TABLE II.—*Data furnished by the Canadian Meteorological Service, January, 1924.*

| Stations. | Altitude above mean sea level, Jan. 1, 1919. | Pressure. | | | Temperature of the air. | | | | | | Precipitation. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Station reduced to mean of 24 hours. | Sea level reduced to mean of 24 hours. | Departure from normal. | Mean max.+mean min.÷2. | Departure from normal. | Mean maximum. | Mean minimum. | Highest. | Lowest. | Total. | Departure from normal. | Total snowfall. |
| | *Feet.* | *In.* | *In.* | *In.* | ° *F.* | ° *F.* | ° *F.* | ° *F.* | ° *F.* | ° *F.* | *In.* | *In.* | *In.* |
| St. Johns, N. F. | 125 | 29.61 | 29.75 | − 11 | 22.7 | −1.1 | 28.9 | 16.6 | 48 | 5 | 5.96 | +0.05 | 38.0 |
| Sydney, C. B. I. | 48 | 29.94 | 29.99 | +.06 | 23.2 | +2.7 | 31.8 | 14.5 | 46 | −7 | 6.44 | +1.34 | 39.0 |
| Halifax, N. S. | 88 | 29.91 | 30.02 | +.05 | 24.5 | +2.7 | 34.5 | 14.6 | 49 | −10 | 6.47 | +0.70 | 22.5 |
| Yarmouth, N. S. | 65 | 29.93 | 30.00 | .00 | 28.6 | +2.3 | 37.4 | 19.9 | 50 | −6 | 6.08 | +0.67 | 23.3 |
| Charlottetown, P. E. I. | 38 | 29.92 | 29.96 | .00 | 19.2 | +2.2 | 29.2 | 9.2 | 45 | −15 | 2.47 | −1.49 | 16.5 |
| Chatham, N. B. | 28 | 29.88 | 29.92 | −.05 | 10.0 | +0.2 | 23.1 | −3.1 | 42 | −28 | 3.35 | −0.24 | 25.7 |
| Father Point, Que. | 20 | 29.95 | 29.98 | .00 | 5.2 | −2.8 | 14.9 | −4.4 | 36 | −22 | 2.50 | −0.35 | 20.6 |
| Quebec, Que. | 296 | 29.70 | 30.04 | +.02 | 10.0 | +0.9 | 19.2 | 0.8 | 37 | −26 | 4.73 | +0.72 | 41.3 |
| Montreal, Que. | 187 | 29.83 | 30.06 | +.02 | 14.3 | +2.6 | 24.1 | 4.4 | 41 | −23 | 4.96 | +1.23 | 35.5 |
| Ottawa, Ont. | 236 | 29.79 | 30.08 | +.05 | 12.6 | +3.0 | 24.3 | 1.0 | 44 | −28 | 5.59 | +2.60 | 45.4 |
| Kingston, Ont. | 285 | 29.75 | 30.09 | +.04 | 21.3 | +4.2 | 30.3 | 12.3 | 45 | −23 | 3.41 | −0.04 | 8.9 |
| Toronto, Ont. | 379 | 29.66 | 30.09 | +.04 | 23.4 | +2.0 | 30.8 | 16.0 | 43 | −6 | 4.89 | +1.97 | 25.4 |
| Cochrane, Ont. | 930 | | | | −7.0 | | 3.6 | −17.6 | 34 | −42 | 1.30 | | 13.0 |
| White River, Ont. | 1,244 | 28.59 | 30.00 | −.01 | −7.3 | +6.9 | 8.8 | −23.4 | 34 | −57 | 1.61 | −0.08 | 16.1 |
| Port Stanley, Ont. | 592 | 29.48 | 30.15 | +.08 | | | | | | | 3.82 | +0.83 | 12.6 |
| Southampton, Ont. | 656 | 29.30 | | | 20.6 | +0.2 | 27.5 | 13.7 | 40 | −11 | 4.62 | +0.57 | 35.6 |
| Parry Sound, Ont. | 688 | 29.32 | 30.06 | +.05 | 12.8 | −1.0 | 23.4 | 2.2 | 38 | −30 | 7.01 | +2.93 | 66.9 |
| Port Arthur, Ont. | 644 | 29.33 | 30.09 | +.02 | −2.2 | −5.3 | 6.8 | −11.1 | 40 | −30 | 0.41 | −0.41 | 4.1 |
| Minnedosa, Man. | 1,690 | 28.16 | 30.11 | +.01 | −5.0 | +2.2 | 4.6 | −14.6 | 34 | −35 | 0.95 | +0.15 | 9.5 |
| LePas, Man. | 860 | | | | −9.1 | | 1.2 | −19.4 | 38 | −37 | 0.26 | | 2.6 |
| Qu'Appelle, Sask. | 2,115 | | | | | | | | | | | | |
| Medicine Hat, Alb. | 2,144 | 27.70 | 30.07 | .00 | 10.9 | +5.4 | 20.8 | 1.0 | 51 | −30 | 1.92 | +1.35 | 19.2 |
| Moose Jaw, Sask. | 1,759 | | | | 1.9 | | 11.0 | −7.2 | 47 | −36 | 0.36 | | 3.6 |
| Swift Current, Sask. | 2,392 | | | | | | | | | | | | |
| Calgary, Alb. | 3,428 | 26.37 | 30.12 | +.09 | 13.7 | +5.3 | 27.1 | 0.3 | 57 | −25 | 0.84 | +0.31 | 8.4 |
| Banff, Alb. | 4,521 | 25.32 | 30.13 | +.13 | 12.5 | +0.4 | 21.7 | 3.2 | 45 | −35 | 0.69 | −0.50 | 6.9 |
| Edmonton, Alb. | 2,150 | | | | | | | | | | | | |
| Prince Albert, Sask. | 1,450 | | | | | | | | | | | | |
| Battleford, Sask. | 1,592 | | | | | | | | | | | | |
| Kamloops, B. C. | 1,262 | 28.88 | 30.23 | +.07 | 21.5 | −1.5 | 27.2 | 15.8 | 50 | −17 | 1.64 | +0.82 | 16.4 |
| Victoria, B. C. | 230 | 29.88 | 30.14 | +.07 | 40.3 | +1.8 | 43.9 | 36.7 | 55 | 17 | 2.65 | −2.74 | 0.1 |
| Barkerville, B. C. | 4,180 | 25.57 | 29.98 | +.09 | 20.3 | +2.5 | 26.9 | 13.7 | 41 | −25 | 2.34 | −0.26 | 22.2 |
| Triangle Island, B. C. | 680 | | | | | | | | | | | | |
| Prince Rupert, B. C. | 170 | | | | 38.2 | | 42.8 | 33.6 | 53 | 15 | 18.82 | | 0.3 |

## LATE REPORTS, DECEMBER, 1923.

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Father Point, Que. | 20 | 29.92 | 29.95 | .00 | 23.7 | +8.3 | 28.8 | 18.6 | 50 | −2 | 2.53 | −0.30 | 15.7 |
| Winnipeg, Man. | 760 | 29.10 | 29.96 | −.06 | 17.8 | +13.7 | 25.5 | 10.0 | 44 | −20 | 0.29 | −0.62 | 2.9 |
| Medicine Hat, Alb. | 2,144 | 27.57 | 29.89 | −.08 | 24.9 | +6.7 | 34.1 | 15.7 | 54 | −30 | 0.41 | −0.14 | 4.1 |
| Calgary, Alb. | 3,428 | 26.26 | 29.96 | +.02 | 21.3 | +3.1 | 35.3 | 7.4 | 52 | −35 | 1.08 | +0.49 | 10.8 |
| Banff, Alb. | 4,521 | 25.24 | 30.00 | +.06 | 18.3 | −0.8 | 25.7 | 10.9 | 41 | −40 | 1.97 | +0.76 | 19.7 |
| Kamloops, B. C. | 1,262 | 28.71 | 30.03 | +.09 | 29.7 | +0.8 | 34.6 | 24.8 | 48 | −17 | 1.23 | +0.45 | 8.0 |
| Barkerville, B. C. | 4,180 | 25.45 | 29.84 | −.04 | 19.4 | −1.5 | 26.1 | 12.7 | 40 | −28 | 4.84 | +1.67 | 45.8 |

## SEISMOLOGICAL REPORTS FOR JANUARY, 1924.

W. J. HUMPHREYS, Professor in Charge.

[Weather Bureau, Washington, March 3, 1924.]

### SEISMOLOGICAL ABBREVIATIONS USED IN THE INSTRUMENTAL REPORTS.

#### CHARACTER OF THE EARTHQUAKE.

I=noticeable.
II=conspicuous.
III=strong.
d=(terræ motus domesticus)=local earthquake (sensible or felt).
v=(terræ motus vicinus)=near-by earthquake (within 1,000 km).
r=(terræ motus remotus)=distant earthquake (1,000 to 5,000 km. distant).
u=(terræ motus ultimus)=very distant earthquake (beyond 5,000 km.).
$\Delta$=distance to epicenter.

#### PHASES.

P=(undæ primæ)=first preliminary tremors.
$PR_n$=P waves reflected $n$ times at the earth's surface.
S=(undæ secundæ)=second preliminary tremors.
$SR_n$=S waves reflected $n$ times at the earth's surface.
PS=transformed waves; longitudinal (P) to transverse (S) or vice versa.
L=(undæ longæ)=long waves in the principal portion.
M=(undæ maximæ)=greatest motion in the principal portion.
C=(coda)=trailers.
$O$=time at epicenter.
$L_{rep_1}$=long waves reaching the station from the antiepicenter (40,000 km. $-\Delta$).
$L_{rep_2}$=long waves again reaching the station from the antiepicenter (40,000 km. $+\Delta$).
F=(finis)=end of perceptible trace.

#### NATURE OF THE MOTION.

i=(impetus)=abrupt beginning.
e=(emersio)=gradual appearance.
T=(period)=twice time of oscillation.
A=amplitude of earth's movement, reckoned from the zero line. E, N, or Z attached to a symbol signifies the E–W, the N–S, or the vertical component, respectively, thus:
$P_E$ is the E–W component of P.
$P_N$ is the N–S component of P.
$P_Z$ is the vertical component of P.
$\mu$=micron, $\frac{1}{1000}$ mm.

#### INSTRUMENTAL CONSTANTS.

$T_0$=period of instrument.
V=magnification of instrument.
$\epsilon$=damping ratio.

*List of instrumental stations from which reports are received.*

| Location. | Latitude, N. | Longitude, W. | Elevation, meters. | Description of instruments. | Instrumental constants. E-W. V | E-W. $T_0$ | E-W. e | N-S. V | N-S. $T_0$ | N-S. e | Institution. | Director. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ALASKA. | ° ′ ″ | ° ′ ″ | | | | | | | | | | |
| Sitka | 57 03 | 135 20 06 | 15.2 | Bosch-Omori 10-kg., horizontal pendulum, two comp. | 10 | 13.9 | ..... | 10 | 18.1 | ..... | U. S. Coast and Geodetic Survey, Magnetic Observatory. | F. P. Ulrich. |
| ARIZONA. | | | | | | | | | | | | |
| Tucson | 32 14 48 | 110 50 06 | 769.6 | .....do..... | 10 | 17.0 | ..... | 10 | 19.6 | ..... | .....do..... | A. K. Ludy. |
| CALIFORNIA. | | | | | | | | | | | | |
| Point Loma | 32 43 03 | 117 15 10 | 91.4 | Two-component C. D. West seismoscope. | ..... | ..... | ..... | ..... | ..... | ..... | Theosophical University, Meteorological Station. | F. J. Dick. |
| COLORADO. | | | | | | | | | | | | |
| Denver | 39 40 36 | 104 56 54 | 1,675 | Wiechert 80-kg., astatic horizontal pendulum. | ..... | ..... | ..... | ..... | ..... | ..... | Regis College, Earthquake Station. | A. W. Forstall, S. J. |
| DISTRICT OF COLUMBIA. | | | | | | | | | | | | |
| Washington | 38 54 25 | 77 04 24 | 42.4 | Wiechert 200-kg., inverted pendulum: *80-kg. vertical.* | 165 | 5.4 | 0 | 142 | 5.2 | 0 | Georgetown University, Seismological Station. | F. A. Tondorf, S. J |
| | | | | | VERTICAL: | | | *V, 80;* | *$T_0$, 3.0.* | | | |
| | | | | Bosch photographic pendulums (horizontal), 200 g. | 133 | 5.0 | ..... | 133 | 5.0 | ..... | | |
| | | | | Mainka bifilar pendulums, 135-kg., horizontal. | 47 | 9.0 | ..... | 59 | 9.0 | ..... | | |
| | | | | Bosch-Omori 25-kg., horizontal. | 13.7 | 8.8 | ..... | 13.5 | 8.6 | ..... | | |
| Washington | 38 54 12 | 77 03 03 | 21 | Marvin, inverted pendulum, undamped, mechanical registration. | 110 | 6.4 | (3) | 110 | 6.4 | ..... | U. S. Weather Bureau | W. J. Humphreys. |
| HAWAII. | | | | | | | | | | | | |
| Honolulu | 21 19 12 | 158 03 48 | 15.2 | Milne-Shaw | 150 | 12 | [5] 30:1 | 150 | 12 | [5] 30:1 | U. S. Coast and Geodetic Survey, Magnetic Observatory. | W. M. Hill. |
| ILLINOIS. | | | | | | | | | | | | |
| Chicago | 41 47 | 87 37 | 180.1 | Two Milne-Shaw horizontal pendulums, 0.45-kg. | 150 | 12 | [2] 20:1 | 150 | 12 | [2] 20:1 | U. S. Weather Bureau, University of Chicago. | H. J. Cox. |
| MARYLAND. | | | | | | | | | | | | |
| Cheltenham | 38 44 | 76 50 30 | *ca.* 71.6 | Two Bosch-Omori 10-kg. | 10 | 15 | ..... | 10 | 15 | ..... | U. S. Coast and Geodetic Survey, Magnetic Observatory. | George Hartnell. |
| MASSACHUSETTS. | | | | | | | | | | | | |
| Cambridge | 42 22 36 | 71 06 59 | 5.4 | Two Bosch-Omori 100-kg., horizontal pendulum, mechanical registration. | 80 | 23 | 1:5 | 50 | 25 | [4] 1:5 | Harvard University, Seismographic Station. | J. B. Woodworth. |
| MISSOURI. | | | | | | | | | | | | |
| St. Louis | 38 38 17 | 90 13 58.3 | 160.4 | Wiechert 80-kg., inverted pendulum. | 80 | 7 | 5:1 | ..... | ..... | ..... | St. Louis University, Geophysical Observatory, Earthquake Station. | Geo. E. Rueppel. |
| NEW YORK. | | | | | | | | | | | | |
| Ithaca | 42 26 58 | 76 29 09 | 242.6 | Bosch-Omori 25-kg., horizontal pendulum, mechanical registration. | 12 | 21 | 4:1 | 13 | 24 | 4:1 | Cornell University, Department of Geology, Seismograph Station. | P. S. Sheldon. |
| New York | 40 51 47 | 73 53 08 | 23.9 | Wiechert 80-kg., horizontal pendulum. | 59.5 | 4.8 | 2.8 | 78 | 5 | 2.9 | Fordham University, Seismologic Station. | F. W. Sohon, S. J. |
| CANAL ZONE. | | | | | | | | | | | | |
| Balboa Heights | 8 57 39 | 79 33 29 | *ca.* 36 | Two Bosch-Omori 100-kg. and 25-kg. | 35<br>10 | 20 | ..... | 35<br>10 | 20<br>20 | ..... | Panama Canal, Department Operation and Maintenance, section of meteorology and hydrography, Seismologic Station. | R. Z. Kirkpatrick, chief hydrographer. |
| PORTO RICO. | | | | | | | | | | | | |
| Vieques | 18 08 50 | 65 26 50 | 19.1 | Bosch-Omori 10-kg. | 10 | 17.2 | ..... | 10 | 19.1 | ..... | U. S. Coast and Geodetic Survey, Magnetic Observatory. | R. R. Bodle. |
| VERMONT. | | | | | | | | | | | | |
| Northfield | 44 10 | 72 41 | 256 | Bosch-Omori mechanical registration, 25-kg. | 10 | 15 | ..... | 10 | 16 | ..... | Local Office, U. S. Weather Bureau. | Wm A. Shaw. |
| CANADA. | | | | | | | | | | | | |
| Ottawa [6] | 45 23 38 | 75 42 57 | 83 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | Dominion Observatory, Earthquake Station. | E. A. Hodgson. |
| Toronto | 43 40 01 | 79 23 54 | 113.7 | Milne horizontal pendulum, North, in the meridian. | ..... | 18 | 10″.46 | ..... | ..... | ..... | Dominion Meteorological Service. | |
| Victoria | 48 24 | 123 19 | 67 | Milne-Shaw horizontal pendulum, North and E-W. | ..... | ..... | ..... | ..... | ..... | ..... | .....do..... | |

[1] Pillar inclination, 1 mm.
[2] 1″ arc tilt, 26.6 mm.
[3] 1 mm.=4″.
[4] 15 mm.=60 sec.
[5] Sensitivity: E. 0.171; N. 0.200.
[6] For instruments and constants, see Table 1.

For the reports of the stations at the University of California, Berkeley, Calif., and at the Lick Observatory, Mount Hamilton, Calif., see *Bulletin of the Seismographic Station, University of California;* for the report of the station at the University of Santa Clara, Santa Clara, Calif., see *Record of the Seismographic Station, University of Santa Clara.*

TABLE 1.—*Noninstrumental earthquake reports, January, 1924.*

| Day. | Approximate time, Greenwich civil. | Station. | Approximate latitude. | Approximate longitude. | Intensity Rossi-Forel. | Number of shocks. | Duration. | Sounds. | Remarks. | Observer. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ALABAMA. | | | | | | | | |
| 1924. | *H. m.* | | ° ′ | ° ′ | | | *Sec.* | | | |
| Jan. 1 | 3 20 | Sheffield | 34 50 | 87 40 | 4 | | | Rattling | Felt by many | H. F. Little, P. M. |
| | 3 30 | Florence | 34 50 | 87 40 | 2 | 1 | Brief. | None | Felt by several | O. Coburn. |
| | | ARKANSAS. | | | | | | | | |
| | 3 00 | Marked Tree | 35 30 | 90 25 | 5 | 1 | 30*ca* | Rumbling | Felt by many | C. Walton. |
| | | Newport | 35 35 | 91 10 | 2 | 1 | 10 | Yes | Felt by several | G. L. Robinson. |
| | 3 05 | Black Rock | 36 05 | 91 00 | 4 | 1 | 12 | Rumbling | do | V. C. Howe. |
| | | Blytheville | 35 53 | 89 55 | 5 | 1 | 10–20 | do | Felt by everyone | E. E. Ridings. |
| | | Corning | 36 35 | 90 30 | | 1 | 4–5 | do | Felt by many | N. E. Skinner. |
| | | Earle | 35 15 | 90 30 | 5 | 2 | 10, 35 | do | Felt by nearly everyone | E. S. Barrentine. |
| | | Helena | 34 30 | 90 30 | 5 | 1 | 25 | do | Felt by many | J. A. Burnett. |
| | | Jonesboro | 35 55 | 90 35 | 5 | 1 | 30 | None | do | T. S. Castleberry. |
| | | do | 35 55 | 90 35 | 5 | 2 | 25 | Rumbling | Some damage | Sr. M. Modesta, O. S. B. |
| | | Osceola | 35 45 | 90 00 | | | | do | Felt by many | A. B. Smith. |
| | | Pocohontas | 36 15 | 91 00 | | 1 | 60 | do | Felt by several | Benedictine Sisters. |
| | | Wilson | 35 37 | 90 00 | 5 | 3 | 7 | do | Felt by many | E. K. Sewell. |
| | | Wynne | 35 15 | 90 45 | 5 | 1 | 30*ca* | Faint | do | E. O. Allen. |
| | 3 09 | Hoxie | 36 05 | 90 55 | 4 | 1 | | None | Felt by several | C. C. Cherry. |
| | | CALIFORNIA. | | | | | | | | |
| 4 | 21 40 | Salinas | 36 41 | 121 39 | 2 | 1 | 1*ca* | None | Felt by several | E. D. Eddy. |
| 5 | 22 52 | Calexico | 32 41 | 115 30 | 4 | 1 | 2 | do | Felt by one | H. W. Rouse. |
| 9 | (?) | Eureka | 40 48 | 124 10 | 4 | 1 | 4 | do | Felt by many | J. M. Jones. |
| | | ILLINOIS. | | | | | | | | |
| 1 | 3 06 | Cairo | 37 00 | 89 05 | 2 | 1 | 7*ca* | None | Felt by several | W. E. Barron. |
| | 3 10 | Anna | 37 30 | 89 15 | 2 | 2 | 5–6 | | Felt by few | Mrs. E. V. Hale. |
| | | KENTUCKY. | | | | | | | | |
| 1 | 3 00? | Calhoun | 37 30 | 87 15 | | 1 | Brief. | | Felt by few | Dr. W. S. Haynes, *et al.* |
| | 3 05 | Clinton | 36 45 | 89 00 | Slight. | 1 | 45 | Rumbling | Felt by several | D. Johnson. |
| | | Hickman | 36 34 | 89 12 | | 1 | 10 | do | Felt by many | |
| | 3 15 | Columbus | 36 45 | 89 05 | | 2 | 20*ca* | do | Felt by several | P. M. Ray. |
| | | Cadiz | 36 55 | 87 50 | 4 | 3 | | do | do | Miss L. Burbon. |
| | 3 20 | La Center | 37 05 | 89 00 | 2 | 1 | Brief. | | | B. Clements. |
| | | MISSISSIPPI. | | | | | | | | |
| 1 | 3 06 | Corinth | 35 00 | 88 25 | 4 | | | None | Felt by several | H. E. Meeks. |
| | | OREGON. | | | | | | | | |
| 5 | 23 15? | Stanfield | 45 50 | 119 15 | 4–5 | 1 | 3–5 | None | Felt by several | R. N. Hanley. |
| 6 | 23 09 | Milton | 45 55 | 118 20 | 5 | 1 | 10–15 | Faint | Felt by many | C. D. Hobbs, C. O. |
| | 23 10 | Weston | 45 55 | 118 30 | 5? | 1 | Few. | None | do | M. A. Barken. |
| | | SOUTH CAROLINA. | | | | | | | | |
| 1 | 1 06 | Greenville | 34 50 | 82 30 | 5 | 1 | Several. | Rumbling | Felt by many | C. E. Morgan. |
| | | TENNESSEE. | | | | | | | | |
| | 3 00 | Brownsville | 35 40 | 89 15 | 5 | 2 | 2 | None | Felt by many | R. Y. Moses. |
| | | Union City | 36 30 | 89 00 | 5 | | | | | S. D. Woosley. |
| | 3 05 | Brownsville | 35 40 | 89 15 | 4 | 1 | Few. | None | Felt by many | F. J. Nunn, P. M. |
| | | Moscow | 35 05 | 89 20 | 2 | 1 | Few. | Rumbling | Felt by several | W. R. Burdison. |
| | | Savannah | 35 15 | 88 15 | 5 | 1 | | Rattling | Felt by many | F. W. Kendon. |
| | | Union City | 36 30 | 89 00 | 5 | 2 | 5 | Rumbling | do | J. C. Burdeisly. |
| | 3 05 35 | Memphis | 35 10 | 90 00 | 5 | 3 | 2 | do | Felt by several | J. P. Young. |
| | 3 10 | Covington | 35 30 | 89 45 | | 2 | 15 | | | R. H. Gunn. |
| | 3 10? | Memphis | 35 10 | 90 00 | 4 | 2 | 15*ca* | Rumbling | Felt by many | A. R. Long. |
| | 3 12 | do | 35 10 | 90 00 | 4 | 2 | 1–2 | None | do | G. E. Wilcox. |
| | | UTAH. | | | | | | | | |
| 1 | 23 15 | Orderville | 37 20 | 112 40 | 2 | 1 | Brief. | Faint | Felt by several | F. A. Porter. |
| | | WASHINGTON. | | | | | | | | |
| 6 | 13 09 | Walla Walla | 46 00 | 118 30 | 4 | 1 | 6 | None | Felt by many | C. C. Garrett. |
| | | WYOMING. | | | | | | | | |
| 11 | 23 30 | Yellowstone | 45 00 | 110 40 | Faint. | 1 | | None | Felt by several | B. C. Lacombe. |

TABLE 2.—*Instrumental seismological reports, January, 1924.*

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

**ALASKA.** *U. S. C. and G. S. Magnetic Observatory, Sitka.*

| Date. | Character. | Phase. | Time. | Period T. | Amplitude. AE | Amplitude. AN | Distance. | Remarks. |
|---|---|---|---|---|---|---|---|---|
| 1924. | | | *H. m. s.* | *Sec.* | *μ* | *μ* | *Km.* | |
| Jan. 14 | | $P_E$? | 21 00 22 | 6 | | | | Strong wind tremors. |
| | | $S_E$? | 21 08 36 | 10 | | | | |
| | | $F_E$ | 21 27 .. | | | | | |
| 30 | | $eL_E$ | 21 25 06 | | | | | Weak phases obscured by wind tremors. |
| | | $eL_N$ | 21 24 53 | 20 | | | | |
| | | $M_E$ | 21 26 32 | 17 | *100 | | | |
| | | $M_N$ | 21 25 50 | 17 | | *600 | | |
| | | $C_N$ | 21 27 20 | 12 | | | | |
| | | $F_E$ | 21 38 .. | | | | | |

**ARIZONA.** *U. S. C. and G. S. Magnetic Observatory, Tucson.*

| Date. | Character. | Phase. | Time. | Period T. | Amplitude. AE | Amplitude. AN | Distance. | Remarks. |
|---|---|---|---|---|---|---|---|---|
| 1924. | | | *H. m. s.* | *Sec.* | *μ* | *μ* | *Km.* | |
| Jan. 14 | | $P_E$ | 21 03 00 | | | | | Nothing on NS. |
| | | $S_E$ | 21 13 16 | | | | | |
| | | $L_E$ | 21 32 32 | 24 | | | | |
| | | $M_E$ | 21 34 01 | 24 | *300 | | | |
| | | $F_E$ | 21 52 .. | | | | | |
| 25 | | $e_E$ | 6 09 23 | | | | | Do. |
| | | $e_E$ | 6 13 45 | | | | | |
| | | $M_E$ | 6 15 59 | 8 | *200 | | | |
| | | $F_E$ | 6 33 .. | | | | | |

**CALIFORNIA.** *Theosophical University, Point Loma.*

| Date. | Character. | Phase. | Time. | Period T. | Amplitude. AE | Amplitude. AN | Distance. | Remarks. |
|---|---|---|---|---|---|---|---|---|
| 1924. | | | *H. m. s.* | *Sec.* | *μ* | *μ* | *Km.* | |
| Jan. 2 | | | 15 00 00 | | 50 | 50 | | Tremors during preceding 24 hours. |
| 6 | | | | | 50 | 50 | | |

**DISTRICT OF COLUMBIA.** *U. S. Weather Bureau, Washington.*

| Date. | Character. | Phase. | Time. | Period T. | Amplitude. AE | Amplitude. AN | Distance. | Remarks. |
|---|---|---|---|---|---|---|---|---|
| 1924. | | | *H. m. s.* | *Sec.* | *μ* | *μ* | *Km.* | |
| Jan. 4 | | e? | 22 00 20 | | | | | |
| | | F | 22 10 *ca.* | | | | | |
| 14 | | e | 21 06 30 | | | | | |
| | | S? | 21 14 30 | | | | | |
| | | eL | 21 38 .. | 30 | | | | |
| | | L | 21 44 .. | 32 | | | | |
| | | L | 21 53 .. | 16 | | | | |
| | | F | 22 15 *ca.* | | | | | |
| 21 | | P? | 2 05 23 | | | | | |
| | | S? | 2 13 05 | | | | | |
| | | F | 2 35 .. | | | | | |
| 29 | | P | 2 05 46 | | | | 7,400 | |
| | | S | 2 14 37 | | | | | |
| | | eL | 2 36 .. | | | | | |
| | | F | 2 50 *ca.* | | | | | |
| 30 | | P | 20 59 06 | | | | | |
| | | S? | 21 02 36 | | | | | |
| | | eL | 21 05 .. | | | | | |
| | | F | 21 25 *ca.* | | | | | |
| 31 | | e | 1 10 36 | | | | | |
| | | S? | 1 14 15 | | | | | |
| | | F | 1 20 *ca.* | | | | | |

**HAWAII.** *U. S. C. and G. S. Magnetic Observatory, Honolulu.*

| Date. | Character. | Phase. | Time. | Period T. | Amplitude. AE | Amplitude. AN | Distance. | Remarks. |
|---|---|---|---|---|---|---|---|---|
| 1924. | | | *H. m. s.* | *Sec.* | *μ* | *μ* | *Km.* | |
| Jan. 7 | | $e_E$ | 10 09 27 | | | | | |
| | | $e_N$ | 10 10 33 | | | | | |
| | | $M_E$ | 10 13 45 | 7 | 30 | | | |
| | | $M_N$ | 10 13 45 | 10 | | 45 | | |
| | | $F_E$ | 10 23 .. | | | | | |
| | | $F_N$ | 10 19 .. | | | | | |
| 12 | | $e_E$ | 14 11 .. | | | | | |
| | | $e_N$ | 14 14 .. | | | | | |
| | | $F_E$ | 14 22 .. | | | | | |
| | | $F_N$ | 14 25 .. | | | | | |
| 14 | | $P_N$ | 21 00 .. | | | | | Exact time of $P_N$ doubtful on account of hour break. |
| | | $e_E$ | 21 07 25 | | | | | |
| | | $S_E$ | 21 07 58 | 17 | | | | |
| | | $S_N$ | 21 07 40 | 12 | | | | |
| | | $S_E2$ | 21 13 36 | 22 | | | | |
| | | $L1_E$ | 21 17 08 | 11 | | | | |

*Trace amplitude.

**HAWAII.** *U. S. C. and G. S. Magnetic Observatory, Honolulu*—Con.

| Date. | Character. | Phase. | Time. | Period T. | Amplitude. AE | Amplitude. AN | Distance. | Remarks. |
|---|---|---|---|---|---|---|---|---|
| 1924. | | | *H. m. s.* | *Sec.* | *μ* | *μ* | *Km.* | |
| Jan. 14 | | $iL2_E$ | 21 29 22 | 20 | | | | |
| | | $L_N$ | 21 16 15 | 13 | | | | |
| | | $M_E$ | 21 37 17 | 19 | 60 | | | |
| | | $M_N$ | 21 17 14 | 13 | | 35 | | |
| | | $C_E$ | 21 41 .. | | | | | |
| | | $F_E$ | 22 05 .. | | | | | |
| | | $F_N$ | 21 59 .. | | | | | |
| 16 | | e | 21 52 36 | | | | | |
| | | F | 22 00 .. | | | | | |
| 21 | | $P_N$(?) | 2 02 52 | | | | | |
| | | S | 2 07 28 | | | | | |
| | | $L1_E$ | 2 11 18 | | | | | |
| | | $L2_E$ | 2 12 34 | | | | | |
| | | $L_N$ | 2 11 30 | | | | | |
| | | $M_E$ | 2 12 40 | 13 | 20 | | | |
| | | $M_N$ | 2 12 46 | 13 | | 20 | | |
| | | C | 2 19 .. | | | | | |
| | | $F_E$ | 2 36 .. | | | | | |
| | | $F_N$ | 2 34 .. | | | | | |
| 25 | | $S_E$(?) | 6 14 22 | | | | | |
| | | $S_N$(?) | 6 14 15 | | | | | |
| | | $e_E$ | 6 20 55 | | | | | |
| | | $e_N$ | 6 20 15 | | | | | |
| | | $L_E$ | 6 25 12 | 7 | | | | |
| | | $L_N$ | 6 22 18 | 10 | | | | |
| | | $M_E$ | 6 28 20 | 5 | 45 | | | |
| | | $M_N$ | 6 27 19 | 8 | | 45 | | |
| | | $C_N$ | 6 36 .. | 6 | | | | |
| | | $F_E$ | 7 29 .. | | | | | |
| | | $F_N$ | 7 23 .. | | | | | |
| 26 | | $e_E$ | 3 37 37 | | | | | |
| | | $e_N$ | 3 38 .. | | | | | |
| | | $F_E$ | 3 52 .. | | | | | |
| | | $F_N$ | 3 50 .. | | | | | |
| 29 | | $S_E$(?) | 2 21 45 | 20 | | | | |
| | | $L_E$ | 2 39 42 | 22 | | | | |
| | | $L_N$ | 2 40 00 | 20 | | | | |
| | | $M_E$ | 2 41 06 | 20 | 40 | | | |
| | | $M_N$ | 2 40 43 | 20 | | 30 | | |
| | | F | 3 21 .. | | | | | |

**ILLINOIS.** *U. S. Weather Bureau, Chicago.*

| Date. | Character. | Phase. | Time. | Period T. | Amplitude. AE | Amplitude. AN | Distance. | Remarks. |
|---|---|---|---|---|---|---|---|---|
| 1924. | | | *H. m. s.* | *Sec.* | *μ* | *μ* | *Km.* | |
| Jan. 4 | | P | 21 59 51 | | | | 1,600 | |
| | | S | 22 02 35 | | | | | |
| | | L | 22 03 18 | 16 | | | | |
| | | F | 22 25 *ca.* | | | | | |
| 7 | | P | 10 11 22 | | | | | |
| | | L | 10 24 02 | 18 | | | | |
| | | F | 11 10 *ca.* | | | | | |
| 12 | | eL | 14 32 .. | 22 | | | | |
| | | F | 14 50 .. | | | | | |
| 14 | | P | 21 03 25 | | | | 9,100 | |
| | | S | 21 13 41 | | | | | |
| | | L | 21 32 20 | 30 | | | | |
| | | L | 21 40 30 | 22 | | | | |
| | | L | 21 50 .. | 18 | | | | |
| | | L | 22 02 30 | 16 | | | | |
| | | F | 23 40 *ca.* | | | | | |
| 21 | | P | 2 04 40 | | | | 5,800 | |
| | | S | 2 12 05 | | | | | |
| | | L? | 2 20 40 | | | | | |
| | | L | 2 36 .. | 16 | | | | |
| | | F | 3 *ca.* .. | | | | | Heavy micros. |
| 25 | | P? | 6 01 58 | | | | | Apparently two quakes superimposed, with heavy micros. |
| | | S? | 6 12 04 | | | | | |
| | | F | 8 *ca.* .. | | | | | |
| 29 | | P | 2 06 17 | | | | 7,600 | |
| | | S | 2 15 16 | | | | | |
| | | L | 2 26 30 | 22 | | | | |
| | | L | 2 41 .. | 18 | | | | |
| | | F | 5 *ca.* .. | | | | | |
| 30 | | P | 20 59 58 | | | | 2,500 | |
| | | S | 21 04 03 | | | | | |
| | | L | 21 06 12 | | | | | |
| | | F | 22 20 *ca.* | | | | | |
| 31 | | P | 1 10 10 | | | | 2,800 | |
| | | S | 1 14 36 | | | | | |
| | | F | 2 *ca.* .. | | | | | |

TABLE 2.—*Instrumental seismological reports, January, 1924*—Continued.

MARYLAND. *U. S. C. & G. S. Magnetic Observatory, Cheltenham.*

| 1924. | | | H. m. s. | Sec. | μ | μ | Km. | |
|---|---|---|---|---|---|---|---|---|
| Jan. 30 | | $e_E$ | 21 04 24 | 3 | | | | No definite M on NS. |
| | | $e_N$ | 21 04 47 | 2 | | | | |
| | | $e_N$ | 21 05 14 | 3 | | *300 | | |
| | | $e_E$ | 21 07 16 | 9 | | | | |
| | | $M_E$ | 21 07 54 | 9 | *300 | | | |
| | | $C_E$ | 21 08 16 | | | | | |
| | | $C_N$ | 21 08 .. | | | | | |
| | | $F_E$ | 21 11 .. | | | | | |
| | | $F_N$ | 21 14 .. | | | | | |

NEW YORK. *Fordham University, New York.*

| 1924. | | | H. m. s. | Sec. | μ | μ | Km. | |
|---|---|---|---|---|---|---|---|---|
| Jan. 6 | | i | 9 32 30 | | | | | |
| | | L | 9 32 50 | 5 | *200 | | | |
| | | F | 9 34 .. | | | | | |
| 11 | | eL | 17 12 .. | 20 | | | | F lost in micros. |
| 14 | | e | 21 37 17 | | | | | |
| | | L | 21 39 19 | 20 | *100 | | | |
| | | F | 21 48 16 | | | | | |

CANAL ZONE. *Panama Canal, Balboa Heights.*

| 1924. | | | H. m. s. | Sec. | μ | μ | Miles. | |
|---|---|---|---|---|---|---|---|---|
| Jan. 1 | | P | 8 47 40 | | | | 140 *ca.* | Also very slight tremors between 9:12:24 and 9:15:00. |
| | | $L_E$ | 8 48 28 | | | | | |
| | | $L_N$ | 8 48 20 | | | | | |
| | | $M_E$ | 8 48 31 | | *1,400 | | | |
| | | $M_N$ | 8 48 22 | | | *4,000 | | |
| | | $F_E$ | 8 51 25 | | | | | |
| | | $F_N$ | 8 51 36 | | | | | |
| 2 | | | | | | | | Slight tremors, 20:29:59 to 20:33. |
| 24 | | | | | | | | Very slight tremors 19:44:42 to 19:47:42; and on NS at 22:48:18. |
| 25 | | | | | | | | Very slight tremors on NS, 6:08:00 to 6:18:00. |
| 26 | | | | | | | | Slight tremors, 2:10 to 2:21. |
| 29 | | | | | | | | Slight tremors, 2:03:20 to 3:00 and 12:09:50 to 12:11. |
| 30 | | | | | | | | Slight tremors on NS, 19:03:00 to 19:19. |
| 31 | | | | | | | | Slight tremors on NS, 1:07 to 1:17. |

VERMONT. *U. S. Weather Bureau, Northfield.*

| 1924. | | | H. m. s. | Sec. | μ | μ | Km. | |
|---|---|---|---|---|---|---|---|---|
| Jan. 30 | | eL | 21 09 .. | | | | | |
| | | F | 21 20 *ca* | | | | | |

CANADA. *Dominion Observatory, Ottawa.*

*Instruments—Fixed constants.*

| Instrument. | Symbol. | Registration. | Damping. | Paper speed. | Mass. |
|---|---|---|---|---|---|
| Bosch | I | Photographic | Air | 15 mm. per min. | 200 g. |
| Do | II | do | Magnetic | do | 200 g. |
| Milne-Shaw | 17 | do | do | 8 mm. per min. | 1 lb. |
| Do | 23 | do | do | do | 1 lb. |
| Deformation | D | do | Air | 17 mm. per min. | 20 g. ca. |
| Spindler Hoyer | W | Smoked sheet. | do | 15 mm. per min. | 80 Kgm. |

*Instruments—Determined constants.*

| Instrument. | $T_0$ | r | v | ε | Comp. | Determined. |
|---|---|---|---|---|---|---|
| I | 5.5 | | 120 | 2:1 | NS | Apr. 4, 1923 |
| II | 5.4 | | 120 | 15:1 | EW | Aug. 21, 1923 |
| 17 | 12.0 | | 250 | 20:1 | EW | Jan. 9, 1924 |
| 23 | 12.0 | | 250 | 20:1 | NS | Jan. 9, 1924 |
| D | 37.6 | | | 13:10 | EW | Jan. 7, 1924 |
| D | 36.9 | | | 13:10 | NS | Jan. 7, 1924 |
| W | 5.5 | | 160 | 4:1 | Vert | Aug. 22, 1923 |

*, Trace amplitude.

CANADA. *Dominion Observatory, Ottawa*—Continued.

| 1924. | | | H. m. s. | Sec. | μ | μ | Km. | |
|---|---|---|---|---|---|---|---|---|
| Jan. 4 | | i | 22 01 35 | | | | | |
| | | e | 22 02 22 | 12 | 1 | | | |
| | | eL | 22 04 .. | 22 | 3 | | | |
| | | M | 22 05 12 | 12 | 7 | | | |
| | | L | 22 09 .. | | | | | Irregular. |
| | | F | 22 20 *ca* | | | | | |
| 7 | | e | 10 20 54 | | | | | Do. |
| | | eL | 10 25 .. | | | | | Irregular. |
| | | F | 10 35 *ca* | | | | | |
| 11 | | e | 0 07 14 | | | | | Sinusoidal L waves. |
| | | i | 0 07 49 | | | | | |
| | | eL | 0 27 30 | | | | | Micros. |
| | | L | 0 32 *to* | 22 | 1 | | | |
| | | L | 0 37 .. | | | | | |
| | | F | 0 50 .. | | | | | |
| 11 | | (eL) | 21 00 .. | | | | | Small sinusoidal L waves. |
| | | L | 21 02 .. | 18 | 1 | 1 | | |
| | | F | 21 30 *ca* | | | | | |
| 12 | | e? | (13 35) | | | | | About time sheets were changed. Time marks uncertain. |
| | | eL | (14 35) | | | | | |
| | | L | (14 50) | | | | | |
| | | F | (15 00) | | | | | |
| 14 | | O | 20 51 07 | | | | 9,300 | Tokio and Yokohama. |
| | | eP | 21 03 35 | | | | | |
| | | PR1 | 21 07 35 | | | | | |
| | | iS | 21 14 00 | | | | | |
| | | i | 21 14 36 | | | | | |
| | | eL17 | 21 31 30 | | | | | |
| | | M 17 | 21 45 .. | 23 | 52 | | | |
| | | M23 | 21 47 .. | 23 | | 49 | | |
| | | L | 21 58 .. | 14 | 8 | 8 | | |
| | | L | 22 20 .. | 14 | 5 | 4 | | |
| | | L | 22 45 .. | 14 | 3 | 2.5 | | |
| | | L | 23 00 .. | 14 | 1.5 | 1 | | |
| | | F | 23 50 *ca* | | | | | |
| 15 | | eL | 3 31 .. | | | | | Preliminaries lost in micros. |
| | | M | 3 58 .. | 20 | 3 | | | |
| | | L | 4 10 .. | 15 | 1 | | | |
| | | F | 4 20 .. | | | | | |
| 16 | | e | (22 02 24) | | | | | Irregular waves with sharp disturbances; may not be seismic. |
| | | $e_E$ | (22 03 30) | | | | | |
| | | e | (22 06 24) | | | | | |
| | | eL? | (22 14) .. | | | | | |
| | | F | (23 05) .. | | | | | |
| 20 | | i | 22 51 58 | 5 | 2.5 | 1 | | |
| | | eL | 22 58 30 | 7 | | | | |
| | | $L_E$ | 23 02 .. | 16 | 1 | | | Very small. |
| | | F | 23 10 .. | | | | | |
| 21 | | O | 1 55 22 | | | | 5,980 | *Milne-Shaw seismographs not in operation after Jan. 21.* |
| | | eP | 2 04 52 | | | | | |
| | | PR1 | 2 07 26 | | | | | |
| | | eS | 2 12 27 | | | | | |
| | | i | 2 14 32 | | | | | |
| | | eL | 2 23 .. | | | | | |
| | | Me | 2 26 .. | 24 | 20 | | | |
| | | $M_N$ | (2 35) .. | 18 | | 8 | | |
| | | $L_E$ | 2 37 .. | 15 | 5.5 | | | |
| | | $L_N$ | 2 40 .. | 12 | | 3 | | |
| | | $L_E$ | 2 54 .. | 14 | 2 | | | |
| | | F | 3 20 *ca* | | | | | |
| 25 | | e | 6 14 00 | | | | | |
| | | e | 6 22 48 | | | | | |
| | | (eL) | 6 27 48 | | | | | |
| | | $M_N$ | 6 29 48 | 6 | | (1) | | |
| | | L | 6 33 30 | 6 | | | | |
| | | F | 6 40 .. | | | | | |
| 29 | | O | 1 55 02 | | | | 8,120 | |
| | | $iP_N$ | 2 06 29 | | | | | |
| | | iS | 2 15 55 | | | | | |
| | | eSR2E | 2 35 00 | | | | | |
| | | $eL_N$ | 2 30 30 | | | | | |
| | | $M_N$ | 2 42 .. | 19 | | 25 | | |
| | | $M_E$ | 2 39 .. | 19 | 12 | | | |
| | | F | 3 *ca* | | | | | |
| 30 | | O | (20 53 29) | | | | (3,270) | |
| | | $eP_N$ | (20 59 50) | | | | | |
| | | $(ePR1_N)$ | 21 00 21 | | | | | |
| | | eS | (21 04 52) | | | | | |
| | | eL | 21 08 30 | | | | | |
| | | $M_N$ | 21 11 30 | 11 | | 15 | | |
| | | $M_N$ | 21 11 .. | 12 | 25 | | | |
| | | F | 21 30 *ca* | | | | | |
| 31 | | $e_N$ | 1 09 36 | | | | | Poorly defined except for i. |
| | | e | 1 13 24 | | | | | |
| | | i | 1 17 50 | | | | | |
| | | eLe? | 1 20 12 | | | | | |
| | | F | 1 30 .. | | | | | |

TABLE 2.—*Instrumental seismological reports, January, 1924*—Continued.

CANADA. *Meteorological Service of Canada, Toronto.*

| 1924. | | | *H. m. s.* | *Sec.* | *μ* | *μ* | *Km.* | |
|---|---|---|---|---|---|---|---|---|
| Jan. 2 | | e | 9 56 45 | | | | | Micros. E/W component, oscillations caused by strong W. wind. |
| N | | F | 10 26 .. | | | | | |
| 4 | | i | 22 00 22 | | | | | |
| | | L | 22 02 27 | 11 | | | | Uniform waves. |
| | | | 22 03 30 | | | | | |
| W | | L | 22 04 08 | | | | | Micros going on. |
| | | M1 | 22 05 24 | | | 24 | | |
| | | M2 | 22 05 35 | 11 | | | | |
| | | i | 22 08 38 | 8 | | | | |
| | | F | 22 22 .. | | | | | |
| | | i | 22 00 28 | | | | | |
| N | | L | 22 04 41 | 14 | | | | |
| | | M1 | 22 05 30 | | | | | |
| | | M2 | 22 05 41 | 11 | 7 | | | |
| | | M3 | 22 05 51 | | | | | |
| | | F | 22 20 .. | | | | | |
| 6 | | L | {18 16 30 / 18 18 00} | 6 | | | | Sinusoidal waves. |
| N | | F | | | | | | Micros. E/W component, wind interfered with phases. |
| 7 | | i | 10 12 10 | | | | | |
| | | e | 10 16 30 | | | | | |
| W | | e | 10 20 52 | | | | | Micros going on. |
| | | L | 10 26 10 | 15 | | 12 | | |
| | | L | 10 31 00 | 12 | | | | |
| | | F | | | | | | Micros. |
| N | | i | 10 12 13 | | | | | |
| | | i | 10 20 52 | | | | | Small micros previous to 10 12 13. |
| | | L? | 10 24 45 | | | | | Irregular. |
| | | L | 10 27 04 | | | | | Micros. |
| | | F | | | | | | |
| 11 | | e | 0 07 14 | | | | | |
| W | | L? | 0 24 00 | | | | | Small amplitude. |
| | | L | 0 27 00 | | | | | Micros going on. |
| | | F | | | | | | Micros. N/S component does not appear disturbed. |
| 12 | | L | 14 33 23 | 15 | | | | Micros and strong W. wind effect boom. |
| W | | L | 14 41 52 | | | | | |
| | | F | | | | | | Small micros. |
| | | i | 13 30 06 | | | | | |
| | | e | 13 31 55 | | | | | Micros interfere with phases. |
| N | | e | 13 42 17 | | | | | |
| | | e | 13 33 30 | | | | | |
| | | F | | | | | | Small micros. |
| 14 | | O | 20 51 17 | | | | | |
| | | eP | 21 03 41 | 8-9 | | | | |
| N | | iP | 21 03 44 | | | | | |
| | | PR | {21 07 19 / .. .. 30} | | | | | |
| | | eS | 21 14 03 | 7 | | | | Quake felt at Tokyo and Yokohama. |
| | | iS | 21 14 06 | | | | | |
| | | i | 21 14 41 | | | | | |
| | | e | 21 21 03 | | | | 9,230 | |
| | | eL | 21 38 15 | 25 | | | | |
| | | L | {21 46 33 to 21 53 30} | 19 | | | | |
| | | M1 | 21 52 23 | 18 | 15 | | | |
| | | M2 | 21 52 41 | | | | | |
| | | L | 21 54 21 | | | | | |
| | | F | 23 24 00 | | | | | |
| | | O | 20 51 22 | | | | | |
| W | | eP | 21 03 42 | | | | | |
| | | iP | 21 03 44 | | | | | |
| | | PR | 21 07 21 | 8 | | | | Do. |
| | | eS | 21 14 00 | | | | | |
| | | iS | 21 14 03 | | | | 9,150 | |
| | | i | 21 14 30 | | | | | |
| | | i | 21 14 48 | | | | | |
| | | e | 21 28 02 | | | | | |
| | | eL | 21 34 35 | | | | | |
| | | L | 21 38 23 | 23 | | | | |
| | | M1 | 21 48 51 | | | 23 | | |
| | | M2 | 21 49 09 | 18 | | | | |
| | | F | 70 48 .. | | | | | |
| 15 | | L | 3 57 43 | | | | | Preliminary phases lost in micros. |
| W | | L | 3 58 02 | 15 | | | | |
| | | F | | | | | | Micros. |
| | | iz | 3 31 26 | | | | | Very small amplitude, micros mask phases. |
| N | | i | 3 58 10 | | | | | |
| | | F | | | | | | Micros. |
| 16 | | L | 22 14 15 | 23 | | | | Small active phases obscured by micros. |
| W | | L | 22 41 30 | 15 | | | | |

CANADA. *Meteorological Service of Canada, Toronto*—Continued.

| 1924. | | | *H. m. s.* | *Sec.* | *μ* | *μ* | *Km.* | |
|---|---|---|---|---|---|---|---|---|
| Jan. 16 | | F | | | | | | Micros. |
| N | | i | 22 11 47 | | | | | |
| | | eL | 22 18 43 | | | | | Micros going on. |
| | | F | | | | | | Micros. |
| 20 | | i? | 22 50 45 | | | | | Micros going on. |
| N | | F | | | | | | Micros. |
| | | | | | | | | E-W component, winds effect boom. |
| 21 | | iP | 2 04 50 | | | | | Preceded by micros. |
| | | eS | 2 12 21 | | | | | |
| W | | iS | 2 12 29 | | | | | |
| | | eL | 2 22 15 | 15 | | | | |
| | | L | 2 25 45 | 15 | | | | |
| | | L | 2 26 02 | 23 | | 27 | | |
| | | L? | 3 48 21 | | | | | |
| | | F | | | | | | Micros. |
| N | | eP | 2 04 49 | | | | | Uniform P waves to 2h 05m 42s, 8 secs. period. |
| | | iP | 2 04 51 | 5 | | | | |
| | | iPR1 | 2 07 23 | | | | | |
| | | eS | 2 12 29 | | | | | P & S well defined. |
| | | iS | 2 12 31 | | | | | |
| | | i | 2 13 15 | | | | | L waves very small and irregular. |
| | | i | 2 14 33 | | | | | |
| | | eL | 2 22 14 | | | | | |
| | | L | 2 36 38 | 15 | | | | Small amplitude. |
| | | | 2 41 23 | | | | | |
| | | e | 3 48 23 | | | | | |
| | | F | | | | | | Micros. |
| 25 | | eP | 6 13 18 | | | | | |
| | | iP | 6 13 23 | 8 | | | | |
| W | | i | 6 15 38 | | | | | |
| | | S | 6 19 00 | 11 | | 4 | | Uniform waves. |
| | | S | 6 19 23 | | | | | |
| | | | 6 20 50 | 11 | | | | |
| | | L | {6 28 15 / .. .. 23} | 15 | | 5 | | |
| | | L | 6 31 38 | 11 | | 6 | | |
| | | L | 6 46 55 | 15 | | | | |
| | | L | 7 48 11 | 17 | | | | |
| | | F | | | | | | Micros. |
| 25 | | eP | 6 13 15 | | | | | |
| | | iP | 6 13 25 | 8 | | | | |
| N | | S | {6 19 22 / .. .. 30} to 6 20 45 | 11 | 4 | | | Difficult seismogram to analyze. Uniform waves. |
| | | i | 6 27 25 | 8 | | | | |
| | | eL | 6 30 00 | 19 | | | | |
| | | F | 7 54 .. | | | | | |
| 26 | | i? | 2 14 45 | 4 | | | | |
| | | e? | 2 25 27 | 8 | | | | Micros going on. |
| N | | L | 2 32 15 | | | | | Small amplitude, readings doubtful. E-W component, wind masked phases. |
| | | F | Micros .. | | | | | |
| 29 | | O | 1 54 59 | | | | | |
| | | eP | 2 06 17 | | | | | |
| | | eS | 2 15 34 | 12 | | | | |
| | | i | 2 15 38 | | | | | |
| W | | e | 2 24 00 | | | | | E well defined. |
| | | e | 2 25 00 | 15 | | | 7,950 | |
| | | L? | 2 30 22 | | | | | |
| | | L | 2 31 10 | 37 | | | | Northern Chili. Sinusoidal. |
| | | M1 | 2 39 00 | 23 | | 17 | | |
| | | M2 | 2 39 23 | | | | | |
| | | M3 | 2 39 45 | | | | | |
| | | F | | | | | | Micros |
| | | O | 1 55 02 | | | | | |
| N | | iP | 2 06 20 | 4 | | | | P & S well defined. |
| | | i | .. .. 22 | | | | | |
| | | iS | 2 15 36 | 8 | 9 | | | |
| | | e | 2 20 41 | | | | | |
| | | eSR | 2 24 08 | | | | | |
| | | L | 2 32 37 | | | | | |
| | | L | 2 36 30 | 19 | | | | Sinusoidal. |
| | | | 2 42 53 | 23 | | | 7,930 | |
| | | M1 | 2 39 51 | 23 | 19 | | | Northern Chili. |
| | | L | 2 44 04 | | | | | |
| | | L | 2 48 08 | 19 | | | | |
| | | L | 3 00 05 | 19 | | | | |
| | | F | | | | | | Micros |
| 30 | | e | 5 35 08 | | | | | Small amplitude slow irregular, waves. |
| W | | L | 6 00 53 | | | | | |
| | | F | 6 04 00 | | | | | |
| N | | e | 5 34 45 | | | | | |
| | | F | 5 52 00 | | | | | |
| 30 | | e | 14 46 05 | | | | | |
| | | i | 14 48 56 | 8 | | | | Small amplitude. Sinusoidal small waves. |
| W | | | 14 51 38 | 8 | | | | |

TABLE 2.—*Instrumental seismological reports, January, 1924*—Continued.

CANADA. *Meteorological Service of Canada, Toronto*—Continued.

| 1924. | | | H. m. s. | Sec. | μ | μ | Km. | |
|---|---|---|---|---|---|---|---|---|
| Jan. 30 | | F?.... | 15 16 .. | | | | | |
| N | | e..... | 14 46 06 | | | | | Small sinusoidal. |
| | | | 14 47 17 to 14 48 53 | 8 | | | | |
| | | F..... | 14 56 .. | | | | | |
| 30 | | O..... | 20 53 01 | | | | | |
| | | eP.... | 20 59 20 | | | | | P poorly defined. |
| W | | eS.... | 21 04 20 | | | | | Irregular. |
| | | eS.... | 21 04 23 | | | | | |
| | | e..... | 21 06 41 | | | | 3,249 | |
| | | i..... | 21 07 20 | 8 | | | | |
| | | i..... | 21 08 10 | 4 to 8 | | | | |
| | | iL.... | 21 08 14 | | | | | |
| | | M..... | 21 08 58 | 11 | | 38 | | |
| | | F..... | 22 05 .. | | | | | |
| | | ePR.. | 20 59 58 | | | | | True P apparently not recorded |
| | | iPR... | 21 00 02 .. .. 06 | 5 | | | | |
| N | | eS.... | 21 04 20 | 15 | | | | |
| | | e..... | 21 07 35 | | | | | |
| | | i..... | 21 10 03 | 11 | | | | |
| | | iL.... | 21 11 00 | 11 | | | | |
| | | M..... | 21 11 15 | | 17 | | | |
| | | F..... | 22 00 .. | | | | | |
| 31 | | iS?.... | 1 17 35 | 10 | | | | |
| | | i..... | 1 18 45 | | | | | |
| W | | e..... | 1 19 47 | | | | | |
| | | e..... | 1 19 55 | 15 | 4 | | | |
| | | L..... | 1 27 08 | 15 | | | | |
| | | | 1 31 52 | | 3 | | | |
| | | F..... | ?2 10 .. | | | | | |
| | | i..... | 1 09 14 | | | | | |
| N | | ..... | .. .. 28 | | | | | |
| | | i..... | 1 11 25 | | | | | |
| | | i..... | 1 13 19 | | | | | |
| | | eS?.... | 1 17 30 | | | | | |
| | | iS?.... | 1 17 39 | 8 | 7 | | | iS well defined. |
| | | L..... | 1 20 19 | 11 | | | | |
| | | F..... | 1 58 .. | | | | | |

CANADA. *Meteorological Service of Canada, Victoria.*

| 1924. | | | H. m. s. | Sec. | μ | μ | Km. | |
|---|---|---|---|---|---|---|---|---|
| Jan. 6 | | L..... | ?18 22 06 | 10 | | | | |
| E | | M..... | 18 26 41 | 10 | | 2 | | |
| | | F..... | 18 29 11 | | | | | |
| | | L..... | ?18 22 21 | 10 | | | | |
| N | | M..... | 18 26 51 | 10 | 1 | | | |
| | | F..... | 18 28 21 | | | | | |
| 7 | | P..... | 10 01 04 | 5 | | | | |
| | | L..... | 10 05 10 | 10 | | | | |
| E | | M..... | 10 08 20 | 20 | | 23 | 2,510 | |
| | | F..... | 10 58 00 | | | | | |
| | | P..... | 10 01 04 | 5 | | | | |
| N | | L..... | 10 05 08 | 10 | | | | |
| | | M..... | 10 06 50 | 18 | 26 | | 2,490 | |
| | | F..... | 10 52 00 | | | | | |
| 9 | | L..... | 10 28 12 | 8 | | | | |
| E | | M..... | 10 28 48 | 10 | | 5 | | |
| | | F..... | 10 34 30 | | | | | |
| | | L..... | 10 28 20 | 10 | | | | |
| N | | M..... | 10 28 50 | 10 | 5 | | | |
| | | F..... | 10 37 00 | | | | | |
| 11 | | L..... | 20 43 00 | 10 | | | | |
| E | | M..... | 20 47 00 | 10 | | 2 | | N-S too small to measure. |
| | | F..... | 20 59 20 | | | | | |
| 12 | | L..... | 14 17 16 | 20 | | | | |
| E | | M..... | 14 19 36 | 17 | | 4 | | |
| | | F..... | 14 26 01 | | | | | |
| | | P..... | 14 09 31 | 8 | | | | |
| | | L..... | 14 18 01 | 20 | | | | |
| N | | M..... | 14 19 15 | 18 | 7 | | 7,010 | |
| | | F..... | 14 26 01 | | | | | |
| 14 | | P..... | 21 01 27 | 8 | | | | |
| | | S..... | 21 10 18 | 12 | | | | |
| E | | M..... | 21 25 28 | 20 | | 13 | 7,420 | |
| | | F..... | 23 45 03 | | | | | |

CANADA. *Meteorological Service of Canada, Victoria*—Continued.

| 1924. | | | H. m. s. | Sec. | μ | μ | Km. | |
|---|---|---|---|---|---|---|---|---|
| Jan. 14 | | P..... | 21 01 25 | 8 | | | | |
| | | S..... | 21 10 18 | 12 | | | | |
| N | | M..... | 21 21 01 | 15 | 8 | | 7,400 | |
| | | F..... | 23 45 03 | | | | | |
| 16 | | L..... | 22 00 02 | 8 | | | | |
| E | | M..... | 22 00 17 | 12 | | 7 | 130? | |
| | | F..... | 22 13 32 | | | | | |
| | | L..... | 21 59 59 | 8 | | | | |
| N | | M..... | 22 00 10 | 12 | 17 | | 100? | |
| | | F..... | 22 15 12 | | | | | |
| 21 | | P..... | 2 02 00 | 8 | | | | |
| | | S..... | 2 03 56 | 10 | | | | |
| | | L..... | 2 07 30 | 12 | | | | |
| E | | M..... | 2 13 43 | 12 | | 4 | 1,080 | |
| | | F..... | 3 18 48 | | | | | |
| | | P..... | 2 02 00 | 8 | | | | |
| | | L..... | 2 07 30 | 12 | | | | |
| N | | M..... | 2 12 55 | 20 | 9 | | | |
| | | F..... | 3 03 00 | | | | | |
| 25 | | P..... | 6 13 11 | 10 | | | | |
| | | L..... | 6 20 36 | 20 | | | | |
| E | | M..... | 6 24 43 | 15 | | 8 | | |
| | | F..... | 7 36 31 | | | | | |
| | | P..... | 6 13 11 | 8 | | | | |
| N | | L..... | 6 22 50 | 20 | | | | |
| | | M..... | 6 25 35 | 18 | 14 | | | |
| | | F..... | 7 36 00 | | | | | |
| 26 | | P..... | 2 25 24 | 5 | | | | E-W component, shutter remained closed. |
| | | L..... | 2 37 25 | 20 | | | | |
| N | | M..... | 2 44 50 | 18 | 2 | | 1,130 | |
| | | F..... | 2 48 20 | | | | | |
| 29 | | P..... | 2 07 49 | 8 | | | | |
| | | S..... | 2 18 42 | 10 | | | | |
| | | L..... | 2 34 44 | 30 | | | | |
| E | | M..... | 2 43 19 | 22 | | 27 | 9,890 | |
| | | F..... | 3 30 59 | | | | | |
| | | P..... | 2 07 49 | 5 | | | | |
| | | S..... | 2 18 39 | 10 | | | | |
| N | | L..... | 2 35 29 | 30 | | | | |
| | | M..... | 2 41 34 | 25 | 31 | | 9,820 | |
| | | F..... | 4 39 00 | | | | | |
| 30 | | L..... | 5 25 59 | 20 | | | | |
| E | | M..... | 5 29 34 | 20 | | 3 | | N-S not visible. |
| | | F..... | 5 31 59 | | | | | |
| 30 | | P..... | 14 27 58 | 5 | | | | |
| | | L..... | 14 29 18 | 10 | | | | |
| E | | M..... | 14 29 41 | 10 | | 3 | 610 | |
| | | F..... | 14 38 38 | | | | | |
| | | P..... | 14 28 48 | 5 | | | | |
| | | L..... | 14 29 31 | 10 | | | | |
| N | | M..... | 14 30 21 | 10 | 10 | | 860 | |
| | | F..... | 14 38 58 | | | | | |
| 30 | | L..... | 21 19 35 | 8 | | | | |
| E | | M..... | 21 21 37 | 12 | | 4 | | |
| | | F..... | 21 42 02 | | | | | |
| | | L..... | 21 19 02 | 20 | | | | |
| N | | M..... | 21 21 00 | 15 | 23 | | | |
| | | F..... | 21 46 17 | | | | | |
| 31 | | L..... | 1 21 22 | 8 | | | | |
| E | | M..... | 1 21 32 | 12 | | 4 | | |
| | | L..... | 1 21 22 | 5 | | | | |
| | | L..... | 1 22 57 | 18 | | | | |
| N | | M..... | 1 24 03 | 18 | 6 | | | |
| | | F..... | 1 42 20 | | | | | |

No earthquakes were recorded during January, 1924, at the following stations:

COLORADO. *Regis College*, Denver.

Reports for January, 1924, have not yet been received from the following stations:

DISTRICT OF COLUMBIA. *Georgetown University*, Washington.
PORTO RICO. *U. S. C. & G. S. Magnetic Observatory*, Vieques.
MASSACHUSETTS. *Harvard University*, Cambridge.
MISSOURI. *St. Louis University*, St. Louis.
NEW YORK. *Cornell University*, Ithaca.

TABLE 3.—*Late Reports (Instrumental).*

DISTRICT OF COLUMBIA. *Georgetown University, Washington.*

| 1923. | | | *H. m. s.* | *Sec.* | *μ* | *μ* | *Km.* | |
|---|---|---|---|---|---|---|---|---|
| Nov. 1 | | e | 20 15 24 | | | | | Very heavy micros; e possibly S. |
| | | L | 20 16 29 | 9 | | | | |
| | | e | 20 21 .. | | | | | |
| | | F? | 20 40 .. | | | | | |
| 2 | | $e_E$ | 21 58 56 | | | | | Very heavy micros; sheet off at 0h. 20m. with quake still on. |
| | | $e_N$ | 21 29 02 | | | | | |
| | | $S_N$? | 21 37 23 | | | | | |
| | | eL | 21 46 18 | 38 | | | | |
| | | $L_E$ | 22 09 10 | 30 | | | | |
| | | $L_N$ | 22 10 02 | 26 | | | | |
| | | $M_E$ | 22 23 05 | 19 | *1,100 | | | |
| 3 | | $eP_E$ | 8 42 21 | | | | | |
| | | $iP_N$ | 8 42 21 | | | | | |
| | | S | 8 46 03 | | | | | |
| | | $eL_E$? | 8 47 .. | | | | | |
| | | $L_N$ | 8 48 55 | 19 | | | | |
| | | $L_E$ | 8 49 34 | 16 | | | | |
| | | F | 10 *ca.* | | | | | |
| 3 | | $e_N$? | 16 44 .. | | | | | Very heavy micros; beginning uncertain. |
| | | $eL_E$? | 16 18 00 | | | | | |
| | | $eL_N$? | 16 17 24 | | | | | |
| | | $L_E$ | 17 18 11 | 21 | | | | |
| | | $L_N$ | 17 18 16 | 26 | | | | |
| | | $L_N$ | 17 28 .. | 11 | | | | |
| | | F | 17 58 .. | | | | | |
| 4 | | $eP_E$? | 0 24 22 | | | | | Very heavy micros; difficult. |
| | | $eP_N$? | 0 24 00 | | | | | |
| | | eS? | 0 37 00 | | | | | |
| | | $S_ER$ | 0 42 00 | | | | | |
| | | eL | 1 01 00 | | | | | |
| | | $L_E$ | 1 03 05 | 28 | | | | |
| | | $L_N$ | 1 03 25 | 31 | | | | |
| | | $M_E$ | 1 07 35 | 25 | *500 | | | |
| | | $M_N$ | 1 07 15 | 25 | | *800 | | |
| | | F | 1 55 .. | | | | | |
| 5 | | $e_E$ | 21 52 31 | | | | | NS bound by damper. $L_{EN}$ 21:18:42 to 21:25. |
| | | $eL_E$ | 22 18 12 | | | | | |
| | | $L_E$ | 22 28 35 | 20 | | | | |
| | | F | 23 10 .. | | | | | |
| 8 | | $eS_E$? | 0 13 35 | | | | | Very heavy micros; P obscured, possibly at 0:07:00. |
| | | $iS_N$ | 0 13 25 | | | | | |
| | | $eL_E$? | 0 19 30 | | | | | |
| | | F | 0 40 .. | | | | | |
| 9 | | $e_E$ | 3 28 30 | | | | | S possibly sooner; EW poorly defined. |
| | | $eS_E$? | 3 32 10 | | | | | |
| | | $eL_E$? | 3 34 42 | | | | | |
| | | $L_N$ | 3 39 .. | | | | | |
| | | $L_E$ | 3 43 .. | | | | | |
| | | F | 4 30 *ca* | | | | | |
| 11 | | e | 6 04 .. | | | | | |
| | | S? | 6 11 48 | | | | | |
| | | F | 6 20 .. | | | | | |
| 11 | | e | 14 06 .. | | | | | Difficult. |
| | | $e_E$ | 14 14 00 | | | | | |
| | | $e_N$ | 14 14 20 | | | | | |
| | | F | 15 *ca* .. | | | | | |
| 16 | | e | 4 33 00 | | | | | e possibly sooner; very heavy micros. |
| | | S? | 4 36 24 | | | | | |
| | | eL? | 4 38 00 | | | | | |
| | | $L_E$ | 4 39 .. | 8 | | | | |
| | | $L_N$ | 4 40 39 | 8 | | | | |
| | | F | 5 .. .. | | | | | |
| 16 | | e | 7 28 25 | | | | | Very heavy micros. |
| | | $L_E$ | 7 31 35 | | | | | |
| | | $L_N$ | 7 32 23 | | | | | |
| | | F | 7 40 .. | | | | | |
| 17 | | $eP_N$ | 3 03 41 | | | | | |
| | | S? | 3 12 57 | | | | | |
| | | $L_E$ | 3 31 07 | 15 | | | | |
| | | $L_N$ | 3 36 .. | | | | | |
| | | F | 4 10 .. | | | | | |
| 18 | | $L_E$ | 9 16 39 | | | | | Very heavy micros. |
| | | $L_N$ | 9 17 32 | | | | | |
| | | F | 9 40 .. | | | | | |
| Dec. 5 | | $e_E$? | 21 06 21 | | | | | Do. |
| | | $e_N$? | 21 06 27 | | | | | |
| | | $S_N$ | 21 18 08 | | | | | |
| | | F | | | | | | Micros. |
| 13 | | e | 17 05 17 | | | | | Very heavy micros. |
| | | $eL_N$ | 17 10 18 | 14 | | | | |
| | | $L_E$ | 17 19 08 | | | | | F lost in micros. |
| 14 | | $e_E$ | 10 44 46 | | | | | Rest lost in heavy micros. |
| | | $e_N$ | 10 44 49 | | | | | |
| 21 | | $eL_N$? | 8 15 18 | | | | | Very heavy micros. |
| | | F | | | | | | Micros. |

* Trace amplitude.

CANADA. *Meteorological Service of Canada, Toronto.*

| 1923. | | | *H. m. s.* | *Sec.* | *μ* | *μ* | *Km.* | |
|---|---|---|---|---|---|---|---|---|
| Dec. 2 | | $e_E$ | 15 36 15 | | | | | Nothing on NS. |
| | | $L_E$ | 15 37 53 | 23 | | | | Sinusoidal, small amplitude of 15:41:08. |
| | | F | Micros | | | | | |
| 3 | | $L_E$ | 8 57 15 | | | | | Nothing on NS. |
| | | $L_E$ | 9 00 23 | | | | | |
| | | F | | | | | | Micros. |
| 5 | | $e_N$ | 7 59 10 | | | | | EW masked by wind effects; small amplitude. |
| | | $L_N$ | 8 02 49 | | | | | |
| | | F | Micros | | | | | |
| 5 | | L | 21 22 00 | | | | | *East-West.* |
| | | i | 21 27 23 | | | | | P and S lost, wind affecting boom. |
| | | L | 21 31 00 | 23 | | | | |
| | | i | 21 35 00 | | | | | Japan. |
| | | L | 21 37 26 | 15 | | | | |
| | | L | 21 39 53 | | | | | Sinusoidal. |
| | | | *to* 41 25 | 15 | 9 | | | |
| | | eS | 21 17 38 | | | | | *North-South.* |
| | | i | 21 17 47 | | | | | |
| | | L | 21 31 12 | 22 | | | | Sinusoidal. |
| | | | *to* 34 30 | | | 13 | | |
| | | L | 21 40 30 | 15 | | | | |
| | | i | 22 02 38 | 15 | | | | |
| | | F | | | | | | Micros. |
| 5 | | e | 23 48 30 | | | | | *North-South.* |
| | | e | 23 56 32 | | | | | Preceded by micros. |
| | | e | 23 57 00 | | | | | Irregular waves. |
| 6 | | e | 0 54 33 | | | | | EW affected by winds and micros. |
| | | e | 1 11 41 | | | | | |
| | | F | ?1 28 00 | | | | | |
| 7 | | e | 16 31 58 | | | | | Small amplitude. |
| | | e | 16 34 15 | | | | | *East-West.* |
| | | F | | | | | | Micros. |
| | | e | 16 30 23 | | | | | *North-South.* |
| | | e | 16 32 13 | | | | | Small amplitude. |
| | | F | | | | | | Micros. |
| 11 | | eL | 6 11 05 | 23 | | | | *East-West.* |
| | | L | 6 14 38 | 23 | | | | |
| | | L | 6 18 00 | | | | | Uniform. |
| | | L | 6 22 08 | 23 | | | | Do. |
| | | | *to* 26 15 | | | | | F in micros. |
| | | e | 6 10 00 | | | | | *North-South.* |
| | | L | 6 12 26 | | | | | Very small amplitude. |
| | | | *to* 18 00 | | | | | |
| | | L | 6 21 00 | | | | | |
| | | F | | | | | | Micros. |
| 12 | | L | 11 21 15 | | | | | *North-South.* |
| | | L | 11 21 37 | | | | | Slow waves; may not be seismic. |
| | | L | 11 28 30 | | | | | |
| | | F | 11 40 .. | | | | | |
| | | $L_E$ | 11 31 08 | | | | | Micros and wind mask phases. |
| | | $F_E$ | ? | | | | | |
| 13 | | e | 17 09 52 | | | | | *East-West.* |
| | | L | 17 10 08 | 17 | 7 | | | |
| | | | *to* 13 33 | 15 | | | | Sinusoidal. |
| | | L | 17 14 15 | | | | | Irregular. |
| | | F | | | | | | Micros. |
| | | L | 17 10 .. | 19 | | | | *North-South.* |
| | | L | 17 10 32 | 13 | | | | Sinusoidal. |
| | | | *to* 13 15 | | | | | |
| | | M | 17 10 40 | | | 7 | | |
| | | F | 17 29 .. | | | | | |
| 15 | | L? | 12 50 40 | | | | | *East-West.* |
| | | L | 12 51 57 | | | | | Irregular. Masked by wind and micros. |
| | | F | Micros | | | | | |
| | | i | 12 48 40 | | | | | *North-South.* |
| | | L | 12 50 15 | 10 | | | | Small uniform waves. |
| | | | *to* 53 .. | | | | | |
| | | F | | | | | | Micros. |
| 16 | | e | 7 51 08 | | | | | *East-West.* |
| | | L | 7 58 00 | | | | | Irregular. Small amplitude. |
| | | F | Micros | | | | | |
| | | e | 7 45 15 | | | | | Micros; readings doubtful. |
| | | i | 7 58 23 | | | | | |
| | | L | 8 02 15 | | | | | |
| | | F | 8 27 00 | | | | | |
| 22 | | P | ?10 04 51 | | | | | Micros. |
| | | | *or* 05 23 | | | | 3,120 | Ecuador? |
| | | iS | 10 09 43 | 5–8 | | | | *East-West.* |
| | | eL | 10 12 23 | 15 | | | | |
| | | i | 10 13 24 | | | | | |
| | | i | 10 16 28 | 8 | | | | |
| | | L | 10 17 41 | 14 | | | | |
| | | L | 10 17 57 | 30 | | | | |
| | | L | 10 20 51 | | | | | |
| | | | *to* 22 00 | | | | | |

TABLE 3.—*Late Reports (Instrumental)*—Continued.

CANADA. *Meteorological Service of Canada, Toronto*—Continued.

| 1923. | | | *H. m. s.* | *Sec.* | μ | μ | *Km.* | |
|---|---|---|---|---|---|---|---|---|
| Dec. 22 | | M1 | 10 21 11 | | | | | |
| | | M2 | 10 21 28 | | 23 | | | |
| | | L | 10 22 15 | 17 | | | | |
| | | F | 11 24 00 | | | | | |
| | | P? | 10 04 47 | | | | 3,110 | *North-South.* |
| | | S | 10 09 40 | 5 | | | | Micros. |
| | | e | 10 16 14 | | | | | |
| | | L | 10 16 30 | | | | | |
| | | L | 10 16 51 | 25 | | | | |
| | | L | *10* 20 15 | 19 | | | | Uniform. |
| | | | *to* 22 38 | 19 | | | | |
| | | M1 | 10 21 24 | 23 | | 21 | | |
| | | M2 | 10 21 41 | | | | | |
| | | L | 10 23 38 | 15 | | | | |
| | | F | 11 24 00 | | | | | |
| 22 | | $e_N$ | 18 13 15 | | | | | Very small; NS. barely noticeable. |
| | | $e_N$ | 18 14 30 | 23 | | | | |
| | | $e_N$ | 18 16 15 | | | | | |
| | | $F_N$ | 18 26 00 | | | | | |
| 26 | | $e_N$ | ?3 09 33 | | | | | Micros; N S. masked. |

CANADA. *Meteorological Service of Canada, Toronto*—Continued.

| 1923. | | | *H. m. s.* | *Sec.* | μ | μ | *Km.* | |
|---|---|---|---|---|---|---|---|---|
| Dec. 26 | | $L_N$ | 3 11 14 | | | | | F in micros. |
| 27 | | i | 15 03 08 | | | | | *East-West.* |
| | | e | 15 03 38 | | | | | |
| | | i | 15 06 30 | | | | | Paper changed 15:20. |
| | | i | 15 02 45 | | | | | *North-South;* minute micros. |
| | | i | 15 06 38 | | | | | |
| 28 | | $e_N$ | 18 11 23 | | | | | EW. masked by wind. |
| | | $L_N$ | 18 15 35 | | | | | F in micros. |
| 28 | | $L_N$ | 23 14 45 | | | | | Masked by wind and micros: sinusoidal waves. |
| | | | *to* 17 00 | 23 | 9 | | | |
| | | $e_N$ | 22 56 32 | | | | | |
| | | $L_N$ | 23 02 08 | | | | | Small amplitude. |
| | | $L_N$ | 23 19 19 | | | | | |
| | | L | 23 25 38 | | | | | F in micros. |

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