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1944 January, February, March.

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ASSOCIATION OF SEISMOLOGY.
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The number constitutes the beginning of the eighth volume of the International Seismological Summary in which travel times and Epicentral distances are calculated with reference to "Geocentric" latitudes of epicentres and observing stations. The travel-times used in making determinations are those contained in "Seismological Tables" by H. Jeffreys and K. E. Bullen, Brit. Ass. for Advancement of Science—London, 1950, and residuals derived accordingly.

Distances are calculated from modified direction-cosines defined by :

$$A = \cos \phi' \cos \lambda$$
$$B = \cos \phi' \sin \lambda$$
$$C = \sin \phi'$$

λ being the east longitude from Greenwich and ϕ' the *geocentric* latitude whose relationship to the ordinary *geographic* latitude ϕ is :—

$$\tan \phi' = \cdot 99328 \tan \phi.$$

These formulae are used to determine direction-cosines of both epicentre and station, though the position is in every case referred to normal ϕ and λ.

The notation is that generally accepted. P and S stand for the times of onset of the direct longitudinal and transverse waves. Pg, Sg, P*, S* for short distances are used for times for these waves transmitted through the superficial "Granitic" and "Intermediate" layers respectively. Reflections of the direct waves at the earth's surface are denoted by PP, PS, PPP, SS . . . and at the outer surface of the central core by PcP, PcS . . .

The refracted logitudinal wave through the central core is known as K. Such waves as PKP, SKS, PKS, SKKS, are frequently recorded at great distances from the epicentre. All times are given as Greenwich Civil Time and are referred to the adopted T_0 as zero.

The arrangement of the " Summary " consists of :—

(1) Date and Time at Origin (T_0), calculated from the above-mentioned tables, together with the depth of focus where this is assumed not to be in the surface. The time calculated is that at which the P wave leaves the focus, not that when P arrives at the epicentre.

(2) Epicentre constants :—

$A=\cos\phi'\cos\lambda$ $\quad D=\sin\lambda$ $\quad G=\sin\phi'\cos\lambda$
$B=\cos\phi'\sin\lambda$ $\quad E=-\cos\lambda$ $\quad H=\sin\phi'\sin\lambda$
$C=\sin\phi'$ $\quad K=-\cos\phi'$

from which distances, Δ, and where necessary Azimuths, of stations with respect to the epicentre may be calculated by means of the formulae :—

$$\cos\ \Delta=aA+bB+cC$$
$$2-2\cos\ \Delta=(a-A)^2+(b-B)^2+(c-C)^2$$
$$2+2\sin\ \Delta\sin Az.=(a-D)^2+(b-E)^2+c^2$$
$$2+2\sin\ \Delta\cos Az.=(a-G)^2+(b-H)^2+(c-K)^2$$

a, b, c being related to the observing station in the same way as A, B, C are to the epicentre.

δ is defined as the nearest integer to $10^5(A^2+B^2+C^2-1)$ and may be used to compare distances calculated by the first two formulae above, whose equivalence depends on the assumption

$$A^2+B^2+C^2=1$$

h is the height, in kilometres, of the epicentre above the sphere of equal volume concentric with the earth and is given by

$$h=-3\cdot549+10\cdot738\cos 2\phi$$

(3) The tabular matter consisting of the station names arranged in order of epicentral distances, followed by this distance and the Azimuth measured round the epicentre from North through East. Other columns give the P phase and its residual, or PKP, in which the residual is shown in brackets [ ]. The S phase or an associated phase follows with its residual. If SKS is entered here the residual is shown in [ ], and if SKKS in { }. Under " Supp " is placed the time of some other, preferably well recorded phase such as PS, SS, or, in the case of deep focus shocks, pP. The final column, L, records the onset, if known, of Rayleigh waves R, or of the horizontally polarised surface waves Q.

(4) Readings for which space is not available in the tabular part, added at the foot. Although still referred to the time at origin as zero, these are no longer prefixed with a plus sign.

The letters E, N, Z after a phase indicate that the reading was taken on an instrument recording East-West, North-South, or Vertical component of motion, though some stations have instruments oriented to record North-East or North-West components. Reflections near

the epicentre take place, and in the case of deep focus earthquakes can be distinguished from the direct phases. These are distinguished as pP, sS, sP, pPP—the small p and s referring to the initial portion of the path towards the surface.

The letters a, k after a P or PKP phase stand for the terms "Anaseismic" and "Kataseismic," and indicate whether the first longitudinal motion was one away from the origin or towards it.

The epicentres for earthquakes with abnormal focal depth are calculated from travel times appropriate to them in the tables cited above. The depth to be assumed can be obtained from these tables when the observational data are plentiful, and the epicentre then determined in the usual way. When the data are scanty an indication of depth can be obtained from the evidence of the readings of certain individual stations.

The first quarter for 1944 contains 74 epicentres, 53 of which are repetitions from previous epicentres.

Cases of abnormal focal depth are noted below :—

Jan.	5d.	4h.	Undetermined shock		Suggested Deep
	7d.	2h.	4·4S.	143·5E.	0·010
	11d.	1h.	39·9N.	142·4E.	0·005
	15d.	23h.	31·5S.	68·6W.	Suggested Deep
	16d.	14h.	Undetermined shock		„ „
	20d.	2h.	14·8S.	174·3W.	„ „
	25d.	7h.	8·9S.	118·5E.	0·005
Feb.	1d.	5h.	41·6N.	142·0E.	0·020
	4d.	21h.	44·7N.	152·3E.	Suggested Deep
	18d.	9h.	Undetermined shock		„ „
	29d.	3h.	13·9S.	70·0W.	0·015
March	5d.	17h.	7·5N.	126·7E.	0·020
	15d.	8h.	24·7N.	125·2E.	0·010
	21d.	22h.	41·0N.	143·3E.	Suggested Deep
	22d.	0h.	8·3S.	123·4E.	0·015
	31d.	2h.	5·6S.	131·0E.	0·005

Thanks are also due to the Director of the Meteorological Office and the Superintendent of Kew Observatory for hospitality extended to the staff and assistance with administration.

KEW OBSERVATORY,
Richmond,
SURREY.

September, 1953.

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1944 JANUARY, FEBRUARY, MARCH.

Jan. 1d. Readings at 1h. (Riverview, Wellington, Christchurch, Auckland, and Mizusawa), 5h. (Tananarive near Stuttgart and Ebingen), 6h. (Wellington, Stuttgart), 8h. (Bogota), 9h. (Bombay and Riverview), 10h. (Calcutta, Wellington, Mount Wilson, Tucson, Riverside, Tinemaha, Palomar, La Paz, and near Huancayo), 16h. (St. Louis).

Jan. 2d. 10h. 59m. 46s. Epicentre 40°·5N. 34°·0E. (as on 1943 Nov. 27d.).

A = +·6322, B = +·4264, C = +·6469 ; δ = −3 ; h = −2 ;
D = +·559, E = −·829 ; G = +·536, H = +·362, K = −·763.

		△	Az.	P.	O−C.	S.	O−C.		Supp.		L.
		°	°	m. s.	s.	m. s.	s.		m. s.		m.
Istanbul		3·8	279	1 16	P_g	2 13	S_g		1 26	?	—
Ksara		6·8	167	c 2 15?	P_g	4 7	sS_g		—	—	—
Bucharest		7·0	306	e 1 47	+ 1	i 3 0	− 8		i 3 43	S_g	—
Sofia		8·3	289	e 2 14	+10	i 3 31	− 9		i 2 20	P*	4·6
Helwan		10·8	192	e 3 17	?	—	—		e 5 59	?	e 9·4
Belgrade		10·9	298	e 2 40	0	e 4 32	−12		e 5 16	SSS	e 5·8
Stuttgart		19·4	305	e 4 29	− 1	e 7 56?	− 8		c 10 44?	Q	13·2
Zürich		19·5	300	e 4 30	− 1	—	—		—	—	—
Basle		20·2	300	e 4 38	− 1	—	—		—	—	—
Strasbourg		20·3	304	e 4 39	− 1	—	—		—	—	—
Neuchatel		20·5	299	e 4 42	0	—	—		—	—	—
Copenhagen		20·8	325	4 52	+ 7	8 34	+ 1		—	—	—
Upsala		21·9	338	e 8 39	?	i 8 56	+ 2		e 8 46	?	—
Clermont-Ferrand		23·1	294	5 9	+ 1	—	—		—	—	—

Additional readings :—
Sofia iE = 3m.45s. and 4m.32s.
Stuttgart iPZ = 4m.32s.
Long waves were also recorded at Triest.

Jan. 2d. Readings also at 2h. (near Mizusawa (2)), 4h. (near Lick), 7h. (Pasadena, Mount Wilson, Tucson, Riverside, Tinemaha, Palomar, Wellington, Christchurch, Arapuni, and Riverview), 11h. (near La Paz), 12h. (near Berkeley, Branner, and San Francisco), 15h. (Bombay, New Delhi, Pasadena, Mount Wilson, Riverside, Tinemaha, Tucson, Haiwee, and Palomar), 19h. (Tacubaya), 22h. (Pasadena, Mount Wilson, Riverside, Tucson, Tinemaha, Apia, Stuttgart and Granada).

Jan. 3d. 10h. 19m. 13s. Epicentre 13°·0N. 71°·0W. (as on 1943 Dec. 24d.).

A = +·3173, B = −·9216, C = +·2235 ; δ = −2 ; h = +6 ;
D = −·946, E = −·325 ; G = +·073, H = −·211, K = −·975.

		△	Az.	P.	O−C.	S.	O−C.		Supp.		L.
		°	°	m. s.	s.	m. s.	s.		m. s.		m.
San Juan		7·1	40	e 2 23	P_g	e 3 2	− 8		—	—	e 3·5
Bogota		8·9	200	e 2 13	+ 1	i 3 57	+ 2		i 2 29	P*	i 6·8
La Paz		29·4	175	e 11 18	S	(e 11 18)	+17		—	—	—
Tucson		41·2	305	i 7 48	0	—	—		e 9 35	P_cP	—
Palomar	z.	46·3	305	i 8 29	0	—	—		—	—	—
Riverside	z.	46·9	306	e 8 34	0	—	—		—	—	—
Mount Wilson	z.	47·5	306	e 8 38	0	—	—		—	—	—
Pasadena	z.	47·6	306	e 8 38	− 1	—	—		—	—	—
Haiwee	z.	48·0	308	e 8 41	− 2	—	—		—	—	—
Tinemaha	z.	48·4	309	i 8 46	0	—	—		—	—	—

Bogota gives also i = 4m.22s.
Long waves were also recorded at Huancayo and St. Louis.

Jan. 3d. Readings also at 2h. (near Bogota), 3h. (near Berkeley), 8h. (near Lick), 9h. (Stuttgart, Hyderabad, Calcutta, and New Delhi), 10h. (near Milan (2), Kew, De Bilt Uccle, Potsdam, Jena, Upsala, Prague, Bucharest, and Colombo), 13h. (Stuttgart, Tucson, Palomar, Santa Barbara, Haiwee, Tinemaha, Riverside, Mount Wilson, Pasadena, Riverview, and near Apia), 14h. (near Mizusawa), 15h. (Bombay and near Apia), 17h. (Ksara, La Plata, and near La Paz), 18h. and 19h. (Mizusawa).

Jan. 4d. 0h. 57m. 54s. Epicentre 13°·0N. 71°·0W. (as on 3d.).

$A = +\cdot3173$, $B = -\cdot9216$, $C = +\cdot2235$; $\delta = -2$; $h = +6$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Port au Prince		5·7	347	e 2 5	P_g	i 2 18	−17	i 3 31	S_g	i 4·2
San Juan		7·1	40	e 1 51	+ 3	e 3 0	−20	—	—	e 3·8
Bogota		8·9	200	i 2 10	− 2	i 3 54	− 1	i 2 38	P*	—
Fort de France		9·7	80	e 3 39	?	e 5 45	S_g	—	—	—
Huancayo		25·3	191	e 5 35	+ 5	e 10 6	+12	e 6 52	?	e 11·6
La Paz		29·4	175	i 6 10	+ 3	11 52	+51	—	—	16·0
St. Louis		30·7	330	e 6 17	− 2	e 11 27	+ 6	e 12 27	SS	e 15·1
Tucson		41·2	305	i 7 45	− 3	—	—	e 9 26	PP	e 27·3
Palomar	z.	46·3	305	i 8 27	− 2	—	—	—	—	—
Riverside	z.	46·9	306	e 8 32	− 2	—	—	—	—	—
Mount Wilson	z.	47·5	305	i 8 36	− 2	—	—	—	—	—
Pasadena	z.	47·6	306	i 8 36	− 3	—	—	—	—	—
Haiwee		48·0	308	e 8 41	− 2	—	—	—	—	—
Tinemaha		48·4	309	i 8 44	− 2	—	—	—	—	—
Granada		64·3	56	i 10 40	+ 1	—	—	—	—	—

Additional readings :—
Bogota i = 2m.17s., iS* = 4m.35s.
St. Louis eZ = 6m.29s.
Tucson iPP = 8m.41s.
Long waves were also recorded at Chicago and Bozeman.

Jan. 4d. 12h. 47m.20s. Epicentre 43°·0N. 0°·2E. (as on 1943 Dec. 26d.).

$A = +\cdot7336$, $B = +\cdot0026$, $C = +\cdot6795$; $\delta = -10$; $h = -3$;
$E = +\cdot003$, $E = -1\cdot000$; $G = +\cdot679$, $H = +\cdot002$, $K = -\cdot734$.

	Δ	Az.	P.	O−C.	S.	O−C.	Supp.	
	°	°	m. s.	s.	m. s.	s.	m. s.	
Clermont-Ferrand	3·5	36	e 0 51	− 6	e 1 37	− 3	i 1 45	S*
Paris	6·1	16	e 1 34	0	e 2 2	P_g	—	—
Neuchatel	6·3	48	e 1 43	+ 7	e 3 10	S*	—	—
Basle	6·9	46	e 2 45	+60	e 3 34	S*	—	—
Zürich	7·3	51	e 1 49	− 1	e 3 49	S*	—	—
Strasbourg	7·7	41	—	—	i 3 45	S*	—	—
Stuttgart	8·5	44	e 2 24	P*	e 4 10	S*	e 3 6	?

Jan. 4d. 15h. 56m. 39s. Epicentre 2°·0N. 99°·0E. (as given by Bombay).

$A = -\cdot1563$, $B = +\cdot9871$, $C = +\cdot0347$; $\delta = 0$; $h = +7$;
$D = +\cdot988$, $E = +\cdot156$; $G = -\cdot005$, $H = +\cdot034$, $K = -\cdot999$.

		Δ	Az.	P.	O−C.	S.	O−C.	L.
		°	°	m. s.	s.	m. s.	s.	m.
Colombo	E.	19·7	285	4 40	+ 6	8 10	0	10·2
Calcutta	N.	22·9	334	e 5 5	− 1	i 9 5	− 8	—
Bombay		30·7	305	e 6 13	− 6	i 11 6	−15	13·0
New Delhi		33·6	325	i 6 39	− 5	i 11 52	−14	—
Riverview	N.	60·6	132	—	—	e 18 46	PS	e 32·6
Stuttgart	z.	88·4	319	e 13 3	+ 8	—	—	—
Mount Wilson	z.	129·9	40	i 19 30	[+18]	—	—	—
Riverside	z.	130·5	40	i 19 19	[+ 6]	—	—	—
Palomar	z.	131·2	40	i 19 10	[− 4]	—	—	—
Tucson		135·7	36	i 19 29	[+ 7]	—	—	—

Bombay gives also iN = 11m.25s., iE = 11m.29s.
Long waves were also recorded at Christchurch and Wellington.

Jan. 4d. Readings also at 3h. (near Bogota), 4h. (Ksara and Pehpei), 6h. (Bogota), 7h. (Fort de France and San Juan), 11h. (near Sofia), 12h. (near Berkeley, Branner, Fresno, and Lick), 14h. (near Alicante), 17h. (near Alicante, Clermont-Ferrand, and near Lick), 22h. (Tucson, Bombay, Christchurch, near Wellington, Riverview, Sydney, and Brisbane), 23h. (Pasadena, Mount Wilson, Riverside, Tinemaha, Haiwee, Palomar, near La Paz, Tucson, and near Stuttgart, Zürich, and Basle).

Jan. 5d. 2h. Japanese shock.

Mizusawa ePE =56m.20s., SN =59m.15s.
Cheb e =60m. and 93m.
Jena eN =66m.11s.
Bombay N =66m.16s. and 66m.38s.
Stuttgart eZ =66m.16s., iPZ =66m.27s., eS =76m.47s., eQ =98·5m., R =109·2m.
Tinemaha iP =66m.21s.k.
Haiwee iPNZ =66m.23s.k.
Santa Barbara eP =66m.24s
Mount Wilson iPZ =66m.29s.k, iPPZ =69m.52s.
Pasadena iPZ =66m.29s.k.
Palomar iPZ =66m.35s.
New Delhi eN =67m.49s., e =73m.0s.
Tucson iP =66m.57s.k.
Riverview eN =71m.0s.?, eLN =89·6m.
Long waves were also recorded at other European stations.

Jan. 5d. 4h. Undetermined shock. Pasadena suggests deep focus.

Huancayo iP =9m.15s., i =9m.22s. and 9m.41s.
La Paz iPZ =10m.41s., iSZ =12m.20s., iLZ =12m.42s.
Bogota iP =11m.55s., iPP =12m.14s., i =12m.48s., iS =15m.32s., iP_cP? =16m.20s., i =18m.33s.
Balboa Heights eP =13m.50s.
Fort de France eP =14m.59s.
St. Louis eZ =17m.58s.
Fordham i =18m.3s.
Tucson iP =18m.22s., i =18m.53s., iP_cP =19m.15s.
Palomar iPZ =18m.53s.a, iZ =19m.22s.
Riverside iPZ =18m.58s.a, iZ =19m.18s., i =19m.28s.
Pasadena iP =19m.3s., i =19m.19s. and 19m.33s.
Mount Wilson iPZ =19m.4s.a, iZ =19m.23s., 19m.27s., and 19m.32s.
Tinemaha iP =19m.16s., i =19m.46s.

Jan. 5d. 5h. 5m. 3s. Epicentre 36°·4N. 27°·4E. (as on 1942 Sept. 1d.).

$A = +\cdot7163$, $B = +\cdot3713$, $C = +\cdot5908$; $\delta = -1$; $h = 0$;
$D = +\cdot460$, $E = -\cdot888$; $G = +\cdot525$, $H = +\cdot272$, $K = -\cdot807$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Istanbul		4·8	15	1 53	P_g	2 59	S_g	—	—	—
Sofia		7·0	355	e 1 41?	− 5	i 3 29	S*	e 2 3	P*	—
Helwan		7·3	152	e 1 51	+ 1	3 12	− 3	3 57	S_g	—
Ksara		7·4	108	1 12?	−40	e 3 14	− 4	—	—	—
Bucharest		8·1	353	e 2 31	P_g	e 4 10	S*	i 4 45	S_g	—
Belgrade		9·9	330	—	—	e 4 36	+16	e 5 11	S*	e 6·7
Triest		13·8	316	—	—	e 6 13	SS	—	—	—
Zürich		17·8	313	e 3 57	−14	—	—	—	—	—
Stuttgart		18·2	319	e 4 17	+ 1	e 7 39?	+ 2	e 4 36	PP	12·8
Basle		18·4	313	e 4 18	0	—	—	—	—	—
Jena	N.	18·4	327	e 4 17	− 1	—	—	—	—	—
Neuchatel		18·5	312	e 4 22	+ 3	—	—	—	—	—
Strasbourg		18·8	317	e 4 31	+ 8	—	—	—	—	—
Clermont-Ferrand		20·5	304	4 41	− 1	—	—	—	—	—
Copenhagen		21·8	337	e 4 57	+ 1	9 9	+17	e 5 40	PPP	—
Uccle		21·9	319	e 5 6	+ 9	e 9 1	+ 7	—	—	e 12·0
Kew		24·8	317	—	—	e 10 7	+21	—	—	e 14·0

Additional readings :—
Sofia iN =2m.26s.
Helwan eE =3m.7s. and 3m.27s.
Bucharest ePN =2m.37s., iS_gZ =5m.9s.
Belgrade e =5m.23s. and 5m.31s., i =5m.38s., e =6m.2s., and 6m.32s.
Stuttgart eQ =9m.57s.↑.
Long waves were also recorded at other European stations.

Jan. 5d. 7h. 44m. 4s. Epicentre 36°·4N. 27°·4E. (as at 5h.).

Felt at Kulluk on the Ægean Coast equidistant from Izmir and Rhodes.
Epicentre 36°·5N. 27°·6E. (Strasbourg).
Rapport du Ministre de France en Turquie, Ankara, 24 mars 1944.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Istanbul		4·8	15	1 39	P_g	2 21	+ 9	2 41	S_g	—
Sofia		7·0	355	i 1 48	+ 2	i 3 17	+ 9	i 2 24	P_g	—
Helwan		7·3	152	e 1 50	0	3 23	+ 8	2 5	P*	—
Ksara		7·4	108	e 1 49	− 3	e 3 9	− 9	—	—	—
Bucharest		8·1	353	e 2 0	− 2	i 3 36	+ 1	i 2 34	P_g	—
Focsani		9·3	358	e 2 20?	+ 3	(4 14)	+ 9	—	—	4·2
Belgrade		9·9	330	e 2 43	PPP	e 4 10	−10	e 4 33	SS	i 5·7
Bacau		10·2	358	e 2 20?	−11	—	—	—	—	4·3
Triest		13·8	316	i 3 25	+ 6	e 5 42?	−12	—	—	—
Milan		16·4	309	3 58	+ 5	7 13	SS	—	—	—
Prague		16·6	330	i 4 4a	+ 8	7 4	+ 4	e 4 18	PPP	e 9·1
Ravensburg		17·4	314	e 4 8	+ 2	e 7 27	+ 8	—	—	—
Cheb		17·5	326	e 4 10	+ 3	e 7 34	+13	e 4 42	PPP	e 10·2
Zürich		17·8	313	e 4 10a	− 1	e 7 27	− 1	—	—	—
Ebingen		18·0	317	e 4 12	− 1	e 7 39	+ 7	—	—	—
Stuttgart		18·2	319	i 4 16k	0	i 7 44	+ 7	e 9 26?	Q	e 10·8
Basle		18·4	313	e 4 18	0	e 6 32	−69	—	—	—
Jena		18·4	327	i 4 15	− 3	e 7 47	+ 6	e 7 52	sS	e 8·6
Neuchatel		18·5	312	e 4 19	0	e 6 50	−54	—	—	—
Strasbourg		18·8	317	e 4 24	+ 1	e 8 0	+10	—	—	—
Potsdam		18·9	331	i 4 26	+ 2	i 7 59	+ 6	—	—	e 9·9
Clermont-Ferrand		20·5	304	e 4 41	− 1	—	—	e 8 55	SS	e 12·0
Tortosa	N.	21·5	290	e 5 3	+11	9 30	SSS	—	—	—
Copenhagen		21·8	337	i 4 54	− 2	8 55	+ 3	—	—	—
Uccle		21·9	319	i 4 56a	− 1	i 9 0	+ 6	—	—	e 10·9
Paris		22·0	312	e 4 54	− 4	e 9 10	+14	—	—	e 12·4
De Bilt		22·2	322	i 4 58k	− 2	e 9 10	+10	—	—	e 11·9
Upsala		24·3	348	i 5 17	− 3	e 9 41	+ 4	—	—	e 12·6
Granada		24·8	282	i 5 29	+ 4	i 10 0	+14	i 5 57	PP	14·7
Kew		24·8	317	i 5 24a	− 1	i 9 59	+13	e 5 53	PP	e 12·9
San Fernando		27·0	280	e 5 42	− 3	e 10 32	+10	—	—	—
Lisbon	E.	29·0	287	—	—	10 58	+ 4	11 22	?	17·0
New Delhi	N.	42·3	85	i 7 56	− 1	—	—	—	—	—
Bombay		43·4	102	e 8 4	− 2	e 14 21	−14	9 42	PP	—
Fordham		74·6	309	i 11 43	0	—	—	—	—	—
St. Louis	Z.	85·7	316	i 12 42	0	—	—	—	—	—

Additional readings :—
Istanbul P_g = 1m.50s.
Sofia iEN = 2m.38s., iS_gE = 3m.30s.
Helwan P_gZ = 2m.21s., S = 3m.2s.
Bucharest iSE?Z = 3m.13s., iS_gZ = 3m.59s.
Belgrade e = 3m.7s., 3m.36s., and 4m.50s., iSS = 5m.25s.
Prague ePPP = 4m.24s., e = 5m.14s. and 5m.50s.
Cheb e = 5m.23s.
Stuttgart eZ = 5m.31s., iSZ = 7m.48s.
Jena iPN = 4m.19s., eN = 5m.36s. and 6m.30s.
Granada P_cP = 8m.58s., SS = 11m.2s
Kew eSSNZ = 10m.59s.
Bombay P_cPE = 9m.51s., P_cPN = 9m.54s., eE = 15m.25s., SSSE = 17m.56s., SSSN = 17m.59s.
Long waves were also recorded at Bergen.

Jan. 5d. 10h. 59m.10s. Epicentre 13°·0N. 71°·0W. (as on 4d.).

$A = +\cdot3173$, $B = -\cdot9216$, $C = +\cdot2235$; $\delta = -2$; $h = +6$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Port au Prince		5·7	347	e 1 31	+ 3	i 2 35	0	i 1 56	P_g	i 3·6
San Juan		7·1	40	e 1 39	− 9	i 3 0	−10	e 2 15	P_g	i 3·5
Bogota		8·9	200	i 2 10	− 2	i 3 55	0	i 2 14	PP	—
Balboa Heights		9·3	243	e 2 18	+ 1	e 3 54	−11	—	—	—
Fort de France		9·7	80	e 2 29	+ 7	—	—	e 4 33	SS	—
Columbia		22·8	339	e 5 9	+ 4	e 9 17	+ 6	—	—	e 12·9
Huancayo		25·3	191	e 5 32	+ 2	i 9 52	− 2	e 6 10	PP	i 12·2
New Kensington		28·5	347	—	—	e 11 18	+32	—	—	e 17·3
Cape Girardeau	N.	29·3	331	e 6 5	− 1	—	—	—	—	—
La Paz		29·4	175	e 6 11	+ 4	i 11 3	+ 2	—	—	14·7
St. Louis		30·7	330	i 6 18	− 1	i 11 24	+ 3	e 13 48	SSS	e 15·7
Chicago		32·1	336	—	—	e 11 41	− 2	—	—	e 17·5
Tucson		41·2	305	i 7 47	− 1	—	—	i 9 23	PP	e 24·2
Rapid City		41·5	326	e 7 50	0	—	—	e 9 0	PP	e 19·4
Rio de Janeiro	E.	44·9	142	e 18 27	SS	—	—	—	—	e 23·3
Salt Lake City		45·1	317	e 8 21	+ 1	e 15 4	+ 5	—	—	e 25·3
Palomar	z.	46·3	305	i 8 29	0	—	—	i 10 30	PP	—
La Jolla		46·5	304	e 8 28	− 3	—	—	—	—	—
Riverside		46·9	306	e 8 34	0	—	—	—	—	—
Mount Wilson	z.	47·5	306	i 8 38	0	—	—	i 10 42	PP	—
Pasadena		47·6	306	i 8 38	− 1	—	—	—	—	e 27·0
Haiwee	z.	48·0	308	e 8 42	− 1	—	—	—	—	—
Tinemaha		48·4	309	e 8 46	0	—	—	e 8 52	?	—
Santa Barbara	z.	48·9	305	e 8 48	− 2	—	—	—	—	—
Uccle		70·8	41	—	—	e 20 44?	+ 9	—	—	e 29·8
De Bilt		71·4	39	—	—	e 21 10	PS	—	—	e 31·8
Stuttgart	z.	73·9	43	e 11 38	− 1	—	—	—	—	—

Additional readings :—
Port au Prince iS = 2m.25s.
San Juan e = 2m.35s.
Bogota iP = 2m.37s., i = 4m.20s.
Huancayo i = 6m.16s.
St. Louis iZ = 6m.24s.
Tucson e = 11m.18s
Rapid City e = 15m.27s.
Palomar iZ = 8m.34s.
Long waves were also recorded at Bozeman, La Plata, and Kew.

Jan. 5d. 19h. 6m. 14s. Epicentre 48°·2N. 9°·0E. (as on 1943 Dec. 27d.).

Intensity V in the region of Balingen.
Epicentre 48° 16′N. 8° 53′E. (Jura Souabe).
Annales de l'Institut de Physique du Globe de Strasbourg, 2 éme partie, Seismologie, tome IX_1 1944, p.5, Strasbourg 1951.

$A = +\cdot6609$, $B = +\cdot1046$, $C = +\cdot7432$; $\delta = +8$; $h = -5$;
$D = +\cdot156$, $E = -\cdot988$; $G = +\cdot734$, $H = +\cdot116$, $K = -\cdot670$.

	△	Az.	P.	O−C.	S.	O−C.
	°	°	m. s.	s.	m. s.	s.
Ebingen	0·0	—	i 0 2	P*	i 0 4	S*
Ravensburg	0·6	135	—	—	e 0 21	S*
Stuttgart	0·6	13	e 0 12	P_g	i 0 19	S_g
Strasbourg	0·9	295	—	—	i 0 32	S*
Zürich	0·9	198	e 0 18	P_g	e 0 30	S_g
Basle	1·2	235	e 0 23	P*	e 0 39	S_g

Jan. 5d. 21h. 12m. 38s. Epicentre 3°·0S. 102°·0E. (as on 1943 June 8d.).

$A = -\cdot2076$, $B = +\cdot9768$, $C = -\cdot0520$; $\delta = -6$; $h = +7$;
$D = +\cdot978$, $E = +\cdot208$; $G = +\cdot011$, $H = -\cdot051$, $K = -\cdot999$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Colombo		24·2	294	5 15	− 4	i 9 30	− 5	—	—	12·0
Kodaikanal	E.	27·7	300	i 5 52	0	i 10 38	+ 5	—	—	—
Calcutta	N.	28·7	333	i 5 58k	− 3	i 10 43	− 7	i 6 53	PP	—
Perth		31·6	157	6 52	+26	11 42	+ 7	12 40	SS	—
Bombay		36·0	308	i 7 1	− 4	i 12 32	−12	8 24	PP	—
Dehra Dun		39·4	328	e 6 57	−36	i 13 4	−31	e 16 22	SS	e 20·9
New Delhi		39·4	325	i 7 31k	− 2	i 13 19	−16	9 3	PP	19·8
Hukuoka		45·2	34	8 37	+17	15 19	+18	—	—	—
Kôti		47·0	37	e 8 42	+ 7	15 36	+10	—	—	—
Sumoto		48·3	37	8 55	+10	15 51	+ 6	—	—	—
Sendai		54·6	38	9 35	+ 3	16 17	−54	—	—	—
Riverview		55·1	130	i 9 40a	+ 4	i 17 25	+ 7	i 10 8	pP	e 27·3
Mizusawa		55·3	37	e 9 47	+ 9	e 17 26	+ 5	e 17 31	PS	—
Tananarive		55·5	250	e 9 41	+ 2	e 17 11?	−13	e 17 33	PS	e 25·0
Ksara		72·1	307	e 11 30	+ 2	e 20 46	− 4	21 17	PS	—
Auckland		74·5	128	11 52	+10	21 27	+10	12 16	pP	35·4
Helwan		74·8	302	11 43	− 1	21 10	−10	i 21 43	PS	43·2
Wellington		75·1	132	11 42	− 4	21 24	0	12 3	pP	38·4
Arapuni		75·3	129	—	—	21 28?	+ 2	27 4?	?	36·4
Suva		76·2	108	15 17	PP	i 21 45	+ 9	16 53	PPP	37·4
Tuai		76·6	130	12 17	+23	21 41	+ 1	—	—	—
Bucharest		82·1	315	e 12 21	− 3	i 22 29	− 9	i 15 29	PP	39·4
Sofia		83·7	313	e 12 33	+ 1	e 22 46	− 8	e 15 48	PP	40·4
Belgrade		86·1	315	e 12 46	+ 2	i 23 18	0	e 16 8	PP	e 49·2
Upsala		89·7	330	i 13 4	+ 3	i 23 51	− 1	e 16 54	PP	e 45·4
Prague		90·7	320	e 13 5	− 1	e 24 1	0	e 16 34	PP	e 42·4
Triest		90·9	315	—	—	i 23 22	[−16]	—	—	e 45·4
Potsdam		91·7	322	e 13 22?	+12	i 24 8	− 2	e 13 33	pP	e 44·7
Cheb		92·0	320	i 13 18	+ 6	e 24 16	+ 4	i 16 52	PP	e 49·4
Copenhagen		92·2	326	e 13 11	− 2	24 8	− 6	16 57	PP	—
Jena		92·6	320	e 13 12	− 3	e 24 8	{+ 7}	e 13 16	PcP	—
Milan		94·1	315	13 39?	+17	27 10	?	—	—	—
Stuttgart		94·1	319	i 13 20a	− 2	i 24 29	− 2	e 13 38	pP	e 51·5
Zürich		94·5	317	e 13 21	− 2	e 23 52	[− 6]	e 13 38	pP	—
Neuchatel		95·6	317	e 13 25	− 3	—	—	—	—	—
Basle		95·7	317	e 13 26	− 3	e 24 18	{− 5}	—	—	—
De Bilt		96·6	322	e 13 31	− 2	i 24 9	[− 1]	e 17 31	PP	e 42·4
Uccle		97·2	320	i 13 34s	− 2	i 24 51	− 6	i 17 33	PP	44·4
Clermont-Ferrand		98·3	315	e 13 43	+ 2	e 24 40	{− 2}	e 17 39	PP	e 45·0
Paris		98·5	318	e 13 58	+16	i 24 44	{ 0}	e 17 40	PP	45·4
Kew		100·0	321	e 13 51	+ 3	i 24 25	[− 2]	i 17 53	PP	e 50·9
Aberdeen		100·2	328	i 20 9	PPP	i 25 18	− 2	i 24 18	SKS	e 43·5
Honolulu		100·6	69	—	—	—	—	e 27 27	PS	e 48·8
Stonyhurst		100·9	324	18 0	PP	24 27	[− 5]	27 5	PS	51·1
College		101·2	24	e 18 12	PP	e 27 15	PS	—	—	e 41·6
Scoresby Sund		103·7	343	18 23	PP	25 20	{− 1}	27 43	PS	—
Granada		104·2	307	(i 18 58)	PP	(25 54)	{+30}	(19 4)	pPP	(55·2)
San Fernando		106·4	307	e 18 37	PP	e 25 20	{−20}	e 27 57	PS	58·4
Lisbon		108·3	310	18 57k	PP	24 54	[−11]	34 4?	SS	52·3
Sitka		109·5	29	—	—	—	—	e 35 31	?	e 55·2
Victoria	N.	120·3	33	e 20 31	PP	e 30 30	PS	e 37 4?	SSP	59·4
Ukiah		125·4	42	—	—	—	—	e 39 2	?	e 59·8
Berkeley		126·7	44	i 21 4	PP	i 31 16	PS	i 21 9	?	e 59·8
Santa Clara	Z.	127·2	44	i 21 12	PP	—	—	—	—	—
Bozeman		128·6	29	e 21 19	PP	e 31 33	PS	e 33 3	PPS	e 56·9
Tinemaha		129·8	42	e 19 15	[+ 3]	i 22 36	SKP	e 21 28	PP	—
Santa Barbara		130·2	45	e 19 20	[+ 8]	i 22 41	SKP	—	—	—
Haiwee		130·6	42	i 19 19	[+ 6]	i 22 39	SKP	i 21 38	PP	—
Logan		130·9	33	e 19 20	[+ 6]	i 22 40	SKP	e 39 21	SSP	e 63·4
Pasadena		131·4	45	i 19 19	[+ 4]	e 26 10?	[−13]	i 21 36	PP	e 56·4

Continued on next page.

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		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Mount Wilson		131·5	45	e 19 21	[+ 6]	i 22 44	SKP	i 21 33	PP	—
Salt Lake City		131·6	34	e 19 43	[+28]	e 22 43	SKP	e 38 18	?	e 65·0
Riverside		132·1	45	e 19 20	[+ 4]	i 22 44	SKP	e 21 43	PP	—
La Jolla		132·8	45	e 19 37	[+20]	i 22 48	SKP	—	—	—
Palomar	Z.	132·8	45	e 19 21	[+ 4]	i 22 48	SKP	e 21 44	PP	—
Rapid City		133·4	23	e 19 17	[− 1]	e 28 39	{− 2}	e 22 10	PP	e 59·2
Seven Falls		135·6	352	e 22 5	PP	—	—	e 39 54	SS	53·4
Shawinigan Falls		136·4	354	e 19 34?	[+10]	—	—	e 22 4?	PP	77·4
Halifax		136·6	345	e 22 22	PP	—	—	—	—	70·4
Rio de Janeiro	E.	137·4	231	e 22 22	PP	—	—	—	—	—
Tucson		137·6	43	i 19 20	[− 6]	e 26 49	[+14]	e 22 10	PP	e 65·5
Ottawa		137·7	357	19 31	[+ 5]	32 22?	PSKS	22 9	PP	e 69·4
La Plata		137·8	205	23 7	SKP	—	—	23 22?	?	63·4
Lincoln		138·7	20	e 22 18	PP	e 29 4	{− 9}	—	—	e 67·7
Harvard		140·2	352	e 19 0	[−31]	—	—	e 19 26	PKP	e 57·4
Chicago		140·4	12	e 22 27	PP	e 23 10	SKP	e 32 35	PS	e 71·2
Fordham		142·1	353	i 19 31	[− 3]	e 32 52	PSKS	i 22 46	PP	e 73·5
New Kensington		142·6	2	e 22 40	PP	—	—	—	—	e 80·5
St. Louis		142·8	16	e 19 34	[− 2]	i 23 41	SKP	i 22 44	PP	e 51·4
Philadelphia		143·1	355	e 22 46	PP	e 29 32	{− 7}	e 33 0	PS	e 61·0
Cape Girardeau	N.	144·2	15	e 19 40	[+ 2]	—	—	e 20 42	?	—
Bermuda		148·2	338	e 19 54	[+ 9]	—	—	—	—	e 81·8
Columbia		149·0	5	e 19 54	[+ 8]	e 30 12	{− 1}	—	—	e 71·8
Tacubaya	N.	153·6	49	e 19 54	[+ 2]	—	—	—	—	—
La Paz		158·3	206	i 20 3a	[+ 4]	i 31 15	{+11}	i 24 39	PP	76·9
Fort de France		159·7	304	e 20 4	[+ 4]	—	—	—	—	—
San Juan		160·8	323	e 20 7	[+ 5]	—	—	e 44 28	SS	e 65·7
Huancayo		164·8	190	e 20 9	[+ 3]	i 45 18	SS	e 24 52	PP	e 58·9
Bogota		175·6	292	e 20 15	[+ 3]	—	—	e 26 0	PP	—

Additional readings :—
Calcutta iPPN = 6m.38s., iSS = 11m.58s.
Bombay iPE = 7m.5s., iEN = 7m.19s., PPE = 8m.20s., PPPN = 8m.40s., eSN = 12m.27s., iE = 13m.1s. and 14m.25s., SSEN = 14m.36s., iE = 15m.28s., iN = 15m.32s.
New Delhi iPE = 7m.34s., PPN = 8m.43s., P_cP = 9m.43s., SSN = 15m.28s., SSS = 15m.58s., iE = 17m.12s., S_cSN = 17m.48s.
Riverview iPPE = 11m.45s., iZ = 17m.31s., iPSN = 17m.50s., isSN = 18m.5s., iE = 18m.36s. and 19m.29s., iN = 20m.54s., iSSN = 21m.20s.
Tananarive eN = 12m.10s., S_cS = 19m.16s., SS = 20m.43s.
Ksara SS = 25m.24s.
Auckland pS = 21m.47s., SS = 26m.16s., Q = 32·4m.
Helwan P_cPZ = 11m.57s., PPZ = 14m.31s.
Wellington iZ = 11m.52s., sPZ = 12m.17s., iZ = 12m.59s., and 13m.22s., PPZ = 14m.48s., pPPZ = 15m.7s., pS = 21m.50s., PS = 22m.27s., iZ = 26m.12s., SSS? = 31m.22s.?, Q = 33·4m.
Suva S_cS = 22m.14s., SS = 27m.7s.?, Q = 33·4m.
Bucharest iPSN = 23m.3s., iPSE = 23m.6s., iSS?N = 27m.17s.
Sofia ePS?EN = 23m.14s., eE = 26m.6s.
Belgrade i = 13m.2s., e = 26m.6s.
Upsala eE = 20m.12s., iE = 23m.26s., iSKS?N = 23m.46s., iSKKS?N = 24m.15s., eE = 25m.17s., PPSE = 26m.17s., eE = 29m.22s.? and 32m.22s.?, eN = 36m.22s.?, iN = 39m.18s., eE = 41m.22s.?.
Prague ePPP = 18m.37s., eSKS = 23m.33s., ePS = 24m.19s., eSS = 30m.22s.?, e = 36m.52s.?.
Potsdam iSN = 24m.3s., isSE = 24m.33s.
Cheb iSKS = 23m.46s., ePPS = 25m.42s.
Copenhagen 18m.45s., 23m.44s., and 25m.45s.
Jena eZ = 13m.29s., eE = 13m.32s., eN = 23m.41s.
Stuttgart ePPZ = 16m.48s., iPPZ = 17m.4s., ipPPZ = 17m.30s., iSKS = 23m.50s., esS = 24m.57s., eSP = 25m.53s., eSS = 30m.58s., eSSS = 34m.34s., eQ = 48m.52s.?.
De Bilt ePPP = 19m.37s., eSKKS = 24m.42s., ePS = 26m.12s.
Uccle e = 15m.54s., ePPP = 19m.31s., e = 24m.9s., PS = 26m.11s., eSS = 31m.22s.?.
Clermont-Ferrand iPS = 26m.43s., eSS? = 31m.4s.
Paris eSS = 31m.44s.
Kew iSKKS = 24m.53s., ePS = 26m.51s., ePPSN = 27m.52s.?, eSS = 31m.57s., eQ = 44m.52s.?.
Aberdeen iN = 21m.19s., iE = 31m.53s., iN = 37m.22s.
Stonyhurst PPP = 20m.3s., SKKS = 24m.58s., PPS = 27m.53s., SSS = 36m.41s., Q = 42m.3s.
College e = 23m.36s. and 33m.50s.
Scoresby Sund 33m.22s.?.

Continued on next page.

Granada PS =(27m.40s.), readings increased by 2 minutes.
San Fernando ePP?E =19m.25s., eSS?E =34m.31s.
Lisbon PPZ =19m.2s.s, Z =19m.12s.?, SN =26m.57s.
Victoria eN =46m.4s.?.
Bozeman e =22m.37s. and 39m.5s., eSSS =45m.8s.
Logan e =19m.47s.
Pasadena iZ =19m.33s., iSKP =22m.41s., iZ =23m.4s., iEN =26m.32s. eSSEN = 38m.58s.?.
Mount Wilson eZ =31m.32s.
Palomar iZ =22m.56s.
Rapid City e =31m.59s., eSS =40m.2s.
Tucson i =19m.30s., 22m.25s., and 23m.14s., e =30m.14s., 34m.37s., and 38m.10s., eSS =41m.9s., eSSS =43m.37s.
Ottawa PPS =34m.22s.?, SS =40m.22s.?, SSS =46m.22s.?, eN =50m.42s.
Harvard e =22m.27s.
Chicago eSSS =46m.11s.
Fordham ePS? =35m.46s., eSS =41m.44s.
St. Louis iPKPZ =19m.37s., iZ =19m.50s. and 19m.57s., iPSKS?N =33m.18s., eN = 34m.43s., iPPS?N =35m.41s., eN =36m.27s., iSS?N =41m.12s., sSS?N =42m.16s., iSSSN =46m.51s.
Philadelphia eSS =41m.17s., e =47m.34s.
La Paz iSKPZ =23m.38s., SSN =44m.46s.
San Juan ePP =23m.28s., e =35m.35s.
Huancayo e =30m.59s., i =35m.56s., e =53m.54s.
Long waves were also recorded at Tortosa and Bergen.

Jan. 5d. Readings also at 4h. (Bogota), 7h. (Aberdeen, Haiwee, Mount Wilson, Pasadena, Tinemaha, Tucson, Palomar, Riverside, Sydney, Tuai, and Auckland), 9h. (Wellington and Bogota), 11h. (Fort de France, Bogota (2), Port au Prince, and near Mizusawa (2)), 12h. (Palomar (2), Tinemaha, Pasadena (2), Mount Wilson (2), Haiwee (2), Tucson (2), and La Paz (2)), 17h. (Tacubaya and Oaxaca), 19h. (Oaxaca), 20h. (near Granada, San Fernando, and Almeria).

Jan. 6d. 16h. 43m. 55s. Epicentre 15°·6S. 74°·6W. (as on 1943 Nov. 16d.).

$A = +\cdot2559$, $B = -\cdot9290$, $C = -\cdot2673$; $\delta = -2$; $h = +6$;
$D = -\cdot964$, $E = -\cdot266$; $G = -\cdot071$, $H = +\cdot258$, $K = -\cdot964$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.	L.
		°	°	m. s.	s.	m. s.	s.	m. s.	m.
Huancayo		3·6	350	i 0 59	+ 1	i 1 35	− 7	—	—
La Paz	Z.	6·3	101	i 1 56a	P*	i 3 24	S_g	—	4·2
Bogota		20·1	1	i 4 41	+ 3	e 8 36	SS	i 5 8 PPP	—
La Plata		24·4	144	5 23	+ 2	10 5	+26	5 34 PP	13·8
Balboa Heights		24·9	349	e 5 26	0	—	—	—	—
Rio de Janeiro	E.	30·5	108	e 1 35	?	e 11 38	+20	—	e 16·4
	N.	30·5	108	e 1 27	?	e 11 35	+17	—	e 17·6
Fort de France		32·9	26	e 6 37	− 1	—	—	—	—
St. Louis		55·9	345	i 9 39	− 3	e 17 17	−12	—	e 29·1
Tucson		58·9	324	i 10 1	− 2	e 18 25	PS	i 10 10 ?	e 29·2
Ottawa		61·1	359	e 10 14	− 4	—	—	—	36·1
La Jolla	Z.	63·1	320	e 10 40	+ 8	—	—	—	—
Riverside		64·1	321	i 10 47	+ 9	—	—	—	—
Mount Wilson	Z.	64·5	321	i 10 40	− 1	—	—	i 10 50 P_cP	—
Pasadena		64·6	321	i 10 40	− 1	—	—	i 10 50 P_cP	—
Haiwee	Z.	65·8	323	i 10 49	0	—	—	—	—
Tinemaha	Z.	66·6	323	i 11 3	+ 9	—	—	—	—
Granada		84·9	49	i 12 45	+ 7	i 23 39	S_cS	—	45·8
Stuttgart	Z.	97·6	41	e 13 42	+ 4	—	—	e 13 53 P_cP	—
Bombay		148·7	78	i 20 2	[+17]	—	—	23 44 PP	—

Additional readings :—
St. Louis iZ =9m.48s., eZ =13m.56s.
Bombay iPKP$_2$N =20m.13s.
Long waves were also recorded at Wellington

Jan. 6d. Readings also at 5h. (Bogota, near Stuttgart and Ebingen), 6h. (Mount Wilson, Tucson, Riverside, La Paz, and Huancayo), 9h. (near Stuttgart (2)), 11h. (Pasadena, Tucson, Mount Wilson, Riverside, Tinemaha, Haiwee, Palomar, Huancayo, La Paz (2), San Juan, Port au Prince, and Bogota), 13h. (Pasadena, Mount Wilson, Riverside, Tinemaha, Haiwee, Palomar, Tucson, and Tacubaya), 14h. (Stuttgart (2)), 15h. (La Paz and near Stuttgart), 16h. (Pasadena, Riverside, Tucson, and Haiwee), 17h. (La Paz).

Jan. 7d. 2h. 49m. 23s. Epicentre 4°·4S. 143°·5E. Depth of focus 0·010.

A = −·8015, B = +·5931, C = −·0762; δ = −2; h = +7;
D = +·595, E = +·804; G = +·061, H = −·045, K = −·997.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Brisbane		24·7	160	i 5 8	− 5	e 9 35	+10	i 5 34	PP	i 11·7
Riverview		30·1	168	i 6 1k	− 1	i 10 56	+ 3	i 6 58	PP	—
Sydney		30·1	168	—	—	e 9 49	−64	—	—	15·4
Suva		36·8	114	8 37	PP	13 2?	+26	i 15 17	SS	—
Perth		37·7	221	7 7	− 1	12 52	+ 2	8 39	PP	19·5
Kôti		38·9	347	e 7 20	+ 2	13 7	− 1	—	—	—
Kohu		40·1	355	e 7 29	+ 1	13 31	+ 5	—	—	—
Sendai		42·5	358	e 7 45	− 2	13 9	−53	—	—	—
Auckland		43·2	143	7 53	0	14 17	+ 5	15 2	sS	20·6
Mizusawa	E.N.	43·4	358	e 7 50	− 4	12 30	?	—	—	—
New Plymouth		44·3	145	8 5	+ 3	14 32	+ 4	—	—	—
Arapuni		44·5	143	—	—	14 7?	−24	—	—	—
Tuai		45·9	143	8 17	+ 3	14 48	− 3	17 54	S_eS	—
Wellington		46·2	148	8 17	0	14 47	− 8	i 8 42	pP	21·6
Christchurch		46·7	151	8 22	+ 1	15 1	− 1	i 8 44	pP	22·3
Calcutta	N.	60·2	300	e 10 34	pP	i 18 14	+10	i 19 2	$_eS$	—
Colombo	E.	64·5	280	10 39	+10	(19 12)	+14	—	—	19·2
New Delhi		71·6	302	e 11 13	0	20 23	0	e 11 43	pP	—
Bombay		73·3	291	e 11 25	+ 2	i 20 48	+ 6	11 55	pP	—
Ukiah		95·3	51	e 29 55	?	—	—	—	—	e 43·0
Berkeley		96·0	53	i 17 9	PP	i 23 45	[+ 1]	—	—	—
Santa Clara		96·3	53	e 17 14	PP	e 23 36	[− 9]	—	—	—
Santa Barbara	z.	98·1	56	e 13 27	0	—	—	—	—	—
Tinemaha	z.	99·2	54	e 13 30	− 2	—	—	—	—	—
Pasadena		99·3	56	i 13 32	0	i 24 0	[0]	i 14 1	pP	e 40·8
Mount Wilson	z.	99·4	56	i 13 33	0	—	—	i 14 3	pP	—
Riverside		100·0	56	e 13 34	− 2	e 24 6	[+ 2]	e 14 7	pP	—
Palomar	z.	100·5	57	i 13 37	− 1	—	—	i 14 6	pP	—
Bozeman		103·9	44	—	—	i 24 26	[+ 4]	e 27 48	PS	e 47·5
Tucson		105·6	58	e 14 0	P	—	—	i 18 20	PP	e 41·8
Ksara		107·1	303	e 14 18	P	—	—	e 28 46	PPS	—
Cheb		118·7	326	e 20 37?	PP	—	—	—	—	—
St. Louis		120·6	47	e 20 2	PP	i 25 28	[− 1]	e 20 34	pPP	e 30·6
Stuttgart		121·2	327	e 18 43	[+ 1]	—	—	e 19 13	?	e 55·6
Chicago		121·3	43	—	—	—	—	e 30 6	PS	e 62·7
De Bilt		121·3	332	—	—	—	—	e 30 37?	PS	—
Uccle		122·5	331	—	—	—	—	(e 36 37?)	SS	e 36·6
Kew		124·3	334	—	—	—	—	e 42 40	SSS	e 60·6
Ottawa		126·8	34	e 18 53	[0]	e 38 37?	SSP	e 33 37?	?	56·6
Fordham		130·6	37	i 22 14	PP	e 31 22	PS	e 23 6	?	e 68·4
Granada		135·6	322	i 19 16k	[+ 7]	26 27	[+18]	19 34	pPKP	71·4
San Fernando		137·7	323	i 19 17	[+ 4]	—	—	e 22 54	PKS	72·6
Huancayo		138·1	113	e 19 17	[+ 3]	e 40 24	SS	e 22 54	PKS	e 59·0
Bermuda		141·7	40	e 23 24	PKS	—	—	e 36 11	?	e 52·1
Bogota		142·5	87	i 19 8	[−14]	—	—	e 20 41	?	—
La Paz		142·5	124	e 20 20	?	—	—	—	—	—
Fort de France		153·6	65	e 19 41	[+ 1]	—	—	—	—	—

Additional readings :—
Brisbane iSN = 9m.25s., iSSE = 10m.15s.
Riverview iPPPNZ = 7m.14s., iN = 11m.0s., iE = 12m.26s. and 13m.40s.
Suva e = 16m.40s., S_eS = 17m.7s.
Perth i = 9m.55s., SS = 16m.12s., SSS = 17m.7s., readings wrongly identified.
Auckland sP_eP = 10m.22s., sS_eP? = 14m.27s., sS = 15m.17s., SS = 17m.37s., Q = 18m.17s.
Wellington pPZ = 8m.55s., sPZ = 9m.9s., iZ = 9m.27s., PPZ = 10m.7s., pP_ePZ = 10m.27s., sP_ePZ = 10m.48s., iZ = 11m.7s. and 11m.32s., sS = 15m.47s., iZ = 17m.4s., SS? = 18m.42s., Q? = 19·6m.
Christchurch P_eS = 13m.41s., e = 16m.26s., S_eS = 18m.4s., Q = 18m.32s., S = 13m.45s.
Calcutta iSS = 22m.32s.
Colombo S_eSE = 20m.16s.
New Delhi P_eP = 21m.8s., SS = 25m.4s.
Bombay eN = 11m.32s., S_eSEN = 21m.25s., PPSE = 22m.5s., iN = 22m.16s., iE = 23m.31s., iN = 23m.42s., SSE = 25m.39s.

Continued on next page.

Pasadena ePPEZ =17m.32s., ePSE =26m.35s., eSSEN =31m.49s.?.
Bozeman e =37m.8s.
Tucson e =22m.7s., eSS =32m.30s.
St. Louis iPPZ =20m.7s., eE =21m.4s., eE =26m.26s., eSKKSE =26m.52s., eSPE = 29m.57s.
Kew eN =51m.37s.?.
Granada iPP =22m.41s., PPS =34m.55s., SS =40m.40s.
Huancayo e =41m.52s.
Long waves were also recorded at La Plata.

Jan. 7d. Readings also at 0h. (near Fresno), 3h. (near Balboa Heights), 5h. (Bombay, Tananarive, Florissant, St. Louis, and near Cape Girardeau), 6h. (Palomar and Tucson), 9h. (Palomar, Mount Wilson, Tucson, Riverview, Kew, Uccle, De Bilt, Cheb, Stuttgart, New Delhi, Calcutta, and Bombay), 11h. (Alicante and near Apia), 12h. (Tucson, Pasadena, Mount Wilson, Riverside, Tinemaha, Palomar, near Granada, Alicante, Almeria, and Malaga), 14h. (Calcutta), 15h. (near Malaga), 18h. (near Granada and Malaga).

Jan. 8d. 14h. Undetermined shock.

Perth i =22m.30s. and 26m.15s.
Brisbane eE =22m.31s. and 33m.6s., iE =35m.12s., eLE =36m.35s.
Riverview eP?NZ =23m.32s., iS?EN =29m.8s., eNZ =30m.0s.
Colombo P =25m.8s.
New Delhi ePN =26m.17s., eS =34m.27s., e =52m.31s.
Bombay ePE =26m.21s., PPE =28m.34s., iE =30m.23s., iSE =34m.37s., PSE = 34m.51s., eE =35m.28s., SSE =38m.35s.
Sydney e =29·5m., eL =37·5m.
Guadalajara PZ =33m.34s.
Auckland P =33m.50s.?, S? =42m.10s.?, Q =46m.?.
Wellington P =34m.0s., S =41m.40s., SS? =44m.?., Q =48m.?, R =49m.
Tacubaya PE =34m.18s.
Bogota eP =36m.6s., i =37m.25s. and 38m.35s.
Tucson eP =36m.7s.
Tinemaha eZ =37m.24s.
Long waves were also recorded at Arapuni, and Christchurch.

Jan. 8d. 19h. Undetermined shock.

Apia i =17m.26s. and 18m.0s., Q =18m.5s.
Auckland P? =21m.10s.?, S =25m.3s., i =25m.20s., Q =25m.55s.
Tuai e =25m.?.
Riverview eEZ =25m.16s., eE =29m.17s., eN =29m.22s., eLN =31·9m.
Arapuni S? =26m.?.
Wellington S? =26m.20s., SS?Z =28m.?, LZ =29m.?.
Christchurch i =27m.8s., e =30m.6s.
Pasadena ePZ =29m.10s.
Mount Wilson ePZ =29m.12s.
Palomar ePZ =29m.13s.
Riverside ePZ =29m.13s.
Tinemaha eP =29m.21s., iZ =29m.45s.
Tucson iP =29m.33s.
St. Louis eZ =36m.12s., eL =68m.
Stuttgart eZ =37m.15s. and 37m.26s.
Huancayo e =41m.16s. and 46m.52s., eL =62m.25s.
Long waves were also recorded at De Bilt.

Jan. 8d. Readings also at 2h. (near Granada), 4h. (Pasadena, Tucson, Mount Wilson, Tinemaha, Haiwee, Apia, and near Mizusawa), 8h. (Huancayo), 9h. (near Granada, Malaga, and near Stuttgart (2)), 10h. (Pasadena, Mount Wilson, Tinemaha, Tucson, St. Louis, and near Stuttgart), 12h. (Pasadena, Mount Wilson, Tucson, and Tinemaha), 13h. (Wellington, Auckland, and Riverview), 15h. (Huancayo and near Stuttgart (2)), 17h. (Harvard and near Lick), 18h. (near La Paz).

Jan. 9d. Readings at 0h. (Mizusawa and near Balboa Heights), 1h. (near Granada), 4h. (Riverview), 5h. (near Strasbourg, Ebingen, Zürich, and Stuttgart), 6h. (near Malaga), 7h. (near Lick), 12h. (near Mizusawa and near Apia), 15h. (Riverview, Tuai, Auckland, and Wellington), 18h. (near Zürich, Stuttgart, and Ebingen), 19h. (2), 20h. (2), 21h. and 23h. (near Alicante).

Jan. 10d. 4h. 22m. 47s. Epicentre 29°·0S. 69°·0W.

$A = +·3139$, $B = -·8178$, $C = -·4823$; $\delta = -6$; $h = +2$;
$D = -·934$, $E = -·358$; $G = -·173$, $H = +·450$, $K = -·876$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
La Plata	E.	11·1	125	2 43?	0	4 43?	− 6	—	—	5·9
	N.	11·1	125	2 37?	− 6	4 43?	− 6	—	—	5·8
	Z.	11·1	125	2 47	+ 4	4 37?	−12	—	—	5·5
La Paz		12·5	6	3 2	0	i 5 24	+ 1	—	—	6·9
Huancayo		17·9	340	e 4 15	+ 3	e 7 25	− 5	e 5 0	PP	e 8·2
Rio de Janeiro	E.	23·9	81	e 5 35	+19	e 9 38	+ 8	—	—	e 12·8
	N.	23·9	81	e 5 33	+17	e 9 31	+ 1	—	—	e 12·7
St. Louis	Z.	70·2	343	e 11 6	−11	—	—	—	—	—
Tucson		72·7	324	i 11 30	− 2	—	—	—	—	—
Palomar	Z.	76·8	321	e 12 2	+ 7	—	—	—	—	—
Riverside	Z.	77·6	321	e 11 58	− 2	—	—	—	—	—
Mount Wilson	Z.	78·1	321	i 12 2	0	—	—	—	—	—
Pasadena	Z.	78·1	321	e 12 1	− 1	—	—	—	—	—
Tinemaha	Z.	80·4	322	e 12 14	− 1	—	—	—	—	—

Mount Wilson gives also iZ = 12m.11s.

Jan. 10d. 20h. 9m. 51s. Epicentre 16°·8N. 100°·7W. (as on 1941 July 19d.).

Damage in the state of Guerrero; felt at Mexico City. Maximum intensity VI.
Epicentre 16° 44′N. 100° 41′W. (Tacubaya). Shallow.
Universidad nacional de Mexico.
Instituto de Geologia, Catalogo compendiadio de temblores durante el periodo Enero 1941—Diciembre 1944, Mexico 1945, p.55.

$A = -·1778$, $B = -·9412$, $C = +·2872$; $\delta = -5$; $h = +5$;
$D = -·983$, $E = +·186$; $G = -·053$, $H = -·282$, $K = -·958$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Tacubaya	N.	3·0	29	0 48	− 2	—	—	—	—	—
Puebla	E.	3·3	47	0 52	− 1	—	—	—	—	—
Oaxaca	N.	3·8	85	0 57	− 4	—	—	—	—	—
Manzanillo	E.	4·1	304	i 1 1	− 4	—	—	—	—	—
Guadalajara	Z.	4·6	328	i 1 12	0	—	—	—	—	—
Vera Cruz	N.	5·0	61	e 1 14	− 4	—	—	—	—	—
Merida	N.	11·3	67	e 2 41	− 5	—	—	—	—	—
Tucson		17·9	331	i 4 11	− 1	i 7 38	+ 8	—	—	i 8·4
Mobile		18·0	37	5 57	?	—	—	—	—	10·8
La Jolla		21·9	321	i 4 56	− 1	—	—	—	—	—
Balboa Heights		22·0	108	e 5 3	+ 5	e 9 10	+14	—	—	—
Palomar	Z.	22·0	323	e 4 57	− 1	—	—	—	—	—
Cape Girardeau	N.	22·7	23	i 5 1	− 3	i 9 18	+ 9	—	—	—
Riverside		22·8	323	e 5 4	− 1	i 9 0	−11	i 5 24	PP	—
Mount Wilson		23·3	323	i 5 11a	+ 1	—	—	—	—	—

Continued on next page.

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		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Pasadena		23·3	323	i 5 10a	0	i 9 25	+ 5	—	—	e 10·6
St. Louis		23·6	20	i 5 10	− 3	i 9 22	− 3	i 5 17	pP	—
Florissant		23·7	20	i 5 12	− 2	i 9 25	− 2	i 9 37	sS	—
Santa Barbara	Z.	24·5	320	i 5 22	0	—	—	—	—	—
Columbia		24·6	41	e 5 20	− 3	e 9 43	+ 1	—	—	e 13·0
Haiwee		24·6	326	i 5 26	+ 3	—	—	—	—	—
Tinemaha	Z.	25·5	326	i 5 31a	− 1	—	—	—	—	—
Salt Lake City		25·8	341	i 5 33	− 1	i 10 13	+11	—	—	i 11·7
Fresno	N.	26·1	324	e 5 38	+ 1	—	—	—	—	—
Logan		26·6	342	i 5 39	− 3	i 10 20	+ 4	i 10 44	?	i 14·2
Port au Prince		27·1	82	i 5 58	+12	e 10 48	+24	6 33	PP	—
Rapid City		27·3	357	i 5 46	− 2	—	—	i 6 22	PP	e 14·0
Chicago		27·4	20	i 5 45	− 4	e 10 28	0	e 6 23	PP	i 11·5
Lick		27·6	323	e 5 51	0	—	—	—	—	e 13·7
Santa Clara		27·8	323	i 5 54	+ 1	e 10 46	+11	—	—	e 13·0
Branner		27·9	323	i 6 0	+ 6	—	—	i 6 5	?	—
Berkeley		28·3	323	e 5 55	− 2	i 10 53	+10	i 12 12	SS	e 13·3
San Francisco		28·3	322	e 6 6	+ 9	—	—	e 6 26	PP	e 15·6
Bogota		28·8	111	i 6 8	+ 6	—	—	i 7 46	?	—
Ukiah		29·7	324	e 6 13	+ 3	e 11 1	− 5	—	—	e 13·7
New Kensington		29·9	33	e 5 56	−16	—	—	—	—	e 12·5
Bozeman		30·1	347	e 6 7	− 6	e 11 9	− 3	e 7 21	PPP	i 13·2
Pennsylvania		31·0	34	i 5 57	?	—	—	i 6 18	P	—
Buffalo		32·0	31	7 28	PP	12 25	+43	8 12	PPP	15·8
Philadelphia		32·0	39	i 6 29	− 1	e 12 2	+20	e 7 18	PP	e 20·0
San Juan		33·0	81	i 6 39	0	i 11 59	+ 2	e 7 45	PP	e 14·0
Fordham		33·3	38	i 6 39	− 2	i 12 3	+ 1	—	—	i 16·7
Ottawa		35·4	30	6 57	− 3	12 41	+ 7	8 17	PP	19·2
Seattle		35·5	336	e 7 41	+41	e 13 8	+32	—	—	e 16·2
Saskatoon		35·6	354	6 53	− 8	12 17	−21	—	—	17·2
Harvard		35·7	38	i 7 2a	0	i 12 20	−19	i 7 12	pP	—
Weston		35·8	38	i 7 2	− 1	e 12 55	+14	e 8 28	PP	—
Bermuda		36·0	58	i 7 5	0	i 12 53	+ 9	—	—	i 17·3
Vermont		36·0	34	i 7 3	− 2	i 12 30	−14	i 8 25	PP	e 14·4
Victoria		36·7	336	7 11	+ 1	12 51	− 3	—	—	17·2
Shawinigan Falls		37·6	32	7 17	− 1	13 9?	+ 1	8 52	PP	17·2
Fort de France		38·1	87	e 5 36?	?	—	—	e 7 1?	P	—
Huancayo		38·1	137	e 7 31	+ 9	e 13 9	− 7	e 9 0	PP	i 16·3
Seven Falls		39·0	32	e 7 29	− 1	13 30	+ 1	8 59	PP	18·2
Halifax		41·7	40	7 52	0	14 3?	− 7	—	—	24·2
La Paz		46·1	133	i 8 34a	+ 6	i 15 22	+ 8	10 15	PP	21·2
Sitka		47·8	337	i 8 41	0	i 15 41	+ 3	i 10 33	PP	e 19·7
Honolulu		53·9	285	—	—	e 17 6	+ 4	—	—	e 25·6
College		57·4	338	e 9 51	− 2	e 17 48	− 1	e 12 0	PP	e 25·5
La Plata	E.	65·5	141	10 51?	+ 4	19 37	+ 5	27 33?	?	33·7
	N.	65·5	141	10 45?	− 2	19 33?	+ 1	19 45?	PS	34·3
Rio de Janeiro		68·7	123	i 11 9	+ 2	e 21 17	ScS	—	—	e 28·3
Scoresby Sund		70·5	20	i 11 18	0	20 39?	+ 7	21 51?	ScS	—
Aberdeen		80·6	33	i 12 20	+ 4	i 22 27	+ 4	—	—	e 39·3
Lisbon		80·9	52	i 12 20	+ 3	22 34	+ 8	i 15 30	PP	39·5
Stonyhurst		81·4	36	12 23	+ 3	22 43	+12	15 31	PP	e 38·2
Bergen		83·2	28	i 12 31	+ 2	—	—	e 15 53	PP	e 42·1
Kew		83·3	38	i 12 31a	+ 1	e 22 50	0	i 15 39?	PP	e 41·2
San Fernando		83·7	54	i 12 38	+ 6	23 4	+10	16 13	PP	42·7
Granada		85·5	53	i 12 52	+11	i 23 19	+ 7	15 46	PP	42·9
Paris		85·9	40	i 12 45	+ 2	e 23 21	+ 5	i 36 15	?	47·2
De Bilt		86·3	36	i 12 47a	+ 2	i 23 35	+15	e 16 9?	PP	e 40·2
Uccle		86·3	38	i 12 44a	− 1	23 31	+11	16 3?	PP	e 41·2
Clermont-Ferrand		87·4	43	i 12 52	+ 2	i 23 35	+ 5	e 16 16	PP	—
Tortosa		87·4	48	i 12 52	+ 2	e 23 19	[+ 2]	16 25	PP	e 40·2
Copenhagen		88·7	31	e 12 56	− 1	23 44	+ 1	16 21	PP	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	Supp.			L.
		°	°	m. s.	s.	m. s.	s.	m. s.			m.
Upsala		88·9	27	e 13 41	+43	e 24 0	+16	e 23 36	SKKS		e 41·2
Strasbourg		89·2	39	e 13 0	+ 1	—	—	13 25	PP		—
Neuchatel		89·4	40	e 13 0	0	—	—	e 16 29	PP		—
Basle		89·6	39	e 13 0	− 1	e 24 1	+10	e 16 31	PP		—
Stuttgart		90·0	39	i 13 3a	0	e 24 15	+21	i 16 35	PP		e 46·4
Zürich		90·2	40	e 13 3k	− 1	—	—	e 16 36	PP		—
Jena	N.	90·4	36	e 14 4	+60	e 24 12	+14	e 16 39	PP		—
Potsdam		90·6	33	i 16 39	PP	e 24 4?	+ 4	i 25 1	PS		e 47·2
Chur		91·1	40	e 13 9a	+ 1	e 24 26	+22	e 16 42	PP		—
Cheb		91·3	36	e 12 56	−13	e 24 30	+24	i 16 47	PP		e 47·2
Milan		91·4	42	16 45	PP	24 9?	+ 2	—	—		—
Prague		92·4	35	e 13 9?	− 5	e 23 57	{− 2}	16 55	PP		e 45·2
Triest		94·2	39	i 17 8	PP	—	—	—	—		—
Christchurch		98·6	227	e 23 59	?	e 24 29	[+ 9]	i 25 29	S		—
Bucharest		102·2	35	—	—	24 9?	[−29]	—	—		44·2
Riverview		114·0	240	—	—	i 25 37	[+ 9]	i 26 45	SKKS		e 53·2
Helwan		114·5	45	19 36	PP	e 29 21	PS	19 45	?		—
Ksara		114·8	39	e 19 46?	PP	—	—	e 29 28	PS		—
New Delhi	N.	134·8	2	e 21 50	PP	i 22 51	PKS	i 39 2	SS		—
Calcutta	N.	139·9	347	e 19 38	[+ 8]	i 29 27	{+ 7}	22 39	PP		—
Bombay		144·0	11	19 35	[− 2]	23 8	PKS	22 51	PP		—
Kodaikanal	E.	153·1	5	e 20 7	[+15]	—	—	—	—		—
Colombo	E.	156·4	359	e 20 9?	[+13]	—	—	—	—		—

Additional Readings :—
Pasadena iZ =5m.19s., iNZ =9m.35s.
St. Louis isSN =9m.36s.
Florissant iPN =5m.19s.
Port au Prince PPP =6m.48s., SS =11m.28s.
Rapid City e =9m.47s.
Chicago i =7m.7s., iS =10m.38s.
Pennsylvania i =6m.48s., 8m.37s.
Buffalo PPP? =8m.30s., SS? =13m.50s.
Philadelphia i =9m.57s.
San Juan i =13m.7s.
Fordham i =6m.48s. and 12m.17s.
Ottawa SS =14m.39s.?.
Harvard iPPP? =8m.24s., isS =12m.36s.
Weston e =12m.17s.
Vermont e =13m.2s.
Fort de France e =11m.50s.?.
Huancayo iS =13m.28s.
La Paz SSNZ =18m.28s.
La Plata SSN =23m.33s.?, N =29m.9s.?.
Scoresby Sund 22m.45s.
Aberdeen eE =28m.9s., eN =34m.17s.
Lisbon PPE =15m.8s., PPN =15m.12s., SN =22m.39s., SE =22m.50s., SSE =27m.46s.
Stonyhurst P_cP =12m.33s., S_cS =22m.53s., PS =23m.31s., PPS =23m.44s., Q =35·2m.
Bergen eZ =21m.38s. and 29m.24s., iZ =35m.51s.
Kew iP_cPEZ =12m.39s., ePPPN =17m.59s., eSNZ =22m.59s., eSSS =32m.9s.?, eQE =34·2m.
San Fernando iZ =13m.10s. and 13m.32s.
Granada 24m.22s.
De Bilt eSS =28m.39s., eSSS =33m.9s.?.
Uccle SSN =28m.55s.
Clermont-Ferrand ePPP =18m.11s., eSKS =23m.5s., eSS? =29m.47s.
Tortosa PPPN =18m.32s.
Copenhagen S =23m.54s.
Upsala eN =22m.4s., e =33m.9s.?.
Stuttgart ePPPZ =18m.36s., eSKS =23m.45s.?, eSP =25m.7s., eSS =30m.9s., eQ =42m.9s.
Jena e =25m.25s.
Prague ePPP =19m.7s., ePPS? =25m.27s.?, eSSS =34m.27s.?.
Riverview iPSEZ =29m.30s., eSS?E =35m.8s., eSSP?N =35m.32s., eQN =47m.9s.
Calcutta iPKSN =23m.14s.
Bombay iN =23m.19s., PPPN =26m.0s., PPPE =26m.5s., SKSPE =32m.55s.
Long waves were also recorded at Ferndale, Auckland, Wellington, Arapuni, and Belgrade.

Jan. 10d. 20h. 33m. 21s. Epicentre 16°·8N. 100°·7W. (as at 20h. 9m.).

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Puebla	E.	3·3	47	0 49	− 4	—	—	—	—	—
Oaxaca	Z.	3·8	85	i 0 52	− 9	—	—	—	—	—
Manzanillo	E.	4·1	304	e 0 58	− 7	—	—	—	—	—
Guadalajara	N.	4·6	328	e 1 11	− 1	—	—	—	—	—
Vera Cruz	Z.	5·0	61	e 1 11	− 7	—	—	—	—	—
Merida	N.	11·3	67	e 2 42	− 4	—	—	—	—	—
Tucson		17·9	331	i 4 11	− 1	—	—	—	—	i 8·8
La Jolla		21·9	321	i 4 56a	− 1	—	—	—	—	—
Palomar	Z.	22·0	323	e 4 57	− 1	—	—	—	—	—
Cape Girardeau		22·7	23	i 5 2	− 2	e 9 25	+16	—	—	—
Riverside		22·8	323	i 5 6	+ 1	i 8 59	−12	—	—	—
Mount Wilson		23·3	323	i 5 11a	+ 1	—	—	—	—	—
Pasadena		23·3	323	i 5 10a	0	i 9 25	+ 5	i 5 32	PP	e 10·0
St. Louis		23·6	20	i 5 11	− 2	9 36	+11	i 5 19	pP	—
Florissant	N.	23·7	20	i 5 13	− 1	i 9 39	+12	—	—	—
Santa Barbara	E.	24·5	320	e 5 22	0	—	—	—	—	—
Columbia		24·6	41	e 5 22	− 1	e 9 47	+ 5	—	—	e 13·0
Haiwee		24·6	326	i 5 25	+ 2	—	—	—	—	—
Tinemaha		25·5	326	i 5 32a	0	—	—	—	—	—
Salt Lake City		25·8	341	i 5 25	− 9	i 10 9	+ 7	—	—	e 13·2
Fresno	N.	26·1	324	e 5 38	+ 1	—	—	e 5 59	PP	e 14·2
Logan		26·6	342	i 5 47	+ 5	i 10 44	+28	—	—	13·9
Rapid City		27·3	357	i 5 57	+ 9	e 10 44	+17	—	—	i 14·2
Chicago		27·4	20	e 5 49	0	(i 10 42)	+14	—	—	i 10·7
Lick		27·6	323	e 5 50	− 1	—	—	—	—	e 15·0
Santa Clara	E.	27·8	323	i 6 0	+ 7	e 10 54	+19	—	—	—
Branner	E.	27·9	323	i 5 55	+ 1	—	—	—	—	—
Berkeley		28·3	323	e 5 56	− 1	—	—	—	—	—
San Francisco	E.	28·3	322	e 5 58	+ 1	—	—	—	—	e 15·7
Bogota		28·8	111	e 6 8	+ 6	—	—	—	—	—
San Juan		33·0	81	e 6 44	+ 5	e 11 44	−13	—	—	e 12·8
Fordham		33·3	38	i 6 39	− 2	—	—	—	—	—
Ottawa		35·4	30	e 6 56	− 4	—	—	e 8 17	PP	18·7
Harvard		35·7	38	i 7 1	− 1	—	—	i 7 9	?	—
Weston		35·8	38	i 7 2	− 1	—	—	—	—	—
Shawinigan Falls		37·6	32	e 7 20	+ 2	—	—	e 8 48	PP	20·7
Huancayo		38·1	137	e 7 56	+34	i 13 29	+13	i 10 37	?	i 14·8
Seven Falls		39·0	32	e 7 30	0	—	—	e 9 4	PP	17·7
La Paz		46·1	133	i 8 39	+11	—	—	—	—	22·7
Scoresby Sund		70·5	20	11 19	+ 1	—	—	—	—	—
Lisbon		80·9	52	12 19k	+ 2	22 39	+13	i 22 57	PS	—
San Fernando		83·7	54	i 12 39	+ 7	—	—	—	—	—
Granada		85·5	53	12 46a	+ 5	23 21	+ 9	—	—	—
Uccle	Z.	86·3	38	i 12 46	+ 1	—	—	—	—	—
Clermont-Ferrand		87·4	43	i 12 53	+ 3	—	—	—	—	—
Tortosa	N.	87·4	48	e 12 54	+ 4	e 24 25	PS	—	—	—
Stuttgart	Z.	90·0	39	e 13 3	0	—	—	i 16 37	PP	—
Zürich		90·2	40	e 12 47	−17	—	—	e 16 29	PP	—
Chur		91·1	40	e 13 7	− 1	—	—	e 16 44	PP	e 30·9
Ksara		114·8	39	e 19 54	PP	—	—	e 29 26	PS	—
New Delhi	N.	134·8	2	i 21 52	PP	—	—	i 22 55	PKS	—
Calcutta	N.	139·9	347	i 23 9	PKS	—	—	—	—	—
Bombay	N.	144·0	11	19 37	[0]	23 6	SKP	22 50	PP	—

Additional readings :—
Pasadena iNZ = 9m.36s.
St. Louis isS?Z = 9m.48s.
Lisbon SE = 22m.48s.
Bombay PPPN = 25m.59s.
Long waves were also recorded at Tananarive and at other American stations.

Jan. 10d. Readings also at 0h. (Bogota, near Granada, Almeria, and Malaga (2)), 1h. (Balboa Heights), 3h. (Bombay), 14h. (near Fresno and Lick), 15h. (Tortosa), 16h. (Mount Wilson, Tucson, Riverside, Tinemaha, and near La Paz), 18h. (Auckland (2), Christchurch), 19h. (Ksara), 20h. (Tacubaya and Santa Clara), 21h. (La Paz, Uccle, and Tacubaya (2)), 22h. (Tacubaya (2)), 23h. (Wellington, Stuttgart, Pasadena, Mount Wilson, Tinemaha, Riverside, Tacubaya (3), and near Mizusawa).

Jan. 11d. 1h. 34m. 11s. Epicentre 39°·9N. 142°·4E. Depth of focus 0·005.

Scale VI at Miyako and Hatinohe ; V at Morioka ; IV at Isinomaki and Mizusawa ; II-III at Mito. Depth 40km. Macroseismic radius over 300km.
Seismological Bulletin of Central Meteorological Observatory Japan for year 1944, Tokyo 1951, page 5, with isoseismic chart. Epicentre as adopted.

$A = -\cdot6095$, $B = +\cdot4694$, $C = +\cdot6389$; $\delta = +2$; $h = -2$;
$D = +\cdot610$, $E = +\cdot792$; $G = -\cdot506$, $H = +\cdot390$, $K = -\cdot769$.

		Δ	Az.	P.	O−C.	S.	O−C.
		°	°	m. s.	s.	m. s.	s.
Miyako		0·4	230	0 10	− 2	0 17	− 5
Hatinohe		0·9	314	0 15k	− 3	0 26	− 5
Morioka		1·0	258	0 17	− 2	0 29	− 4
Mizusawa	E.	1·2	232	0 22	0	0 38	0
Akita		1·8	264	0 48k	+18	1 10	+18
Sendai		2·0	215	0 32	0	0 57	0
Hukusima		2·6	215	0 41a	0	1 25	+13
Mori		2·6	328	0 39k	− 2	1 8	− 4
Sapporo		3·2	346	0 50	+ 1	1 23	− 4
Onahama		3·2	202	0 58	+ 9	1 43	+16
Aikawa		3·7	241	0 59	+ 3	1 50	+11
Mito		3·8	204	0 57k	− 1	1 48	+ 6
Utunomiya		3·9	212	1 1	+ 2	1 48	+ 4
Kakioka		4·1	206	1 0	− 2	1 55	+ 6
Tukubasan		4·1	207	1 1a	− 1	1 50	+ 1
Nemuro		4·2	34	1 2	− 1	1 48	− 4
Maebasi		4·4	218	1 7	+ 1	—	—
Kumagaya		4·4	213	1 6	0	2 3	+ 6
Nagano		4·6	227	1 11	+ 2	2 28	+26
Tokyo Cen. Met. Ob.		4·7	207	1 8	− 2	2 1	− 3
Yokohama		5·0	207	1 15	+ 1	2 29	+17
Wazima		5·0	241	1 13	− 1	2 17	+ 5
Toyama		5·2	233	1 18	+ 1	2 56	+39
Kohu		5·2	217	1 18	+ 1	2 35	+18
Hunatu		5·3	214	1 19	0	2 22	+ 3
Mera		5·3	203	1 19	0	2 39	+20
Misima		5·5	211	1 22	+ 1	2 23	− 1
Osima		5·6	206	1 20	− 3	2 20	− 7
Shizuoka		5·9	214	1 34	+ 7	2 42	+ 8
Omaesaki		6·2	213	1 42	+11	2 59	+18
Gihu		6·3	227	1 35	+ 3	2 53	+ 9
Hamamatu		6·4	217	1 34	0	2 59	+13
Hikone		6·7	228	1 39	+ 1	3 2	+ 8
Kyoto		7·2	229	1 47	+ 2	3 19	+13
Kobe		7·8	230	1 51k	− 2	3 26	+ 5
Wakayama		8·1	228	2 0	+ 3	3 40	+12
Sumoto		8·2	229	2 8	+ 9	4 45	L
Muroto		9·3	227	1 53	−21	4 27	L
Kôti		9·5	231	2 20	+ 3	5 9	L
Tinemaha	z.	73·5	56	i 11 29	+ 1	—	—
Haiwee		74·3	56	e 11 35	+ 3	—	—
Mount Wilson	z.	75·4	58	i 11 39a	+ 1	—	—
Pasadena		75·4	58	i 11 39	+ 1	—	—
Riverside	z.	76·0	58	i 11 42	0	—	—
Tucson		81·3	55	i 12 12	+ 1	—	—
Stuttgart	z.	82·5	331	i 12 17	0	—	—

Jan. 11d. 11h. 1m. 34s. Epicentre 47°·3N. 11°·3E. (as on 1939 Dec. 14d.)

Scale IV in the vicinity of Innsbruck. Epicentre near that adopted.
E. Trapp.
"Makroseism," Beobachtungen in den Jahren 1941-1945, Anhang 8. Jahrbuch für 1947 de Zentralanstalt für Meteorologie und Geodynamik, Wien. Macroseismic chart, p. D50.

$A = +·6674$, $B = +·1334$, $C = +·7326$; $\delta = -8$; $h = -4$;
$D = +·196$, $E = -·981$; $G = +·718$, $H = +·144$, $K = -·681$.

	Δ	Az.	P.	O−C.	S.	O−C.	Supp.	
	°	°	m. s.	s.	m. s.	s.	m. s.	
Ravensburgh	1·2	293	—	—	e 0 41	0	—	—
Chur	1·3	249	e 0 23	− 2	e 0 45	+ 1	i 0 29	P_g
Zürich	1·9	272	e 0 34	0	e 0 59	0	—	—
Stuttgart	2·0	316	e 0 38	+ 3	e 1 1	− 1	i 1 11	S_g
Basle	2·5	275	e 0 39	− 4	e 1 23	S_g	—	—
Strasbourg	2·7	298	—	—	e 1 26	S_g	e 1 38	S_g
Neuchatel	3·0	264	e 0 55	+ 5	e 1 34	+ 7	—	—

Stuttgart also gives iS? = 1m.6s.

Jan. 11d. Readings also at 0h. (Tacubaya and near Alicante), 2h. (Tacubaya, Huancayo, La Plata, and near La Paz), 4h. (Tacubaya, Fort de France, Huancayo, Bogota, Stuttgart, near Berkeley, Branner, Lick, Fresno, Mount Wilson, Pasadena, Tucson, Riverside, and Tinemaha), 5h. (Tacubaya, near Berkeley, Branner, Lick, Fresno, Mount Wilson, Pasadena, Riverside, and Tinemaha), 6h. and 9h. (2) (Tacubaya), 10h. (near Mizusawa), 11h. (near Malaga), 16h. (Tuai, Wellington, Christchurch, Riverview, Ravensburg (2), near Chur (2), Basle, Zürich (2), Stuttgart (2), and Milan), 17h. (Huancayo, Fort de France, San Juan, Bogota, near Chur, Zürich, and Stuttgart), 21h. (Buffalo), 22h. (near Istanbul).

Jan. 12d. 15h. 2m. 35s. Epicentre 40°·4N. 125°·1W. (as on 1941 Feb. 11d.).

Intensity V at Cape Mendocino, Eureka, and Ferndale; IV at Cummings, Upper Mattole and Westpoint. Epicentre 40°·3N. 124°·9W. (Berkeley).

$A = -·4391$, $B = -·6248$, $C = +·6456$; $\delta = -2$; $h = -2$;
$D = -·818$, $E = +·575$; $G = -·371$, $H = -·528$, $K = -·764$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Ferndale	E.	0·6	75	i 0 17	+ 2	i 0 25	− 1	—	—	—
Ukiah		1·9	131	i 0 34	0	i 0 47	−12	—	—	—
Berkeley		3·4	138	i 0 52	− 3	i 1 33	− 4	i 1 20	P_g	—
San Francisco		3·4	140	e 0 53?	− 2	i 1 30?	− 7	—	—	—
Branner		3·8	141	i 1 1	0	e 1 47	0	—	—	—
Santa Clara		3·9	139	i 1 3	+ 1	i 1 43	− 7	i 1 23	P*	—
Lick		4·1	137	e 1 5	0	i 1 53	− 2	—	—	e 2·5
Tinemaha		6·3	120	i 1 39k	+ 3	—	—	—	—	—
Haiwee		7·0	125	e 1 50	+ 4	—	—	—	—	—
Santa Barbara		7·3	143	e 1 50	0	—	—	—	—	—
Seattle		7·5	14	e 2 53	+60	—	—	e 2 17	P*	e 4·3
Mount Wilson		8·4	134	i 2 4	− 2	—	—	—	—	—
Pasadena		8·4	136	i 2 4	− 2	i 3 37	− 6	—	—	—
Riverside		8·9	133	i 2 12	0	—	—	—	—	—
Palomar	Z.	9·6	134	e 2 22	+ 1	—	—	—	—	—
Logan		10·1	78	e 2 32	+ 4	e 4 35	+10	—	—	i 5·4
Salt Lake City		10·1	83	e 2 28	0	e 4 46	+21	—	—	e 5·4
Bozeman		11·6	58	—	—	e 5 6	+ 5	—	—	e 6·2
Tucson		14·1	121	i 3 27	+ 4	i 6 30	+28	—	—	e 7·1
Rapid City		16·6	70	i 3 54	− 2	—	—	—	—	e 7·9
Florissant	N.	26·7	83	—	—	i 10 22	+ 5	—	—	e 12·9
St. Louis		26·9	83	i 5 45	0	e 10 18	− 2	—	—	e 13·0
Cape Girardeau		27·8	85	e 6 12	+19	—	—	—	—	e 14·9
Chicago		28·1	75	e 5 53	− 2	—	—	—	—	e 14·1
Honolulu		33·7	245	—	—	e 12 33	+25	—	—	e 14·2

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Ottawa		36·1	65	e 7 6	+ 1	—	—	—	—	18·4
Fordham		38·4	72	—	—	e 13 31?	+11	—	—	e 18·0
Seven Falls		39·1	62	e 7 29	− 2	—	—	—	—	20·4
Bermuda		48·4	80	e 11 47	?	e 15 59	+13	—	—	e 23·8
San Juan		54·8	95	—	—	e 17 14	0	—	—	e 28·5
Tortosa	N.	85·2	38	(e 14 25?)	+106	—	—	—	—	e 14·4

Additional readings :—
Ferndale iE = 22s. and 54s.
Ukiah i = 1m.22s.
Berkeley iZ = 41s., iP = 55s.
Santa Clara iE = 2m.10s.
Tucson i = 6m.20s.
St. Louis iZ = 6m.5s., eN = 10m.55s.
Long waves were also recorded at Riverview, Wellington, Christchurch, College, and other American and European stations.

Jan. 12d. Readings also at 4h. (near Mizusawa), 6h. (Mount Wilson, Pasadena, Riverside, Tucson, Tinemaha, and Stuttgart), 7h. (Bogota, Mount Wilson, Pasadena, Riverside, and Tinemaha), 9h. (near Bogota), 15h. (near La Paz), 16h. (near Malaga), 17h. (near Granada and Malaga), 18h. (Bombay, Colombo, Calcutta, Kodaikanal, and New Delhi).

Jan. 13d. Readings at 0h. (near Fresno), 2h. (Stuttgart, Ebingen, and Triest), 3h. (Tucson Tinemaha, Riverside, Pasadena, Mount Wilson, Wellington, Arapuni, Auckland and Suva), 10h. (Riverview), 14h. (near Mizusawa), 16h. (La Paz), 20h. (Wellington and near Branner), 22h. (Pasadena, Riverside, Tucson, and Tinemaha).

Jan. 14d. Readings at 3h. (Riverview and near Ferndale), 4h. (Huancayo), 5h. (Uccle, Tinemaha, Mount Wilson, Riverside, Tucson, Rio de Janeiro, La Paz, and La Plata), 6h. (Stuttgart, near Malaga, and Granada), 7h. (Pasadena, Mount Wilson, Tucson, Riverside, and Tinemaha), 11h. (Stuttgart), 12h. (Upsala, Tucson, Riverside, and Tinemaha), 14h. (Riverview), 19h. (near Balboa Heights), 20h. (Riverview, Wellington, Auckland, Pasadena, Tucson, Mount Wilson, and Tinemaha), 21h. (Mount Wilson, Tucson, Riverside, Fort de France, and San Juan).

Jan. 15d. 5h. 45m. 58s. Epicentre 18°·0N. 47°·0W. (as on 1942 Dec. 31d.).

$A = +·6491$, $B = -·6960$, $C = +·3071$; $\delta = +6$; $h = +5$;
$D = -·731$, $E = -·682$; $G = +·209$, $H = -·225$, $K = -·952$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Fort de France		14·0	259	e 3 19	− 3	—	—	—	—	e 8·5
San Juan		18·2	275	e 4 12	− 4	e 7 59	+22	—	—	e 9·2
Bermuda		21·4	315	e 4 53	+ 2	—	—	—	—	e 9·2
Harvard		32·1	326	e 6 29	− 2	—	—	—	—	e 14·0
Seven Falls		35·0	332	—	—	e 12 31	+ 3	—	—	15·0
Ottawa		36·3	326	e 8 2?	PP	—	—	—	—	15·0
Rio de Janeiro	N.	40·8	175	e 9 30	PP	e 14 14	+18	—	—	e 19·7
Huancayo		40·9	225	e 7 46	0	e 13 53	− 5	—	—	e 17·5
Chicago		41·9	314	e 8 27	+33	—	—	e 9 7	PP	e 17·2
Granada		42·5	54	8 27k	+28	i 14 27	+ 5	—	—	20·0
St. Louis		42·8	308	e 8 11	+10	e 14 27	+ 1	—	—	e 17·5
Florissant		42·9	308	e 8 3	+ 1	e 14 27	0	—	—	e 17·8
Clermont-Ferrand		49·7	45	8 57	+ 1	—	—	—	—	—
Rapid City		53·5	313	e 8 23	−61	e 17 55	+68	—	—	e 25·8
Stuttgart		54·5	42	e 9 32	0	—	—	—	—	e 26·0
Tucson		58·8	297	e 9 59	− 3	—	—	—	—	e 32·6
Logan		59·6	310	e 10 5	− 3	e 20 2	?	—	—	e 27·3
Riverside	Z.	64·1	300	e 10 37	− 1	—	—	—	—	—
Tinemaha	Z.	64·6	303	e 10 43	+ 2	—	—	—	—	—
Mount Wilson	Z.	64·7	300	e 10 40	− 2	—	—	—	—	—
Pasadena		64·8	300	i 10 42	− 1	—	—	—	—	e 30·0

Additional readings :—
Harvard e = 7m.1s.
Huancayo e = 8m.37s. and 13m.25s.
Tucson e = 10m.39s. and 11m.11s.
Pasadena iZ = 11m.20s. and 11m.39s.
Long waves were also recorded at Bozeman, Fordham, and other European stations.

Jan. 15d. 23h. 49m. 27s. Epicentre 31°·5S. 68°·6W.

Intensity VI at Petorca, San Felipe ; IV at Santiago, Valparaiso (Chile).
Epicentre 31°·25S, 68°·75W. Depth of focus 50km., magnitude 7·4 (Gutenburg).
Annales de l'Institut de Physique du Globe de Strasbourg, 2eme partie, Séismologie, Tome IX 1944, p.6. Strasbourg 1951.
E. Tillotson. The Argentina Earthquake, Nature, London, 29 Janvier 1944, vol. 153, pp. 132-133.

A. Castellanos, El Terremoto de San Juan, Asoc. Cult. de Conferencia de Rosario, Argentina, publ. No. 6, 1945, pp. 77-242.

$A = +·3117$, $B = -·7953$, $C = -·5199$; $\delta = -5$; $h = +1$;
$D = -·931$, $E = -·365$; $G = -·190$, $H = +·484$, $K = -·854$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Montezuma		8·8	359	e 2 13	+ 2	—	—	2 34	?	i 4·6
La Plata	E.	9·6	114	i 2 22	+ 1	4 3?	− 9	4 27	SS	4·5
	Z.	9·6	114	2 29	+ 8	3 51?	−21	4 33?	SS	5·1
La Paz	N.	15·0	4	i 3 37a	+ 2	i 6 33	+10	—	—	7·7
Huancayo		20·3	341	i 4 39	− 1	i 8 24	+ 1	i 5 28	PPP	—
Rio de Janeiro	E.	24·1	75	i 5 18	0	(i 9 58)	+24	—	—	i 10·0
	N.	24·1	75	i 5 29	+11	(9 55)	+21	—	—	i 9·9
Bogota		36·3	351	(i 7 6)	− 1	(e 12 37)	−11	—	—	(22·6)
Balboa Heights		41·6	345	e 7 52	+ 1	e 13 50	−18	i 9 44	PcP	e 17·7
Fort de France		46·5	11	i 8 29	− 2	e 15 12	− 7	10 6	PP	—
San Juan		49·7	4	i 8 50	− 6	i 15 38	−26	i 10 27	PcP	e 19·2
Port au Prince		49·9	357	e 9 4	+ 7	e 16 14	+ 7	10 49	PP	—
Merida	E.	55·9	337	e 9 21	−21	—	—	—	—	—
Tacubaya	E.	58·5	326	e 9 58	− 2	—	—	—	—	—
Bermuda		63·6	5	10 35	0	i 19 13	+ 5	e 20 15	ScS	e 26·4
Mobile		64·6	342	10 42	+ 1	19 25	+ 4	—	—	—
Columbia		66·2	350	e 10 48	− 4	e 19 34	− 6	e 11 0	PcP	e 29·0
Georgetown		70·5	354	i 11 17	− 1	i 20 27	− 5	—	—	—
Philadelphia		71·4	356	i 11 21	− 3	i 20 32	−10	e 15 13	PPP	e 28·4
Fordham		72·2	357	i 11 25	− 4	i 20 45	− 6	i 11 34	PcP	e 37·3
New Kensington		72·4	352	e 11 30	0	e 20 51	− 2	e 27 13	?	e 42·7
Pennsylvania		72·4	353	i 13 48	PP	—	—	—	—	—
St. Louis		72·6	342	i 11 29	− 2	e 20 51	− 5	i 11 38	pP	—
Harvard		73·7	358	i 11 35a	− 3	e 21 7	− 1	i 11 59	PcP	e 36·6
Buffalo		74·7	353	11 40	− 3	e 21 24	+ 5	e 11 50	PcP	—
Tucson		74·9	324	i 11 43	− 1	i 21 21	− 1	e 12 4	PcP	e 32·0
Chicago		75·0	345	e 11 40	− 5	i 21 12	−11	e 16 9	PPP	31·1
Vermont		75·7	357	i 11 47	− 2	i 21 28	− 2	i 11 56	PcP	i 30·6
Halifax		75·9	4	11 51	+ 1	21 28	− 4	14 35	PP	38·6
Lincoln		76·5	339	e 11 50	− 4	e 21 14	−25	—	—	e 31·5
Ottawa		76·8	355	11 52	− 3	21 37	− 5	14 55	PP	36·6
Shawinigan Falls		77·8	358	11 58	− 3	21 50	− 3	—	—	39·6
Seven Falls		78·3	359	12 4	+ 1	21 56	− 3	31 9	?	34·6
La Jolla		78·8	320	i 12 9	+ 3	—	—	—	—	—
Palomar	Z.	79·0	321	e 12 7	0	—	—	i 12 17	PcP	—
Riverside		79·7	320	i 12 10a	− 1	e 22 13	0	i 12 19	PcP	—
Mount Wilson		80·3	320	i 12 14a	0	—	—	i 12 24	PcP	—
Pasadena		80·3	320	i 12 14a	0	e 22 11	− 9	i 12 21	PcP	e 34·0
Santa Barbara		81·3	319	i 12 20a	0	—	—	i 12 30	PcP	—
Rapid City		81·6	336	i 11 53	−28	i 22 7	−26	e 17 1	PPP	e 36·1
Haiwee		81·7	322	e 12 21	− 1	e 22 33	− 1	—	—	—
Johannesburg		82·0	115	e 12 21?	− 2	e 22 33?	− 4	—	—	e 37·6
Tinemaha		82·5	322	i 12 26a	0	e 22 43	+ 1	i 12 36	PcP	e 42·4
Fresno	N.	83·1	321	e 12 29	0	—	—	—	—	—
Logan		83·1	330	i 12 28	− 1	i 22 47	− 1	i 15 24	PP	e 37·3
Lick		84·5	320	e 12 36	0	e 23 1	− 1	e 12 46	PcP	—
Santa Clara		84·7	320	i 12 37	0	e 22 56	− 8	—	—	e 41·5
Branner		84·9	320	e 12 39	+ 1	e 23 9	+ 3	e 23 1	?	—
Berkeley		85·3	320	i 12 40	0	e 23 3	− 7	i 16 4	PP	e 41·0
Bozeman		85·9	332	e 12 38	− 5	e 22 34	[−33]	e 16 7	PP	e 36·4

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	Supp.			L.
		°	°	m. s.	s.	m. s.	s.	m. s.			m.
Christchurch		86·7	219	12 48	+ 1	23 25	+ 1	16 20	PP		40·6
Ukiah		86·7	321	e 12 47	0	e 23 6	[− 6]	i 23 39	S	e	39·8
Wellington		87·0	222	12 48	0	23 27	0	12 57	pP		40·6
Ferndale		88·3	321	—	—	e 23 20	[− 2]	e 23 23	SKKS	e	65·6
Arapuni		88·5	225	—	—	23 51?	+10	i 25 21?	PPS		41·6
Lisbon		89·1	42	12 51	− 7	23 19?	[− 8]	13 1	PcP		38·5
San Fernando		89·3	45	i 13 0	+ 1	i 23 42	− 6	i 13 10	PcP		40·6
Saskatoon		89·7	337	13 3	+ 2	23 29	[− 2]	29 57?	SS		36·6
Auckland		89·8	134	12 53?	− 9	i 23 59	+ 6	23 33	SKS		41·6
Granada		91·4	46	i 13 10a	+ 1	i 24 25	+18	13 31	pP		41·9
Seattle		92·4	326	e 13 58	+44	e 24 16	0	e 26 30	PPS	e	42·6
Apia		93·8	251	e 13 43	+23	—	—	—	—	e	44·2
Tortosa		96·2	45	13 35	+ 4	24 56	+ 8	17 37	PP		48·4
Victoria		96·7	326	13 17	−16	23 50	[−20]	16 57	PP		40·6
Honolulu		100·2	288	e 20 2	PPP	e 25 40	+18	e 32 7	SS	e	46·4
Clermont-Ferrand		100·6	42	e 13 52	+ 1	e 25 46	+21	e 18 5	PP	e	46·4
Tananarive		100·9	120	e 16 41	?	25 44	+16	17 57	PP		48·6
Kew		102·0	36	i 13 56	− 1	i 24 34	[− 3]	i 18 7	PP		46·6
Paris		102·0	39	e 14 1	+ 4	i 24 27	[−10]	i 18 15	PP		43·6
Stonyhurst		102·4	33	—	—	24 42	[+ 3]	33 3	SS		44·6
Neuchatel		103·5	42	e 14 3	− 1	—	—	e 18 15	PP		—
Milan		104·0	45	18 22	PP	24 52	[+ 6]	—	—		—
Basle		104·1	42	e 14 7	0	—	—	e 18 8	PP		—
Uccle		104·1	37	e 14 4	− 3	i 26 6	+11	e 18 18?	PP		47·6
Zürich		104·6	42	e 14 6	− 3	e 24 45	[− 4]	e 18 14	PP		—
Sitka		104·8	328	e 14 57	+47	i 24 46	[− 3]	e 18 21	PP		44·2
Strasbourg		104·8	41	e 14 22	+12	e 24 46	[− 3]	e 18 33	PP		53·6
Chur		104·9	43	e 14 9	− 1	e 24 46	[− 4]	e 16 29	?		—
Riverview		105·0	213	14 9	− 2	i 25 6	[+15]	i 18 30	PP	e	48·9
Sydney		105·0	213	e 13 39	−32	e 24 9	[−42]	e 17 45	—		—
De Bilt		105·2	37	i 18 30	PP	e 25 54	−10	e 24 53	SKS	e	47·6
Stuttgart		105·7	42	e 14 12	− 2	e 26 21	+13	e 18 30	PP	e	51·0
Triest		106·9	45	e 18 33	PP	i 24 59	[0]	i 33 57	SSP		—
Scoresby Sund		107·0	13	18 40	PP	24 57	[− 2]	28 5	PS		—
Cheb		108·1	41	e 18 59	PP	e 25 10	[+ 6]	e 28 13	PS	e	54·6
Jena		108·1	40	e 18 49	PP	e 26 5	{+13}	e 34 12	SS	e	51·3
Brisbane	N.	109·2	218	e 14 38	P	i 25 19	[+10]	e 19 1	PP		—
Prague		109·3	42	18 59	PP	e 25 3?	[− 6]	e 21 41	PPP	e	46·6
Bergen		109·5	30	—	—	e 28 33?	PS	—	—	e	46·6
Potsdam		109·6	39	e 14 33?	P	i 28 47	PS	e 19 3?	PP	e	51·6
Copenhagen		110·7	35	19 13	PP	26 15	{+ 5}	28 57	PS		—
Belgrade		110·8	49	e 18 55	[+20]	e 28 42	PS	i 19 20	PP	e	57·5
Helwan		112·7	67	e 18 27	[−12]	e 26 25	{+ 1}	19 45	PP		—
College		113·7	332	e 19 29	PP	e 25 24	[− 3]	e 29 15	PS	e	51·1
Bucharest		114·4	51	e 19 30?	PP	e 25 27	[− 3]	i 29 20	PS		55·6
Upsala	E.	114·9	33	19 50	PP	29 33	PS	e 38 33?	?	e	53·6
	N.	114·9	33	19 53	PP	—	—	e 35 38?	SS	e	49·6
Istanbul		115·2	56	(19 33)	PP	(28 13)	?	(30 33)	PPS		—
Perth		116·8	184	19 58	PP	27 3	{+10}	i 29 33	PS		57·1
Ksara		117·8	65	e 20 16	PP	30 2	PS	36 23	SS		—
Colombo	E.	141·7	122	19 24	[−10]	—	—	—	—		69·1
Kodaikanal	E.	142·1	114	19 35	[+ 1]	29 52	{+18}	23 20	PKS		—
Bombay		143·1	99	e 19 33	[− 3]	29 35	{− 5}	i 22 52	PP		—
New Delhi	N.	150·3	86	19 51	[+ 3]	i 33 56	SKSP	23 36	PP		66·1
Dehra Dun	N.	151·4	82	e 20 33?	PKP_2	—	—	e 21 22	?		—
Mizusawa	E.	154·6	295	e 20 22	PKP_2	23 56	PKS	—	—		—
	N.	154·6	295	20 16	PKP_2	23 49	PKS	—	—		—
Calcutta	N.	157·6	107	e 20 5	[+ 7]	30 58	{− 2}	24 15	PP	e	69·8

Additional readings :—
La Plata SNZ =4m.9s.
Huancayo i =4m.44s., iS =8m.16s.
Bogota i =(7m.11s.) and (7m.24s.), e =(13m.6s.) and (14m.25s.), readings increased by 15 minutes.
Fort de France PPP? =10m.47s.
San Juan i =9m.53s.

Continued on next page.

Port au Prince i=9m.14s., 11m.39s., i=12m.14s., iS=16m.29s.
Columbia e=25m.7s.
Philadelphia e=12m.48s. and 27m.26s.
Fordham i=21m.2s., iPS=21m.34s.
Pennsylvania i=13m.58s., 14m.21s., 23m.11s., 23m.23s., and 23m.43s.
St. Louis eN=12m.15s., iS?N=20m.44s., iE=20m.48s., iSSE=21m.7s.
Harvard i=11m.44s., iS=21m.19s.
Buffalo PP=14m.29s., PPP=16m.0s., 21m.4s.
Tucson ePP=14m.13s., ePPP=16m.21s., e=16m.47s., eS=21m.18s., e=21m.25s., i=21m.55s., eSS=25m.38s., e=29m.58s.
Chicago e=13m.55s., eS=21m.9s., e=26m.46s.
Vermont i=21m.47s., e=26m.6s. and 29m.43s.
Ottawa SS=26m.57s.?, SSS=30m.33s.?.
Riverside iZ=12m.24s., ePKP,PKP=39m.0s., eP'P'P'Z=59m.6s.
Mount Wilson ePKP,PKPZ=38m.44s., eZ=39m.4s., eP'P'P'=59m.8s.
Pasadena iPPZ=15m.35s., ePKP,PKPZ=39m.2s., eP'P'P'=59m.0s.
Rapid City iS=22m.2s., eSS=27m.3s., eSSS=30m.42s.
Tinemaha ePKP,PKPZ=38m.58s., eZ=58m.50s.
Logan i=13m.38s., e=14m.2s., iSS=28m.28s., e=32m.3s.
Lick eSE=22m.58s.
Berkeley iSZ=23m.24s.
Bozeman i=13m.7s., e=16m.10s., eSS=28m.31s., e=34m.54s.
Christchurch PPP=18m.4s., S?=22m.36s., PPS=24m.30s., SS=28m.54s., Q=34m.54s.
Ukiah e=24m.55s. and 29m.58s.
Wellington iZ=13m.43s. and 14m.38s., PPZ=16m.8s., sPPZ=16m.28s., S=23m.10s., i=23m.43s., PPS=24m.25s., i=25m.38s. and 26m.54s., SS?Z=28m.27s., iZ=30m.30s., SSS?=32m.54s., Q=36·6m.
Arapuni Q=36·6m.
Lisbon N=13m.51s., iS$_c$SN=23m.52s.
San Fernando iN=13m.51s., PPZ=16m.38s., iSE=23m.33s., iE=23m.55s., and 25m.10s.
Saskatoon SSS=32m.33s.?.
Auckland i=13m.59s., PP?=15m.35s., i=20m.33s., PPS=25m.3s., i=26m.18s., e=32m.33s.? and 35m.33s.?, Q=37·6m.
Granada sP=14m.6s., PP=16m.31s., pPP=16m.59s., sPP=17m.23s., SKS=23m.37s., PS=25m.40s.
Seattle e=14m.13s., eSS=31m.18s.
Tortosa iN=16m.44s., PPPN=19m.40s., SKSN=24m.8s., SKKSN?=24m.25s., S$_c$SN=25m.6s., PSN=26m.1s., SSE=31m.23s., SSSN=35m.50s., QN=40m.55s.
Victoria SS=29m.51s.
Honolulu i=26m.38s.
Clermont-Ferrand iSKS=24m.32s.
Tananarive SKS=24m.35s., EN=24m.49s., PS=27m.12s., SS=32m.27s., Q=41m.47s.
Kew iSKKS=24m.55s., ePSEZ=27m.17s., eSS=32m.48s., iSSSEN=36m.33s., eQEN=42m.3s.?.
Paris iSS=32m.43s.
Stonyhurst SKS=24m.57s., 30m.46s., 35m.18s., SSS=37m.0s., 40m.6s., Q=42·6m.
Uccle iSKSNZ=24m.45s., iSS=33m.15s., eSSSE=37m.6s.
Sitka eP=16m.8s., e=27m.25s., iPS=27m.40s., eSS=33m.25s.
Strasbourg eSS=33m.13s.
Riverview iPS=27m.48s., SSN=33m.29s., iSSSEZ=37m.47s., eQE=44m.57s.?.
De Bilt iSS=33m.33s.
Stuttgart iSKS=24m.53s., eSP=27m.52s., eSPZ=27m.58s., ePKKPZ=29m.49s. e=32m.46s., eSSN=33m.38s., eSSS=38m.12s., eQ=45m.3s.
Cheb iSS=34m.18s.
Jena ePE=18m.55s., eN=19m.46s.
Brisbane iN=28m.29s.
Prague e=26m.42s., ePS=28m.23s., SS=34m.33s.?, eSS=38m.33s.?.
Potsdam eN=18m.57s.?, iPPN=19m.20s., iN=34m.23s.
Copenhagen 34m.3s.?.
Belgrade i=20m.10s., eSS=34m.59s.
Helwan PS?E=29m.18s., eE=30m.6s., SSE=35m.38s.
College eSS=35m.24s., e=35m.33s.
Bucharest ePN=19m.39s.?, eE=24m.26s., eEN=27m.43s., iSKKSE=29m.59s., eN=35m.38s.
Istanbul readings reduced by 40 minutes.
Perth i=33m.38s., SS=38m.48s., SSS=44m.3s.
Kodaikanal SKSP=33m.3s.
Bombay PKSN=23m.8s., iEN=23m.17s., PPPE=26m.7s., eN=29m.47s., iE=29m.51s., SKSPE=32m.55s., iE=35m.36s., SSEN=41m.24s.
New Delhi PKSN=22m.28s., iN=35m.27s., SSN=42m.54s.
Calcutta SKSPN=34m.53s., iPPSN=37m.35s., iSSN=43m.57s.

Jan. 15d. Readings also recorded at 3h. (Mount Wilson, Tucson, Pasadena, Riverside, Tinemaha, and near Malaga), 4h. (near Ferndale), 7h. (Sitka), 13h. (near Fort de France), 15h. (Columbia), 17h. (Stuttgart), 20h. (near Bogota), 21h. (near Mizusawa), 23h. (Clermont-Ferrand, Stuttgart, Mount Wilson, Tucson (2), Pasadena, and Tinemaha).

Jan. 16d. 2h. 25m. 27s. Epicentre 40°·4N. 125°·1W. (as on 12d.).

Intensity V at Upper Mattole; IV at Ferndale. Epicentre 40°·3N. 125°·1W. (Berkeley).

$A = -·4391$, $B = -·6248$, $C = +·6456$; $\delta = -2$; $h = -2$;
$D = -·818$, $E = +·575$; $G = -·371$, $H = -·528$, $K = -·764$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Ferndale		0·6	75	i 0 16	+ 1	i 0 26	0	—	—	—
Ukiah		1·9	131	e 0 36	+ 2	i 0 55	− 4	i 0 40	P_g	i 1·2
Berkeley		3·4	138	i 0 53	− 2	i 1 31	− 6	e 1 0	P*	i 2·3
San Francisco		3·4	140	i 0 53?	− 2	i 1 20?	−17	i 1 48?	S*	—
Branner		3·8	141	i 1 0	− 1	i 1 43	− 4	i 1 7	P*	i 2·4
Santa Clara	E.	3·9	139	e 1 34	+32	i 2 37	L	—	—	(i 2·6)
Lick		4·1	137	e 1 3	− 2	e 1 46	− 9	i 1 19	P_g	e 2·6
Fresno	N.	5·5	129	e 1 27	+ 2	i 3 2	S_g	—	—	—
Tinemaha		6·3	120	i 1 39	+ 3	i 3 4	S*	—	—	—
Haiwee		7·0	125	e 1 49	+ 3	e 3 27	S*	—	—	—
Santa Barbara		7·3	143	e 1 50	0	i 3 13	− 2	—	—	—
Mount Wilson	Z.	8·4	134	e 2 5	− 1	e 3 40	− 3	—	—	—
Pasadena		8·4	136	e 2 5	− 1	i 3 37	− 6	—	—	e 3·9
Riverside	Z.	8·9	133	i 2 12	0	—	—	—	—	—
Logan		10·1	78	i 2 32	+ 4	e 4 9	−16	i 5 18	S_g	i 5·6
Bozeman		11·6	58	e 3 9	PPP	—	—	e 5 45	SSS	e 6·1
Tucson		14·1	121	i 3 25	+ 2	—	—	e 8 0	?	e 8·5
Rapid City		16·6	70	i 3 29	−27	—	—	—	—	e 11·1
Lincoln		21·6	80	—	—	e 8 52	+ 3	—	—	e 13·1
Ottawa		36·1	65	e 7 3	− 2	—	—	—	—	19·5

Additional readings:—
Berkeley iPZ = 0m.57s., iZ = 2m.0s.
Branner eEN = 2m.13s.
Lick iE = 2m.8s. and 2m. 23s., eN = 2m.29s.
Long waves were also recorded at Seattle, Chicago, and Philadelphia.

Jan. 16d. 14h. Central America. Pasadena suggests deep focus.

Merida ePN = 29m.55s.
Balboa Heights eP = 30m.0s.
La Paz P = 31m.14s.
Bogota eP = 31m.32s., i = 31m.46s.
San Juan eP = 32m.56s., eL = 36m.40s.
Huancayo e = 33m.29s. and 34m.27s., eL = 38m.11s.
Tucson eP = 33m.47s., e = 33m.59s., eS = 36m.54s., i = 37m.10s., eL = 45m.53s.
Riverside iPZ = 34m.34s., eZ = 34m.43s., iP_cPZ = 37m.6s., epP_cPZ = 37m.18s.
Mount Wilson ePZ = 34m.40s., iP_cPZ = 37m.11s., iZ = 37m.27s.
Pasadena ePZ = 34m.40s., ipPZ = 34m.53s., iP_cPZ = 37m.11s., ipP_cPZ = 37m.24s., eLNZ = 48m.
Tinemaha ePZ = 34m.56s., iZ = 35m.5s., iP_cPZ = 37m.16s., ipP_cPZ = 37m.29s.
St. Louis eE = 37m.50s., L? = 40m.
Florissant e? = 38m.38s., L? = 42m.
Mizusawa eSE = 52m.37s.

Jan. 16d. Readings also at 1h. (Pasadena, Mount Wilson (2), Riverside (2), Tinemaha (2), Tucson (2), and La Plata), 3h. (Bogota), 7h. (La Plata), 8h. and 10h. (La Paz), 11h. (Pasadena, Mount Wilson, Tucson, Riverside, Tinemaha, La Paz, and near Balboa Heights), 12h. (Pasadena, Mount Wilson, Tinemaha, Tucson, and near Apia), 13h. (Pasadena, Mount Wilson, Tucson, Riverside, San Juan, Rio de Janeiro, Huancayo, La Paz, and La Plata), 16h. (Ksara, Riverview, and Tuai), 19h. (De Bilt and Uccle), 21h. (Clermont-Ferrand, Stuttgart, Ksara, Bucharest, and near Istanbul), 22h. (La Paz), 23h. (Riverview).

Jan. 17d. Readings at 1h. and 2h. (La Plata), 4h. (Bombay), 6h. (Riverview), 7h. (near Stuttgart), 13h. (Pasadena, Mount Wilson, Riverside, Riverview, Christchurch, and Brisbane).

Jan. 18d. Readings at 1h. (Stuttgart, Tucson, Pasadena, Mount Wilson, La Jolla, Tinemaha, Santa Barbara, Riverside, Haiwee, and Palomar), 5h. (Arapuni, Auckland, Christchurch, Wellington, Tucson, and Riverview), 6h. (Pasadena, and Granada), 14h. (Mizusawa), 15h. (Clermont-Ferrand and Stuttgart), 16h. (Stuttgart and near La Paz), 20h. (Mount Wilson, near La Paz, and near Malaga), 22h. (near Apia), 23h. (Pasadena, Tucson, Mount Wilson, Stuttgart, Chur, Colombo, New Delhi, Bombay, Calcutta, and Kodaikanal).

Jan. 19d. Readings at 0h. (Wellington, Christchurch, Auckland, Brisbane, Riverview, Sydney, and Bombay), 5h. (Tucson, Pasadena, Mount Wilson, Riverside, Tinemaha, Stuttgart (2), Bombay, Wellington, Auckland, Riverview, and Mizusawa), 6h. (Wellington), 7h. (Pasadena, Mount Wilson, Riverside, and Bombay), 8h. (Wellington), 9h. (La Plata), 11h. (near Bogota), 13h. (near Malaga), 18h. (Bombay, Pasadena, Mount Wilson, Riverside, Tucson, and La Plata), 20h. (near Granada, Almeria, Toledo, and Malaga (2)).

Jan. 20d. 2h. 59m. 7s. Epicentre 14°·8S. 174°·3W.

Pasadena suggests depth of focus 90 km.

$A = -\cdot9624$, $B = -\cdot0961$, $C = -\cdot2538$; $\delta = -14$; $h = +6$;
$D = -\cdot099$, $E = +\cdot995$; $G = +\cdot252$, $H = +\cdot025$, $K = -\cdot967$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Apia		2·6	70	i 0 48	+ 4	i 1 14	− 3	—	—	—
Suva		7·7	243	i 1 58	+ 2	i 3 36	+11	—	—	—
Auckland		24·0	203	5 18	+ 1	9 38	+ 6	i 5 48	PP	11·9
Arapuni		24·8	200	—	—	8 53?	PcP	—	—	11·9
Tuai		25·1	196	5 27	− 1	—	—	i 5 50	PP	—
Wellington		28·0	199	5 13	−42	10 30	− 8	6 23	sP	13·9
Christchurch		30·8	199	(6 14)	− 6	6 14	P	9 11	PcP	14·4
Brisbane		32·9	242	i 6 38	0	—	—	i 7 58	PPP	i 17·1
Riverview		36·5	232	i 7 6k	− 3	e 12 40	−11	i 7 30	pP	—
Sydney		36·5	232	e 6 11	−58	e 12 41	−10	—	—	—
Santa Barbara		71·3	46	i 11 23	0	—	—	—	—	—
Berkeley	z.	71·6	42	i 11 24	− 1	—	—	—	—	—
Lick		71·7	42	e 11 25	− 1	—	—	—	—	—
La Jolla		72·2	48	e 11 30	+ 1	—	—	—	—	—
Pasadena		72·2	47	i 11 27a	− 2	e 20 42	− 9	i 11 50	PcP	e 29·9
Mount Wilson		72·3	47	i 11 30a	+ 1	—	—	i 11 51	PcP	—
Palomar	z.	72·7	48	e 11 30	− 2	—	—	e 11 48	PcP	—
Riverside		72·7	47	i 11 30a	− 2	—	—	—	—	—
Haiwee		73·4	45	i 11 36a	0	—	—	—	—	—
Tinemaha		73·8	44	i 11 37a	− 1	—	—	—	—	—
Tucson		76·6	51	i 11 52a	− 2	e 21 33	− 7	i 12 23	pP	e 35·0
Rapid City		87·1	43	e 12 49	0	e 23 5	[−10]	—	—	e 45·0
Florissant		94·5	52	e 13 24	+ 1	e 24 33	− 1	i 23 52	SKS	—
St. Louis		94·6	52	e 13 21	− 3	e 24 31	− 4	e 13 45	pP	e 29·9
Huancayo		95·4	104	—	—	i 24 46	+ 4	e 23 55	SKS	e 44·7
Seven Falls		109·8	44	—	—	e 25 5?	[− 6]	—	—	51·9
San Juan		111·5	75	—	—	e 25 7	[−11]	e 28 42	PS	e 52·7
Bombay		116·0	284	e 19 50	PP	25 28	[− 8]	26 43	SKKS	—
Paris		146·0	3	e 19 42	[+ 1]	—	—	i 20 10	?	—
Stuttgart	z.	146·0	355	e 19 41	[0]	—	—	i 19 44	PKP_2	—
Strasbourg		146·3	357	i 19 43	[+ 1]	—	—	—	—	—
Basle		147·3	358	e 19 43	[0]	—	—	—	—	—
Zürich		147·4	356	e 19 43	[0]	—	—	—	—	—
Neuchatel		147·9	357	e 19 45	[+ 1]	—	—	—	—	—
Clermont-Ferrand		149·1	3	e 19 47	[+ 1]	—	—	i 19 52	PKP_2	—
Tortosa	N.	153·7	8	e 19 51	[− 2]	—	—	i 20 12	PKP_2	—
Granada		156·2	18	e 20 27	PKP_2	—	—	i 43 48	SS	—

Additional readings :—
Auckland PP = 5m.58s., P_cP = 9m.23s., i = 10m.8s. and 10m.53s.
Wellington iZ = 6m.8s., sPP?Z = 7m.23s., P_cPZ = 7m.40s.
Christchurch Q = 10m.40s.
Brisbane eQ?N = 14m.17s., iE = 16m.57s.

Continued on next page.

Riverview iPP = 8m.36s., iPPPE = 8m.57s., iN = 9m.3s., iP_cPE = 9m.26s., iE = 13m.3s., iSS?N = 15m.24s., iZ = 15m.34s., iSSS?N = 15m.50s., iN = 16m.21s. and 16m.42s., iS_cSE = 17m.20s.
Pasadena iZ = 12m.1s. and 12m.11s.
Tucson e = 14m.34s., 14m.43s., and 19m.10s., eSS = 22m.3s., ePKP,PKP = 39m.10s.
Rapid City e = 13m.55s. and 15m.14s.
St. Louis iZ = 13m.52s., eSKSE = 23m.49s., eSP?E = 25m.52s.
Huancayo eSS = 31m.2s.
San Juan eSS = 35m.23s.
Bombay PSE = 29m.30s., PPSE = 31m.0s.
Stuttgart eZ = 20m.6s.
Clermont-Ferrand e = 20m.7s.
Tortosa iN = 22m.28s.
Long waves were also recorded at Harvard.

Jan. 20d. Readings also at 0h. (Jena, Zürich, Basle, Strasbourg, near Stuttgart, De Bilt, Uccle, near Berkeley, Lick, and Branner), 5h. (near Mizusawa), 6h. (near La Paz), 9h. (near Bogota), 11h. (near Lick (2)), 12h. (St. Louis, Harvard, Tinemaha, Riverside, Tucson, Mount Wilson, Pasadena, Riverview, New Delhi, Calcutta, Bombay, and Colombo (2)), 17h. (Riverview), 19h. (Palomar, Tucson, and near Bogota), 23h. (Harvard).

Jan. 21d. Readings at 4h. (near Apia), 5h. (Riverview), 7h. and 9h. (La Plata), 12h. (La Plata, near Bogota, and Balboa Heights), 14h. (Riverview), 16h. (La Paz), 17h. Auckland), 21h. (Strasbourg, near Zürich, Stuttgart, and Ebingen (2)).

Jan. 22d. Readings at 2h. (near La Paz), 6h. (Mount Wilson, Tucson, Tinemaha, and Palomar), 8h. (near Apia and near Alicante), 10h. (near Alicante), 15h. (Triest), 16h. (Riverview), 19h. (St. Louis, Florissant, and near Mizusawa), 20h. (near Stuttgart), 21h. (near Seven Falls, Shawinigan Falls, and Ottawa), 22h. (Florissant, St. Louis, Mount Wilson, Pasadena, Riverside, Tinemaha, Tucson, and Palomar).

Jan. 23d. 7h. Undetermined shock.

College e = 20m.56s. and 23m.54s., eS? = 24m.15s., e = 25m.2s. and 25m.29s.
Tinemaha ePZ = 25m.15s., i = 25m.18s., iP_cPZ = 27m.46s., iS_cPZ = 31m.32s.
Haiwee ePEZ = 25m.22s., iNZ = 25m.25s., iP_cPZ = 27m.49s., iS_cPZ = 31m.34s.
Santa Barbara iPZ = 25m.27s.
Mount Wilson ePZ = 25m.32s., iNZ = 25m.37s., iP_cPZ = 27m.53s., iS_cPZ = 31m.39s.
Pasadena iPZ = 25m.32s., iEZ = 25m.35s., iP_cPZ = 27m.52s., iS_cPZ = 31m.38s., eLZ = 36·3m.
Riverside ePZ = 25m.37s., iZ = 25m.40s., iP_cPZ = 27m.54s., iS_cPZ = 31m.41s.
Palomar iPZ = 25m.43s., iZ = 25m.52s. and 25m.59s., iP_cPZ = 27m.57s., iS_cPZ = 31m.40s.
La Jolla iPNZ = 25m.49s.
Tucson iP = 26m.17s., i = 26m.22s. and 28m.11s., e = 30m.28s. and 32m.4s.
Harvard i = 27m.4s., eL = 52m.
Florissant ePN = 27m.9s., eN = 27m.13s., 27m.27s., and 34m.13s., eLN = 46m.
St. Louis iPZ = 27m.10s., iZ = 27m.14s. and 27m.23s., eS?E = 34m.16s.
Cape Girardeau eN = 27m.20s.
Ottawa eZ = 27m.33s., L = 48m.
Stuttgart eZ = 30m.7s.
Long waves were also recorded at Fordham, Philadelphia, and Chicago.

Jan. 23d. Readings also at 2h. (near Apia and near Balboa Heights), 14h. (Stuttgart) 18h. (Triest), 22h. (Tacubaya, Tucson, Mount Wilson, and Riverside), 23h. (Auckland, Wellington, Christchurch, and near Ferndale (2)).

Jan. 24d. 4h. 24m. 9s. Epicentre 30°·0N. 114°·0W. (as on 1941 August 21d.).

$A = -·3528$, $B = -·7925$, $C = +·4975$; $\delta = +3$; $h = +2$;
$D = -·914$, $E = +·407$; $G = -·202$, $H = -·454$, $K = -·868$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Tucson		3·5	50	e 0 58	+ 1	i 1 51	S*	i 1 4	P*	i 2·3
La Jolla		4·0	317	e 1 14	P*	i 1 59	+ 7	—	—	—
Palomar	z.	4·1	326	i 1 4	− 1	—	—	i 1 13	P*	—
Riverside		4·9	325	e 1 17	0	i 2 30	S*	i 1 28	P*	—
Pasadena		5·4	321	e 1 33	+ 9	i 2 44	S*	i 1 40	P*	—

Pasadena gives also i = 2m.50s.

Jan. 24d. 6h. Undetermined shock.

Seattle e = 2m.58s. and 6m.23s., eL = 7m.27s.
Logan e = 3m.55s., eL = 9m.57.
Tinemaha ePZ = 4m.2s., eEZ = 4m.11s.
Haiwee i = 4m.15s.
Pasadena iZ = 4m.31s.
Riverside ePZ = 4m.37s., iZ = 4m.46s.
Palomar iPZ = 4m.48s.
Tucson iP = 5m.19s., e = 7m.21s., eL = 15m.17s.
Florissant eE = 17m.7s
St. Louis eE = 17m.28s
Long waves were also recorded at Fordham, Philadelphia, and Chicago.

Jan. 24d. Readings also at 0h. (Florissant, St. Louis, Cape Girardeau, Tinemaha, Riverside, Palomar, Tucson, and Tacubaya (2)), 1h. (Tacubaya and near Honolulu), 7h. (Fordham, Wellington, Riverview, and Brisbane), 8h. (near Bogota), 13h. (near Granada), 16h. (Ferndale), 17h. (Ksara and near San Juan), 19h. (near Mizusawa (3)), 20h. (near Berkeley, Branner and Lick), 23h. (near La Paz).

Jan. 25d. 7h. 33m. 12s. Epicentre 8°·9S. 118°·5E. Depth of focus 0·005.

A = −·4715, B = +·8684, C = −·1537 ; δ = +5 ; h = +7 ;
D = +·879, E = +·477 ; G = +·073, H = −·135, K = −·988.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Perth		23·1	186	i 5 28	PP	i 9 8	+ 5	—	—	—
Brisbane		37·5	124	i 7 8	− 1	e 12 54	+ 1	i 7 31	pP	e 17·5
Riverview		39·0	135	i 7 24k	+ 2	i 13 21	+ 5	i 7 46	pP	—
Sydney		39·0	135	e 7 0	−22	e 13 12	− 4	—	—	—
Colombo	E.	41·6	291	7 43	0	13 54	0	—	—	—
Calcutta	N.	43·0	318	e 8 22	+27	—	—	—	—	—
Mizusawa		52·2	22	e 9 7	+ 1	16 26	+ 1	16 20	PS	—
Bombay	E.	52·8	302	i 9 10	− 1	e 16 31	− 2	16 38	PS	23·8
New Delhi	N.	54·6	316	e 9 21	− 3	e 16 45	−12	e 17 24	PS	—
Auckland		57·9	128	—	—	17 43	+ 2	—	—	23·8
Christchurch		58·2	136	—	—	17 45	0	23 29	Q	28·0
Wellington		59·0	133	10 31	+36	17 58	+ 3	10 48	pP	23·8
Ksara		88·8	304	e 12 53	+ 5	23 33?	+ 5	—	—	—
Tinemaha	Z.	121·7	52	i 18 51	[+ 5]	—	—	—	—	—
Pasadena		122·4	54	i 18 52	[+ 4]	i 22 19	SKP	i 19 23	pPKP	—
Mount Wilson	Z.	122·5	54	i 18 52	[+ 4]	—	—	i 19 21	pPKP	—
Palomar	Z.	123·7	55	i 18 56	[+ 6]	—	—	—	—	—
Riverside	Z.	123·8	54	i 18 52	[+ 1]	—	—	i 19 21	pPKP	—
Tucson		128·8	55	i 19 5	[+ 4]	i 22 15	SKP	i 19 32	pPKP	—
Florissant	Z.	140·5	36	e 19 54	pPKP	e 22 52	SKP	—	—	—
St. Louis	Z.	140·7	36	e 19 19	[− 3]	i 22 53	SKP	e 19 55	pPKP	—
Shawinigan Falls		141·3	11	19 22	[− 2]	22 55	SKP	—	—	—
Ottawa		141·6	15	19 20	[− 4]	22 55	SKP	—	—	—
Tacubaya	N.	142·1	69	e 19 34	[+ 9]	—	—	—	—	—
Harvard		145·4	12	i 19 32	[+ 1]	23 4	SKP	—	—	—
Fordham		146·3	16	i 19 38	[+ 5]	—	—	—	—	—
Bogota		166·8	109	e 20 3	[+ 5]	—	—	e 21 0	PKP_2	—

Additional readings :—
Brisbane iSN = 12m.51s., isSN = 13m.31s., iQN = 15m.31s.
Riverview iEN = 9m.14s., iSN = 13m.16s., isSE = 14m.1s., iSSZ = 16m.12s.
Bombay iE = 9m.55s., eE = 17m.26s., SSE = 20m.7s., SSSE = 21m.53s.
New Delhi PPN = 12m.48s., eN = 21m.27s.
Wellington i = 18m.18s.
Riverside ePPZ = 20m.33s., epPPZ = 20m.54s., iPKKPZ = 28m.44s.
Tucson i = 22m.24s., e = 24m.56s., i = 32m.5s.
St. Louis iZ = 23m.45s.

Jan. 25d. Readings also at 0h. (Kew), 2h. (Stuttgart and Triest), 3h. (Tacubaya), 7h. (Merida and Tacubaya (2)), 8h. (Wellington), 12h. (St. Louis), near Berkeley, Branner, Lick, and near Alicante), 13h. (near Alicante), 17h. (Triest), 20h. (Stuttgart, Zürich, and near Fort de France).

Jan. 26d. Readings at 1h. (Auckland, Wellington, Christchurch, and Riverview), 5h. (near Tananarive), 7h. (Mizusawa), 14h. (Riverview and near Alicante), 17h. (near Malaga).

Jan. 27d. Readings at 0h. (Tinemaha, 1h. (near Granada, Alicante (2), Almeria, and Toledo), 4h. (St. Louis, Florissant, Fordham, Harvard, Palomar, Pasadena, Santa Barbara, Riverside, and Mount Wilson), 5h. (Cape Girardeau), 9h. (Mizusawa), 10h. (near Alicante), 13h. (near La Paz), 14h. (Palomar, Kew, and Balboa Heights), 19h. (Stuttgart), 21h. (near Mizusawa), 23h. (Wellington, near Berkeley, Branner, San Francisco, Santa Clara, and Lick (3)).

Jan. 28d. 11h. Undetermined shock.

Brisbane iPN =4m.32s., iPE =4m.36s., iSE =8m.38s., isSN =9m.0s., iSSN =9m.32s., eSSE =9m.40s.
Riverview P?Z =5m.33s., eSN =10m.22s., iSE =10m.26s., eN =10m.37s., iSS?E = 12m.5s., eQE =12m.24s.?, eRE =13m.0s.
Wellington P?Z =7m.13s.?a, iZ =7m.40s., PP? =8m.40s., PPPZ =9m.20s., S =13m.55s., i =14m.20s., SS =16m.0s.?, L =18m.
Mizusawa ePE =7m.43s., ePN =7m.47s., eSE =12m.2s.
Auckland P? =8m.20s., e =15m.0s.?, L =17·5m.
Sydney e =9m.0s.
Palomar ePZ =12m.30s., iZ =12m.48s.
Mount Wilson ePZ =12m.32s., iZ =12m.44s.
Pasadena ePEZ =12m.32s., i =12m.44s., eLEZ =41m.
Riverside ePZ =12m.36s., iZ =12m.47s.
Haiwee ePE =12m.46s.
Tinemaha iPZ =12m.46s.
La Jolla eZ =12m.47s.
Tucson e =13m.12s., eL =16m.13s.
Christchurch S =13m.30s., Q =16m.53s., R =20m.40s.
Bombay iSE =21m.59s., S_cSE =22m.14s., PSE =22m.50s., PPSE =23m.4s.
Long waves were also recorded at Florissant, St. Louis, and Arapuni.

Jan. 28d. Readings also at 2h. (Suva, Wellington, Christchurch, and Riverview), 5h. (Clermont-Ferrand and Zürich), 12h. (near Mizusawa), 13h. (near La Paz), 14h. (Riverside, Tucson, and Palomar), 16h. (Wellington and near Apia), 21h. (near Apia), 23h. (Tinemaha, Palomar, Riverside, Mount Wilson, Pasadena, Tucson, Bombay, Calcutta, New Delhi, Auckland, and near La Paz).

Jan. 29d. 2h. 25m. 8s. Epicentre 62°·9N. 154°·4W.

$A = -\cdot4130$, $B = -\cdot1979$, $C = +\cdot8890$; $\delta = +5$; $h = -10$;
$D = -\cdot432$, $E = +\cdot902$; $G = -\cdot802$, $H = -\cdot384$, $K = -\cdot458$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
College		3·5	53	e 0 56	− 1	1 40	0	i 1 47	S*	—
Logan		32·6	110	e 6 35	0	—	—	e 7 58	PPP	e 16·3
Tinemaha		33·9	122	i 6 48a	+ 1	—	—	i 6 53	?	—
Rapid City		34·6	99	e 6 55	+ 2	—	—	—	—	e 18·0
Haiwee		34·9	122	e 6 55	0	—	—	—	—	—
Santa Barbara		35·7	126	e 7 2	0	—	—	—	—	—
Mount Wilson		36·5	124	i 7 9a	0	—	—	—	—	—
Pasadena		36·6	124	i 7 9a	− 1	—	—	i 7 13	?	e 18·9
Riverside		37·0	124	i 7 12a	− 1	—	—	—	—	—
Palomar	z.	37·8	123	i 7 19a	− 1	—	—	—	—	—
La Jolla	z.	38·1	124	i 7 21	− 1	—	—	—	—	—
Tucson		41·1	117	i 7 48	+ 1	e 14 12	+11	—	—	e 21·7
Florissant		44·6	92	i 8 22	+ 6	e 14 55	+ 3	—	—	—
St. Louis		44·8	92	i 8 18	+ 1	e 14 57	+ 2	i 8 28	pP	e 21·7
Ottawa		46·0	74	e 8 27	0	i 18 40?	SS	e 21 52?	?	23·9

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Cape Girardeau	N.	46·2	92	e 8 28	0	—	—	e 8 33	pP	—
Shawinigan Falls		46·4	70	e 8 32	+ 2	—	—	—	—	22·9
Seven Falls		46·8	69	e 8 35	+ 2	—	—	—	—	21·9
Fordham		50·5	76	e 8 59	− 3	—	—	—	—	e 25·9
Bermuda		61·6	74	e 12 27	PP	—	—	—	—	e 30·3
Stuttgart	Z.	67·9	12	e 11 8	+ 6	—	—	—	—	—

Additional readings :—
Mount Wilson iNZ = 7m.14s., iZ = 7m.36s.
Palomar iZ = 7m.24s. and 7m.38s.
Tucson i = 7m.53s., e = 13m.11s.
St. Louis iPZ = 8m.23s., eZ = 10m.11s.
Long waves were also recorded at other American stations.

Jan. 29d. Readings also at 0h. (Suva, Wellington, Christchurch, Auckland, and near Mizusawa), 1h. (Mount Wilson, Riverside, Palomar, Tucson, and Riverview), 3h. (near Fresno), 8h. (Mount Wilson, Riverside, and Palomar), 9h. (Pasadena, Mount Wilson, Riverside, Tinemaha, Palomar, and Riverview), 18h. (La Paz and La Plata), 19h. (La Plata), 21h. (La Plata and Mizusawa).

Jan. 30d. Readings at 0h. (Stuttgart, Riverview, Tuai, Auckland, Tucson, Wellington, and Christchurch), 1h. (Pasadena), 10h. (near Lick), 16h. (near Stuttgart, Ebingen, and Ravensburg).

Jan. 31d. Readings at 0h. (Riverview, Wellington (2), Christchurch, St. Louis, Riverside, Palomar, Tucson, Pasadena, Mount Wilson, and La Paz), 1h. (Tacubaya), 2h. (St. Louis, Mount Wilson, Pasadena, Palomar, La Jolla, Riverside, and Tucson), 3h. (Cape Girardeau and Florissant), 4h. (Tucson and Stuttgart), 7h. (Bogota), 9h. (Stuttgart, St. Louis, Palomar, Tinemaha, Riverside, Mount Wilson, Tucson, Pasadena, and Mizusawa), 10h. (Florissant), 12h. (near La Paz and Huancayo), 14h. (near Fort de France), 15h. (La Paz), 16h. (Riverview), 17h. (Wellington, Christchurch, Arapuni, and Riverview), 21h. (St. Louis, Tucson, Tinemaha, Palomar, Santa Barbara, Riverside, Mount Wilson, Pasadena, Stuttgart (2), and Granada).

Feb. 1d. 3h. 22m. 38s. Epicentre 41°·5N. 32°·4E.

Destructive at Beypazari, Yogunpelit and Gudul.
Epicentres suggested 41°·5N. 32°·5E., Magnitude 7·4 (Pasadena).
41°·5N. 32°·3E. (J.S.A.).

Cevad E. Tasman.
Gerede-Bolu, Depremi, M.T.A.
Sene 9, Sayi 1/31 1944, Ankara, pp. 134, 135. Abstract in English, p. 136. Three pages of photographs. 23,000 houses destroyed, many casualties. Seismic origin on the fault passing north of Gerede and south of Bolu. Scale IX-X at Cerkès, Gerede, and Bolu.

Marcel Fouché et Nuriye Pinar.
Le Séisme de Cerkès, Gerede, Bolu, de Fev. 1, 1944.

N. Egeran and E. Lahn.
Note sur la carte séismique de la Turquie. M.T.A. Sene 9, Sayi 2/32, Ankara, 1944, pp. 279-289, with map.

$A = +\cdot6343$, $B = +\cdot4025$, $C = +\cdot6601$; $\delta = +7$; $h = -2$;
$D = +\cdot536$, $E = -\cdot844$; $G = +\cdot557$, $H = +\cdot354$, $K = -\cdot751$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Istanbul		2·5	260	1 15	P_g	1 36	S_g	—	—	—
Bucharest		5·4	304	i 1 27	+ 3	2 4	P_g	—	—	—
Focsani		5·6	320	e 1 35	+ 8	i 2 51	S*	i 1 51	P_g	—
Bacau		6·4	324	e 1 45	+ 7	i 3 7	+14	i 3 29	S_g	—
Campulung	N.	6·5	307	e 1 45	+ 6	i 2 58	+ 3	i 1 58	P*	—
Ksara		8·2	159	e 1 49	−14	i 3 27	−11	i 4 32	S_g	—
Belgrade		9·3	295	i 2 20	+ 3	i 4 49	S*	i 2 56	PP	—
Helwan		11·6	185	e 2 35	−15	e 4 40	−21	2 51	P	—
Triest		14·1	293	i 3 25	+ 2	e 6 15	+13	—	—	—
Prague		15·1	310	3 41k	+ 5	e 6 47	+22	e 3 52	PP	e 7·0

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Cheb		16·3	308	i 3 51?	− 1	i 6 53?	0	i 4 0?	PP	e 8·8
Potsdam		17·0	317	i 4 1	0	i 7 31?	+21	i 4 14	PP	—
Chur		17·2	296	e 4 6	+ 3	i 7 41	+27	—	—	—
Jena	E.	17·2	310	i 4 13k	+10	i 7 39	+25	—	—	e 8·6
	N.	17·2	310	e 4 3	0	i 7 32	+18	—	—	—
Milan		17·3	291	i 4 13	+ 9	7 48	+32	—	—	10·3
Ravensburg		17·4	298	i 4 6k	0	i 7 34	+15	—	—	—
Ebingen		17·9	300	e 4 14k	+ 2	e 7 48	+18	e 8 34?	Q	e 8·9
Stuttgart		17·9	303	e 4 12k	0	i 7 42	+12	e 8 34?	Q	e 9·1
Zürich		18·0	298	e 4 12k	− 1	e 7 49	+17	—	—	—
Basle		18·7	299	e 4 20	− 2	e 8 12	+24	—	—	—
Strasbourg		18·7	302	4 20	− 2	i 8 2	+14	—	—	9·2
Neuchatel		19·0	296	e 4 25	− 1	e 8 13	+18	—	—	—
Copenhagen		19·3	325	e 4 25	− 4	i 8 12	+10	—	—	—
Marseilles		20·0	284	e 4 38	+ 1	i 8 23	+ 6	i 4 59	PP	10·1
Upsala		20·5	338	e 4 39	− 3	8 23?	− 4	i 4 50	PP	—
De Bilt		21·3	310	i 4 51k	+ 1	i 8 38	− 5	—	—	—
Uccle		21·4	306	i 4 50k	− 1	i 9 1	+16	i 5 11	PP	e 10·4
Clermont-Ferrand		21·6	291	e 4 52	− 2	i 9 2	+13	—	—	e 11·1
Paris		22·2	300	e 4 58	− 2	9 12	+12	—	—	11·4
Barcelona		22·6	281	i 5 4	+ 1	i 9 22	+15	—	—	e 10·1
Tortosa	N.	24·0	279	i 5 20	+ 3	i 9 26	− 6	6 1	PP	—
Kew		24·4	307	i 5 21k	0	i 9 50	+11	i 8 58	PcP	e 12·4
Bergen		25·2	330	i 5 32	+ 3	10 5	+13	e 9 6	PcP	e 12·4
Stonyhurst		26·2	311	e 5 38	0	10 17	+ 8	6 29	PP	10·9
Aberdeen		27·0	318	i 5 42	− 3	i 10 40	+18	—	—	—
Granada		28·0	274	i 3 42k	?	i 8 50	?	i 3 53	?	11·5
San Fernando		30·2	273	i 6 19	+ 5	i 11 18	+ 5	i 9 6	PcP	14·9
Lisbon		31·7	280	e 6 25	− 2	11 52	+15	14 22	SS	19·9
Reykjavik		38·2	326	e 7 36	+13	13 31	+14	e 15 8	SS	e 17·8
Dehra Dun	N.	38·2	92	e 6 42?	−41	12 27	−50	—	—	17·6
New Delhi		38·5	95	e 7 11	−15	i 13 32	+10	8 45	PP	18·8
Scoresby Sund		39·8	335	7 42	+ 6	i 14 1	+19	9 26	PP	—
Bombay		41·1	112	i 7 52	+ 5	14 14	+13	9 38	PP	—
Calcutta	N.	50·2	94	e 8 49	−11	i 16 19	+ 8	i 10 49	PP	i 24·8
Kodaikanal	E.	50·3	116	e 8 26	−34	i 15 51	−22	—	—	—
Colombo	E.	54·3	117	9 19	−11	17 19	+12	—	—	31·1
Tananarive		61·7	164	e 10 15	− 7	18 34	−10	12 27	PP	27·1
Halifax		66·0	309	10 49	− 1	19 45	+ 7	24 4	SS	31·4
Johannesburg		67·5	184	e 10 58	− 2	e 19 58	+ 2	e 20 10	PS	31·4
Seven Falls		68·6	315	11 1	− 6	20 15	+ 6	25 10	SS	32·4
Shawinigan Falls		70·0	315	11 16	+ 1	20 42	+16	25 22	SS	33·4
Vermont		71·6	314	i 11 30	+ 5	i 20 59	+15	e 14 18	PP	32·7
Harvard		71·9	311	i 11 29	+ 2	i 20 57	+ 9	i 14 22	PP	e 30·4
Weston		71·9	311	e 11 27	0	e 21 0	+12	25 48	SS	—
Ottawa		72·3	316	11 31	+ 2	21 1	+ 9	14 26	PP	e 33·4
Hukuoka		74·0	60	e 11 54	+15	e 21 11	0	—	—	29·4
Bermuda		74·1	300	i 11 30	−10	i 21 4	− 8	e 13 47	PP	i 29·8
Fordham		74·3	311	e 11 38	− 3	e 21 23	+ 8	—	—	i 34·0
Sapporo		74·3	46	e 11 41	0	e 21 35	+20	e 26 35	SS	36·3
Mori		74·5	48	e 11 43	+ 1	21 34	+17	—	—	41·9
Kumamoto		74·7	59	e 11 36	− 7	21 37	+18	—	—	—
Toyooka		75·5	55	e 11 36	−12	21 46	+18	—	—	—
Buffalo		75·6	316	11 48	0	22 2	+33	14 54	PP	—
Miyazaki		75·7	60	12 12	+23	—	—	—	—	—
Hamilton		75·9	317	12 8	+18	21 45	+13	15 3	PP	34·4
Koti		76·0	58	e 11 50	− 1	21 36	+ 2	—	—	—
Kobe		76·3	56	11 49	− 3	22 19	+42	—	—	—
Sumoto		76·3	56	11 47	− 5	21 52	+15	—	—	—
Kyoto		76·4	55	e 11 43	−10	22 13	+35	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.			L.
		°	°	m. s.	s.	m. s.	s.	m. s.			m.
Mizusawa	E.	76·9	49	e 11 51	− 5	21 40	− 3	—		—	—
	N.	76·9	49	e 11 55	− 1	21 32	−11	—		—	—
Miyako		77·0	49	e 11 50	− 6	21 58	+13	—		—	—
Sendai		77·3	50	e 11 42	−16	22 3	+15	—		—	—
Georgetown		77·4	311	i 12 3	+ 5	i 21 58	+ 9	—		—	—
Maebasi		77·5	53	12 6	+ 7	22 4	+14	—		—	—
Kohu		77·7	54	e 12 3	+ 3	22 10	+18	—		—	—
New Kensington		77·7	314	e 11 50	−10	e 21 52	0	e 15 1	PP		e 30·2
Kumagaya		77·9	53	11 58	− 3	22 11	+17	—		—	—
Shiznoka		78·1	54	11 54	− 8	22 14	+18	—		—	—
Tokyo		78·4	53	e 12 8	+ 4	22 23	+23	—		—	e 45·2
Yokohama		78·5	53	12 5	+ 1	22 22	+21	—		—	—
Saskatoon		80·2	337	12 16	+ 2	22 33	+14	e 26 22?	SS		33·4
Sitka		80·8	354	e 12 14	− 3	e 22 36	+11	e 15 41	PP		e 33·8
Chicago		80·9	320	e 12 34	+17	i 22 32	+ 6	e 15 15	PP		e 34·0
Fort de France		83·0	283	i 12 28	0	e 22 38	− 9	15 36	PP		—
Columbia		83·1	310	e 12 33	+ 4	e 22 55	+ 7	e 15 54	PP		e 36·0
San Juan		84·2	289	e 12 38	+ 4	i 23 1	+ 2	e 15 42	PP		e 34·4
Florissant		84·6	319	i 12 38	+ 2	e 23 3	0	i 15 57	PP		—
St. Louis	Z.	84·7	319	e 12 31	− 6	i 23 14	+10	i 15 53	PP		—
Cape Girardeau	N.	85·3	317	e 12 41	+ 1	e 23 16	+ 6	e 15 52	PP		—
Lincoln		85·9	323	e 12 46	+ 3	e 23 13	− 3	—		—	e 32·8
Rapid City		85·9	331	e 12 43	0	e 23 0	−16	i 16 12	PP		e 34·6
Bozeman		87·3	336	e 12 54	+ 4	i 23 35	+ 6	e 16 12	PP		i 35·9
Butte		87·4	337	e 14 19?	?	e 24 49?	PS	e 17 29?	PP		e 37·0
Victoria		87·9	344	13 29	+36	24 17	PS	17 4	PP		36·4
Seattle		88·4	343	e 16 10	PP	e 21 22	?	e 26 21	?		e 43·0
Mobile		89·6	313	13 20	+19	23 48	− 3	—		—	—
Logan		91·0	335	e 13 14	+ 7	i 24 18	+15	e 30 2	SS		i 37·4
Salt Lake City		91·9	334	e 13 31	+20	e 23 54	[+10]	e 17 4	PP		e 36·6
Rio de Janeiro		94·8	244	e 13 40	+15	i 24 22	−14	i 17 22	PP		i 39·4
Ferndale		95·6	342	—	—	e 25 8	+25	—		—	e 43·9
Ukiah		96·7	341	e 13 57	+24	e 25 4	+11	e 17 42	PP		e 43·8
Tinemaha	Z.	97·3	336	i 13 41	+ 5	—	—	—		—	—
Berkeley		97·7	339	i 13 38	0	i 25 18	+17	i 17 54	PP		e 44·9
Merida	N.	97·9	307	e 16 30	?	—	—	—		—	—
Lick		98·0	339	e 13 52	+13	—	—	e 18 5	PP		e 45·2
Santa Clara		98·1	339	i 18 10	PP	e 25 26	+22	e 32 3	SS		e 42·6
Fresno	N.	98·1	338	e 13 50	+10	e 24 36	{− 5}	e 17 50	PP		e 48·4
Haiwee	N.	98·1	335	e 13 45	+ 5	—	—	—		—	—
Tucson		99·2	328	e 13 41	− 4	e 24 37	{−11}	e 17 52	PP		e 39·9
Bogota		99·2	285	e 13 46	+ 1	—	—	e 18 26	PP		49·4
Mount Wilson	Z.	99·9	335	i 13 52	+ 4	—	—	—		—	—
Riverside	Z.	99·9	335	i 13 52	+ 4	—	—	—		—	—
Pasadena		100·0	335	e 13 50	+ 2	e 25 22	+ 2	i 17 56	PP		e 39·8
Palomar	Z.	100·3	333	e 13 53	+ 3	—	—	—		—	—
Vera Cruz		103·1	310	i 17 34	PP	—	—	—		—	—
Tacubaya		104·6	312	i 18 19	PP	—	—	—		—	—
Perth		105·9	118	—	—	i 24 37	[−18]	—		—	i 46·8
Manzanillo		107·6	317	e 18 24	PP	—	—	—		—	—
La Paz		108·5	294	14 27	P	i 25 0	[− 6]	i 19 7	PP		44·4
Huancayo		111·1	272	e 15 53	P	i 25 4	[−13]	e 19 4	PP		i 44·4
La Plata	E.	112·3	243	18 28	[−10]	25 28	[+ 6]	19 22	PP		45·4
	N.	112·3	243	18 16	[−22]	34 34	SS	19 40	PP		47·2
Montezuma		112·8	260	—	—	e 39 59	SSS	—		—	e 46·8
Honolulu		116·8	10	e 20 14	PP	e 29 45	PS	e 36 9	SS		e 56·3
Brisbane		130·0	93	i 21 29	PP	i 39 4	SS	i 43 50	SSS		i 67·4
Riverview		131·8	101	e 22 54	PKS	e 26 14	[−10]	e 40 4	SS		e 57·6
Sydney		131·8	101	e 22 22	PKS	e 40 10	SS	e 23 16	PP		e 70·6
Auckland		150·7	93	20 2	[+14]	43 12	SS	47 52	SSS		61·4
Christchurch		150·8	107	19 52	[+ 3]	30 36	{+13}	23 30	PP		73·2
New Plymouth		150·8	97	19 56	[+ 7]	—	—	—	—		—
Arapuni		151·7	95	—	—	e 38 22?	PPS	e 51 22?	?		67·4
Wellington		151·9	102	19 47	[− 3]	30 4	{−24}	23 46	PP		71·4
Tuai		153·0	99	20 16?	[+24]	—	—	—	—		68·5

For Notes see next page.

NOTES TO FEBRUARY 1d. 3h. 22m. 38s.

Additional readings :—
Bucharest E =1m.33s.
Focsani iP*E =1m.56s., iN =2m.6s., iS*N =3m.10s., iS*E =3m.13s., EN =3m.18s.
Bacau E =3m.48s., iS$_g$N =3m.56s.
Campulung iS*N =3m.25s., iS$_g$N =3m.40s., iS$_g$E =3m.44s.
Belgrade i =2m.28s., 2m.39s., and 3m.24s.
Cheb ePN =3m.54s.?, i =4m.22s.?, 5m.8s.?, and 7m.28s.?.
Potsdam iPN =4m.7s.
Jena iSZ =7m.36s.
Copenhagen 4m.31s., i =4m.37s., 4m.42s.
Clermont-Ferrand i =4m.56s.
Paris i =5m.4s.
Tortosa iN =5m.49s., PPPN =6m.9s., iN =7m.22s., SSE =10m.53s.
Bergen eZ =8m.1s., SN =10m.10s.
Stonyhurst iP =5m.49s., PPP =6m.41s., P$_c$P =9m.20s., 10m.27s.
Granada PP =4m.28s., P$_c$P =7m.18s., sS =9m.39s., SS =10m.29s., interpretation or timing at fault.
Lisbon P =6m.28s., P =6m.32s., iPEZ =6m.44s., iSE =11m.57s., SSE =14m.34s.
Reykjavik iEN =9m.15s., iSEN =13m.53s., iEN =16m.26s.
New Delhi PPPN =9m.11s., P$_c$PN =9m.22s., P$_c$SN =13m.0s., iSE =13m.37s., SSN =16m.29s., SSE =16m.33s., SSSN =17m.13s.
Scoresby Sund iP =7m.57s., 16m.35s.
Bombay ePN =7m.27s., iPEN =8m.1s., PPN =9m.42s., PPPE =10m.1s., SEN =13m.39s., SSE =17m.11s., SSN =17m.15s. Suggested combination of three different shocks close together in time. The discrepancies noted in this determination can be accounted for on this hypothesis but no other station has recorded a multiple shock.
Calcutta iPPPN =11m.46s., iSSN =19m.56s.
Tananarive E =10m.40s., EN =18m.50s., iPS =18m.54s., iS$_c$S =20m.39s., i =21m.18s., SS =23m.15s.
Halifax SSS =26m.34s.
Johannesburg 1?N =24m.58s.
Seven Falls SSS =28m.4s.
Vermont i =11m.48s., iSS =25m.10s.
Harvard iP =11m.33s., i =12m.19s., iPPP =16m.9s., iS =21m.1s., e =21m.29s., 22m.9s., 22m.43s., and 23m.22s., eSS =25m.53s., eSSS? =29m.25s.
Weston P$_c$P =11m.42s.
Ottawa i =11m.49s., PPPZ =15m.45s., SS =26m.6s., SSS =28m.46s.
Bermuda e =14m.28s., i =21m.52s., 25m.24s., and 29m.12s.
Fordham iP =11m.42s., i =12m.2s., and 21m.31s.
Sapporo e =29m.18s.
Buffalo PPP =16m.40s., PS =22m.54s., SS =26m.24s., SSS =29m.41s.
Hamilton PPP =16m.44s., SS =26m.54s., SSS =29m.45s.
Georgetown iS =22m.3s.
New Kensington e =26m.35s.
Sitka e =12m.32s., iS =22m.43s., iSS =27m.22s., eSSS =31m.29s.
Chicago e =16m.43s., eS =22m.10s., eSS =27m.28s., eSSS =30m.58s.
Fort de France PPP =17m.18s., PS =23m.24s.
Columbia iS =23m.0s., e =23m.58s., iSS =28m.54s.
San Juan i =16m.33s., 28m.6s., and 29m.50s.
Florissant iZ =12m.53s., 13m.11s., and 16m.20s., iPPPZ =17m.46s.
St. Louis iPZ =12m.35s. and 12m.38s., iZ =12m.53s., 13m.23s., 14m.17s., 15m.19s., and 15m.30s., iPPPZ =17m.50s., iPPPPZ =19m.26s., iE =25m.55s., eSSE =28m.47s., eSSN =28m.57s.
Cape Girardeau eN =12m.56s., 15m.36s., 15m.41s., and 18m.34s.
Rapid City i =13m.8s., 15m.32s., and 23m.41s., eSS =28m.6s.
Bozeman e =13m.15s. and 21m.27s., i =27m.44s., eSS =29m.9s.
Butte eS =25m.57s.?, e =28m.47s.?.
Victoria PS =24m.52s.
Logan e =18m.17s.
Salt Lake City e =18m.39s., 24m.36s., and 25m.33s., eSS =30m.13s., e =32m.48s.
Ukiah e =31m.2s. and 38m.30s.
Berkeley iPZ =13m.54s., iPE =14m.4s.
Lick eE =18m.15s.
Santa Clara eE =36m.41s.
Fresno eN =14m.13s.
Tucson i =14m.11s., 14m.45s., and 18m.7s., e =20m.47s., and 25m.27s., i =27m.52s., iSS =31m.42s., iSSS =35m.55s., e =38m.51s.
Bogota e =14m.2s.
Pasadena eSKSZ =24m.52s.?, iEN =25m.52s., ePKP,PKPZ =38m.59s.
Perth i =25m.7s., 32m.2s., and 36m.2s.
La Paz i =18m.20s., PPPZ =21m.22s., PPPN =21m.49s., iPSEN =28m.14s., PPS =28m.58s., iNZ =29m.34s., iSSS =34m.22s.
Huancayo e =18m.2s. and 21m.26s., i =27m.23s., iPS =28m.45s., eSS =34m.22s., eSSS =39m.3s.

Continued on next page.

La Plata PPPE =21m.46s., PPPN =22m.4s., N =27m.10s., PPSN =28m.58s., PPSE = 29m.10s., N =30m.28s., 31m.4s., and 32m.10s., E =33m.4s. and 36m.10s., N =37m.52s., E =38m.4s., SSSE =39m.34s.
Honolulu e =31m.39s. and 46m.27s.
Brisbane ePPN =21m.34s., iN =23m.26s., ePPPE =24m.37s., eQN =54m.37s.
Riverview iPKSE =22m.58s., iN =35m.41s., eE =36m.19s., eN =47m.16s.
Auckland i =20m.52s., 45m.22s., 54m.12s.?, and 58m.55s.
Christchurch SKSP =33m.47s., PPS =37m.14s., SSZ =43m.4s., SSS =48m.16s., SSSS = 53m.32s., Q =62m.34s.
Wellington iZ =21m.22s. and 22m.12s., PPP?Z =27m.32s., i =31m.20s., SKSP = 33m.52s., i =39m.32s., SS =42m.57s., PSPS =44m.12s., SSS? =49m.22s., e = 53m.10s.?, Q? =61·4m.
Tuai i =20m.39s.

Feb. 1d. 5h. 16m. 27s. Epicentre 41°·6N. 142°·0E. Depth of focus 0·020.
(as on 1943 July 16d.).
Intensity VI at Urakawa; V at Obihiro, Mori, Hakodate, Hatinohe, Miyako; IV at Kucino, Sapporo, Mizusawa, Sakata, Tukubasan, Aomori; II-III at Nemuro, Isinomaki, and Wakkanai. Seismo. Bull. Cent. Met. Obs. Japan, 1944. Tokyo, 1951.
Epicentre 41°·8N. 142°·1E. Macroseismic radius 300km. Shallow.

$A = -\cdot5910$, $B = +\cdot4617$, $C = +\cdot6614$; $\delta = -10$; $h = -2$;
$D = +\cdot616$, $E = +\cdot788$; $G = -\cdot521$, $H = +\cdot407$, $K = -\cdot750$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Hatinohe		1·1	198	0 19	− 8	0 39	− 8	—	—	—
Aomori		1·2	229	0 10	−18	0 32	−17	—	—	—
Mori		1·2	295	0 17k	−11	0 36	−13	—	—	—
Sapporo		1·6	342	0 15k	−17	0 33	−23	—	—	—
Miyako		1·8	180	0 27k	− 7	0 54	− 6	—	—	—
Morioka		2·0	198	0 31a	− 5	0 59	− 5	—	—	—
Akita		2·4	229	0 31	−10	1 9	− 3	—	—	—
Mizusawa	N.	2·6	195	i 0 41	− 2	1 18	+ 1	—	—	—
Nemuro		3·2	57	0 29k	−22	0 56	−34	—	—	—
Sendai		3·4	194	0 49	− 5	1 33	− 2	—	—	—
Hukusima		4·0	198	0 58	− 3	1 51	+ 2	—	—	—
Onahama		4·8	192	1 8	− 4	2 5	− 2	—	—	—
Mito		5·4	195	1 14	− 6	2 34	+13	—	—	—
Kakioka		5·5	194	1 20	− 1	2 34	+10	—	—	—
Tukubasan		5·6	196	1 20	− 2	2 30	+ 4	—	—	—
Maebasi		5·7	205	1 22	− 2	2 30	+ 2	—	—	—
Kumagaya		5·8	201	1 22	− 3	2 48	+17	—	—	—
Wazima		5·8	225	2 4a	+39	3 21	+50	—	—	—
Tokyo Cen. Met. Ob.		6·2	198	1 19	−11	2 36	− 4	—	—	—
Toyama		6·2	218	1 29a	− 1	2 54	+14	—	—	—
Yokohama		6·5	198	1 31	− 3	3 2	+14	—	—	—
Hunatu		6·6	203	1 31	− 5	2 53	+ 3	—	—	—
Kohu		6·6	204	1 36	0	3 6	+16	—	—	—
Mera		6·9	195	1 34a	− 6	2 56	− 1	—	—	—
Misima		6·9	201	1 39	− 1	3 0	+ 3	—	—	—
Osima		7·1	198	1 39	− 3	2 45	−17	—	—	—
Shizuoka		7·2	204	1 53	+ 9	3 26	+22	—	—	—
Gihu		7·4	215	1 47a	+ 1	3 22	+13	—	—	—
Nagoya		7·5	213	1 49	+ 1	3 8	− 4	—	—	—
Omaesaki		7·6	204	1 56	+ 7	3 53	+39	—	—	—
Hikone		7·8	217	1 53a	+ 1	3 26	+ 7	—	—	—
Kyoto		8·2	219	1 58	+ 1	3 36	+ 8	—	—	—
Toyooka		8·3	225	1 59	+ 1	3 37	+ 6	—	—	—
Kobe		8·8	220	2 5a	0	3 43	0	—	—	—
Owase		8·8	217	2 7	+ 2	4 2	+19	—	—	—
Sumoto		9·2	220	2 10	0	4 10	+18	—	—	—
Yonago		9·2	230	2 11	+ 1	4 9	+17	—	—	—
Siomisaki		9·6	212	2 15	0	5 3	+62	—	—	—
Hamada		10·3	233	2 26	+ 2	4 30	+12	—	—	—
Muroto		10·4	219	2 29	+ 3	4 42	+22	—	—	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Koti		10·5	223	2 27 a	0	4 29	+ 6	—	—	—
Izuka		12·0	232	2 47 a	0	5 45	+47	—	—	—
Kumamoto		12·6	229	2 56 a	+ 2	5 27	+15	—	—	—
Unzendake		12·9	230	3 0	+ 2	6 9	+50	—	—	—
Kagosima		13·6	226	3 11 a	+ 4	7 1	?	—	—	—
New Delhi	N.	53·4	277	9 9	+ 4	16 39	+16	—	—	—
Bombay		62·3	271	i 10 10	+ 3	i 18 34	+15	i 10 31	pP	—
Scoresby Sund		67·6	355	10 40	− 1	19 34	+10	—	—	—
Upsala		69·1	334	i 10 48	− 3	i 19 45	+ 4	i 11 9	pP	e 29·6
Berkeley	Z.	69·8	57	i 10 53	− 2	—	—	—	—	—
Bergen		72·4	340	11 10	0	—	—	e 11 33?	pP	e 35·6
Tinemaha		72·8	56	e 11 10	− 3	e 20 28	+ 4	i 11 26	pP	—
Haiwee		73·4	57	e 11 16	0	e 20 34	+ 3	—	—	—
Logan		73·6	48	e 11 17	0	e 20 39	+ 6	e 19 50	?	e 28·3
Santa Barbara	Z.	73·6	58	e 11 18	+ 1	—	—	—	—	—
Copenhagen		74·1	333	e 11 19	− 1	—	—	—	—	—
Mount Wilson	Z.	74·7	58	e 11 23	− 1	—	—	i 11 45	pP	—
Pasadena		74·7	58	e 11 22	− 2	i 20 49	+ 4	i 11 43	pP	—
Riverside		75·3	58	e 11 24	− 3	—	—	—	—	—
La Jolla		76·1	58	e 11 42	+10	—	—	—	—	—
Palomar	Z.	76·1	57	i 11 30	− 2	—	—	—	—	—
Prague		77·8	329	e 12 11 a	pP	i 21 35	+16	21 56	SP	e 32·6
Jena	Z.	78·2	330	e 11 42	− 1	—	—	—	—	—
Ksara		78·9	305	e 11 51?	+ 4	e 22 14?	SP	—	—	—
Belgrade		79·3	322	e 11 51	+ 2	e 22 10	SP	e 12 14	pP	e 43·8
Tucson		80·6	56	e 11 54	− 2	e 21 57	+ 9	i 12 20	pP	—
Uccle	Z.	80·8	335	e 11 56	− 1	—	—	e 14 33?	PP	—
Stuttgart		80·9	330	i 11 57 a	− 1	e 22 13	SP	e 15 3	PP	e 39·0
Strasbourg		81·5	331	11 57	− 4	—	—	—	—	—
Triest		81·6	326	e 12 33	pP	e 22 33	SP	—	—	—
Chur		82·3	329	e 12 5	0	—	—	—	—	—
Zürich		82·3	330	e 12 6	+ 1	—	—	—	—	—
Basle		82·5	330	e 12 6	0	—	—	—	—	—
Neuchatel		83·2	330	e 12 9	0	—	—	—	—	—
Helwan	Z.	84·4	305	i 12 18 k	+ 3	—	—	i 13 14	pP	—
Clermont-Ferrand		85·6	332	e 12 22	+ 1	—	—	e 15 21	PP	—
Florissant		86·8	38	i 12 26	− 1	e 22 53	+ 4	e 22 44	SKS	—
St. Louis	Z.	87·0	39	i 12 27	− 1	e 22 47	− 4	i 12 40	pP	—
Cape Girardeau	N.	88·4	39	e 12 34	− 1	e 22 55	[+ 9]	e 12 46	pP	—
Tortosa	N.	90·8	331	i 12 45	− 1	23 45	+19	16 42	PP	e 86·6
Harvard		91·0	24	i 12 46	− 1	—	—	—	—	—
Granada		95·5	333	(i 12 58 k)	−10	(e 24 28)	+21	(i 13 21)	pP	(46·0)
Bogota		123·5	45	e 18 44	[+ 5]	—	—	—	—	—
La Paz	Z.	144·0	55	19 28	[+12]	—	—	—	—	—

Additional readings :—
Bombay iE =19m.3s., iN =19m.6s., SSN =22m.41s.
Upsala PSE =20m.8s., eN =23m.33s., SS?E =25m.0s., eSSS?E =27m.33s.?, eN = 28m.33s.?.
Mount Wilson iZ =11m.32s.
Pasadena iZ =11m.32s., ePKP,PKPZ =38m.49s.
Prague eSS =24m.21s.
Belgrade e =14m.44s. and 17m.38s.
Tucson ePKP,PKP =38m.46s.
Helwan iZ =12m.24s., PPPZ =12m.35s.
Florissant iZ =12m.43s., iSE =22m.56s.
St. Louis iZ =12m.58s. and 13m.36s., eZ =13m.54s.
Cape Girardeau eN =12m.38s. and 12m.57s.
Tortosa PPPN =18m.5s., iN =19m.28s., SSN? =30m.7s.
Granada PP =(16m.50s.), pPP =(16m.56s.), sPP =(17m.30s.), readings increased by 2 minutes.

Feb. 1d. 6h. 8m. 44s. Epicentre 41°·5N. 32°·4E. (as at 3h.).

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Istanbul		2·5	260	(0 36)	− 7	(1 3)	−11	(1 18)	S*	—
Bucharest		5·4	304	1 16?	− 8	—	—	—	—	—
Belgrade		9·3	295	e 2 15	− 2	e 4 29	+24	e 3 0	PPP	—
Triest		14·1	293	—	—	e 6 18	SS	—	—	e 7·7
Chur		17·2	296	e 4 5	+ 2	—	—	—	—	—
Stuttgart	z.	17·9	303	e 4 13	+ 1	—	—	—	—	—
Zürich		18·0	298	e 4 14	+ 1	—	—	—	—	—
Basle		18·7	299	e 4 19	− 3	—	—	—	—	—
Strasbourg		18·7	302	e 4 23	+ 1	—	—	—	—	—
Neuchatel		19·0	296	e 4 24	− 2	—	—	—	—	—
Uccle		21·4	306	e 4 54	+ 3	—	—	—	—	—
Clermont-Ferrand		21·6	291	e 4 53	− 1	—	—	—	—	—
Tortosa	N.	24·0	279	5 27	+10	—	—	—	—	—
Granada		28·0	274	5 11	−44	—	—	—	—	—
St. Louis	z.	84·7	319	i 12 40	+ 3	—	—	—	—	—
Tucson		99·2	328	e 13 50	+ 5	—	—	e 13 53	P_cP	—
Mount Wilson	z.	99·9	335	i 13 55	+ 7	—	—	i 13 58	P_cP	—
Riverside	z.	99·9	335	e 13 55	+ 7	—	—	e 13 58	P_cP	—
Palomar	z.	100·3	333	i 13 56	+ 6	—	—	i 14 6	P_cP	—

Additional readings :—
Istanbul SSS =(1m.36s.), readings decreased by 8 minutes.
Belgrade e =3m.6s., iS =5m.0s., i =5m.14s.

Feb. 1d. 7h. 42m. 37s. Epicentre 41°·6N. 20°·5E. (as on 1942 August 27d.).

Intensity V at Debar.
Epicentre 41°·31′N. 20°32′E. (Belgrade). Radius of macroseismic area 17 kms.
Annuaire microséismique et macroséismique 1944, Nouvelle série No. 4, Beograd 1950, p.29.

$A = +·7025$, $B = +·2627$, $C = +·6614$; $\delta = -3$; $h = -3$;
$D = +·350$, $E = -·937$; $G = +·620$, $H = +·232$, $K = -·750$.

	Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
	°	°	m. s.	s.	m. s.	s.	m. s.		m.
Belgrade	3·3	359	e 0 58	+ 5	i 1 36	+ 1	e 1 3	P*	—
Bucharest	5·0	54	1 23?	+ 5	—	—	—	—	—
Triest	6·4	312	i 1 38	0	—	—	—	—	—
Istanbul	6·4	92	e 2 23?	P_g	—	—	—	—	—
Milan	9·1	299	5 6	S_g	—	—	—	—	—
Prague	9·5	336	—	—	e 4 54	S*	e 5 13	S_g	e 5·6
Ravensburg	9·9	312	—	—	e 4 30	+10	e 5 17	S_g	—
Cheb	10·2	329	—	—	e 4 23?	− 4	—	—	—
Zürich	10·3	308	e 2 31	− 1	—	—	—	—	—
Stuttgart	10·7	316	e 2 36	− 2	e 4 31	− 8	e 2 47	PP	—
Basle	11·0	307	e 2 39	− 3	—	—	—	—	—
Strasbourg	11·4	312	e 3 8	PPP	5 0	+ 4	—	—	—

Additional readings :—
Belgrade iP_g =1m.8s., i =1m.31s., iS =1m.42s.
Stuttgart eZ =3m.26s., eSZ =4m.26s., cS_g =5m.44s., iS_g =5m.51s.
Long waves were also recorded at Uccle and De Bilt.

Feb. 1d. 21h. 24m. 37s. Epicentre 41°·5N. 32°·4E. (as at 6h.).

	Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
	°	°	m. s.	s.	m. s.	s.	m. s.		m.
Istanbul	2·5	260	0 32	−11	1 9	− 5	0 40	P	—
Bucharest	5·4	304	i 1 48	P_g	i 2 29	+ 1	—	—	—
Ksara	8·2	159	e 2 3	0	—	—	—	—	4·7
Belgrade	9·3	295	e 2 14	− 3	e 4 16	+11	i 5 11	S_g	—
Helwan	11·6	185	i 2 39k	−11	e 5 0	− 1	e 5 30	SSS	—
Triest	14·1	293	e 3 32	0	—	—	—	—	—
Prague	15·1	310	e 3 37	+ 1	e 6 25	0	e 7 4	SSS	—
Cheb	16·3	308	—	—	e 7 23?	+30	—	—	—
Potsdam	17·0	317	e 4 4	+ 3	e 7 17?	+ 7	e 4 9	PP	e 9·4
Chur	17·2	296	e 4 7	+ 4	e 7 17	+ 3	—	—	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Milan		17·3	291	4 15	+11	—	—	—	—	—
Stuttgart		17·9	303	e 4 8	− 4	e 7 31	+ 1	i 4 14	PP	e 8·9
Zürich		18·0	298	e 4 11	− 2	—	—	—	—	e 9·7
Basle		18·7	299	e 4 18	− 4	e 13 20	L	—	—	(e 13·3)
Strasbourg		18·7	302	4 23?	+ 1	7 43	− 5	—	—	—
Neuchatel		19·0	296	e 4 19	− 7	—	—	—	—	—
Upsala		20·5	338	i 5 0	PP	e 8 36	+ 9	e 8 42	SS	e 12·4
Uccle		21·4	306	e 4 57	+ 6	e 8 55	+10	—	—	10·4
Clermont-Ferrand		21·6	291	e 4 50	− 4	—	—	—	—	—
Paris		22·2	300	i 4 59	− 1	—	—	e 5 2	?	—
Tortosa		24·0	279	e 5 24	+ 7	—	—	—	—	e 15·4
Granada		28·0	274	i 6 4k	+ 9	10 53	+15	—	—	15·7
Calcutta	N.	50·2	94	—	—	e 16 19	+ 8	—	—	—
St. Louis		84·7	319	e 12 41	+ 4	—	—	—	—	e 45·1

Additional readings :—
Istanbul S_g =0m.58s.
Bucharest iN =1m.57s. and 2m.21s.
Belgrade e =2m.19s. and 2m.23s., i =4m.34s., 4m.53s., and 5m.3s.
Helwan eE =4m.50s.
Upsala eN =5m.52s. and 11m.0s.
Tortosa eN =6m.38s. and 7m.25s.
Long waves were also recorded at Florissant and at other European stations.

Feb. 1d. Readings also at 1h. (near Lick), 4h. (Bucharest and La Paz), 5h. (Tortosa, Stuttgart, Bucharest (2), and near Istanbul (2)), 6h. (Stuttgart, Triest, Belgrade, Bucharest, Ksara, and near Istanbul), 7h. (Palomar, Mount Wilson, Riverside (2), Tucson (2), Triest, Stuttgart, Bucharest, Belgrade, Ksara, and near Istanbul (4)), 8h. (Triest, Ksara, Bucharest (3), and near Istanbul (5)), 9h. (Bucharest and near Istanbul), 10h. (Pehpei and Auckland), 11h. (Istanbul (4)), 12h. (Palomar, Tinemaha, Tucson, and Istanbul (4)), 13h. (Istanbul (2)), 14h. (Pasadena, Mount Wilson, Riverside, Tinemaha, Palomar, Tucson, and Istanbul (2)), 14h. (near Mizusawa), 15h. (Pasadena, Mount Wilson, Riverside, Tinemaha, Palomar, Tucson, and near Istanbul (2)), 16h. (Tortosa, Stuttgart, Bucharest, and near Istanbul), 17h. (College, St. Louis, Stuttgart, Bucharest, Istanbul, and near Alicante), 18h. (La Plata and Bucharest), 19h. (2) and 20h. (Istanbul), 21h. (Bucharest and near Istanbul (3)), 22h. (La Plata), 23h. (Istanbul).

Feb. 2d. 3h. 33m. 9s. Epicentre 41°·5N. 32°·4E. (as on 1d.).

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Istanbul		2·5	260	0 36	− 7	1 7	− 5	1 21	SS	—
Bucharest		5·4	304	e 1 25	+ 1	i 2 28	0	i 1 50	P_g	—
Focsani		5·6	320	e 1 40	P*	e 2 51	S*	—	—	3·8
Bacau		6·4	324	e 1 43	+ 5	—	—	—	—	3·8
Campulung		6·5	307	e 1 42	+ 3	—	—	—	—	3·8
Ksara		8·2	159	e 1 58	− 5	e 4 40	S_g	—	—	—
Belgrade		9·3	295	e 2 15	− 2	i 5 5	S_g	—	—	—
Helwan		11·6	185	i 2 38k	−12	e 4 45	−16	—	—	—
Triest		14·1	293	i 3 20	− 3	—	—	—	—	—
Prague		15·1	310	e 3 40	+ 4	e 6 35	+10	—	—	—
Cheb		16·3	308	—	—	e 5 51?	−62	—	—	e 7·8
Potsdam		17·0	317	i 4 6	+ 5	e 7 28	+18	—	—	e 8·8
Chur		17·2	296	e 4 0	− 3	e 7 19	+ 5	—	—	—
Jena		17·2	310	e 4 2	− 1	e 7 26	+12	—	—	e 9·6
Milan	E.	17·3	291	i 4 7	+ 3	7 29	+13	—	—	9·8
Stuttgart		17·9	303	e 4 11	− 1	e 7 26	− 4	e 8 51?	Q	e 10·2
Zürich		18·0	298	e 4 10k	− 3	e 7 28	− 4	—	—	—
Basle		18·7	299	e 4 19	− 3	e 7 51	+ 3	—	—	e 10·8
Strasbourg		18·7	302	4 29	+ 7	7 57	+ 9	—	—	—
Neuchatel		19·0	296	e 4 21	− 5	e 7 58	+ 3	—	—	—
Copenhagen		19·3	325	e 4 31	+ 2	—	—	—	—	10·8
Upsala		20·5	338	i 4 46	+ 4	i 8 50	+23	—	—	e 11·8
De Bilt		21·3	310	i 4 52k	+ 2	i 8 51	+ 8	—	—	e 10·8
Uccle		21·4	306	i 4 53k	+ 2	8 49	+ 4	—	—	10·6
Clermont-Ferrand		21·6	291	e 4 51	− 3	—	—	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Paris		22·2	300	e 4 58	− 2	—	—	—	—	—
Tortosa	N.	24·0	279	e 5 26	+ 9	e 9 34	+ 2	—	—	e 16·1
Kew		24·4	307	—	—	(e 9 51?)	+12	—	—	e 9·8
Stonyhurst		26·2	311	—	—	i 10 29	+20	—	—	e 15·6
Aberdeen		27·0	318	—	—	i 10 42	+20	—	—	—
Granada		28·0	274	i 5 51k	− 4	e 10 53	+15	—	—	16·6
New Delhi	N.	38·5	95	e 7 34	+ 8	e 13 32	+10	—	—	—
Bombay		41·1	112	7 51	+ 4	14 8	+ 7	9 34	PP	—
Calcutta	N.	50·2	94	—	—	e 16 16	+ 5	—	—	—
Ottawa		72·3	316	e 11 32	+ 3	—	—	—	—	44·8
St. Louis	Z.	84·7	319	e 12 38	+ 1	—	—	—	—	—
Tinemaha	Z.	97·3	336	i 13 42	+ 6	—	—	—	—	—
Tucson		99·2	328	e 13 48	+ 3	—	—	—	—	—
Mount Wilson	Z.	99·9	335	i 13 52	+ 4	—	—	—	—	—
Palomar	Z.	100·3	333	i 13 58	+ 8	—	—	—	—	—

Additional readings :—
Istanbul P_g =39s., SSS =1m.44s.
Bucharest iP*N =1m.36s., iPEZ =1m.39s., iS*N =2m.46s., iS*EZ =2m.49s., iS_gE = 3m.3s.
Belgrade e =2m.24s., and 3m.5s., i =4m.22s., 4m.42s., 4m.53s., 5m.14s., and 5m.34s.
Helwan iZ =2m.45s., eEZ =5m.20s.
Jena eN =7m.31s.
Upsala eE =6m.6s., iN =6m.10s., eN =7m.14s., and 9m.8s.
Uccle eN =6m.55s.
Stonyhurst i =11m.2s.
Bombay SSN =17m.1s.
St. Louis iPZ =12m.41s., iZ =12m.53s.
Long waves were also recorded at Kodaikanal, San Fernando, Kew and Bergen.

Feb. 2d. Readings also at 0h. (Istanbul), 1h. (La Plata and Tucson), 2h. (Istanbul, Tucson, Palomar, Haiwee, Mount Wilson, Pasadena, and Riverside), 3h. (Santa Barbara), 4h. (Haiwee, Mount Wilson, Pasadena, Palomar, Riverside, Tinemaha, and Tucson), 5h. (Istanbul(2)), 6h. (La Paz), 9h. (Istanbul and Ksara), 11h. (Tucson, Mount Wilson, Berkeley, near Branner, Lick, Fresno, near Apia, and near Fort de France), 12h. (Ksara, Stuttgart, Triest, Bucharest, Belgrade, near Istanbul (3), and near Apia), 13h. (Bucharest and near Istanbul), 14h. (Istanbul), 15h. (Bucharest), 16h. (Istanbul (3)), 19h. (St. Louis), 20h. (La Paz), 21h. (Tacubaya, Riverview, Wellington, Huancayo, Pasadena, Palomar, Riverside, Tinemaha, Tucson, and near La Paz), 22h. (Oaxaca, Puebla, Tacubaya, Vera Cruz, St. Louis, Tucson, Mount Wilson, Palomar, and Riverside), 23h. (Riverview and Wellington).

Feb. 3d. 11h. 25m.24s. Epicentre 5°·6N. 71°·6W.

Felt at Pamplona and Santa Rosa de Viterbo, Colombia.
Annales de l'Institut de Physique du Globe de Strasbourg, 2e partie, Séismologie, tome IX 1944, p.6, Strasbourg 1951. Epicentre as adopted (J.S.A.).

$A = +·3142$, $B = -·9444$, $C = +·0969$; $\delta = 0$; $h = +7$;
$D = -·949$, $E = -·316$; $G = +·031$, $H = -·092$, $K = -·995$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Bogota		2·9	248	i 0 48	0	i 1 11	−13	i 0 54	P_g	—
Balboa Heights		8·6	293	e 2 9	0	e 3 46	− 2	—	—	—
Fort de France		13·7	48	e 3 7	−11	—	—	—	—	—
San Juan		13·8	22	i 3 54	+35	e 5 59	+ 5	—	—	e 7·8
Huancayo		17·9	191	e 4 14	+ 2	e 7 18	−12	—	—	e 8·2
La Paz	Z.	22·2	170	5 0	0	i 9 5	+ 5	—	—	11·7
St. Louis	Z.	37·0	335	e 7 9	− 4	—	—	—	—	—
Rio de Janeiro		39·6	136	e 17 36	SSS	—	—	—	—	e 21·1
Tucson		45·2	312	i 8 18	− 2	—	—	—	—	e 45·5
Palomar	Z.	50·3	309	i 8 58	− 2	—	—	—	—	—
Riverside	Z.	50·9	310	e 9 3	− 2	—	—	—	—	—
Mount Wilson	Z.	51·5	310	e 9 5	− 4	—	—	—	—	—
Pasadena	Z.	51·6	310	i 9 7	− 3	—	—	—	—	—
Tinemaha	Z.	52·8	313	e 9 16	− 3	—	—	—	—	—

Additional readings :—
Bogota iP_g =1m.4s., the reading entered as P_g is given as P*.
San Juan e =4m.49s.
Huancayo e =5m.11s. and 7m.37s.
Tucson i =8m.27s. and 9m.1s.

Feb. 3d. 12h. 14m. 58s. Epicentre 60°·2N. 137°·9W.

Felt at Whitehorse.
Epicentre 59°·6N. 135°·9W. (U.S.C.G.S.).
60°·5N. 137°·5W. Magnitude 6·5 (Gutenberg).
Annales de l'Institut de Physique du Globe de Strasbourg, 2e partie, Séismologie, tome IX 1944, p. 6, Strasbourg 1951.

$A = -\cdot3706$, $B = -\cdot3349$, $C = +\cdot8663$; $\delta = -2$; $h = -9$;
$D = -\cdot670$, $E = +\cdot742$; $G = -\cdot643$, $H = -\cdot581$, $K = -\cdot500$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Sitka		3·0	152	i 0 51	+ 1	i 1 28	+ 1	i 1 22	?	i 1·7
College		6·6	320	e 2 5	P_g	e 2 57	− 1	i 3 23	S*	e 3·6
Victoria		14·4	138	3 25	− 2	6 8	− 1	—	—	8·0
Seattle		15·5	137	—	—	e 5 58	−37	—	—	e 9·7
Spokane		17·3	127	e 4 8	+ 4	—	—	—	—	—
Saskatoon		19·0	102	4 25	− 1	7 58	+ 3	—	—	10·0
Ferndale	E.	21·4	151	—	—	e 9 25	SS	—	—	—
Bozeman		21·5	120	e 4 49	− 3	e 8 49	+ 2	e 5 53	PPP	i 11·5
Ukiah		23·0	149	e 5 8	+ 1	e 9 25	+11	—	—	e 12·7
Logan		24·4	127	i 5 22	+ 1	e 9 54	+15	—	—	i 12·8
Berkeley		24·5	149	i 5 20	− 2	i 9 54	+14	e 10 6	SS	i 15·4
Santa Clara		25·0	149	i 5 27	0	e 10 30	SS	e 12 32	P_cS	e 14·9
Lick	N.	25·1	149	e 5 27	− 1	—	—	—	—	e 15·7
Salt Lake City		25·3	128	e 5 29	− 1	e 10 13	+19	e 6 19	PPP	e 13·5
Fresno	N.	26·2	145	e 5 33	− 5	—	—	e 5 41	?	—
Tinemaha		26·3	142	e 5 40	+ 1	—	—	—	—	—
Haiwee		27·3	142	i 5 47a	− 1	—	—	—	—	—
Santa Barbara		28·4	146	i 5 57	− 1	—	—	—	—	—
Mount Wilson		29·0	144	i 6 2a	− 2	—	—	—	—	—
Pasadena		29·1	144	i 6 3a	− 1	e 10 44?	−12	i 7 2	PP	e 13·2
Riverside		29·5	144	i 6 6a	− 2	—	—	—	—	—
La Jolla		30·5	143	e 6 15	− 2	—	—	—	—	—
Tucson		33·2	135	i 6 40	0	e 12 7	+ 7	i 7 50	PP	e 14·2
Chicago		35·5	99	i 6 59	− 1	e 12 22	−14	e 8 8	PP	e 16·3
Florissant		36·5	105	i 7 7	− 2	e 12 46	− 5	e 8 23	PP	e 17·8
St. Louis		36·7	105	i 7 8	− 2	e 12 49	− 5	i 8 22	PP	i 18·8
Cape Girardeau	N.	38·0	105	e 7 19	− 2	e 15 25	SS	e 8 42	PP	—
Ottawa		38·8	83	7 27	− 1	13 27	+ 1	16 2	SS	18·0
Buffalo		39·0	88	i 7 31	+ 1	e 12 21	−68	e 8 31	PP	—
Shawinigan Falls		39·5	79	7 33	− 1	13 38	+ 1	—	—	20·0
Seven Falls		40·0	78	7 37	− 1	13 44	0	16 50	SS	18·0
New Kensington		40·4	92	i 10 26	?	e 13 51	+ 1	e 16 0	?	e 20·2
Vermont		40·7	83	i 8 48	+64	i 13 57	+ 2	i 16 56	SS	e 18·0
Scoresby Sund		42·1	27	—	—	14 20	+ 4	—	—	—
Georgetown		43·0	90	i 8 3	0	i 14 26	− 3	e 17 2?	SS	—
Harvard		43·0	83	i 8 2k	− 1	i 9 46	PP	e 19 32	Q	e 22·0
Fordham		43·1	86	i 8 2	− 2	i 14 32	+ 2	e 9 32	PP	e 20·3
Philadelphia		43·1	83	e 8 3	− 1	e 14 28	− 2	e 9 40	PP	e 20·0
Columbia		44·8	99	e 8 17	0	e 14 52	− 3	(e 18 17)	SS	e 18·3
Halifax		45·3	74	—	—	—	—	e 18 14	SS	23·0
Tacubaya	N.	49·2	128	e 8 47	− 5	—	—	—	—	—
Bermuda		54·3	86	—	—	e 16 50	−17	—	—	e 23·8
Upsala		58·8	15	—	—	e 18 3	− 4	—	—	e 35·0
Copenhagen		62·1	19	i 10 25	0	—	—	—	—	—
Kew		63·6	28	—	—	e 23 22	SS	—	—	e 32·5
San Juan		65·2	96	e 10 30	−15	e 19 12	−16	e 15 39	P_cS	e 31·5
Jena		66·5	20	e 10 49	− 5	—	—	e 12 5	?	—
Strasbourg		68·0	24	e 11 2	− 1	—	—	—	—	—
Stuttgart		68·1	22	e 11 4	0	—	—	—	—	e 37·0
Basle		69·0	24	e 11 10	+ 1	—	—	—	—	—
Neuchatel		69·4	24	e 11 13	+ 1	—	—	—	—	—
Zürich		69·4	24	e 11 11	− 1	—	—	—	—	—
Chur		70·1	23	e 11 12	− 4	—	—	e 11 17	?	—
Granada		75·9	36	i 11 55k	+ 5	i 22 1	PS	12 13	P_eP	40·2
Ksara		86·2	5	e 12 43	− 1	e 23 24	+ 5	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
New Delhi	N.	87·0	329	e 12 49	+ 1	23 13	[− 1]	24 24	PS	—
Huancayo		87·4	119	e 12 54	+ 4	e 23 24	{+ 1}	e 16 17	PP	e 38·3
Calcutta	N.	89·4	318	—	—	23 6	[−23]	—	—	—
Helwan		89·8	9	e 12 49	−13	e 24 2	+ 9	e 13 4	P_cP	—
La Paz	Z.	94·5	115	17 28	PP	—	—	—	—	49·0
Bombay	N.	97·3	331	e 13 38	+ 2	25 0	+ 2	17 33	PP	—
Riverview		110·1	235	e 19 13	PP	e 28 44	PS	e 29 55	PPS	e 51·1

Additional readings :—
Berkeley ePE =5m.23s.
Salt Lake City iP =5m.32s.
Tucson i =7m.8s. and 9m.59s.
Chicago e =14m.11s.
Florissant eZ =8m.16s., iPPPZ =8m.46s., ePcP?Z =9m.32s., eSSE =14m.48s.
St. Louis iZ =7m.15s., iPPPZ =8m.46s., iPcP?Z =9m.31s., eSSE =14m.45s., eSSSE = 15m.28s., eN =18m.6s.
Cape Girardeau eN =8m.22s., ePPPN =9m.6s., ePPPPN =9m.21s., eN =9m.56s.
Buffalo ePP =8m.13s., eSS =13m.33s., eSSS =15m.25s.
Georgetown eS =14m.31s.
Harvard i =8m.8s.
Fordham eS =14m.50s.
Philadelphia e =17m.39s.
San Juan e =20m.40s. and 22m.8s.
Granada PP =14m.35s.
Huancayo e =24m.44s. and 28m.26s., eSS =29m.25s., e =35m.2s.
Bombay PPE =17m.37s., SKSN =24m.14s., SN =25m.4s., SSE =31m.35s.
Riverview eN =29m.5s., eSSN =34m.48s., eE =35m.11s.
Long waves were also recorded at Denver, Pennsylvania, Cheb, Bucharest, Bergen, and Honolulu.

Feb. 3d. Readings also at 4h. (Istanbul and near Mizusawa), 5h. (Stuttgart, Bucharest (2), and near Istanbul (4)), 6h. (Bucharest and Istanbul (2)), 9h. (near Istanbul, and near Alicante), 14h. (Tucson, Riverside, Palomar, St. Louis, La Paz, Huancayo, and Bogota), 19h. (Mizusawa), 20h. (Palomar, Riverside, Pasadena, Mount Wilson, Haiwee, Tinemaha, Tucson, Copenhagen, Riverview, Wellington, Auckland, Stuttgart, Belgrade, Bucharest, and near Istanbul), 21h. (Granada, Triest, Chur, Zurich, Stuttgart, and Ksara), 23h. (Istanbul).

Feb. 4d. 21h. 5m. 56s. Epicentre 44°·7N. 152°·3E. (as on 1940 Jan. 6d.).

Pasadena suggests deep.

$A = -·6314$, $B = +·3315$, $C = +·7010$; $\delta = -4$; $h = -3$;
$D = +·465$, $E = +·885$; $G = -·621$, $H = +·326$, $K = -·713$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.	
		°	°	m. s.	s.	m. s.	s.	m. s.	
Tinemaha	Z.	64·8	63	e 10 46	+ 3	—	—	e 11 17	P_cP
Santa Barbara	Z.	65·5	65	e 11 15	+28	—	—	—	—
Pasadena		66·6	65	e 10 58	+ 4	—	—	i 11 29	P_cP
Mount Wilson	Z.	66·7	65	i 10 59	+ 4	—	—	i 11 30	P_cP
Riverside	Z.	67·2	65	e 11 1	+ 3	—	—	e 11 32	P_cP
Palomar	Z.	68·0	65	e 11 5	+ 2	—	—	i 11 37	P_cP
Tucson		72·5	63	e 11 33	+ 3	—	—	—	—
Florissant		79·5	45	e 12 9	− 1	e 21 38	−33	e 12 44	pP
St. Louis		79·7	45	i 12 10	− 1	e 22 10	− 3	i 12 44	pP
Stuttgart	Z.	81·5	337	i 12 19	− 2	—	—	—	—
Strasbourg		81·6	338	12 22	+ 1	—	—	—	—
Zürich		82·9	337	e 12 27	− 1	—	—	—	—
Basle		83·0	338	e 12 27a	− 1	—	—	—	—
Chur		83·1	336	e 12 29	0	—	—	—	—
Neuchatel		83·7	337	e 12 31	− 1	—	—	—	—
Clermont-Ferrand		85·9	340	12 43	0	—	—	—	—

Additional readings :—
Tinemaha iZ =11m.58s.
Mount Wilson iZ =11m.30s. and 11m.43s.
Tucson e =12m.7s.
St. Louis eSKSE =21m.40s., esSKSE =22m.43s., esSE =23m.14s.

Feb. 4d. 23h. 45m. 13s. Epicentre 72°·2N. 0°·5E. (as on 1943 Nov. 5d.).

$A = +·3075$, $B = +·0027$, $C = +·9515$; $\delta = -8$; $h = +7$;
$D = +·009$, $E = -1·000$; $G = +·951$, $H = +·008$, $K = -·308$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Upsala		14·1	142	e 3 44	+21	e 6 4	+ 2	—	—	e 7·8
Aberdeen		15·2	185	—	—	i 5 21	−67	—	—	i 8·0
Copenhagen		17·3	157	i 4 8	+ 4	—	—	—	—	9·8
Stonyhurst		18·5	185	—	—	i 7 28	−16	—	—	i 9·6
Potsdam		20·7	159	e 5 17?	+33	—	—	—	—	e 12·8
Kew		20·8	181	e 4 42	− 3	e 8 22?	−11	—	—	e 10·8
Uccle		21·5	175	e 4 49	− 3	8 46	— 1	—	—	10·3
Jena	N.	21·9	160	e 4 58	+ 1	—	—	—	—	—
Cheb		22·8	161	—	—	e 8 47?	−24	—	—	—
Prague		23·1	157	e 5 53	+45	e 9 27	+11	—	—	e 11·8
Strasbourg		23·9	168	5 18	+ 2	—	—	—	—	—
Stuttgart		23·9	166	e 5 16	0	e 9 39	+ 9	—	—	—
Clermont-Ferrand		26·6	176	e 5 37	− 5	—	—	—	—	—
Granada		35·1	186	i 7 23a	+26	12 18	−12	—	—	i 17·6
Ottawa		43·4	275	—	—	e 14 11	−24	—	—	17·8
Philadelphia		48·1	272	—	—	e 15 21	−21	—	—	e 24·4
Florissant	E.	53·8	285	—	—	e 16 48	−13	—	—	e 24·3
St. Louis		53·9	285	e 9 24	− 3	e 16 49	−13	—	—	e 24·8
Tinemaha	Z.	63·1	308	e 10 36	+ 4	—	—	—	—	—
Haiwee	Z.	63·9	307	e 10 38	+ 1	—	—	—	—	—
Mount Wilson	Z.	65·7	307	e 10 49	+ 1	—	—	—	—	—
Riverside	Z.	65·8	307	e 10 56	+ 7	—	—	—	—	—
Tucson		65·8	300	e 10 44	− 5	—	—	—	—	e 35·5

Additional readings:—
Upsala eN = 6m.10s.
Stonyhurst i = 7m.56s.
Jena eN = 5m.6s., 5m.10s., and 5m.20s.
Clermont-Ferrand e = 5m.46s.
Philadelphia e = 18m.11s., 19m.1s., and 20m.53s.
St. Louis eN = 19m.11s., and 20m.32s.
Long waves were also recorded at Scoresby Sund, De Bilt, San Fernando, Harvard, Chicago, Bozeman, and Pasadena.

Feb. 4d. Readings also at 0h. (Istanbul), 2h. (near Balboa Heights), 3h. (Stuttgart, Bucharest, and near Istanbul (2)), 4h. (Riverview and near Istanbul), 7h. (Istanbul, Auckland, Wellington, Riverview, and near Apia), 8h. (near Istanbul), 9h. (Riverview, Huancayo, Tucson, Haiwee, Palomar, Riverside, and Tinemaha), 10h. (Istanbul), 11h. (Ksara, Bucharest, and near Istanbul), 13h. (Istanbul, Clermont-Ferrand, Barcelona, near Granada, Alicante (2), Almeria, Malaga, Toledo, and Tortosa), 15h. (Istanbul and Tucson), 16h. (Tucson, Palomar, and Riverside), 18h. (Stuttgart and Scoresby Sund), 19h. (near Mizusawa), 21h. (near Ksara), 23h. (near Branner).

Feb. 5d. 17h. 19m. 56s. Epicentre 22°·5N. 122°·5E.

$A = -·4969$, $B = +·7800$, $C = +·3805$; $\delta = +9$; $h = +4$;
$D = +·843$, $E = +·537$; $G = -·204$, $H = +·321$, $K = -·925$.

	Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
	°	°	m. s.	s.	m. s.	s.	m. s.		m.
Zi-ka-wei	8·7	354	e 2 0	−10	i 4 46	S_g	—	—	—
Miyazaki	12·2	38	3 23	+25	5 39	+23	—	—	—
Hukuoka	13·1	30	i 3 13	+ 3	7 37	?	—	—	—
Hamada	14·9	32	3 35	+ 1	8 35	L	—	—	(8·6)
Hunatu	19·2	44	e 4 24	− 4	9 52	L	—	—	(9·9)
Kohu	19·2	43	e 4 33	+ 5	10 17	L	—	—	(10·3)
Yokohama	19·7	47	e 4 51	+17	—	—	—	—	e 9·9
Kumagaya	20·0	45	4 56	+19	9 58	L	—	—	(10·0)
Tokyo Cen. Met. Ob.	20·0	46	e 9 22	?	—	—	—	—	—
Mizusawa	23·0	40	4 48?	−19	12 42	L	—	—	(12·7)

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Sapporo		25·8	33	e 6 43	+69	e 11 59	?	—	—	e 15·5
Calcutta	N.	31·5	277	e 6 25	− 1	(i 11 35)	+ 1	—	—	i 11·6
Dehra Dun	N.	40·4	292	e 7 56?	+15	13 59	+ 9	—	—	19·9
New Delhi		41·1	288	e 7 45	− 2	i 13 49	−12	9 22	PP	19·0
Colombo	E.	43·9	256	8 26	+16	14 45	+ 3	10 18	PP	23·1
Kodaikanal	E.	44·7	263	i 7 54	−22	—	—	—	—	—
Brisbane	E.	57·8	148	e 10 8	+13	—	—	—	—	—
Riverview		62·3	153	i 10 23a	− 3	i 19 20	+28	i 20 49	ScS	e 29·7
Sydney		62·3	153	e 10 40	+14	—	—	e 13 4	PP	—
College		69·7	27	e 11 11	− 3	e 20 21	− 1	—	—	e 34·2
Ksara		75·1	301	e 11 46	0	e 21 30	+ 6	—	—	—
Auckland		76·9	140	—	—	22 9?	+26	—	—	27·1
Sitka		77·6	33	—	—	e 21 36	−15	—	—	e 34·6
Upsala		78·0	330	e 16 46	PPP	e 22 4?	+ 9	—	—	e 38·1
Bucharest		79·0	314	e 11 59	− 8	i 22 6	0	i 14 49	PP	38·1
Helwan		80·1	298	12 13	0	22 25	+ 7	e 15 10	PP	—
Christchurch		80·2	146	12 22	+ 8	22 31	+12	17 39	PPP	39·3
Copenhagen		82·3	328	e 12 23	− 2	22 34	− 6	15 30	PP	—
Belgrade		82·5	315	e 12 31	+ 5	e 23 33	+51	e 16 17	PP	e 47·3
Bergen		83·1	334	e 26 54	?	—	—	e 32 4?	SSS	e 42·1
Prague		83·9	323	e 12 27	− 6	e 22 52	− 4	e 28 4	SS	e 38·1
Scoresby Sund		83·9	350	12 35	+ 2	23 4	+ 8	28 16	SS	—
Tananarive		84·0	247	e 21 28	?	23 1	+ 4	28 4	SS	e 40·7
Cheb		85·1	323	e 12 34	− 5	e 23 2	− 6	—	—	e 45·1
Jena	N.	85·1	324	e 12 39	0	—	—	e 15 56	PP	e 43·1
Triest		86·4	318	—	—	e 24 4	PS	—	—	—
Stuttgart		87·5	323	i 12 49a	− 2	e 23 24	− 7	i 16 14	PP	e 44·1
De Bilt		87·8	327	i 12 54	+ 2	e 23 34	0	e 16 4?	PP	e 40·1
Aberdeen		88·1	334	e 22 59	?	e 24 9	PS	e 33 57	SSS	e 43·0
Chur		88·3	321	e 13 1	+ 6	e 23 47	+ 8	—	—	—
Strasbourg		88·4	323	e 13 11	+16	—	—	—	—	42·0
Zürich		88·6	322	e 12 54	− 2	—	—	e 16 14	PP	—
Uccle		89·0	327	e 12 4?	−54	e 23 43	− 2	e 29 47	SS	e 42·1
Basle		89·1	322	e 13 4	+ 6	e 24 33	PS	e 16 28	PP	—
Neuchatel		89·7	322	e 13 4	+ 3	—	—	—	—	—
Stonyhurst		90·4	331	—	—	—	—	e 34 4?	SSS	45·1
Kew		90·9	329	i 13 6	− 1	i 23 21	[−17]	i 16 38	PP	e 43·1
Paris		91·2	325	e 13 8	0	—	—	—	—	e 46·1
Clermont-Ferrand		92·6	322	e 13 26	+11	—	—	—	—	e 52·1
Bozeman		96·5	34	—	—	e 24 27	−24	—	—	e 48·6
Tinemaha	z.	97·6	45	e 13 46	+ 8	—	—	e 17 32	PP	—
Haiwee	z.	98·4	45	e 13 52	+11	—	—	—	—	—
Mount Wilson	z.	99·4	47	e 13 59	+13	—	—	—	—	—
Pasadena		99·4	47	i 13 58	+12	e 24 36	[+12]	i 17 52	PP	e 41·8
Riverside	z.	100·0	47	e 14 2	+14	—	—	—	—	—
Rapid City		101·6	31	—	—	e 23 37	?	e 26 21	PS	e 50·4
Granada		101·9	319	(18 20)	PP	(26 54)	PS	—	—	51·5
Tucson		105·4	45	e 14 28	+15	27 44	PS	e 18 30	PP	e 49·8
Seven Falls		109·7	9	—	—	e 27 4?	PS	—	—	47·1
Ottawa		110·4	13	—	—	e 29 4?	PS	—	—	47·1
Florissant		111·7	27	i 19 21	PP	e 25 25	[+ 6]	e 22 22	PKS	—
St. Louis		111·9	27	e 19 14	PP	e 25 14	[− 6]	e 28 58	PS	—
Philadelphia		115·7	14	e 19 48	PP	e 25 38	[+ 3]	e 22 4	PKS	e 46·4
San Juan		138·5	11	e 19 36	[+ 8]	e 40 45	SS	e 22 21	PP	e 63·5
Bogota		148·6	32	17 54	?	—	—	e 20 0	PKP	—
Huancayo		160·1	61	e 20 15	[+14]	e 44 43	SS	e 24 30	PP	e 70·5
Rio de Janeiro	N.	166·8	265	e 25 4	PP	—	—	—	—	—
La Plata		167·7	179	19 16	[−52]	(45 4?)	SS	—	—	45·1
La Paz	N.	168·3	62	e 20 26	[+18]	25 25	PP	(30 29)	?	30·5

Additional readings :—
Zi-ka-wei iN = 2m.38s., iE = 4m.34s., and 4m. 52s., iN = 5m.14s., 7m.28s., and 8m.46s.
Yokohama e = 5m.5s.
Mizusawa ePE = 5m.13s.?.

Continued on next page.

Calcutta iSN =10m.4s., iSSN =10m.45s.
New Delhi PPPN =9m.31s., SSN =16m.12s., SSSE =16m.37s., SSSN =16m.50s., S_cSN =18m.2s.
Brisbane iZ =10m.11s., iE =13m.59s.
Riverview iP =10m.45s., iN =19m.28s., iE =19m.32s., iN =19m.54s.
College e =23m.34s., and 25m.46s.
Auckland i =22m.36s.? and 24m.59s.?.
Sitka e =28m.17s.
Upsala eE =22m.30s., 26m.4s.?, and 31m.4s.?.
Bucharest iZ =12m.11s., iN =12m.54s., iSE =22m.9s., iPSN =22m.48s., iSS?N = 27m.27s.
Helwan eEZ =12m.43s., SE =22m.44s.
Christchurch PPS =23m.35s., SS =27m.49s., SSS =31m.51s., Q =34m.4s.
Belgrade e =13m.13s. and 45m.4s.
Prague e =23m.47s.
Stuttgart eSS =29m.4s.?.
De Bilt eSS =29m.34s.
Kew iZ =17m.37s., iPPPZ =18m.11s., eS =24m.0s., iPS =25m.7s., eSSN =30m.1s., eSSSEN =34m.21s.
Pasadena eZ =17m.4s.
Granada readings are given as PKP and SKKS.
Florissant eZ =25m.1s., eSPE =28m.49s., eE =29m.29s.
St. Louis ePPZ =19m.24s., eZ =19m.40s., ePPPSN =30m.44s.
San Juan e =24m.40s. and 29m.10s., eSSS =46m.5s.
Huancayo e =28m.23s., 30m.30s., 39m.30s., 49m.13s., 52m.6s., and 65m.46s.
Long waves were also recorded at Arapuni, Wellington, Bermuda, Columbia, Potsdam, Lisbon, Tortosa, and San Fernando.

Feb. 5d. 20h. 2m. 22s. Epicentre 22°·0S. 170°·3E. (as on 1943 Sept. 14d.).

$A = -·9148$, $B = +·1564$, $C = -·3724$; $\delta = 0$; $h = +4$;
$D = +·168$, $E = +·986$; $G = +·367$, $H = -·063$, $K = -·928$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Auckland		15·3	166	4 3	+24	8 28	L	8 43?	Q	9·6
Brisbane		16·6	247	e 3 44	−12	—	—	—	—	e 8·5
Wellington		19·6	172	4 33?	+ 1	8 18	+10	4 48	PP	11·1
Riverview		20·7	230	i 4 38k	− 6	i 8 27	− 4	i 5 8	PP	e 9·7
Sydney		20·7	230	e 3 20	?	e 8 17	−14	—	—	—
Christchurch		21·6	177	5 9	+15	8 59	+10	—	—	11·7
Pasadena	Z.	88·0	52	i 12 53	0	—	—	—	—	e 41·6
Mount Wilson	Z.	88·1	52	i 12 53	− 1	—	—	—	—	—
Riverside	Z.	88·5	52	i 12 54	− 2	—	—	—	—	—
Palomar	Z.	88·6	54	i 12 53	− 3	—	—	—	—	—
Haiwee	Z.	89·1	49	e 13 1	+ 3	—	—	—	—	—
Tinemaha		89·3	49	i 12 59	0	—	—	—	—	—
Calcutta	N.	91·3	294	e 16 53	PP	e 23 53	[+13]	—	—	—
Tucson		92·7	56	i 13 16	+ 1	—	—	—	—	e 46·5
Florissant		110·5	55	—	—	e 43 24	Q	—	—	e 57·7
St. Louis		110·6	55	—	—	e 43 18	Q	—	—	e 58·1
Stuttgart	Z.	149·3	336	e 19 47	[+ 1]	—	—	—	—	—

Additional readings :—
Auckland PP? =4m.33s., i =6m.5s. and 7m.3s.
Brisbane iE =3m.47s. and 4m.4s.
Wellington P_cPZ =6m.6s., iZ =7m.33s., sS? =8m.38s.
Riverview i =4m.42s., iN =5m.46s., iZ =5m.52s., and 8m.30s., i =8m.34s., iE = 8m.51s.
Long waves were also recorded at Istanbul.

Feb. 5d. Readings also at 1h. (Istanbul (2), Oaxaca, and Tacubaya), 2h. (Istanbul, Palomar, Riverside, Tinemaha, and Tucson), 3h. and 4h. (Istanbul), 6h. (Istanbul (4) and Tucson), 8h. (near Malaga), 9h. (Berkeley, near Branner, Lick, and Fresno), 10h. (near Branner and Lick), 12h. (Granada, Alicante, Toledo, near Tortosa, near Ottawa, Seven Falls, and Shawinigan Falls), 13h. (near Branner and Lick), 14h. (near La Paz, near Branner, and Lick), 15h. (Wellington), 16h. (La Paz, La Plata, near Ottawa, and near Mizusawa), 19h. (Calcutta, New Delhi, and Zi-ka-wei), 22h. (Cape Girardeau), 23h. (near Fort de France).

Feb. 6d. 18h. Undetermined shock.

Fort de France P =41m.41s., P_g =42m.13s., P =42m.38s.
Bogota eP =43m.23s., iPP? =43m.33s., i =46m.48s., iS? =47m.19s.
Huancayo eP =46m.0s., e =46m.23s., eS =50m.23s., eL =51m.28s.
La Paz PZ =46m.28s., eS?N =51m.23s., iN =55m.16s., LN =56m.36s.
Cape Girardeau ePN =47m.29s., eN =47m.47s.
Florissant ePN =47m.45s., eE =48m.30s.
St. Louis ePZ =47m.45s., eZ =48m.2s., eLN =57m.31s.
Tucson eP =49m.17s., e =50m.45s., eL =53m.25s.
Palomar ePZ =49m.54s.
Riverside ePZ =49m.59s.
Mount Wilson ePZ =50m.4s.
Pasadena ePZ =50m.5s.
Tinemaha ePZ =50m.12s.
Long waves were also recorded at San Juan, Bermuda, and La Plata.

Feb. 6d. Readings also at 0h. (Pehpei and Istanbul), 2h. (Stuttgart, Riverview, Auckland, Tucson, Haiwee, Palomar, Tinemaha, Riverside, Mount Wilson, Pasadena, and Pehpei), 3h. (Tucson, Huancayo, near San Juan, Bogota, Fort de France, and Zi-ka-wei), 4h. (Riverview, Mount Wilson, Riverside, Palomar, Tucson, La Paz, and La Plata (2)), 8h. (Riverside and Tucson), 13h. and 15h. (Istanbul), 16h. (Bucharest and near Istanbul), 17h. (Bogota, Cheb, De Bilt, Uccle, Kew, Stonyhurst, Aberdeen, Stuttgart, and Scoresby Sund), 18h. (Pasadena, Mount Wilson, Riverside, Palomar, Tucson, Bucharest, and near Istanbul), 19h. (Istanbul), 20h. (La Paz, Bogota, Bucharest, and near Istanbul), 21h. (Bucharest, Ksara, and near Istanbul), 23h. (near Fort de France).

Feb. 7d. Readings at 6h. (Philadelphia and Istanbul), 7h. (Philadelphia), 8h. (Tucson, Pasadena, Mount Wilson, Riverside, Tinemaha, Palomar, and Philadelphia), 9h. (Ksara), 13h. (New Delhi, Calcutta, Bombay, Zi-ka-wei, and Riverview), 14h. (Granada, Kew, De Bilt, Uccle, Stuttgart, Cheb, and Istanbul), 17h. (Florissant, St. Louis, Mount Wilson, Tinemaha, Haiwee, Tucson, near Sitka, and near Tuai, Christchurch, Kaimata, New Plymouth, Takata, Bunnythorpe, and Wellington), 18h. (Philadelphia and Istanbul), 19h. (Belgrade, Harvard, Pasadena, Mount Wilson, Riverside, Tinemaha, Palomar, Bombay, Riverview, Sydney, and Brisbane), 20h. (Harvard, Strasbourg, Stuttgart, Zurich, Chur, Triest, and Bucharest), 22h. (Riverview and near Istanbul).

Feb. 8d. 12h. 34m. 14s. Epicentre 48°·2N. 9°·0E. (as on 1944 Jan. 5d.).
Intensity IV-V in the vicinity of the epicentre, to the S.E. of Ebingen.
Epicentre about 48°·1N. 9°·0E. (macroseismic).
Annales de l'Institut de Physique du Globe de Strasbourg, 2e partie, Séismologie, tome IX 1944, p. 7. Strasbourg 1951.

$A = +\cdot6609$, $B = +\cdot1046$, $C = +\cdot7432$; $\delta = +8$; $h = -5$;
$D = +\cdot156$, $E = -\cdot988$; $G = +\cdot734$, $H = +\cdot116$, $K = -\cdot670$.

	Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
	°	°	m. s.	s.	m. s.	s.	m. s.		m.
Ebingen	0·0	—	i 0 1	P_g	i 0 2	S_g	—	—	—
Ravensburg	0·6	135	—	—	e 0 18	S_g	—	—	—
Stuttgart	0·6	13	e 0 11	P_g	i 0 18	S_g	i 0 13	P*	—
Strasbourg	0·9	295	—	—	i 0 31	S_g	—	—	—
Zürich	0·9	198	i 0 18k	P_g	i 0 29	S_g	—	—	—
Basle	1·2	235	e 0 22	P_g	e 0 38	S_g	—	—	—

Stuttgart gives also i =0m.22s.

Feb. 8d. Readings also at 0h. (Istanbul, near Alicante, Malaga, and Granada), 4h. (Istanbul and near Mizusawa), 5h. (Mount Wilson, Tinemaha, and Palomar), 6h. and 13h. (Istanbul), 14h. (Riverview, Pasadena, Mount Wilson, Tinemaha, and Palomar), 15h. (near Toledo), 16h. (Bucharest and near Istanbul (2)), 17h. (2) (Bucharest), 18h. (Istanbul (2)), 20h. (Riverside, Palomar, Tucson, and Riverview), 23h. (Riverview).

Feb. 9d. Readings at 1h. (Istanbul (2)), 4h. (near Lick), 8h. (near Mizusawa), 12h. (near Stuttgart), 14h. (Bombay, Calcutta, and near Istanbul), 16h. (near Istanbul), 17h. (near Istanbul ad near Alicante (2)).

Feb. 10d. 12h. 5m. 24s. Epicentre 41°·5N. 32°·4E. (as on 2d.).

Felt strongly in the region of Bolu-Adapazar. Epicentre 41°·5N. 32°·5E.
Bulletin Météorologique, Séismique et magnétique de l'Observatoire d'Istanbul-Kandilli 1944, Istanbul 1949, p. 45.
Rapport du Ministre de France en Turquie.

$A = +\cdot6343$, $B = +\cdot4025$, $C = +\cdot6601$; $\delta = +7$; $h = -2$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Istanbul		2·5	260	(0 41)	− 2	(1 13)	− 1	(0 50)	P_g	—
Bucharest		5·4	304	e 1 26	+ 2	i 2 29	+ 1	i 1 50	P_g	—
Ksara		8·2	159	e 1 53	−10	4 27	S_g	—	—	—
Belgrade		9·3	295	e 2 7	−10	e 4 14	+ 9	i 5 11	S_g	—
Helwan		11·6	185	i 2 42k	− 8	e 5 18	SS	3 24	PPP	7·2
Triest		14·1	293	e 3 14	− 9	—	—	—	—	e 7·6
Prague		15·1	310	e 3 37	+ 1	e 6 47	SS	—	—	e 7·4
Cheb		16·3	308	e 2 36?	−76	—	—	—	—	—
Potsdam		17·0	317	e 4 8	+ 7	e 7 29	+19	e 7 37?	SS	e 9·6
Chur		17·2	296	e 4 6	+ 3	e 7 23	+ 9	—	—	—
Milan	E.	17·3	291	4 16	PP	—	—	—	—	10·5
Stuttgart		17·9	303	e 4 11	− 1	e 7 38	+ 8	e 9 0	Q	e 10·2
Zürich		18·0	298	e 4 11	− 2	—	—	e 4 17	PP	—
Basle		18·7	299	e 4 22	0	e 7 52	+ 4	—	—	e 10·4
Strasbourg		18·7	302	4 28	+ 6	—	—	—	—	—
Neuchatel		19·0	296	e 4 25	− 1	—	—	—	—	—
Copenhagen		19·3	325	i 4 29	0	8 18	SS	—	—	—
Upsala		20·5	338	e 4 51	+ 9	8 30	+ 3	e 9 23	SSS	e 10·1
De Bilt		21·3	310	—	—	e 8 59	+16	—	—	e 10·6
Uccle		21·4	306	e 4 26	−25	8 49	+ 4	i 4 55	PP	10·6
Clermont-Ferrand		21·6	291	i 4 55	+ 1	—	—	—	—	—
Granada		28·0	274	i 6 0k	+ 5	i 10 46	+ 8	6 16	pP	14·9
New Delhi	N.	38·5	95	e 9 12	PPP	i 13 31	+ 9	—	—	—
St. Louis	Z.	84·7	319	e 12 38	+ 1	—	—	—	—	—

Additional readings :—
Istanbul iPS =(1m.5s.), readings reduced by 2 minutes.
Bucharest iS*N =2m.50s., iS_gN =3m.10s.
Belgrade e =2m.14s. and 2m.34s.
Helwan eE =5m.44s.
Potsdam ePN =4m.12s.
Upsala eN =8m.13s.
Uccle i =8m.56s.
Granada PP =7m.10s.
Long waves were also recorded at Paris, Kew, Bergen, and Aberdeen.

Feb. 10d. Readings also at 4h. (Riverview and near Malaga (2)), 5h. (near Istanbul), 7h. (near Fort de France), 9h. (Paris), 11h. (Tucson, Riverview, Christchurch, Wellington, and near Tuai), 18h. (near Istanbul (2)), 20h. (Harvard and Riverview), 22h. (Riverview), 23h. (Bucharest and near Istanbul).

Feb. 11d. 6h. 32m. 35s. Epicentre 46°·3N. 13°·8E. (as on 1942 April 12d.).

Intensity V in the region of Villach. Austria.
Epicentre in Yugoslavia on the border of the Save, 46°·4N. 13°·6E. (Strasbourg).

E. Trapp.
Makros. Beobachtungen in den Jahren 1941-1945; Anhang 8 zum Jahrbuch für 1947 der Zentralanstalt für Meteorolog. und Geodyn. Wien. Macroseismic chart p. D-51.

$A = +\cdot6733$, $B = +\cdot1654$, $C = +\cdot7206$; $\delta = -5$; $h = -4$;
$D = +\cdot239$, $E = -\cdot971$; $G = +\cdot700$, $H = +\cdot172$, $K = -\cdot693$.

	△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
	°	°	m. s.	s.	m. s.	s.	m. s.		m.
Triest	0·7	183	i 0 18	+ 1	—	—	—	—	—
Ravensburg	3·2	298	—	—	e 1 42	S*	—	—	—
Zürich	3·7	288	e 0 59	− 1	e 1 53	+ 8	—	—	—
Stuttgart	4·0	310	e 1 5	+ 1	e 1 50	− 2	e 1 16	P_g	—
Basle	4·4	287	e 1 7	− 3	e 2 21	S_g	—	—	—
Strasbourg	4·7	302	—	—	2 25	S*	—	—	—

Stuttgart gives also eSZ =1m.47s., iS_g =2m.7s.

Feb. 11d. Readings also at 1h. (near Istanbul, near Apia, and near Lick), 4h. (Istanbul) 6h. (Bogota), 9h. (Copenhagen, Tucson, Palomar, Riverside, Mount Wilson, Pasadena, Brisbane, Christchurch, Wellington, Auckland, Riverview, New Plymouth, and Tuai), 13h. (Istanbul), 15h. (near Mizusawa), 19h. (St. Louis, Tucson, Palomar, Tinemaha, Riverside. Mount Wilson, Pasadena, and La Plata), 21h. (Istanbul), 22h. (near Istanbul (2)).

Feb. 12d. Readings at 0h. and 4h. (near Istanbul), 5h. (Tucson, Riverside, Palomar, Tinemaha, Haiwee, La Paz, Huancayo, and near Fort de France), 11h. (Tucson and near Istanbul), 12h. (Bucharest and near Istanbul), 13h. (Pasadena, Mount Wilson, Riverside, Santa Barbara, Haiwee, La Jolla, Palomar, and Tucson), 17h. and 18h. (Palomar), 19h. (Riverview, Auckland, and Istanbul), 20h. (Riverview), 22h. (near Mizusawa).

Feb. 13d. Readings at 0h. and 8h. (Istanbul), 11h. (Bucharest and near Istanbul), 13h. (near La Paz), 15h. (Stuttgart and Mizusawa), 17h. (Riverview, Wellington, and Auckland), 19h. (Zi-ka-wei), 20h. (Stuttgart, De Bilt, Uccle, Cheb, Upsala, Bergen, Calcutta, and New Delhi), 23h. (Brisbane, Riverview, Sydney, Auckland, Wellington and Christchurch).

Feb. 14d. Readings at 2h. (Mizusawa and Istanbul), 3h. (Granada, Cheb, Stuttgart, St. Louis, Tucson, Pasadena, Mount Wilson, Riverside, Tinemaha, Santa Barbara, Haiwee, La Jolla, and Palomar), 7h. (Fordham), 9h. (Mount Wilson, Tinemaha, Haiwee, Palomar, St. Louis, Tucson, Puebla, Vera Cruz, Tacubaya, Oaxaca, and Istanbul), 10h. (Ksara and near La Paz), 13h. (Huancayo, Tucson, and Tinemaha), 14h. (2) and 15h. (Istanbul), 16h. (Christchurch, Wellington, La Paz, Huancayo, and Istanbul), 17h. (Istanbul and Riverview), 18h. (La Paz and Istanbul), 21h. (Istanbul), 22h. (La Paz).

Feb. 15d. 5h. 39m. 28s. Epicentre 52°·2N. 32°·0W. (as on 1939 Dec. 25d.).

$A = +\cdot5219$, $B = -\cdot3261$, $C = +\cdot7882$; $\delta = -2$; $h = -6$;
$D = -\cdot530$, $E = -\cdot848$; $G = +\cdot668$, $H = -\cdot417$, $K = -\cdot615$.

	Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
	°	°	m. s.	s.	m. s.	s.	m. s.		m.
Stonyhurst	17·8	73	i 4 12	+ 1	—	—	—	—	e 8·5
Aberdeen	17·9	62	—	—	i 7 30	0	i 7 32	SS	—
Kew	19·5	79	i 4 28	− 3	e 8 10	+ 4	i 4 40	PP	e 9·5
Paris	22·1	85	—	—	e 8 59	+ 1	—	—	—
Uccle	22·5	79	5 3k	+ 1	e 9 6	+ 1	i 9 12	?	10·5
Clermont-Ferrand	23·7	92	e 5 7	− 7	e 9 29	+ 2	—	—	e 11·8
San Fernando	24·1	122	e 5 13	− 5	—	—	—	—	12·0
Granada	24·9	116	i 5 35k	+ 9	9 58	+11	—	—	11·6
Strasbourg	25·4	81	e 5 28	− 3	—	—	—	—	—
Basle	25·7	84	e 5 34	+ 1	—	—	—	—	—
Copenhagen	26·0	63	e 5 36	0	10 9	+ 3	—	—	—
Stuttgart	26·2	80	e 5 35	− 3	e 10 17	+ 8	—	—	e 13·0
Zürich	26·4	84	e 5 38	− 2	—	—	—	—	—
Cheb	27·6	76	e 5 32?	−19	—	—	—	—	e 12·5
Prague	28·8	74	e 8 48	P_cP	—	—	e 11 57	SS	e 15·5
Ottawa	29·2	275	e 6 6	+ 1	—	—	—	—	e 14·5
Chicago	38·3	278	—	—	e 13 24	+ 5	—	—	e 19·6
St. Louis	41·9	275	i 7 55	+ 1	e 14 17	+ 4	i 8 1	?	—
College	53·3	332	—	—	—	—	e 21 1	?	e 29·4
Tucson	58·7	283	e 10 3	+ 1	—	—	—	—	e 31·0
Tinemaha	z.	59·6	292	i 10 14	+ 6	—	—	—	—	—
Riverside	z.	61·3	290	i 10 20	0	—	—	—	—	—
Palomar	z.	61·5	288	e 10 22	+ 1	—	—	—	—	—
Mount Wilson	z.	61·6	290	i 10 23	+ 1	—	—	—	—	—
Pasadena	z.	61·7	290	e 10 22	0	—	—	—	—	e 33·5

Kew gives also eZ = 5m.28s.
Long waves were also recorded at De Bilt, Bergen, Upsala, Philadelphia, Harvard, Fordham, Weston, Salt Lake City, and Sitka.

Feb. 15d. Readings also at 2h. (Istanbul, Ksara, and Bucharest), 3h. (Clermont-Ferrand, Basle, Stuttgart, Zürich, Helwan, and Ksara), 5h. (Riverview), 9h. (near Malaga), 10h. (near Granada and Malaga (2)), 14h. (La Paz and San Fernando), 15h. (Pasadena, Riverside, Palomar, Tucson, and near San Juan), 16h. (Pasadena, Riverside, Palomar, Tucson, St. Louis, and Harvard), 17h. (La Paz and Ksara), 20h. (near Lick, Berkeley, and Branner), 23h. (Wellington and Auckland).

Feb. 16d. 11h. Undetermined shock.

College e=14m.35s., 15m.5s., and 16m.4s., eL=18m.27s.
Tinemaha ePZ=18m.15s.
Haiwee ePZ=18m.26s.
Santa Barbara ePZ=18m.36s.
Mount Wilson ePZ=18m.37s.
Pasadena ePZ=18m.40s., eLN=27·3m.
Riverside ePZ=18m.45s.
Tucson eP=19m.10s., i=21m.6s., e=24m.27s., eL=29m.31s.
St. Louis iPZ=20m.15s., eZ=20m.34s., eSE=27m.27s., eLN=32m.13s.
Stuttgart eZ=23m.10s.
Basle eP=23m.16s.
Zürich eP=23m.17s.
Neuchatel eP=23m.19s.
Long waves were also recorded at Bozeman, Chicago, Christchurch, and De Bilt.

Feb. 16d. Readings also at 0h. (Balboa Heights), 1h. (Bucharest, Ksara, and Helwan), 3h. (near Pehpei, near Granada, Alicante, Almeria, Malaga, and Toledo), 4h. (near Bogota), 5h. (San Juan and near Bogota), 8h. (Auckland), 11h. (New Delhi and Riverview), 15h. (near Balboa Heights), 19h. (Bogota).

Feb. 17d. Readings at 0h. (Tucson, Pasadena, Mount Wilson, Riverside, La Jolla, Tinemaha, and Palomar), 4h. (near San Francisco, Santa Clara, Lick, Branner, and Berkeley), 7h. (Huancayo and Tucson), 9h. and 16h. (2) (Istanbul), 17h. (Granada and Helwan), 18h. (Stuttgart and Ksara), 21h. (Istanbul).

Feb. 18d. 9h. Undetermined shock. Pasadena suggests deep focus.

Suva P?=13m.58s., iS=14m.58s., i=15m.12s.
Tuai P=15m.28s., S=17m.50s.
New Plymouth P=15m.30s., S=18m.20s.
Wellington P=15m.44s., S=18m.39s.
Auckland S?=17m.38s.
Christchurch S?=19m.18s.
Santa Barbara iPZ=23m.28s.
Pasadena iP=23m.32s.a.
Mount Wilson iPNZ=23m.33s.a.
Palomar iPZ=23m.34s.a.
Riverside iPNZ=23m.34s.a.
Tinemaha iP=23m.41s.a.
Tucson iP=23m.53s., i=25m.59s.
Copenhagen P=30m.48s.
Stuttgart eZ=30m.55s., 31m.4s. and 31m.21s.

Feb. 18d. Readings also at 0h. (Tucson, Tinemaha, Riverside, Palomar, and Istanbul), 1h. (Istanbul), 3h. (Kodaikanal, Calcutta, and near New Delhi), 4h. (Bombay and near Hyderabad), 7h. (Istanbul), 8h. (Riverview), 9h. (near Ottawa), 15h. (near Mount Wilson, Pasadena, Riverside, La Jolla, and Tucson), 16h. (near Apia), 18h. (Stuttgart), 19h. (Basle, Zurich, Stuttgart, Jena, Copenhagen, Huancayo, La Plata, La Paz, St. Louis, Tucson (2), Pasadena (2), Mount Wilson (2), Riverside (2), La Jolla, Tinemaha (2), Santa Barbara (2), Palomar (2), and near Mizusawa), 20h. (Huancayo, Tucson (2), Pasadena, Mount Wilson, Riverside, Tinemaha, Palomar (2), Stuttgart, Cheb, and Scoresby Sund), 21h. (Wellington, and Scoresby Sund).

Feb. 19d. 11h. 35m. 53s. Epicentre 66°·0N. 22°·0W. Rough.

$A = +·3792$, $B = -·1532$, $C = +·9125$; $\delta = -8$; $h = -11$;
$D = -·375$, $E = -·927$; $G = +·846$, $H = -·342$, $K = -·409$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Reykjavik		1·9	179	i 0 27	− 7	—	—	—	—	e 0·8
Aberdeen		12·9	124	—	—	—	—	i 6 5	?	—
Bergen		13·4	99	e 3 35	PP	e 6 23	SS	—	—	e 7·0
Kew		18·3	131	i 4 58	+41	e 7 35	− 4	i 5 20	?	e 9·1
Upsala		18·8	91	e 4 41	+18	—	—	—	—	e 11·1
Copenhagen		19·4	104	e 4 37	+ 7	8 27	+23	—	—	—
De Bilt		19·5	120	i 4 27a	− 4	i 8 13	+ 7	i 4 50	PP	e 9·1
Uccle		20·2	126	e 4 29a	−10	e 8 17	− 4	—	—	e 9·1
Paris		21·5	131	e 4 40	−12	e 8 41	− 6	—	—	11·1
Potsdam		22·2	110	e 5 7	+ 7	e 9 21	+21	—	—	e 14·1
Strasbourg		23·4	122	e 5 5	− 6	e 9 20	− 1	—	—	15·1
Stuttgart		23·7	120	i 4 13a	−61	e 9 37	+10	—	—	e 11·4
Cheb		23·7	114	e 5 17	+ 3	e 9 43	+16	—	—	e 13·1
Basle		24·2	123	e 5 16	− 3	e 9 34	− 1	—	—	—
Clermont-Ferrand		24·4	133	e 5 12	− 9	—	—	—	—	e 12·1
Prague		24·5	112	5 27	+ 5	e 9 34	− 6	e 10 7	SS	e 12·1
Zürich		24·7	123	e 5 21k	− 3	—	—	—	—	—
Milan	E.	26·6	125	6 18	PP	10 14	− 2	—	—	—
Granada		30·8	150	i 6 15a	− 5	11 20	− 3	—	—	15·4
Belgrade		31·2	112	—	—	e 11 59	+30	—	—	e 16·5
Philadelphia		39·5	256	—	—	e 12 35	−62	—	—	e 21·1
Chicago		42·9	271	—	—	e 13 45	−42	—	—	e 24·7
St. Louis		46·7	270	e 8 22	−10	e 15 11	−11	—	—	e 20·4
Tinemaha	Z.	59·2	292	e 10 0	− 5	—	—	—	—	—
Tucson		60·6	284	e 10 10	− 5	—	—	e 12 49	PP	e 33·6
Mount Wilson	Z.	61·6	291	i 10 22	0	—	—	—	—	—
Riverside	Z.	61·6	291	e 10 21	− 1	—	—	—	—	—
Pasadena	Z.	61·8	291	e 10 24	+ 1	—	—	—	—	e 32·1
Palomar	Z.	61·9	289	e 10 25	+ 1	—	—	—	—	—

Additional readings :—
Reykjavik iEN = 37s., 40s., and 44s.
Upsala eN = 4m.59s.
Copenhagen 8m.37s.
Uccle iZ = 4m.32s.
Prague e = 8m.52s.
Long waves were also recorded at Scoresby Sund, Stonyhurst, Tortosa, and other American stations.

Feb. 19d. Readings also at 0h. (near Mizusawa), 5h. (Wellington), 11h. (Tinemaha, Tucson, and La Plata), 12h. (Auckland (2), Christchurch, New Plymouth, Tuai, and Wellington), 13h. (Riverview, Scoresby Sund, Copenhagen, Bergen, Upsala, Aberdeen, Stonyhurst, Cheb, Prague, De Bilt, Kew, Paris, Uccle, Strasbourg, Stuttgart, Clermont-Ferrand, Mount Wilson (2), Pasadena, Palomar (2), Riverside, Tinemaha and Tucson (2)), 14h. (Bozeman and Pasadena), 15h. (near Mizusawa), 16h. (St. Louis, Mount Wilson, Palomar, Riverside, Tinemaha, Tucson, and near Bogota), 17h. (La Paz), 18h. (Harvard and near Apia), 19h. (Auckland, Christchurch, Wellington, Riverview, La Paz, Huancayo, Tucson, Palomar, and Riverside), 20h. (St. Louis, Pasadena, and near Mizusawa).

Feb. 20d. 19h. 32m. 0s. Epicentre 66°·0N. 22°·0W. (as on 19d.).

$A = +·3792$, $B = -·1532$, $C = +·9125$, $\delta = -8$; $h = -11$.

	△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
	°	°	m. s.	s.	m. s.	s.	m. s.		m.
Reykjavik	1·9	179	i 0 34	0	i 0 43	−16	—	—	e 0·8
Aberdeen	12·9	124	i 3 10	+ 3	—	—	—	—	6·4
Kew	18·3	131	i 4 11	− 6	e 7 43?	+ 4	—	—	e 9·0
Copenhagen	19·4	104	4 43	+13	—	—	—	—	10·0
De Bilt	19·5	120	i 4 31a	0	e 8 29	+23	—	—	e 9·5

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Uccle		20·2	126	e 4 36 a	− 3	e 8 0?	−21	—	—	10·0
Jena		22·8	114	e 5 8	+ 3	—	—	—	—	—
Strasbourg		23·4	122	5 8	− 3	—	—	—	—	—
Stuttgart		23·7	120	e 5 15	+ 1	e 9 35	+ 8	—	—	e 11·6
Cheb		23·7	114	e 5 32	+18	e 9 52	+25	—	—	e 13·0
Basle		24·2	123	e 5 18	− 1	—	—	—	—	—
Clermont-Ferrand		24·4	133	e 5 17	− 4	—	—	—	—	e 12·4
Prague		24·5	112	e 6 0	PP	e 10 12	+32	—	—	e 13·0
Zürich		24·7	123	e 5 20	− 4	—	—	—	—	—
San Fernando	E.	31·0	155	e 12 15	?	—	—	—	—	—
St. Louis		46·7	270	e 8 26	− 6	—	—	—	—	e 24·0

Long waves were also recorded at Scoresby Sund, Bergen, Granada, and Tortosa.

Feb. 20d. Readings also at 2h. (near Istanbul), 4h. (Tucson and Riverside), 5h. (near Bogota) 8h. (Stuttgart, Ksara, Belgrade, near Bucharest, and Istanbul), 9h. (Tucson, Auckland, Wellington, and Christchurch), 10h. (Sitka, Pasadena, La Paz, Huancayo, Riverview, Sydney, and Arapuni), 11h. (De Bilt, Uccle, Stuttgart, San Fernando, Harvard, and near Bogota), 12h. (Bozeman), 17h. (Huancayo), 19h. (Pasadena, Riverside, Palomar, Tinemaha, Tucson, Tacubaya, and Copenhagen), 20h. (near Branner), 21h. (Tacubaya, Oaxaca, and Ksara).

Feb. 21d. 0h. 25m. 59s. Epicentre 66°·0N. 22°·0W. (as on 20d.).

$A = +·3792$, $B = -·1532$, $C = +·9125$; $\delta = -8$; $h = -11$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Reykjavik		1·9	179	i 0 33	− 1	—	—	i 0 44	P_g	0·8
De Bilt		19·5	120	i 4 31 a	0	—	—	—	—	e 9·0
Uccle		20·2	126	e 4 37	− 2	e 8 31	+10	—	—	10·0
Jena		22·8	114	e 5 7	+ 2	—	—	—	—	—
Stuttgart	Z.	23·7	120	e 5 15	+ 1	—	—	e 5 57	PPP	—
Cheb		23·7	114	e 5 22	+ 8	e 9 55	+28	—	—	e 14·0
Clermont-Ferrand		24·4	133	e 5 16	− 5	—	—	—	—	e 12·6
Prague		24·5	112	e 5 28	+ 6	—	—	—	—	e 13·0
St. Louis		46·7	270	e 10 27	PP	—	—	—	—	e 24·6

Long waves were also recorded at Paris, Aberdeen, and Kew.

Feb. 21d. 11h. 28m. 32s. Epicentre 16°·8N. 106°·1W. (as on 1943 Nov. 20d.).

$A = -·2656$, $B = -·9203$, $C = +·2872$; $\delta = -2$; $h = +5$;
$D = -·961$, $E = +·277$; $G = -·080$, $H = -·276$, $K = -·958$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Manzanillo	N.	2·8	37	e 0 30	−17	—	—	—	—	—
Guadalajara	N.	4·7	33	0 57	−17	—	—	—	—	—
Tacubaya	N.	7·0	68	e 1 42	− 4	—	—	—	—	—
Tucson		16·0	345	i 3 41	− 7	i 6 44	− 2	—	—	e 7·6
La Jolla	Z.	18·9	331	i 4 39	+15	—	—	—	—	—
Palomar	Z.	19·1	332	i 4 27	0	—	—	—	—	—
Mount Wilson		20·4	331	i 4 36	− 5	—	—	—	—	—
Pasadena		20·4	331	i 4 44	+ 3	i 8 27	+ 2	—	—	e 10·2
Santa Barbara	Z.	21·4	329	e 4 51	0	—	—	—	—	—
Tinemaha		22·9	335	i 5 7	+ 1	e 9 15	+ 2	—	—	—
Fresno	N.	23·3	332	e 5 13	+ 3	—	—	—	—	—
Salt Lake City		24·4	350	e 5 18	− 3	e 9 29	−10	e 5 56	PP	e 12·2
Lick	N.	24·6	329	e 5 28	+ 5	—	—	—	—	—
Santa Clara		24·8	329	i 5 31	+ 6	e 10 9	+23	—	—	—
Cape Girardeau	N.	25·1	32	e 5 27	− 1	—	—	e 8 32	?	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Lincoln		25·3	19	e 6 52	?	—	—	—	—	e 12·4
Berkeley		25·4	329	i 5 35	+ 4	i 10 0	+ 4	—	—	e 14·8
St. Louis		25·8	29	i 5 25	− 9	e 9 47	−15	i 5 50	PP	10·5
Ukiah		26·8	330	e 6 2	+18	e 10 23	+ 4	—	—	e 13·1
Rapid City		27·3	5	e 5 50	+ 2	e 9 7	?	e 6 35	PP	i 13·6
Columbia		28·3	47	e 5 52	− 5	e 10 38	− 5	—	—	e 16·1
Bozeman		29·1	353	—	—	e 10 50	− 6	—	—	e 15·0
Chicago		29·6	28	e 6 54	+45	e 10 51	−13	—	—	e 13·9
New Kensington		32·9	39	e 7 37	+59	e 12 30	+34	—	—	e 19·4
Victoria		34·7	340	—	—	e 12 14	−10	—	—	19·5
Saskatoon		35·3	359	—	—	e 13 28?	?	—	—	18·5
Philadelphia		35·4	43	e 8 31	PP	e 12 54	+20	—	—	e 15·2
Fordham		36·7	43	e 7 3	− 7	—	—	—	—	e 20·1
San Juan		38·1	81	e 7 34	+12	e 13 7	− 9	e 15 11	SS	e 17·9
Ottawa		38·2	35	7 15	− 8	13 1	−16	15 28	SS	19·5
Weston		39·1	42	e 7 26	− 5	—	—	—	—	—
Bermuda		40·5	60	e 7 40	− 2	—	—	—	—	e 22·8
Huancayo		41·8	131	e 8 46	+53	e 14 44	+33	e 9 44	PP	e 18·1
Seven Falls		41·9	36	e 9 28	PP	e 13 58	−15	—	—	21·5
Sitka		46·2	339	—	—	e 15 8	− 7	e 18 30	SS	e 23·4
La Paz	z.	50·0	129	9 17	+19	—	—	—	—	27·5
Bergen	E.	85·7	27	—	—	e 22 28?	−46	—	—	—
De Bilt		89·3	35	—	—	e 23 28	[− 1]	—	—	e 49·5

Additional readings :—
Tucson i = 3m.53s., e = 6m.20s., eS = 6m.41s.
Berkeley iSZ = 10m.15s., iE = 14m.1s.
St. Louis iZ = 5m.30s. and 6m.0s., eE = 12m.26s., eS_cPE = 13m.15s.
Chicago e = 10m.42s.
San Juan e = 12m.32s.
Long waves were also recorded at Oaxaca, Seattle, Kew, and Stuttgart.

Feb. 21d. 15h. 26m. 28s. Epicentre 66°·0N. 22°·0W. (as at 0h.).

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Reykjavik		1·9	179	0 4	?	—	—	i 0 41	P_g	0·8
Copenhagen		19·4	104	e 4 43	+13	—	—	—	—	9·5
De Bilt		19·5	120	i 4 32 a	+ 1	—	—	e 4 55	PPP	e 9·5
Uccle		20·2	126	e 4 40	+ 1	e 8 32	+11	—	—	e 10·0
Paris		21·5	131	e 4 49	− 3	e 8 47	0	—	—	11·5
Jena		22·8	114	e 5 7	+ 2	e 8 39	−32	e 9 38	SS	—
Strasbourg		23·4	122	5 12	+ 1	e 9 29	+ 8	—	—	—
Stuttgart		23·7	120	e 5 16	+ 2	e 9 42	+15	—	—	e 12·1
Cheb		23·7	114	e 5 25	+11	e 9 52	+25	—	—	e 14·5
Basle		24·2	123	e 5 18	− 1	e 9 49	+14	—	—	—
Clermont-Ferrand		24·4	133	e 5 12	− 9	—	—	—	—	e 12·0
Prague		24·5	112	e 5 32?	+10	—	—	—	—	e 10·5
Zürich		24·7	123	e 5 23 k	− 1	—	—	—	—	—
St. Louis	E.	46·7	270	—	—	e 15 7	−15	—	—	e 23·8
Tucson		60·6	284	e 10 17	+ 2	—	—	e 30 4	Q	e 34·5

Jena gives also eP?E = 5m.12s., eN = 8m.18s.
Long waves were also recorded at Sitka, Scoresby Sund, and at other European stations.

Feb. 21d. 17h. 33m. 43s. Epicentre 66°·0N. 22°·0W. (as at 15h.).

	Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
	°	°	m. s.	s.	m. s.	s.	m. s.		m.
Reykjavik	1·9	179	0 31	− 3	i 0 49	−10	i 0 44	P_g	e 1·2
Copenhagen	19·4	104	e 4 42	+12	8 35	+31	—	—	10·3
De Bilt	19·5	120	i 4 30	− 1	—	—	—	—	e 9·8
Uccle	20·2	126	e 4 41	+ 2	e 8 17?	− 4	—	—	e 10·3
Strasbourg	23·4	122	5 17	+ 6	—	—	—	—	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Stuttgart		23·7	120	e 5 14	0	e 9 41?	+14	—	—	e 12·5
Cheb		23·7	114	e 8 17?	?	—	—	—	—	e 15·3
Clermont-Ferrand		24·4	133	e 5 14	− 7	—	—	—	—	e 12·3
Prague		24·5	112	e 5 28	+ 6	—	—	—	—	e 13·3
Zürich		24·7	123	e 5 22	− 2	—	—	—	—	—
St. Louis		46·7	270	e 8 22	−10	—	—	—	—	e 24·0
Tucson		60·6	284	e 10 12	− 3	—	—	i 10 15	P	e 34·7
Riverside	z.	61·6	291	i 10 23	+ 1	—	—	—	—	—
Palomar	z.	61·9	289	i 10 17	− 7	—	—	i 10 24	?	—

Long waves were also recorded at Aberdeen, Kew, and Paris.

Feb. 21d. Readings also at 0h. (Tacubaya and Wellington), 7h. (Lick), 8h. (Cheb, Prague, Stuttgart, Kew, and De Bilt), 9h. (Bombay, Calcutta, New Delhi, and Istanbul), 10h. (near Granada and Alicante), 11h. (Tacubaya, Tucson, Riverside, Tinemaha, Pasadena, and Palomar), 12h. (Tinemaha, Tucson, Tacubaya, Guadalajara, Manzanillo, and near Alicante), 13h. (near Berkeley, Fresno, Branner, San Francisco, Santa Clara, and Lick (2)), 14h. (De Bilt, Triest, Zürich, Stuttgart, Belgrade, Ksara, Cheb, Prague, Bucharest, and near Istanbul (4)), 15h. (Jena, Stuttgart, Aberdeen, Stonyhurst, and near Alicante), 16h. (2) and 19h. (Istanbul), 20h. (St. Louis, Prague, Stuttgart, Uccle, De Bilt, Kew, Aberdeen, and Balboa Heights), 21h. (Riverview, Prague, Stuttgart, and De Bilt), 23h. (Istanbul (2)).

Feb. 22d. Readings at 0h. (Kew, De Bilt, Stuttgart, and near Istanbul), 1h. (near Bogota), 2h. (Bogota, Aberdeen, De Bilt, Stuttgart, and Istanbul), 3h. (Stuttgart), 4h. (Istanbul and near San Juan), 6h. (Istanbul), 7h. (Tinemaha, Pasadena, Palomar, Tucson, Huancayo, and near Balboa Heights), 16h. (Stuttgart (2) and De Bilt), 21h. (near Ottawa), 23h. (Riverside and Tucson).

Feb. 23d. 12h. 25m. 6s. Epicentre 51°·7N. 178°·5W. (as on 1943 June 28d.).

$A = -·6221$, $B = -·0163$, $C = +·7828$; $\delta = +5$; $h = -6$;
$D = -·026$, $E = +1·000$; $G = -·782$, $H = -·020$, $K = -·622$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
College		20·6	38	e 4 47	+ 4	e 8 35	+ 6	—	—	e 9·9
Victoria		34·9	73	—	—	e 12 20	− 7	—	—	15·9
Saskatoon		42·6	60	—	—	e 17 58	SS	—	—	25·9
Santa Barbara	z.	45·0	88	e 8 19	0	—	—	—	—	—
Pasadena		46·1	87	i 8 27a	− 1	—	—	—	—	e 19·6
Riverside		46·7	87	i 8 31a	− 1	—	—	10 4	PP	—
Palomar	z.	47·5	88	i 8 37a	− 1	—	—	—	—	—
La Jolla		47·6	88	e 8 38	− 1	—	—	—	—	—
Tucson		52·0	84	i 9 12	− 1	—	—	—	—	e 24·9
St. Louis		59·9	65	i 10 9	− 1	e 18 14	− 7	i 10 34	pP	e 28·6
Harvard		66·9	50	i 10 54	− 2	—	—	—	—	—
Copenhagen		72·6	355	11 32	+ 1	—	—	—	—	—
Jena		77·4	353	e 12 1	+ 3	—	—	—	—	—
Stuttgart	z.	79·7	356	i 12 11	0	—	—	—	—	—
Zürich		81·1	356	e 12 9	− 9	—	—	—	—	—
Clermont-Ferrand		82·9	359	e 12 30	+ 2	—	—	—	—	—
Bombay	N.	86·4	297	i 12 47	+ 2	e 23 11	−10	—	—	—
Fort de France		94·5	59	e 13 23	0	—	—	—	—	—

Additional readings :—
Riverside i = 8m.52s. and iZ = 9m.2s.
Tucson i = 9m.36s. and 10m.25s., e = 14m.40s.
St. Louis iZ = 10m.17s. and 10m.25s., eE = 18m.33s., esSE = 18m.54s., eN = 19m.41s., eE = 19m.54s.
Harvard i = 11m.23s.
Bombay eN = 23m.35s.
Long waves were also recorded at Sitka, Wellington, and De Bilt.

Feb. 23d. Readings also at 0h. (Tuai and Wellington), 1h. (Kew, Cheb, Prague, Paris, Aberdeen, Stuttgart, De Bilt, Uccle, Clermont-Ferrand, Copenhagen, Bergen, Granada, Istanbul, St. Louis, and Tucson), 2h. (Istanbul), 4h. (Stuttgart), 5h. (Auckland, Wellington, Huancayo, La Paz, St. Louis, and Tucson), 6h. (Kew, De Bilt, Uccle, Granada, New Delhi, Riverview, Christchurch, and Wellington) 11h. (Stuttgart), 12h. (Christchurch and Riverview), 15h. (Istanbul), 20h. (Brisbane, Sydney, Tucson, Pasadena, Riverside, and Tinemaha), 21h. (Istanbul, near Sitka, and near Fort de France), 22h. (near Granada, Alicante, Almeria, Malaga, and Toledo).

Feb. 24d. Readings at 1h. (Auckland and Wellington), 2h. (Istanbul), 3h. and 8h. (near Mizusawa), 11h. (near Istanbul), 12h. (Tucson, Pasadena, Riverside, Palomar, Riverview, Christchurch, Wellington, Auckland, and near Apia), 20h. (Huancayo and La Paz).

Feb. 25d. 7h. Undetermined shock.

College eP =34m.25s., e =34m.36s., eS =35m.42s., eL =36m.7s.
Sitka e =39m.40s., eL =40m.6s.
Tinemaha iPEZ =40m.13s.a.
Pasadena eP =40m.33s., eLZ =55·8m.
Riverside iPZ =40m.36s.
Palomar iPZ =40m.43s.
Tucson eP =41m.8s., i =41m.31s., eL =57m.48s.
Ottawa eZ =41m.18s., L =56m.
Shawinigan Falls e =41m.19s., L =57m.
Florissant ePE =41m.20s., eSSE =51m.48s.
St. Louis iPZ =41m.22s., eSSN =52m.29s., eLE =56m.3s.
Rapid City e =41m.37s., eS =47m.34s., eL =53m.33s.
Harvard i =41m.49s., e =60m.24s.
Stuttgart eZ =43m.11s.
Scoresby Sund 46m.25s., L =54m.
Long waves were also recorded at New Delhi, Bermuda, and at other American stations.

Feb. 25d. Readings also at 0h. (Granada and Helwan), 3h. (Stuttgart, near Basle, and Zürich), 5h. (near Apia), 6h. (St. Louis, Pasadena, Palomar, and Tucson (2)), 14h. (near Fresno), 16h. (near Bacau, Bucharest, Campulung, and Focsani), 17h. (Stuttgart), 20h. (near Strasbourg), 22h. (near Fort de France).

Feb. 26d. 22h. Undetermined shock.

College eP =24m.32s., eS? =25m.12s., e =25m.22s., iL =25m.32s.
Tinemaha iPNZ =29m.53s.
Santa Barbara iPZ =30m.5s.
Rapid City e =30m.6s., eS =36m.34s., eL =41m.10s.
Pasadena iP =30m.12s., eLZ =40·5m.
Riverside iPNZ =30m.16s.
Tucson iP =30m.53s., i =31m.13s. and 33m.30s., eL =48m.14s.
Florissant ePZ =31m.27s., eL =44m.54s.
St. Louis ePZ =31m.27s., eZ =32m.18s., eLE =45m.18s.
Ottawa e =31m.40s., L =46m.
Shawinigan Falls e =31m.46s., L =46m.
Seven Falls e =31m.51s., L =46m.
Fordham iP =32m.14s., eL =49·6m.
Weston eP =32m.16s.
Saskatoon e =33m.36s., L =37m.
Salt Lake City e =35m.23s., eL =41m.24s.
Long waves were also recorded at Riverview, San Juan, Bermuda, and other American stations.

Feb. 26d. Readings also at 3h. (near Apia), 20h. (Stuttgart and near Buffalo), 21h. and 23h. (Stuttgart).

Feb. 27d. Readings at 4h. and 7h. (La Paz), 20h. (Pasadena, Riverside, near La Jolla, and Tucson), 21h. (Triest), 23h. (Kodaikanal).

Feb. 28d. Readings at 0h. (Kodaikanal), 1h. (Stuttgart, Cheb, Helwan, Tananarive, Bombay (2), New Delhi (2), and Colombo (2)), 2h. (Riverside, Tinemaha, Tucson, Stuttgart, Tananarive, New Delhi, Calcutta, Kodaikanal, and Colombo), 3h. (Huancayo and Istanbul), 4h. (La Paz and near Bogota), 10h. (near Fresno), 15h. (La Paz), 16h. (Pasadena, Tinemaha, Tucson, and St. Louis), 17h. (St. Louis, Tucson (2), Riverside (2), Pasadena, Tinemaha (2), near College, and near La Paz), 18h. (Florissant), 20h. (Riverview), 21h. (Calcutta), 22h. (near La Paz), 23h. (Calcutta).

Feb. 29d. 3h. 41m. 53s. Epicentre 13°·9S. 70°·0W. Depth of focus 0·015.
(as on 1943, Feb. 16d.).

$A = +\cdot3321$, $B = -\cdot9126$, $C = -\cdot2387$; $\delta = +11$; $h = +6$;
$D = -\cdot940$, $E = -\cdot342$; $G = -\cdot082$, $H = +\cdot224$, $K = -\cdot971$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Huancayo		5·5	289	i 1 21	0	i 2 2	−22	—	—	—
Montezuma		8·7	173	e 2 11	+ 7	e 3 26	−15	—	—	e 5·3
La Plata		23·6	155	4 52	− 8	8 49	−13	5 25	PP	10·3
Balboa Heights		24·6	338	i 5 15	+ 5	i 9 31	+13	—	—	i 15·9
Fort de France		29·8	19	e 5 59	+ 2	10 35	− 8	e 6 59	PP	—
Port au Prince		32·3	356	i 6 22	+ 3	i 11 22	0	12 37	?	i 16·5
San Juan		32·3	8	i 6 22	+ 3	i 11 18	− 4	e 6 53	pP	i 18·1
Vera Cruz		41·8	322	—	—	12 43	−63	—	—	—
Tacubaya		43·8	319	i 7 56	+ 1	—	—	—	—	—
Bermuda		46·3	7	e 8 17	+ 3	i 14 51	0	e 9 44	PP	i 18·6
Mobile		47·6	339	i 8 29	+ 4	i 15 9	0	—	—	—
Columbia		48·8	348	e 8 33	− 1	i 15 23	− 3	i 18 7	S_cS	e 21·3
Georgetown		52·9	354	i 9 6	+ 1	i 16 22	0	i 10 5	pP	—
Philadelphia		53·8	356	i 9 13	+ 1	i 16 36	+ 1	e 10 5	pP	e 21·7
Cape Girardeau	E.	54·2	342	i 9 14	0	e 16 35	− 5	e 10 4	P_cP	—
Fordham		54·6	358	i 9 17	0	i 16 44	− 1	i 10 18	P_cP	—
New Kensington		54·9	351	e 9 23	+ 3	i 16 51	+ 2	i 18 52	S_cS	e 24·3
St. Louis		55·6	341	i 9 24	− 1	i 16 54	− 4	i 10 21	pP	e 26·8
Florissant		55·8	341	i 9 26	0	i 16 58	− 3	i 10 23	pP	e 26·2
Harvard		56·1	359	i 9 29k	+ 1	i 17 4	− 1	i 10 20	pP	—
Buffalo		57·1	353	9 33	− 2	i 14 7	?	e 10 9	pP	—
Chicago		57·7	344	i 9 37	− 2	i 17 17	− 9	e 10 42	P_cP	e 25·8
Vermont		58·1	357	e 9 48	+ 6	i 17 29	− 2	e 10 46	P_cP	e 28·0
Halifax		58·5	6	e 12 15	PP	e 22 7?	SS	e 15 31	?	—
Ottawa		59·2	356	9 50	0	i 17 45	− 1	e 10 54	P_cP	e 27·1
Shawinigan Falls		60·2	358	9 58	+ 1	17 58	0	—	—	25·1
Tucson		60·3	323	i 9 55	− 2	e 17 52	− 8	i 10 38	pP	e 24·9
Seven Falls		60·7	359	10 1	+ 1	18 5	0	e 19 27	sS	29·1
La Jolla		64·8	317	i 10 25k	− 2	e 18 52	− 4	i 10 56	P_cP	—
Boulder City		65·2	321	i 10 28	− 2	i 18 59	− 2	i 20 3	S_cS	—
Rapid City		65·2	335	i 10 29	− 1	i 18 58	− 3	i 12 40	PP	e 26·8
Riverside		65·6	318	i 10 31k	− 1	e 19 4	− 2	i 11 13	pP	—
Pasadena		66·2	318	i 10 34k	− 2	i 19 10	− 3	i 11 21	pP	e 26·5
Salt Lake City		66·8	327	i 10 39	− 1	i 19 17	− 3	e 23 57	SS	e 27·5
Santa Barbara		67·4	317	i 10 42k	− 2	—	—	i 10 57	pP	—
Logan		67·5	328	i 10 42	− 2	i 19 24	− 5	i 10 54	pP	e 28·5
Tinemaha		68·1	320	i 10 46k	− 2	e 19 34	− 2	i 11 24	pP	—
Fresno	N.	68·8	319	i 10 49	− 3	—	—	—	—	—
Bozeman		69·9	331	e 11 1	+ 2	e 19 59	+ 2	e 13 18	PP	e 28·4
Lick		70·4	318	e 11 1	− 1	e 20 1	− 2	—	—	—
Santa Clara		70·6	318	i 11 1	− 2	i 20 4	− 1	—	—	—
Butte		70·9	331	i 12 14	+69	i 21 17	+68	e 13 50	PP	e 29·4
Berkeley		71·1	318	i 11 4	− 2	e 20 6	− 5	—	—	—
Ukiah		72·4	320	e 11 13	− 1	e 20 16	−10	e 13 40	PP	e 30·1
Saskatoon		73·0	338	11 18	+ 1	i 20 31	− 1	27 7?	?	30·1

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Spokane		74·4	329	i 11 23	− 3	i 20 46	− 2	—	—	—
Seattle		77·0	327	e 13 55	?	e 23 19	?	e 16 38	PPP	e 32·7
Lisbon		77·2	45	11 44	+ 3	i 21 27	+ 8	—	—	33·4
Victoria		78·1	327	i 11 47	+ 1	i 21 29	+ 1	—	—	33·1
San Fernando		78·2	48	e 11 51	+ 4	i 21 40	+11	i 13 11	pP	—
Granada		80·4	48	i 12 1k	+ 2	21 55	+ 2	12 45	pP	42·8
Tortosa		84·8	47	e 12 20	− 1	i 22 29	− 8	22 43	S_cS	—
Barcelona		86·2	46	—	—	i 22 53	+ 3	—	—	—
Clermont-Ferrand		88·4	42	i 12 41	+ 2	i 22 50	[− 3]	i 16 16	PP	—
Stonyhurst		88·4	33	12 40	+ 1	i 23 12	+ 1	i 24 21	PS	—
Kew		88·6	36	i 12 40k	0	i 23 17	+ 4	i 13 29	pP	e 46·1
Sitka		89·0	330	i 12 38	− 3	i 23 12	− 4	e 16 18	PP	e 34·9
Paris		89·2	39	i 12 43	+ 1	e 23 0	[+ 2]	16 21	PP	43·1
Aberdeen		90·1	31	i 12 27	−20	i 22 58	[− 5]	23 32	S_eS	37·5
Scoresby Sund		90·4	15	i 12 50	+ 2	i 23 30	+ 1	24 39	PS	—
Uccle		91·0	38	e 12 51	0	i 23 6	[− 3]	e 13 38	pP	e 39·1
Basle		92·0	42	e 12 57	+ 2	e 23 4	[−10]	—	—	—
De Bilt		92·0	37	i 12 58k	+ 3	i 23 13	[− 1]	e 13 42	pP	—
Milan		92·4	44	17 34	PP	23 53	+ 6	—	—	—
Strasbourg		92·4	40	e 13 7	+10	i 23 47	0	—	—	—
Zürich		92·5	42	e 13 0k	+ 2	e 23 17	[0]	e 13 47	pP	—
Chur		93·0	43	e 13 1	+ 1	e 23 18	[− 2]	e 16 50	PP	—
Stuttgart		93·4	41	i 13 3k	+ 1	e 23 53	− 2	e 13 49	pP	—
Bergen		94·9	28	—	—	e 23 34	[+ 4]	e 24 19	S	—
Jena	N.	95·4	39	e 14 7	+56	—	—	—	—	—
Triest		95·5	45	e 17 9	PP	i 23 31	[− 2]	—	—	—
Cheb		95·8	40	e 14 5	+52	e 23 37	[+ 1]	e 25 43	PS	—
Potsdam		96·7	37	—	—	i 23 40	[0]	i 24 26	S	e 40·1
Prague		97·0	40	e 17 22	PP	e 24 32	+ 6	i 25 57	PS	—
Copenhagen		97·2	34	i 13 21	+ 2	i 24 33	+ 5	17 51	PP	—
College		97·4	335	e 16 30	?	e 23 34	[−10]	e 24 20	S	e 45·2
Wellington		98·9	223	13 20k	− 7	24 39	− 3	14 8	pP	45·1
Christchurch		99·2	220	13 24	− 4	e 24 15	[+22]	e 17 26	PP	27·1
Arapuni		99·8	227	—	—	24 7?	[+11]	—	—	—
Belgrade		100·0	47	—	—	23 55	[− 2]	e 27 6	PPS	—
Upsala	E.	100·7	31	e 18 48	?	i 23 54	[− 6]	i 24 55	S	—
Auckland		100·9	228	17 54	PP	24 49	−10	27 37	PPS	41·1
Bucharest		103·9	47	e 18 0	PP	i 24 14	[− 1]	i 19 27	PP	31·1
Suva		105·4	247	17 37	?	25 22	−14	i 28 57?	PPS	43·1
Helwan		106·5	63	e 18 34?	PP	i 27 34	PS	28 42	PPS	—
Tananarive		110·4	116	24 45	SKS	(24 45)	[+ 1]	28 9	PS	34·0
Ksara		110·7	59	e 18 15	[− 2]	e 24 49	[+ 4]	e 34 29	SS	—
Riverview		118·4	218	i 19 43	PP	i 29 11	SP	i 30 31	PPS	—
Mizusawa	E.	142·8	318	e 19 9?	[−10]	e 22 40	PKS	—	—	—
	N.	142·8	318	19 13	[− 6]	e 22 48	PKS	—	—	—
Bombay		144·0	77	i 19 21	[+ 1]	26 17	[+ 2]	22 38	PP	—
New Delhi	N.	146·3	59	i 19 25	[0]	29 25	SKKS	22 51	PP	42·7
Colombo	E.	149·6	100	e 17 37	?	29 44	SKKS	—	—	—
Calcutta	N.	157·7	64	e 19 44	[+ 3]	i 30 30	SKKS	—	—	—

Additional readings :—
La Plata Z = 5m.29s., E = 5m.55s., N = 6m.58s., SE = 8m.45s., SSZ = 9m.49s., SSEN = 9m.55s.
San Juan isP = 7m.26s., ePP = 7m.44s., isS = 12m.46s., i = 13m.30s.
Bermuda ePP = 8m.56s., i = 9m.14s., epPP = 10m.49s.
Columbia eS = 15m.19s., e = 19m.40s.
Georgetown isS = 18m.36s.
Philadelphia e = 9m.35s., i = 12m.11s., iS_cP = 13m.58s., iS_cS = 18m.43s., e = 20m.5s.
Cape Girardeau eE = 14m.16s. and 18m.40s.
Fordham e = 12m.18s., i = 14m.0s., 16m.39s., 18m.39s., and 18m.43s., e = 39m.21s.
New Kensington e = 15m.33s.
St. Louis iZ = 10m.5s., iP_cPZ = 10m.9s., iZ = 10m.53s. and 11m.18s., iPPZ = 11m.32s., iZ = 12m.14s., ipPPZ = 12m.34s., ipPPPPZ = 14m.4s., iSE = 16m.47s., iE = 17m.20s., iSPE = 18m.5s., iE = 18m.25s., isSE = 18m.54s., iS_cSE = 19m.39s., iSSE = 20m.50s., esSS?E = 22m.50s.

Continued on next page.

Florissant iZ =10m.9s., P_cP =10m.16s., iPPZ =11m.37s., ipPPZ =12m.30s., ipPPPZ =14m.5s., iSE =16m.51s., eSPE =17m.38s., iE =18m.9s., isSE =18m.56s., iS_cSE =19m.42s., iE =20m.18s., iSSE =20m.51s. and 21m.0s., eE =22m.2s., esSS =22m.39s., eE =25m.6s.
Harvard isS =18m.58s., eSS =20m.59s., eSSS =23m.1s.
Buffalo ePPP =10m.23s., e =10m.41s.
Chicago ePPP =13m.15s., isS =18m.38s., i =19m.9s., e =21m.7s.
Vermont e =12m.56s., i =13m.18s., isS =18m.59s., iSS =21m.36s., e =23m.38s.
Ottawa e =14m.21s., i =19m.19s., SS =21m.41s., SSS =24m.7s.
Tucson i =11m.42s., 12m.20s., and 13m.42s., iS =16m.58s., isS =19m.27s., e =21m.22s.
Seven Falls SS =22m.1s.
La Jolla eS_cSN =20m.4s., ePKP,PKPZ =39m.13s.
Rapid City epPP =13m.42s., i =22m.58s.
Riverside iZ =10m.50s., iP_cPZ =10m.59s., eS_cSEN =20m.4s., iPKP,PKPZ = 39m. 11s.
Pasadena iZ =10m.49s., iP_cPZ =11m.2s., isPZ =11m.45s., eZ =12m.45s., iS_cSE = 20m.5s., isSE =20m.31s., eSSEN =23m.39s., ePKP,PKPZ =38m.38s., iPKP, PKPZ =39m.10s., eZ =42m.7s., eSKP,PKPZ =42m.32s.
Salt Lake City e =12m.34s. and 22m.20s.
Santa Barbara ePKP,PKPZ =39m.6s.
Logan e =27m.17s.
Tinemaha iZ =11m.5s., iS_cSEN =20m.34s., iPKP,PKPEZ =39m.1s., iZ =39m.12s., eSKP,PKPZ =42m.9s.
Bozeman i =20m.43s., e =24m.5s.
Butte i =12m.46s., iS =21m.20s., eSS =25m.53s.
Ukiah e =21m.1s., eSS =25m.3s.
Spokane i =11m.36s. and 12m.20s.
Seattle eSS =26m.19s., e =28m.42s., eSSS =30m.9s.
Lisbon SZ =21m.30s., N =22m.54s., SSE =27m.25s.
San Fernando eE =12m.55s., iE =13m.18s., iE =22m.51s., isS?E =23m.50s.
Granada iPP =15m.38s., ipPP =16m.11s., SKKS =22m.16s., iS =23m.11s., PS = 23m.35s., sS =23m.57s., SS =29m.2s., SSS =33m.10s.
Tortosa iN =13m.23s.
Clermont-Ferrand e =16m.46s.
Stonyhurst PP =17m.32s., PPP =18m.16s., iSKS =22m.53s., iSKKS =23m.0s., iS_eS =23m.16s., i =25m.21s. and 25m.39s., SS =29m.21s., PKKP =30m.32s., SSS =33m.7s.?.
Kew isPZ =13m.52s., iPPZ =16m.17s., iEZ =17m.21s., and 22m.13s., iSKS =22m.51s., iSKKS =23m.10s., iPS =24m.24s., iPPS =24m.53s., i =25m.15s., eEZ = 27m.54s., eSSZ =29m.9s., eSSEN =29m.59s.?, eSSSEN =32m.59s.?, eSSSZ = 33m.32s., eQEN =37m.57s.
Sitka eSKS =22m.19s., isS =24m.14s., e =27m.56s., iSS =29m.15s., eSSS =32m.44s., i =33m.27s.
Aberdeen iEN =13m.42s. and 24m.37s., iE =29m.27s.
Scoresby Sund 13m.38s., i =14m.0s., 16m.59s., iSKS =23m.5s., 29m.15s.
Uccle ePPEN =16m.16s., iE =17m.38s., ePSE =24m.37s., iEN =24m.51s. and 26m.9s., eSSSEN =32m.7s.?.
De Bilt iZ =16m.43s., eZ =17m.17s., iZ =17m.47s., ePP =19m.31s., eZ =24m.57s.
Zürich ePP =16m.37s.
Stuttgart ePPZ =16m.47s., epPPZ =17m.41s., iSKS =23m.19s., iSPZ =25m.17s., iZ =26m.11s., isSP =26m.17s., eSS =30m.23s., esSS =31m.17s., ePKP,PKPZ = 38m.27s.
Bergen eN =26m.15s., eE =26m.32s., eZ =26m.59s., eEN =32m.24s.
Cheb e =18m.7s.? and 27m.1s.
Potsdam iSKKSE =24m.4s., iSPE =25m.52s.
Prague i =18m.25s., iSKS =23m.44s., e =27m.7s., eSS =31m.7s., eSSS =35m.7s.
Copenhagen 22m.22s., i =23m.42s., 25m.52s., and 31m.23s.
College e =26m.35s., eSS =31m.9s., e =33m.53s.
Wellington sPZ =14m.34s., PP =17m.19s., pPPZ =18m.15s., SP?Z =25m.54s., PS?Z = 26m.31s., SS =31m.7s.
Christchurch eEZ =18m.2s., eE =21m.7s., iZ =26m.1s.
Belgrade e =30m.20s.
Upsala iE =24m.30s., eE =26m.30s. and 31m.57s.
Auckland SS =31m.53s.
Bucharest iPPN =19m.31s., $ePcPN$ =19m.53s., iSSN =26m.57s., iSSE =27m.6s., iN =27m.36s., iS_cSN =28m.4s., iEN =28m.34s.
Helwan eEZ =19m.13s., PKP?E =21m.52s., SKP?E =24m.26s., PPP?E =25m.16s., SKKS?E =29m.4s.
Tananarive PP =25m.14s., eS =29m.7s.
Ksara e =25m.53s.
Riverview eN =30m.10s., eE =30m.17s., eSSE =35m.51s., eSSN =36m.5s., eE = 40m.1s.
Bombay PPN =22m.41s., SKKSE =29m.11s., SSE =41m.6s.
New Delhi iN =19m.54s. and 30m.2s., SSN =34m.13s., SSSN =36m.43s.

Feb. 29d. 16h. 28m. 4s. Epicentre 0°·3N. 75°·3E.

Felt in Ceylon and Southern India.
Government of India Seismological Bulletin, Jan. to March 1944, Bombay 1945, p. 3.
Epicentre 0°·5N. 75°·5E.

$A = +·2538$, $B = +·9673$, $C = +·0052$; $\delta = +11$; $h = +7$;
$D = +·967$, $E = -·254$; $G = +·001$, $H = +·005$, $K = -1·000$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Colombo	E.	8·0	35	2 0	0	i 3 16	−17	—	—	—
Bombay		18·6	353	i 4 25	+ 4	i 8 3	+17	5 47	?	—
Calcutta	N.	25·5	30	i 5 5k	−27	i 9 58	+ 1	i 5 18	pP	—
New Delhi	E.	28·2	4	e 6 9k	+13	i 10 54	+13	6 43	PP	13·7
	N.	28·2	4	i 6 0k	+ 4	i 10 44	+ 3	6 34	PP	13·6
Dehra Dun	N.	30·0	5	i 6 9k	− 3	i 11 6	− 4	—	—	i 15·5
Tananarive		33·3	235	6 40	− 1	11 56	− 6	7 42	PP	16·2
Ksara		49·8	316	e 8 58	+ 2	e 16 8	+ 2	—	—	—
Perth		50·0	135	8 58	0	16 16	+ 7	10 56	PP	—
Helwan		51·1	310	i 9 6k	0	15 53	−31	10 47	PP	23·1
Johannesburg		52·6	237	e 9 20	+ 2	e 16 44	0	e 10 50	PP	e 22·3
Zi-ka-wei	N.	53·4	51	e 9 23	− 1	17 7	+12	—	—	27·2
Istanbul		58·2	321	10 6	+ 8	18 1	+ 2	13 51	PP	—
Hukuoka		61·3	52	10 12	− 8	e 18 37	− 2	—	—	25·1
Kumamoto		61·3	53	10 22	+ 2	18 53	+14	—	—	—
Miyazaki		61·5	55	10 36	+15	13 45	PPP	—	—	—
Bucharest		61·8	323	i 10 23a	0	i 18 46	0	i 12 32	PP	28·9
Hamada		63·0	51	10 36	+ 5	19 12	+11	—	—	—
Kôti		63·7	53	10 35	− 1	19 12	+ 2	—	—	—
Sumoto		65·1	52	i 10 44	− 1	19 38	+11	—	—	—
Wakayama		65·2	52	10 46	+ 1	19 42	+14	—	—	—
Kobe		65·4	52	10 46	− 1	19 29	− 1	—	—	—
Toyooka		65·4	51	10 47	0	19 31	+ 1	—	—	—
Siomisaki		65·5	54	e 10 47	0	19 32	0	—	—	—
Belgrade		65·6	320	i 10 47	− 1	i 19 28	− 5	i 13 26	PP	e 32·2
Osaka		65·7	52	10 49	+ 1	19 28	− 6	—	—	—
Toyama		67·6	50	11 11	+10	20 8	+11	—	—	—
Kohu		68·3	52	11 6	+ 1	20 8	+ 2	—	—	—
Hunatu		68·4	52	11 4	− 2	19 40	−27	—	—	—
Misima		68·5	53	11 7	+ 1	20 18	+10	—	—	—
Yokohama		69·1	52	11 28	+18	20 4	−11	—	—	—
Tokyo		69·3	52	e 11 16	+ 5	e 20 25	+ 8	—	—	e 36·2
Triest		70·2	320	i 11 15	− 2	i 20 22	− 6	i 13 56	PP	e 33·9
Hukusima		70·4	50	11 26	+ 8	20 33	+ 3	—	—	—
Mizusawa	E.	71·2	49	11 27	+ 4	e 20 38	− 2	—	—	—
Prague		71·5	324	i 11 26a	+ 2	e 20 42	− 1	e 14 23	PP	e 31·9
Mori		71·7	46	e 11 9	−17	20 23	−22	—	—	e 35·8
Miyako		72·0	49	11 27	− 1	20 47	− 2	—	—	—
Sapporo		72·5	45	e 11 33	+ 3	20 54	0	—	—	—
Cheb		72·7	323	i 11 34	+ 2	i 21 1	+ 4	e 14 24	PP	e 39·9
Milan		73·2	318	i 11 36	+ 1	i 21 21	+19	14 34	PP	34·2
Potsdam		73·2	326	i 11 35	0	i 20 59	− 3	i 14 28	PP	e 28·9
Chur		73·4	320	e 11 35	− 1	e 20 58	− 7	—	—	—
Jena		73·5	324	e 11 32	− 4	e 21 2	− 4	e 14 22	PP	e 35·3
Upsala		74·1	334	11 36	− 4	21 0	−12	i 14 30	PP	e 34·9
Stuttgart		74·2	322	i 11 39a	− 1	i 21 7	− 7	i 14 16	PP	e 42·0
Zürich		74·2	320	i 11 40a	0	e 21 8	− 6	e 14 25	PP	—
Copenhagen		74·8	329	i 11 43	− 1	i 21 18	− 2	14 36	PP	—
Basle		74·9	320	e 11 44a	0	e 21 15	− 7	e 14 33	PP	—
Neuchatel		75·1	320	i 11 45	− 1	e 21 19	− 5	—	—	—
Strasbourg		75·1	321	i 11 45a	− 1	i 21 16	− 8	e 14 40	PP	30·9
Barcelona		77·2	313	i 11 58	+ 1	i 22 0	+13	—	—	31·0
Clermont-Ferrand		77·4	317	i 11 59	+ 1	e 22 23	PS	e 15 7	PP	e 43·0
De Bilt		77·6	324	i 12 0a	0	e 21 46	− 5	i 12 13	pP	e 35·9
Uccle		77·8	323	i 12 0a	− 1	i 21 50	− 3	i 12 12	pP	e 37·9

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	Supp.			L.
		°	°	m. s.	s.	m. s.	s.	m. s.			m.
Tortosa	E.	78·3	312	i 12 4	+ 1	21 59	0	15 12	PP		36·8
Riverview		78·4	125	i 12 4a	0	i 21 56	− 4	i 26 47	SS		i 36·1
Sydney		78·5	125	e 11 32	−32	i 21 56	− 5	e 11 56	P		e 35·9
Paris		78·5	320	i 12 4	0	i 21 56	− 5	15 12	PP		36·9
Brisbane		79·3	119	i 12 5a	− 4	i 22 0	− 9	i 14 39	PP		e 37·0
Bergen		80·0	332	i 12 4	− 9	22 21	+ 4	12 14	pP		31·9
Kew		80·8	323	i 12 18a	+ 1	i 22 22	− 3	i 15 24	PP		e 41·4
Granada		81·0	308	i 12 21a	+ 3	27 48	SS	15 27	PP		i 40·2
Stonyhurst		82·5	325	i 12 25	− 1	i 22 56	+14	i 12 39	pP		39·9
Aberdeen		82·9	328	12 29	+ 1	i 22 47	+ 1	i 15 25	PP		36·6
San Fernando	E.	83·0	307	i 12 29	+ 1	e 22 49	+ 2	i 15 53	PP		44·4
Lisbon		85·5	309	i 12 42k	+ 1	i 23 12	0	i 12 54	pP		49·6
Scoresby Sund		92·1	341	i 13 13	+ 1	24 19	+ 6	i 16 59	PP		—
Reykjavik		92·9	335	e 17 2	PP	e 32 26	?	—	—		e 47·4
Christchurch		95·5	135	13 26	− 2	24 40	− 2	17 15	PP		43·5
New Plymouth		97·0	130	13 40	+ 5	24 23	[+11]	—	—		—
Wellington		97·3	132	13 36k	0	24 8	[− 5]	17 16	PP		44·4
Auckland		97·8	127	13 51	+13	25 13	+11	17 44	PP		43·9
Arapuni		98·3	129	17 38	PP	24 2	[−17]	31 50	SS		41·9
College		107·9	18	e 18 59	PP	e 24 58	[− 5]	e 37 57	SS		e 41·7
Sitka		117·4	18	e 14 56	P	e 25 51	[+10]	e 20 1	PP		—
Halifax		122·3	327	e 18 8	[−49]	e 28 20	{+51}	e 48 56?	Q		68·9
Honolulu		123·9	64	e 20 49	PP	e 27 36	{− 4}	e 37 30	SS		e 50·2
Seven Falls		124·3	333	19 0	[− 1]	27 56	{+13}	20 44	PP		52·9
La Plata		124·5	227	19 19	[+18]	27 56	{+12}	21 2	PP		57·7
Shawinigan Falls		125·6	334	19 6	[+ 2]	—	—	21 6	PP		74·9
Vermont		127·4	322	e 21 0	PP	e 31 12	PS	i 38 7	SS		e 50·9
Saskatoon		127·7	2	e 20 59	PP	e 28 4	{− 1}	e 38 2	SS		54·9
Ottawa		127·8	335	19 7	[− 1]	31 8	PS	21 9	PP		e 60·9
Harvard		128·0	329	i 19 7	[− 1]	e 26 24	[+ 9]	i 21 12	PP		e 72·9
Victoria		128·8	16	19 36	[+26]	28 15	{+ 3}	21 23	PP		57·9
Seattle		129·8	15	e 24 6	PPP	—	—	—	—		e 56·5
Bermuda		130·2	315	e 21 23	PP	e 32 6	PS	e 39 10	SS		e 54·5
Fordham		130·4	330	e 19 13	[0]	i 33 22	PPS	i 21 26	PP		—
Buffalo		131·1	335	19 15	[+ 1]	—	—	e 21 31	PP		—
Philadelphia		131·7	329	e 21 27	PP	i 28 42	{+12}	e 38 57	SS		e 55·1
Pennsylvania		132·4	333	i 21 36	PP	i 22 46	PKS	—	—		—
Butte		133·4	7	e 23 5	PKS	e 29 36	{+55}	e 40 36	SS		e 66·1
New Kensington		133·4	335	e 21 47	PP	—	—	e 22 53	PKS		e 58·2
Georgetown		133·5	331	i 19 19	[0]	e 33 26	PPS	—	—		—
Bozeman		133·9	6	e 21 52	PP	i 22 56	PKS	e 39 34	SS		e 54·4
Fort de France		134·4	291	e 19 21	[+ 1]	—	—	—	—		—
Chicago		135·3	343	e 18 57	[−25]	e 40 7	SS	e 22 0	PP		e 61·2
Rapid City		135·8	358	i 19 24	[+ 1]	e 39 13	SS	e 22 5	PP		e 58·4
Ukiah		137·2	21	e 22 12	PP	e 28 44	{−20}	e 40 28	SS		e 56·2
Logan		137·7	7	e 19 21	[− 5]	e 40 7	SS	i 22 23	PP		e 58·1
San Juan		137·8	299	e 19 29	[+ 3]	e 40 39	SS	e 22 3	PP		e 56·0
Salt Lake City		138·6	8	e 19 26	[− 2]	e 40 21	SS	i 22 30	PP		c 62·1
Florissant		138·9	343	e 19 20	[− 9]	e 27 8	[+31]	e 22 18	PP		—
St. Louis	Z.	139·0	343	e 19 23	[− 6]	e 26 43	[+ 5]	i 22 18	PP		—
Columbia		139·3	330	e 20 3	[+34]	e 29 19	{+ 2}	e 22 26	PP		e 56·4
Santa Clara		139·3	21	i 19 30	[+ 1]	—	—	e 38 58	SS		e 75·9
Cape Girardeau		140·0	341	e 19 41	[+10]	e 23 8	PKS	e 22 25	PP		—
Tinemaha	Z.	140·7	17	i 19 28	[− 4]	—	—	i 22 34	PP		—
Pasadena		143·5	19	i 19 33a	[− 4]	e 41 20	SS	i 22 46	PP		e 55·9
Riverside		143·9	19	i 19 34a	[− 3]	—	—	e 22 58	PP		—
La Jolla		145·0	19	i 19 40	[+ 1]	—	—	—	—		—
Mobile		145·4	335	i 19 45	[+ 5]	—	—	—	—		—
Tucson		147·1	10	i 19 44	[+ 1]	i 26 36	[−14]	i 23 11	PP		e 66·3
Huancayo		148·6	247	e 19 48	[+ 3]	e 26 48	[− 4]	i 23 18	PP		e 61·5

Additional readings :—
Bombay PPPN = 5m.53s., iSSN = 8m.35s.
Calcutta iSN = 9m.40s., SSN = 11m.5s.
New Delhi PPPN = 6m.54s., P_cPN = 9m.18s., SSN = 11m.1s., iN = 11m.33s.

Continued on next page.

Tananarive EN =6m.51s., i =8m.18s., SS =13m.54s., N =14m.32s., 15m.36s., and 15m.52s.
Perth SS =19m.44s. and SSS =20m.56s.
Helwan PPPE =11m.25s.
Johannesburg eSS?EN =19m.8s.
Bucharest ePN =10m.26s., eP_cPN =11m.13s., eP_cPE =11m.16s., iPPE =12m.35s., iZ =14m.26s., iS_cS?E =20m.16s., iS_cS?N =20m.22s.
Belgrade i =10m.59s., 14m.1s., and 15m.36s.
Mizusawa eSN =20m.47s.
Prague e =15m.2s., ePPP =15m.59s., ePS =20m.56s., eSS =25m.14s., eSSS =28m.26s.
Sapporo i =15m.9s.
Cheb ePPP =16m.15s., ePS =21m.26s., eSS =25m.57s., eSSS =29m.46s.
Milan SSE =25m.27s.
Potsdam iP_cPE =11m.47s., iP_cPN =11m.50s., iE =21m.15s., iSKSE =21m.38s., iSKSN =21m.43s., iN =22m.16s., eSSN =25m.38s.?.
Jena ePN =11m.36s., eE =16m.21s., eSSE =26m.2s., eE =29m.47s.
Uppsala iE =11m.50s., iPPPE =16m.22s., PPPN =16m.32s., iPSE =21m.21s., iPSN =21m.24s., iN =21m.52s., eE =25m.36s., eN =25m.40s., SSE =26m.0s., eSSS?N =29m.30s., eSSS?E =29m.34s.
Stuttgart iZ =11m.42s., iP_cP? =11m.52s., i =12m.32s., iPPZ =14m.36s., iPPPZ =16m.26s., iPS =21m.45s., and 22m.6s., e =30m.11s., eQ =35m.26s.?, ePKP,PKPZ =39m.11s.
Zürich ePPP =16m.15s.
Copenhagen 12m.26s., 15m.17s., 21m.39s., and 26m.8s.
Basle e =11m.56s.
Strasbourg eP_cS =17m.42s., eSS =26m.14s.
Clermont-Ferrand e =17m.35s.
De Bilt iPP =15m.6s., iPPPP =18m.6s., eSS =26m.56s.?.
Uccle iPP =15m.4s. and 15m.7s., eZ =18m.9s.
Tortosa PPN =17m.11s., PSE =22m.31s., SSE =27m.14s., QE =31m.25s.
Riverview iP_cP =12m.12s., iS_cSN =22m.18s., iPSE =22m.35s., iE =27m.20s., iSSSE =30m.22s., eN =30m.28s., iE =30m.46s., eQN =32m.2s.
Paris e =18m.16s.
Brisbane ePN =12m.12s., iZ =16m.3s., iE =27m.32s., iSSN =30m.39s., iQE =33m.13s.
Bergen eZ =13m.5s., iPPZ =15m.21s., eE =21m.38s., SN =22m.8s., PPSZ =23m.20s., SSE =27m.36s., eN =27m.53s.
Kew iP_cPE =12m.30s., iEN =13m.11s., iPPE =15m.32s., iPPPEN =17m.3s., ePPPZ =17m.33s., iSKSEN =22m.36s., ePSEN =23m.31s., iEN =24m.49s., eSSEN =27m.50s., eSSS?E =31m.26s.?, eSSSNZ =32m.56s.?.
Granada P_cP =12m.33s., S_cS =22m.5s.
Stonyhurst P_cP =12m.29s., 13m.13s., PP =15m.48s., PPP =17m.56s., SKS? =22m.52s., S_cS? =23m.13s., iPS =23m.55s., PPS =24m.13s. and 24m.59s., SS =28m.5s.
Aberdeen iN =12m.44s., iE =19m.22s., iEN =23m.2s., and 27m.32s., iE =32m.12s.
San Fernando iE =14m.9s., ePPPE =17m.48s., iSE =23m.20s., iPSE =24m.3s., eSS =28m.46s.
Lisbon N =13m.8s.?, PPE =15m.52s.? and 16m.3s.?, iPPZ =16m.14s., N =16m.36s., 16m.48s., and 17m.58s., SE =23m.17s., SSE =28m.14s., N =36m.26s.?.
Scoresby Sund i =19m.7s., 22m.15s., 23m.57s., 24m.35s., 25m.33s., and 30m.26s.
Christchurch iZ =13m.35s., eE =23m.34s., SKS =24m.0s., PPS =26m.4s., SS =31m.8s., SSS =34m.10s., Q =38m.44s.
Wellington P_cPZ =13m.41s., i =13m.58s., iZ =17m.51s., PPPZ =19m.39s., i =23m.44s., PS? =24m.59s., PPS =26m.11s., SS? =31m.41s., Q =39m.56s.
Auckland i =14m.43s., PPP =19m.26s., PS =26m.24s., i =27m.6s., PPPS =28m.21s., SS =31m.28s., Q =38·9m.
Arapuni SSS =36m.14s.
College e =28m.21s., 32m.38s., and 34m.20s.
Sitka e =22m.42s. and 25m.56s., eS =26m.56s., e =28m.0s., ePS =29m.27s., eSS =36m.8s., e =36m.26s., eSSS =39m.53s., e =47m.56s.
Honolulu e =24m.29s., and 40m.28s.
Seven Falls PPP =23m.41s., PS =30m.56s., SS =38m.26s.
La Plata PKPN =21m.20s., PPE =22m.20s., PPPE =26m.20s., N =26m.56s., SKKSN =30m.20s., PSE =32m.26s., PSN =32m.32s., SSN =37m.32s., SSE =37m.56s., QN =52·7m., true PKP is given as P and PP as PKP, and other phrases are wrongly identified.
Vermont iPP =21m.21s., i =24m.6s., e =28m.10s., i =32m.57s.
Ottawa PPP =24m.10s., SS =38m.26s., SSS =43m.26s.
Harvard ePKS? =22m.24s., ePPP =24m.8s., e =25m.35s., ePS =31m.16s., ePPS =33m.2s., e =39m.6s.
Victoria SKP =22m.44s., PS =31m.24s., PPS =33m.16s., SS =38m.19s., SSS =43m.38s.
Bermuda i =22m.32s., e =33m.7s.
Buffalo e =19m.19s., 19m.25s., 21m.49s., and 22m.9s.
Philadelphia i =22m.42s., e =25m.17s., i =33m.27s., e =44m.24s.
Pennsylvania i =22m.34s.
Butte eSSS =45m.28s.
New Kensington e =35m.5s.
Georgetown e =33m.39s. and 33m.43s.

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Bozeman e =40m.16s.
Chicago i =22m.51s., e =32m.0s., 34m.9s., and 45m.9s.
Rapid City e =24m.38s., and 35m.16s.
Ukiah e =24m.19s., 25m.23s., and 34m.4s., eSSS =45m.48s.
Logan i =19m.38s., e =25m.12s., and 28m.5s., eSSS =45m.37s.
San Juan e =21m.59s., 31m.51s., 35m.9s., and 37m.38s.
Salt Lake City e =25m.17s., 32m.36s., and 34m.36s., eSSS =46m.31s.
Florissant iZ =19m.40s., eSKPZ =22m.48s., iZ =23m.13s., ePPPZ =25m.28s., ePPPPZ =27m.47s., ePSKSE =32m.35s., ePPPSZ =36m.11s., eSSE =40m.41s., eSSSE =45m.41s.
St. Louis iPKPZ =19m.29s., iZ =19m.38s., iSKPZ =23m.2s., iZ =23m.30s., iPPPZ = 25m.25s., ePPPPZ =27m.39s., ePSKSN =32m.19s., ePPSiN =34m.22s., eSSN = 40m.34s., ePPSSN =41m.42s., eSSSN =45m.55s.
Columbia e =32m.12s., eSS =40m.37s.
Pasadena iPPPZ =26m.8s., eSKSPEN =32m.40s., iSSSEN =47m.17s.
Tucson i =21m.56s., 24m.32s., and 28m.58s., e =33m.9s., i =37m.23s., e =42m.6s. and 43m.7s., eSSS =47m.18s., e =53m.30s.
Huancayo e =22m.41s., 29m.27s., and 33m.38s., ePKP,PKP =40m.59s., e =41m.54s., 43m.36s., and 51m.36s.

Feb. 29d. Readings also at 3h. (near Mizusawa), 5h. (near Balboa Heights), 19h. (near Apia), 20h. (St. Louis, Tucson, Pasadena, Palomar, and Riverside), 21h. (Ferndale), 23h. (Pehpei).

March 1d. Readings at 4h. (near Toledo), 7h. (Palomar and Tucson), 10h. (near Malaga), 12h. (De Bilt and Cheb), 13h. (St. Louis, Tucson, Tinemaha, Palomar, and Riverside), 14h. (Wellington and near Istanbul), 15h. (Bucharest), 21h. (Stuttgart, Tucson, Tinemaha, Palomar, Riverside, Pasadena, Wellington, Auckland, Riverview, and near Apia), 22h. (Tucson, Riverside, Palomar, and Tinemaha).

March 2d. 11h. 16m. 18s. Epicentre 0°·3N. 75°·3E. (as on Feb. 29d.).

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Colombo	E.	8·0	35	1 57	− 3	3 24	− 9	—	—	—
Kodaikanal	E.	10·1	12	i 1 57	−31	i 3 46	−39	—	—	—
Bombay		18·6	353	i 4 24	+ 3	i 8 0	+14	4 49	PP	9·1
Calcutta	N.	25·5	30	e 5 23	− 9	i 9 48	− 9	i 10 54	SS	—
New Delhi	N.	28·2	4	e 5 58	+ 2	e 10 42	+ 1	—	—	—
Stuttgart	Z.	74·2	322	e 11 45	+ 5	—	—	—	—	—
Tinemaha	Z.	140·7	17	e 19 42	[+10]	—	—	e 22 46	PP	—
Tucson		147·1	10	i 19 48	[+ 5]	—	—	—	—	—

Additional readings :—
Bombay SSN =8m.25s.
Tucson e =19m.55s., i =20m.2s., e =20m.35s.
Long waves were also recorded at Riverview.

March 2d. Readings also at 3h. and 4h. (Riverview), 12h. (near Fresno), 13h. (Mizusawa), 16h. (Tucson, Tinemaha, Riverside, Palomar, Pasadena, La Jolla, Santa Barbara, Riverview, and Wellington), 17h. (Stuttgart), 21h. (near La Paz).

March 3d. Readings at 0h. (La Jolla, Palomar, Tinemaha, Riverside, Tucson, and near Branner), 6h. (near Berkeley), 12h. (La Paz), 13h. (Bogota, Riverview, Sydney, and Brisbane), 14h. (Pasadena), 20h. (near Lick and Fresno).

March 4d. Readings at 5h. (Tucson, Pasadena, Tinemaha, and near Mizusawa), 9h. (Huancayo, Balboa Heights, and near Bogota), 13h. (near Apia), 14h. (Tucson and Palomar), 19h. (La Paz).

March 5d. 17h. 16m. 1s. Epicentre 7°·5N. 126°·7E. Depth of focus 0·020.
(as on 1940, Sept. 9d.).

$A = -\cdot5926$, $B = +\cdot7950$, $C = +\cdot1297$; $\delta = +2$; $h = +7$;
$D = +\cdot802$, $E = +\cdot598$; $G = -\cdot078$, $H = +\cdot104$, $K = -\cdot992$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Mizusawa		34·1	19	e 6 30?	− 1	e 11 54	+10	—	—	—
Calcutta	N.	39·7	297	e 7 21	+ 3	i 13 43	+34	—	—	—
Perth		40·6	194	i 12 29	?	i 17 39	?	—	—	—
Brisbane	N.	43·1	144	i 7 47	+ 1	i 13 55	− 4	e 9 23	PP	e 19·8
Colombo	E.	46·4	272	8 6	− 6	—	—	—	—	—
Riverview		47·2	152	i 8 21a	+ 3	i 15 4	+ 6	i 18 28	SS	e 24·5
Sydney		47·2	152	e 14 11	?	—	—	—	—	—
Hyderabad		48·0	287	7 23	−61	14 32	−37	18 12	SS	22·4
Kodaikanal	E.	48·7	278	i 8 29	− 1	—	—	i 10 29	PP	—
New Delhi	N.	51·1	302	e 8 47	− 1	e 15 42	−10	10 44	PP	—
Bombay		53·5	288	e 9 3	− 3	i 16 18	− 6	e 10 54	PP	—
Auckland		63·0	139	—	—	17 59?	−29	—	—	—
Arapuni		64·3	139	e 13 59?	PP	—	—	—	—	—
Wellington		65·5	142	—	—	20 9?	+71	30 59?	Q	33·0
Christchurch		65·6	145	19 3	S	(19 3)	+ 3	31 16	Q	35·1
College		80·7	26	e 12 2	+ 5	e 22 3	+14	e 26 58	SS	e 38·3
Ksara		86·6	303	e 12 30	+ 4	e 22 52	+ 4	—	—	—
Sitka		88·1	33	—	—	e 22 56	[+12]	i 23 16	S	e 41·8
Helwan		90·9	300	i 12 47k	0	i 23 35	+ 8	23 14	SKS	—
Copenhagen		97·1	329	13 15	0	—	—	—	—	47·0
Cheb		99·4	324	—	—	e 23 59?	[+13]	—	—	—
Stuttgart	z.	101·9	323	e 13 36	− 1	—	—	—	—	—
Pasadena	z.	106·1	51	i 29 44	PKKP	—	—	—	—	e 44·0
Riverside	z.	106·7	51	i 18 21	PP	—	—	i 29 41	PKKP	—
Tucson		112·5	50	e 16 23	?	e 18 6	PKP	28 33	SP	e 63·0
Florissant	E.	122·5	34	e 20 12	PP	—	—	—	—	—
St. Louis		122·7	34	e 18 38	[+ 1]	e 29 47	SP	i 20 11	PP	e 59·2
Harvard		127·5	15	i 18 49	[+ 3]	—	—	—	—	—
Huancayo		157·8	103	e 20 15	PKP_2	e 44 40	SP	e 24 5	PP	e 74·2
La Paz	z.	163·0	123	i 19 46s	[+ 3]	i 20 44	PKP_2	i 24 30	PP	76·0

Additional readings :—
Mizusawa SE = 10m.57s.
Brisbane isSN = 14m.17s., eQN = 17m.11s.
Riverview iEN = 8m.26s., $iS_cS?E$ = 18m.7s., iN = 18m.53s., iE = 19m.1s., eZ = 19m.5s., eQN = 19m.53s.
Hyderabad S_cSN = 17m.8s.
New Delhi iN = 18m.27s. and 20m.12s.
Bombay iN = 11m.10s., iE = 12m.22s., iN = 16m.32s., iEN = 16m.52s., SSSE = 21m.17s.
Christchurch P_cP = 20m.12s., $P_cS?EN$ = 23m.41s., eZ = 25m.29s., eN = 27m.39s.
College e = 22m.13s.
Helwan eZ = 14m.45s. and 16m.24s., S?E = 23m.59s.
Tucson ePKP = 17m.44s., e = 19m.4s., 25m.7s., and 29m.16s.
St. Louis eSSE = 36m.59s.
Huancayo e = 24m.22s. and 30m.37s
Long waves were also recorded at other European stations.

March 5d. Readings also at 3h. (La Plata), 4h. (near Mizusawa), 5h. (Riverview and Philadelphia), 7h. (near Mizusawa), 9h. (Tucson, Pasadena, and Riverside), 12h. (Arapuni, Auckland, Christchurch. Wellington, and Riverview), 13h. (New Delhi), 14h. (Sitka), 16h. (near Istanbul), 19h. (Bucharest, Ksara, near Istanbul, Berkeley, Branner, and near Lick).

March 6d. 20h. 9m. 5s. Epicentre 44°·5N. 129°·7W.

$A = -\cdot4571$, $B = -\cdot5506$, $C = +\cdot6985$; $\delta = 0$; $h = -3$;
$D = -\cdot769$, $E = +\cdot639$; $G = -\cdot446$, $H = -\cdot537$, $K = -\cdot716$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Ferndale		5·6	132	e 1 31	+ 4	e 2 27	− 6	—	—	—
Ukiah		7·2	136	e 1 47	− 2	—	—	—	—	e 3·1
Berkeley		8·7	137	i 2 0	−10	e 3 51	+ 1	—	—	—
Branner		9·1	139	e 2 14	0	—	—	—	—	e 4·6
Santa Clara		9·2	138	e 2 14	− 2	e 4 1	− 2	—	—	e 4·2
Lick		9·4	137	e 2 14	− 4	e 4 8	+ 1	—	—	—
Fresno	N.	10·8	132	e 2 35	− 4	—	—	—	—	e 6·8
Tinemaha		11·4	126	i 2 48	+ 1	—	—	—	—	—
Butte		12·2	77	e 4 0?	?	e 6 43?	?	—	—	e 7·4
Santa Barbara	Z.	12·6	139	e 3 16	+13	—	—	—	—	—
Bozeman		13·3	78	e 3 13	0	e 5 45	+ 3	—	—	e 6·5
Logan		13·4	95	e 3 13	− 1	e 6 0	+15	—	—	e 6·9
Pasadena		13·6	135	e 3 16	− 1	—	—	—	—	e 5·7
Sitka		13·6	347	i 3 13	− 4	e 5 53	+ 3	—	—	e 6·4
Salt Lake City		13·6	99	e 3 15	− 2	e 5 43	− 7	—	—	e 6·1
Riverside	Z.	14·2	133	e 3 19	− 5	—	—	—	—	—
Palomar	Z.	14·9	134	e 3 28	− 6	—	—	—	—	—
La Jolla		15·1	136	e 3 40	+ 4	—	—	—	—	—
Saskatoon		17·1	56	4 2	0	7 20	+ 8	—	—	8·9
Rapid City		19·0	82	i 4 19	− 7	e 8 8	+13	—	—	e 10·6
Tucson		19·1	124	e 4 26	− 1	e 8 0	+ 3	—	—	e 8·3
Florissant		29·7	87	e 6 11	+ 1	e 11 13	+ 7	—	—	e 15·0
St. Louis		29·9	87	e 6 9	− 3	e 11 12	+ 3	e 12 37	SS	e 14·7
Chicago		30·6	81	e 6 16	− 2	e 10 41	?	e 11 46	?	e 16·4
Honolulu		32·8	235	e 6 41	+ 4	e 12 32	+38	—	—	e 13·8
New Kensington		36·6	78	—	—	e 12 59	+ 6	—	—	e 19·1
Ottawa		37·6	69	7 20	+ 2	13 9	+ 1	—	—	18·9
Shawinigan Falls		39·2	66	7 37	+ 6	—	—	—	—	21·9
Philadelphia		40·0	77	e 9 2	?	e 13 42	− 2	e 9 14	PP	e 17·1
Seven Falls		40·3	65	7 43	+ 3	13 52	+ 3	—	—	21·9
Fordham	Z.	40·5	75	e 9 20	PP	—	—	—	—	—
Weston		41·7	72	e 9 41	PP	e 14 15	+ 5	—	—	—
Bermuda		51·1	80	—	—	e 16 29	+ 5	—	—	e 26·1
San Juan		58·6	95	e 14 43	?	e 18 6	+ 2	—	—	e 31·6
Aberdeen		69·6	28	—	—	e 28 22	?	—	—	—
Copenhagen		75·2	21	—	—	21 36	+11	—	—	30·9
Stuttgart		80·4	26	e 12 17	+ 2	—	—	—	—	e 33·4

Additional readings :—
Ferndale eSE =2m.36s.
Ukiah e =1m.58s.
Berkeley iPZ =2m.7s. and 2m.12s., iE =3m.37s., iSZ =3m.56s., iSE =4m.0s.
Lick eSE =4m.13s.
Tinemaha eEN =2m.51s.
Pasadena iPEN =3m.26s.
Sitka e =3m.15s.
Riverside iZ =3m.31s.
Rapid City i =4m.53s.
Tucson i =4m.37s., e =6m.2s. and 7m.28s.
Florissant eE =11m.40s.
St. Louis eE =11m.19s., esS?E =11m.32s.
Honolulu e =10m.23s. and 11m.12s.
Philadelphia e =11m.17s.
San Juan e =16m.18s.
Long waves were also recorded at Auckland, Riverview, College, Columbia, Seattle, and other European stations.

March 6d. 21h. 5m.51s. Epicentre 44°·5N. 129°·7W. (as at 20h.).

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Ferndale	N.	5·6	132	e 2 29	S	(e 2 29)	− 4	—	—	—
Ukiah		7·2	136	e 2 19	P_g	—	—	—	—	e 3·3
Berkeley	E.	8·7	137	i 2 43	P_g	—	—	—	—	—
Branner		9·1	139	i 2 13	− 1	—	—	—	—	—
Santa Clara	E.	9·2	138	e 2 19	+ 3	—	—	—	—	—
Tinemaha		11·4	126	i 2 50	+ 3	—	—	—	—	—
Haiwee		12·2	129	i 3 0	+ 2	—	—	—	—	—
Butte		12·2	77	e 3 59?	+61	—	—	—	—	e 6·7
Santa Barbara	Z.	12·6	139	e 2 59	− 4	—	—	—	—	—
Bozeman		13·3	78	e 3 16	+ 3	—	—	—	—	e 7·1
Logan		13·4	95	i 3 15	+ 1	—	—	—	—	e 6·5
Pasadena	Z.	13·6	135	i 3 15	− 2	—	—	—	—	e 6·0
Sitka		13·6	347	e 3 18	+ 1	e 6 17	+27	—	—	e 6·5
Salt Lake City		13·6	99	e 3 17	0	e 5 57	+ 7	—	—	e 6·9
Riverside		14·2	133	i 3 22	− 2	—	—	—	—	—
Palomar	Z.	14·9	134	i 3 32	− 2	—	—	—	—	—
La Jolla		15·1	136	e 3 35	− 1	—	—	—	—	—
Saskatoon		17·1	56	e 4 7	+ 5	—	—	—	—	10·2
Rapid City		19·0	82	i 4 23	− 3	e 7 54	− 3	—	—	i 9·6
Tucson		19·1	124	i 4 28	+ 1	e 7 44	−13	—	—	e 8·0
College		22·8	340	e 5 14	+ 9	e 9 28	+17	—	—	e 11·3
Florissant		29·7	87	e 6 5	− 5	e 11 15	+ 9	—	—	—
St. Louis		29·9	87	e 6 8	− 4	e 11 2	− 7	e 7 7	PP	e 15·4
Ottawa		37·6	69	7 20	+ 2	13 9	+ 1	—	—	19·2
Philadelphia		40·0	77	e 11 11	?	e 13 49	+ 5	—	—	e 17·4
Seven Falls		40·3	65	e 7 41	+ 1	—	—	—	—	21·2
San Juan		58·6	95	e 11 48	PP	—	—	—	—	e 29·3
Granada		85·2	41	12 40k	+ 1	22 10	−59	—	—	44·0

Additional readings :—
Ferndale ePE =2m.45s.
Berkeley iN =2m.48s., iZ =3m.2s.
Bozeman e =3m.32s. and 6m.30s.
Pasadena iZ =3m.27s.
Sitka e =3m.59s.
Palomar iZ =3m.38s.
Rapid City i =5m.1s. and 5m.26s.
Tucson i =4m.34s., e =7m.16s.
Long waves were also recorded at Honolulu, De Bilt, Kew, and other American stations.

March 6d. 22h. 51m. 7s. Epicentre 44°·5N. 129°·7W. (as at 21h.).

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Ferndale	N.	5·6	132	e 2 29	S	(e 2 29)	− 4	—	—	—
Ukiah		7·2	136	e 2 18	P_g	e 3 14	+ 1	—	—	e 3·5
Berkeley		8·7	137	i 3 58	S	(i 3 58)	+ 8	—	—	i 5·0
Santa Clara		9·2	138	e 2 33	+17	e 5 7	L	—	—	(e 5·1)
Tinemaha	Z.	11·4	126	i 2 49	+ 2	—	—	—	—	—
Butte		12·2	77	e 4 12?	+74	—	—	—	—	e 7·5
Bozeman		13·3	78	e 3 12	− 1	—	—	—	—	e 7·0
Logan		13·4	95	i 3 17	+ 3	e 5 19	−26	—	—	e 6·5
Pasadena		13·6	135	e 3 35	+18	—	—	—	—	e 6·5
Salt Lake City		13·6	99	e 3 41	+24	e 5 54	+ 4	—	—	e 7·3
Sitka		13·6	347	e 3 17	0	—	—	—	—	e 6·6
Riverside	Z.	14·2	133	e 3 22	− 2	—	—	—	—	—
Palomar	Z.	14·9	134	i 3 31	− 3	—	—	—	—	—
Saskatoon		17·1	56	e 4 6	+ 4	—	—	—	—	9·9
Rapid City		19·0	82	i 4 23	− 3	—	—	—	—	e 8·7
Tucson		19·1	124	e 4 27	0	e 8 10	+13	—	—	e 9·7
College		22·8	340	—	—	e 9 40	+29	—	—	e 12·1

Additional readings :—
Ferndale ePE =2m.42s.
Berkeley iPE =4m.2s.
Tinemaha eN =2m.53s.
Long waves were also recorded at Seattle, Philadelphia, De Bilt, and Cheb.

March 6d. 23h. 16m. 26s. Epicentre 44°·5N. 129°·7W. (as at 22h.).

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Ferndale		5·6	132	e 1 50	P_g	e 2 44	+11	—	—	—
Ukiah		7·2	136	e 1 51	+ 2	—	—	—	—	e 3·2
Berkeley		8·7	137	i 1 59	−11	i 3 59	+ 9	—	—	—
Santa Clara		9·2	138	e 2 24	+ 8	—	—	—	—	e 4·7
Tinemaha		11·4	126	e 2 48	+ 1	—	—	—	—	—
Haiwee		12·2	129	e 3 5	+ 7	—	—	—	—	—
Butte		12·2	77	e 4 10?	+72	—	—	—	—	e 7·2
Bozeman		13·3	78	e 3 9	− 4	e 6 24	+42	—	—	e 7·0
Logan		13·4	95	i 3 14	0	e 5 56	+11	—	—	e 6·7
Pasadena		13·6	135	e 3 19	+ 2	—	—	—	—	e 5·8
Salt Lake City		13·6	99	e 3 20	+ 3	e 5 59	+ 9	—	—	e 7·5
Sitka		13·6	347	e 3 14	− 3	e 5 54	+ 4	—	—	e 6·5
Riverside	z.	14·2	133	i 3 22	− 2	—	—	—	—	—
Palomar	z.	14·9	134	i 3 31	− 3	—	—	—	—	—
La Jolla		15·1	136	e 3 41	+ 5	—	—	—	—	—
Saskatoon		17·1	56	e 4 3	+ 1	—	—	—	—	8·6
Rapid City		19·0	82	i 4 21	− 5	e 7 45	−10	e 4 56	PP	e 8·3
Tucson		19·1	124	e 4 26	− 1	e 7 29	−28	—	—	e 8·4
College		22·8	340	e 5 10	+ 5	e 9 21	+10	e 5 59	PP	e 11·0
Florissant		29·7	87	7 16	PP	e 11 15	+ 9	e 13 19	SS	e 15·1
St. Louis		29·9	87	e 6 11	− 1	e 11 15	+ 6	e 7 13	PP	e 14·8
Ottawa		37·6	69	7 21	+ 3	13 11	+ 3	—	—	18·6
Philadelphia		40·0	77	e 9 18	PP	e 13 47	+ 3	e 16 34	SS	e 19·3
Seven Falls		40·3	65	e 8 34?	?	e 12 34?	?	—	—	19·6
Weston		41·7	72	e 9 41	PP	e 14 17	+ 7	—	—	—
San Juan		58·6	95	e 10 48	+47	e 17 58	− 6	—	—	e 29·9
Copenhagen		75·2	21	—	—	21 34	+ 9	—	—	31·6
Stuttgart		80·4	26	e 12 16	+ 1	—	—	—	—	e 38·6
Granada		85·2	41	i 12 59k	+20	e 23 16	+ 7	13 29	pP	—

Additional readings :—
Berkeley iPZ = 2m.4s., iPN = 2m.7s., iE = 4m.9s., iZ = 4m.20s.
Bozeman e = 3m.56s.
Sitka e = 3m.37s. and 3m.56s.
Tucson e = 4m.36s. and 6m.18s.
St. Louis eSSN = 12m.38s.
Long waves were also recorded at Honolulu and other American and European stations.

March 6d. Readings also at 1h. (near Malaga), 5h. (Mizusawa and Riverview), 6h. (Butte), 8h. (Butte and Mizusawa), 9h. (Haiwee, Tucson, Palomar, Pasadena, Riverside, Tinemaha, and La Paz), 10h. (near Mizusawa), 11h. (Triest), 12h. (Ferndale and La Paz), 14h. (Seattle, Haiwee, Palomar, Pasadena, Riverside, Tinemaha, Tucson, Salt Lake City, Logan, Bozeman, Philadelphia, Rapid City, Santa Clara, Ukiah, San Juan, Stuttgart, near Chur, and Zurich), 15h. (near Bogota), 18h. (Ksara, Bucharest, Basle, Zürich, and Stuttgart), 20h. (Palomar (2), Pasadena, Tucson (2), and Tinemaha), 21h. (Rapid City, Tucson (4), Haiwee, Palomar (3). Pasadena (3), Riverside (3), Tinemaha (3), Santa Clara, near Berkeley, Branner, Fresno, and Lick), 22h. (Palomar (2), Pasadena (2), Riverside (2), Tinemaha, Tucson (2), and Harvard), 23h. (Lick, Palomar, Pasadena, Riverside, Tucson, and Tinemaha).

March 7d. 6h. 9m. 8s. (I)
6h. 45m. 3s. (II)
8h. 21m. 25s. (III)
} Epicentre 44°·5N. 129°·7W. (as on 6d.).

			△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
			°	°	m. s.	s.	m. s.	s.	m. s.		m.
I	Ferndale		5·6	132	e 1 40	P*	—	—	e 1 57	P_g	—
II			5·6	132	e 1 29	+ 2	—	—	e 1 39	P*	—
III			5·6	132	e 1 39	P*	—	—	—	—	—
I	Ukiah		7·2	136	e 2 14	P*	(e 3 3)	−10	—	—	e 3·0
II			7·2	136	e 2 9	P*	—	—	—	—	e 3·4
III			7·2	136	e 1 42	− 7	—	—	e 2 13	P*	e 2·8
I	Santa Clara	N.	9·2	138	e 2 7	− 9	—	—	—	—	e 5·1
II		E.	9·2	138	e 2 15	− 1	—	—	—	—	e 4·8
III		E.	9·2	138	e 2 18	+ 2	—	—	—	—	e 4·5
I	Lick		9·4	137	e 2 16	− 2	—	—	—	—	—
III			9·4	137	e 3 17?	+59	—	—	—	—	—

Continued on next page.

			△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
			°	°	m. s.	s.	m. s.	s.	m. s.		m.
I	Tinemaha		11·4	126	i 2 49	+ 2	—	—	—	—	—
II			11·4	126	i 2 49	+ 2	—	—	—	—	—
III		z.	11·4	126	e 2 46	− 1	—	—	—	—	—
I	Haiwee		12·2	129	i 2 59	+ 1	—	—	—	—	—
II		z.	12·2	129	e 3 1	+ 3	—	—	—	—	—
III			12·2	129	e 2 56	− 2	—	—	—	—	—
I	Butte		12·2	77	e 4 12?	+74	e 7 24	?	—	—	e 8·5
I	Santa Barbara		12·6	139	e 3 1	− 2	—	—	—	—	—
II			12·6	139	e 3 2	− 1	—	—	—	—	—
I	Bozeman		13·3	78	e 3 16	+ 3	—	—	—	—	e 6·3
II			13·3	78	e 3 12	− 1	—	—	—	—	e 6·8
III			13·3	78	e 3 14	+ 1	—	—	—	—	e 7·0
I	Logan		13·4	95	e 3 16	+ 2	—	—	—	—	e 6·3
II			13·4	95	i 3 15	+ 1	e 6 2	+17	—	—	e 7·3
III			13·4	95	i 3 15	+ 1	e 5 53	+ 8	—	—	e 6·6
I	Pasadena		13·6	135	e 3 17	0	—	—	—	—	e 6·3
II			13·6	135	e 3 13	− 4	(e 5 45?)	− 5	—	—	e 5·8
III			13·6	135	e 3 13	− 4	(e 5 48)	− 2	—	—	e 5·8
II	Sitka		13·6	347	e 3 34	+17	—	—	—	—	e 6·6
III			13·6	347	e 3 18	+ 1	e 6 10	+20	—	—	e 6·9
I	Salt Lake City		13·6	99	e 3 19	+ 2	e 5 59	+ 9	—	—	e 7·1
II			13·6	99	—	—	e 6 1	+11	—	—	e 6·9
III			13·6	99	e 3 17	0	e 5 59	+ 9	—	—	e 6·9
I	Riverside		14·2	133	i 3 22k	− 2	—	—	—	—	—
II			14·2	133	e 3 21	− 3	—	—	—	—	—
III			14·2	133	i 3 21	− 3	—	—	—	—	—
I	Palomar	z.	14·9	134	i 3 31	− 3	—	—	—	—	—
II		z.	14·9	134	i 3 31	− 3	—	—	—	—	—
III		z.	14·9	134	i 3 29	− 5	—	—	—	—	—
I	La Jolla		15·1	136	e 3 35	− 1	—	—	—	—	—
II			15·1	136	e 3 34	− 2	—	—	—	—	—
I	Saskatoon		17·1	56	e 4 4	+ 2	e 7 28	+16	—	—	9·9
II			17·1	56	e 4 4	+ 2	e 7 27	+15	—	—	10·0
III			17·1	56	e 4 4	+ 2	—	—	—	—	9·6
I	Rapid City		19·0	82	i 4 23	− 3	—	—	—	—	e 9·4
II			19·0	82	i 4 20	− 6	e 8 28	+33	—	—	e 11·4
III			19·0	82	i 4 21	− 5	e 8 11	+16	—	—	e 10·3
I	Tucson		19·1	124	i 4 27	0	e 8 6	+ 9	—	—	e 10·1
II			19·1	124	e 4 27	0	e 8 10	+13	—	—	e 9·7
III			19·1	124	i 4 26	− 1	e 8 8	+11	—	—	e 9·3
III	College		22·8	340	e 5 11	+ 6	e 9 36	+25	—	—	e 11·3
I	Florissant		29·7	87	e 6 11	+ 1	e 11 12	+ 6	—	—	—
III			29·7	87	e 6 10	0	e 11 13	+ 7	—	—	—
I	St. Louis		29·9	87	e 6 11	− 1	e 11 34	+25	—	—	e 15·5
II			29·9	87	e 6 11	− 1	e 11 42	+33	—	—	e 15·7
III			29·9	87	e 6 12	0	e 11 12	+ 3	—	—	e 15·4
I	Ottawa		37·6	69	e 7 19	+ 1	—	—	—	—	20·9
II			37·6	69	e 7 21	+ 3	—	—	—	—	21·0
III			37·6	69	7 21	+ 3	13 16	+ 8	—	—	20·6
I	Bogota		62·7	112	i 10 29	0	—	—	—	—	—

Additional readings :—
Tinemaha I iZ = 2m.57s.
Bozeman III e = 4m.31s.
Pasadena I iEN = 3m.24s.
Riverside I iZ = 3m.32s.
Palomar I iZ = 3m.38s.
La Jolla I i = 3m.41s.
Rapid City I i = 4m.51s., II i = 4m.55s.
Tucson I e = 5m.14s. and 7m.29s., II e = 6m.6s., III i = 4m.43s., e = 7m.28s.
Long waves were also recorded at Seattle I, II, and III, Weston I and III, Sitka I, Harvard III, and Honolulu III.

March 7d. Readings also at 0h. (Clermont-Ferrand, Paris, Auckland, Wellington, and Riverview), 1h. (Haiwee, Palomar, Pasadena, Riverside, Santa Barbara, Tinemaha, and Tucson), 2h. (Haiwee, Palomar, Tinemaha, Brisbane, and Riverview), 3h. (Palomar, Tinemaha, and Tucson), 4h. (Haiwee, Palomar, Pasadena, Riverside, Santa Barbara, Tinemaha, Tucson, Auckland, and Wellington), 5h. (Tucson, Haiwee, Palomar, Pasadena, Riverside, Tinemaha, Copenhagen, and Stuttgart), 8h. (Haiwee, Palomar, Pasadena, Riverside, Tucson, and Tinemaha), 11h. (Tucson, Palomar, Riverside, and near Bogota), 13h. (Haiwee, Palomar, Pasadena, Riverside, Tinemaha, Tucson, and Kodaikanal), 14h. (near Alicante (4)), 15h. (Riverview, near Alicante (2), and near Mizusawa), 19h. (Auckland, Christchurch, Wellington, and Riverview), 20h. (Auckland, Wellington, Riverview, Mizusawa, Hyderabad, Bombay, Calcutta, Colombo, New Delhi, Ksara, Bucharest, Cheb, Palomar, Pasadena, Riverside, and Tucson), 21h. (De Bilt), 22h. (Bucharest and near Istanbul), 23h. (Istanbul, Tucson, Palomar, Pasadena, Riverside, Haiwee, and Tinemaha).

March 8d. Readings at 4h. (near Granada, Alicante, and Toledo), 5h. (Bombay, Calcutta, Kodaikanal, New Delhi, and Mizusawa), 7h. (Tucson), 9h. (near Mizusawa), 11h. (Riverview and near Mizusawa), 12h. (near Seven Falls, Shawinigan Falls, and Ottawa), 14h. (Tucson, Palomar, and near Alicante), 21h. (Stuttgart and near Fresno), 22h. (Bucharest and Istanbul), 23h. (Apia (2), Arapuni, Auckland, Wellington, Brisbane, Riverview, Sydney, Huancayo, Palomar, Pasadena, Santa Barbara, Tinemaha, Tucson, Copenhagen, Stuttgart, and Granada).

March 9d. 22h. 3m. 43s. Epicentre 42°·5N. 82°·5E. (as on 1940, March 17d.).

$A = +\cdot0965$, $B = +\cdot7332$, $C = +\cdot6731$; $\delta = -4$; $h = -3$;
$D = +\cdot991$, $E = -\cdot131$; $G = +\cdot088$, $H = +\cdot667$, $K = -\cdot740$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Dehra Dun	N.	12·6	197	e 4 2	?	—	—	—	—	e 7·7
New Delhi	E.	14·5	199	e 3 37	+ 9	i 6 30	+19	3 47	PP	—
Calcutta	N.	20·5	164	e 4 47	+ 5	i 8 48	+21	—	—	i 12·6
Bombay	N.	24·9	202	i 5 35	+ 9	i 10 19	+32	6 37	PPP	13·6
Hyderabad	N.	25·2	190	5 34	+ 5	10 25	+33	6 11	PP	—
Kodaikanal	E.	32·5	190	e 6 27	− 7	e 13 17	?	—	—	—
Colombo	E.	35·5	185	e 7 17?	+17	13 1	+25	—	—	—
Ksara		37·3	272	e 7 23	+ 7	13 22	+18	—	—	—
Bacan		39·2	297	e 7 47	+16	—	—	—	—	—
Istanbul		39·3	287	8 17	+45	13 43	+ 9	—	—	—
Focsani		39·5	296	e 7 34	0	—	—	—	—	—
Bucharest		40·3	293	e 7 44	+ 4	i 13 57	+ 8	e 10 9	PP	—
Campulung		40·6	295	e 7 50	+ 7	—	—	9 32	PP	—
Upsala	E.	42·3	318	7 53	− 4	i 14 18	− 1	9 33	PP	21·7
	N.	42·3	318	e 7 49	− 8	i 14 12	− 7	e 9 41	PP	21·2
Helwan		42·6	271	i 8 5k	+ 6	e 14 35	+12	e 9 42	PP	—
Copenhagen		45·8	313	e 8 22a	− 3	15 8	− 1	10 24	PP	—
Prague		46·2	306	e 8 29	+ 1	e 15 17	+ 2	e 10 25	PP	e 19·8
Potsdam		46·3	307	e 8 32	+ 3	i 15 19	+ 3	i 19 43	SSS	—
Cheb		47·4	306	e 8 43	+ 5	e 15 40	+ 8	—	—	—
Jena	N.	47·6	307	e 8 37	− 2	e 15 35	0	e 10 27	PP	—
Triest		48·1	300	i 8 43	0	i 15 43	+ 1	e 10 43	PP	—
Bergen		48·3	321	8 40	− 5	15 41	− 4	—	—	—
Stuttgart		49·8	305	i 8 55k	− 1	i 16 9	+ 3	e 10 16	P_cP	25·8
Chur		50·3	302	e 9 0	0	e 16 15	+ 2	—	—	—
Zürich		50·7	304	e 9 2	− 1	—	—	—	—	—
Strasbourg		50·8	305	e 9 3	− 1	e 16 23	+ 3	—	—	—
De Bilt		51·0	310	i 9 3	− 3	i 16 23	+ 1	—	—	e 26·3
Basle		51·3	304	e 9 7	− 1	e 16 30	+ 4	—	—	—
Neuchatel		51·9	304	e 9 11	− 1	—	—	—	—	—
Uccle		52·7	309	e 9 11	− 7	i 16 36	−10	—	—	25·3
Paris		53·8	307	i 9 25	− 1	i 17 2	+ 1	—	—	—
Kew	z.	54·3	311	i 9 23	− 7	e 17 6	− 1	17 22	PS	—
Clermont-Ferrand		54·8	303	e 9 29	− 5	—	—	—	—	—
Scoresby Sund		55·1	338	—	—	17 12	− 6	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Tortosa		58·9	299	i 10 3	0	18 13	+ 5	18 48	PS	—
Granada		63·6	298	i 10 35a	0	i 19 11	+ 3	23 3	SS	—
San Fernando		65·7	298	i 10 47	− 1	e 19 40	+ 6	—	—	—
Harvard		92·2	341	e 13 4	− 9	—	—	—	—	—
St. Louis		99·0	355	e 13 35	− 9	e 24 11	[−11]	e 26 15	SP	—
Pasadena	z.	101·4	17	e 13 47	− 8	—	—	—	—	—
Riverside	z.	101·7	17	e 17 57	PP	—	—	—	—	—
Palomar	z.	102·5	16	e 13 48	−12	—	—	e 17 46	PP	—
Tucson		104·6	16	e 13 56	−13	—	—	e 18 21	PP	—
La Paz	z.	143·9	307	19 33	[− 4]	—	—	—	—	—

Additional readings :—
New Delhi SSE =6m.52s.
Bombay SSN =11m.42s.
Bucharest iZ =9m.26s., iE =eN =9m.29s.
Upsala ePPPN =10m.14s., SSN =16m.47s.
Helwan eZ =11m.56s.
Prague eSS =18m.23s.
Stuttgart iZ =9m.4s.
Kew iZ =9m.34s., eZ =16m.38s., ePPSZ =17m.32s.
Tortosa iN =11m.21s.
Pasadena iZ =16m.37s and 17m.7s.
Riverside iZ =19m.27s.
Tucson e =16m.59s. and 22m.10s.
Long waves were recorded at Reykjavik.

March 9d. 22h. 12m. 57s. Epicentre 42°·5N. 82°·5E. (as at 22h. 3m.).

$A = +·0965$, $B = +·7332$, $C = +·6731$; $\delta = -4$; $h = -3$;
$D = +·991$, $E = -·131$; $G = +·088$, $H = +·667$, $K = -·740$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
New Delhi	E.	14·5	199	e 3 44	+16	i 6 26	+15	6 52	SS	—
Bombay		24·9	202	i 5 36	+10	i 10 22	+35	6 25	PP	—
Hyderabad	N.	25·2	190	5 36	+ 7	10 27	+35	6 16	PP	—
Zi-ka-Wei	N.	32·9	97	e 6 27	−11	11 39	−17	—	—	17·3
Colombo	E.	35·5	185	7 28	+28	13 2	+26	15 13	SS	18·2
Ksara		37·3	272	e 7 24	+ 8	e 13 22	+18	—	—	—
Kumamoto		38·0	89	e 7 21	0	13 5	− 9	—	—	—
Hukuoka		38·3	88	e 7 15	− 9	13 3	−16	—	—	19·4
Bacau		39·2	297	e 7 9	−22	—	—	—	—	21·0
Istanbul		39·3	287	7 33	+ 1	13 41	+ 7	9 17	PP	—
Focsani		39·5	296	7 40	+ 6	—	—	—	—	21·0
Miyazaki		39·9	90	7 43	+ 6	—	—	—	—	—
Bucharest		40·3	293	i 7 45a	+ 5	—	—	—	—	21·0
Campulung		40·6	295	e 7 50	+ 7	—	—	—	—	21·0
Koti		40·7	86	7 29	−15	13 35	−20	—	—	—
Sapporo		41·3	68	e 7 36	−13	e 14 4	0	—	—	21·3
Kobe		41·3	83	e 7 34	−15	14 4	0	—	—	—
Aikawa		42·1	77	8 2	+ 7	14 4	−12	—	—	—
Upsala	E.	42·3	318	i 7 55	− 2	—	—	9 30	PP	e 20·6
Helwan		42·6	271	i 8 5	+ 6	e 14 36	+13	—	—	e 18·1
Maebasi		43·4	79	e 8 9	+ 3	15 2	+27	—	—	—
Shizuoka		43·6	81	7 58	−10	14 13	−25	—	—	—
Mizusawa	E.	43·7	74	e 7 56?	−12	16 46?	+127	—	—	22·4
Belgrade		44·0	295	i 8 14	+ 3	i 15 17	+34	10 1	PP	e 23·8
Tokyo		44·2	80	8 17	+ 5	15 3	+17	—	—	15·1
Yokohama		44·3	80	13 36	S	(13 36)	−72	—	—	21·7
Copenhagen		45·8	313	i 8 13k	−12	—	—	i 10 8	PP	—
Prague		46·2	306	i 8 31a	+ 3	e 15 1	−14	—	—	e 21·5
Potsdam	E.	46·3	307	i 8 33	+ 4	i 15 22	+ 6	10 22	PP	e 24·0
	N.	46·3	307	i 8 33	+ 4	i 15 19	+ 3	—	—	e 21·0
Cheb		47·4	306	e 8 47	+ 9	e 15 43	+11	e 18 15	SS	e 24·0
Jena	E.	47·6	307	i 8 39	0	i 15 37	+ 2	e 10 29	PP	22·2
Triest		48·1	300	i 8 45	+ 2	i 15 47	+ 5	10 20	PP	—
Bergen		48·3	321	i 8 42	− 3	15 39	− 6	10 26	PP	22·4
Stuttgart		49·8	305	i 8 57k	+ 1	i 16 9	+ 3	e 10 43	PP	e 24·4
Chur		50·3	302	e 9 0	0	i 16 15	+ 2	—	—	—

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	Supp.			L.
		°	°	m. s.	s.	m. s.	s.	m. s.			m.
Zürich		50·7	304	e 9 4a	+ 1	e 16 16	− 2	—		—	—
Strasbourg		50·8	305	i 9 4	0	i 16 26	+ 6	11 3		PP	25·0
De Bilt		51·0	310	i 9 3k	− 3	i 16 25	+ 3	—		—	e 24·0
Milan		51·1	300	i 9 8	+ 2	18 48	PS	12 5		PP	—
Basle		51·3	304	e 9 8	0	e 16 28	+ 2	—		—	—
Neuchatel		51·9	304	e 9 11	− 1	e 16 37	+ 2	—		—	—
Uccle		52·7	309	i 9 12k	− 6	—	—	e 11 19		PP	e 24·0
Aberdeen		53·0	318	i 7 33	?	i 16 15	−35	i 11 33		PP	25·0
Paris		53·8	307	i 9 26	0	i 16 58	− 3	11 22		PP	27·0
Kew		54·3	311	i 9 28	− 2	e 17 48?	+41	11 38		PP	27·0
Clermont-Ferrand		54·8	303	e 9 34	0	e 17 16	+ 2	e 11 37		PP	e 27·1
Scoresby Sund		55·1	338	i 9 30	− 6	i 17 13	− 5	11 37		PP	—
Barcelona		57·5	299	e 9 55	+ 2	i 17 51	+ 1	—		—	28·0
Reykjavik	N.	58·4	331	e 10 41	+41	e 19 57	?	e 15 52		PPP	e 35·5
Tortosa		58·9	299	i 10 3	0	i 18 12	+ 4	12 8		PP	28·1
Granada		63·9	298	i 10 35a	− 2	i 18 44	−28	11 22		PcP	30·7
San Fernando		65·7	298	i 10 49	+ 1	i 19 37	+ 3	15 29		PPP	33·5
College		66·0	22	e 10 39	−11	e 19 17	−21	e 14 27		PP	27·9
Lisbon	Z.	66·3	302	10 52a	0	19 56	+14	i 13 17		PP	—
	E.	66·3	302	10 54	+ 2	19 46	+ 4	16 9		SSS	34·6
Tananarive		69·1	216	11 16	+ 6	20 40	+25	14 0		PP	34·1
Saskatoon		85·4	7	12 36	− 4	22 50	[−13]	—		—	37·0
Victoria		86·5	18	12 43	− 3	22 58	[−13]	—		—	36·0
Seattle		87·6	17	e 16 0	PP	e 25 26	PPS	e 37 41		?	e 40·1
Halifax		88·1	337	—	—	e 23 16	[− 5]	—		—	42·0
Shawinigan Falls		88·7	343	12 50	− 7	23 13	[−12]	—		—	50·0
Seven Falls		88·8	343	12 46	−11	23 23	[− 3]	—		—	37·0
Ottawa		89·2	346	12 58	− 1	23 25	[− 3]	—		—	41·0
Vermont		90·7	343	e 14 18	?	23 26	[−11]	30 24		SS	38·7
Butte		90·9	10	e 13 48?	+41	e 24 15?	+12	e 16 30?		PP	e 36·6
Bozeman		91·4	9	e 13 25	+16	e 24 14	[+33]	—		—	e 40·8
Harvard		92·2	341	i 13 6	− 7	—	—	—		—	e 44·9
Weston		92·3	341	e 13 7	− 6	e 23 47	[+ 1]	16 31		PP	—
Rapid City		93·6	4	e 13 14	− 5	e 23 58	[+ 5]	16 59		PP	e 41·8
Fordham		94·4	342	i 13 18	− 5	i 23 48	[−10]	e 25 40		PPS	—
Philadelphia		95·0	343	e 14 37	?	i 23 52	[− 9]	i 25 47		PPS	e 41·5
Logan		95·1	11	i 13 19	− 7	i 23 53	[− 9]	—		—	e 37·4
Chicago		95·5	354	e 14 4	+36	i 23 51	[−13]	e 31 25		SS	e 43·7
Ukiah		95·5	20	—	—	e 23 56	[− 8]	e 34 41		SSS	e 41·3
New Kensington		95·6	347	—	—	e 23 54	[−10]	e 36 8		SSS	e 45·3
Honolulu		95·6	54	—	—	e 23 54	[−10]	e 34 24		SSS	e 43·9
Salt Lake City		96·1	11	e 13 27	− 4	e 23 55	[−12]	e 31 8		SS	e 33·8
Berkeley	N.	96·9	19	i 13 40	+ 6	i 24 6	[− 5]	—		—	—
	E.	96·9	19	e 13 56	+22	i 24 2	[− 9]	—		—	—
	Z.	96·9	19	i 13 27	− 7	i 24 2	[− 9]	i 17 14		PP	e 38·8
Santa Clara		97·1	19	e 17 28	?	i 24 8	[− 4]	e 33 27		?	e 44·4
Tinemaha		98·5	17	e 13 36	− 6	i 24 14	[− 6]	i 17 28		PP	—
Fresno	N.	98·5	18	e 13 39	− 3	e 24 9	[−11]	e 17 28		PP	—
Riverview		98·6	129	—	—	e 24 20	[0]	e 25 12		S	e 50·2
Florissant		98·7	355	e 13 35	− 7	i 24 8	[−13]	e 17 40		PP	—
St. Louis		99·0	355	i 13 35	− 9	e 25 1	−11	e 17 31		PP	e 47·3
Haiwee		99·5	17	e 13 39	− 7	i 24 16	[− 9]	i 30 37		PKKP	—
Bermuda		99·6	332	e 14 59	+73	e 24 17	[− 8]	e 19 39		PPP	e 45·0
Cape Girardeau		100·2	354	—	—	e 23 16	?	—		—	—
Santa Barbara		101·4	18	e 13 49	− 6	i 24 22	[−12]	—		—	—
Pasadena		101·4	17	e 13 46	− 9	i 24 24	[−10]	e 17 50		PP	e 40·5
Riverside	Z.	101·7	17	e 13 47	− 9	—	—	i 30 2		PKKP	—
Columbia		102·4	346	e 18 7	PP	e 24 27	[−12]	(e 32 23)		SSP	e 32·4
Palomar	Z.	102·5	16	e 13 51	− 9	i 24 34	[− 5]	i 17 55		PP	—
La Jolla	N.	102·8	17	—	—	i 24 32	[− 8]	—		—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.			L.
		°	°	m. s.	s.	m. s.	s.	m. s.			m.
Tucson		104·6	12	e 14 2	− 7	e 24 42	[− 7]	e 18 15	PP		e 41·0
San Juan		112·9	328	e 17 6	?	e 26 21	{− 4}	e 29 12	PS		e 48·3
Auckland		115·2	118	—	—	i 27 38	{+57}	36 39	SS		50·0
Wellington		117·7	122	—	—	27 48	{+50}	53 3?	Q		57·0
Rio de Janeiro		131·2	276	e 21 3	PP	—	—	—	—		—
La Paz		143·9	307	i 19 35	[− 2]	29 27	{−17}	41 17	SS		66·0
Huancayo		144·0	321	e 19 27	[−10]	—	—	23 35	PP		59·4
La Plata	N.	148·4	272	19 45	[0]	—	—	—	—		63·4

Additional readings :—
Bombay iE =5m.44s., iN =5m.51s. and 6m.10s.
Hyderabad SSN =11m.33s., S_cSN =15m.41s.
Zi-ka-wei iN =11m.49s.
Istanbul SS =16m.39s. ; traces of two quakes confused.
Bucharest iN =12m.6s.
Upsala i =8m.7s., SS =16m.12s., iN =13m.17s., eE =16m.9s.
Helwan e =8m.48s.
Mizusawa SN =16m.41s.
Belgrade i =16m.17s. and 18m.20s.
Copenhagen i =10m.24s.
Potsdam iN =11m.44s., iE =13m.5s., iN =13m.34s.
Cheb PP =9m.50s., e =13m.13s. and 14m.50s., SSS =19m.46s.
Jena iSSN =19m.19s.
Bergen SSE =19m.14s., eSSZ =19m.17s., SSN =19m.23s.
Stuttgart iZ =9m.7s., eP_cPZ =10m.13s.
Strasbourg eSS =20m.39s.
Basle e =27m.28s. and 28m.6s.
Aberdeen PSEN =16m.45s., iEN =18m.36s., iSSE =20m.43s.
Kew e =10m.6s. and 12m.6s.?, ePPPN =12m.36s.?, e =19m.33s.?.
Scoresby Sund i =12m.38s.
Tortosa PPPN =13m.13s., P_cSE =15m.17s., PSE =18m.41s., S_cSN =20m.53s., SSE = 22m.7s., SSSE? =23m.12s.
Granada S_cS =20m.20s., SS =22m.51s.
San Fernando iSE =19m.42s., PSE =20m.56s., SSE =24m.19s., SSSE =26m.19s.
College e =24m.22s.
Lisbon N =14m.10s., S_cSE =20m.51s., SSSN =26m.9s., SSSE =26m.52s.?, SSSN = 27m.17s., E =31m.0s., Z =32m.38s.
Tananarive P_cP =11m.30s., SS =25m.17s.
Butte e =25m.57s. ?
Bozeman e =25m.4s., e =29m.34s. and 34m.4s.
Harvard i =13m.28s.
Weston SS =29m.20s.
Rapid City i =24m.14s., e =25m.22s.
Fordham e =14m.22s.
Philadelphia e =16m.54s., 26m.37s., and 29m.40s.
Logan e =16m.56s. and 25m.23s.
Chicago e =25m.55s. and 35m.41s.
Honolulu e =43m.34s.
Salt Lake City e =25m.48s.
Riverview ePSZ =26m.43s., eSSEN =32m.15s., eE =37m.0s., eQN =43m.51s.
Florissant eSPZ =26m.25s., eSSSE =36m.9s.
St. Louis eZ =14m.0s., iSKSN =24m.9s., iSPN =26m.25s., eSSN =32m.37s., ePSSN = 35m.29s.
Bermuda ePS =26m.48s., e =32m.41s., eSSS =35m.12s.
Pasadena eZ =16m.46s. and 19m.51s., ePSNZ =26m.47s., iPKKPZ =30m.3s., eSSEN = 31m.21s. ?
Tucson i =14m.6s., e =17m.36s., ePS =27m.40s., e =29m.40s.
San Juan e =26m.10s., eS =27m.7s.
Auckland SSS =43m.3s. ?
Wellington PP?Z =30m.18s., PPP?Z =31m.1s., SKS =36m.8s. ?, SS =43m.33s., SS?Z = 47m.48s.?, S_cS,S_cS? =49m.33s.
La Paz iSKP =22m.59s., iZ =23m.27s. and 26m.12s., PSKS =32m.59s., PPSZ =35m.25s., SSEN =41m.42s.
Huancayo ePKP =19m.35s., e =29m.43s., eSS =41m.8s., e =51m.30s.
La Plata PN =19m.51s., PZ =19m.56s., Z =20m.4s., N =21m.9s., EN =29m.45s., E =30m.27s.
Long waves were also recorded at Sitka and Dehra Dun.

March 9d. Readings also at 0h. (Kew, De Bilt, and Cheb), 4h. (near Balboa Heights and La Paz), 5h. (Bogota), 7h. (Philadelphia), 8h. (Tucson), 9h. (Tucson, Palomar, Pasadena, Riverside, La Jolla, Santa Barbara, Tinemaha, and Wellington), 10h. (Riverview), 16h. (Logan, Tucson (3), St. Louis, Florissant, Butte, Riverside (2), Palomar (3), Pasadena (3), Ferndale, Santa Clara, Berkeley, and Brisbane), 17h. (St. Louis, Florissant, Pasadena, Palomar, and Tucson), 19h. (Basle, Neuchatel, Zürich, Strasbourg, Pehpei, and Wellington), 20h. (Tucson, Riverside, Pasadena, Palomar, and Balboa Heights).

March 10d. 6h. 39m. 53s. Epicentre 40°·9N. 142°·7E. (as on 1943, June 14d.).

Scale V at Miyako ; IV at Hatinohe, Morioka, Aomori, Mizusawa, Kushiro, and Hakodate ; II-III at Sendai, Urakawa, and Isinomaki. Epicentre 40°·5N. 142°·7E. Macroseismic radius 300km.
Seismological Bulletin of Central Met. Obs., Japan, for 1944, Tokyo, 1951, p. 7, with Macroseismic Chart.

$A = -\cdot6030$, $B = +\cdot4594$, $C = +\cdot6522$; $\delta = +2$; $h = -2$;
$D = +\cdot606$, $E = +\cdot795$; $G = -\cdot519$, $H = +\cdot395$, $K = -\cdot758$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Hatinohe		0·9	247	0 23k	+ 3	0 37	+ 3	—	—	—
Miyako		1·4	203	0 22k	− 5	0 37	− 9	—	—	—
Aomori		1·5	267	0 40k	+12	0 47	− 2	—	—	—
Morioka		1·7	224	0 32k	+ 1	0 49	− 5	—	—	—
Mizusawa	E.	2·1	214	i 0 41	+ 4	1 3	− 1	—	—	—
	N.	2·1	214	0 37	0	0 58	− 6	—	—	—
Akita		2·3	239	0 41	+ 1	1 13	+ 4	—	—	—
Sendai		3·0	208	0 47	− 3	1 23	− 4	—	—	—
Nemuro		3·2	41	1 9k	P_g	1 44	S_g	—	—	—
Hukusima		3·6	209	0 57	− 1	1 48	+ 6	—	—	—
Aikawa		4·5	232	1 25	P_g	2 50	S_g	—	—	—
Mito		4·8	202	1 14	− 1	2 6	− 6	—	—	—
Tukubasan		5·1	204	1 16	− 4	2 45	S_g	—	—	—
Maebasi		5·3	214	1 22	0	2 51	S_g	—	—	—
Kumagaya		5·4	210	1 23	− 1	2 28	0	—	—	—
Nagano		5·5	221	1 26	+ 1	2 54	S_g	—	—	—
Tokyo		5·7	205	1 27	− 1	2 58	S_g	—	—	—
Wazima		5·7	234	1 31a	+ 3	2 41	+ 6	—	—	—
Yokohama		5·9	204	1 26	− 5	2 55	S*	—	—	—
Toyama		6·0	227	1 33	+ 1	3 1	S*	—	—	—
Kohu		6·2	213	1 35	0	2 53	+ 5	—	—	—
Mera		6·4	202	1 30	− 8	3 23	S_g	—	—	—
Misima		6·5	208	1 37	− 2	3 7	+12	—	—	—
Osima		6·6	204	1 32	− 9	3 0	+ 2	—	—	—
Shizuoka		6·8	211	1 41	− 3	3 7	+ 4	—	—	—
Gihu		7·2	222	1 48k	− 1	3 29	+16	—	—	—
Omaesaki		7·2	211	1 49	0	3 39	S*	—	—	—
Hamamatu		7·3	214	1 44	− 6	3 33	S*	—	—	—
Hikone		7·6	225	1 52	− 3	3 23	0	—	—	—
Toyooka		8·2	232	2 4	+ 1	3 50	+12	—	—	—
Osaka		8·4	224	2 11	+ 5	3 57	+14	—	—	—
Kobe		8·6	226	2 7k	− 2	3 56	+ 8	—	—	—
Sumoto		9·0	226	2 26	+13	4 29	S*	—	—	—
Siomisaki		9·3	219	2 17	0	4 37	S*	—	—	—
Hamada		10·3	238	2 34	+ 2	5 2	S*	—	—	—
Koti		10·3	228	2 33	+ 1	4 35	+ 5	—	—	—
Hukuoka		12·2	237	3 0	+ 2	6 44	L	—	—	(6·7)
Kumamoto		12·5	234	3 2	0	6 34	L	—	—	(6·6)
Miyazaki		12·7	229	3 30	+25	7 11	L	—	—	(7·2)
Unzendake		12·9	235	3 18	+11	6 53	L	—	—	(6·9)
College		45·3	35	e 8 30	+ 9	e 15 3	+ 1	e 18 27	SS	e 22·4
Calcutta	N.	48·9	266	i 9 8k	+18	i 16 15	+22	i 19 27	SS	e 24·2
New Delhi	N.	54·1	279	e 9 24	− 5	e 17 4	− 1	17 21	PS	—
Hyderabad	N.	59·4	267	e 10 5	− 1	18 15	PS	18 34	PPS	—
Bombay		62·8	272	e 10 30	0	19 18	PS	12 48	PP	—
Kodaikanal	E.	64·7	262	e 10 35	− 7	e 19 23	+ 1	—	—	—
Scoresby Sund		68·4	355	11 9	+ 3	20 4	− 3	—	—	31·1
Brisbane	z.	68·7	170	e 10 57	−10	—	—	—	—	—
Upsala		69·9	334	e 13 52	PP	e 20 7?	−17	e 24 51	SS	e 34·1
Bozeman		71·6	46	—	—	e 20 46	+ 2	—	—	e 29·0
Tinemaha		72·8	56	e 11 32	0	e 21 5	+ 7	i 11 46	P_cP	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Bergen		73·2	340	i 11 49	+14	21 18	+16	—	—	e 41·1
Haiwee	Z.	73·5	56	e 11 37	+ 1	—	—	—	—	—
Santa Barbara	Z.	73·5	59	e 11 47	+11	—	—	—	—	—
Pasadena		74·7	58	e 11 43	0	i 21 17	− 2	e 25 7?	SS	e 31·1
Riverview		74·8	173	—	—	e 21 17	− 3	e 31 22	?	e 37·2
Copenhagen		74·9	334	i 11 47a	+ 3	21 24	+ 2	14 34	PP	38·1
Riverside	Z.	75·3	58	e 11 45	− 2	—	—	i 11 54	P_cP	—
Palomar	Z.	76·0	58	e 11 51	0	—	—	i 12 3	P_cP	—
La Jolla		76·1	59	e 12 0	+ 9	—	—	—	—	—
Rapid City		76·8	44	e 11 56	+ 1	i 21 40	− 2	—	—	—
Bucharest		77·8	319	e 12 1	0	e 21 49	− 4	e 14 59	PP	41·1
Aberdeen		77·9	342	—	—	i 22 32	+38	—	—	e 36·6
Prague		78·7	329	e 12 16	+10	e 21 48	−15	e 27 14	SS	e 36·1
Jena	N.	79·1	331	e 13 7	+59	—	—	—	—	—
Ksara		79·7	306	e 12 17?	+ 6	e 22 28	+15	—	—	—
Belgrade		80·2	322	e 12 17	+ 3	e 22 20	+ 1	e 15 9	PP	e 47·4
De Bilt		80·3	335	i 12 18a	+ 4	e 22 24	+ 4	e 15 23	PP	e 38·1
Tucson		80·5	56	e 12 15	0	e 21 52	−30	e 15 30	PP	e 37·8
Stuttgart		81·7	331	i 12 23a	+ 1	e 22 47	+13	e 15 27	PP	e 43·0
Uccle		81·7	335	e 12 23a	+ 1	—	—	i 14 13	PP	e 39·1
Strasbourg		82·4	332	e 12 28	+ 3	—	—	—	—	47·1
Kew		82·5	338	i 12 29a	+ 3	i 22 45	+ 3	i 15 40	PP	e 40·1
Auckland		82·8	156	—	—	22 49	+ 4	—	—	40·1
Zürich		83·1	331	e 12 28	− 1	—	—	—	—	—
Chur		83·2	330	e 12 31	+ 2	—	—	—	—	e 45·8
Basle		83·4	331	e 12 32	+ 2	—	—	—	—	—
Neuchatel		84·0	331	e 12 35	+ 2	—	—	—	—	—
Paris		84·0	335	i 12 36	+ 3	—	—	—	—	40·1
Arapuni		84·2	154	12 7?	−27	—	—	—	—	—
Milan	E.	84·5	329	22 56	S	(22 56)	− 6	—	—	—
Helwan		85·2	306	—	—	i 23 17	+ 8	—	—	—
Chicago		85·9	36	—	—	e 23 10	− 6	—	—	e 45·6
Clermont-Ferrand		86·5	333	e 12 49	+ 3	e 23 26	+ 4	e 16 27	PP	e 45·2
Wellington	Z.	86·8	157	12 57a	+10	23 22	− 3	16 17	PP	43·1
Florissant		87·1	39	e 12 51	+ 2	e 23 44	+16	e 16 23	PP	e 41·1
St. Louis		87·3	39	e 12 49	− 1	e 23 28	− 1	13 2	pP	e 40·7
Seven Falls		87·4	23	13 1	+11	23 32	+ 2	32 37	?	43·1
Ottawa		87·5	27	e 12 50	− 1	e 23 27	− 4	—	—	39·1
Christchurch		88·3	159	12 48	− 7	23 26	−13	15 54	PP	41·1
Vermont		89·1	26	—	—	e 23 48	+ 2	—	—	e 45·5
Granada		96·4	333	i 17 42k	PP	28 23	?	—	—	52·7
San Juan		115·2	30	—	—	e 35 36	SS	—	—	e 47·4
Huancayo		136·0	60	—	—	e 28 56	{− 1}	e 39 51	SS	e 64·0
La Paz		144·0	56	19 39	[+ 2]	23 23	PKS	—	—	70·1

Additional readings :—
Calcutta iSSSN = 20m.35s.
New Delhi SSN = 20m.38s., SSSN = 21m.36s.
Bombay P_cPN = 11m.15s., PPE = 12m.52s., PSE = 19m.23s., iN = 22m.22s., iSSN = 22m.52s.
Brisbane iZ = 11m.5s.
Upsala eN = 28m.51s.
Pasadena i = 11m.52s.
Copenhagen 21m.48s.
Palomar eZ = 11m.58s.
Tucson e = 12m.21s., i = 12m.29s.
Stuttgart ePP = 15m.36s.
Kew iZ = 12m.55s., iS_cSEN = 23m.7s., eSSEN = 27m.53s.
Wellington iZ = 14m.42s., SS? = 28m.57s. ?
Florissant eSE = 23m.56s., eSSE = 29m.15s., eSSSS?E = 35m.46s.
St. Louis pPPZ = 16m.28s., eSSE = 29m.18s., eSSSS?E = 35m.50s.
Christchurch SSEN = 28m.57s., QEN = 35·1m.
Long waves were also recorded at Bermuda, Cheb, and Lisbon.

March 10d. Readings also at 0h. (Haiwee, Pasadena, Palomar, Riverside, Tucson, and near Berkeley), 1h. (Haiwee, Pasadena, Tucson, Mizusawa, San Juan, La Paz, La Plata, near Huancayo, and Rio de Janeiro), 2h. (Balboa Heights, La Plata, and Uccle), 4h. (La Paz), 7h. (near Mizusawa), 8h. (Haiwee, Palomar, Pasadena, Riverside, Tinemaha, Tucson, and near Mizusawa (2)), 10h. (near Mizusawa), 12h. (La Paz, Tucson, Pasadena, Riverside, and near Mizusawa (2)), 13h. (near Istanbul, near Lick, and near Mizusawa), 14h. (near Mizusawa), 16h. (Balboa Heights, La Paz, Huancayo, Tucson, Palomar, Riverside, and Tinemaha), 18h. (Haiwee, Palomar, Pasadena, Riverside, Tinemaha, Tucson, Mizusawa, and near Apia), 19h. and 22h. (near Mizusawa).

March 11d. Readings at 4h. (near Branner), 5h. (Bogota), 6h. (Cheb, De Bilt, Stuttgart, Uccle, Calcutta, New Delhi, Zi-ka-wei, Haiwee, Tinemaha, Branner, near Berkeley, and Lick (2)), 7h. (Tinemaha, Tucson, Haiwee, Palomar, Riverside, and Granada), 8h. (near Apia and near Mizusawa), 9h. (near Istanbul, and near Mizusawa), 11h. (Haiwee, Palomar, Riverside, Tucson, and Tacubaya), 13h. (Pehpei, and near Istanbul), 15h. (near Alicante), 17h. (Haiwee, Palomar, Riverside, Tinemaha, Pasadena, Tucson, Stuttgart, Brisbane, and Wellington), 20h. (near Uccle), 22h. (near Tananarive), 23h. (near Apia).

March 12d. Readings at 0h. (Bogota and near Uccle), 4h. (La Plata and Calcutta), 5h. (Bombay), 6h. (near Granada), 7h. (Bogota), 8h. (Tacubaya, Tucson, and Palomar), 13h. (Palomar, Pasadena, Riverside, Tinemaha, Brisbane, Riverview, Sydney, Auckland, and Wellington), 14h. (De Bilt, Uccle, and near Santa Clara), 15h. (Ebingen and Stuttgart), 18h. (Haiwee, Palomar, Tucson, Pasadena, Riverside, Tinemaha, St. Louis, La Paz, and La Plata), 21h. (near Bacau, Campulung, Bucharest, and Focsani).

March 13d. Readings at 7h. and 8h. (Kew), 13h. (near Lick), 14h. (Bucharest, near Istanbul (2), Fresno, Branner, near Berkeley, Lick, and near Uccle), 16h. (Istanbul), 21h. (near Berkeley), 22h. (near Apia), 23h. (Istanbul).

March 14d. 23h. 59m. 26s. Epicentre 41°·6N. 23°·8E. (as on 1937 Sept. 8d.).

Institut météorologique central do Bulgarie. Bull. Seismologique p. 22, Sofia 1945.
Epicentre 41°·5N. 23°·9E. Intensity VI-VII near Nevrokop. Macroseismic radius 200km.

$A = +\cdot6862$, $B = +\cdot3029$, $C = +\cdot6614$; $\delta = -5$; $h = -2$;
$D = +\cdot404$, $E = -\cdot915$; $G = +\cdot605$, $H = +\cdot267$, $K = -\cdot750$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Sofia		1·2	343	e 0 26	+ 2	i 0 41	0	i 0 44	S_g	—
Bucharest		3·3	31	e 0 50	− 3	i 1 46	S_g	i 1 14	P_g	—
Belgrade		4·0	325	e 1 1	− 3	i 2 0	+ 8	i 1 17	P_g	—
Istanbul		4·0	96	1 10	+ 6	—	—	2 13	S_g	—
Triest		8·3	302	e 2 6	+ 2	e 4 16	S*	—	—	—
Prague		10·7	326	e 3 4?	+26	—	—	—	—	e 5·1
Chur		11·5	302	e 2 48	0	e 6 4	S_g	—	—	—
Cheb		11·6	321	e 1 34?	?	—	—	—	—	—
Zürich		12·3	303	e 3 6	+ 7	e 6 44	S_g	—	—	—
Stuttgart		12·5	310	e 2 59	− 3	—	—	—	—	e 6·8
Basle		13·0	304	e 3 5	− 4	e 7 10	S_g	—	—	—
Helwan	z.	13·2	150	i 3 7	− 4	—	—	—	—	i 6·1
Strasbourg		13·3	307	e 4 27	?	e 5 34	− 8	—	—	—

Additional readings :—
Sofia iN = 32s.
Bucharest ePN = 54s., iP*NZ = 1m.4s.
Belgrade i = 1m.13s., i = 2m.13s.
Long waves were also recorded at Potsdam, De Bilt, Kew, Neuchatel, and Granada.

March 14d. Readings also at 1h. (Istanbul, and near Berkeley), 3h. (near Uccle), 4h. (near Berkeley), 7h. (College, Pasadena, Tucson, Florissant, and St. Louis), 11h. (Tucson, Brisbane, Riverview, Sydney, Christchurch, Wellington, New Plymouth, near Auckland, and near La Paz), 12h. (Pasadena and Tucson), 13h. (near Apia), 18h. (Palomar, Pasadena, Riverside, Santa Barbara, Brisbane, Riverview, Sydney, Helwan, Ksara, and La Paz), 23h. (Berkeley, near Branner, Lick, Fresno, and near Istanbul).

March 15d. 1h. 30m. 7s. Epicentre 47°·5N. 15°·0E. (as given by Strasbourg).

Intensity V at Vordernberg and Trofaiach, radius of macroseismic area 25kms.
E. Trapp.
Makros Beobachtungen in den Jahren 1941-45. Anhang 8, Jahrbuch für 1947, der Zentralanstalt für Meteorologie und Geodynamik, Wien, macroseismic chart, p. D.50.

A = +·6550, B = +·1755, C = +·7350 ; δ = +5 ; h = −4 ;
D = +·259, E = −·966 ; G = +·710, H = +·190, K = −·678.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Triest		2·0	205	i 1 7	S	(i 1 7)	+ 5	—	—	—
Chur		3·7	260	e 1 1	+ 1	—	—	e 1 9	P*	—
Ravensburg		3·7	283	—	—	1 53	S*	—	—	—
Stuttgart		4·0	290	e 1 5	+ 1	e 1 49	− 3	e 1 21	P_g	i 2·2
Jena		4·1	328	e 1 21	P_g	e 2 10	S*	—	—	—
Zürich		4·4	270	e 1 9	− 1	e 2 17	S*	e 1 21	+ 3	—
Strasbourg		4·9	285	—	—	2 38	S_g	—	—	—
Basle		5·0	271	e 1 17	− 1	e 2 39	S*	—	—	—
Neuchatel		5·5	269	e 1 25	0	e 2 21	− 9	e 1 43	P*	—

Stuttgart gives also eS_g = 2m.7s.
Long waves were also recorded at Potsdam.

March 15d. 5h. 3m. 53s. Epicentre 39°·5N. 73°·0E. (as on 1943, April 5d.).

A = +·2262, B = +·7399, C = +·6335 ; δ = −6 ; h = −1 ;
D = +·956, E = −·292 ; G = +·185, H = +·606, K = −·774.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
New Delhi		11·4	161	e 2 43	− 4	i 4 58	+ 2	2 48	PP	5·8
Bombay	E.	20·5	182	e 4 51	+ 9	8 44	+17	8 32	PcP	—
	N.	20·5	182	e 4 48	+ 6	8 48	+21	5 13	PP	—
Calcutta	N.	21·4	140	i 4 57	+ 6	i 8 52	+ 7	i 9 34	SS	10·7
Hyderabad	N.	22·5	168	5 8	+ 6	9 20	+15	—	—	12·0
Kodaikanal	E.	29·4	173	e 7 37	?	—	—	—	—	—
Colombo	E.	33·0	169	e 3 17	?	—	—	—	—	—
Bucharest		34·8	294	e 7 1	+ 7	—	—	e 14 44	SS	24·1
Helwan		35·3	267	i 7 1k	+ 2	12 41	+ 8	8 25	PP	—
Belgrade		38·7	295	i 7 28	+ 1	e 18 18	L	—	—	(e 18·3)
Upsala		39·8	319	i 8 48	PP	—	—	e 15 47	SS	—
Prague		41·9	305	e 7 43	−11	e 9 28	PP	e 16 43	SS	e 23·1
Potsdam		42·4	308	—	—	e 17 7	SS	—	—	e 22·1
Copenhagen		42·5	314	i 7 57	− 2	14 20	− 2	9 33	PP	—
Cheb		43·2	305	e 8 9	+ 5	e 14 39	+ 7	i 9 51	PP	—
Triest		43·2	299	i 8 2	− 2	e 14 43	+11	e 9 52	PP	—
Jena		43·6	306	e 8 6	− 2	—	—	e 9 42	PP	—
Stuttgart		45·5	304	i 8 22	− 1	e 15 14	+ 9	e 10 7	PP	e 21·8
Chur		45·7	302	e 8 23	− 1	—	—	—	—	—
Bergen		45·9	321	e 9 58	PP	e 15 7?	− 4	e 17 58	SS	e 22·8
Zürich		46·2	302	e 8 26	− 2	—	—	—	—	—
Strasbourg		46·5	305	e 8 29	− 2	—	—	—	—	—
Basle		46·8	303	e 8 32	− 1	e 19 12	SSS	—	—	—
De Bilt		47·2	310	i 8 37	+ 1	e 15 29	0	e 10 27	PP	e 24·1
Neuchatel		47·4	302	e 8 36	− 2	—	—	—	—	—
Uccle		48·1	308	e 8 42	− 1	e 19 12	SS	i 10 37	PP	e 25·1
Paris		49·8	305	e 9 2	+ 6	—	—	e 10 54	PP	28·1
Aberdeen		50·2	317	—	—	e 16 33	+22	e 20 43	SSS	i 26·6
Kew		50·7	310	e 9 1	− 2	e 16 15?	− 3	e 10 59	PP	e 25·1
Scoresby Sund		55·0	337	9 31	− 4	17 25	+ 8	—	—	—
Granada		58·4	294	i 9 59a	− 1	i 18 26	+24	10 20	pP	e 32·3
San Fernando	E.	60·6	294	e 11 18	+63	18 43	+13	—	—	36·1

For Notes see next page.

NOTES TO MARCH 15d. 5h. 3m. 53s.

Additional readings :—
New Delhi SSN = 5m.4s.
Bombay SN = 9m.20s.
Upsala iN = 13m.4s., eE = 13m.13s., eN = 15m.2s.
Prague e = 20m.1s. and 21m.13s.
Cheb e = 17m.43s.
Triest SS = 17m.44s.
Stuttgart ePPPZ = 11m.14s., ePPPP?Z = 12m.15s., eSZ = 15m.24s., eZ = 16m.45s., eSS = 18m.30s., eSSZ = 18m.39s., e = 20m.34s.
Bergen eZ = 17m.22s., eN = 20m.29s., eZ = 21m.24s.
De Bilt eSS = 19m.9s.
Kew eSS?N = 19m.37s., eSSEZ = 20m.7s.?.
Granada P_gP = 10m.38s., PP = 13m.29s., P_gS = 14m.4s., SS = 22m.45s., sSS = 24m.29s.
Long waves were also recorded at Milan, St. Louis, Florissant, Tucson, and Pasadena.

March 15d. 5h. 50m. 4s. (I)
6h. 17m. 22s. (II)
Epicentre 39°·5N. 73°·0E. (as at 5h. 3m.).

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
I New Delhi		11·4	161	e 2 47	0	e 4 56	0	5 3	SS	—
II		11·4	161	2 48	+ 1	e 5 0	+ 4	—	—	—
I Bombay	N.	20·5	182	e 4 43	+ 1	8 46	+19	9 20	SS	—
II		20·5	182	e 4 46	+ 4	8 44	+17	9 17	SS	—
I Calcutta	N.	21·4	140	i 8 49a	S	(i 8 49)	+ 4	—	—	(i 12·6)
I Hyderabad	N.	22·5	168	9 14	S	(9 14)	+ 9	—	—	(12·2)
II	E.	22·5	168	9 25	S	(9 25)	+20	—	—	(12·2)
II Kodaikanal	E.	29·4	173	e 6 38	PP	—	—	—	—	—
I Colombo	E.	33·0	169	—	—	e 12 56?	+59	—	—	—
I Upsala	N.	39·8	319	—	—	15 56?	SS	—	—	e 22·0
I Prague		41·9	305	e 16 32	SS	19 50	?	—	—	e 22·4
II		41·9	305	e 16 38	SS	20 20	?	—	—	e 22·6
II Triest		43·2	299	e 8 3	− 1	—	—	e 9 51	PP	—
I Stuttgart	Z.	45·5	304	e 8 19	− 4	—	—	—	—	—
II		45·5	304	e 8 21	− 2	e 15 8?	+ 3	e 10 12	PP	e 25·1
II Chur		45·7	302	e 8 22	− 2	—	—	—	—	—
II Bergen		45·9	321	e 11 28	PPP	—	—	—	—	e 23·2
II Zürich		46·2	302	e 8 29	+ 1	—	—	—	—	—

Additional readings :—
New Delhi I iSN = 4m.59s., II eSN = 5m.3s.
Bombay I iN = 4m.47s., P_gPE = 8m.37s., II iN = 4m.50s.
Calcutta and Hyderabad record S as P and L as S.
Upsala I eE = 17m.42s.
Stuttgart II eSS = 18m.38s.
Long waves were also recorded at Kodaikanal (I) and other European stations.

March 15d. 8h. 14m. 43s. Epicentre 37°·0N. 121°·5W.

Intensity V at Aptos and San Jose ; IV at Salinas, San Leandro, and San Francisco ; macroseismic area 2000 sq. miles.
R. R. Bodle.
United States Earthquakes, 1944, Washington, 1946, p. 15.

$A = -·4183$, $B = -·6826$, $C = +·5992$; $\delta = -4$; $h = -1$;
$D = -·853$, $E = +·522$; $G = -·313$, $H = -·511$, $K = -·801$.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.	
		°	°	m. s.	s.	m. s.	s.	m. s.	
Lick		0·4	340	e 0 12	− 1	i 0 19	− 2	—	—
Santa Clara		0·5	314	i 0 8	− 6	i 0 14	− 9	—	—
Branner		0·7	307	i 0 17	0	i 0 27	− 1	—	—
Berkeley		1·1	325	e 0 22	0	i 0 38	− 1	—	—
San Francisco		1·1	315	0 17?	− 5	—	—	—	—
Fresno	N.	1·4	101	e 0 28	+ 1	i 0 48	+ 2	i 0 32	P_g
Tinemaha		2·6	88	e 0 44	0	i 1 22	+ 5	—	—
Santa Barbara		2·9	151	i 0 48	0	i 1 38	S_g	—	—
Haiwee		3·0	107	i 0 53	+ 3	i 1 36	+ 9	—	—
Pasadena		3·9	135	i 1 2	0	i 1 45	− 5	—	—
Tucson		10·0	115	e 2 33	+ 6	—	—	e 5 37	S_g

Berkeley gives also iPN = 25s., iZ = 41s.

March 15d. 8h. 56m. 52s. Epicentre 24°·7N. 123°·2E. Depth of focus 0·010.

A = −·4981, B = +·7611, C = +·4155; δ = +2; h = +3;
D = +·837, E = +·547; G = −·227, H = +·348, K = −·910.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Zi-ka-wei		6·7	346	e 1 34	− 3	i 2 38	−15	i 3 38	SSS	—
Mizusawa	E.	20·9	43	(4 51)	+15	4 51	P	—	—	—
Calcutta	N.	32·0	273	—	—	e 11 25	+ 3	e 14 42	?	—
New Delhi	N.	41·1	286	i 13 37a	S	(i 13 37)	− 4	14 14	PPS	—
Hyderabad	E.	42·2	269	—	—	14 0	+ 3	—	—	—
Bombay		46·9	273	10 37	PP	15 6	+ 1	—	—	—
Helwan		79·6	297	11 59	+ 1	i 21 42	− 9	i 12 26	P_cP	—
Copenhagen		80·8	327	i 12 5k	+ 1	—	—	—	—	—
Scoresby Sund		81·7	349	12 9	0	22 16	+ 4	—	—	—
Stuttgart		86·2	323	e 12 31	− 1	e 22 48	[+ 2]	e 22 58	S	e 39·1
Zürich		87·3	322	e 12 35	− 2	—	—	—	—	—
Basle		87·8	322	e 12 38	− 1	—	—	—	—	—
Tinemaha		95·6	45	i 13 17	+ 1	—	—	—	—	—
Haiwee	Z.	96·4	45	i 13 20	+ 1	—	—	—	—	—
Pasadena	Z.	97·4	47	i 13 24	0	—	—	—	—	—
Riverside	Z.	98·0	47	i 13 27	+ 1	—	—	—	—	—
Palomar	Z.	98·8	47	i 13 31	+ 1	—	—	—	—	—
Tucson		103·4	44	e 13 52	+ 2	—	—	i 18 1	PP	—
St. Louis	Z.	109·6	27	e 18 50	PP	—	—	—	—	—

Additional readings :—
Zi-ka-wei iE = 4m.6s., iN = 4m.32s.
New Delhi P_cP = 16m.41s., iS = 18m.11s., readings wrongly identified.
Stuttgart e = 23m.27s.
Long waves were also recorded at Prague, Uccle, and De Bilt.

March 15d. Readings also at 0h. (near Sofia (2) and Bucharest (2)), 7h. (La Plata), 10h. (near Uccle), 13h. (Pasadena), 18h. (Prague), 19h. (Riverview), 20h. (Tucson, Pasadena, and Palomar), 22h. (Wellington, Riverview, and Brisbane).

March 16d. 12h. Undetermined shock.

Auckland P = 33m.15s.?, S = 37m.32s., R = 40m.13s.
Wellington P = 33m.57s., S? = 38m.36s.?, Q = 40m.55s.?, R = 42m.
Brisbane eZ = 34m.45s.
Riverview iN = 38m.38s., iE = 41m.7s., eL?N = 43m.54s.
Pasadena ePZ = 39m.28s., eN = 58·0m., eZ = 60m.
Riverside ePZ = 39m.31s.
Tucson iP = 39m.53s., i = 39m.56s.
Christchurch QE = 41m.48s., RZ = 43m.25s.
Uccle ePNZ = 47m.43s.
Stuttgart eZ = 47m.47s. and 47m.50s.
Clermont-Ferrand PKP = 47m.48s.
Zürich eP = 47m.51s.
Chur eP = 47m.53s.
Helwan iZ = 48m.6s., 48m.26s., and 52m.0s.
Granada iP = 48m.36s.k, P_cP = 48m.57s., S = 58m.30s.
Strasbourg e = 49m.45s., 49m.59s., and 53m.15s.
Long waves also recorded at Kew.

March 16d. Readings also at 6h. (Brisbane), 7h. (Tucson and Palomar), 9h. (near Helwan, Ksara, Bucharest, De Bilt, and Stuttgart), 12h. (Stuttgart), 17h. (near Bogota), 22h. (near Bogota and near Apia), 23h. (Auckland, Christchurch, Wellington, Brisbane, Riverview, Sydney, and Stuttgart).

March 17d. Readings at 8h. (La Plata), 9h. (Palomar and Tucson), 10h. (Riverview), 11h. (La Paz and near Mizusawa), 16h. (Brisbane and Riverview), 23h. (near Fort de France).

March 18d. Readings at 0h. (near Fort de France), 7h. (near Malaga), 10h. (Tucson, La Paz, and La Plata), 11h. (Riverview), 13h. (Zürich (2), near Berkeley, Branner, and Lick), 14h. (Brisbane and near Istanbul), 19h. (Istanbul (2), Belgrade, Triest, near Bucharest, and Sofia), 20h. (Calcutta, Bucharest, Sofia, Stuttgart, De Bilt, Uccle, and Merida).

March 19d. Readings at 1h. (near Uccle), 8h. (Haiwee, La Jolla, Pasadena, Palomar, Riverside, Tinemaha, Santa Barbara, Tucson, near Triest (2), and near Mizusawa), 9h. (Tucson and Palomar), 10h. (Triest), 11h. (near Granada), 13h. (Pasadena, Palomar, Riverside, and Tucson), 17h. (Mizusawa), 20h. (Riverview and Kew).

March 20d. Readings at 8h. (Dehra Dun), 9h. (Tucson, Pasadena, Palomar, Riverside, near Haiwee, and Tinemaha), 10h. (near Apia), 18h. (near Almeria and Malaga).

March 21d. 22h. 9m. 46s. Epicentre 41°·0N. 143°·3E. (as on 1943, June 13d.).

Scale VI at Okayama; V at Hatinohe and Aomori. Epicentre 40°·9N. 43°·1E.; depth 50km.
Radius of macroseismic area greater than 300km.
Seismological Bulletin of the Central Meteorological Observatory, Japan, for the year 1944, Tokyo, 1951, p. 8, with macroseismic chart.

$A = -\cdot6069$, $B = +\cdot4523$, $C = +\cdot6535$; $\delta = -3$; $h = -2$;
$D = +\cdot598$, $E = +\cdot802$; $G = -\cdot524$, $H = +\cdot391$, $K = -\cdot757$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Hatinohe		1·4	251	0 24k	− 3	0 35	−11	—	—	—
Miyako		1·7	216	0 20	−11	0 41	−13	—	—	—
Aomori		1·9	264	0 45	+11	0 54	− 5	—	—	—
Morioka		2·1	232	0 33k	− 4	0 55	− 9	—	—	—
Mori		2·3	298	0 41	+ 1	1 1	− 8	—	—	—
Mizusawa	E.	2·5	222	i 0 41	− 2	1 5	− 9	—	—	—
Sapporo		2·5	325	0 48	+ 5	1 18	+ 4	—	—	—
Nemuro		2·9	44	1 2	+14	1 39	+15	—	—	—
Sendai		3·3	214	0 52a	− 1	1 25	−10	—	—	—
Hukusima		3·9	214	0 54	− 8	1 36	−14	—	—	—
Onahama		4·5	205	1 26	+15	2 22	+17	—	—	—
Aikawa		4·9	234	1 15	− 2	2 11	− 4	—	—	—
Mito		5·1	206	1 18	− 2	2 18	− 2	—	—	—
Utunomiya		5·2	212	1 22	+ 1	2 26	+ 4	—	—	—
Kakioka		5·3	208	1 19	− 3	2 38	+13	—	—	—
Kumagaya		5·7	213	1 24	− 4	2 33	− 2	—	—	—
Nagano		5·9	224	1 31	0	2 53	+13	—	—	—
Tokyo		6·0	209	1 31	− 1	2 39	− 4	—	—	—
Wazima		6·1	236	1 31	− 3	2 38	− 7	—	—	—
Yokohama		6·3	208	1 35	− 1	3 1	+11	—	—	—
Toyama		6·4	229	1 39	+ 1	3 24	+31	—	—	—
Hunatu		6·5	213	1 41	+ 2	2 56	+ 1	—	—	—
Misima		6·8	211	1 38	− 6	2 58	− 5	—	—	—
Shizuoka		7·2	214	2 5	+16	2 28	+15	—	—	—
Omaesaki		7·5	214	2 4	+11	3 33	+13	—	—	—
Gihu		7·6	224	1 53	− 2	3 25	+ 2	—	—	—
Hamamatu		7·7	217	2 5	+ 9	3 34	+ 9	—	—	—
Hikone		8·0	226	2 0	0	3 21	−12	—	—	—
Kyoto		8·4	227	2 4	− 2	3 42	− 1	—	—	—
Osaka		8·8	227	2 9	− 2	4 8	+15	—	—	—
Kobe		9·0	228	2 14	+ 1	3 57	− 1	—	—	—
Sumoto		9·4	228	2 17	− 1	4 19	+12	—	—	—
Siomisaki		9·6	221	2 33	+12	4 22	+10	—	—	—
Koti		10·8	229	2 35	− 4	4 47	+ 5	—	—	—
Kumamoto		13·0	235	3 4	− 5	5 7	−28	—	—	—

Continued on next page.

		Δ	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Miyazaki		13·2	230	3 9	− 2	5 49	+ 9	—	—	—
College		45·0	35	e 8 41	+22	e 15 4	+ 6	—	—	e 18·6
Calcutta	N.	49·4	266	e 8 57	+ 4	e 15 57	− 3	—	—	—
New Delhi	N.	54·5	279	9 28	− 4	i 17 3	− 7	—	—	—
Bombay	E.	63·3	272	10 30	− 3	18 57	− 7	19 12	PS	—
	N.	63·3	272	10 37	+ 4	18 57	− 7	—	—	—
Kodaikanal	E.	65·1	262	e 10 48	+ 3	—	—	—	—	—
Scoresby Sund		68·3	355	—	—	20 8	+ 2	20 40	PS	31·2
Upsala	E.	70·0	334	—	—	e 20 19	− 7	—	—	e 34·2
Tinemaha	N.	72·3	56	e 11 40	+11	—	—	—	—	—
Santa Barbara		73·0	59	11 52	+19	—	—	—	—	—
Pasadena		74·2	58	e 11 45	+ 5	i 21 14	0	i 12 0	P_cP	e 34·1
Riverview		74·8	173	—	—	e 21 19	− 1	—	—	e 32·4
Copenhagen		75·0	334	e 11 47a	+ 2	—	—	14 35	PP	—
La Jolla		75·6	59	e 12 16	+28	—	—	—	—	—
Palomar		75·6	58	e 12 0	+12	i 21 32	+ 3	i 12 9	pP	—
Potsdam	N.	77·5	332	—	—	e 22 8	+18	—	—	e 45·2
Bucharest		78·0	319	e 12 0	− 2	i 21 52	− 3	e 14 46	PP	40·2
Prague		78·8	329	e 12 24	+18	e 22 3	− 1	e 15 20	PP	e 36·2
Ksara		80·0	306	e 12 12	− 1	e 22 30	+13	—	—	—
Tucson		80·1	56	i 12 18	+ 5	—	—	—	—	e 38·0
De Bilt		80·4	335	i 12 17	+ 2	e 22 19	− 2	—	—	e 38·2
Stonyhurst		81·0	340	—	—	e 22 22	− 5	22 54	SKS	e 40·2
Uccle		81·8	335	e 12 21a	− 1	e 22 30	− 5	—	—	e 38·2
Stuttgart		81·9	332	i 12 23	0	e 22 33	− 3	i 12 39	PP	43·2
Strasbourg		82·5	332	12 30	+ 4	—	—	13 30	PP	—
Kew		82·7	338	e 12 27	0	—	—	e 12 44	P_cP	40·2
Triest		82·7	327	e 13 40	+73	e 22 36	− 8	—	—	—
Chur		83·3	330	e 12 31	+ 1	—	—	—	—	—
Zürich		83·3	331	e 12 30a	0	—	—	—	—	—
Basle		83·5	331	e 12 32	+ 1	—	—	—	—	—
Neuchatel		84·2	331	e 12 36	+ 2	—	—	—	—	—
Helwan		85·5	306	i 12 41k	0	23 26	+14	23 2	SKS	—
Clermont-Ferrand		86·6	333	e 12 49	+ 3	—	—	—	—	e 42·2
Florissant		86·7	39	e 13 4	+17	e 23 15	− 9	e 29 10	SS	e 42·2
St. Louis	z.	86·9	39	i 12 51	+ 3	i 23 29	+ 3	e 13 6	pP	e 40·2
Ottawa		87·2	27	e 12 52	+ 3	—	—	—	—	47·2
Granada		96·5	333	e 13 33a	+ 1	i 25 50	+59	i 17 33	PP	49·3

Additional readings :—
Mizusawa SN =1m.8s.
Bombay iN =10m.41s., iE =10m.44s., PPS =19m.22s., SSE =23m.12s.
Upsala eN =20m.39s.
Palomar iNZ =12m.24s.
Potsdam eE =22m.15s.
Bucharest eN =15m.17s., iPSEN =22m.18s.
Prague ePS =22m.22s.
Tucson i =12m.33s., e =14m.55s.
Stuttgart ePS =23m.14s.
Helwan iZ =12m.56s.
St. Louis eZ =14m.18s., ePPZ =16m.32s., eSSE =29m.11s.
Granada ePPS =30m.59s.
Long waves were also recorded at Bergen, Cheb, Paris, San Fernando, and Wellington.

March 21d. Readings also at 6h. (Bucharest), 8h. (Tucson, Palomar, Riverside, and Pasadena), 12h. (La Paz and Bogota), 14h. (near Alicante), 15h. (Tucson, Palomar, Bozeman, St. Louis, and College), 16h. and 17h. (near Malaga), 18h. (near Berkeley), 19h. (Kodaikanal and near Malaga), 21h. (Huancayo), 22h. (near Berkeley and Mizusawa (2)), 23h. (near Neuchatel (2), Basle (2), Zürich (2), Chur (2), Stuttgart, and Strasbourg).

March 22d. 0h. 43m. 9s. Epicentre 8°·3S. 123°·4E. Depth of focus 0·015.

$A = -\cdot5448$, $B = +\cdot8262$, $C = -\cdot1435$; $\delta = +1$; $h = +6$;
$D = +\cdot835$, $E = +\cdot550$; $G = +\cdot079$, $H = -\cdot120$, $K = -\cdot990$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Perth		24·6	195	5 11	+ 1	9 26	+ 8	5 51	PP	—
Brisbane	N.	33·9	128	i 6 28	− 5	c 11 43	− 4	7 46	PP	e 15·6
Riverview		36·0	139	i 6 51k	+ 1	i 12 19	0	i 7 27	pP	—
Sydney		36·1	139	i 6 51	0	i 12 15	− 5	i 12 3	?	18·0
Miyazaki		40·7	10	7 26	− 3	—	—	—	—	—
Hukuoka		42·2	8	7 43	+ 1	11 19	?	—	—	17·4
Kobe		44·2	14	7 59	+ 1	14 17	− 4	—	—	—
Shizuoka		45·3	17	8 5	− 2	14 31	− 5	—	—	—
Kohu		46·0	17	8 14	+ 2	15 1	+15	—	—	—
Calcutta	N.	46·0	312	e 8 16	+ 4	i 14 52	+ 6	i 8 31	pP	—
Colombo	E.	46·0	287	8 11	− 1	14 45	− 1	10 56	PP	—
Tokyo		46·4	18	e 8 17	+ 2	—	—	1 9 29	PcP	—
Toyama		46·6	16	8 17	0	14 49	− 6	—	—	—
Sendai		49·1	18	8 36	0	15 25	− 5	—	—	—
Kodaikanal	E.	49·3	291	i 8 31	− 7	e 14 6	?	—	—	—
Mizusawa	E.	50·0	18	8 46	+ 3	15 40	− 2	—	—	—
Hyderabad	N.	51·3	300	9 24	+31	(16 26)	+26	(11 25)	PP	—
Hatinohe		51·4	18	e 8 54	0	15 57	− 5	—	—	—
Mori		52·6	16	7 59	−64	e 15 16	−62	—	—	—
Sapporo		53·7	16	(9 8)	− 3	(16 35)	+ 2	—	—	—
Auckland		54·5	130	8 51?	−26	16 38	− 6	9 19	pP	26·9
Christchurch		55·3	138	9 22	0	16 53	− 1	10 2	pP	29·5
Arapuni		55·5	131	—	—	17 3	+ 6	—	—	25·9
Wellington	Z.	56·0	135	9 25k	− 3	16 56	− 8	10 1	pP	24·9
Bombay		56·7	299	i 9 33	+ 1	i 17 8	− 5	10 13	pP	—
New Delhi	N.	57·7	311	i 9 39k	0	i 17 20	− 6	10 14	pP	—
Dehra Dun	N.	58·0	314	e 9 38	− 4	e 17 30	0	—	—	i 24·3
Apia		63 7	101	i 10 24	+ 4	e 18 38	− 4	e 20 3	SS	—
Tananarive		74·0	253	11 25	+ 2	i 20 46	+ 2	12 4	pP	—
Honolulu		82·6	67	i 12 8	− 2	e 22 2	−13	e 23 15	SS	34·3
Ksara		92·5	302	e 13 1?	+ 3	e 23 21	[+ 4]	—	—	—
Helwan		95·8	299	i 13 13k	0	23 36	[0]	17 3	PP	—
College		96·9	25	e 17 10	PP	e 23 31	[−10]	c 31 0	SS	e 42·0
Bucharest		101·0	313	e 13 37	+ 1	i 24 57	− 3	e 17 48	PP	42·9
Sitka		103·0	33	—	—	e 24 10	[− 1]	e 27 12	PS	—
Upsala		105·0	329	18 12	PP	25 32	− 1	e 43 51?	Q	49·9
Prague		108·5	320	e 15 38	P	e 24 57	[+21]	e 19 9	PP	—
Copenhagen		108·6	326	14 12	P	24 39	[+ 3]	18 38	PP	i 53·9
Potsdam	E.	108·9	323	i 18 52	PP	e 27 51	SP	e 29 3	SPP	41·9
Triest		109·6	316	e 17 51	[−24]	i 24 37	[− 3]	—	—	e 56·8
Cheb		109·8	320	e 18 51?	PP	e 23 51?	[−50]	e 27 51?	PS	—
Jena		110·1	321	e 18 31	[+15]	—	—	e 18 51	PP	—
Bergen		110·7	332	17 32	[−45]	24 41	[− 4]	19 5	PP	45·4
Victoria		111·6	41	20 51?	PP	e 29 51?	PPS	—	—	56·9
Stuttgart		112·1	319	e 14 26	P	e 26 38	S	e 15 23	pP	54·0
Chur		112·3	317	e 17 41	?	24 47	[− 5]	—	—	—
Milan		112·8	316	19 12	PP	29 51	PS	—	—	—
Zürich		112·8	318	e 18 12	[−10]	—	—	—	—	—
Strasbourg		113·0	320	19 14	PP	24 57	[+ 3]	28 51	SP	—
Ukiah		113·3	50	e 19 23	PP	25 58	S	e 28 45	SP	53·0
Basle		113·4	318	e 18 33	[+10]	e 26 57	S	—	—	—
De Bilt		113·7	324	e 14 34	P	i 26 55	S	e 15 30	pP	53·9
Scoresby Sund		114·1	348	14 39	P	24 56	[− 2]	18 27	PKP	—
Berkeley		114·2	52	i 19 19	PP	—	—	28 42	SP	—
Uccle		114·6	323	e 19 19	PP	i 24 58	[− 2]	i 28 47	SP	e 54·9
Santa Clara		114·6	52	e 19 27	PP	—	—	(e 28 31)	SP	e 28·5
Neuchatel		114·9	318	e 18 5	P	—	—	—	—	—
Aberdeen	N.	115·6	331	i 19 36	PP	i 28 55	PS	35 6	SS	55·3
Paris		116·3	321	e 19 29	PP	i 25 5	[− 2]	—	—	—

Continued on next page.

		△	Az.	P.		O−C.	S.		O−C.	Supp.			L.
		°	°	m.	s.	s.	m.	s.	s.	m.	s.		m.
Santa Barbara		116·8	55	i 18	32	[+ 3]	—		—	i 19	40	PP	—
Clermont-Ferrand		116·9	317	e 19	35	PP	—		—		30 12	PPS	—
Kew		117·1	324	e 14	49a	P	i 25	9	[0]	i 35	46	SS	57·9
Stonyhurst		117·3	328	i 19	48	PP	i 25	5	[− 5]	i 20	27	pPP	53·9
Tinemaha		117·5	52	i 18	34	[+ 3]	e 25	13	[+ 2]	e 19	19	PP	—
Haiwee		117·9	53	e 18	36	[+ 4]	—		—	—		—	—
Pasadena		118·1	55	i 18	32a	[0]	i 25	13	[0]		19 47	PP	46·9
Riverside		118·6	55	i 18	35a	[+ 2]	e 25	20	[+ 4]	e 28	51	PKKP	—
La Jolla	z.	119·1	57	i 18	35	[+ 1]	—		—	e 20	4	PP	—
Palomar		119·3	56	i 18	35a	[+ 1]	i 25	20	[+ 2]	i 28	53	PKKP	—
Tortosa		120·1	312	e 19	20	[+45]	25	10	[−10]	i 20	5	PP	61·9
Saskatoon		120·3	33	e 26	39	SKKS	e 36	21	SS	e 29	56	PS	49·9
Bozeman		120·4	41	e 19	16	PP	e 25	13	[− 8]	e 20	3	PP	e 56·3
Logan		121·2	45	e 18	43	[+ 6]	e 30	59	PPS	e 20	9	PP	e 49·7
Granada		124·2	310	i 18	42a	[− 1]	25	14	[−19]	19	29	pPKP	69·0
Tucson		124·5	56	i 18	46	[+ 2]	e 25	25	[−10]	e 20	29	PP	e 51·5
Rapid City		126·1	40	e 18	52	[+ 5]	e 27	19	S	e 20	44	PP	e 59·3
San Fernando		126·4	309	e 18	32	[−16]	26	18	[+38]	21	6	PP	65·3
Lisbon		127·9	313	18	53?	[+ 2]	38	1	SS	i 20	59	PP	53·7
Chicago		136·8	34	e 21	53	PP	—		—	e 39	35	SSS	e 60·0
La Plata		137·0	179	19	3	[− 5]	26	3	[− 1]	21	45	PP	64·9
Florissant		137·1	39	i 19	13	[+ 5]	e 28	32	SKKS	i 21	54	PP	—
St. Louis		137·3	39	i 19	10	[+ 1]	e 28	30	SKKS	i 21	53	PP	—
Cape Girardeau	N.	138·5	41	e 19	14	[+ 3]	e 22	35	SKP	e 22	50	pPP	—
Shawinigan Falls		139·4	16	e 19	3	[− 9]	—		—	e 21	51	PP	—
Seven Falls		139·5	14	e 19	9	[− 3]	e 40	21	SS	e 22	3	PP	56·9
Ottawa		139·5	20	19	2	[−10]	41	3	SS	22	9	PP	61·9
Vermont		141·2	18	e 22	16	PP	e 40	43	SS	e 45	14	SSS	e 64·1
Harvard		143·5	17	i 19	17	[− 2]	—		—	—		—	—
Weston		143·7	17	e 19	18	[− 2]	e 26	24	[+ 9]	e 22	34	PP	—
Fordham		144·1	22	i 19	20	[0]	e 29	12	SKKS	i 22	43	PP	—
Georgetown		144·4	27	i 19	21	[0]	i 29	9	SKKS	i 22	40	PP	—
Philadelphia		144·6	23	i 19	19	[− 2]	e 29	11	SKKS	e 22	47	PP	e 63·9
Columbia		145·9	36	e 19	25	[+ 1]	e 29	19	SKKS	e 41	15	SS	e 54·0
Rio de Janeiro	N.	146·3	203	e 19	19	[− 5]	e 29	30	SKKS	(e 42	11)	SS	e 42·2
Huancayo		152·5	137	i 19	41	[+ 7]	i 30	2	SKKS	) e 33	36	PS	e 43·0
La Paz		152·6	156	19	39	[+ 5]	26	21	[− 6]	20	51	pPKP	76·7
Bermuda		154·9	15	e 19	53	[+15]	e 30	47	SKKS	e 23	41	PP	e 71·6
Bogota		162·2	100	i 19	50	[+ 3]	30	54	SKKS	—		—	—
San Juan		166·4	42	e 19	56	[+ 6]	e 44	55	SS	e 24	37	PP	79·1
Fort de France		172·2	34	e 19	33	[−20]	—		—	e 25	0	PP	—

Additional readings :—
Brisbane iSZ = 11m.34s., iSSN = 13m.16s., iQN = 13m.37s.
Riverview iPP = 8m.14s., iP_cP = 9m.14s., isSE = 13m.17s., isSN = 13m.20s., iZ = 14m.19s., iE = 14m.30s., iSSE = 14m.52s., iN = 15m.51s.
Calcutta isSN = 15m.52s.
Mizusawa SN = 15m.43s.
Hyderabad P_cPN = 10m.39s., S_cSN = 18m.58s., SSN = 20m.9s.
Sapporo readings increased by 15 minutes.
Auckland P_cP = 9m.42s., sS = 17m.46s., S_cS? = 18m.46s., Q = 23m.21s.
Christchurch PPZ = 11m.23s., iZ = 14m.2s., sSN = 18m.7s., S_cSEN = 20m.0s., SSNZ = 22m.39s., QEN = 25m.27s.
Wellington sP?Z = 10m.40s., iZ = 10m.51s. and 11m.25s., sPPZ = 12m.19s., PPP? = 13m.3s., S_cPZ = 13m.59s., iZ = 17m.13s., sSZ = 17m.41s., i = 18m.2s., S_cS = 18m.51s., sSS = 21m.41s., Q = 22m.51s.
Bombay P_cPE = 10m.23s., PPE = 11m.37s., PPPN = 13m.7s., SPN = 17m.17s., SPPE = 17m.30s., SSN = 18m.17s., iN = 20m.18s., iE = 20m.21s.
New Delhi P_cPN = 10m.35s., P_cPE = 10m.38s., PPE = 11m.55s., PSN = 18m.2s., PSE = 18m.9s., sSEN = 18m.29s., S_cSN = 19m.8s., SSN = 21m.15s., SSE = 21m.22s., sSSN = 22m.21s., SSSN = 23m.15s., iN = 23m.49s.
Tananarive isS = 21m.56s., SS = 26m.19s., SSS = 29m.1s.
Ksara e = 23m.59s., e = 25m.13s.
Helwan PSZ = 25m.39s., PPSZ = 26m.19s.
College e = 26m.47s.
Bucharest eP?Z = 12m.39s., iE = 17m.45s. and 18m.27s., iN = 23m.59s., iEN = 24m.32s.
Sitka e = 30m.26s.
Upsala i = 24m.16s., eN = 25m.28s.

Continued on next page.

Prague ePKP =18m.34s., ePPP =22m.3s., eSKKS =25m.33s., ePS =28m.9s., ePPS = 29m.9s., eSS =33m.51s., eSSS =37m.57s.
Copenhagen 19m.40s., 22m.1s., 25m.30s., 26m.4s., 27m.19s., 27m.49s., 28m.15s., and 28m.50s.
Potsdam iPS?N =28m.26s., iSSN =33m.52s.
Bergen SKKSN =26m.5s., eE =27m.38s., PKKPZ =28m.12s., PKKPN =28m.32s., PKKSN =31m.48s., eE =33m.7s. and 35m.9s.
Stuttgart ePKPZ =17m.45s., iPPZ =19m.3s., ipPPZ =20m.3s., eSKS =24m.41s., eSKKS =25m.24s., e =27m.44s., iSP =28m.41s., ePKKPZ =29m.14s., eZ = 29m.24s., ePPSZ =29m.41s., iZ =30m.39s., eSS =34m.59s., i =35m.35s., isSS = 36m.41s.
Ukiah eSS =34m.49s.
De Bilt iPP =19m.23s., iZ =20m.5s., eZ =20m.23s., iN =28m.5s., iPS? =28m.37s.
Scoresby Sund 19m.20s., 20m.19s., 21m.58s., eN =22m.46s., 28m.43s., 29m.54s.
Berkeley iN =26m.50s., iSKSE =28m.12s.
Uccle iEZ =19m.32s., iZ =20m.10s., eSSN =35m.4s., iN =36m.11s.
Clermont-Ferrand e =20m.34s., and 23m.0s.
Kew eZ =15m.49s., i =19m.48s. and 20m.39s., eEZ =22m.20s., e =23m.16s., iE = 26m.21s., iEN =27m.21s., eEN =28m.33s., i =29m.4s., e =30m.17s., eZ = 36m.21s., eEN =36m.50s., and 39m.51s.?, eZ =41m.51s.?.
Stonyhurst ePKS =22m.19s., ePPP =23m.7s., eS? =27m.42s., iPKKP =29m.12s., i =29m.30s. and 29m.49s., iPS =30m.25s., iS_cSP =31m.1s., eSS =36m.3s., iSKKS =37m.8s., i =38m.59s.
Tinemaha iEZ =19m.46s.
Pasadena iZ =18m.41s. and 18m.51s., ipPPZ =20m.43s., iSKPZ =21m.50s., iSN = 27m.24s., iPKKPZ =28m.56s., eSPE =29m.13s., iSPPEN =30m.27s., eSSN = 35m.39s.?.
Riverside iZ =19m.39s., iSKPZ =21m.53s.
Palomar iEZ =19m.54s., iSPN =29m.36s.
Tortosa SE =26m.55s., PPSE =30m.42s., iE =39m.10s., SSSE =40m.24s.
Bozeman e =29m.31s. and 30m.45s., eSS =36m.6s., e =38m.14s.
Logan e =21m.18s., 26m.32s., 32m.36s., 36m.24s., and 37m.26s.
Vermont epPP =23m.45s., e =28m.44s., 32m.33s., and 51m.0s.
Granada iPP =20m.29s., pPP =21m.15s., PPP =23m.23s., sPPP =24m.7s., SKKS = 26m.52s., sS =30m.35s., SP =31m.21s., PS =31m.39s., PSS =36m.4s., eSS = 40m.22s.
Tucson e =18m.33s., 24m.5s., and 28m.31s., esS =29m.34s., e =32m.10s., eSS =37m.1s.
Rapid City eSS =37m.29s.
San Fernando SE =28m.32s., PSE =30m.58s., PPS =31m.53s.
Lisbon E =20m.40s., Z =20m.54s., ePPN =21m.2s., E =21m.40s., Z =23m.31s., N = 28m.39s., and 33m.22s., E =33m.26s., Z =33m.29s.
Chicago e =28m.23s. and 31m.43s.
La Plata PKPE =19m.27s., PPZ =21m.51s., PPE =21m.57s., PKS?N =22m.26s., N =23m.33s., and 27m.15s., SKKSE =27m.51s.?, SKKSN =28m.27s., E =31m.51s., N =31m.57s., PSN =33m.57s., Z =35m.9s., SS?E =39m.21s., SS?N =39m.33s.
Florissant eSKPZ =22m.29s., esSKPE =23m.38s., eZ =31m.29s., ePPSE =34m.25s., ePPPSE =35m.38s., eSS =39m.51s., eSSSE =44m.52s.
St. Louis eZ =18m.56s., iPKP?Z =19m.1s., iSKPZ =22m.23s., ipPPZ =22m.38s., iZ =22m.57s., isSKPE =23m.40s., ePPPZ =24m.49s., esSKKSE =29m.43s., esSN =31m.57s., ePPSE =34m.41s., eE =35m.31s., eSSZ =39m.44s., ePPSS?N = 40m.50s., eSSSE =45m.50s., eN =53m.30s.
Shawinigan Falls e =31m.9s.
Seven Falls e =32m.21s.
Ottawa SKP =22m.31s., PPSN =34m.15s.
Columbia e =33m.1s.
Weston e =23m.12s. and 25m.55s., eSKKS =29m.5s., e =32m.32s. and 33m.33s., eSS =41m.14s.
Fordham i =20m.22s. and 42m.6s.
Philadelphia epPP =33m.39s., e =35m.30s., eSS =41m.0s., eSSS =47m.1s.
Huancayo i =20m.16s. and 21m.51s.
La Paz PKP_2Z =19m.59s., PP =24m.5s., PPP =27m.29s., SKKS =30m.11s., PSKS = 33m.25s., SS =44m.7s.
Bermuda e =20m.7s., eSS =44m.13s., e =48m.45s. and 52m.44s.
Bogota ipP =20m.38s., e =23m.25s. and 31m.29s.
San Juan e =20m.54s. and 33m.9s.

March 22d. Readings also at 0h. (near Mizusawa), 2h. (near Chur and Zürich), 7h. (Pehpei), 8h. (Tucson and near Almeria), 12h. (Brisbane and Riverview), 17h. (Tucson (3), Pasadena (2), Palomar (3), St. Louis (2), La Jolla, and Tinemaha (2)), 19h. (Tucson, Pasadena, Palomar, Florissant, St. Louis, Huancayo, Arapuni, Wellington, Apia, Riverview, and Brisbane), 20h. (Kew, Uccle, and Stuttgart), 21h. (near Fort de France), 22h. (Tacubaya).

March 23d. Readings at 0h. (near Harvard), 1h. (Merida), 5h. (Tacubaya), 11h. (near Granada, Alicante, Almeria, and Malaga), 12h. (Tacubaya, Merida, Florissant, St. Louis, Tucson, Haiwee, Palomar, Riverside, and Tinemaha), 15h. (Granada), 16h. (near Uccle), 17h. (near Alicante), 19h. (Stuttgart (2), Tucson, Pasadena, Tinemaha, near Ottawa, and near Mizusawa),

March 24d. 17h. 1m. 51s. Epicentre 8°·1N. 83°·2W. (as on 1942 April 22d.).

$A = +·1172$, $B = -·9832$, $C = +·1400$; $\delta = +2$; $h = +6$;
$D = -·993$, $E = -·118$; $G = +·017$, $H = -·139$, $K = -·990$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Balboa Heights		3·7	78	i 1 6	+ 6	i 1 50	+ 5	i 2 0	S_g	—
Bogota		9·7	110	i 2 35	+13	—	—	—	—	—
San Juan		19·5	56	e 4 34	+ 3	e 8 18	+12	—	—	e 10·5
St. Louis		31·1	349	i 6 16	− 6	e 11 16	−12	—	—	—
Tucson		35·1	317	e 6 55	− 2	—	—	—	—	e 17·3
La Jolla	z.	40·0	313	i 7 37	− 1	—	—	—	—	—
Palomar		40·0	314	i 7 33	− 5	—	—	—	—	—
Riverside	z.	40·7	315	e 7 42	− 2	—	—	—	—	—
Pasadena		41·3	315	i 7 48	− 1	—	—	—	—	—
Tinehama		42·9	318	i 8 2	0	—	—	—	—	—

Additional readings :—
San Juan i = 4m.41s.
Tucson e = 10m.44s.

March 24d. Readings also at 0h. (Ksara), 1h. (near Mizusawa), 3h. (near Port au Prince), 13h. and 14h. (near Alicante), 19h. (Tucson), 21h. (Basle), 22h. (Brisbane, Riverview, Stuttgart, Basle, Chur, Neuchatel, Zürich, Tucson, Palomar, Pasadena, Riverside, and Tinemaha).

March 25d. Readings at 3h. (near Apia), 4h. (La Plata, St. Louis, Tucson, Riverside, and Tinemaha), 5h. (Tucson and Tinemaha), 6h. (Bogota), 8h. (Pasadena, Riverside, Tucson, Tinemaha, and Triest), 11h. (Ksara), 12h. (Tucson and Tinemaha), 14h. (Auckland, Wellington, and Riverview), 16h. (Tucson, Tinemaha, and near Apia), 17h. (Wellington, New Plymouth, near Monowai, and near New Delhi), 19h. (St. Louis), 20h. (Pasadena, Riverside, Tinemaha, Tucson, and near Alicante), 21h. (Auckland and Riverview), 23h. (Belgrade).

March 26d. Readings at 3h. (near Mizusawa), 4h. (La Paz), 8h. (near Bogota), 13h. (near San Juan), 16h. (Arapuni, Wellington, Brisbane, Riverview, Bombay, and Calcutta), 17h. (Pasadena, Bacau, and near Bucharest), 20h. (near Istanbul), 21h. (Tucson and Riverside), 22h. (Stuttgart), 23h. (Kodaikanal, Florissant, St. Louis, Calcutta, Pasadena, Tucson, Riverside, and Tinemaha).

March 27d. Readings at 0h. (Riverview and near Fort de France), 6h. (Wellington), 7h. (Riverview, Auckland, and Wellington), 8h. (near Malaga (2)), 13h. (Tacubaya), 14h. (Huancayo, La Plata, La Jolla, Tucson, Riverside, Pasadena, and near Malaga), 15h. (De Bilt, Uccle, Stuttgart, Kew La Paz, Riverview, and Wellington), 16h. (Bogota), 17h. (De Bilt and Stuttgart), 20h. (De Bilt, Uccle, Jena, Cheb, Potsdam, Prague, Clermont-Ferrand, Zürich, Triest, Strasbourg, Upsala, Granada, Belgrade, Bucharest, and Sofia), 22h. (Stuttgart).

March 28d. Readings at 1h. (Triest), 2h. and 7h. (near Bogota), 10h. (Christchurch, Riverview, Pasadena, Tucson, and Stuttgart), 11h. (Huancayo and St. Louis), 12h. (Kew), 13h. (Riverview, Auckland, Christchurch, and Wellington), 18h. (Riverview), 19h. (Harvard), 20h. (Kew), 22h. (Pasadena, Riverside, Tinemaha, Tucson, Arapuni, Auckland, Christchurch, Wellington, Brisbane, Riverview, Sydney, and near Apia), 23h. (Auckland, Huancayo, St. Louis, and Granada).

March 29d. Readings at 0h. (Kew), 1h. (Istanbul, Strasbourg, Neuchatel, near Basle, Zurich, Stuttgart, and near Uccle), 2h. (near Harvard), 5h. (near Lick), 13h. (De Bilt, Kew, Uccle, Stuttgart, and Ferndale), 14h. (near Harvard), 15h. (Auckland, Wellington, and Riverview), 16h. (Brisbane and Riverview), 20h. (near La Paz and near Ottawa), 21h. (near Lick).

March 30d. Readings at 1h. (near Ravensburg, Basle, Chur, Zürich, Neuchatel, and Stuttgart), 2h. (Riverview), 7h. (Bucharest), 10h. (Huancayo, La Paz, La Plata, Haiwee, Tucson, Tinemaha, Riverside, and Pasadena), 15h. (Calcutta, New Delhi, Helwan, Ksara, Bucharest, Cheb, Uccle, De Bilt, Stuttgart, and Kew), 16h. (Helwan and Ksara), 18h. (Huancayo and near Bogota (2)), 19h. (Stuttgart, Jena, Tucson, Tinemaha, La Paz, and near Bogota), 20h. (near Bogota (2)), 23h. (Tacubaya).

March 31d. 2h. 51m. 44s. Epicentre 5°·6S. 131°·0E. Depth of focus 0·005.

$A = -\cdot6530$, $B = +\cdot7512$, $C = -\cdot0969$; $\delta = +10$; $h = +7$;
$D = +\cdot755$, $E = +\cdot656$; $G = +\cdot064$, $H = -\cdot073$, $K = -\cdot995$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Perth		29·8	207	6 48	PP	11 46	+52	7 34	PPP	—
Brisbane		30·2	139	i 6 3k	− 3	i 10 53	− 7	i 6 54	PP	i 13·9
Riverview		33·8	150	i 6 37k	− 1	i 11 58	+ 2	i 6 48	pP	i 16·1
Sydney		33·8	150	e 5 58	−40	e 11 4	−52	—	—	e 13·9
Miyazaki		37·3	2	7 7	− 1	12 53	+ 3	—	—	—
Hukuoka		39·0	359	e 7 22	0	13 14	− 2	—	—	—
Koti		39·0	3	e 7 22	0	13 17	+ 1	—	—	—
Kobe		40·3	5	e 7 32	0	13 37	+ 2	—	—	—
Hamada		40·3	1	7 31	− 1	13 33	− 2	—	—	—
Nagoya		40·9	8	7 42	+ 5	13 40	− 4	—	—	—
Kohu		41·6	10	e 7 47	+ 4	13 55	+ 1	—	—	—
Kumagaya		42·3	10	e 7 55	+ 6	14 19	+14	—	—	—
Toyama		42·5	8	7 51	0	14 8	0	—	—	—
Nagano		42·6	9	7 49	− 2	13 54	−15	—	—	—
Hukusima		44·0	11	e 8 3	0	14 29	0	—	—	—
Sendai		44·6	11	8 4	− 4	14 33	− 5	—	—	—
Mizusawa		45·5	11	e 8 17	+ 2	14 52	+ 1	—	—	—
Calcutta	N.	50·2	306	(i 8 56a)	+ 5	(i 16 8)	+11	(i 16 48)	sS	—
Auckland		50·6	134	9 1	+ 7	16 6	+ 3	16 46	S	23·3
Arapuni		51·8	135	—	—	16 34	+15	—	—	22·3
Colombo	E.	52·5	283	8 51	−18	16 35	+ 6	—	—	—
Christchurch		52·6	143	9 6	− 3	16 31	+ 1	9 40	pP	26·8
Wellington		52·7	140	9 8k	− 2	16 26	− 5	9 25	pP	23·3
Kodaikanal	E.	55·6	287	i 9 39a	+ 8	i 17 24	+14	—	—	25·9
Hyderabad		56·7	295	9 37	− 2	17 27	+ 2	10 39	P_cP	27·3
New Delhi	N.	61·9	307	i 10 15	0	i 18 32	0	10 55	P_cP	30·5
Bombay		62·2	295	e 10 18	+ 1	i 18 37	+ 1	12 27	PP	—
Honolulu		74·7	67	e 11 54	+20	e 21 39	SP	e 17 34	?	e 31·4
Tananarive		82·0	252	—	—	e 22 36	+14	27 32	SS	—
College		91·3	25	e 14 45	?	e 23 45	− 6	e 25 7	PS	e 37·2
Ksara		97·3	303	e 13 3?	−24	e 24 6	[+ 9]	—	—	—
Helwan		101·1	299	13 46	+ 2	24 22	[+ 6]	15 54	pP	—
Bucharest		104·5	314	e 18 4	PP	i 25 52	+10	e 18 24	pPP	51·3
Victoria		104·5	41	—	—	e 26 28	+46	—	—	43·3
Ukiah		105·8	51	—	—	e 24 44	[+ 6]	e 28 51	PPS	e 44·2
Upsala		106·4	331	e 18 36	PP	e 24 42	[+ 1]	e 33 16?	SS	e 52·3
Berkeley	E.	106·6	53	e 19 36	?	—	—	i 23 49	?	e 48·7
Santa Clara	Z.	106·9	53	e 26 0	S	(e 26 0)	− 2	—	—	—
Tinemaha	Z.	109·9	53	e 18 28	[+ 4]	—	—	i 19 3	PP	—
Haiwee		110·3	53	e 18 29	[+ 4]	—	—	e 19 9	PP	—
Pasadena		110·3	56	e 17 31	[−54]	e 28 16?	PS	i 19 16	PP	e 44·8
Copenhagen		110·4	328	19 6	PP	28 13	PS	34 30	SS	56·3
Riverside	Z.	111·0	56	e 19 2	PP	—	—	—	—	—
Potsdam		111·2	324	e 19 6	PP	e 28 34	PS	—	—	e 53·3
Prague		111·2	322	e 19 21	PP	e 28 38	PS	e 29 16	PPS	e 50·3
Cheb		112·4	322	e 18 36	[+ 7]	e 28 53	PS	e 19 29	PP	—
Scoresby Sund		112·9	350	19 28	PP	28 58	PS	35 14	SSP	56·3
Triest		112·9	317	i 19 24	PP	i 28 54	PS	—	—	—
Bozeman		113·4	42	—	—	e 26 17	SKKS	e 28 52	PS	e 50·1
Logan		113·9	46	e 19 46	PP	e 28 32	SP	e 35 41	SSP	e 46·4
Saskatoon		113·9	34	—	—	e 29 16?	PS	—	—	52·3
Salt Lake City		114·1	47	—	—	e 26 18	SKKS	e 29 7	PS	e 46·6
Stuttgart		114·8	322	e 18 35	[+ 1]	e 27 16	S	e 19 32	PP	—
Chur		115·3	320	e 18 36	[+ 1]	—	—	—	—	—
Zürich		115·7	321	e 18 38	[+ 3]	—	—	—	—	—
De Bilt		115·8	326	i 19 43	PP	—	—	—	—	e 48·3
Strasbourg		115·8	322	19 40	PP	—	—	—	—	—
Milan		116·0	318	19 41	PP	29 35	PS	—	—	—
Basle		116·3	321	e 18 34	[− 3]	—	—	e 19 49	PP	—
Tucson		116·7	56	e 18 40	[+ 3]	e 29 13	PS	e 22 37	PPP	e 54·1

Continued on next page.

		△	Az.	P.	O−C.	S.	O−C.	Supp.	L.
		°	°	m. s.	s.	m. s.	s.	m. s.	m.
Aberdeen		116·9	333	i 19 57	PP	i 29 37	PS	e 35 56 SS	56·8
Neuchatel		116·9	321	e 18 38	[0]	—	—	— —	—
Uccle		116·9	325	e 19 49	PP	e 26 16?	SKKS	e 29 16? PS	e 57·3
Paris		118·8	323	e 20 9	PP	—	—	— —	e 65·3
Kew		119·1	328	e 19 56	PP	e 25 37	[+ 6]	e 26 16 SKKS	e 59·3
Rapid City		119·1	41	e 20 10	PP	e 26 43	SKKS	— —	e 59·8
Clermont-Ferrand		119·8	320	e 20 13	PP	—	—	— —	e 65·3
Granada		128·1	313	i 21 5k	PP	27 53	SKKS	23 30 PPP	71·8
Florissant		130·1	42	e 21 18	PP	e 22 34	SKP	e 23 58 PPP	—
San Fernando		130·2	313	e 21 21	PP	e 22 25	SKP	38 1 ?	72·3
St. Louis		130·3	42	e 19 19	[+15]	i 22 25	SKP	e 21 39 PP	e 63·7
Lisbon		131·2	318	21 24a	PP	22 29	SKP	24 19 PPP	64·1
Cape Girardeau	N.	131·4	44	—	—	e 22 33	SKP	— —	—
Ottawa		134·0	25	e 19 13	[+ 3]	e 22 35	SKP	e 39 16? SS	e 56·3
Seven Falls		134·6	20	e 22 16	PP	—	—	e 39 46 SS	56·3
Fordham		138·4	28	e 20 13	[+55]	e 22 34	SKP	e 41 6 SSP	e 73·3
Weston		138·4	24	e 19 22	[+ 4]	—	—	— —	e 56·8
Philadelphia		138·5	30	e 22 10	PP	e 32 36	PS	e 40 14 SS	e 54·7
La Plata		138·8	168	22 52	SKP	28 52	SKKS	— —	75·3
Huancayo		148·5	124	e 19 43	[+ 7]	e 23 50	SKP	— —	e 62·7
Bermuda		149·6	26	e 21 11	?	e 42 43	SS	— —	e 72·8
La Paz		151·0	140	19 46	[+ 6]	i 23 25	SKP	33 21 PSKS	74·9
Rio de Janeiro	N.	151·1	191	e 20 16	pPKP	—	—	— —	—
Bogota		155·0	90	e 19 51	[+ 5]	—	—	e 20 14 pPKP	—
San Juan		159·0	50	e 19 56	[+ 5]	—	—	e 44 39 SS	e 74·7

Additional readings :—
Perth PPP =8m.46s., SS =13m.16s.
Brisbane iE =6m.33s., iN =7m.2s., iP$_c$P?N =8m.54s.
Riverview isS?N =12m.20s., iSSE =13m.39s., iN =14m.17s., E =14m.22s.
Calcutta iSSN =(19m.57s.), readings increased by one minute.
Auckland i =16m.26s., S$_c$S? =19m.41s., pS$_c$S? =20m.34s., Q =21m.56s.
Christchurch PPE =11m.44s., iN =17m.8s., iNZ =17m.28s., S$_c$SZ =19m.24s., SSEN = 21m.32s., QEN =22m.36s.
Wellington sPZ =9m.36s., P$_c$PZ =10m.21s., PPP?Z =12m.3s., iZ =13m.24s., sS = 17m.6s., Q =21m.41s.
Hyderabad PPN =11m.31s., PSN =17m.34s., S$_c$SE =19m.27s.
New Delhi PSN =18m.41s., S$_c$SN =20m.7s., iN =21m.18s., SSN =22m.27s., SSSN = 24m.8s.
College eSS =29m.53s.
Helwan eZ =17m.22s., PP?Z =17m.52s., eZ =20m.12s., eN =25m.41s., 26m.34s., and 27m.34s.
Bucharest iN =20m.38s., iE =21m.25s., and 25m.22s.
Upsala eN =25m.16s.?.
Pasadena eE =25m.58s.?, eSSN =34m.28s.?.
Copenhagen 25m.59s.
Prague eSS =34m.46s., eSSS =38m.52s.
Scoresby Sund 28m.10s., 38m.58s.
Bozeman eS =26m.52s., eSS =35m.8s.
Logan e =29m.24s.
Salt Lake City e =39m.29s.
Stuttgart eZ =20m.18s., 22m.10s., 22m.39s., and 24m.5s., ePS =29m.5s., ePKKPZ = 29m.16s.?, e =29m.45s., ePPS =30m.49s.
Tucson e =19m.3s., 26m.29s., 36m.44s., and 43m.51s.
Kew ePSZ =30m.37s., ePPSZ =31m.37s., eSSEN =36m.27s., eSSSNZ =40m.46s.
Granada PS =31m.23s., SS =41m.11s., SSS =45m.47s., readings wrongly identified.
Florissant eSE =38m.37s.
St. Louis eZ =19m.33s., i =22m.33s., eE =23m.8s., ePPPE =24m.0s., eSE =29m.56s., eSSE =38m.36s., eSSSN =44m.2s., eN =54m.34s.
Lisbon PPN =21m.29s., PPE =21m.36s., SKPE =22m.35s.
Philadelphia e =29m.25s., eSS =35m.36s.
Huancayo e =27m.46s. and 43m.29s.
Bermuda e =22m.26s., 29m.4s., and 53m.48s.
La Paz iZ =20m.6s. and 20m.30s., PPS =36m.16s.
Bogota e =20m.48s.
San Juan e =26m.0s., 28m.41s., and 31m.35s.
Long waves were also recorded at Chicago and Harvard.

March 31d. 20h. 35m. 4s. Epicentre 0°·5S. 80°·0W. (as given by U.S.C.G.S. and Strasbourg).

Felt at Guayaquil and Quito.
Annales de l'Institut de Physique du Globe de Strasbourg, 2e partie, Séismologie, tome IX 1944, p. 9. Strasbourg 1951.

$A = +·1736$, $B = -·9848$, $C = -·0087$; $\delta = +4$; $h = +7$;
$D = -·985$, $E = -·174$; $G = -·001$, $H = +·008$, $K = -1·000$.

		△	Az.	P.	O−C.	S.	O−C.	Supp.		L.
		°	°	m. s.	s.	m. s.	s.	m. s.		m.
Bogota		7·8	50	i 1 56	− 2	i 3 53	S*	i 2 4	P*	—
Balboa Heights		9·4	3	i 2 20	+ 2	e 4 4	− 3	—	—	e 4·7
Huancayo		12·4	158	i 3 3	+ 2	i 5 9	−12	e 6 18	SSS	e 6·8
La Paz	Z.	19·7	144	i 4 36k	+ 2	i 8 17	+ 7	—	—	11·5
San Juan		23·2	35	i 5 10	+ 1	—	—	i 5 48	PPP	i 10·2
Fort de France		23·4	51	e 4 38	−33	i 8 56	−25	—	—	—
Tacubaya	N.	27·3	318	i 5 47	− 1	—	—	—	—	—
Columbia		34·3	359	e 8 8	PP	e 11 36	−41	—	—	e 14·4
Bermuda		35·8	23	—	—	e 12 49	+ 8	e 13 56	?	e 17·4
Cape Girardeau	N.	38·6	348	e 7 24	− 2	—	—	e 9 7	PP	—
La Plata	E.	39·9	151	—	—	13 56?	+13	—	—	22·7
Philadelphia		40·5	7	e 7 40	− 2	e 13 43	− 9	e 9 10	PP	e 16·9
Fordham		41·5	8	e 7 51	+ 1	e 14 11	+ 4	e 9 35	PP	e 23·9
Chicago		42·7	352	e 9 29	PP	—	—	e 17 33	SS	e 21·2
Weston		43·4	11	e 8 7	+ 1	e 14 28	− 7	—	—	—
Harvard		43·5	11	i 8 7	0	—	—	i 8 14	?	e 21·9
Tucson		43·7	322	e 8 8	0	e 14 43	+ 4	e 9 40	PP	e 18·2
Ottawa		45·9	5	8 24	− 2	15 8	− 3	10 11	PP	e 22·9
Seven Falls		48·1	9	8 44	+ 1	15 41	− 1	—	—	24·9
La Jolla		48·3	318	e 8 45	0	—	—	—	—	—
Rapid City		49·0	339	i 8 50	0	i 15 56	+ 1	—	—	e 20·1
Riverside	Z.	49·0	319	i 8 51a	+ 1	—	—	—	—	—
Pasadena		49·7	319	i 8 56a	0	e 16 2?	− 2	i 9 29	?	e 22·2
Salt Lake City		50·2	329	e 9 0	0	e 16 12	+ 1	—	—	e 28·8
Haiwee		50·7	320	e 9 9	+ 6	—	—	—	—	—
Santa Barbara	Z.	50·9	317	e 9 6	+ 1	—	—	—	—	—
Logan		51·0	330	e 9 20	+14	e 16 17	− 5	—	—	e 27·0
Tinemaha	Z.	51·5	321	i 9 9a	0	—	—	i 10 33	PcP	—
Bozeman		53·5	334	e 14 27	PcS	e 17 10	+13	—	—	e 27·2
Santa Clara	Z.	54·0	320	e 10 30	PcP	—	—	—	—	—
Berkeley		54·5	320	i 9 32	0	i 17 13	+ 3	e 17 30	PPS	e 24·9
Saskatoon		57·0	342	—	—	e 17 43	0	—	—	33·9
Victoria		61·5	329	—	—	e 18 41	− 1	—	—	29·9
Granada		79·5	52	i 12 13	+ 3	i 22 11	0	12 20	PcP	41·5
Scoresby Sund		80·2	17	12 24	+10	22 19	0	22 48	PS	—
College		81·2	337	—	—	e 22 37	+ 8	e 31 37	SSS	e 43·4
Kew		84·0	39	—	—	e 22 57	0	e 23 15	ScS	e 41·9
Paris		85·4	41	e 12 40	0	—	—	—	—	e 42·9
Uccle		86·8	39	e 12 47	0	e 23 21	− 4	—	—	—
De Bilt		87·4	38	e 12 51	+ 1	e 23 30	0	i 13 0	PcP	e 37·9
Strasbourg		88·9	41	13 9	+11	—	—	—	—	—
Stuttgart		89·8	41	e 13 1	− 1	e 23 52	− 1	e 24 10	ScS	e 44·7
Copenhagen		91·8	34	—	—	24 10	− 1	—	—	—
Cheb		91·9	40	—	—	e 23 56?	{+ 1}	—	—	e 44·9
Triest		93·0	44	—	—	e 24 5	{+ 1}	—	—	—

Additional readings :—
Bogota i = 2m.13s., iP_g = 2m.48s., i = 4m.46s., iS_g = 5m.2s.
Cape Girardeau eN = 7m.37s.
Fordham iP = 8m.0s.
Tucson ePPP = 10m.29s.
Ottawa SSS = 18m.56s.
Tinemaha iZ = 10m.3s.
Berkeley iPN = 9m.42s.
Granada SS = 27m.9s.
Stuttgart e = 29m.38s.?, eQ = 42·9m.
Long waves were also recorded at Riverview and Butte.

March 31d. Readings also at 3h. (near Bogota (2)), 6h. (La Plata and La Paz), 7h. (La Paz), 9h. (Kodaikanal), 12h. (near Istanbul), 18h. (Mizusawa), 19h. (Tucson, Riverside, Pasadena, and Tinemaha), 22h. (Tacubaya and Kodaikanal).

The scanned images of the bulletins of the International Seismological Summary (ISS) have been obtained thanks to funding provided by the US National Science Foundation through grant EAR-9725140 (Villaseñor et al., 1997) and collected by SGA Storia Geofisica Ambiente (Bologna) on behalf of the Istituto Nazionale di Geofisica e Vulcanologia (Rome), in the frame of the EUROSEISMOS project.

REYKJAVIK.

Earthquake readings for 1944 January, February, and March.

A large number of local earthquakes were recorded at Reykjavik during this period. Many of these were actually experienced in Iceland but few were recorded instrumentally more widely. A complete list is added of the times of first recorded phase for each of these, which also includes any shock which has been treated in more detail in the text of the present number.

Date			h.	m.	s.
January	1d.	iP	6	17	43
		iP	6	44	58
Feb.	4d.	iP	18	33	5
	6d.	iP	17	6	44
	10d.	iP	3	20	21
	18d.	iP	20	3	36
		eP	21	37	0
		iP	23	28	14
	19d.	iP	11	36	20
		e	12	21	11
		iP	13	47	48
		i	13	54	52
		iP	14	18	0
		e	14	49	23
		eP	16	5	14
		i	16	12	48
	20d.	iP	19	32	34
		iP	19	46	1
		iP	19	49	42
	21d.	iP	0	26	32
		iP	2	34	49
		iP	2	38	57
		iP	3	50	45
		iP	5	22	24
		iP	8	29	44
		eP	9	49	30
		iP	11	35	54
		eP	12	46	14
		eP	15	21	56
		P?	15	26	32
		iP	16	1	54
		eP	16	49	43
		iP	16	53	0
		iP	17	34	14
		eP	18	23	12
		iP	19	55	49
		eP	20	14	16
		eP	20	56	45
		eP	21	27	20
		i	21	37	3
		iP	21	40	36
		iP	22	33	46
		iP	22	35	16
		i	22	51	13
		eP	23	8	8
		i	23	44	1
		i	23	45	12
		i	23	51	0
		i	23	52	4
	22d.	iP	0	4	51
		i	0	10	48
		eP	0	33	48
		i	0	42	15
		i	0	49	48
		i	1	0	48
		e	2	8	4
		iP	2	13	25
		i	2	20	23
		iP	2	35	5
		iP	4	4	4
		i	4	42	7
		eP	4	51	57
		i	5	7	3
		iP	5	8	19
		e	5	14	55
		iP	7	35	49
		iP	8	21	43
		e	10	18	30
		i	10	32	8
		e	10	59	12
		e	12	13	45

Date			h.	m.	s.
Feb.	22d.	i	12	47	41
		eP	13	25	45
		e	13	45	25
		e	14	0	37
		e	15	20	41
		iP	15	45	15
		eP	16	6	47
		iP	16	44	29
		i	17	1	22
		i	18	14	6
		e	18	25	14
		i?	18	27	8
		eP	18	32	47
		eP	19	35	40
		e	19	49	34
		i	20	21	57
		eP	22	16	54
		i	22	18	45
	23d.	e	0	30	22
		e?	0	42	48
		e?	1	29	44
		i	3	17	7
		e	3	55	9
		eP	4	6	54
		eP	5	23	23
		i	6	47	28
		e?	7	4	5
		e	7	10	59
		iP?	7	12	36
		eP	7	20	59
		e	7	25	38
		eP	7	47	14
		iP	8	27	51
		i	8	28	37
		e	8	44	56
		e	8	53	8
		i	9	3	12
		iP	9	7	35
		i	9	29	4
		e	10	5	36
		i	10	30	51
		iP	10	33	22
		e	10	39	45
		i	10	43	7
		iP	11	4	22
		i	11	16	27
		i	11	22	32
		iP	11	29	31
		iP	11	44	32
		e	11	48	44
		e	12	21	48
		i	12	43	20
		e	12	57	45
		e	13	2	45
		e	13	10	21
		e	13	49	35
		eP	14	13	55
		i	14	22	41
		i	14	24	59
		i	14	42	43
		iP	14	55	21
		i	14	58	43
		i	15	43	6
		eP	16	20	39
		i	16	24	31
		i	16	33	20
		iP	16	35	16
		iP	16	49	10
		i	16	55	3
		i	18	9	15
		i	18	23	4
		e	18	49	6

Date			h.	m.	s.
Feb.	23d.	i	18	54	46
		iP	19	10	4
		i	19	13	17
		i	19	59	49
		e?	20	2	16
		i	21	1	14
		i	21	25	31
		i	21	27	3
		i	21	38	58
		i	21	41	25
		e	21	59	23
		i	22	16	11
		i	22	55	54
		i	23	17	32
		i	23	44	59
	24d.	e	0	6	50
		e	0	23	4
		eP	0	51	41
		i	0	59	54
		i	2	51	10
		i	3	0	22
		i	4	56	25
		e	5	10	18
		iP	5	27	2
		e	6	35	55
		e	6	42	58
		iP	8	15	29
		i	9	10	46
		i	11	45	31
		i	13	29	1
		iP	14	49	21
		i	16	5	12
		iP	16	36	54
		i	17	1	10
		eP	17	18	48
		i	18	6	59
		i	19	56	32
		e	22	14	33
		i	22	27	57
	25d.	i	4	12	59
		eP	4	39	48
		i	5	50	56
		e	6	40	0
		iP	7	29	13
		e?	11	8	24
		i	12	11	10
		e	12	26	11
		e	22	8	30
		i	23	21	7
	26d.	i	4	24	27
		eP	10	51	25
		iP	20	18	26
		iP	21	3	15
		e?	21	32	43
		i	22	25	16
		iP	23	12	28
	27d.	e	4	49	2
		iP	10	6	41
		e	21	49	56
	28d.	i?	1	51	56
		iP	12	24	41
		i	15	49	26
	29d.	e	20	20	37
		i	20	29	32
March	2d.	iP	12	9	53
		iP	18	32	52
		i	22	52	51
	4d.	iP	3	40	11
		i	3	59	5
	7d.	iP	2	32	4

The scanned images of the bulletins of the International Seismological Summary (ISS) have been obtained as part of a global earthquake relocation project (Villaseñor et al., 1997) initiated with funding from the US National Science Foundation through grant EAR-9725140 and collected by SGA Storia Geofisica Ambiente (Bologna) on behalf of the Istituto Nazionale di Geofisica e Vulcanologia (Rome), in the frame of Euroseismos project.

A digital hypocenter file of the ISS (Villaseñor and Engdahl, 2005) can be obtained from the USGS web site: http://earthquake.usgs.gov/scitech/iss/

Villaseñor, A., and E.R. Engdahl, *A digital hypocenter catalog for the International Seismological Summary,* Seism. Res. Lett., vol. 76, no. 5, pp. 554-559, 2005.

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