

MANILA, P. I.

SEISMOLOGICAL BULLETIN OF THE OBSERVATORY.--Continued.

| No. and Date | Phase | Green Time | | | Per. s. | Amplitude | | Dist. Km. | Remarks. |
|---------------------|---|------------|----|--|-------------------|-----------|----|-----------|--|
| | | h. | m. | s. | | N | E | | |
| No. 10 Jan. 17th | iPNE iSNE F | 1 | 12 | 21 52 32 | | μ | μ | 230 | |
| No. 12 Jan. 18th | iPNE iNE iNE SE iN mE F | 7 | 11 | 18 38 18 50 52 39 22 | 6.9 | | 13 | 3940 | O=7:04:04 About 5° S; 153° E, by Riverview, Batavia, Zikawei, Hong- kong, Manila. |
| No. 13 Jan. 19th | ePNE iSNE iSN F | 12 | 56 | 32 23 36 07 | | | | 420 | |
| No. 14 Jan. 20th | iPNE iSNE F | 7 | 19 | 27 44 17 | | | | 690 | O=7:17:54 |
| No. 15 Jan. 20th | ePNE eSNE F | 13 | 04 | 19 33 24 | | | | 670 | O=13:02:48 Felt at Bu- tuan, Mindanao. |
| No. 16 Jan. 21st | ePNE iSNE iSNE F | 4 | 47 | 57 46 58 22 | | | | 400 | Felt in NW Luzon. Epi- center in China Sea. |
| No. 18 Jan. 23rd | iPNE iSNE F | 17 | 24 | 00 17 28 | | | | 130? | Begins in minute gap. |
| No. 20 Jan. 25th | iPNE iSNE MN MN ME F | 1 | 40 | 25 46 37 53 55 27 | 6.4 7.5 6.8 | 34 50 | 40 | 730 | O=1:38:47 Epicenter in SE Philippines. |
| No. 21 Jan. 26th | ePNE eSNE F | 12 | 25 | 33 44 57 | | | | 630 | Disturbed by microseisms |
| No. 22 Jan. 27th | eNE F | 6 | 17 | 39 | | | | | Disturbed by microseisms Felt in Formosa. |

iPNE 11 00 43

From Galitzin.

M A N I L A , P . I .

SEISMOLOGICAL BULLETIN OF THE OBSERVATORY.--Continued.

| No. and Date | Phase | Green. Time h. m. s. | Per. s. | Amplitude | | Dist. Km. | Remarks. |
|---------------------|--------------------------|---|------------|-----------|-------|--------------|--------------------------|
| | | | | N | E | | |
| | | | | γ | μ | | |
| No. 23 Jan. 28th | ePN iPE SNE F | 6 28 44 6 28 44 6 36 05 7 02 | | | | 580 0 | O=6:19:25 |
| No. 25 Jan. 29th | ePNE F | 11 15 04 11 48 | | | | | |
| No. 26 Jan. 29th | ePNE iSNE F | 16 58 59 16 59 11 17 03 | | | | 90 | |
| No. 28 Jan. 30th | iPNE iSNE F | 4 43 48 4 44 10 4 47 | | | | 175 | |
| No. 29 Jan. 30th | ePNE iSNE F | 10 28 09 10 28 24 10 31 | | | | 115 | |
| No. 30 Jan. 30th | ePNE iSNE F | 18 07 00 18 07 17 18 09 | | | | 135 | |
| No. 31 Jan. 31st | ePNE iSNE iSE F | 12 10 31 12 11 41 12 12 09 12 22 | | | | 620 | Disturbed by microseisms |
| No. 32 Jan. 31st | ePN iSN F | 22 11 47 22 12 33 22 26 | | | | 360 | Disturbed by microseisms |

Five insignificant or undecipherable disturbances, on the following days of January: 17th, 21st, 24th, 29th and 30th.

BULLETINS RECEIVED

JANUARY, 1930.

We thankfully acknowledge the receipt of the following and hope for their continuance in the future.

STATIONS

BULLETINS

| | |
|------------------------------|--|
| Batavia- - - - - | July, August and September, 1929, and Principal earthquakes of November and December, 1929. |
| Hongkong - - - - - | October and November, 1929. |
| Parc Saint Maur- - - - - | October and November, 1929. |
| STRASBOURG | |
| L'Institut - - - - - | October and November, 1929. |
| Bureau Central - - - - - | October and November, 1929. |
| Union International- - - - - | October and November, 1929, and quarterly Bibliographic Bulletin October 1, 1929, No. 8. |
| Ottawa - - - - - | November, 1929. |
| Wellington - - - - - | January, February and March, 1929, and Principal earthquakes of November and December, 1929. |
| SPAIN | |
| Toledo - - - - - | January to April, 1929. |
| Almeria- - - - - | January to April, 1929. |
| Malaga - - - - - | January to April, 1929. |
| Alicante - - - - - | January to April, 1929. |
| Beograd- - - - - | October and November, 1929. |
| Kew- - - - - | November, 1929. |
| Moncalleri - - - - - | Year 1928. |
| Zikawei- - - - - | August 8-21, and October 6-22, 1929, and Principal earthquakes of December, 1929. |
| Phu-Lien - - - - - | June, 1929. |
| Ksara- - - - - | Annals of the Ksara Observatory, 1927. |
| Nagasaki - - - - - | Bulletin for the year 1927 and 1928. |
| San Fernando, Spain- - - - - | October and November, 1929. |
| Granada- - - - - | August 3rd to October 18th, 1929. |
| Taihoku- - - - - | September 19th to December 31st, 1929. |

MIGUEL SELGA, S.J,
 Director, Weather Bureau,
 Manila, Philippine Islands.

WILLIAM C. REPETTI, S.J.,
 Seismologist.
 CESÁREO DULUEÑA,
 Asst. Seismologist.

MANILA, P. I.

SEISMOLOGICAL BULLETIN OF THE OBSERVATORY

$\phi=14^{\circ} 34' 42''$ N. $\lambda=120^{\circ} 58' 41''$ E. $h=2.40$ m. Alluvium.

Instrument: Wiechert Inverted Pendulum (1000 Kg.)

| | T_0 | V | ϵ | $\frac{r}{T_0^2}$ |
|-----|-------|-----|------------|-------------------|
| N-S | 7.59 | 154 | 3.811 | 0.020 |
| E-W | 7.73 | 156 | 4.242 | 0.020 |

| No. and Date | Phase | Green. Time h. m. s. | Per. s. | Amplitude | | Dist. Km. | Remarks. |
|--------------------|---|---|------------|-----------|-------|--------------|---|
| | | | | N | E | | |
| 1930 | | | | μ | μ | | |
| No. 33 Feb. 1st | iPNE iSNE F | 5 44 48 5 45 28 5 58 | | | | 295 | |
| No. 34 Feb. 1st | ePNE iSNE F | 11 08 35 11 09 51 11 21 | | | | 683 | O=11:05:47 |
| No. 35 Feb. 1st | ePNE iSNE F | 16 39 22 16 39 56 16 52 | | | | 245 | |
| No. 36 Feb. 2nd | iPN PR ₁ E iSNE PSNE mE F | 15 06 01 15 08 33 15 14 14 15 14 34 15 17 15 16 24 | 7.3 | | 10 | 6678 | O=14:55:51. Aleutian Islands by Zikawei, Hongkong, Batavia, Manila. |
| No. 37 Feb. 3rd | eNE F | 2 50 48 3 24 | | | | | |
| No. 38 Feb. 3rd | iPNE iSNE F | 17 01 02 17 01 17 17 06 | i | 20 | 20 | 117 | |
| No. 39 Feb. 5th | iPNE iSN F | 16 48 08 16 48 41 17 04 | | | | 240 | |
| No. 40 Feb. 5th | eNE F | 20 46 21 09 | | | | | |
| No. 42 Feb. 7th | ePNE PR ₂ N? SNE? iLE F | 16 40 15 16 41 44 16 45 44 16 50 00 17 43 | | | | 3890? | O=16:33:05. West coast of Sumatra according to Batavia. |
| No. 43 Feb. 8th | eNE F | 6 54 7 17 | | | | | |
| No. 44 | eNE F | 9 40 00 9 51 | | | | | Disturbed by micro-seisms. |

BULLETINS RECEIVED

FEBRUARY

1930

STATIONS

BULLETINS

| | | |
|-------------------------|-----------|---|
| Wellington- | - - - - - | Principal earthquakes of December 10th to 28th, 1929. |
| Belgium - | - - - - - | May 22nd to September 16th, 1929. |
| Fordham, New York - | - - - - - | October 1st to December 18th, 1929. |
| La Paz, Bolivia - | - - - - - | May 1st to September 3rd, 1929. |
| Florissant, St. Louis - | - - - - - | July 14 to October 4, 1929. |
| Saint Louis, J.S.A. - | - - - - - | Preliminary Bulletin of the earthquake of December 17, 1929. |
| Vienna- | - - - - - | July 15 to September 24, 1929. |
| Graz- | - - - - - | September 1 to November 1, 1929. |
| Lemberg - | - - - - - | March 8 to October 4, 1929. |
| Kobe- | - - - - - | July to September, 1929. |
| Tananarive- | - - - - - | June, July and August, 1929. |
| Melbourne - | - - - - - | October 4 to December 31, 1929. |
| Sydney- | - - - - - | Preliminary Bulletin of the earthquake of January 18th, 1930. |
| Hongkong- | - - - - - | Principal earthquakes of January, 1930. |
| Upsala- | - - - - - | Seismographic records of the years 1924 to 1927. |
| Hamburg - | - - - - - | October, November and December, 1929 |
| Phu-Lien- | - - - - - | July to October, 1929. |
| Stuttgart - | - - - - - | July to December, 1929. |
| Ottawa- | - - - - - | December, 1929. |
| U.S.C.G.S.- | - - - - - | January to March, 1927. |
| STRASBOURG: | | |
| L'Institut - | - - - - - | December, 1929. |
| Bureau Central - | - - - - - | December, 1929. |
| Union International- | - - - - - | December, 1929. |
| Parc Saint Maur - | - - - - - | December, 1929. |
| Washington- | - - - - - | December, 1929. |
| Batavia - | - - - - - | Principal earthquakes, January, 1930 |
| Taihoku - | - - - - - | Jan. 1st to Feb. 3rd, 1930. |
| Zikawei - | - - - - - | October 21 to November 20, 1929, and Prin. Earthquakes of Jan., 1930. |
| Granada - | - - - - - | Oct. 19 to Dec. 31, 1929. |
| SPAIN: | | |
| Toledo- | - - - - - | September and October, 1929. |
| Almeria - | - - - - - | September and October, 1929. |
| Malaga- | - - - - - | September and October, 1929. |
| Alicante- | - - - - - | September and October, 1929. |
| Kew - | - - - - - | December, 1929. |
| Apia, Samoa - | - - - - - | July, August and September, 1929. |

MIGUEL SELGA S. J.,
 Director, Weather Bureau,
 Manila, Philippine Islands.

WILLIAM C. REPETTI, S. J.,
 Seismologist.
 CESÁREO DULUENA,
 Asst. Seismologist.

MANILA, P. I.

SEISMOLOGICAL BULLETIN OF THE OBSERVATORY.--Continued.

| No. and Date | Phase | Green. Time | | | Per. s. | Amplitude | | Dist. Km. | Remarks |
|--------------|-------|-------------|----|----|---------|-----------|---|-----------|--|
| | | h. | m. | s. | | N | E | | |
| 1930 | | | | | | | | | |
| No. 45 | iPNE | 17 | 14 | 20 | | | | 250 | Northern Luzon. Disturbed by microseisms. |
| Feb. 11th | iSNE | 17 | 14 | 55 | | | | | |
| | F | 17 | 37 | | | | | | |
| No. 46 | PNE | 4 | 21 | 00 | | | | 320 | Begins in minute gap. Disturbed by microseisms. |
| Feb. 12th | iSN | 4 | 21 | 42 | | | | | |
| | F | 4 | 33 | | | | | | |
| No. 47 | eNE | 6 | 41 | 32 | | | | | Disturbed by microseisms. |
| Feb. 12th | F | 7 | 35 | | | | | | |
| No. 48 | iPE | 18 | 50 | 52 | | | | 3067 | O=18:44:49 |
| Feb. 14th | eSN | 18 | 55 | 28 | | | | | |
| | F | 19 | 22 | | | | | | |
| No. 49 | PNE | 20 | 52 | 30 | | | | 8440 | O=20:40:45. 30° S; 175° W by Batavia, Manila and Hongkong. |
| Feb. 14th | iSNE | 21 | 02 | 12 | | | | | |
| | PSN | 21 | 02 | 41 | | | | | |
| | F | 22 | 05 | | | | | | |
| No. 51 | ePNE | 5 | 13 | 15 | | | | | Disturbed by microseisms. |
| Feb. 17th | F | 5 | 39 | | | | | | |
| No. 52 | ePNE | 22 | 56 | 50 | | | | 345 | Disturbed by microseisms. |
| Feb. 17th | iSNE | 22 | 57 | 35 | | | | | |
| | F | 23 | 14 | | | | | | |
| No. 53 | ePNE | 0 | 34 | 56 | | | | 117 | |
| Feb. 18th | iSNE | 0 | 35 | 11 | | | | | |
| No. 54 | ePNE | 0 | 40 | 09 | | | | 117 | No. 53 still recording. |
| Feb. 18th | iSNE | 0 | 40 | 24 | | | | | |
| | F | 0 | 52 | | | | | | |
| No. 57 | ePNE | 13 | 21 | 24 | | | | 180 | |
| Feb. 19th | iSNE | 13 | 21 | 47 | | | | | |
| | F | 13 | 26 | | | | | | |
| No. 58 | eNE | 19 | 31 | 33 | | | | 4567? | O=19:23:34? |
| Feb. 20th | S?NE | 19 | 37 | 44 | | | | | |
| | F | 20 | 03 | | | | | | |
| No. 59 | ePNE | 6 | 06 | 44 | | | | | |
| Feb. 21st | F | 6 | 17 | | | | | | |
| No. 60 | ePNE | 18 | 50 | 27 | | | | 120 | |
| Feb. 22nd | iSNE | 18 | 50 | 42 | | | | | |
| | F | 18 | 54 | | | | | | |
| No. 61 | eNE | 19 | 54 | | | | | | |
| Feb. 22nd | F | 20 | 04 | | | | | | |
| No. 63 | ePN | 15 | 46 | 55 | | | | 640 | Epicenter in Mindamao Sea. |
| Feb. 23rd | eSN | 15 | 48 | 07 | | | | | |
| | F | 16 | 11 | | | | | | |

M A N I L A , P . I .

SEISMOLOGICAL BULLETIN OF THE OBSERVATORY.--Continued.

| No. and Date | Phase | Green. Time | | | Per. s. | Amplitude | | Dist. Km. | Remarks. |
|---------------------|-------------------|-------------|----|----|---------|-----------|-------|-----------|---|
| | | h. | m. | s. | | N | E | | |
| 1930 | | | | | | μ | μ | | |
| No. 64 Feb. 24th | iPNE | 20 | 54 | 07 | | | | 1330 | O=20:51:14. 3° N; 118° E by Batavia, Amboina, Hongkong, Manila. |
| | mE | 20 | 55 | 20 | 6.9 | | 80 | | |
| | iSNE | 20 | 56 | 25 | | | | | |
| | SR ₁ N | 20 | 56 | 40 | | | | | |
| | mE | 20 | 57 | 24 | 8.6 | | 95 | | |
| | L | 20 | 57 | 37 | | | | | |
| | mN | 20 | 58 | 01 | 7.2 | 95 | | | |
| | mE | 20 | 59 | 27 | 7.0 | | 65 | | |
| | F | 22 | 13 | | | | | | |
| No. 65 Feb. 25th | ePNE | 5 | 17 | 53 | | | | 1411 | O=5:14:51 |
| | iSN | 5 | 20 | 19 | | | | | |
| | F | 5 | 54 | | | | | | |
| No. 69 Feb. 28th | ePNE | 1 | 53 | 47 | | | | 135 | |
| | iSNE | 1 | 54 | 04 | | | | | |
| | F | 2 | 01 | | | | | | |
| No. 71 Feb. 28th | ePNE | 22 | 54 | 27 | | | | 2420 | O=22:49:28 |
| | iSE | 22 | 58 | 19 | | | | | |
| | F | 23 | 49 | | | | | | |

Nine insignificant or undecipherable disturbances on the following days of February: 7th, 16th, 18th, 19th, 23rd, 25th, 27th (2) and 28th.

A D D I T I O N A L D A T A .

December 27th, 1929. Epicenter: 4° S; 125° E by Batavia, Manila, Hongkong, Melbourne.

Manila, 2110 Km., O=13:32:03.

MANILA, P. I.

SEISMOLOGICAL BULLETIN OF THE OBSERVATORY

$\phi=14^{\circ} 34' 42''$ N. $\lambda=120^{\circ} 58' 41''$ E. $h=2.40$ m. Alluvium.

Wiechert. $M=1000$ Kg.

Galitzin-Wilip.

| | T_0 | V | ϵ | $\frac{r}{T_0^2}$ |
|-----|-------|-----|------------|-------------------|
| N-S | 7.76 | 154 | 3.822 | 0.019 |
| E-W | 8.01 | 144 | 3.879 | 0.017 |

| | T_0 |
|-----|-------|
| N-S | 12.3 |
| E-W | 11.8 |
| Z | 12.0 |

| No. and Date | Phase | Green. Time h. m. s. | Per. s. | Amplitude | | | Dist. Km. |
|--------------------|---|---|------------|-----------|-------|-------|---|
| | | | | N | E | Z | |
| 1930 | | | | μ | μ | μ | |
| No. 74 March 2 | iPNE iSNE iLNE F | 15 29 08 15 31 06 15 32 14 16 03 | | | | | 1133 $\phi=15:26:39$ |
| No. 75 Mar. 3rd | iPNE iSNE | 10 28 44 10 29 03 | | | | | 150 |
| No. 77 Mar. 4th | ePNE eSN iLN F | 12 40 22 12 43 47 12 45 32 13 47 | | | | | 2030 $\phi=12:36:06$ |
| No. 79 Mar. 6th | ePNE iSNE F | 3 35 50 3 38 32 4 15 | | | | | 1556 $\phi=3:32:30$ $25^{\circ} 25' N; 132^{\circ}$ $20' E$ by Zikawei, Manila. |
| No. 80 Mar. 6th | ePNE iSNE F | 6 27 05 6 27 29 6 33 | | | | | 190 |
| No. 81 Mar. 6th | ePNE iSNE F | 6 35 54 6 36 22 6 41 | | | | | 215 |
| No. 82 Mar. 6th | ePE PR ₂ N SE L?E F | 15 46 51 15 51 51 15 56 25 16 11 59 17 08 | | | | | 8110 $\phi=15:35:24$ New Zealand. |
| No. 83 Mar. 6th | iPNE iSNE F | 17 49 27 17 49 43 17 55 | | | | | 125 |
| No. 84 Mar. 7th | ePNE iSNE F | 2 53 53 2 54 09 3 09 | | | | | 125 From Galitzin. No time in Wiechert. |
| No. 85 Mar. 7th | ePE e?PN iSNE SR ₁ NE iLNE | 10 56 00 10 56 21? 10 59 09 10 59 26 11 00 43 | | | | | 1855 $\phi=10:52:04. 28^{\circ}$ $12' N; 130^{\circ} 30' E$ by Manila and Zi- kawei. From Galitzin. |

M A N I L A , P . I .

SEISMOLOGICAL BULLETIN OF THE OBSERVATORY.--Continued.

| No. and Date | Phase | Green. Time h. m. s. | Per. S. | Amplitude | | | Dist. Km. | Remarks. |
|--------------|-------------------|-------------------------|------------|-----------|----|---|--------------|---|
| | | | | N | E | Z | | |
| 1930 | | | | μ | μ | μ | | |
| No. 86 | eE | 4 06 | | | | | | |
| Mar. 8th | F | 4 46 | | | | | | From Galitzin. Panama. |
| No. 87 | ePNE | 10 21 06 | | | | | 225 | From Galitzin. |
| Mar. 8th | iSE | 10 21 33 | | | | | | |
| | eSN | 10 21 36 | | | | | | |
| | F | 10 50 | | | | | | |
| No. 89 | iPNE | 16 34 31 | | | | | 3900 | |
| Mar. 10th | PR ₁ E | 16 35 40 | | | | | | O=16:27:20 44°N; 147°E approx. Ba- tavia, Manila, Zi- kawei. |
| | iSNE | 16 40 01? | | 20 | 45 | | | |
| | iN | 16 41 17 | 5.7 | 15 | | | | |
| | mE | 16 41 57 | 8.2 | | 20 | | | |
| | SR ₃ N | 16 43 14 | | | | | | |
| | iLNE | 16 44 34 | | | | | | S in minute gap. |
| | F | 17 21 | | | | | | |
| No. 91 | ePN | 22 57 48 | | | | | 175 | |
| Mar. 10th | iSN | 22 58 10 | | | | | | |
| | F | 23 00 | | | | | | |
| No. 92 | ePNE | 4 36 47 | | | | | 320 | Felt at Bangued, Luzon. |
| Mar. 11th | iSNE | 4 37 32 | | | | | | |
| | F | 4 48 | | | | | | |
| No. 93 | iPZ | 19 25 43 | | | | | 1345 | |
| Mar. 11th | iSN | 19 28 02 | | | | | | |
| | LN | 19 29 12 | | | | | | |
| | F | 20 08 | | | | | | |
| No. 94 | ePNE | 3 04 59 | | | | | 415 | Felt at Iloilo. |
| Mar. 12th | iSNE | 3 05 51 | | | | | | |
| | F | 3 25 | | | | | | |
| No. 95 | ePNE | 13 26 19 | | | | | 1490 | |
| Mar. 12th | iSE | 13 28 53 | | | | | | |
| | F | 13 53 | | | | | | |
| No. 96 | ePNE | 4 36 08 | | | | | 125 | |
| Mar. 14th | iSNE | 4 36 24 | | | | | | |
| | F | 4 42 | | | | | | |
| No. 99 | ePNE | 1 35 30 | | | | | 495 | |
| | iSNE | 1 36 28 | | | | | | |
| | iSN | 1 36 47 | | | | | | |
| | F | 2 15 | | | | | | |
| No. 100 | iPN | 3 59 50 | | | | | 1510 | O=3:56:35 |
| Mar. 15th | iSN | 4 02 26 | | | | | | |
| | L | 4 03 44 | | | | | | |
| | M | 4 05 08 | | | | | | |
| | F | 5 17 | | | | | | |

MANILA, P. I.

SEISMOLOGICAL BULLETIN OF THE OBSERVATORY.--Continued.

| No. and Date | Phase | Green. Time h. m. s. | Per. S. | Amplitude | | | Dist. Km. | Remarks. |
|----------------------|---------------------------|--|------------|-----------|---------|-------|--------------|--|
| | | | | N | E | Z | | |
| 1930 | | | | μ | μ . | μ | | |
| No. 101 Mar. 15th | ePN iSN L M F | 7 00 37 7 06 25 7 11 22 7 14 34 8 09 | | | | | 4190 | 0=6:53:05 |
| No. 102 Mar. 16th | ePN iSN F | 3 00 50 3 01 48 3 25 | | | | | 490 | Felt at Aparri. |
| No. 103 Mar. 16th | ePN iSN F | 5 00 46 5 01 46 6 10 | | | | | 510 | Felt in N Luzon. |
| No. 104 Mar. 16th | iPN iSN F | 20 47 49 20 48 08 20 55 | | | | | 150 | |
| No. 106 Mar. 17th | ePN iSN F | 12 53 14 12 53 31 13 02 | | | | | 135 | |
| No. 110 Mar. 19th | ePNE iSNE F | 3 04 04 3 04 30 3 11 | | | | | 200 | |
| No. 111 Mar. 19th | eP iSN F | 17 42 13 17 42 26 17 48 | | | | | 100 | |
| No. 113 Mar. 21st | iPN iSN F | 10 03 20 10 03 40 10 26 | | | | | 160 | Compression from SW. Felt in Lubang Island, Mindoro Prov. |
| No. 114 Mar. 21st | ePNE iSN F | 16 04 40 16 05 00 16 20 | | | | | 160 | |
| No. 115 Mar. 22nd | ePNE eSNE F | 8 55 53 9 01 44 9 38 | | | | | 4244 | |
| No. 116 Mar. 24th | ePNE iSNE F | 14 19 19 14 19 37 14 22 | | | | | 145 | |
| No. 117 Mar. 25th | ePEZ iSEZ F | 20 43 04 20 44 18 20 52 | | | | | 660 | |
| No. 118 Mar. 26th | ePEZ iSEZ F | 0 01 14 0 01 36 0 12 | | | | | 175 | |

MANILA, P. I.

SEISMOLOGICAL BULLETIN OF THE OBSERVATORY.--Continued.

| No. and Date | Phase | Green. Time | | | Per. s. | Amplitude | | | Dist. Km. | Remarks. |
|----------------------|---------------------|-------------|----------|----|---------|-----------|---|---|-----------|--|
| | | h. | m. | s. | | N | E | Z | | |
| 1930 | | | | | | μ | μ | μ | | |
| No. 119 Mar. 26th | iPNE | 7 | 17 | 12 | | | | | 2665 | O=7:11:48 Dilata- tion, 8° 30' S; 127° 30' E by Batavia, Ma- nila, Riverview, Hongkong, Zikawei |
| | iN | 7 | 17 | 21 | | | | | | |
| | PR ₁ E | 7 | 17 | 44 | | | | | | |
| | PR ₃ N | 7 | 17 | 54 | | | | | | |
| | iSNE | 7 | 21 | 22 | | | | | | |
| | mN | 7 | 21 | 42 | 14.1 | 900 | | | | |
| | L?N | 7 | 24 | 14 | | | | | | |
| | mN F | 7 9 | 25 35 | 41 | 9.1 | 330 | | | | |
| No. 120 Mar. 26th | iPNEZ | 11 | 37 | 11 | | | | | 2665 | O=11:31:47 Comp- ression. |
| | PR ₁ E | 11 | 37 | 46 | | | | | | |
| | PR ₂ N | 11 | 37 | 51 | | | | | | |
| | PR ₃ N | 11 | 37 | 54 | | | | | | |
| | iSEZ F | 11 12 | 41 46 | 21 | | | | | | |
| No. 121 Mar. 26th | iPNZ | 20 | 20 | 46 | | | | | 2665 | O=20:15:22 |
| | iPE | 20 | 20 | 48 | | | | | | |
| | iSNEZ | 20 | 24 | 59 | | | | | | |
| | F | 21 | 35 | | | | | | | |
| No. 123 Mar. 27th | ePNEZ | 12 | 34 | 36 | | | | | 1490 | |
| | SNE | 12 | 37 | 10 | | | | | | |
| | LNE | 12 | 38 | 28 | | | | | | |
| | F | 12 | 58 | | | | | | | |
| No. 125 Mar. 30th | PNEZ | 0 | 31 | 00 | | | | | 2190? | Begins in minute gap. |
| | PR ₁ NEZ | 0 | 31 | 18 | | | | | | |
| | iSNEZ | 0 | 34 | 36 | | | | | | |
| | LNEZ | 0 | 36 | 21 | | | | | | |
| | F | 1 | 45 | | | | | | | |
| No. 126 Mar. 30th | iPNEZ | 8 | 45 | 30 | | | | | 2733 | O=8:39:59 |
| | iSNEZ | 8 | 49 | 44 | | | | | | |
| | SR ₂ E | 8 | 51 | 04 | | | | | | |
| | iLNZ | 8 | 52 | 15 | | | | | | |
| | F | 10 | 36 | | | | | | | |
| No. 127 Mar. 30th | iPNEZ | 15 | 24 | 32 | | | | | 2655 | O=15:19:10 Dila- tation. Same epicenter as No. 119. |
| | PR ₁ E | 15 | 25 | 00 | | | | | | |
| | PR ₁ Z | 15 | 25 | 02 | | | | | | |
| | PR ₂ E | 15 | 25 | 05 | | | | | | |
| | PR ₂ Z | 15 | 25 | 06 | | | | | | |
| | iSN | 15 | 28 | 42 | | | | | | |
| | iS?Z | 15 | 28 | 42 | | | | | | |
| | F | 17 | 50 | | | | | | | |
| No. 128 Mar. 31st | ePNE | 7 | 15 | 24 | | | | | | |
| | F | 7 | 27 | | | | | | | |
| No. 129 Mar. 31st | iN | 12 | 48 | 21 | | | | | | |
| | eE | 12 | 48 | 21 | | | | | | |
| | F | 13 | 14 | | | | | | | |

M A N I L A, P . I .

SEISMOLOGICAL BULLETIN OF THE OBSERVATORY.--Continued.

| No. and Date | Phase | Green. Time h. m. s. | Per. s. | Amplitude | | | Dist. Km. | Remarks. |
|--------------|-------|-------------------------|------------|-----------|-------|-------|--------------|---|
| | | | | N | E | Z | | |
| 1930 | | | | μ | μ | μ | | |
| No. 130 | eNE | 13 25 | | | | | | |
| Mar. 31st | F | 13 46 | | | | | | |
| No. 131 | iPNEZ | 22 36 11 | | | | | 165 | Compression. Felt in Lubang Is- land, Mindoro Prov. |
| Mar. 31st | iSNEZ | 22 36 32 | | | | | | |
| | F | 22 52 | | | | | | |
| No. 132 | iPEZ | 23 50 16 | | | | | 1622 | |
| Mar. 31st | iSE | 23 53 04 | | | | | | |
| | F | 24 34 | | | | | | |

Seventeen insignificant or undecipherable disturbances on the following days of March: 1st, 2nd, 3rd, 4th, 9th, 10th, 11th, 14th(2), 15th, 17th(2), 18th(2), 20th, 27th and 28th.

CORRECTION TO FEBRUARY REPORT.

Feb. 14th iPE 18:50:52
iSN 19:01:17 Dist. 9200 Km. O=18:38:29

During the month of March the seismic equipment of the Observatory was augmented by the addition of a complete set of Galitzin-Wilip seismographs. The recording drums are located on the ground floor of the astronomical building. The vertical component is installed in an inner room of the same building where satisfactory constancy of temperature is obtained. The connecting circuit to the galvanometer is about 90 feet in length. The horizontal components are installed in the seismic room proper on the ground floor of the meteorological building. The circuits to the galvanometers are 430 feet in length and are protected from direct exposure to the sun. The above arrangement was necessitated chiefly by limitations of space but has proved very satisfactory. The seismographs were adjusted to aperiodicity according to the values furnished by the maker. The periods are approximately 12 seconds. The other constants have not yet been determined. The timing circuit is controlled by a Synchronome clock.

BULLETINS RECEIVED

MARCH, 1930

We thankfully acknowledge the receipt of the following and hope for their continuance in the future.

STATIONS

BULLETINS

Kew - - - - - January, 1930.
Wellington- - - - - Preliminary Bulletin of the earth-
quakes of November 17 and 23,
1929.
U.S.C.G.S.
Tucson- - - - -September and October, 1929.
Chicago - - - - -September and October, 1929.
Honolulu- - - - -September and October, 1929.
Sitka - - - - -September and October, 1929.
Charlottesville - - - - -September and October, 1929.
Ottawa- - - - -January, 1930.
STRASBOURG:
L'Institut- - - - -January, 1930.
Bureau Central- - - - -January, 1930.
Union International - - - - -January, 1930.
Parc Saint Maur - - - - -January, 1930.
Washington- - - - -January, 1930.
Tokyo - - - - -Preliminary Report of earthquakes,
from July 5 to December 17, 1929.
San Fernando- - - - -January and February, 1930.
Taihoku - - - - -February 3 to March 8, 1930.

MI GUEL SELGA, S.J.,
Director, Weather Bureau,
Manila, Philippine Islands.

William C. Repetti, S.J.,
Seismologist.