

British Association for the Advancement of Science.

Circular No. 2, issued by the Seismological Committee, Professor J. W. JUDD, C.B., F.R.S. (Chairman), Mr. JOHN MILNE, F.R.S., Slide, Isle of Wight (Secretary).

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Registers from Similar Horizontal Pendulums (Milne Type).

These registers are for the most part continuous with those published by the Seismological Investigation Committee in their first circular and in the Reports of the British Association, 1896 to 1899.

The places to which they refer will be seen by reference to the table of contents. In the next circular, to be issued early in 1901, it is desirable that these registers should be continued up to December 31, 1900, and be extended by corresponding registers from the following places: Bidston, Edinburgh, Paisley, Beyrut, Calcutta, Colombo, Mauritius, Tokio, Melbourne, Sydney, New Zealand, Swarthmore College (Philadelphia), Baltimore, Honolulu, Mexico, Trinidad, and Arequipa.

If observers at these and other places working with the type of instrument adopted by the British Association will kindly send a copy of their register, together with copies of the more important seismograms, to John Milne, Slide, Isle of Wight, England, as early as possible after December 31, and again after June 30 of each year, the interval of time which must elapse before they receive copies of the registers from co-operators in various parts of the world will be considerably reduced.

The time employed is Greenwich mean time expressed in hours, minutes, and usually in decimals of minutes.

A 1**

D. First P.T.'s.—This refers to the duration of the first preliminary tremors or the first uniform thickening of the trace.

Amplitude indicates half of the complete range of the maximum motion. When this exceeds one millimetre it is expressed in millimetres and in seconds of arc. Values less than one millimetre refer to the thickening of a line and indicate half its width.

*The Register from Slide, Isle of Wight, England.
Observer, JOHN MILNE. Assistant, SHINOBU HIROTA.*

| Slide No. | Date | Commencement | | Maximum | | Amplitude | | Duration | | Remarks |
|--------------|---------|--------------|------|---------|------|-----------|------|----------|----|--|
| | | H. | M. | H. | M. | MM. | " | H. | M. | |
| 1900. | | | | | | | | | | |
| 375 | Jan. 4 | about noon | | — | | 0.25 | 0.12 | 0 | 3 | Origin Sumatra. The repetition occurs 80 min. later. The time records are approximate. |
| 376 | " 5 | 19 | 20.0 | 20 | 4.0 | 2.25 | 1.12 | 2 | 20 | |
| 377 | " 11 | 8 | 25.6 | 9 | 28.0 | 1.0 | 0.5 | 2 | 25 | — |
| 378 | " 13 | 11 | 40.3 | — | — | 0.6 | 0.3 | 0 | 29 | — |
| 379 | " 15 | 20 | 23.4 | — | — | 1.5 | 0.75 | 0 | 32 | — |
| 380 | " 17 | 6 | 36.9 | — | — | 0.75 | 0.37 | 0 | 30 | — |
| 381 | " 20 | — | | — | | — | | — | | Origin Mexico. |
| 382 | " 24 | 8 | 17.0 | — | — | 0.25 | 0.12 | 0 | 22 | — |
| 383 | " 29 | 23 | 0.6 | — | — | 0.5 | 0.25 | 0 | 60 | — |
| 384 | " 31 | 14 | 46.6 | — | — | 0.25 | 0.12 | 0 | 10 | — |
| 385 | " 31 | 19 | 31.1 | — | — | 0.75 | 0.37 | 0 | 65 | — |
| 386 | Feb. 2 | 9 | 0 | — | — | 0.25 | 0.12 | 0 | 4 | — |
| 387 | " 6 | 15 | 11.0 | 15 | 18.2 | 1.00 | 0.5 | 0 | 15 | — |
| 388 | " 13 | 7 | 3.6 | 7 | 44.3 | 0.5 | 0.25 | 0 | 55 | — |
| 389 | " 16 | 7 | 7.6 | — | — | 0.25 | 0.12 | 0 | 4 | — |
| 390 | " 22 | 12 | 30 | — | — | 0.25 | 0.12 | 0 | 4 | — |
| 391 | " 26 | 4 | 23.7 | — | — | 0.25 | 0.12 | 0 | 5 | — |
| 392 | March 6 | 18 | 23.6 | — | — | 0.5 | 0.25 | 0 | 5 | Felt strongly in Cairo. |
| 393 | " 7 | 7 | 52.1 | — | — | 0.5 | 0.25 | 0 | 5 | — |
| 394 | " 9 | 2 | 54.0 | 3 | 1.0 | 0.5 | 0.25 | 0 | 25 | — |
| 395 | " 9 | 4 | 0.0 | — | — | 0.25 | 0.12 | 1 | 0 | This may be the max. for 394. |
| 396 | " 9 | 13 | 8.3 | — | — | 0.5 | 0.25 | 0 | 30 | — |
| 397 | " 12 | 1 | 58.1 | 2 | 31.0 | 1.0 | 0.5 | 0 | 70 | — |
| 398 | " 23 | 19 | 0 | — | — | 0.25 | 0.12 | 0 | 18 | Time is approximate. |
| 399 | April 1 | 8 | 27.2 | — | — | 0.25 | 0.12 | 0 | 5 | — |
| 400 | " 4 | 6 | 59.7 | — | — | 0.25 | 0.12 | 0 | 7 | — |
| 401 | " 16 | 23 | 26.0 | — | — | 1.0 | 0.5 | 0 | 10 | — |
| 402 | " 17 | 1 | 31.1 | — | — | 0.75 | 0.37 | 0 | 49 | — |
| 403 | " 18 | 8 | 28.0 | — | — | 0.75 | 0.37 | 0 | 5 | — |
| 404 | " 24 | 23 | 28.9 | 24 | 14.0 | — | — | — | — | First Pts. last 6 min. |
| | | | | 24 | 21.2 | 3.5 | 1.75 | 2 | 20 | Repetition 56 min. later. |
| 405 | May 11 | 17 | 36.6 | 18 | 19.6 | 2.5 | 1.25 | 1 | 40 | Origin N.E. Japan. First Pts. last 7 min. |

The Register from Skide, Isle of Wight, England—continued.

| Shide No. | Date | Commencement | | Maximum | | Amplitude | | Duration | Remarks |
|-----------|--------|--------------|------|---------|------|-----------|------|----------|---------|
| | | H. | M. | H. | M. | MM. | " | | |
| 406 | May 15 | 13 | 19.0 | — | — | 0.5 | 0.25 | 0.25 | — |
| 407 | " 16 | 20 | 25.1 | 21 | 5.1 | 2.5 | 1.25 | 1.50 | — |
| 408 | " 26 | 16 | 50.6 | 17 | 3.0 | 0.5 | 0.25 | 0.30 | — |
| 409 | June 1 | 13 | 35.1 | — | — | 0.25 | 0.12 | 0.5 | — |
| 410 | " 2 | 13 | 41.2 | — | — | 0.25 | 0.12 | 0.5 | — |
| 411 | " 9 | 13 | 2.1 | 13 | 10 | — | — | — | — |
| 412 | " 9 | 16 | 8.3 | — | — | 0.25 | 0.12 | 0.8 | — |
| 413 | " 10 | 12 | 2.1 | — | — | 0.5 | 0.25 | 0.20 | — |
| 414 | " 12 | 21 | 41.0 | 22 | 1.0 | 0.75 | 0.37 | 0.40 | — |
| 415 | " 16 | 15 | 12.3 | 15 | 35.0 | 1.0 | 0.5 | 0.50 | — |
| 416 | " 19 | 0 | 20.3 | — | — | 0.25 | 0.12 | 0.10 | — |
| 417 | " 21 | 21 | 3.1 | 21 | 43.1 | 7.5 | 3.75 | 2.50 | — |
| 418 | " 26 | 6 | 21.1 | 6 | 28 | 0.5 | 0.25 | 0.35 | — |
| 419 | " 28 | 23 | 39.0 | — | — | 0.25 | 0.12 | 0.15 | — |
| 420 | " 28 | 2 | 25.6 | — | — | 0.25 | 0.12 | 0.20 | — |

Seismograph Register from Kew Observatory (National Physical Laboratory), Richmond, Surrey, England. Director, R. T. GLAZEBROOK, F.R.S. Superintendent, Dr. CHARLES CHREE, F.R.S. Assistant, E. G. CONSTABLE.

| Register No. | Date | Commencement of P.T.'s | | Duration | 1st Max. | 2nd Max. | Amplitude in Secs. of Arc | Total Duration of Disturbance |
|--------------|--------|------------------------|------|----------|----------|----------|---------------------------|-------------------------------|
| | | H. | M. | | | | | |
| 1900. | | | | | | | | |
| 200 | Jan. 5 | 19 | 21.6 | 40.2 | 20 | 7.9 | 20 11.5 | 0.85 |
| 201 | " 7 | 9 | 8.4 | — | — | — | — | less than 0.3 |
| 202 | " 8 | 13 | 1.5 | — | — | — | — | " |
| 203 | " 9 | 7 | 15.2 | — | — | — | — | " |
| 204 | " 11 | 9 | 31.6 | — | — | — | — | 7 123 |
| 205 | " 12 | 9 | 54.3 | — | — | — | — | 4 |
| 206 | " 15 | 20 | 22 | — | 20 | 22.3 | 20 28.0 | 0.75 |
| | | 20 | 27 | — | — | — | — | 33 |
| 207 | " 17 | 6 | 37.0 | 8.2 | 6 | 48.8 | 6 50.6 | 0.50 |
| 208 | " 18 | 6 | 3.0 | — | — | — | — | less than 0.3 |
| 209 | " 20 | 6 | 46.2 | 10.3 | 7 | 24.6 | 7 29.5 | 12.60 |
| 210 | " 24 | 23 | 26 | — | — | — | — | less than 0.3 |
| 211 | " 31 | 19 | 31.0 | — | 19 | 56.5 | — | " |
| 212 | Feb. 1 | 12 | 37.7 | — | — | — | — | " |
| | | 15 | 19.4 | — | — | — | — | " |
| | | 17 | 48.8 | — | — | — | — | " |
| 213 | " 3 | 5 | 17.0 | — | 5 | 23.8 | — | " |
| 214 | " 4 | 14 | 2.0 | — | — | — | — | " |
| | | 15 | 58.0 | — | — | — | — | " |
| 215 | " 23 | 19 | 22.2 | — | — | — | — | " |
| | | 19 | 47.2 | — | — | — | — | " |
| 216 | " 24 | 11 | 34.5 | — | — | — | — | " |
| 217 | Mar. 3 | 15 | 42.5 | — | — | — | — | " |
| | | 15 | 57.2 | — | — | — | — | " |
| 218 | " 7 | 7 | 54.0 | — | — | — | — | " |
| 219 | " 9 | 2 | 48.0 | — | — | — | — | " |
| 220 | " 9 | 13 | 19.0 | — | — | — | — | " |
| 221 | " 12 | 1 | 56.8 | — | — | — | — | " |
| | | 2 | 34.0 | — | — | — | — | " |

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Seismograph Register from Kew Observatory—continued.

| Register No. | Date | Commencement of P.T.'s | | Duration | 1st Max. | 2nd Max. | Amplitude in Secs. of Arc | Total Duration of Disturbance |
|--------------|---------|--|------|----------|----------|----------|---------------------------|-------------------------------|
| | | H. | M. | | | | | |
| 222 | April 4 | 7 | 0.5 | — | — | — | — | M. |
| 223 | " 24 | About 23 h. 30 m. to 25th 1 h. 15 m. too faint to measure. | | — | — | — | less than 0.3 | 22 |
| 224 | May 7 | 14 | 3.2 | — | — | — | 0.40 | 5 |
| 225 | " 8 | 18 | 19.5 | — | — | — | 0.40 | 42 |
| 226 | " 11 | 17 | 35.3 | 9.9 | 18 | 20.6 | 0.53 | 96 |
| 227 | " 12 | 1 | 56.8 | — | — | — | less than 0.3 | — |
| | | 2 | 34.0 | — | — | — | — | — |
| 228 | " 14 | 16 | 17.2 | — | — | — | " | — |
| | | 16 | 47.7 | — | — | — | — | — |
| 229 | " 15 | 13 | 4.5 | — | — | — | " | — |
| 230 | " 16 | 20 | 23.7 | 10.6 | 21 | 1.8 | 21 3.8 | 0.92 |
| | | 12 | 22.7 | — | — | — | — | 118 |
| 231 | " 17 | 18 | 6.0 | — | — | — | less than 0.3 | 10 |
| | | 20 | 47.5 | — | — | — | — | 19 |
| 232 | " 25 | 10 | 47.1 | — | — | — | " | 5 |
| 233 | June 2 | 13 | 0.0 | — | 13 | 14.7 | — | 55 |
| 234 | " 9 | 13 | 3.1 | 5.0 | 13 | 10.0 | 0.35 | 37 |
| 235 | " 12 | 21 | 52.4 | — | — | — | 0.40 | 13 |
| 236 | " 16 | 15 | 33.6 | — | — | — | less than 0.3 | 26 |
| 237 | " 21 | 20 | 47.3 | 26.3 | 21 | 40.9 | 21 45.4 | " |
| 238 | " 26 | 6 | 27.0 | — | — | — | 1.73 | 34 |
| | | — | — | — | — | — | less than 0.3 | 238 |
| | | — | — | — | — | — | — | 24 |

Notes on the Kew Seismograph Register, 1900.

| Register No. | General Remarks |
|--------------|--|
| 200 | Disturbance not of large extent, apparently in groups of 4 steps. There appears to be a repetition 63 minutes later. |
| 201 | Very slight movement; merely a broadening of the normal line. |
| 202 | Very slight movement, and somewhat doubtful. |
| 203 | A number of very small oscillations. |
| 204 | A number of very small oscillations. Maximum apparently at 10h. 10m., time uncertain. |
| 205 | Same as No. 201. |
| 206 | There is some uncertainty about this movement, as there is an absence of any preliminary tremors. |
| 207 | A small disturbance, with three well marked phases. Died away quickly. |
| 208 | Very small. Maximum apparently at 6h. 7m. |
| 209 | The largest disturbance fully recorded here at present, the maximum amplitude being 12".6. The maximum deflection, which occurred rather abruptly, was reached in six steps, and apparent repetition of these six steps can be traced for a considerable period. There was a marked falling off in amplitude at 7h. 30m. |
| 210 | As 201. Time of commencement uncertain. |
| 211 | Small ill-defined movement. |
| 212 | Slight isolated movements. |
| 213 | Small but regular oscillation, with maximum at 5h. 23.8m. |
| 214-218 | As 201. |
| 219 | Of small extent. Maximum at 2h. 59m. |
| 220-222 | As 201. |
| 223 | Curve much too faint to measure accurately, but apparently disturbed, but to no great extent, from about 23h. 30m. on 24th, to 1h. 15m. on 25th. |

Notes on the Kew Seismograph Register, 1900—continued.

| Register No. | General Remarks |
|--------------|---|
| 224 | Small swing. Maximum apparently at 14h. 44m. |
| 225 | Small swing. Maximum apparently at 18h. 58.0m. |
| 226 | Well marked oscillation, but not of great extent. |
| 227-229 | As 201. |
| 230 | A distinct movement; the largest deflection occurred with the second maximum phase. The 'repetition' swings were not very pronounced. |
| 231, 232 | As 201. |
| 233 & 238 | As 201. |
| 234 | Small movement, but well defined. |
| 235 | Small movement. Maximum apparently at 22h. 5m. |
| 236 | Small movement. Maximum apparently at 15h. 40m. |
| 237 | In this disturbance the oscillation group having the largest deflection was preceded and followed by four groups whose maxima were smaller. |

The Register from Toronto, Ontario, Canada. Professor R. F. STUART, Director.

| Toronto No. | Date | Com-mence-ment | D. of First P.T. s | Maxi-mum | Amplitude | Total Duration | Remarks |
|--------------|------------------------------|------------------|--------------------|------------------|----------------------|------------------------|---------------------------|
| 1899. | | | | | | | |
| 71 | June 5 | H. M. S. 4 38 42 | H. M. S. — | H. M. S. 4 54 16 | MM. 14.7 | H. M. S. 2 25 9 | Very large. |
| 72 | " 5 | 15 7 54 | — | 15 16 0 | 10.0 | 2 10 6 | — |
| 73 | " 10 | 7 0 24 | — | 7 18 24 | } thickening of line | — | Very small. |
| 74 | " 14 | 11 13 48 | 0 4 5 | Across paper | | Across slit many times | — |
| 75 | " 17 | 1 26 30 | — | 1 26 30 | 0.1 | 0 43 33 | Iloilo, Philippines. |
| 76 | " 19 | 9 6 3 | — | 9 12 0 | 0.2 | 0 16 0 | — |
| 77 | " 20 | 18 21 4 | — | 18 24 4 | 0.4 | — | Very sudden, small shock. |
| 78 | " 21 | 15 45 6 | — | — | 0.3 | — | Very small shock. |
| 79 | " 24 | 18 1 20 | — | — | — | — | — |
| 80 | Boom anchored by spider web. | | | | | | |
| 81 | " | " | " | " | " | " | " |
| 82 | July 6 | 20 22 0 | — | — | — | — | Very small. |
| 83 | " 7 | 9 12 0 | — | 9 14 0 | 0.2 | 0 10 0 | " |
| 84 | " 9 | 20 28 2 | — | 20 43 39 | — | 0 15 0 | " |
| 85 | " 11 | 7 57 41 | — | 7 57 41 | 0.2 | 1 12 19 | " |
| 86 | " 11 | — | — | 21 46 0 | — | — | Small hitch. |
| 87 | " 12 | 1 50 0 | — | — | 0.1 | 1 10 0 | — |
| 88 | " 12 | 15 11 20 | — | 15 13 0 | 0.2 | 0 48 40 | — |
| 89 | " 13 | 21 8 11 | — | 21 9 20 | 0.2 | 0 1 9 | — |
| 90 | " 14 | 13 42 27 | — | 14 1 53 | 5.8 | 2 33 43 | Large. |
| 91 | " 14 | 22 5 20 | — | — | 0.1 | — | — |
| 92 | " 16 | 20 54 30 | — | 20 36 0 | 0.1 | 0 5 30 | — |
| 93 | " 17 | 5 21 29 | — | 5 31 48 | 0.3 | 0 52 37 | — |

Toronto Register—continued.

| Toronto No. | Date | Com-mence-ment | D. of First P.T. s | Maxi-mum | Amplitude | Total Duration | Remarks |
|-------------|---------|----------------------------------|--------------------|------------|--------------------------|--------------------------|--|
| 94 | July 17 | H. M. S. 11 37 0 | H. M. S. — | H. M. S. — | MM. — | H. M. S. 1 0 0 | Thickening of line at intervals during one hour. |
| 95 | " 20 | 10 4 37 | — | 10 29 51 | 0.2 | 0 17 39 | — |
| 96 | " 22 | 20 47 48 | — | 20 49 32 | 0.2 | 0 6 51 | Perhaps origin California. |
| 97 | " 25 | 7 7 16 | — | 7 40 37 | 0.1 | 0 46 58 | — |
| 98 | " 25 | 21 6 14 | — | — | — | — | Very small. |
| 99 | " 26 | 20 40 46 | — | — | — | 0 31 43 | — |
| 100 | " 27 | 21 9 18 | — | — | — | — | — |
| 101 | " 28 | 15 27 57 | — | — | — | — | — |
| 102 | " 28 | 15 59 0 | — | — | — | — | — |
| 103 | Aug. 2 | { 15 8 46 15 19 27 | — | 15 27 58 | 1.5 | 1 17 14 | Chili? |
| 104 | " 2 | 18 4 34 | — | 18 7 34 | 2.0 | 1 34 11 | — |
| 105 | " 3 | 22 12 20 | — | — | — | — | — |
| 106 | " 4 | 5 3 1 | — | 5 14 25 | 0.6 | 2 13 46 | — |
| 107 | " 6 | { 18 12 53 18 23 41 | — | — | — | — | Two very small hitches. |
| 108 | " 8 | 15 7 14 | — | — | — | — | — |
| 109 | " 8 | 21 48 5 | — | — | — | — | — |
| 110 | " 9 | 14 38 38 | — | 14 39 0 | — | 0 1 52 | — |
| 111 | " 17 | { 17 21 40 17 27 0 | — | — | — | — | — |
| 112 | " 17 | 20 59 13 | — | 21 25 0 | 0.2 | 0 44 22 | — |
| 113 | " 20 | 2 55 0 | — | — | — | — | — |
| 114 | " 20 | 17 55 30 | — | 17 59 38 | 0.1 | 0 4 30 | — |
| 115 | " 24 | { 15 14 3 15 27 8 15 35 49 | — | 16 22 42 | 1.4 | — | — |
| 116 | Sept. 4 | 0 30 14 | — | 0 48 19 | 24.0 | 7 54 19 | — |
| 117 | " 4 | 4 48 25 | — | 5 15 15 | 8.1 | — | — |
| 118 | " 4 | 12 6 2 | — | 12 6 30 | 0.1 | 0 6 0 | — |
| 119 | " 4 | 12 44 31 | — | — | — | — | — |
| 120 | " 4 | 13 5 18 | — | 13 5 25 | 0.1 | 0 58 53 | — |
| 121 | " 6 | 0 11 30 | — | 0 11 30 | — | 0 2 0 | — |
| 122 | " 6 | 13 30 26 | — | 13 30 40 | 0.2 | 0 10 50 | — |
| 123 | " 6 | 17 11 0 | — | — | — | — | — |
| 124 | " 7 | 18 23 53 | — | 18 24 0 | 0.1 | 0 5 0 | — |
| 125 | " 8 | 22 30 14 | — | 22 32 0 | — | 0 3 1 | — |
| 126 | " 10 | 17 11 56 | — | 17 25 19 | } Vibration across paper | — | — |
| 127 | " 10 | 20 42 14 | — | 22 3 6 | | } Vibration across paper | 5 36 55 |
| 128 | " 11 | 8 27 6 | — | — | — | | — |
| 129 | " 11 | 15 8 27 | — | 15 13 30 | 0.1 | 0 5 23 | — |
| 130 | " 11 | 21 10 53 | — | 21 11 0 | — | 0 4 7 | — |
| 131 | " 12 | 11 58 24 | — | 11 58 30 | — | 0 1 6 | — |
| 132 | " 12 | 19 13 30 | — | 20 0 0 | — | 1 36 0 | — |

| Toronto No. | Date | Commencement | | D. of first P.T.'s | | Maximum | Amplitude | Total Duration | Remarks |
|-------------|----------|---------------|----------|--------------------|----------|----------|-----------|----------------|---------------------------------------|
| | | H. M. S. | H. M. S. | H. M. S. | H. M. S. | | | | |
| 133 | Sept. 14 | 10 | 9 | 14 | — | 10 9 25 | 1.0 | 0 35 46 | — |
| 134 | " 15 | 20 | 21 | 11 | — | — | — | — | — |
| 135 | " 16 | 5 | 30 | 25 | — | 5 40 8 | 1.7 | 1 10 40 | — |
| 136 | " 17 | 13 | 6 | 43 | — | 13 14 53 | 4.1 | 1 37 52 | — |
| 137 | " 20 | 2 | 32 | 51 | — | 2 58 14 | 0.8 | 1 13 44 | — |
| 138 | " 23 | 11 | 19 | 17 | — | 11 26 7 | — | 0 39 50 | — |
| 139 | " 23 | 13 | 57 | 48 | — | 14 4 53 | — | 0 49 2 | — |
| 140 | " 23 | 18 | 21 | 22 | — | — | 0.5 | 0 35 6 | — |
| 141 | " 26 | 12 | 53 | 1 | — | — | — | — | — |
| 142 | " 26 | 15 | 38 | 28 | — | — | — | — | — |
| 143 | " 26 | 22 | 11 | 50 | — | — | — | — | — |
| 144 | " 27 | 8 | 27 | 27 | — | 8 31 25 | 0.5 | 0 40 26 | — |
| 145 | " 28 | 6 | 54 | 47 | — | 6 54 47 | 0.5 | 0 2 13 | — |
| 146 | | Quake lost by | | a spider's web. | | — | — | — | — |
| 147 | Oct. 6 | 17 | 20 | 10 | — | — | — | — | — |
| 148 | " 6 | 23 | 34 | 18 | — | 23 34 30 | 0.1 | 0 2 2 | — |
| 149 | " 10 | 19 | 12 | 13 | — | — | — | — | — |
| 150 | " 10 | 20 | 1 | 54 | — | — | — | — | — |
| 151 | " 11 | 2 | 58 | 37 | — | 3 0 0 | 0.1 | 0 2 53 | — |
| 152 | " 13 | 15 | 51 | 53 | — | 16 24 28 | 0.4 | — | — |
| 153 | " 13 | Paper not | | clamped. | | — | — | — | — |
| 154 | " 17 | 3 | 43 | 10 | — | 3 52 10 | 1.4 | 0 46 52 | — |
| 155 | " 19 | 9 | 42 | 37 | — | 10 29 50 | 0.5 | 2 12 14 | — |
| 156 | " 24 | 4 | 16 | 54 | — | 4 37 50 | 0.4 | 1 41 45 | — |
| 157 | | Gas out. | | — | | — | — | — | — |
| 158 | " 30 | 13 | 15 | 19 | — | — | — | 1 10 48 | — |
| 159 | " 31 | 17 | 14 | 12 | — | — | — | 0 6 41 | — |
| 160 | Nov. 1 | 18 | 16 | 30 | — | — | — | — | — |
| 161 | " 1 | 21 | 13 | 0 | — | — | — | — | — |
| 162 | " 6 | 9 | 4 | 0 | — | — | — | — | — |
| 163 | " 7 | 10 | 14 | 15 | — | 10 15 0 | 0.2 | 0 6 45 | — |
| 164 | " 7 | 11 | 30 | 0 | — | 11 40 0 | — | — | — |
| 165 | " 7 | 18 | 32 | 0 | — | — | — | — | — |
| 166 | " 10 | 21 | 14 | 45 | — | — | — | — | — |
| 167 | " 12 | 19 | 51 | 0 | — | — | — | — | — |
| 168 | " 14 | 17 | 15 | 40 | — | 17 15 55 | 0.4 | 0 14 20 | — |
| 169 | " 17 | 19 | 13 | 6 | — | — | — | — | — |
| 170 | " 18 | 15 | 19 | 10 | — | 15 23 33 | 0.8 | 0 35 50 | — |
| 171 | " 19 | 18 | 8 | 24 | — | — | — | — | — |
| 172 | " 20 | 13 | 23 | 27 | — | 13 43 22 | 0.1 | 1 9 33 | — |
| 173 | " 20 | 21 | 20 | 46 | — | — | — | — | — |
| 174 | " 23 | 10 | 1 | 1 | — | 10 48 55 | 2.5 | 2 3 59 | — |
| 175 | " 24 | 10 | 32 | 31 | — | — | — | — | — |
| 176 | " 24 | 187 | 0 | 0 | — | — | — | — | Paper moving in jerks; not measurable |
| 177 | " 25 | 47 | 0 | 0 | — | — | — | — | — |
| 178 | " 27 | 6 | 13 | 0 | — | — | 0.7 | 0 10 0 | — |
| 179 | Dec. 7 | 21 | 40 | 0 | — | — | — | — | — |
| 180 | " 25 | 12 | 41 | 16 | — | 12 43 25 | 3.3 | — | Air currents interfere. |
| 181 | " 26 | 0 | 14 | 32 | — | 0 43 0 | 1.2 | — | Air currents interfere. |
| 182 | " 27 | ? | — | — | — | — | — | — | Air currents. |
| 183 | " 27 | 19 | 27 | 0 | — | — | — | — | — |
| 184 | " 29 | 3 | 56 | 0 | — | — | 0.3 | 0 8 0 | — |
| 185 | " 31 | 11 | 40 | 0 | — | 11 44 0 | 0.4 | — | — |
| 186 | " 31 | 21 | 14 | 4 | — | — | — | 0 25 56 | — |

| No. | Date | Commencement of P.T.'s | | Maximum | End | Amplitude | Remarks |
|-------|---------|------------------------|---------------|-----------------|-----|-----------|------------------------------------|
| | | H. M. S. | H. M. S. | | | | |
| 1899. | | | | | | | |
| 40 | June 5 | 47 40 22 | 5 9 0 | 6 46 1 | — | 3.2 | — |
| 41 | " 5 | 15 13 1 | 15 30 47 | 16 12 43 | — | 2.4 | — |
| 42 | " 10 | 6 51 2 | — | — | — | — | — |
| 43 | " 14 | 11 17 25 | 11 57 32 | 13 37 42 | — | 3.2 | — |
| 44 | " 17 | 1 23 29 | 1 23 29 | 1 53 13 | — | 6.3 | — |
| 45 | " 19 | 9 11 54 | 9 13 8 | 9 34 46 | — | 0.2 | — |
| 46 | " 20 | 18 20 23 | 18 20 23 | 18 23 0 | — | 0.1 | — |
| 47 | " 24 | 13 14 30 | 18 16 30 | 18 18 0 | — | 0.2 | — |
| 48 | " 29 | 23 59 36 | 0 10 38 | 0 12 48 | — | 0.3 | — |
| 49 | July 2 | 19 36 9 | 19 44 0 | 19 57 58 | — | 0.6 | — |
| 50 | " 3 | 4 29 52 | 4 30 57 | 4 34 19 | — | 0.1 | — |
| 51 | " 6 | 20 18 30 | 20 21 5 | 20 25 3 | — | 0.1 | — |
| 52 | " 7 | 9 18 2 | 9 18 35 | 9 32 0 | — | 0.1 | — |
| 53 | " 9 | — | 20 32 13 | — | — | 0.2 | — |
| 54 | " 11 | 7 48 57 | 8 19 44 | 8 51 17 | — | 0.4 | — |
| 55 | " 11 | 21 54 0 | 22 2 28 | 22 14 39 | — | 0.1 | — |
| 56 | " 12 | 2 0 0 | 2 41 3 | 3 16 33 | — | 0.4 | — |
| 57 | " 12 | 15 4 20 | 15 13 46 | 15 46 13 | — | 0.4 | — |
| 58 | " 14 | 13 41 0 | 13 49 3 | 16 20 40 | — | 11.0 | — |
| 59 | " 17 | 5 12 27 | 5 25 12 | 5 50 53 | — | 0.3 | — |
| 60 | " 17 | 11 29 5 | 11 50 41 | 12 4 40 | — | 0.2 | — |
| 61 | " 22 | 20 41 0 | — | — | — | — | — |
| 62 | " 25 | 7 0 48 | 7 20 0 | 7 51 1 | — | 0.3 | — |
| 63 | " 27 | 21 3 29 | — | — | — | — | — |
| 64 | Aug. 2 | Clock stopped | | — | — | — | See Toronto, 103 |
| 65 | " 2 | Clock stopped | | — | — | — | " " 104 |
| 66 | " 3 | — | 22 33 18 | 22 38 13 | — | 0.1 | — |
| 67 | " 4 | 4 58 21 | 5 11 18 | 7 53 41 | — | 2.4 | — |
| 68 | " 6 | ? ? ? | Clock stopped | | — | — | — |
| 69 | " 17 | 21 1 38 | 21 36 40 | 23 0 0 | — | 2.0 | — |
| 70 | " 24 | 15 19 54 | 16 5 10 | 24 15 0 | — | 1.0 | — |
| 71 | Sept. 4 | 0 26 13 | 0 35 9 | 8 0 0 | — | — | Very large quake |
| 72 | " 4 | 4 36 3 | 5 4 23 | — | — | 7.5 | paper |
| 73 | " 4 | 11 51 37 | 11 52 52 | 11 58 30 | — | 0.1 | — |
| 74 | " 4 | 12 51 4 | 12 52 0 | 12 58 0 | — | 0.1 | — |
| 75 | " 6 | 13 18 23 | 13 18 50 | 13 23 23 | — | 0.3 | — |
| 76 | " 7 | 5 4 3 | — | 5 6 10 | — | — | — |
| 77 | " 7 | 12 11 30 | — | — | — | — | — |
| 78 | " 7 | 18 11 39 | 18 11 55 | 18 19 40 | — | 0.5 | — |
| 79 | " 8 | 9 28 21 | — | — | — | 0.1 | — |
| 80 | " 10 | Splendid | | seismogram lost | — | — | in mails |
| 81 | " 10 | — | — | — | — | — | — |
| 82 | " 10 | — | — | — | — | — | — |
| 83 | " 10 | — | — | — | — | — | — |
| 84 | " 10 | — | — | — | — | — | — |
| 85 | " 10 | — | — | — | — | — | — |
| 86 | " 10 | One week's record lost | | — | — | — | — |
| 87 | " 10 | — | — | — | — | — | — |
| 88 | " 10 | — | — | — | — | — | — |
| 89 | " 10 | — | — | — | — | — | — |
| 90 | " 17 | 12 52 28 | 13 4 43 | 14 30 16 | — | 7.4 | Beginning of large waves at 13 1 7 |
| 91 | " 20 | 2 35 30 | 3 5 51 | 4 52 36 | — | 0.8 | — |
| 92 | " 23 | 11 8 28 | 11 15 31 | 13 22 0 | — | 17.0 | Very large |

The Register from Victoria, B.C.—continued.

| No. | Date | Commencement of P.T.'s | | Maximum | | End | | Amplitude | Remarks |
|-----|----------|-----------------------------------|--------------|-------------------------|----------|----------|------------------|---------------------------------|---------|
| | | H. M. S. | H. M. S. | H. M. S. | H. M. S. | H. M. S. | MM. across paper | | |
| 93 | Sept. 23 | 13 43 43 | 13 46 51 | 15 40 11 | — | — | — | Very large. | |
| 94 | " 23 | 18 40 28 | 18 41 33 | 18 46 14 | — | — | 1.0 | — | |
| 95 | " 26 | 12 41 40 | 12 42 40 | 12 56 0 | — | — | 0.4 | — | |
| 96 | " 27 | 8 42 40 | 8 50 40 | 9 18 0 | — | — | 0.2 | — | |
| 97 | " 28 | 6 59 33 | 7 1 30 | 7 8 0 | — | — | 0.2 | — | |
| 98 | " 29 | 17 18 31 | 18 29 31 | 20 32 0 | — | — | 2.5 | — | |
| 99 | Oct. 6 | 17 28 54 | — | — | — | — | — | — | |
| 100 | " 9 | 19 26 12 | — | — | — | — | — | — | |
| 101 | " 10 | 23 36 41 | — | — | — | — | — | — | |
| 102 | " 11 | 3 35 4 | — | — | — | — | — | — | |
| 103 | " 13 | 15 42 46 | 16 0 35 | 17 28 0 | — | — | 0.6 | — | |
| 104 | " 15 | 18 1 29 | 18 19 11 | 20 28 0 | — | — | 0.6 | — | |
| 105 | " 17 | 3 37 0 | 3 37 50 | Continued several hours | — | — | 0.5 | — | |
| 106 | " 19 | 9 36 25 | 10 31 56 | 12 35 43 | — | — | 2.0 | — | |
| 107 | " 24 | { 4 14 51 4 19 21 | 5 7 25 | 5 58 44 | — | — | 0.5 | — | |
| 108 | " 27 | 19 13 53 | — | 20 approx. | — | — | — | — | |
| 109 | Nov. 1 | 21 43 18 | — | — | — | — | — | — | |
| 110 | " 6 | 9 46 35 | — | — | — | — | — | — | |
| 111 | " 7 | 10 1 5 | 10 2 10 | 10 7 5 | — | — | — | — | |
| 112 | " 7 | 17 50 26 | — | — | — | — | — | — | |
| 113 | " 7 | 18 19 41 | — | — | — | — | — | — | |
| 114 | " 7 | 18 48 14 | — | — | — | — | — | — | |
| 115 | " 10 | 21 30 8 | — | 22 50 0 | — | — | — | — | |
| 116 | " 11 | 12 16 16 | — | — | — | — | — | — | |
| 117 | " 12 | 0 37 28 | 0 44 32 | 1 30 28 | — | — | 0.6 | — | |
| 118 | " 14 | 17 2 3 | 17 4 0 | 17 6 15 | — | — | 0.5 | — | |
| 119 | " 17 | { 19 3 45 19 7 54 | — | — | — | — | — | — | |
| 120 | " 18 | 15 13 21 | 15 46 18 | 16 14 50 | — | — | 0.5 | — | |
| 121 | " 19 | 18 1 52 | — | — | — | — | — | — | |
| 122 | " 20 | 12 57 50 | 13 10 0 | — | — | — | 0.1 | — | |
| 123 | " 20 | 21 0 0 | Air currents | — | — | — | — | — | |
| 124 | " 23 | 9 57 37 | 10 22 13 | 24 10 0 | — | — | 6.0 | Large and continuous | |
| 125 | " 24 | 10 20 3 | 11 57 30 | 12 10 0 | — | — | 0.5 | — | |
| 126 | " 24 | { 18 49 12 19 4 12 | 19 39 24 | 22 0 0 | — | — | 1.5 | — | |
| 127 | " 25 | 4 8 27 | — | 4 15 0 | — | — | 0.1 | — | |
| 128 | " 26 | 19 52 15 | — | 19 58 15 | — | — | 0.2 | — | |
| 129 | " 27 | 5 57 15 | — | — | — | — | 0.1 | — | |
| 130 | Dec. 2 | 4 9 44 | — | — | — | — | 0.1 | — | |
| 131 | " 7 | { 21 12 7 21 19 13 21 21 19 | — | — | — | — | — | — | |
| 132 | " 7 | 7 0 0 | — | — | — | — | — | — | |
| 133 | " 21 | 12 32 1 | 12 34 3 | 13 35 0 | — | — | 16.0 | Large, probably from California | |
| 134 | " 25 | — | — | — | — | — | — | — | |
| 135 | " 26 | 0 33 2 | 1 0 0 | 1 45 0 | — | — | 1.0 | — | |
| 136 | " 27 | 7 55 0 | 8 0 0 | 8 5 0 | — | — | 0.1 | — | |
| 137 | " 27 | 19 33 0 | — | — | — | — | — | — | |
| 138 | " 29 | 4 42 43 | 4 44 30 | 4 47 40 | — | — | 0.4 | — | |
| 139 | " 31 | 11 40 0 | 11 53 0 | 8 0 0 | — | — | 0.2 | — | |
| 140 | " 31 | 21 7 2 | — | 21 30 0 | — | — | 0.3 | — | |

A 1**—3

Earthquake Register from San Fernando, Spain.
Instituto y Observatorio de Marina. Director, Commodore J. VINIEGRA.

| No. | Date | Commencement | Maxima | Amplitude | Duration | Remarks |
|--------------|---------|------------------|---------------------------------|------------------|----------------|---------|
| 1900. | | | | | | |
| 56 | Jan. 5 | H. M. S. 19 22.6 | H. M. S. 20 15.4 | MM. " 1.4 = 0.64 | H. M. S. 2 9.8 | — |
| 57 | " 11 | 8 29.6 | 9 37.1 | 0.93 = 0.40 | 2 8.3 | — |
| 58 | " 15 | 21 19.9 | 21 19.9 | 1.40 = 0.60 | 0 44.3 | — |
| 59 | " 20 | 6 45.6 | 7 27.4 | 6.5 = 2.8 | 3 6.2 | — |
| 60 | " 31 | 19 38.6 | 20 18.7 | — | 1 0.5 | — |
| 61 | Feb. 6 | 15 20.8 | — | — | 0 18.0 | — |
| 62 | " 20 | 22 31.4 | — | — | 0 20.2 | — |
| 63 | " 24 | 0 57.8 | — | — | 0 30.0 | — |
| 64 | March 9 | 3 38.4 | 5 20.7 | — | 2 16.3 | — |
| 65 | " 12 | 3 28.7 | 3 41.5 | 0.39 = 0.17 | 0 23.8 | — |
| 66 | April 4 | 6 40.3 | 7 2.6 | — | 0 35.0 | — |
| 67 | " 24 | 23 34.4 | 24 8.1 | 0.17 = 0.51 | 1 6.8 | — |
| 68 | May 3 | 5 59.9 | — | — | 0 14.8 | — |
| 69 | " 11 | 17 48.0 | { 18 26.1 18 28.1 | 1.48 = 0.64 | 1 5.0 | — |
| 70 | " 16 | 20 23.2 | 21 8.9 | — | 1 22.5 | — |
| 71 | June 9 | 12 49.9 | 13 14.9 | 0.60 = 0.26 | 0 39.0 | — |
| 72 | " 21 | 21 1.3 | { 21 30.0 21 41.5 21 54.3 | 2.5 = 1.08 | 2 48.3 | — |

Register from Abbassieh, Cairo, Egypt. Survey Department. Director-General,
Captain J. H. LYONS, R.E.; Superintendent, E. B. H. WADE.

| No. | Date | Commencement | D.P.T. | Maxima | Amp. | Duration | Remarks |
|--------------|--------|------------------|--------------|------------------|-------|----------|---|
| 1900. | | | | | | | |
| 11 | Jan. 5 | H. M. S. 19 22 5 | H. M. S. 0 5 | H. M. S. 19 29 0 | " 1 2 | — | — |
| | | | | 19 43 3 | 2.6 | — | — |
| | | | | 19 45 8 | — | — | — |
| | | | | 19 55 3 | — | — | — |
| | | | | 20 1 1 | — | — | — |
| | | | | 20 9 6 | — | — | — |
| 12 | " 11 | 9 29 6 | 0 10 | 9 40 0 | 0.3 | 2 3 | — |
| | | | | 0 53 3 | — | — | — |
| | | | | 0 59 5 | — | — | — |
| | | | | 10 16 8 | — | — | — |
| | | | | 10 20 0 | — | — | — |
| | | | | 10 22 0 | — | — | — |
| | | | | 10 25 0 | — | — | — |
| | | | | 11 24 0 | — | — | — |
| 13 | " 18 | 15 29 0 | 0 4 | 15 35 0 | 0.12 | 0 10 | In spite of its minute amplitude it was plainly felt locally. |

Register from Abbassieh, Cairo, Egypt--continued.

| No. | Date | Commence-ment | | | D.P.T. | | Maxima | | Amp. | | Dura- tion | Remarks |
|-----|--------------|---------------|----|----|--------|----|--------|----|------|------|---------------|--|
| | | H. | M. | S. | H. | M. | H. | M. | S. | " | | |
| 14 | Jan. 20 | 7 | 32 | 8 | — | — | 7 | 35 | 8 | — | — | Preliminary tremors obscured; there may have been motion previous to 7h.32m. but instrument had been disturbed for daily winding of watch. |
| | | | | | | | 7 | 39 | 0 | — | — | |
| | | | | | | | 7 | 42 | 0 | — | — | |
| | | | | | | | 7 | 48 | 3 | 0.7 | — | |
| | | | | | | | 7 | 59 | 1 | — | 0 40 | |
| 15 | " 23 | 3 | 59 | 8 | — | — | — | — | — | — | — | Slight isolated thickening. |
| | " 25 | 3 | 24 | 8 | — | — | — | — | — | — | — | Slight thickening. |
| | " 29 | 23 | 7 | 0 | — | — | — | — | — | — | — | " |
| 16 | Feb. 5 | 11 | 22 | 0 | — | — | — | — | — | — | 0 10 | Slight isolated thickening. |
| | | 12 | 15 | 0 | — | — | — | — | — | — | 0 5 | Slight isolated thickening. |
| 17 | " 6 | 6 | 58 | 2 | — | — | — | — | — | — | — | Slight isolated thickening, barely visible. |
| | | 15 | 9 | 7 | — | — | — | — | — | — | — | Slight isolated thickening. |
| 18 | " 17 | 15 | 29 | 0 | — | — | — | — | — | — | — | Doubt seismic origin. |
| 19 | " 22 | 12 | 28 | 8 | — | — | — | — | — | — | — | Slight isolated thickening. |
| 20 | " 28 | 9 | 5 | 0 | — | — | — | — | — | — | — | Very slight isolated thickening. |
| 21 | Mar. 3 | 10 | 41 | 8 | — | — | — | — | — | — | — | Very slight isolated thickening. |
| 22 | " 6 | 18 | 0 | 5 | — | — | — | — | — | — | — | Boom thrown off scale to the east |
| 23 | " 19 | 12 | 8 | 0 | — | — | — | — | — | — | 0 9 | by strong shock, felt by the above and many others. |
| 24 | " 23 | 14 | 32 | 0 | 0 7 | — | 14 | 41 | 6 | — | — | Isolated very small thickening. |
| | | | | | | | 14 | 43 | 5 | 0.9 | 0 20 | Doubt if this is seismic. |
| | | | | | | | 14 | 45 | 0 | — | — | |
| 25 | " 30 | 9 | 27 | 8 | — | — | — | — | — | — | — | Very slight isolated thickening. |
| 26 | Apr. 7 | 16 | 35 | 8 | 1 6 | — | 16 | 37 | 4 | 0.3 | 0 10 | Seismic nature doubtful. |
| 27 | " 16 | 9 | 7 | 8 | 0 6 | — | 9 | 14 | 3 | 0.5 | 0 16 | Seismic nature doubtful. |
| 28 | " 24 & 25 | 23 | 29 | 3 | — | — | 23 | 41 | 2 | 1.2 | — | A very clearly defined shock. |
| | | | | | | | 23 | 44 | 8 | — | — | |
| | | | | | | | 23 | 47 | 8 | — | — | |
| | | | | | | | 0 | 00 | 3 | — | — | |
| | | | | | | | 0 | 15 | 3 | — | — | |
| 29 | " 30 | 18 | 25 | 3 | — | — | — | — | — | — | 0.18 | |
| 30 | " 30 | 20 | 39 | 0 | 1 0 | — | 20 | 40 | 3 | — | — | |
| | | | | | | | 20 | 44 | 3 | 0.10 | 0 12 | |
| | | | | | | | 20 | 46 | 8 | — | — | |
| | | | | | | | 20 | 50 | 0 | — | — | |

A [**] 4

Register from Abbassieh, Cairo, Egypt--continued.

| No. | Date | Commence-ment | | | D.P.T. | | Maxima | | Amp. | | Dura- tion | Remarks |
|-----|--------|---------------|----|----|--------|----|--------|----|------|-----|---------------|--|
| | | H. | M. | S. | H. | M. | H. | M. | S. | " | | |
| 31 | May 3 | 14 | 26 | 3 | 0 3 | — | 14 | 28 | 8 | 0.2 | 0 10 | |
| 32 | " 11 | 17 | 48 | 3 | 0 35 | — | 18 | 15 | 8 | — | — | |
| | | | | | | | 18 | 31 | ? | 0.5 | — | See re- marks |
| 33 | June 5 | 17 | 0 | 8 | — | — | — | — | — | — | — | The trace was un- fortunately just going off the paper, owing to large di- urnal movement; max. at 18h. 30m. 8s. is cut through. It would probably be greater than the previous. End of the movement is lost. |
| 34 | " 5 | 18 | 14 | 8 | — | — | — | — | — | — | — | Slight isolated thickening. |
| 35 | " 22 | 15 | 51 | 0 | — | — | — | — | — | — | — | Slight isolated thickening. |

The seismograph installed in October last was apparently very little disturbed by air movements, but as the year went on a gradually increasing diurnal movement set in, which by the middle of May seriously interfered with the record. The movement was traced to faulty foundation, and the instrument was removed to another pillar formerly used as support for one of the transit instruments of the Observatory. In this position it appears to be practically free from diurnal movement.

Earthquake of March 6, 1900.

A sharp shock was felt at numerous places in the Nile valley on the above date, being recorded by the Milne Seismograph at 8h. 6m. p.m., Cairo mean time. The shock was sharp enough to jerk the supporting thread of the boom out of its groove, which reduced the sensitiveness and prevented further accurate record. Hanging lamps were set swinging, glass and plates rattled, tables moved, &c. From the south it was felt at Luxor, but apparently not at Assuan, at Qena, Girga, Minia, Fayum, Cairo, Mena House, Zagazig, Sherbin, Ras-el-Khalig, Port Said, Ismailia, Suez, and apparently more severely at the lighthouses in the Gulf of Suez, *i.e.* Zaffarana, Ras Gharib, and especially at the Ashrafa lighthouse, where a tray of lamp-cleaning materials was overturned.

Also at St. Catherine's Monastery in Sinai. No buildings, however, appear to have been damaged.

The shock was too violent for its details to be recorded on the bromide paper. The first movement threw the needle off the scale to the east, where it remained fixed, the supporting thread having slipped off its pulley.

A tracing of the shocks of January 5 and April 25, which were very clearly recorded, is sent with this report.

Register from the Royal Observatory, Cape of Good Hope, March to June 1900.
Director, Sir DAVID GILL, K.C.B., F.R.S.

| No. | Date | Commence- ment | D. Ist Pts. | Maxima | Semi- ampli- tude | Duration | Remarks |
|--------------|---------|-------------------------------------|----------------|---------------------------------------|-------------------------|----------|--|
| 1900. | | | | | | | |
| 62 | March 6 | H. M. 18 30 27 | M. — | H. M. 18 38 3 0 35 5 | " 0 15 | — | Beginning and ending not well defined. |
| 63 | " 15 | 8 34 5 | — | — | — | 0 15 | These do not appear to be of seismic origin. |
| 64 | " 15 | 9 35 1 | — | — | — | — | |
| 65 | " 15 | 13 41 8 | — | — | — | 0 10 | |
| 66 | " 15 | 21 13 0 | — | — | — | — | |
| 67 | " 19 | — | — | 23 38 2 | 0 06 | 0 3 | Very slight disturbance. |
| 68 | April 4 | — | — | 6 46 3 6 55 1 | 0 06 | — | Two very slight thickenings of the trace. |
| 69 | " 13 | — | — | 7 1 6 | 0 06 | 0 10 | Slight thickenings of trace. |
| 70 | " 30 | — | — | 20 35 | 0 06 | 0 5 | Slight thickenings of trace. |
| 71 | May 11 | 17 36 3 | 28 5 | 18 35 7 0 39 6 0 52 0 19 9 6 | — | 1 50 | — |
| 72 | " 16 | 20 50 4 | 27 5 | 21 22 3 | 0 08 | 1 40 | — |
| 73 | " 20 | — | — | 6 30 8 | — | 0 4 | Very slight thickening of trace. |
| 74 | " 25 | 14 30 | — | — | — | 4 0 | Numerous tremors. 7 Air currents. |
| 75 | " 26 | 16 15 7 | 2 7 | 16 20 1 | 0 26 | 0 12 | — |
| 76 | " 31 | — | — | 8 19 1 | — | 0 3 | Very slight. |
| 77 | June 10 | — | — | — | 0 1 | — | Trace thickens for about 15m. (5h. 15m. to 5h. 30m.) Disturbance much confused by air tremors. |
| 78 | " 21 | 21 8 8 | 35 1 | 21 50 4 0 54 3 | 0 40 | ? | The latter part of this disturbance possibly lost by failure of driving clock at 23h. 30m. |
| — | " 21-29 | Frequent failures of driving clock. | — | — | — | — | — |
| — | " 29 | Driving clock under repair. | — | — | — | — | — |

Register from the Kodaikanal Observatory, Southern India.
Director, C. MICHIE SMITH.

| No. | Date | Begins G.M.T. | Maximum G.M.T. | Ampli- tude | Duration | Remarks | |
|--------------|---------|------------------|-------------------|----------------|----------|--|--------------------|
| 1900. | | | | | | | |
| — | Feb. 7 | H. M. — | H. M. — | N.M. — | H. M. — | A series of shocks felt between 7d. 21h. 46m and 8d. 0h. 40m. Instrument not working till 8d. 1h. 20m., when apparently a disturbance was in progress. | |
| 1 | " 8 | 1 48 6 | 1 48 6 | 1 0 | — | | |
| 4 | " 11 | 9 2 6 | 9 2 6 | 0 25 | 0 2 | | |
| 8 | " 18 | 18 43 9 | — | 3 0 | — | | |
| 9 | " 18 | 18 46 0 | — | — | — | | |
| 10 | " 20 | 20 50 4 | 20 54 1 | 1 0 | 0 22 | | |
| 11 | " 23 | 8 44 0 | — | 2 0 | — | | |
| 27 | Apr. 24 | 23 21 9 | 23 27 6 | 2 0 | 0 30 5 | | |
| — | — | — | 0 31 8 | 1 5 | | | |
| 30 | May 9 | 0 38 0 | 1 2 8 | 0 75 | 1 8 | | Many small shocks. |
| 31 | " 9 | 2 16 8 | 2 49 0 | 1 0 | 1 9 | | |
| 34 | June 1 | 9 24 4 | — | — | — | Slight motion visible till 6h. 40m. | |
| 35 | " 6 | 8 38 4 | — | 0 5 | — | Small single mark. | |
| 39 | " 20 | 3 34 0 | — | — | — | Thickening of line. | |
| 40 | " 21 | 8 0 7 | — | — | — | " | |
| 41 | " 21 | 16 12 3 | — | — | — | " | |

Up to the end of 1899 this instrument was at the Observatory, Madras.

Register from Colaba, Bombay. Director, N. A. F. MOOS.

| Observatory Number | Date | Time of Disturbance in G.M.T. | | | | Ampli- tude of Maxi- mum Move- ment in mm., and in Arc | Remarks |
|-----------------------|--------|--|-------------------|--------------|-------------------|---|---------|
| | | Com- mence- ment of Prelimi- nary Tre- mors | Begin- ning | Maxi- mum | End | | |
| 1900. | | | | | | | |
| 4 | Jan. 4 | H. M. S. — | H. M. S. 19 13 51 | H. M. S. — | H. M. S. 19 21 47 | Beginning and maximum appear to be simultaneous. | |
| 5 | " 5 | — | 19 6 24 | 19 33 44 | 20 9 27 | | |
| 10 | " 11 | — | — | 9 32 12 | 9 43 49 | | |
| — | — | — | — | — | — | | |
| 14 | " 16 | — | 8 48 7 | — | 8 52 59 | | |
| 15 | " 17 | — | 6 23 47 | — | 6 31 15 | | |
| 24 | " 20 | — | 57 23 8 | 6 26 | 8 13 14 | | |

Register from Colaba, Bombay—continued.

| Observatory Number | Date | Time of Disturbance in G.M.T. | | | | | Amplitude of Maximum Movement in mm. and in Arc | Remarks |
|--------------------|---------|-------------------------------------|-----------|----------|----------|---------------|---|---------|
| | | Commencement of Preliminary Tremors | Beginning | Maximum | End | | | |
| | | H. M. S. | H. M. S. | H. M. S. | H. M. S. | MM. | | |
| 32 | Jan. 29 | — | — | 22 50 17 | — | 6.0 = 3.30 | This disturbance unfortunately occurred on the day when for investigational purposes the method of suppression of tremors was specially discontinued to note its effects; the beginning and end of the disturbance are therefore masked by tremors, and cannot be exactly determined. | |
| 38 | Feb. 7 | — | 21 51 | 5 21 51 | 17 21 56 | 9.0 = 0.43 | Dislocation west at 21 h. 51 m. 11 s. Shock perceptible in Bombay. | |
| 104 | Apr. 24 | — | 23 23 | 22 23 | 23 54 23 | 51 0.6 = 0.53 | | |
| 110 | May 2 | — | 11 58 | 16 | — | — | Single shock. | |
| 119 | " 4 | — | 9 34 | 33 | — | 9 40 16 | | |
| 134 | " 11 | 17 42 | 18 17 | 57 54 | 18 1 26 | 18 7 37 | 0.6 = 0.51 | |
| 148 | June 4 | — | 10 34 | 52 | — | 10 40 5 | | |

Register from Batavia, R. Magn. and Mt. Observatory.
Director, Dr. S. FIGEE.

| No. | Date | Commencement | Durat. P.T. | Times of Maxima | Amplitude | Duration | Remarks |
|--------------|---------|--------------|-------------|-----------------|-----------|----------|-----------|
| 1900. | | | | | | | |
| 167 | Jan. 24 | H. M. 7 15.1 | 7.4 | H. M. 7 23.7 | MM. 0.5 | MIN. 26 | Small. |
| 168 | " 27 | 6 56.4 | 4.1 | 7 0.7 | 0.7 | 37 | " |
| | | | | 5.7 | 0.7 | — | |
| | | | | 6.5 | 0.7 | — | |
| 169 | " 28 | 5 59.0 | 0.7 | 13.7 | 0.6 | 12 | Moderate. |
| | | | | 6 10.7 | 4.0 | — | |
| | | | | 14.2 | 4.0 | — | |
| | | | | 16.7 | 1.2 | — | |
| | | | | 19.0 | 1.5 | — | |
| | | | | 20.7 | 1.0 | — | |
| | | | | 21.7 | 1.8 | — | |
| 170 | " 29 | 22 39.0 | 3.7 | 22 45.9 | 3.3 | 74 | |
| | | | | 48.8 | 1.7 | — | |
| | | | | 50.1 | 1.4 | — | |
| | | | | 50.3 | 1.4 | — | |
| | | | | 54.5 | 1.0 | — | |
| 171 | " 31 | 19 36.3 | — | 19 36.6 | 0.6 | 26 | Small. |
| | | | | 39.3 | 0.6 | — | |

Register from Batavia—continued.

| No. | Date | Commencement | Durat. P.T. | Times of Maxima | Amplitude | Duration | Remarks |
|---|--------|--------------|-------------|-----------------|-----------|----------|---|
| 172 | Feb. 1 | H. M. 6 29.0 | — | H. M. 6 29.4 | MM. 0.4 | MIN. 8 | Small. |
| | | | | 30.3 | 0.5 | — | |
| | | | | 32.1 | 0.3 | — | |
| 173 | " 3 | 4 15.7 | 0.3? | 4 16.7 | 0.5 | 75 | Moderate. |
| | | | | 17.7 | 0.8 | — | |
| | | | | 19.2 | 1.2 | — | |
| | | | | 21.2 | 1.3 | — | |
| | | | | 23.0 | 2.0 | — | |
| | | | | 24.7 | 1.3 | — | |
| 174 | " 5 | 1 15.7 | — | 1 16.5 | 1.5 | 8 | Moderate earthquake from the volcano Tangkoeban Prahoe; motion N.-S. Commencement from Ewing's Seismograph, 1h. 15m. 19s., and Ehlert's Seismograph, 1h. 13m. 0s. Time noted by observer, 1h. 15m. 17s. |
| | | | | 17.1 | 1.5 | — | |
| 175 | " 9 | 8 1.2 | — | 8 1.7 | 0.4 | 5 | Very small. |
| | | | | 3.7 | 0.4 | — | |
| 176 | " 13 | 6 45.5 | — | 6 50.6 | 0.5 | 27 | Small. |
| | | | | 51.8 | 0.4 | — | |
| | | | | 53.2 | 0.4 | — | |
| | | | | 56.6 | 0.4 | — | |
| 177 | " 20 | 21 49.7 | 5.1 | 21 55.5 | 0.5 | 23 | Very small. |
| | | | | 56.5 | 0.4 | — | |
| 178 | " 21 | 11 5.5 | — | 11 5.6 | 0.4 | 3 | Very small. Earthquake felt by many persons. Time noted by observer, 1h. 5m. 12s.; by Ewing's Seismogr., 1h. 4m. 45s.; by Ehlert's Seismogr., 1h. 5m. 36s. |
| | | | | 6.4 | 0.5 | — | |
| 179 | " 23 | 4 38.9 | — | 4 41.9 | 0.5 | 7 | Very small. |
| 180 | " 24 | 0 16.1 | — | 0 19.9 | 0.5 | 10 | " " |
| 181 | Mar. 8 | 18 56.7 | — | 18 57.7 | 0.5 | 10 | " " |
| 182 | " 9 | 2 31.5 | 6.3 | 2 58.7 | 0.9 | 100 | Moderate. |
| | | | | 62.6 | 0.8 | — | |
| | | | | 63.3 | 0.8 | — | |
| 183 | " 10 | 13 27.5 | 0.3 | 13 28.6 | 0.5 | 14 | Small. |
| | | | | 29.2 | 0.6 | — | |
| Between March 11 and 28 instrument evidently inactive by insensibility, though the time of vibration was found by two tests not to have varied from 15s.; March 28, instrument cleaned. | | | | | | | |
| 84 | " 28 | 10 48.2 | — | 10 49.2 | 0.8 | 15 | |
| 185 | " 29 | 12 14.0 | — | 12 15.5 | 1.0 | 10 | Small. |
| 186 | Apr. 1 | 7 10.2 | — | 7 10.7 | 0.5 | 10 | Very small. |
| | | | | 7 11.4 | 0.5 | — | |
| 187 | " 2 | 16 3.5 | — | 16 5.0 | 0.5 | 3 | " " |
| 188 | " 3 | 4 57.3 | — | 4 57.7 | 0.8 | 3 | " " |
| | | | | 4 58.5 | 1.0 | 0.5 | — |

Register from Batavia—continued.

| No. | Date | Commence- ment | Durat. P.T. | Times of Maxima | | Ampli- tude | Dura- tion | Remarks |
|-----|---------|---------------------------------|----------------|----------------------|-------------------------------|----------------|--|---------|
| | | | | H. M. | MM. | | | |
| 189 | Apr. 12 | 13 41.9 | — | 13 42.6 | 0.5 0.3 | 4 | Very small. | |
| 190 | " 13 | 6 14.9 | — | 45.7 6 22.2 | 0.4 0.2 0.4 0.2 | 29 | " " | |
| 191 | " 16 | 1 29.6 | — | 23.0 31.3 42.2 | 0.5 0.3 0.4 0.2 0.4 0.2 | 5 | " " | |
| 192 | " 16 | 5 35.7 | — | 1 30.1 | 0.5 0.3 | 2 | " " | |
| 193 | " 17 | 0 16.9 | 6.1 | 33.2 | 0.4 0.2 | 63 | Moderate. | |
| 194 | " 20 | 13 14.4 | — | 1 0.5 | 1.2 0.6 | 6 | Very small. | |
| 195 | " 20 | 16 50.7 | — | 13 15.0 | 1.0 0.5 | 5 | " " | |
| 196 | " 21 | 22 58.4 | — | 53.0 | 0.4 0.2 | 5 | " " | |
| 197 | " 24 | 22 17.5 | 3.0 | 23 0.0 | 0.4 0.2 | 3 | " " | |
| 198 | " 30 | 19 43.2 | 4.0? | 22 22.2 | 10.0 5.0 | 90 | Strong. | |
| 199 | May 8 | 1 9.2 | 0.8 | 28.2 | 10.0 5.0 | 56 | Moderate. | |
| 200 | " 8 | 20 9.7 | — | 19 51.2 | 8.3 2.5 | 36 | Small. | |
| 201 | " 10 | 16 12.0 | — | 1 10.2 | 1.0 0.3 | 9 | " " | |
| 202 | " 11 | 18 10.0 | 1.0 | 11.6 | 1.0 0.3 | 15 | Very small. | |
| 203 | " 15 | 12 33.0? | — | 20 15.5 | 0.7 0.2 | 20 | " " | |
| 204 | " 15 | 18 53.3 | — | 16.5 | 0.7 0.2 | 20 | " " | |
| 205 | " 15 | 23 40.5 | — | 16 22.7 | 0.7 0.2 | 20 | " " | |
| 206 | " 16 | 14 6.3 | — | 18 11.5 | 1.7 0.5 | 76 | Moderate. | |
| 207 | " 16 | 21 52.7 | — | 18 40.6 | 1.7 0.5 | — | " " | |
| 208 | " 18 | 12 24.0 | 0.8 | 18 43.0 | 1.7 0.5 | — | Small. | |
| 209 | " 19 | 14 53.2 | — | 19 8.6 | 1.0 0.3 | — | Very small. | |
| | " 28 | 1 10.8 | 0.7 | 15 9.5 | 0.6 0.2 | 14 | " " | |
| 210 | " 31 | 23 1.0 | — | 1 11.9 | 3.3 1.0 | 30 | Moderate. | |
| 211 | June 9 | 12 42.2 | — | 1 14.0 | 2.7 0.8 | — | " " | |
| 212 | " 12 | 15 47.2 | — | 23 9.6 | 0.7 0.2 | 18 | Small. | |
| 213 | " 12 | 20 55.7 | 4.3? | 12 51.8 | 0.7 0.2 | 18 | Very small. | |
| 214 | " 14 | 19 5.7 | — | 15 50.8 | 0.6 0.2 | 6 | " " | |
| 215 | " 14 | 21 19.7 | — | 21 7.7 | 2.0 0.6 | 55 | Moderate. | |
| 216 | " 15 | 21 17.9 | — | 21 12.2 | 2.1 0.6 | — | " " | |
| 217 | " 16 | 18 32.9 | — | 21 15.1 | 2.0 0.6 | — | " " | |
| 218 | " 17 | 16 33.0 | — | 19 8.2 | 0.5 ? | 3 | Instrument evi- dently very insensible, though the period of vi- bration of the boom was found to be 15 seconds. | |
| 219 | " 18 | 23 10.7 | — | 21 23.9 | 0.5 ? | 5 | | |
| 220 | " 19 | 5 10.3 | — | 21 18.2 | 0.5 ? | 1 | | |
| | | | — | 18 33.1 | 0.5 ? | 1 | | |
| | | | — | 16 33.2 | 0.5 ? | 40 | | |
| | | | — | 17 7.7 | 0.5 ? | — | | |
| | | | — | 23 24.2 | 0.6 ? | 25 | | |
| | | | — | 5 18.0 | 1.1 ? | 50 | | |
| | | | — | 5 23.1 | 1.0 ? | — | | |
| | | | — | 21 27.3 | 1.0 ? | — | | |
| 221 | " 21 | 21 11.3 | — | 21 28.0 | 1.0 ? | — | | |
| | | | — | 21 28.2 | 0.9 ? | — | | |
| 222 | " 26 | Instrument readjusted 1 26.0 | — | 1 29.3 | 5.2 2.6 | 25 | Moderate. | |
| | | | — | 1 30.9 | 4.5 2.3 | — | | |

Register from Cordoba, Argentine Meteorological Office.
Director, W. G. DAVIS.

| No. | Date | Commence- ment | Duration of Preliminary Tremors | Time of Maximum | Ampli- tude | Total Duration | Remarks |
|-----|---------|-------------------|---------------------------------------|--|-----------------|-------------------|---|
| | | | | | | | |
| 1 | Mar. 6 | H. M. 8 14.8 | H. M. — | H. M. — | MM. — | H. M. 5 2 | Continuous pulsations. Three small independent shocks before the maximum. |
| 2 | " 7 | 1 40.8 | 0 29 | 2 13.3 | 0.5 | 1 31 | |
| 3 | " 7 | 5 30.8 | — | — | — | 6 41 | Tremors: strongest be- tween 9h. 15m. and 11h. 15m. |
| 4 | " 9 | 8 30.8 | — | — | — | 3 16 | Tremors: strongest be- tween 10h. 15m. and 11h. 15m. |
| 5 | " 16 | 15 2.8 | 0 13.7 | 15 17 | 0.5 | 1 4 | Vibrations with abrupt beginnings. |
| 6 | " 16 | 19 56.8 | — | 15 30.2 | 2.0 | 1 7 | |
| 7 | " 17 | 18 8.2 | — | 15 49 | 1.5 | — | Erratic vibrations. Thunderstorm at same time. |
| 8 | April 3 | 9 31.8 | 0 47 | 18 8.2 18 18.1 18 29.5 18 59.8 10 19.8 | 0.3 | 4 26 | Vibrations and disloca- tions E. Slight tremors with ex- ception of two mini- utes before and after maximum. |
| 9 | " 6 | 11 53.8 | 0 3.5 | 11 53.8 | 0.5 | 0 15 | |
| 10 | " 9 | 11 48.8 | — | — | 0.5 | 4 28 | Well defined. Continuous strong pulsations. |
| 11 | " 10 | 5 39.8 | — | — | 0.8 | 9 30 | Continuous short period pulsations. |
| 12 | " 12 | 17 26.5 | — | 17 26.8 | — | 1 20 | Maximum amplitude exceeded limits of paper. |
| 13 | " 12 | 19 11.9 | 0 13 | 19 13.0 | 2.0 | 0 47 | |
| 14 | " 13 | 3 39.1 | — | 19 39.2 | 2.5 | — | These shocks were dis- tinctly felt here and destroyed several hamlets in the provin- ce of Rioja. |
| 15 | " 13 | 5 15.3 | 0 12 | 3 40.8 4 6.8 5 16.8 | 1.0 — 4.0 | 0 13 | |
| 16 | " 13 | 8 51.8 | — | — | — | 3 49 | Continuous short period pulsations. |
| 17 | " 14 | 6 37.8 | 0 23 | 7 2.7 | 1.5 | 0 31 | Followed by strong long period pulsations from 8h. 45m. to 12h. 15m. |
| 18 | " 17 | 3 16.8 | — | — | 1.0 | 11 30 | Continuous beadlike movement, most pro- nounced between 8h. 15m. and 12h. 15m. on the 17th. |
| 19 | " 23 | 11 25.3 | 0 0.7 | 11 26.0 | 0.7 | 6 8.5 | Abrupt beginning. Well defined. |
| 20 | " 24 | 20 44.3 | 0 1 | 20 43.8 | 1.5 | 0 15 | |
| 21 | " 25 | 5 13.8 | 0 1.2 | 5 18.3 | 1.0 | 0 14 | Beginning very abrupt. First maximum ex- ceeded limits of paper (sensible). |
| 22 | " 28 | 19 50.4 | — | 19 53.1 20 15.8 | 0.75 | 1 14 | |
| 23 | " 28 | 23 30.3 | 0 1 | 23 31.3 | 0.5 | 0 9 | Well defined. Irregular thickening of line. |
| 24 | " 29 | 8 46.8 | — | — | — | 4 30 | |
| 25 | May 1 | 2 37.6 | 0 1.2 | 2 39.1 | 1.0 | 0 18.5 | Well defined. Pulsations and irregular thickening of line. |
| 26 | " 8 | 21 16.8 | — | — | — | 19 0 | |
| 27 | " 4 | 22 16.8 | — | — | — | 16 0 | Pulsations and irregular thickening of line. |
| 28 | " 5 | 3 16.8 | — | — | — | 11 0 | |
| 29 | " 7 | 5 16.8 | — | — | — | 9 0 | Beadlike thickening of line. Very pro- nounced from 10h. 45m. to 12h. 0m. Irregular thickening of line. Most pro- nounced from 9h. 15m. to 12h. 15m. |

Register from Cordoba, Argentine Meteorological Office—continued.

| No | Date | Commencement | | Duration of Preliminary Tremors | | Time of Maximum | | Amplitude | Total Duration | Remarks |
|---|---------|--------------|-------|---------------------------------|-------|-----------------|-------|-----------|----------------|---|
| | | H. M. | M. S. | H. M. | M. S. | H. M. | M. S. | | | |
| 30 | May 8 | H. M. | | H. M. | | H. M. | | MM. | H. M. | Well-marked earthquake. Beadlike movements before and after. Well defined. |
| | | 5 56.3 | | 5 57.3 | | 0 07.5 | | 0 6 | | |
| 31 | " 17 | 18 48.6 | | 19 5.1 | | 1.5 | | 0 35.5 | | |
| | | | | 19 9.1 | | 1.2 | | | | |
| 32 | " 22 | 5 46.8 | | | | | | 11 30 | | Irregular thickening with greatest intensity between 11h. 15m. and 13h. 15m. |
| 33 | " 23 | 4 16.8 | | | | | | 12 0 | | Slight irregular thickening. |
| 34 | June 1 | 4 16.8 | | | | | | 9 0 | | Pulsations and thickening of line. |
| Record lost from June 3 at 14h. 15m. till June 4 at 20h. 15m. | | | | | | | | | | |
| 35 | June 6 | 22 14.9 | | | | | | 0 3 | | Doubtful. Boom shifted 2mm. to E. |
| 36 | " 13 | 5 16.8 | | | | | | 12 0 | | Pulsations with thickening of line at 16h. 11.8m.; 16h. 15.4m., sudden; 16h. 32.5m., sudden; 16h. 49.8m. |
| 37 | " 15 | 1 16.8 | | | | | | 14 0 | | Slight irregular thickening, with pulsations most pronounced from 11h. 15m. to 13h. 15m. |
| Record lost from 14h. 15m. to 22h. 15m. on June 19. | | | | | | | | | | |
| 38 | June 21 | 2 25.4 | | 2 25.4 | | 1.0 | | 0 7 | | Doubtful. Beginning suddenly. |
| 39 | " 21 | 21 22.5 | | | | | | 0 8 | | Thickening of line. |
| 40 | " 21 | 21 49.8 | | | | | | 0 2 | | " " |
| 41 | " 21 | 21 58.8 | | | | | | 0 3 | | " " |
| 42 | " 22 | 6 46.8 | | | | | | 6 30 | | Very long period pulsations. |
| 43 | " 24 | 18 19.9 | | 19 28.9 | | 0.5 | | 0 21 | | Cigar-shaped thickening. |
| 44 | " 26 | 3 16.8 | | | | | | 11 0 | | Continuous long period pulsations. |
| 45 | " 27 | 7 16.8 | | | | | | 8 0 | | Continuous long period pulsations and irregular thickening. |
| 46 | " 27 | 16 7.0 | | 16 7.8 | | 0.4 | | 0 5 | | Pulsations and irregular thickening. Greatest from 10h. 53m. to 11h. 54m. |
| 47 | " 27 | 3 16.8 | | | | | | 11 0 | | Pulsations and irregular thickening. |
| 48 | " 30 | 0 16.4 | | Uncertain | | 0.6 | | 0 30 | | Cigar-shaped. |
| 49 | July 4 | 23 16.8 | | | | | | 10 45 | | Pulsations and irregular thickening. |
| 50 | " 6 | 4 16.8 | 2 0 | 8 19.8 | | 0.5 | | 11 0 | | Shock lasted 5 minutes. |
| 51 | " 7 | 8 56.8 | | 8 56.8 | | 1.0 | | 0 17.3 | | Beadlike movement with abrupt beginnings. |
| 52 | " 12 | 1 47.3 | | 2 6.8 | | 1.25 | | 1 30 | | Gradual increase of motion up to 1st maximum. The shock was followed by small movements till 14h. 15m. of the 12th. |
| | | | | 2 9.8 | | 1.5 | | | | |
| | | | | 2 17.8 | | 1.0 | | | | |
| 53 | " 14 | 13 53.3 | 0 5.5 | 14 0.3 | | 1.0 | | | | Series of small shocks till 15h. 30m., followed by tremors till 16h. 15m. |
| 54 | " 17 | 11 3.7 | | 11 5.8 | | | | 0 55 | | Elongated beadlike movement. |
| | | | | 11 11.8 | | | | | | |
| | | | | 11 16.8 | | 0.5 | | | | |
| 55 | " 20 | 9 44.4 | 0 9.5 | 9 57.8 | | 0.75 | | 0 28.5 | | Four cigar-shaped movements. |
| 56 | " 21 | 11 16.8 | | | | | | 2 45 | | Pulsations and irregular thickening of line. |
| 57 | " 21 | 16 3.3 | | 16 15.8 | | 1.5 | | 0 24.7 | | Doubtful. Six movements with abrupt beginnings. |
| 58 | " 21 | 16 46.7 | | 16 47.8 | | 3.0 | | 0 14.7 | | Two diamond-shaped movements. |
| | | | | 16 55.8 | | 2.5 | | | | |

Register from Cordoba, Argentine Meteorological Office—continued.

| No. | Date | Commencement | | Duration of Preliminary Tremors | | Time of Maximum | | Amplitude | Total Duration | Remarks |
|--|---------|--------------|-----------|---------------------------------|-------|-----------------|-------|-----------|----------------|--|
| | | H. M. | M. S. | H. M. | M. S. | H. M. | M. S. | | | |
| 59 | July 22 | 20 24 | | H. M. | | H. M. | | MM. | H. M. | Apparent shock with shifting of boom. |
| | | | | 20 27.8 | | 0.5 | | 0 8.5 | | |
| 60 | " 23 | 5 16.8 | | | | | | 18 0.7 | | Pulsations with slight dislocations. |
| 61 | " 24 | 14 0 | | | | | | 0.75 | | Doubtful. Began suddenly. |
| 62 | " 25 | 6 11.8 | | | | | | 0.5 | 0 30 | Gradual and heavy thickening of line. |
| 63 | " 27 | 9 10.3 | | | | | | | 4 30 | Slight pulsations. |
| 64 | " 28 | 10 10.8 | | | | | | | 4 0 | " " |
| 65 | " 29 | 1 31.8 | | | | | | | 18 15 | Irregular thickening of line. |
| 66 | Aug. 1 | 7 36.8 | | | | | | | 6 0 | Irregular thickening of line and pulsations. |
| 67 | " 2 | 3 16.8 | | | | | | 0.5 | 12 40 | Irregular thickening of line. Strongest from 11h. 15m. to 12h. 15m. |
| 68 | " 2 | 18 1.8 | | | | | | | 1 15 | Irregular thickening of line. Slight. |
| 69 | " 3 | 8 16.8 | | | | | | | 5 45 | Irregular thickening of line. Slight. |
| 70 | " 4 | 5 3.5 | | 5 58.8 | | 1.0 | | 2 32 | | Numerous elongated beadlike movements. |
| | | | | 6 5.8 | | 1.5 | | | | |
| 71 | " 7 | 4 16.8 | | | | | | | 12 0 | Thickening of line and pulsations. Strongest from 11h. 45m. to 12h. 45m. |
| 72 | " 10 | 5 46.8 | | | | | | | 8 30 | Pulsations and thickening of line from 12h. 0m. to 12h. 45m. |
| 73 | " 17 | 21 41.8 | 0 11.3 | 21 54.5 | | 1.5 | | 0 57.9 | | Preliminary movements uniform beads; final movement elongated thickenings. |
| | | | | 22 6 | | 0.75 | | | | |
| From August 19 at 14h. 15m. till August 21 at 14h. 15m. register lost. | | | | | | | | | | |
| 74 | Aug. 21 | 17 37.2 | | Erratic shifting of boom. | | | | | 0 22.3 | Greatest deviation 8.0 mm. Boom remained permanently to E. |
| 75 | " 22 | 18 28.2 | | Dislocations | | 6.0 | | | 0 25.4? | Strong oscillations. Boom remained permanently 15mm. to E. Similar to preceding. |
| 76 | " 23 | 21 26 | | 21 28 | | 1.0 | | | 0 32.5? | Dislocation. Boom shifted to E. |
| 77 | " 23 | 22 50.4 | | | | | | | 0 3.5 | Duration of principal shock 24m. |
| 78 | " 24 | 15 20.8 | 0 30 | 16 8.8 | | 4.5 | | | 2 56 | Thickening of line with two maxima. |
| 79 | " 24 | 19 6.1 | | | | | | | 0 55 | Slight pulsations and thickenings. |
| 80 | " 26 | 0 16.8 | | | | | | | 13 30 | Sudden movement with slight dislocation. |
| 81 | " 30 | 17 27.4 | | 17 27.4 | | 1.5 | | | 0 39.2 | Slight dislocations during preliminary tremors. |
| 82 | Sept. 1 | 11 32.2 | 0 17 | 11 51.8 | | 3.0 | | 0 32.5 | | Shock followed by pulsations till 16h. 45m. |
| | | | | 11 54.6 | | 3.5 | | | | |
| 83 | " 2 | 0 24.8 | 2 56 | 4 0.8 | | 2.5 | | | | Principal movement lasted 10m. after maximum, followed by continuous movements of 0.8 amplitude till 15h. 15m. September 2. |
| 84 | " 4 | 20 40.8 | 0 16 | 1 52.4 | | 0.5 | | | 3 14.6 | P.T. not exceeding 0.5 amplitude. Shock followed by thickening of line and pulsations which gradually merged into the following shock. |
| 85 | " 4 | 5 54.5 | Uncertain | 6 11.8 | | 0.5 | | | 0 0 | Intermittent thickening of line and pulsations. |
| 86 | " 7 | 6 26.8 | | | | 0.5 | | | 8 0 | Continual small disturbances, greatest from 10h. 15m. till 12h. 45m. |

Register from Cordoba, Argentine Meteorological Office—continued.

| No. | Date | Commencement | | Duration of Preliminary Tremors | | Time of Maximum | | Amplitude | Total Duration | Remarks |
|-----|---------|--------------|--------|---------------------------------|---------|-----------------|---------|-----------|----------------|---|
| | | H. | M. | H. | M. | H. | M. | | | |
| 87 | Sept. 8 | H. 8 | M. 1'8 | — | — | — | — | — | 6 0 | Intermittent thickening of line, greatest from 11h. 15m. till 12h. 15m. Slight dislocation at 12h. 30'8m. |
| 88 | " 9 | 7 | 16'8 | — | — | — | — | — | 6 0 | Slight intermittent thickening of line. |
| 89 | " 10 | 17 | 32'8 | 0 27 | 18 10'8 | 2 0 | 2 12 | — | 2 12 | Photogram indistinct. Time given approximately. |
| 90 | " 10 | 21 | 56'8 | 0 35 | 23 2'8 | 5 0 | — | — | — | Photogram indistinct. Time given approximately. Decided movement till 0h. 46'8m. of the 11th. |
| 91 | " 14 | 7 | 7'8 | — | — | — | — | — | 16 0 | Slight intermittent thickening, followed by very slight long period pulsations. From 2h. 15m. on September 15 till 3h. 15m. a series of slight movements. Pulsations continued till 13h. 15m. of same day. |
| 92 | " 18 | 1 | 46'8 | — | — | — | — | — | 12 30 | Intermittent irregular thickening. |
| 93 | " 17 | 7 | 16'8 | — | — | — | — | — | 2 15 | Very slight pulsations and thickening. |
| 94 | " 20 | 2 | 51'2 | 0 21'3 | 3 25'8 | 0 6 | 3 33'8 | 0 5 | 1 43'2 | First part of principal movement beadlike, latter part elongated thickenings. |
| 95 | " 23 | 11 | 39'6 | 0 30 | 12 9'8 | 0 6 | 12 15'8 | 0 7 | 4 6 | Beginning and ending elongated thickenings, termination difficult to determine. |
| 96 | " 27 | 0 | 0 | 4 22 | 12 29'8 | 0 9 | 12 37'8 | 0 9 | 4 55 | Very slight long period pulsations. Principal shock lasted 10m., followed by irregular thickenings of line, which merged into pulsations lasting till 17h. 15m., when thickening of line began again and continued until 14h. 15m. of 28th. From 6h. 15m. to 7h. 15m. on the 28th, these movements had an amplitude of 0'6mm. |
| 97 | " 29 | 17 | 21'8 | 0 16 | 17 44'3 | 2 25 | 2 37 | — | 2 37 | From 16h. 19m. till 18h. 49m. a series of sharp shocks with maximum amplitude of 2mm. (Caran, East Indies.) |
| 98 | Oct. 1 | 6 | 19'8 | — | — | — | — | — | 7 15 | Irregular thickening ending with pulsations. |
| 99 | " 1 | 18 | 35'1 | 0 1 | 18 37'8 | 1 0 | 18 46'8 | 1 0 | 0 15 | Characteristic earth movement. |
| 100 | " 1 | 19 | 32'8 | 0 1 | 19 34'6 | 0 75 | — | — | 0 6 5 | > Began abruptly. |
| 101 | " 2 | 0 | 46'8 | — | — | — | — | — | 15 30 | Commencement long period pulsations, changing into irregular thickening. Very pronounced from 8h. 46m. till 12h. 15m. on October 2. |
| 102 | " 6 | 7 | 6'8 | — | — | — | — | — | 6 0 | Slight pulsations and irregular thickening. |
| 103 | " 8 | 2 | 46'8 | — | — | — | — | — | 11 30 | Irregular thickening. Greatest from 9h. 45m. to 12h. 15m., October 8. |

Register from Cordoba, Argentine Meteorological Office—continued.

| No. | Date | Commencement | | Duration of Preliminary Tremors | | Time of Maximum | | Amplitude | Total Duration | Remarks |
|-----|--------|--------------|---------|---------------------------------|----|-----------------|------|-----------|----------------|--|
| | | H. | M. | H. | M. | H. | M. | | | |
| 104 | Oct. 9 | H. 8 | M. 16'8 | — | — | — | — | — | H. M. 11 30 | Same as previous. Greatest movement from 7h. 45m. to 10h. 15m. |
| 105 | " 9 | 23 | 16'8 | — | — | 23 | 16'8 | 1'25 | 0 5 | Doubtful. Boom shifted 1mm. to W. |
| 106 | " 10 | 2 | 35'6 | — | — | — | — | 1'0 | 0 7'5 | Doubtful. Dislocations. |
| 107 | " 10 | 3 | 25'4 | 0 8 | — | 3 34'8 | 1'0 | — | 0 19 | Doubtful. Began suddenly with shifting of boom. |
| 108 | " 16 | 4 | 16'8 | — | — | — | — | — | 8 28 | Slight pulsations and thickening of line. |
| 109 | " 24 | 4 | 19'3 | 0 55'6 | — | 5 16'3 | 0'6 | 1 53 | — | Small but well defined. |
| 110 | " 25 | 1 | 6'8 | 2 11 | — | 2 32'8 | 0'6 | 13 25 | — | Sudden movement at 2h. 32'8m., lasting 2m., followed by irregular thickening, which was very pronounced and resembled true earthquake movement at 2h. 22m. and 6h. 40m., lasting 15m. |
| 111 | " 31 | 15 | 53'4 | — | — | — | — | — | 0 10'7 | Slight but gradual thickening of line. |
| 112 | " 31 | 21 | 48'8 | 0 3 | — | 21 52'0 | 1'0 | — | 0 22 | Doubtful >. |
| 113 | " 31 | 23 | 8'7 | — | — | 22 6'6 | 1'0 | — | 0 8'5 | Two equal circular beads followed by very slight tremors. |
| | Nov. 4 | 2 | 16'8 | — | — | — | — | — | — | Register lost from 4h. 15m. to 14h. 15m. on November 4. Slight irregular thickening. |
| 114 | " 5 | 11 | 14'4 | 0 44 | — | 11 19'8 | 0'5 | — | 0 16'6 | Irregular thickening from 4h. 15m. till 12h. 15m., appears true earthquake. |
| 115 | " 12 | 0 | 44'8 | 0 2 | — | 0 42'8 | 0'6 | — | 0 27 | Cigar-shaped movements. |
| 116 | " 18 | 15 | 4'9 | 0 6 | — | 1 8'3 | 0 3 | — | — | Oscillations of 0'75mm., lasting 7 minutes, followed a maximum well defined. |
| 117 | " 19 | 11 | 46'8 | 0 40 | — | 12 28'8 | 0'5 | — | — | Thickening began at 10h. 45m. Irregular thickening followed 2nd maximum till 14h. 45m. Pulsations commenced at 2h. 15m. and continued till 14h. 15m. on 20th. |
| 118 | " 20 | 13 | 3'4 | — | — | 13 6'8 | 0'5 | — | 0 22 | P.T. consists of thickening of line, cigar-shaped movements. |
| 119 | " 21 | 12 | 40'9 | — | — | 13 15'6 | 0'75 | — | — | Doubtful. |
| 120 | " 21 | 13 | 16'8 | — | — | 12 40'9 | 0'2 | — | 0 6'0 | > Doubtful. |
| 121 | " 21 | 13 | 49'8 | — | — | 13 18'0 | 1'75 | — | 0 6'5 | > Doubtful. Lights shut off from 14h. 15m. to 14h. 42m. |
| 122 | " 22 | 15 | 54'5 | 0 3 | — | 13 49'8 | 2'2 | — | 0 15 | Began suddenly. Seisogram not symmetrical. |
| 123 | " 23 | 10 | 38'1 | 0 32'5 | — | 18 54'1 | 1'5 | — | — | Slight movements with various degrees of intensity began at 2h. 15m., gradually increasing in amplitude. Beginning and ending of true shock hard to determine, and are given approximately. P.T. with amplitude of 0'5mm. Principal movement from 1h. 5'6m. to 12h. 12'8m. Final tremors merged into pulsations, which lasted till 14h. 15m. |

Register from Cordoba, Argentine Meteorological Office—continued.

| No. | Date | Commencement | | Duration of Preliminary Tremors | | Time of Maximum | | Amp-itude | Total Duration | Remarks |
|-----|---------|--------------|------|---------------------------------|------|-----------------|------|-----------|--|--|
| | | H. | M. | H. | M. | H. | M. | | | |
| 124 | Nov. 24 | 9 | 21-8 | — | — | — | — | — | 3 25 | Thickening of line at intervals (regular). |
| 125 | " 24 | 19 | 6-1 | 1 | 22-4 | 20 43-3 | 1-0 | } 2 25 | Well-defined earthquake movement. | |
| 126 | Dec. 1 | 10 | 29-5 | — | — | 20 49-3 | 1-0 | | | |
| 127 | " 1 | 21 | 14-8 | — | — | 10 30-5 | 0-5 | | | |
| 128 | " 2 | 4 | 16-8 | — | — | 21 17-8 | 1-0 | 0 37 | 0 4 | Doubtful. |
| 129 | " 2 | 17 | 52-6 | — | — | — | — | — | 8 20 | Three bead-like movements followed by thickening of line. |
| 130 | " 2 | 19 | 11-6 | — | — | — | — | — | 0 12 | Irregular thickening of line and pulsations. |
| 131 | " 3 | 20 | 43-2 | — | — | 17 54-3 | 3-0 | 0 13 | 0 13 | One maximum only. |
| 132 | " 3 | 21 | 27-4 | — | — | 20 43-2 | ? | } 0 19 | Strong sudden movement. Boom shifted to E. 1mm. | |
| 133 | " 4 | 0 | 12-6 | — | — | 20 46-8 | 3-0 | | | |
| 134 | " 4 | 1 | 12-2 | 0 | 9 | — | — | | | 0 5 |
| 135 | " 4 | 5 | 1-5 | — | — | 0 16-3 | 2-0 | } 1 22-6 | P.T. with abrupt beginning. Principal movement strongest at commencement; numerous dislocations. | |
| 136 | " 4 | 5 | 39-0 | 0 | 2 | 1 43-2 | 2-5 | | | |
| 137 | " 4 | 13 | 16-3 | — | — | 2 20-8 | 1-5 | | | 0 17 |
| 138 | " 4 | 17 | 36-2 | — | — | 5 43-8 | 1-2 | } 0 37 | Accompanied by slight dislocations. | |
| 139 | " 5 | 2 | 46-8 | — | — | 5 55-4 | 2-2 | | | |
| 140 | " 5 | 10 | 36-8 | — | — | 5 59-0 | 2-6 | | | 0 5 |
| 141 | " 5 | 15 | 5-1 | — | — | — | — | — | 0 6 | Sudden thickening. Doubtful. |
| 142 | " 5 | 16 | 44-3 | — | — | — | — | — | 0 5 | Sudden thickening. Doubtful. |
| 143 | " 5 | 21 | 6-2 | — | — | 10 36-8 | 1-0 | } 0 17 | Movements with abrupt beginnings. Doubtful. | |
| 144 | " 6 | 15 | 57-8 | — | — | 10 42-8 | 0-5 | | | |
| 145 | " 6 | 17 | 44-8 | — | — | 10 47-8 | 0-4 | | | 0 7-5 |
| 146 | " 6 | 18 | 0-8 | — | — | — | — | — | 0 8 | Thickening with slight dislocation. Doubtful. |
| 147 | " 6 | 20 | 40-8 | 0 | 1 | — | — | — | 0 5 | Sudden thickening. Doubtful. |
| 148 | " 6 | 17 | 44-8 | — | — | 15 57-8 | 9-0 | } 0 12 | Very strong and abrupt. Abrupt. | |
| 149 | " 6 | 18 | 0-8 | — | — | 17 44-8 | 3-5 | | | |
| 150 | " 6 | 18 | 0-8 | — | — | 18 0-8 | 1-0 | | | 0 9 |
| 151 | " 8 | 22 | 16-8 | — | — | 20 42-3 | 3-5 | } 0 8-5 | Main shock lasted 1m. Beginning of each maximum very abrupt. Seismogram not symmetrical. | |
| 152 | " 9 | 0 | 3-1 | 0 | 8 | 17 27-8 | 2-5 | | | |
| 153 | " 9 | 0 | 11-5 | — | — | 17 37-8 | 1-2 | | | 0 39 |
| 154 | " 9 | 0 | 22-4 | — | — | 17 52-8 | 3-0 | } 1 25-7 | Abrupt and intermittent movements with several dislocations. | |
| 155 | " 9 | 0 | 51-1 | — | — | 21 31-3 | 2-25 | | | |
| 156 | " 9 | 0 | 26-5 | — | — | — | — | | | 1 25-7 |
| 157 | " 9 | 10 | 26-5 | — | — | 23 20-3 | 1-0 | 0 5 | 0 5 | Slight movements with dislocations; continued one hour more. |
| 158 | " 24 | 15 | 20-1 | — | — | 3 26 | 1-5 | } 0 8 | Abrupt movements. | |
| 159 | " 24 | 15 | 20-1 | — | — | 3 28-5 | 2-0 | | | |
| 160 | " 24 | 15 | 20-1 | — | — | 10 58-8 | 1-0 | | | 0 5-5 |
| 161 | " 24 | 19 | 1-4 | — | — | 22 16-8 | 1-5 | } 0 3 | Dislocations to W. | |
| 162 | " 24 | 19 | 1-4 | — | — | 0 4-1 | 3-0 | | | |
| 163 | " 24 | 19 | 1-4 | — | — | 0 11-5 | 1-2 | | | 0 53 |
| 164 | " 25 | 0 | 53-3 | — | — | 0 22-4 | 1-5 | } 0 6 | > Abrupt beginnings. | |
| 165 | " 25 | 0 | 53-3 | — | — | 0 51-1 | 0-6 | | | |
| 166 | " 25 | 0 | 53-3 | — | — | 10 26-5 | 2-0 | | | 0 6 |
| 167 | " 25 | 1 | 4-1 | — | — | 15 20-1 | 2-0 | } 0 8 | > Very abrupt beginnings. Doubtful. | |
| 168 | " 25 | 1 | 4-1 | — | — | — | — | | | |
| 169 | " 25 | 1 | 4-1 | — | — | 19 1-4 | 0-75 | | | 0 4 |
| 170 | " 25 | 1 | 4-1 | — | — | 0 53-3 | 1-0 | } 0 16 | > Abrupt movements with dislocation. | |
| 171 | " 25 | 1 | 4-1 | — | — | 1 4-1 | 0-5 | | | |

Register from Cordoba, Argentine Meteorological Office—continued.

| No. | Date | Commencement | | Duration of Preliminary Tremors | | Time of Maximum | | Amp-itude | Total Duration | Remarks |
|---|---------|--------------|------|---------------------------------|------|-----------------|------|-----------|---|---|
| | | H. | M. | H. | M. | H. | M. | | | |
| 1900. | | | | | | | | | | |
| 157 | Jan. 4 | 7 | 46-8 | — | — | — | — | — | 5 50 | Slight pulsations and irregular thickening. |
| 158 | " 5 | 12 | 3-8 | 2 | 56 | 15 0-5 | 1-2 | } 4 1 | P.T. consists of pulsations and irregular thickenings. Principal movement with abrupt beginning. | |
| 159 | " 5 | 19 | 35-8 | 0 | 33-5 | 15 11-8 | 1-0 | | | |
| 160 | " 5 | 19 | 35-8 | 0 | 33-5 | 15 17-3 | 0-75 | | | 1 52 |
| 161 | " 5 | 19 | 35-8 | 0 | 33-5 | 20 15-3 | — | } 8 45 | Principal movement began abruptly and lasted 1-5m., followed by many bead-like movements. | |
| 162 | " 6 | 4 | 16-8 | 1 | 40-8 | 18 47-3 | 2-0 | | | |
| 163 | " 6 | 4 | 16-8 | 1 | 40-8 | — | — | | | 1 25 |
| 164 | " 9 | 16 | 41-8 | — | — | 6 4-5 | 2-5 | } 15 0 | Irregular thickenings. Very slight pulsations. Well defined movements, continued 42m. after maximum, followed by minute irregular thickening, which became very pronounced from 13h. 36-8m. to 13h. 56-8m., followed by pulsations till 16h. 46-8m. | |
| 165 | " 10 | 4 | 16-8 | — | — | 6 29-1 | 2-25 | | | |
| 166 | " 11 | 9 | 30-5 | 0 | 51-8 | 6 39-1 | 1-25 | | | |
| 167 | " 11 | 9 | 30-5 | 0 | 51-8 | 6 52-9 | 2-00 | | | |
| 168 | " 11 | 9 | 30-5 | 0 | 51-8 | 7 10-2 | 1-75 | | | |
| 169 | " 11 | 9 | 30-5 | 0 | 51-8 | 7 26-8 | 3-0 | | | |
| 170 | " 11 | 9 | 30-5 | 0 | 51-8 | 7 44-8 | 2-0 | | | |
| 171 | " 11 | 9 | 30-5 | 0 | 51-8 | 8 52-9 | 4-0 | | | |
| 172 | " 11 | 9 | 30-5 | 0 | 51-8 | 9 21-4 | 3-0 | | | |
| 173 | " 11 | 9 | 30-5 | 0 | 51-8 | 10 17-8 | 3-0 | | | |
| 174 | " 11 | 9 | 30-5 | 0 | 51-8 | 10 57-5 | 2-0 | | | |
| 175 | " 11 | 9 | 30-5 | 0 | 51-8 | 11 21-1 | 2-0 | | | |
| 176 | " 11 | 9 | 30-5 | 0 | 51-8 | 11 48-8 | 3-0 | | | |
| 177 | " 11 | 9 | 30-5 | 0 | 51-8 | 12 20-1 | 1-5 | | | |
| 178 | " 11 | 9 | 30-5 | 0 | 51-8 | 12 52-9 | 1-25 | | | |
| 179 | " 11 | 9 | 30-5 | 0 | 51-8 | — | — | 1 25 | 1 25 | Irregular thickenings. Very slight pulsations. Well defined movements, continued 42m. after maximum, followed by minute irregular thickening, which became very pronounced from 13h. 36-8m. to 13h. 56-8m., followed by pulsations till 16h. 46-8m. |
| 180 | " 11 | 9 | 30-5 | 0 | 51-8 | 10 22-8 | 0-6 | } 11 45 | Irregular thickening strong from 6h. 15m. to 12h. 15m. | |
| 181 | " 11 | 9 | 30-5 | 0 | 51-8 | 10 26-8 | — | | | |
| 182 | " 11 | 9 | 30-5 | 0 | 51-8 | 10 26-8 | — | | | 0 33 |
| 183 | " 12 | 3 | 31-8 | — | — | — | — | } 5 0 | Pulsations and irregular thickening; strongest from 10h. 15m. to 11h. 15m. | |
| 184 | " 12 | 3 | 31-8 | — | — | — | — | | | |
| 185 | " 12 | 3 | 31-8 | — | — | — | — | | | 5 0 |
| 186 | " 13 | 10 | 43-8 | 0 | 7 | 18 6-3 | — | } 0 1 | Well defined earth movement. Duration of greatest intensity 6m. | |
| 187 | " 13 | 10 | 43-8 | 0 | 7 | 20 7-3 | 0-5 | | | |
| 188 | " 13 | 10 | 43-8 | 0 | 7 | — | — | | | 0 1 |
| 189 | " 19 | 12 | 16-8 | — | — | — | — | } 3 30 | Very slight pulsations. | |
| 190 | " 20 | 6 | 43-1 | 0 | 8-5 | — | — | | | |
| 191 | " 20 | 6 | 43-1 | 0 | 8-5 | 7 11-4 | 3-0 | | | 2 51 |
| From February 10 at 13h. 15m. till February 17 at 15h. 15m., no register, for lack of photographic paper. | | | | | | | | | | |
| 171 | Feb. 20 | 4 | 16-8 | — | — | — | — | — | 10 0 | Slight long period pulsations. |
| 172 | " 21 | 20 | 16-8 | — | — | — | — | — | 20 0 | Slight long period pulsations. |
| 173 | " 23 | 9 | 52-9 | — | — | — | — | — | 0 8 | Abrupt thickening. Doubtful. |
| 174 | " 27 | 15 | 58-4 | — | — | — | — | — | 0 4 | Slight thickening. Doubtful. |

Register from Cordoba, Argentine Meteorological Office—continued.

| No. | Date | Commencement | | Duration of Preliminary Tremors | | Time of Maximum | | Amplitude | Total Duration | Remarks |
|--|---------|--------------|------|---------------------------------|-----|-----------------|------|-----------|----------------|---|
| | | H. | M. | H. | M. | H. | M. | | | |
| 175 | Feb. 27 | 11 | 21 | — | — | — | — | 0.5 | 0 40.7 | >>> Abrupt thickening. Doubtful. |
| 176 | Mar. 9 | 3 | 23.9 | 0 | 2.5 | 3 | 31.0 | 0.4 | 0 38 | Slight thickening. |
| 177 | " 12 | 18 | 3.0 | 0 | 5 | 18 | 9.0 | — | 0 11 | Very slight thickening. |
| 178 | " 12 | 22 | 18.8 | — | — | 22 | 22.8 | 4.0 | 2 11 | Boom shifted 5.5 mm. to W. with numerous oscillations, with amplitudes ranging from 2.5 mm. to 4 mm. The last 25 minutes of disturbance movements with abrupt beginnings. |
| Beginning at 22h. 15m. on March 12, and lasting till March 17, there were frequent strong-erratic movements with abrupt beginnings and dislocations, which were probably due to a moth, which was discovered in the instrument on last-mentioned date. From March 17 to 24 these same movements were again noted, and at the end of this time two more moths were removed. | | | | | | | | | | |
| 179 | Mar. 20 | 2 | 54.6 | 0 | 13 | 3 | 17 | 4.5 | 0 49 | Well defined earth movements. Beginning and ending somewhat uncertain, due to movements caused by moths. |
| | | | | | | 3 | 22.5 | 3.0 | | |
| | | | | | | 3 | 30.2 | 2.5 | | |
| 180 | " 30 | 0 | 46.8 | — | — | — | — | — | 15 30 | Slight pulsations and irregular thickening. |
| 181 | April 5 | 5 | 16.8 | — | — | — | — | — | 9 0 | Very slight pulsations. |
| 182 | " 6 | 7 | 16.8 | — | — | — | — | — | 7 0 | |
| 183 | " 20 | 16 | 4.2 | — | — | 16 | 4.2 | 1.0 | 0 8 | Abrupt beginning. |
| 184 | " 20 | 16 | 30.8 | — | — | 16 | 30.8 | 0.7 | 0 4 | Accompanied by slight dislocation. |
| 185 | " 20 | 16 | 47.4 | — | — | 16 | 49.1 | 0.6 | 0 8 | |
| 186 | " 20 | 16 | 58.8 | — | — | 16 | 58.8 | 0.5 | 0 21 | > Followed by slight pulsations. |
| 187 | " 21 | 1 | 52.1 | — | — | 1 | 55.8 | 0.7 | 0 8 | Apparently local in character and followed by pulsations and slight disturbances at 5h. 59.8m., 7h. 6.8m., and 7h. 37m. |
| 188 | May 3 | 21 | 12.7 | — | — | — | — | 0.2 | 0 3 | Very slight movement. |
| 189 | " 10 | 19 | 16.1 | — | — | 19 | 23.8 | 0.1 | 0 1 | Very slight thickening. |
| 190 | " 10 | 19 | 23.2 | — | — | — | — | 0.5 | 0 3 | Beginning rather abrupt. |
| 191 | " 11 | 1 | 12.8 | — | — | — | — | — | 0 9 | Very slight disturbances. |
| 192 | " 12 | 12 | 12.6 | — | — | — | — | 0.6 | 0 5 | > With slight dislocation. Preceded and followed by long period pulsations. |
| 193 | " 14 | 4 | 16.8 | — | — | — | — | 0.5 | 12 0 | Irregular thickenings. Strongest from 8h. 45m. to 13h. 57m. |
| — | " 15 | 3 | 4.7 | 0 | 1.2 | 3 | 6.2 | 1.0 | 0 8 | Well defined earthquake. |
| 194 | " 16 | 20 | 29.4 | 0 | 18 | 20 | 51.8 | 1.0 | 1 5 | Well defined earthquake. Cigar-shaped movement. P.T. commenced rather abruptly. |
| | | | | | | 20 | 57.8 | 0.6 | | |
| 195 | " 25 | 0 | 16.8 | — | — | — | — | 0.5 | 16 0 | Irregular thickenings and pulsations. Strongest from 7h. 15m. to 13h. 16m. |
| 196 | " 25 | 16 | 13.8 | 0 | 14 | 16 | 30.8 | 1.0 | 0 27 | Slight irregular thickening from 4h. 15m. till time of shock. Well defined earthquake; very slight, regular, elongated thickenings continued 45m. longer. |

Register from Cordoba, Argentine Meteorological Office—continued.

| No. | Date | Commencement | | Duration of Preliminary Tremors | | Time of Maximum | | Amplitude | Total Duration | Remarks |
|-----|--------|--------------|------|---------------------------------|----|-----------------|------|-----------|----------------|---|
| | | H. | M. | H. | M. | H. | M. | | | |
| 197 | June 7 | 22 | 46.6 | 0 | 5 | 22 | 54.2 | 1.0 | 0 36 | P.T. slight regular thickening, which also constituted the last 22m. of the movement. |
| 198 | " 11 | 4 | 16.8 | — | — | — | — | — | 10 0 | Irregular thickenings. Greatest between 11h. 15m. and 12h. 45m. |
| 199 | " 21 | 21 | 2.8 | 0 | 3 | 21 | 9.8 | 1.5 | 2 34 | Very well defined and characteristic earthquake. |
| | | | | | | 21 | 29.8 | 1.6 | | |
| | | | | | | 21 | 36.3 | 1.4 | | |

Notes relating to the Cordoba Register.

Mr. W. G. Davis writes to me as follows:—

'The instrument was placed in position during the first days of January 1899, but frequent displacements of the boom, both sudden and gradual, till towards the end of the following month showed that the pier was settling during the process of the hardening of the cement. Trustworthy records began on the 1st of March, and have been continued up to the present; the only serious interruption was from February 10 to 17, owing to lack of photographic paper.

'The seismograph has worked perfectly, and no difficulty whatever has been experienced since the beginning of March 1900, when the final adjustments were made after the pier had practically become stable. So far as I can judge no well-marked air tremors have been registered, although it is quite possible that some of the thickenings of the line, and slight pulsations noted between midnight and morning, may have been caused by air currents. Nearly all the heavy rains are shown on the photograms by a displacement of the boom, due, I believe, to the greater weight of water on the valley side. When these have been well marked, and have taken place towards the end of the showers or shortly afterwards, they have not been noted in the enclosed list.

'The period of the boom oscillation was about 28 seconds (27½ to 28½) till April 18, 1899. Since then it has been kept at 15 secs., rarely varying by more than 0.3 second from this value. Observations of the period are made at least twice a week. At the beginning of the series a high sensibility was maintained, in order to keep a closer watch over the small changes in the stability of the pier while the cement was hardening.

'The watch correction is determined daily by the standard chronometer, eclipsing the register at 10h. 0m. 0s. during one minute. The hour interval is equivalent to 59.0mm.

'In the subjoined list all the observations have been reduced to Greenwich mean time—4h. 16m. 48s. later than the Cordoba meridian—but the times given on the tracings of the seismograms remain in Cordoba mean time. Therefore they require to be increased by the above amount to correspond with those given in the list, or to refer them to G.M.T.

'The Oficina Meteorológica is situated on the western limit of the pampa region (lat. 31° 25' 15" S., long. 64° 12' W.) Fifteen kilo-

metres to the west are the foot hills, which terminate in the first range of the Cordova sierras. The building is located on the bluffs overlooking the town of Cordova, about 10 metres below the general level of the surrounding pampa, and 40 metres above the river. Height above the sea, 438 metres. The soil is composed principally of fine compost clay with thin veins of sand and small pebbles.

'The seismograph is installed in one of the offices of the main building, which is only entered to attend to the requirements of the instrument. This is mounted on a pier built of especially hard brick set in Portland cement, which extends to 1.20m. below the floor and 0.80m. above, and rests on a concrete foundation 0.30m. thick. At the top the pier is 0.45m. by 0.45m., and at the floor level 0.60m. by 0.60m., and isolated from the floor by 2 centimetres. A marble slab 3 centimetres in thickness forms the top of the column; the clock box rests on a heavy table, and this is constructed on a solid foundation. The boom is in the meridian and points to the north.

'The more one studies these mysterious records, not only of the earthquake movements but those of a purely local character, as well as the diurnal range, the more the interest is excited, and the wider the field for investigation opened.'

A Note from Trinidad.

Mr. J. H. Hart, Superintendent of the Botanical Department, writes to me that his seventh record was obtained on July 29, 1900. It commenced at 13h. 47m., showed a maximum at 8h. 8.8m., the amplitude of which was 3.5mm. The duration was 3 hours.

The preliminary tremors are possibly obscured by ordinary morning tremors. There are also terminal tremors. The shock was not felt in Trinidad.

An earthquake is reported from Guadeloupe, Martinique, Dominica, and Antigua as occurring at 3.15 to 3.20 local time on August 1. This was not recorded in Trinidad.

Notes relating to the Earthquakes of January 20 and May 16, 1900.

Professor R. F. Stupart, of Toronto, sends me the following notes relating to the earthquakes of January 20 and May 16 :—

Translation of an Account of the Earthquake as written in Spanish by the Vice-Director of the Central Meteorologico-Magnetic Observatory, Mexico.

'On January 19, 1900, in the capital, Mexico (D.F.), at 11.59 p.m. was felt an oscillatory tremor of two movements, the first from E.N.E. to W.S.W., the pendulum tracing an ellipse of which the major axis measures 33 centimetres; the second movement traced a small ellipse from S.S.E. to N.N.W., its major axis measuring 45 millimetres. The total duration of the phenomenon was 58 seconds. Information is to hand in this Observatory of the phenomenon having been felt in the following localities: in Toluca (E. of Mexico) at 11.58 p.m., a strong oscillatory tremor from N.N.E. to S.S.W., varying momentarily from N.W. to S.E., approximate duration 45 seconds; in Chilpancing (E. of Guerrero) at five minutes after midnight on the 20th, strong oscillatory tremor from N. to S., duration 8 seconds; in Sayula (E. of Jalisco) at 11.50 p.m. of the 19th, strong oscillatory tremor from N. to S., duration

1 minute; in Zacoalco (E. of Jalisco) at 11.55 p.m. of the 19th, oscillatory tremor from N. to S. and from S.E. to N.W., duration 55 seconds; in Teocuitatlan (E. of Jalisco), an oscillatory tremor from N. to S., duration 40 seconds; in La Piedad (E. of Michoacan) at 11.57 p.m. of the 19th, a strong and pronounced oscillatory tremor; in Peujamo (E. of Guanajuato) at 11.58 p.m. of the 19th, a strong prolonged tremor; in La Barca (E. of Jalisco) at 11.55 p.m. of the 19th, a strong oscillatory tremor from N. to S., much prolonged and accompanied by a loud subterranean rumble; in Zamora (E. of Michoacan) at 11.55 p.m. of the 19th, a rapid oscillatory tremor from N.E. to S.W., duration 1 minute 5 seconds; in Zacapu (E. of Michoacan) at midnight, a strong rapid oscillatory tremor from N.E. to S.W., duration 1 minute; in Totolan (E. of Jalisco) at 11.55 p.m. of the 19th, a rapid oscillatory tremor from N.E. to S.W., duration 1 minute; in Aguas Blancas (E. of Guerrero) at midnight, a strong oscillatory tremor from N. to S., duration 53 seconds; in San Geronimo (E. of Guerrero) at midnight, a slight oscillatory tremor from N. to S., duration 1 minute; in San Luis de Guerrero at midnight, a strong oscillatory tremor from N.E. to S.W., duration 20 seconds; in Zihuatanejo at midnight, a strong oscillatory tremor from E. to W., duration 40 seconds; in La Union (E. of Guerrero) at midnight, a strong oscillatory tremor from N. to S., duration 20 seconds; in El Carrizal (E. of Guerrero) at midnight, a strong oscillatory tremor from N. to S., duration 1 minute; in Coacomán (E. of Michoacan) at midnight, a strong oscillatory tremor from N.E. to S.W., duration 1 minute, causing damage; in Yurecuaro (E. of Michoacan) at 11.55 p.m. of the 19th, an oscillatory tremor N.N.E. to S.S.W., quite strong and of a duration of more than 1 minute, cracking the cupola of the tower of the village and causing the iron cross on which the weathercock rests to shift its position (it is stated that the tremor was accompanied by loud subterranean rumbles, and that there was a good deal of alarm in spite of the hour); in Tonila (E. of Jalisco), loud subterranean rumbles being heard every hour, terminating with reverberation in the volcano; in Guadalajara (E. of Jalisco) at 11.49 p.m. of the 19th, a strong tremor, which lasted almost a minute (in this town a good many buildings were cracked, e.g. the quarters of the 19th Battalion, the Chapel of San Francisco, called the 'Cenacolo'; other buildings were slightly cracked, e.g. the cupola of the church of Santa Maria de Gracia, and the churches of San Felipe, San Diego, the Chapel of Jesus and Santa Monica; also an arch of the public slaughter-house of the town, and several private houses). In Ameca, Atialulco, San Martin de Hidalgo, La Barca, Marcota, Cocula, Zacoalco, and Ciudad Guzman (Zapotlan) the phenomenon made itself felt, causing slight damage to the buildings. In Ocotlan the church was completely wrecked. In La Union de Tula the cupola of the church was badly cracked, and in Tamazula bells were thrown down and the dial plate of the public clock. (All these towns belong E. of Jalisco.)

As is evident from these data the region affected extends from the western part of the Valle de Mexico towards the Pacific Coast, the earthquake being felt in many localities of the following States: Jalisco, Michoacan, Colima, and Guerrero. The zone of the greatest intensity appears to have been in the neighbourhood of the volcano of Colima.

Extract from the New York Herald, May 19, 1900.

City of Mexico *via* Galveston, Texas, Friday, May 16.

Reports from towns on the Pacific coast show that while the earthquake on Wednesday was comparatively slight in this city it was severe along the coast.

A tidal wave succeeded the second shock ; considerable damage was done in the States of Colinne and Jalisco. Houses were submerged, boats were swamped, and several residents were drowned. The seismic movement, which was from S.E. to N.W., occurred at 1.35 in the afternoon on the Pacific coast, and at 1.38 in this city. The duration of the movement generally was 1 minute, but where the disturbance was most severe it lasted only 2 seconds.

Cracks which were made in buildings of this city by the earthquake in January last were further opened by the shocks of Wednesday. The structures most damaged are the National Palace, the Church of San Francisco, and the Palace of Justice. In order to prevent danger these buildings must be repaired.