

# Riverview College Observatory

SYDNEY, N.S.W.



## SEISMOLOGICAL BULLETIN.

$\phi = 33^\circ 49' 49''$  S.  $\lambda = 151^\circ 9' 30''$  E.  $h = 41.9$  m. Foundation: Triassic sandstone.

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

|           | V   | $T_0$ | $\epsilon : 1$ | $\frac{r}{T^2}$ |
|-----------|-----|-------|----------------|-----------------|
| $A_1$ (1) | 153 | 8.6   | 5.5            | 0.02            |
| $A_1$ (3) | 112 | 9.0   | 3.9            | 0.02            |
| $A_2$ (1) | 159 | 8.6   | 4.0            | 0.028           |
| $A_2$ (3) | 148 | 10.2  | 2.1            | 0.04            |
| $A_2$ (2) | 83  | 5.1   | 5.5            | 0.05            |

| No. | Date.        | Phase                | Time (Greenwich) |       | Per. | Amplitude       |                 |       | $\Delta$ | Remarks.  |
|-----|--------------|----------------------|------------------|-------|------|-----------------|-----------------|-------|----------|---|
|     |              |                      | h.               | m. s. |      | $A_s$           | $A_e$           | $A_z$ |          |   |
| 186 | 1920 Sept. 4 | e(P?)                | 2                | 32 31 | 5    | 1               | -               |       |          |   |
|     |              | eL                   |                  | 45.1  | 22   |                 |                 |       |          |   |
|     |              | ME <sub>1</sub>      |                  | 47 28 | 40   |                 | 22              |       |          |   |
|     |              | ME <sub>2</sub>      |                  | 54 33 | 20   |                 | 4               |       |          |   |
|     |              | MN <sub>1</sub>      |                  | 55 17 | 24   | 6               |                 |       |          |   |
|     |              | MN <sub>2</sub>      |                  | 57 03 | 18   | 10              |                 |       |          |   |
|     |              | F                    | 5                | 05    |      |                 |                 |       |          |   |
| 187 | " 8          | iP                   | 2                | 51 40 | 5    | $+\frac{1}{2}$  | +10             | -1    | 4220     | Computed azimuth :-<br>267° (N.87°E.)               |
|     |              | PR <sub>1</sub>      |                  | 52 00 | 6    | 8               | 60              |       |          |   |
|     |              | S                    |                  | 57 40 | 10   | 62              | 35              |       |          |   |
|     |              | PS                   |                  | 58 42 | 10   | 115             | 51              |       |          | $\phi$ , 24°S.<br>$\lambda$ , 163 $\frac{1}{2}$ °W. |
|     |              | eL                   | 3                | 00.6  | 18   |                 |                 |       |          |   |
|     |              | MN <sub>1</sub>      |                  | 01 43 | 20   | 560             |                 |       |          |   |
|     |              | MZ <sub>1</sub>      |                  | 02 15 | 20   |                 |                 | 54    |          |   |
|     |              | ME <sub>1</sub>      |                  | 02 15 | 20   |                 | 320             |       |          | Computed time at<br>origin :-<br>h m s<br>2 44 00   |
|     |              | MN <sub>2</sub> )    |                  | 03.8  | 10   | 69              | 69              |       |          |   |
|     |              | ME <sub>2</sub> )    |                  | 04 48 | 12   |                 |                 | 36    |          |   |
|     |              | MZ <sub>2</sub>      |                  | 04 48 | 12   |                 |                 |       |          |   |
|     |              | F                    | 5                | 00    |      |                 |                 |       |          |   |
| 188 | " 9          | eP                   | 19               | 01 47 | 5    | $\frac{1}{2}$   | $\frac{1}{2}$   |       | 3150     |   |
|     |              | i                    |                  | 02 14 | 5    | -4              | +9              |       |          |   |
|     |              |                      |                  | 02 37 | 5    | 8               | 4               |       |          |   |
|     |              | iS                   |                  | 06 41 | 7    | -25             | -20             |       |          |   |
|     |              | PS                   |                  | 07 09 | 8    | 20              | 2013            |       |          |   |
|     |              | eL                   |                  | 08.7  | 25   |                 |                 |       |          |   |
|     |              | ME <sub>1</sub>      |                  | 08 57 | 20   |                 | 105             |       |          |   |
|     |              | MN <sub>1</sub>      |                  | 09 22 | 24   | 140             |                 |       |          |   |
|     |              | MZ                   |                  | 09 31 | 24   |                 |                 | 104   |          |   |
|     |              | MN <sub>2</sub> )    |                  | 16.0  | 14   | 37              | 36              |       |          |   |
|     |              | ME <sub>2</sub> )    |                  | 17 57 | 15   |                 | 37              |       |          |   |
|     |              | ME <sub>3</sub>      |                  | 20 00 | 12   | 26              |                 |       |          |   |
|     |              | MN <sub>3</sub>      |                  | 20 00 | 12   |                 |                 |       |          |   |
|     |              | F                    | 22               | 20    |      |                 |                 |       |          |   |
| 189 | " 10         | eP                   | 22               | 07 58 |      |                 |                 |       | 2330     |   |
|     |              | eS                   |                  | 11 49 | 11   | 2               | 1               |       |          |   |
|     |              | PS                   |                  | 12 15 | 11   | 2               | -               |       |          |   |
|     |              | eL                   |                  | 15.0  | 15   |                 |                 |       |          |   |
|     |              | ME                   |                  | 15 54 | 13   |                 | 1 $\frac{1}{2}$ |       |          |   |
|     |              | MN                   |                  | 20 58 | 13   | 2               |                 |       |          |   |
|     |              | F                    | 23               | 20    |      |                 |                 |       |          |   |
|     |              | e?                   | 18               | 51 15 | 9    | $\frac{1}{2}$   | -               |       |          |   |
| 190 | " 17         | •(SR <sub>1</sub> ?) | 19               | 00 06 | 10   | 1 $\frac{1}{2}$ | -               |       |          |   |
|     |              | eL                   |                  | 02.5  | 18   |                 |                 |       |          |   |
|     |              | MN                   |                  | 05 32 | 13   | 2               |                 |       |          |   |
|     |              | ME                   |                  | 06 01 | ?    |                 |                 |       |          |   |
|     |              | F                    | 19               | 30    |      |                 |                 |       |          |   |

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$\phi=33^{\circ} 49' 49''$  S.

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4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

|       | V                | $T_0$ | $\epsilon: l$ | $\frac{r}{T_0^2}$ |
|-------|------------------|-------|---------------|-------------------|
| $A_N$ | (See last sheet) |       |               |                   |
| $A_E$ | (See last sheet) |       |               |                   |
| $A_Z$ |                  |       |               |                   |

| Date<br>1920    | Phase                         | Time<br>(Greenwich) | Per. | Amplitude        |               |       | $\Delta$   | Remarks   |
|-----------------|-------------------------------|---------------------|------|------------------|---------------|-------|------------|---|
|                 |                               |                     |      | $A_N$            | $A_E$         | $A_Z$ |            |   |
| Sept. 20        | iP                            | 14 43 42            | 7    | +19              | +20           | -21   | 2320<br>km | Computed azimuth:<br>226° (N. 46° E.)<br><br>$\phi, 18\frac{1}{2}^{\circ}$ S.<br>$\lambda, 167^{\circ}$ E.        |
|                 |                               | 43 58               | 7    | 198              | 184           | 74    |            |   |
|                 | iPR <sub>2</sub>              | 45 08               | 7    | +49              | +60           |       |            |   |
|                 | iS <sub>2</sub>               | 47 32               | 9    | -189             | +54           | +46   |            |   |
|                 | PS                            | 47 56               | 8    | 405              | 230*          | 280   |            |   |
|                 | eL                            | 48.4                | 18   |                  |               |       |            |   |
|                 | MZ <sub>1</sub>               | 49 27               | 18   |                  |               | 1120  |            |   |
|                 | MN <sub>1</sub>               |                     |      |                  |               |       |            |   |
|                 | ME <sub>1</sub> <sup>1)</sup> | 49.6                | 16   | 445              | 410           |       |            |   |
|                 | MN <sub>2</sub> <sup>2)</sup> |                     |      |                  |               |       |            |   |
|                 | ME <sub>2</sub> <sup>2)</sup> | 52.5                | 10   | 500              | 170+          |       |            |   |
|                 | MZ <sub>2</sub>               | 52 41               | 13   |                  |               | 460   |            |   |
|                 | MN <sub>3</sub>               | 54 16               | 9    | 340              |               |       |            |   |
|                 | ME <sub>3</sub>               | 54 52               | 11   |                  | 190           |       |            |   |
|                 | MZ <sub>3</sub>               | 55 23               | 14   |                  |               | 680   |            |   |
|                 | ME <sub>4</sub>               | 56 36               | 11   |                  | 190           |       |            |   |
|                 | MN <sub>4</sub>               | 56 51               | 8    | 290              |               |       |            |   |
|                 | MN <sub>5</sub>               | 15 02 29            | 9    | 250              |               |       |            |   |
|                 | ME <sub>5</sub>               | 03 23               | 12   |                  | 150           |       |            |   |
|                 | MN <sub>6</sub> <sup>6)</sup> | 07.4                | 11   | 210              | 150           |       |            |   |
| CE <sub>1</sub> | 15 19                         | 9                   |      | 46               |               |       |            |   |
| CN <sub>1</sub> | 15 31                         | 8                   | 65   |                  |               |       |            |   |
| CE <sub>2</sub> | 19 29                         | 9                   |      | 48               |               |       |            |   |
| CN <sub>2</sub> | 19 57                         | 10                  | 29   |                  |               |       |            |   |
| CE <sub>3</sub> | 36 14                         | 9                   |      | 6                |               |       |            |   |
| CN <sub>3</sub> | 36 42                         | 9                   | 52   |                  | 1930          |       |            |   |
| eW <sub>2</sub> | 17 30.6                       | 18                  |      |                  |               |       |            |   |
| ME <sub>2</sub> | 31 39                         | 18                  |      | 2 $\frac{3}{4}$  |               |       |            |   |
| F               | 19 10                         |                     |      |                  |               |       |            |   |
| 192 " 20        | iP                            | 17 32 50            | 5    | -                | -1            |       | 2410       |   |
|                 |                               | 33 02               | 8    |                  |               | 3     |            |   |
|                 | iS                            | 36 52               | 6    | -1 $\frac{1}{4}$ | +9            |       |            |   |
|                 | MZ                            | 38 01               | 8    |                  |               | 2     |            |   |
|                 | MN <sub>1</sub>               | 39 27               | 11   | 6                |               |       |            |   |
|                 | ME <sub>1</sub>               | 39 55               | 12   |                  | 2             |       |            |   |
|                 | MN <sub>2</sub>               | 40 42               | 11   | 7                |               |       |            |   |
| 193 " 21        | eP <sub>2</sub>               | 2 38 54             | 5    | 3                | $\frac{1}{2}$ |       | 2700       | F lost in 191.<br>Computed azimuth:<br>228° (N. 48° E.)<br><br>$\phi, 17^{\circ}$ S.<br>$\lambda, 169^{\circ}$ E. |
|                 | iP                            | 39 00               | 5    | +13              | +15           | -5    |            |   |
|                 |                               | 40 12               | 5    | 9                | 11            |       |            |   |
|                 | iS                            | 43 15               | 7    | 3                | -12           |       |            |   |
|                 | eL                            | 44.5                | 17   |                  |               |       |            |   |
|                 | ME <sub>1</sub>               | 44 52               | 16   |                  | 33            |       |            |   |
|                 | MZ <sub>1</sub>               | 45 15               | 13   |                  |               | 7     |            |   |
|                 | MN <sub>1</sub>               | 45 29               | 15   | 32               |               |       |            |   |
|                 | ME <sub>2</sub>               | 46 25               | 15   |                  | 18            |       |            |   |
|                 | MN <sub>2</sub>               | 49 41               | 11   | 21               |               |       |            |   |
| F               | 4 55                          |                     |      |                  |               |       |            |   |

(Continued on next sheet)

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Foundation: Triassic sandstone.

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4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

|       | V                | $T_0$ | $e:1$ | $\frac{r}{T_0^2}$ |
|-------|------------------|-------|-------|-------------------|
| $A_N$ |                  |       |       |                   |
| $A_E$ | (See last sheet) |       |       |                   |
| $A_Z$ |                  |       |       |                   |

| No. | Date.            | Phase           | Time (Greenwich) |       | Per. | Amplitude     |                |       | $\Delta$ | Remarks |
|-----|------------------|-----------------|------------------|-------|------|---------------|----------------|-------|----------|---------|
|     |                  |                 | h.               | m. s. |      | $A_N$         | $A_E$          | $A_Z$ |          |         |
|     |                  |                 |                  |       |      | $\mu$         | $\mu$          | $\mu$ | km.      |         |
| 194 | 1920<br>Sept. 21 | e?              | 16               | 10.5  |      |               |                |       |          |         |
|     |                  | eL              |                  | 16.2  | 20   |               |                |       |          |         |
|     |                  | MN              |                  | 17 13 | 15   | 3             |                |       |          |         |
|     |                  | ME              |                  | 21 13 | 14   |               | 2              |       |          |         |
|     |                  | F               | 17               | 05    |      |               |                |       |          |         |
| 195 | " 21             | e?              | 17               | 41.5  |      |               |                |       |          |         |
|     |                  | e?              |                  | 49.6  |      |               |                |       |          |         |
|     |                  | e               |                  | 54.3  | 7    | $\frac{1}{2}$ | -              |       |          |         |
|     |                  | e(L?)           | 18               | 04.4  | 17   |               |                |       |          |         |
|     |                  |                 |                  | 05 03 | 15   | 3             |                |       |          |         |
|     |                  | MN <sub>1</sub> |                  | 09 55 | 18   | 5             |                |       |          |         |
|     |                  | MN <sub>2</sub> |                  | 31 36 | 20   | 3             |                |       |          |         |
| ME  |                  | 37 09           | 16               |       | 2    |               |                |       |          |         |
| F   | 19               | 10              |                  |       |      |               |                |       |          |         |
| 196 | " 23             | e?              | 5                | 59.1  |      |               |                |       |          |         |
|     |                  | e               | 6                | 09.2  | 12   | 1             | -              |       |          |         |
|     |                  | eL              |                  | 13.9  | ?    |               |                |       |          |         |
|     |                  | ME              |                  | 15 03 | 20   |               | $1\frac{1}{2}$ |       |          |         |
|     |                  | MN              |                  | 16 32 | 20   | 3             |                |       |          |         |
| F   | 6                | 30              |                  |       |      |               |                |       |          |         |
| 197 | " 24             | eP?             | 4                | 34 31 | 4    |               |                |       |          |         |
|     |                  | eS              |                  | 38 59 | 9    |               |                |       |          | 4840    |
|     |                  | eL              |                  | 41.5  | 17   |               |                |       |          |         |
|     |                  | MN              |                  | 42 33 | 14   | 3             |                |       |          |         |
| F   | 5                | 05              |                  |       |      |               |                |       |          |         |
| 198 | " 27             | eP              | 10               | 01 36 |      |               |                |       |          | 1930    |
|     |                  | eS              |                  | 04 53 | 9    | -             | $\frac{1}{2}$  |       |          |         |
|     |                  | PS              |                  | 05 16 | 10   | 3             | 3              |       |          |         |
|     |                  | eL              |                  | 06.1  | 18   |               |                |       |          |         |
|     |                  | MN              |                  | 06 20 | 12   | 4             |                |       |          |         |
|     |                  | ME              |                  | 08 16 | 12   |               | 4              |       |          |         |
| F   | 10               | 40              |                  |       |      |               |                |       |          |         |
| 199 | " 30             | e?              | 10               | 18.1  |      |               |                |       |          |         |
|     |                  | eL              |                  | 26.1  | 13   |               |                |       |          |         |
|     |                  | MN              |                  | 26 47 | 12   | 1             |                |       |          |         |
|     |                  | ME              |                  | 30 19 | ?    |               |                |       |          |         |
|     |                  | F               | 10               | 40    |      |               |                |       |          |         |

*E. F. Pigot*

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2. Wiechert Vertical Seismometer (80 kilo.)
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4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

|          | V   | $T_0$ | $a:1$ | $\frac{r}{T_0^2}$ |
|----------|-----|-------|-------|-------------------|
| $A_N(1)$ | 150 | 8.8   | 4.5   | 0.02              |
| $A_N(3)$ | 127 | 8.8   | 4.1   | 0.02              |
| $A_E(1)$ | 169 | 8.5   | 4.3   | 0.02              |
| $A_E(3)$ | 148 | 10.5  | 2.6   | 0.04              |
| $A_Z(2)$ | 74  | 5.4   | 5.5   | 0.05              |

| No. | Date        | Phase                             | Time (Greenwich) |    |    | Per. | Amplitude      |                |       | $\Delta$ | Remarks.                |
|-----|-------------|-----------------------------------|------------------|----|----|------|----------------|----------------|-------|----------|-------------------------|
|     |             |                                   | h.               | m. | s. |      | $A_N$          | $A_E$          | $A_Z$ |          |                         |
| 200 | 1920 Oct. 1 | eP?                               | 5                | 09 | .9 |      |                |                |       |          |                         |
|     |             | S?                                |                  | 17 | .2 | 9    |                | 1              |       |          |                         |
|     |             | eL                                |                  | 24 | .0 | 15   |                |                |       |          |                         |
|     |             | MN                                |                  | 25 | .9 | 16   | $2\frac{3}{4}$ |                |       |          |                         |
|     |             | ME                                |                  | 29 | 17 | ?    |                |                |       |          |                         |
|     |             | F                                 | 6                | 20 |    |      |                |                |       |          |                         |
| 201 | " 3         | e(S?)                             | 14               | 48 | .7 | 8    |                |                |       |          |                         |
|     |             | eL                                |                  | 50 | .4 | 15   |                |                |       |          |                         |
|     |             | MN                                |                  | 51 | 26 | 12   | 2              |                |       |          |                         |
|     |             | ME                                |                  | 55 | 46 | 12   |                | $1\frac{1}{2}$ |       |          |                         |
|     |             | F                                 | 15               | 30 |    |      |                |                |       |          |                         |
| 202 | " 4         | e(P?)                             | 17               | 24 | .2 |      |                |                |       |          |                         |
|     |             | eS                                |                  | 27 | 11 |      |                |                |       |          |                         |
|     |             | M                                 |                  | 30 | .1 | 12   | 2              | 1              |       |          |                         |
|     |             | F                                 | 17               | 50 |    |      |                |                |       |          |                         |
| 203 | " 12        | eS?                               | 9                | 04 | 16 |      |                |                |       |          |                         |
|     |             | eL                                |                  | 07 | .3 | ?    |                |                |       |          |                         |
|     |             | ME                                |                  | 08 | 25 | 13   |                | $1\frac{1}{2}$ |       |          |                         |
|     |             | MN                                |                  | 08 | 54 | 13   | 1              |                |       |          |                         |
|     |             | F                                 | 9                | 40 |    |      |                |                |       |          |                         |
| 204 | " 15        | eP?                               | 14               | 15 | 46 |      |                |                | 4640' |          |                         |
|     |             | eS                                |                  | 22 | 09 | 16   | 3              |                |       |          |                         |
|     |             | PS                                |                  | 22 | 35 | 16   | 9              |                |       |          |                         |
|     |             | eL                                |                  | 26 | .6 | 18   |                |                |       |          |                         |
|     |             | MZ                                |                  | 27 | 41 | 16   |                |                | 10    |          |                         |
|     |             | MN <sub>1</sub>                   |                  | 27 | 58 | 16   | 10             |                |       |          |                         |
|     |             | ME <sub>1</sub>                   |                  | 28 | 42 | 12   |                | 4              |       |          |                         |
|     |             | MN <sub>2</sub>                   |                  | 38 | 49 | 14   | 8              |                |       |          |                         |
|     |             | ME <sub>2</sub>                   |                  | 38 | 11 | 15   |                | 4              |       |          |                         |
|     |             | F                                 | 15               | 55 |    |      |                |                |       |          |                         |
| 205 | " 18        | iP                                | 8                | 23 | 37 | 4    | +6             | -              | -2    | 8650     | Computed azimuth ;      |
|     |             |                                   |                  | 23 | 39 | 4    | $-\frac{1}{2}$ | -              | +15   |          | 180° (due North)        |
|     |             | iPR <sub>1</sub>                  |                  | 26 | 41 | 6    | +17            | 1              | 2     |          |                         |
|     |             | iS                                |                  | 33 | 30 | 8    | -14            | -11            | 2     |          | $\phi, 46^\circ$ N.     |
|     |             | PS                                |                  | 34 | 18 | 9    | 11             | 4              |       |          | $\lambda, 151^\circ$ E. |
|     |             | SR <sub>1</sub>                   |                  | 39 | 07 | 10   | 4              | 1              |       |          |                         |
|     |             | eL                                |                  | 47 | .1 | 22   |                |                |       |          |                         |
|     |             | MZ <sub>1</sub>                   |                  | 50 | 09 | 20   |                |                | 16    |          |                         |
|     |             | MN <sub>1</sub> , ME <sub>1</sub> |                  | 50 | .8 | 20   | 15             | 17             |       |          | Computed time at or-    |
|     |             | ME <sub>2</sub>                   |                  | 56 | 41 | 18   |                | 25             |       |          | igin :-                 |
|     |             | MN <sub>2</sub> , MZ <sub>2</sub> |                  | 57 | .6 | 20   | 36             |                | 24    |          | h m s                   |
|     |             | C                                 |                  | 9  | 07 | .1   | 4              | 2              |       |          | 8 11 37                 |
|     |             | F                                 |                  | 9  | 50 |      |                |                |       |          |                         |

ERRATUM. On July Bulletin, No. 153, for 22 read 21

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4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

|       | V                | $T_0$ | $\epsilon:1$ | $\frac{r}{T_0^2}$ |
|-------|------------------|-------|--------------|-------------------|
| $A_N$ |                  |       |              |                   |
| $A_E$ | (See last sheet) |       |              |                   |
| $A_Z$ |                  |       |              |                   |

| No.             | Date.           | Phase               | Time (Greenwich) |       |    | Per | Amplitude        |               |                 | $\Delta$ | Remarks.                         |
|-----------------|-----------------|---------------------|------------------|-------|----|-----|------------------|---------------|-----------------|----------|----------------------------------|
|                 |                 |                     | h.               | m.    | s. |     | $A_N$            | $A_E$         | $A_Z$           |          |                                  |
| 206             | 1920<br>Oct. 20 | iP                  | 10               | 13    | 43 | ?   |                  |               |                 | 6200     |                                  |
|                 |                 | eS                  |                  | 21    | 30 | ?   |                  |               |                 |          |                                  |
|                 |                 | eL                  |                  | 32    | 6  | 18  |                  |               |                 |          |                                  |
|                 |                 | MN                  |                  | 39    | 39 | 16  | 3                |               |                 |          |                                  |
|                 |                 | ME                  |                  | 40    | 43 | 15  |                  | 4             |                 |          |                                  |
| 207             | " 20            | F                   | 11               | 35    |    |     |                  |               |                 | 2440     | A few long waves.                |
|                 |                 | e                   | 21               | 07.1  |    |     |                  |               |                 |          |                                  |
| 208             | 2222            | iP                  | 10               | 57    | 33 | 4   | +1 $\frac{3}{4}$ | -             | -2              | 2820     | NS and EW reductions from No. 3. |
|                 |                 | i                   |                  | 58    | 27 | 5   | +8               | -             |                 |          |                                  |
|                 |                 | S?                  | 11               | 02    | 03 | 8   | -                | $\frac{1}{2}$ |                 |          |                                  |
|                 |                 | i                   |                  | 04    | 08 | 8   | -7               | -             |                 |          |                                  |
|                 |                 | e(L?)               |                  | 05    | 6  | 13  |                  |               |                 |          |                                  |
|                 |                 | ME                  |                  | 08    | 55 | 13  |                  | 6             |                 |          |                                  |
|                 |                 | MZ                  |                  | 10    | 05 | 12  |                  |               | 11              |          |                                  |
|                 |                 | MN                  |                  | 11    | 04 | 12  | 3                |               |                 |          |                                  |
|                 |                 | F                   | 12               | 20    |    |     |                  |               |                 |          |                                  |
|                 |                 | 209                 | " 22             | e(P?) | 12 | 29  | 45               | 6             | 1               |          |                                  |
| e(S?)           |                 |                     |                  | 38    | 45 | ?   |                  |               |                 |          |                                  |
| eL              |                 |                     |                  | 57    | 2  | ?   |                  |               |                 |          |                                  |
| MN <sub>1</sub> |                 |                     |                  | 58    | 54 | 15  | 2 $\frac{1}{2}$  |               |                 |          |                                  |
| MN <sub>2</sub> | 13              |                     |                  | 17    | 19 | 16  | 2                |               |                 |          |                                  |
| 210             | " 23            | F                   | 14               | 30    |    |     |                  |               |                 | 2340     |                                  |
|                 |                 | eP                  | 4                | 49    | 54 | 4   | $\frac{1}{2}$    | $\frac{1}{2}$ |                 |          |                                  |
|                 |                 | iS                  |                  | 53    | 46 | 5   | -1               | +3            |                 |          |                                  |
|                 |                 | eL                  |                  | 55    | 8  | 20  |                  |               |                 |          |                                  |
|                 |                 | ME                  |                  | 56    | 46 | 16  |                  | 2             |                 |          |                                  |
| 211             | " 24            | MN                  |                  | 57    | 46 | 13  | 2                |               |                 | 2450     |                                  |
|                 |                 | F                   | 5                | 40    |    |     |                  |               |                 |          |                                  |
|                 |                 | eP                  | 1                | 45    | 29 | 4   | -                | $\frac{1}{2}$ |                 |          |                                  |
|                 |                 | i(PR <sub>1</sub> ) |                  | 44    | 05 | 4   | 6                | +10           |                 |          |                                  |
|                 |                 | iS                  |                  | 47    | 28 | 7   | -5               | -             |                 |          |                                  |
|                 |                 | PS                  |                  | 47    | 38 | 7   | 21               | 6             |                 |          |                                  |
|                 |                 |                     |                  | 47    | 55 | 8   |                  |               | 3 $\frac{1}{2}$ |          |                                  |
|                 |                 | SR <sub>1</sub>     |                  | 48    | 48 | 12  | 14               | 26            |                 |          |                                  |
|                 |                 |                     |                  | 48    | 55 | 12  | 58               | 13            |                 |          |                                  |
|                 |                 | ME <sub>1</sub>     |                  | 52    | 00 | 14  |                  | 17            |                 |          |                                  |
|                 |                 | MN <sub>1</sub>     |                  | 52    | 12 | 12  | 7                |               |                 |          |                                  |
|                 |                 | ME <sub>2</sub>     |                  | 54    | 28 | 10  |                  | 8             |                 |          |                                  |
|                 |                 | MN <sub>2</sub>     |                  | 55    | 56 | 12  | 10               |               |                 |          |                                  |
| F               | 2               | 50                  |                  |       |    |     |                  |               |                 |          |                                  |

(Continued on next sheet)

# Riverview College Observatory, SYDNEY, N.S.W.



## SEISMOLOGICAL BULLETIN.

$\phi=33^{\circ} 49' 49''$  S.

$\lambda=151^{\circ} 9' 30''$  E.

$h=41.9$  m.

Foundation: Triassic sandstone.

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

|       | V | $T_0$            | $\epsilon:1$ | $\frac{r}{T_0^2}$ |
|-------|---|------------------|--------------|-------------------|
| $A_N$ |   |                  |              |                   |
| $A_E$ |   | (See last sheet) |              |                   |
| $A_Z$ |   |                  |              |                   |

| No.     | Date.           | Phase.               | Time (Greenwich) |                  | Per. | Amplitude      |                |                | $\Delta$<br>km. | Remarks. |
|---------|-----------------|----------------------|------------------|------------------|------|----------------|----------------|----------------|-----------------|----------|
|         |                 |                      | h.               | m. s.            |      | $A_N$<br>$\mu$ | $A_E$<br>$\mu$ | $A_Z$<br>$\mu$ |                 |          |
| 212     | 1920<br>Oct. 25 | e                    | 8                | 24 49            | 4    | -              | 1              |                | 2490            |          |
|         |                 | eL                   |                  | 28.8             | 12   |                |                |                |                 |          |
|         |                 | ME                   |                  | 29 01            | 13   |                | 2              |                |                 |          |
|         |                 | MN $\frac{1}{2}$     |                  | 29 49            | 11   | $3\frac{1}{4}$ |                |                |                 |          |
|         |                 | F                    | 8                | 45               |      |                |                |                |                 |          |
| 213     | " 25            | eP                   | 13               | 29 05            | 4    | -              | 1              |                | 2440            |          |
|         |                 | eS                   |                  | 33 05            | 7    | $\frac{1}{2}$  | $\frac{1}{2}$  |                |                 |          |
|         |                 | eL                   |                  | 35.4             | 16   |                |                |                |                 |          |
|         |                 | ME                   |                  | 36 01            | 10   |                | 1              |                |                 |          |
|         |                 | MN                   |                  | 36 57            | 10   | 2              |                |                |                 |          |
|         |                 | F                    | 14               | 10               |      |                |                |                |                 |          |
|         |                 | e(S?)                | 7                | 47 27            |      |                | 10             |                |                 |          |
| 214     | " 28            | eL                   | 8                | 08.8             | 20   |                |                |                | 2480            |          |
|         |                 | ME                   |                  | 11 27            | ?    |                |                |                |                 |          |
|         |                 | MN                   |                  | 15 59            | 16   | $2\frac{3}{4}$ |                |                |                 |          |
|         |                 | F                    | 8                | 50               |      |                |                |                |                 |          |
|         |                 | e(PR $\frac{1}{2}$ ) | 1                | 08 47            | ?    |                |                |                |                 |          |
|         |                 | e(PS?)               |                  | 18 11            | 10   | 1              |                |                |                 |          |
|         |                 | e                    |                  | 34 46            | ?    |                |                |                |                 |          |
|         |                 | eL                   |                  | 39.3             | 24   |                |                |                |                 |          |
|         |                 | ME $_1$              |                  | 39 55            | 24   |                | 6              |                |                 |          |
|         |                 | MN $_1$              |                  | 42 51            | 20   | 3              |                |                |                 |          |
|         |                 | ME $_2$              |                  | 45 03            | 16   |                | $2\frac{3}{4}$ |                |                 |          |
|         |                 | MN $_2$              |                  | 46 11            | 17   | $3\frac{1}{4}$ |                |                |                 |          |
|         |                 | MN $_3$              | 2                | 07 03            | 18   | $3\frac{1}{4}$ |                |                |                 |          |
| MN $_4$ |                 | 13 15                | 16               | $2\frac{3}{4}$   |      |                |                |                |                 |          |
| F       | 2               | 35                   |                  |                  |      |                |                |                |                 |          |
| 216     | " 28            | eP                   | 1                | 15 23            | 4    |                |                |                | 2290            |          |
|         |                 |                      |                  | 15 27            | 4    | $1\frac{3}{4}$ |                |                |                 |          |
|         |                 | e(S?)                |                  | 19 11            | 7    | $1\frac{1}{2}$ |                |                |                 |          |
|         |                 | eL                   |                  | 23.8             | 15   |                |                |                |                 |          |
|         |                 | ME                   |                  | 24 22            | 14   |                | 2              |                |                 |          |
|         |                 | MN                   |                  | 24 31            | 14   | 2              |                |                |                 |          |
|         |                 | F                    |                  | lost in No. 215. |      |                |                |                |                 |          |

*Edward P. ...*

# Riverview College Observatory

SYDNEY, N.S.W.



## SEISMOLOGICAL BULLETIN.

$\phi=33^{\circ} 49' 49''$  S.  $\lambda=151^{\circ} 9' 30''$  E.  $h=41.9$  m. Foundation: Triassic sandstone.

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

|           | V   | T    | $\epsilon:1$ | $\frac{r}{T^2}$ |
|-----------|-----|------|--------------|-----------------|
| $A_N$ (1) | 156 | 8.6  | 4.8          | 0.02            |
| $A_N$ (3) | 121 | 9.1  | 4.9          | 0.02            |
| $A_N$ (1) | 159 | 8.6  | 3.5          | 0.02            |
| $A_N$ (3) | 146 | 10.5 | 3.6          | 0.03            |
| $A_z$ (2) | 85  | 5.2  | 5.2          | 0.06            |

| No. | Date.          | Phase           | Time (Greenwich) |    |    |     | Amplitude |       |       | $\Delta$                 | Remarks. |
|-----|----------------|-----------------|------------------|----|----|-----|-----------|-------|-------|--------------------------|----------|
|     |                |                 | h.               | m. | s. | s.  | $A_N$     | $A_E$ | $A_z$ |                          |          |
| 217 | 1920<br>Nov. 1 | eP              | 16               | 59 | 34 | ?   |           |       |       | km.<br>2490              |          |
|     |                | iS              | 17               | 04 | 13 | 6   | -10       | +11   |       |                          |          |
|     |                |                 |                  | 06 | 06 | 8   |           | 6     |       |                          |          |
|     |                | eL              |                  | 06 | .7 | 20  |           |       |       |                          |          |
|     |                | M <sub>1</sub>  |                  | 09 | .0 | 18  | 10        | 23    |       |                          |          |
|     |                | ME <sub>2</sub> |                  | 10 | 13 | 16  |           | 38    |       |                          |          |
|     |                | MN <sub>2</sub> |                  | 11 | 21 | 14  | 10        |       |       |                          |          |
|     |                | ME <sub>3</sub> |                  | 14 | 01 | 11  |           | 5     |       |                          |          |
|     |                | MN <sub>3</sub> |                  | 16 | 59 | 10  | 8         |       |       |                          |          |
|     |                | ME <sub>4</sub> |                  | 17 | 13 | 10  |           | 4     |       |                          |          |
|     |                | F               | 18               | 10 |    |     |           |       |       |                          |          |
| 218 | " 3            | e               | 16               | 51 | .7 | 11  | -         | 10    |       |                          |          |
|     |                | e               |                  | 55 | .7 | 11  | 1½        |       |       |                          |          |
|     |                | MN <sub>1</sub> |                  | 56 | 48 | 11  | 12        |       |       |                          |          |
|     |                | ME <sub>1</sub> | 17               | 01 | 01 | ?   |           |       |       |                          |          |
|     |                | ME <sub>2</sub> |                  | 11 | 52 | 13  |           | 1     |       |                          |          |
|     |                | MN <sub>2</sub> |                  | 12 | 24 | 15  | 2½        |       |       |                          |          |
|     |                | F               | 18               | 00 |    |     |           |       |       |                          |          |
| 219 | " 6            | eP              | 21               | 16 | 23 | 8   | ½         | 1     |       | 2480                     |          |
|     |                | eS              |                  | 20 | 27 | 9   | 2¼        | 2     |       |                          |          |
|     |                | PS              |                  | 20 | 40 | 9   | 3½        | 3     |       |                          |          |
|     |                | eL              |                  | 21 | .9 | 20  |           |       |       |                          |          |
|     |                | ME              |                  | 23 | 24 | 16  |           | 9     |       |                          |          |
|     |                | MN              |                  | 24 | 06 | 14  | 4         |       |       |                          |          |
|     |                | F               | 22               | 15 |    |     |           |       |       |                          |          |
| 220 | " 12           | e               | 6                | 35 | .2 | ?   |           |       |       |                          |          |
|     |                | e               |                  | 39 | .1 | ?   |           |       |       |                          |          |
|     |                | e(L?)           |                  | 52 | .8 | 22? |           |       |       |                          |          |
|     |                | MN <sub>1</sub> |                  | 57 | 00 | 20  | 3         |       |       |                          |          |
|     |                | ME              | 7                | 06 | 09 | 17  |           | 2     |       |                          |          |
|     |                | MN <sub>2</sub> |                  | 06 | 47 | 17  | 3½        |       |       |                          |          |
|     |                | ME <sub>2</sub> |                  | 10 | 12 | ?   |           |       |       |                          |          |
|     |                | F               | 7                | 50 |    |     |           |       |       |                          |          |
| 221 | " 14           | eP              | 3                | 32 | 25 | 4   | ½         | -     |       | Very short wave-lengths. |          |
|     |                | MN              |                  | 41 | 07 | 8   | 1         |       |       |                          |          |
|     |                | ME              |                  | 43 | 22 | ?   |           |       |       |                          |          |
|     |                | F               | 4                | 00 |    |     |           |       |       |                          |          |
| 222 | " 15           | eP?             | 19               | 19 | 56 |     |           |       |       |                          |          |
|     |                | e(S?)           |                  | 24 | 44 | ?   |           |       |       |                          |          |
|     |                | eL              |                  | 30 | .1 | 18  |           |       |       |                          |          |
|     |                | MN <sub>1</sub> |                  | 31 | 09 | 14  | 4         |       |       |                          |          |
|     |                | ME              |                  | 33 | 39 | 12  |           | 1½    |       |                          |          |
|     |                | MN <sub>2</sub> |                  | 37 | 20 | 12  | 2         |       |       |                          |          |
|     |                | F               | 20               | 15 |    |     |           |       |       |                          |          |
| 223 | " 23           | e               | 7                | 09 | .4 | 6   | ¾         |       |       |                          |          |
|     |                | e(L?)           |                  | 12 | .4 | 16  |           |       |       |                          |          |
|     |                | ME              |                  | 13 | 34 | 16  |           | 2     |       |                          |          |
|     |                | MN              |                  | 14 | 41 | 12  | 3         |       |       |                          |          |

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

 $\phi = 33^{\circ} 49' 49''$  S. $\lambda = 151^{\circ} 9' 30''$  E.

h=41.9 m.

Foundation: Triassic sandstone.

## INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW)
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4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

|           | V   | $T_0$ | $\epsilon : 1$ | $\frac{r}{T_0^2}$ |
|-----------|-----|-------|----------------|-------------------|
| $A_N$ (1) | 151 | 8.7   | 6.8            | 0.02              |
| $A_E$ (3) | 121 | 9.0   | 4.0            | 0.02              |
| $A_N$ (1) | 164 | 8.7   | 5.8            | 0.03              |
| $A_N$ (3) | 151 | 10.5  | 2.3            | 0.05              |
| $A_N$ (2) | 80  | 5.3   | 4.6            | 0.06              |



| No. | Date.          | Phase.                            | Time (Greenwich) |      | Per. | Amplitude |       |       | $\Delta$ | Remarks.                           |
|-----|----------------|-----------------------------------|------------------|------|------|-----------|-------|-------|----------|------------------------------------|
|     |                |                                   | h.               | m.   |      | s.        | $A_N$ | $A_E$ |          |                                    |
|     |                |                                   |                  |      |      | $\mu$     | $\mu$ | $\mu$ | km.      |                                    |
| 224 | 1920<br>Dec. 1 | e                                 | 5                | 36   | 31   | 18        |       |       |          | A few long waves.                  |
| 225 | " 1            | e(S?)                             | 14               | 18   | 15   | 8         | 1     | -     |          |                                    |
|     |                | eL                                |                  | 20.3 | 15   |           |       |       |          |                                    |
|     |                | ME                                |                  | 22   | 25   | 10        |       | 1 1/2 |          |                                    |
|     |                | MN                                |                  | 23   | 36   | 10        | 4     |       |          |                                    |
|     |                | F                                 | 15               | 00   |      |           |       |       |          |                                    |
| 226 | " 5            | eP?                               | 22               | 03   | 20   | ?         |       |       |          |                                    |
|     |                | e(S?)                             |                  | 08   | 01   | 14        | 3     | -     |          |                                    |
|     |                | eL                                |                  | 10.9 | 24   |           |       |       |          |                                    |
|     |                | MN                                |                  | 12   | 12   | 22        | 20    |       |          |                                    |
|     |                | ME                                |                  | 13   | 08   | 13        |       | 5     |          |                                    |
|     |                | F                                 | 22               | 45   |      |           |       |       |          |                                    |
| 227 | " 7            | IP                                | 15               | 20   | 11   | 5         | -4    | -4    | 27.40    |                                    |
|     |                |                                   |                  | 20   | 43   | 4         | 3 1/2 | 2     |          |                                    |
|     |                | eS                                |                  | 24   | 35   | 8         | 4     | 1     |          |                                    |
|     |                | PS                                |                  | 25   | 08   | 8         | 5     | 3     |          |                                    |
|     |                | eL                                |                  | 26.5 | 25   |           |       |       |          |                                    |
|     |                | ME <sub>1</sub>                   |                  | 27   | 39   | 20        |       | 17    |          |                                    |
|     |                | MN <sub>1</sub>                   |                  | 27   | 51   | 20        | 9     |       |          |                                    |
|     |                | MZ                                |                  | 28   | 12   | 18        |       |       | 10       |                                    |
|     |                | ME <sub>2</sub>                   |                  | 32   | 20   | 12        |       | 6     |          |                                    |
|     |                | MN <sub>2</sub>                   |                  | 33   | 16   | 12        | 4     |       |          |                                    |
|     |                | F                                 | 16               | 20   |      |           |       |       |          |                                    |
| 228 | " 10           | e(P?)                             | 4                | 49   | 57   | ?         |       |       | 5880?    | Strong gale: heavy<br>microseisms. |
|     |                | e(S?)                             |                  | 57   | 27   | 15        | 8     | 10    |          |                                    |
|     |                | e                                 | 5                | 06   | 35   | 26        | -     | 25    |          |                                    |
|     |                |                                   |                  | 07   | 06   | 22        | 12    | -     |          |                                    |
|     |                | eL                                |                  | 10.1 | 26   |           |       |       |          |                                    |
|     |                | MN <sub>1</sub> , MZ <sub>1</sub> |                  | 13.3 | 20   |           | 60    |       | 36       |                                    |
|     |                | ME <sub>1</sub>                   |                  | 14   | 06   | 18        |       | 60    |          |                                    |
|     |                | ME <sub>2</sub> , MZ <sub>2</sub> |                  | 17.8 | 17   |           |       | 30    | 17       |                                    |
|     |                | MN <sub>2</sub>                   |                  | 18   | 14   | 16        | 65    |       |          |                                    |
|     |                | ME <sub>3</sub>                   |                  | 27   | 37   | 14        |       | 13    |          |                                    |
|     |                | MN <sub>3</sub>                   |                  | 29   | 26   | 14        | 6     |       |          |                                    |
|     |                | MZ <sub>3</sub>                   |                  | 34   | 08   | 15        |       |       | 9        |                                    |
|     |                | MN <sub>4</sub>                   |                  | 34   | 16   | 15        | 27    |       |          |                                    |
|     |                | ME <sub>4</sub>                   |                  | 34   | 27   | 13        |       | 7     |          |                                    |
|     |                | CE                                |                  | 45   | 31   | 14        |       | 6     |          |                                    |
|     |                | CN                                |                  | 45   | 52   | 14        | 6     |       |          |                                    |
|     |                | F                                 | 8                | 00   |      |           |       |       |          |                                    |

(Continued on next sheet)



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SYDNEY, N.S.W.



## SEISMOLOGICAL BULLETIN.

$\phi=33^{\circ} 49' 49''$  S.  $\lambda=151^{\circ} 9' 30''$  E.  $h=41.9$  m. Foundation: Triassic sandstone.

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|       | V                | $T_0$ | $e:1$ | $\frac{r}{T_0^2}$ |
|-------|------------------|-------|-------|-------------------|
| $A_x$ |                  |       |       |                   |
| $A_y$ | (See last sheet) |       |       |                   |
| $A_z$ |                  |       |       |                   |

| No. | Date.        | Phase                             | Time (Greenwich) |    |    |    | Per.  | Amplitude |        |       | $\Delta$                            | Remarks. |
|-----|--------------|-----------------------------------|------------------|----|----|----|-------|-----------|--------|-------|-------------------------------------|----------|
|     |              |                                   | h.               | m. | s. | s. |       | $A_x$     | $A_y$  | $A_z$ |                                     |          |
|     |              |                                   |                  |    |    |    | μ     |           |        | km.   |                                     |          |
| 229 | 1920 Dec. 13 | eP                                | 3                | 48 | 27 | 4  | 1 1/2 | -         | -      | 3030  | Felt at Kieta (Bougainville Island) |          |
|     |              | S                                 |                  | 53 | 12 | 14 | 9     | 6         |        |       |                                     |          |
|     |              | PS                                |                  | 53 | 59 | 16 | 30    | 10        |        |       |                                     |          |
|     |              | eL                                |                  | 54 | 1  | 25 |       |           |        |       |                                     |          |
|     |              | EN <sub>1</sub> , ME <sub>1</sub> |                  | 56 | 6  | 24 | 205   | 90        |        |       |                                     |          |
|     |              | MZ <sub>1</sub>                   |                  | 57 | 17 | 24 |       |           | 70     |       |                                     |          |
|     |              | ME <sub>2</sub>                   |                  | 58 | 25 | 15 |       | 12        |        |       |                                     |          |
|     |              | MN <sub>2</sub>                   |                  | 58 | 56 | 15 | 75    |           |        |       |                                     |          |
|     |              | MZ <sub>2</sub>                   |                  | 59 | 24 | 16 |       |           | 22     |       |                                     |          |
|     |              | ME <sub>3</sub>                   |                  | 59 | 31 | 12 |       | 60        |        |       |                                     |          |
|     |              | F                                 | 4                | 15 |    |    |       |           |        |       |                                     |          |
| 230 | " 16         | eP                                | 12               | 18 | 15 | 3  |       |           |        | 9040  | Destructive earthquake in Kan-su    |          |
|     |              | iP                                |                  | 18 | 21 | 3  |       |           | +3 1/2 |       |                                     |          |
|     |              |                                   |                  | 18 | 36 | 3  |       |           | 9      |       |                                     |          |
|     |              | PR <sub>1</sub>                   |                  | 21 | 32 | 4  | 5     | 2 1/2     |        |       | Computed time at origin :-          |          |
|     |              | iS                                |                  | 28 | 28 | 8  | -     | -18       |        |       | h m s                               |          |
|     |              | i                                 |                  | 28 | 35 | 8  | -29   |           |        |       | 12 5 55                             |          |
|     |              | i                                 |                  | 28 | 42 | 8  |       | +130      |        |       |                                     |          |
|     |              |                                   |                  | 28 | 43 | 8  | 70    | 15        |        |       |                                     |          |
|     |              | PS                                |                  | 29 | 17 | 8  | 22    | 40        |        |       |                                     |          |
|     |              | eSR <sub>1</sub>                  |                  | 33 | 20 | 30 |       |           |        |       |                                     |          |
|     |              |                                   |                  | 34 | 30 | 32 | 560   | 370       |        |       |                                     |          |
|     |              | eL                                |                  | 39 | 3  | 49 |       |           |        |       |                                     |          |
|     |              | EN <sub>1</sub> , ME <sub>1</sub> |                  | 41 | 5  | 30 | 910   | 870       |        |       |                                     |          |
|     |              | MN <sub>2</sub> , ME <sub>2</sub> |                  | 44 | 7  | 24 | 390   | 690       |        |       |                                     |          |
|     |              | MN <sub>3</sub>                   |                  | 48 | 19 | 24 | 570   |           |        |       |                                     |          |
|     |              | ME <sub>3</sub>                   |                  | 50 | 12 | 20 |       | 390       |        |       |                                     |          |
|     |              | MN <sub>4</sub>                   |                  | 52 | 32 | 23 | 620   |           |        |       |                                     |          |
|     |              | MZ <sub>1</sub>                   |                  | 52 | 39 | 24 |       |           | 290    |       |                                     |          |
|     |              | ME <sub>4</sub>                   |                  | 55 | 56 | 17 |       | 320       |        |       |                                     |          |
|     |              | MZ <sub>2</sub>                   |                  | 58 | 19 | 18 |       |           | 170    |       |                                     |          |
|     |              | MZ <sub>3</sub>                   | 13               | 00 | 33 | 18 |       |           | 140    |       |                                     |          |
|     |              | MN <sub>5</sub>                   |                  | 02 | 04 | 23 | 800   |           |        |       |                                     |          |
|     |              | ME <sub>5</sub>                   |                  | 04 | 29 | 18 |       | 290       |        |       |                                     |          |
|     |              | MZ <sub>4</sub>                   |                  | 06 | 15 | 21 |       |           | 190    |       |                                     |          |
|     |              | MN <sub>6</sub>                   |                  | 06 | 26 | 20 | 460   |           |        |       |                                     |          |
|     |              | ME <sub>6</sub>                   |                  | 09 | 54 | 18 |       | 90        |        |       |                                     |          |

(Analysis of this seism continued on next sheet)

# Riverview College Observatory,

## SYDNEY, N.S.W.



### SEISMOLOGICAL BULLETIN.

 $\phi = 33^{\circ} 49' 49''$  S. $\lambda = 151^{\circ} 9' 30''$  E.

h = 41.9 m.

Foundation: Triassic sandstone.

## INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

|       | V                | $T_0$ | $\epsilon: 1$ | $\frac{r}{T_0^2}$ |
|-------|------------------|-------|---------------|-------------------|
| $A_N$ |                  |       |               |                   |
| $A_E$ | (See last sheet) |       |               |                   |
| $A_Z$ |                  |       |               |                   |

| No.                | Date.           | Phase                        | Time (Greenwich) |    |    | Per. | Amplitude       |                 |                | $\Delta$<br>km. | Remarks. |
|--------------------|-----------------|------------------------------|------------------|----|----|------|-----------------|-----------------|----------------|-----------------|----------|
|                    |                 |                              | h.               | m. | s. |      | $A_N$<br>$\mu$  | $A_E$<br>$\mu$  | $A_Z$<br>$\mu$ |                 |          |
| 230<br>(continued) | 1920<br>Dec. 16 | CN1                          | 13               | 14 | 45 | 16   | 135             |                 |                | 2850            |          |
|                    |                 | CE1, CZ1                     | 20               | .1 |    | 16   |                 | 105             | 37             |                 |          |
|                    |                 | CN2                          | 20               | 16 |    | 16   | 70              |                 |                |                 |          |
|                    |                 | CE2                          | 28               | 04 |    | 16   |                 | 120             |                |                 |          |
|                    |                 | CN3                          | 29               | 32 |    | 16   | 55              |                 |                |                 |          |
|                    |                 | CE3                          | 32               | 36 |    | 17   |                 | 60              |                |                 |          |
|                    |                 | CE4                          | 44               | 08 |    | 16   |                 | 50              |                |                 |          |
|                    |                 | CN4                          | 53               | 02 |    | 20   | 50              |                 |                |                 |          |
|                    |                 | 2 waves<br>(L rep. 1)<br>eW2 | 14               | 25 | .3 | 28   |                 |                 |                |                 |          |
|                    |                 | MN1                          | 27               | 12 |    | 18   | 23              |                 |                |                 |          |
|                    |                 | ME1                          | 32               | 54 |    | 22   |                 | 30              |                |                 |          |
|                    |                 | ME2                          | 37               | 16 |    | 22   |                 | 65              |                |                 |          |
|                    |                 | MN2                          | 40               | 05 |    | 18   | 50              |                 |                |                 |          |
|                    |                 | ME3                          | 42               | 50 |    | 20   |                 | 30              |                |                 |          |
| F                  | 17              | 55                           |                  |    |    |      |                 |                 |                |                 |          |
| 231                | Dec. 16         | eP                           | 21               | 15 | 32 | 5    | $\frac{3}{2}$   | -               |                | 2850            |          |
|                    |                 | iS                           | 20               | 04 |    | 7    | -10             | -               |                |                 |          |
|                    |                 | eL                           | 22               | .1 |    | 24   |                 |                 |                |                 |          |
|                    |                 | MN                           | 23               | 04 |    | 20   | 26              |                 |                |                 |          |
|                    |                 | MZ                           | 24               | 10 |    | 20   |                 |                 | 12             |                 |          |
|                    |                 | F                            | 21               | 50 |    |      |                 |                 |                |                 |          |
| 232                | " 18            | eP?                          | 10               | 11 | 39 |      |                 |                 |                |                 |          |
|                    |                 | e(S?)                        | 18               | 00 |    |      |                 |                 |                |                 |          |
|                    |                 | e(SR1?)                      | 20               | 56 |    | ?    |                 |                 |                |                 |          |
|                    |                 | eL                           | 28               | .2 |    | 20   |                 |                 |                |                 |          |
|                    |                 | ME1                          | 31               | 49 |    | 15   |                 | 6               |                |                 |          |
|                    |                 | MN                           | 32               | 08 |    | 15   | 17              |                 |                |                 |          |
|                    |                 | ME2                          | 34               | 08 |    | 15   |                 | 7 $\frac{1}{2}$ |                |                 |          |
|                    |                 | F                            | 11               | 35 |    |      |                 |                 |                |                 |          |
| 233                | " 18            | eP                           | 10               | 38 | 18 | 2    |                 |                 |                |                 |          |
|                    |                 | MN                           | 45               | 41 |    | 14   | 4 $\frac{1}{2}$ |                 |                |                 |          |
|                    |                 | ME                           | 46               | 20 |    | 14   |                 | 4               |                |                 |          |
|                    |                 | F                            | lost in No. 232. |    |    |      |                 |                 |                |                 |          |
| 234                | " 19            | eP?                          | 3                | 23 | 09 |      |                 |                 |                |                 |          |
|                    |                 | eL                           | 32               | .4 |    | 20   |                 |                 |                |                 |          |
|                    |                 | ME1                          | 33               | 00 |    | 15   |                 | 4 $\frac{1}{2}$ |                |                 |          |
|                    |                 | MN1                          | 34               | 04 |    | 16   | 8               |                 |                |                 |          |
|                    |                 | MN2                          | 42               | 11 |    | 12   | 10              |                 |                |                 |          |
|                    |                 | ME2                          | 43               | 08 |    | 11   |                 | 5               |                |                 |          |
|                    |                 | F                            | lost in No. 235. |    |    |      |                 |                 |                |                 |          |

(Continued on next sheet)

# Riverview College Observatory

SYDNEY, N.S.W.



## SEISMOLOGICAL BULLETIN.

$\phi=33^{\circ} 49' 49''$  S.  $\lambda=151^{\circ} 9' 30''$  E.  $h=41.9$  m. Foundation: Triassic sandstone.

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

|       | V                | $T_0$ | $\epsilon: 1$ | $\frac{r}{T_0^2}$ |
|-------|------------------|-------|---------------|-------------------|
| $A_x$ |                  |       |               |                   |
| $A_y$ | (See last sheet) |       |               |                   |
| $A_z$ |                  |       |               |                   |

| No. | Date.        | Phase                             | Time (Greenwich) |     |    | Per. | Amplitude      |                |       | $\Delta$            | Remarks. |
|-----|--------------|-----------------------------------|------------------|-----|----|------|----------------|----------------|-------|---------------------|----------|
|     |              |                                   | h.               | m.  | s. |      | $A_x$          | $A_y$          | $A_z$ |                     |          |
|     |              |                                   |                  |     |    |      | $\mu$          | $\mu$          | $\mu$ | km.                 |          |
| 255 | 1920 Dec. 19 | e                                 | 4                | 00  | 00 | 8    | 1              |                |       |                     |          |
|     |              | eL                                |                  | 01. | 4  | 16   |                |                |       |                     |          |
|     |              | MN <sub>1</sub>                   |                  | 02  | 07 | 13   | $2\frac{1}{2}$ |                |       |                     |          |
|     |              | ME <sub>1</sub>                   |                  | 03  | 08 | 12   |                | 2              |       |                     |          |
|     |              | MN <sub>2</sub>                   |                  | 09  | 04 | 12   | $3\frac{1}{2}$ |                |       |                     |          |
|     |              | F                                 | 4                | 25  |    |      |                |                |       |                     |          |
| 256 | " 19         | e (P?)                            | 20               | 31. | 3  | 6    | $1\frac{3}{4}$ | 2              |       |                     |          |
|     |              | eL                                |                  | 45. | 2  | 20   |                |                |       |                     |          |
|     |              | ME                                |                  | 49  | 12 | 18   |                | $2\frac{1}{4}$ |       |                     |          |
|     |              | MN                                |                  | 52  | 09 | 18   | $2\frac{1}{2}$ |                |       |                     |          |
|     |              | F                                 | 22               | 05  |    |      |                |                |       |                     |          |
| 257 | " 24         | eL                                | 17               | 57. | 7  | 16   |                |                |       |                     |          |
|     |              | MN                                |                  | 59  | 14 | 12   | $1\frac{1}{2}$ |                |       |                     |          |
|     |              | ME                                | 18               | 03  | 50 | ?    |                |                |       |                     |          |
|     |              | F                                 | 18               | 25  |    |      |                |                |       |                     |          |
| 258 | " 24         | e (P?)                            | 22               | 22  | 50 | ?    |                |                |       |                     |          |
|     |              | e (S?)                            |                  | 26  | 30 | 7    | $\frac{1}{2}$  |                |       |                     |          |
|     |              | eL                                |                  | 29. | 8  | 16   |                |                |       |                     |          |
|     |              | ME                                |                  | 29  | 14 | 12   |                | 1              |       |                     |          |
|     |              | MN                                |                  | 29  | 46 | 13   | 2              |                |       |                     |          |
|     |              | F                                 | 22               | 55  |    |      |                |                |       |                     |          |
| 259 | " 25         | eP                                | 11               | 45  | 40 | 3    | 2              | $\frac{3}{4}$  |       | 9160 Kansou (China) |          |
|     |              | eS                                |                  | 55  | 59 | 9    | $1\frac{1}{2}$ | $\frac{1}{2}$  |       |                     |          |
|     |              | eL                                | 12               | 19. | 5  | 28   |                |                |       |                     |          |
|     |              | MN <sub>1</sub>                   |                  | 23  | 27 | 23   | 13             |                |       |                     |          |
|     |              | ME <sub>1</sub>                   |                  | 24  | 43 | 18   |                | $4\frac{1}{2}$ |       |                     |          |
|     |              | ME <sub>2</sub>                   |                  | 26  | 15 | 16   | 8              |                |       |                     |          |
|     |              | ME <sub>2</sub> , MN <sub>3</sub> |                  | 30. | 0  | 18   | 8              | $3\frac{1}{2}$ |       |                     |          |
|     |              | ME <sub>3</sub>                   |                  | 37  | 36 | 16   |                | 5              |       |                     |          |
|     |              | F                                 | 13               | 45  |    |      |                |                |       |                     |          |
| 260 | " 31         | eL                                | 10               | 11. | 5  | 18   |                |                |       |                     |          |
|     |              | M                                 |                  | 12. | 8  | 14   | $4\frac{1}{2}$ | $2\frac{1}{2}$ |       |                     |          |
|     |              | F                                 | 10               | 45  |    |      |                |                |       |                     |          |

*E. J. ...*