		eL _N	1 48 24	18				
		L	{ 1 56 —			18-15		
		L	{ 2 22 —					
		F	{ 2 45 —					
9		O	16 08 45				8,380	
		eP _N	16 14 25					
		eP _N	16 14 28					
		S _N	16 24 02					
		S _N	16 24 05					
		eL _N	16 39 00	20				
		L	16 44 24	40				
		L	16 56 00	20				
		L	17 10 00	11				
		F	17 45					

TABLE 2.—Instrumental reports, May, 1917—Continued.

Date.	Char-acter.	Phase.	Time.	Period. T.	Amplitude.		Dis- tance.	Remarks.
					A _m	A _n		

Canada. Victoria, B. C. Dominion Meteorological Service—Contd.

1917. May	2	P or S.	H. m. s. 1 51 22	Sec. 2 10 43	μ *500	μ	km.	†
		M.	2 10 43					
		F.	2 31 32					
	2	L.	3 41 27					M at cut-off. †
		F.	4 04 44					
	2	M.	5 12 12		*200			†
	2	L?	14 54 52					†
		M.	15 02 49		*100			
	3	M.	13 18 09		*400			
		F.	13 22 32					
	4	P?	1 06 45					
		M.	1 41 27		*700			
		F.	2 28 34					
	6	P or L.	23 33 31					
		M.	23 44 26		*600			
		F.	23 58 49					
	7	P?	8 58 49					
		M.	9 02 17		*100			
		F.	9 04 44					
	9	P.	15 59 49				6,370	May be Kam- chatka.
		S.	16 07 45					
		L.	16 17 32					
		M.	16 44 27		*3,500			
		eL.	18 28 00					F?
		VERTICAL.			A _z			
		P.	15 59 00	2-4			5,320	L?
		S.	16 06 00	6				
		M.	16 39 30	18	167			
	9	M.	21 30 34		*200			May be part of above.
	14	P?	22 41 59					
		L.	22 44 28					
		M.	22 52 24		*200			
		F.	23 16 42					
	24	P?	20 03 00					
		L?	20 10 30					
		M.	20 12 00		*200			F?

Date.	Char-acter.	Phase.	Time.	Period. T.	Amplitude.		Dis- tance.	Remarks.
					A _m	A _n		

Canada. Victoria, B. C. Dominion Meteorological Service—Contd.

1917. May	25	P.	H. m. s. 14 52 02	Sec. 14 53 31	μ *200	μ	km.	
		L.	14 53 31					
		M.	14 55 01					
		F?	15 00 58					
	29	P?	6 44 35					
		L.	6 47 02					
		M.	6 51 57		*500			
		F.	7 02 48					
	31	P.	8 53 54				2,290	Alaskan Peninsula. S waves of large amplitude.
		iP.	8 55 53					
		iS.	8 57 42					
		L.	8 58 22					
		M.	9 01 20		*14,500			
		F.	12 25 38					
		VERTICAL.			A _z			
		P.	8 53 54	3-4			1,680	
		S.	8 56 48	4				
		L.	8 58 12	18				
		M.	9 01 00	21	67			
	31	L.	19 53 42	18-24	*100			
		F?	19 59 00					

* Trace amplitude.

† Probably after-shocks.

SEISMOLOGICAL DISPATCHES.¹

Rome, May 9, 1917.

Violent earthquakes in Calabria created a panic among the populace there to-day. Inhabitants of towns and villages fled to the open fields. No fatalities have been reported. (United Press.)

Ogdensburg, N. Y., May 22, 1917.

Three distinct earth shocks were felt in this vicinity at 4 a. m. to-day. Persons were roused from sleep by the shaking of their houses, but no damage has been reported. (Assoc. Press.)

¹ Reported by the organizations indicated and collected by the seismological station at Georgetown University, Washington, D. C.