

British Association for the Advancement  
of Science.

SEISMOLOGICAL COMMITTEE.

Observations and formal business to  
J. H. BURGESS,  
Earthquake Observatory,  
SHIDE, Isle of Wight.

Special inquiries to  
Prof. H. H. TURNER,  
University Observatory,  
OXFORD.

Monthly Bulletin for January, 1913.

In place of the Circulars hitherto issued by the Shide Observatory twice a year, it is proposed to issue Monthly Bulletins containing a list of Earthquakes recorded at the Milne Stations, and at those Foreign Stations which send lists to Shide. The present list is somewhat in arrear owing to the death of Prof. Milne, but it is hoped to make up the arrears as soon as possible.

The Stations are arranged in the order of longitude, starting from the Azores and travelling eastward.

The Russian Stations and those using the Wiechert instrument usually publish several maxima. For the purpose of this Bulletin the first is always given; if the amplitude of this maximum is not the greatest, then the maximum having the greatest amplitude is also given.

Observers are asked to send a copy of their Registers each month.

The time employed is Greenwich mean time (civil) expressed in hours, minutes, and decimals of a minute; 24 or 0 hours = midnight.

The amplitudes recorded in the 6th column refer only to the Milne instruments, and are given in millimetres and decimals of a millimetre.

LIST OF STATIONS, arranged in order of Longitude,  
starting from the Azores and travelling Eastward :—

STATION.	Latitude.	Longitude.	STATION.	Latitude.	Longitude.
1. Azores .. ..	37°44' N.	25°41' W.	46. Beirut .. ..	33°54' N.	35°28' E.
2. Cape Verde ..	16.30 N.	24. 0 W.	47. Ksara .. ..	33.49 N.	35.52 E.
3. Ascension ..	7.57 S.	14.21 W.	48. Makeyevka ..	48. 2 N.	37.59 E.
4. Cork .. ..	51.59 N.	8.28 W.	49. Tiflis .. ..	41.43 N.	44.47 E.
5. Rio Tinto ..	37.46 N.	6.38 W.	50. Baku .. ..	40.23 N.	49.54 E.
6. San Fernando	36.27 N.	6.12 W.	51. Seychelles ..	4. 5 S.	55. 5 E.
7. St. Helena ..	15.55 S.	5.44 W.	52. Mauritius ..	20. 5 S.	57.53 E.
8. Paisley .. ..	55.50 N.	4.26 W.	53. Tashkent ..	41.19 N.	69.17 E.
9. Granada .. ..	37.11 N.	3.36 W.	54. Bombay .. ..	18.53 N.	72.48 E.
10. Eskdalemuir	55.19 N.	3.12 W.	55. Kodaikānal ..	10.14 N.	77.27 E.
11. Edinburgh ..	55.55 N.	3.11 W.	56. Colombo ..	6.56 N.	79.50 E.
12. Bidston .. ..	53.24 N.	3. 4 W.	57. Calcutta ..	22.32 N.	88.20 E.
13. Stonyhurst ..	53.50 N.	2.28 W.	58. Cocos .. ..	12.12 S.	96.54 E.
14. W. Bromwich	52.32 N.	2. 0 W.	59. Irkutsk .. ..	52.16 N.	104.19 E.
15. Shide .. ..	50.41 N.	1.17 W.	60. Batavia .. ..	6.11 S.	106.47 E.
16. Haslemere ..	51. 5 N.	0.43 W.	61. Perth .. ..	31.57 S.	115.50 E.
17. Guildford ..	51.15 N.	0.35 W.	62. Tsingtau ..	36. 4 N.	120.19 E.
18. Kew .. ..	51.28 N.	0.19 W.	63. Manila .. ..	14.34 N.	120.58 E.
19. Accra .. ..	5.31 N.	0.11 W.	64. Zi-ka-wei ..	31.11 N.	121.25 E.
20. Paris .. ..	48.48 N.	2.30 E.	65. Osaka .. ..	34.39 N.	135.26 E.
21. Aachen .. ..	50.46 N.	6. 4 E.	66. Adelaide ..	34.56 S.	138.35 E.
22. Strassburg ..	48.35 N.	7.46 E.	67. Tokio .. ..	35.42 N.	139.45 E.
23. Heidelberg ..	49.24 N.	8.24 E.	68. Melbourne ..	37.50 S.	144.58 E.
24. Göttingen ..	31.33 N.	9.58 E.	69. Sydney .. ..	33.52 S.	151.12 E.
25. Hamburg ..	53.33 N.	9.59 E.	70. Riverview ..	33.52 S.	151.12 E.
26. Florence ..	37.11 N.	11.15 E.	71. Christchurch	43.31 S.	172.37 E.
27. Innsbruck ..	47.16 N.	11.24 E.	72. Wellington ..	41.16 S.	174.48 E.
28. Padova .. ..	45.24 N.	11.52 E.	73. Fiji .. ..	20. 0 S.	178. 0 E.
29. Trieste .. ..	45.38 N.	13.46 E.	74. Samoa .. ..	13.48 S.	171.45 W.
30. Monte Cassino	41.29 N.	13.48 E.	75. Fanning Island	4. 0 N.	159.40 W.
31. Pola .. ..	44.51 N.	13.50 E.	76. Honolulu ..	21.19 N.	158. 3 W.
32. Pompeii .. ..	40.44 N.	14.30 E.	77. Victoria ..	48.23 N.	123.19 W.
33. Laibach .. ..	46. 3 N.	14.31 E.	78. Santa Clara ..	37.26 N.	121.57 W.
34. Malta .. ..	35.54 N.	14.31 E.	79. St. Louis ..	38.38 N.	90.14 W.
35. Graz .. ..	47. 4 N.	15.27 E.	80. Toronto ..	43.39 N.	79.23 W.
36. Vienna .. ..	48.14 N.	16.21 E.	81. Lima .. ..	12. 3 S.	77. 3 W.
37. Breslau .. ..	51. 4 N.	16.59 E.	82. Baltimore ..	39.17 N.	76.37 W.
38. Sarajevo .. ..	43.52 N.	18.25 E.	83. Ottawa .. ..	45.23 N.	75.42 W.
39. Cape Town ..	33.56 S.	18.28 E.	84. Harvard University	42.22 N.	71. 7 W.
40. Budapest ..	47.29 N.	19. 4 E.	85. La Paz .. ..	16.29 S.	68. 9 W.
41. Königs-berg ..	54.49 N.	20.29 E.	86. Bermuda ..	32.19 N.	64.51 W.
42. Lemberg .. ..	49.20 N.	24. 1 E.	87. Pilar .. ..	31.40 S.	63.51 W.
43. Czernowitz ..	48.18 N.	25.56 E.	88. Trinidad ..	10.40 N.	61.30 W.
44. Pulkovo .. ..	59.46 N.	30.19 E.	89. Chacarita ..	34.35 S.	58.28 W.
45. Cairo .. ..	29.51 N.	31.30 E.	90. Fernando Noronha	3.50 S.	32.25 W.

The letters in the 7th column stand for: A. = Alfani; B. = Bosch; Bif. = Bifilar; B.O. = Bosch-Omori; C. = Cartuja; C.O. = Cartuja-Omori; G. = Galitzin; M. = Milne; Ma. = Mainka; O.A. = Omori-Alfani; V. = Vicentini; W. = Wiechert.

Guildford and West Bromwich use a modification of the Milne.

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
<b>January 5</b>							
Edinburgh	E.W.	—	—	4 49·3	—	M.	—
Shide	"	4 41·3	—	4 49	—	W.	—
Aachen	"	4 44	—	—	—	—	—
Hamburg	"	4 44	—	—	—	—	—
Padova	N.S.	4 37·7	4 43·9	—	—	V.	—
Triest	"	4 37·7	4 39·5	4 40·5	—	W.	—
Laibach	"	4 38·8	—	4 41·3	—	G.	—
Graz	"	4 37·2	—	4 41·2	—	W.	—
Vienna	"	4 37·6	—	4 41·7	—	—	—
Breslau	"	4 39	—	4 45	—	"	—
Sarajevo	E.W.	4 36·4	—	4 38·3	—	"	—
Budapest	"	—	—	4 41	—	"	—
Konigsberg	"	4 44·8	—	—	—	"	—
Pulkovo	"	4 39·4	4 43·6	4 47·5	—	G.	—
Cairo	"	4 40	—	4 49	0·2	M.	—
Rio Tinto	"	—	—	18 21	0·7	"	—
San Fernando	"	17 57	—	18 28·8	0·5	"	—
Paisley	"	17 45	—	18 20	0·4	"	—
Granada	"	—	—	18 19·6	—	Bif.	—
Eskdalemuir	"	17 45	—	18 24·9	0·5	M.	—
Edinburgh	"	17 44	—	18 22	0·2	"	—
Bidston	"	17 54·7	—	18 11·8	0·4	"	—
Stonyhurst	"	17 45·6	—	18 20·5	0·2	"	—
West Bromwich	"	17 45·4	17 53	18 19	1·0	"	—
Shide	N.S.	17 39·5	—	18 13·5	1·5	"	—
Haslemere	E.W.	—	—	18 18·9	1·0	"	—
Guildford	"	17 37·6	—	18 18·3	0·8	"	—
Kew	"	17 45·1	—	18 12·6	0·9	"	—
Paris	"	17 44·7	—	18 12·2	—	"	—
Aachen	"	—	17 44·3 ?	18 9·5	—	W.	—
Strassburg	"	17 49 ?	—	18 10 ?	—	"	—
Heidelberg	"	17 44·4	—	18 11·5	—	"	—
Gottingen	"	17 44·1	—	18 10	—	"	—
Hamburg	"	17 43·8	—	18 8·6	—	"	—
Florence	"	17 42·1	—	18 9·6	—	A.	—
Padova	"	—	—	18 16·2	—	V.	—
Triest	"	17 44·2	—	18 10·3	—	W.	—
Laibach	"	17 44·1	17 53·8	18 8·3	—	G.	—
Graz	"	17 33·9	17 44·2	18 9·6	—	W.	—
Vienna	"	17 33·4	—	18 7	—	—	—
Breslau	"	17 34	17 43·7	18 12	—	"	—
Sarajevo	"	17 32·7 ?	17 44·2	18 13·9	—	"	—
Konigsberg	"	17 40·2	—	18 5·2	—	"	—
Lemberg	"	17 29·4	—	18 10·3	—	B.O.	—
Czernowitz	"	—	—	18 9·6	—	M.A.	—
Pulkovo	"	17 32·2	17 41·2	18 0·3	—	G.	Chinese Sea ?
Cairo	N.S.	17 35	17 45	18 14·2	0·5	M.	—
Makeyevka	"	—	17 41·6	18 3·2	—	G.	—
Kodaikanal	E.W.	17 42·4	17 54·4	18 1·7	0·6	M.	—
Colombo	"	17 41·4	—	17 35·5	0·3	"	—
Calcutta	"	17 28·5	—	17 45·3	—	"	—
Irkutsk	"	17 27·2	17 32·1	17 37·2	—	G.	Kiu-siu, Japan.
Batavia	"	17 32	—	17 39·6	—	W.	—
Tsingtau	"	17 23·7	17 26·1	17 27·9	—	"	—
Manila	"	17 24·4	17 29	17 34·8	—	"	—
Zi-ka-wei	"	17 23	—	17 43·7	—	"	—
Osaka	N.S.	17 22·5	—	17 30·5	—	G.	—
Honolulu	E.W.	—	—	17 28·9	—	O.	—
				18 14	0·1	M.	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
<b>January 7</b>							
Corr	E.W.	—	—	23 51	1·0	M.	—
Rio Tinto	"	23 46	—	23 56	0·4	"	—
San Fernando	N.S.	23 27·7	—	23 54	0·8	"	—
Paisley	E.W.	23 7	—	23 48·3	0·9	"	—
Granada	"	—	—	23 54·4	—	Bif.	—
Eskdalemuir	"	23 11	—	23 48	1·1	M.	—
Edinburgh	"	23 5·2	—	23 48·1	1·1	"	—
Bidston	"	23 6·2	23 15·3	23 43·7	1·4	"	—
Stonyhurst	"	23 9·5	—	23 43·8	0·8	"	—
West Bromwich	"	—	—	23 50·8	1·0	"	—
Shide	"	—	—	23 49	1·0	"	—
Haslemere	"	23 13·3	—	23 39·5	0·2	"	—
Guildford	"	—	—	23 51·5	1·0	"	—
Kew	"	23 5·7 ?	—	23 48	0·9	"	—
Paris	"	23 15·5	—	23 49·5	1·0	"	—
Aachen	"	—	—	23 43·4	0·7	"	—
Heidelberg	"	—	—	23 49·5	0·9	"	—
Gottingen	"	23 3·7	23 12	23 49·8	—	"	—
Hamburg	"	23 4	—	23 38	—	W.	—
Florence	"	—	—	23 46·5	—	"	—
Triest	"	23 35	—	23 44·7	—	"	—
Laibach	"	23 4	—	23 37·2	—	"	—
Graz	"	—	—	23 44·5	—	"	—
Vienna	"	23 30·6	23 35·6	23 41	—	A.	—
Breslau	"	—	—	23 8	—	W.	—
Budapest	"	23 4	23 12·1 ?	23 38·9	—	G.	—
Konigsberg	"	—	—	23 45·9	—	"	—
Czernowitz	"	—	—	23 46·1	—	W.	—
Pulkovo	"	23 3·5	23 34·5 ?	23 46	—	"	—
Cairo	"	23 3·6	23 14 ?	23 41·2	—	"	—
Makeyevka	"	23 3·3	—	—	—	"	—
Tiflis	"	23 3·1	23 13·3	23 37·4	—	"	—
Mauritius	"	—	—	23 40·1	—	"	—
Bombay	"	23 21·9	—	23 40	—	Ma.	—
Kodaikanal	"	23 2·1	23 11·6	23 27·9	—	"	—
Colombo	"	—	—	23 36·2	—	G.	Chinese Sea.
Calcutta	"	23 4	—	23 45	0·4	M.	—
Batavia	"	23 2·5	—	23 29·1	—	G.	—
Tsingtau	"	23 1·9	23 10·7	23 30	—	"	—
Manila	"	—	—	23 34·1	—	"	—
Zi-ka-wei	"	23 31	—	23 33	—	"	—
Osaka	E.W.	23 31	—	23 33	—	M.	—
Honolulu	"	23 5·6	—	23 19·6	0·6	"	—
Harvard Univ.	"	—	—	23 23·1	0·5	"	—
San Fernando	"	23 12·4	23 20·6	23 21·8	0·8	"	—
Paisley	"	23 5·3	—	23 20·5	0·5	"	—
Granada	"	22 43	—	23 10·1	—	"	—
Eskdalemuir	"	22 57·4	23 2·9	23 8·2	—	G.	Philippines.
	"	22 37·9	—	23 0	—	W.	—
	"	23 40·4	23 41·3	23 42	—	"	—
	"	22 54·2	22 56·8	23 58·4	—	"	—
	"	22 53·5	22 55·4	22 59·5	—	"	—
	"	22 53	22 54·8	23 4·7	—	"	Formosa.
	"	23 13·6	—	23 55·5	—	"	—
	"	22 54·9	—	—	—	"	—
	N.S.	23 6·2	—	23 5·2	—	O.	—
	E.W.	23 6·9	—	23 29·1	0·3	M.	—
	"	23 13·3	23 27·2	23 42·4	0·3	"	—
	"	23 58·3	—	—	—	"	—
	"	23 53·5	—	—	—	"	—
	"	23 52·9	—	—	—	B.O.	—
<b>January 8</b>							
San Fernando	E.W.	20 14·8	—	20 24·3	0·3	M.	—
Paisley	"	—	—	20 19·5	0·1	"	—
Granada	"	20 37	20 38	20 41·6	—	C.	—
Eskdalemuir	"	—	—	20 8	0·2	M.	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
<i>January 8, continued</i>							
Edinburgh	E.W.	20 4.6	—	20 14.3	0.1	M.	—
Bidston	"	20 1.5	—	20 10	0.3	"	—
Stonyhurst	"	20 7.5	—	20 9.7	0.2	"	—
West Bromwich	"	—	—	20 15	0.5	"	—
Shide	"	20 8	—	20 11	0.2	"	—
Haslemere	"	—	—	20 15	0.2	"	—
Guildford	"	20 7.4	—	20 11.7	1.1	"	—
Kew	"	20 7.1	—	20 10.9	0.3	"	—
Paris	"	20 5.7	—	—	—	"	—
Aachen	"	—	—	20 5	—	W.	—
Göttingen	"	—	—	20 3	—	"	—
Hamburg	"	20 0	—	—	—	"	—
Königsberg	"	—	—	20 6.3	—	"	—
Pulkovo	"	19 28.5	—	19 55.9	—	G.	—
Cairo	"	19 47	—	20 9	0.2	M.	—
Tiflis	"	19 27.5	—	19 56.8	—	G.	—
Tashkent	"	19 25.5?	—	—	—	"	—
Calcutta	"	19 38	—	19 36.6	—	M.	—
Irkutsk	"	19 23.3	19 28.6	19 36.8	—	G.	Bay of Bengal.
Tsingtau	"	19 20	19 22.8	19 25	—	W.	—
Manila	"	19 19.5	19 21.2	19 26.5	—	"	Formosa.
Zi-ka-wei	"	19 19.7	—	19 23	—	"	—
Osaka	N.S.	19 21.8	—	19 31.5	—	"	—
<i>January 9</i>							
Rio Tinto	E.W.	3 23	—	4 0	0.5	M.	—
San Fernando	"	3 51.2	—	4 1.2	1.0	"	—
Paisley	"	3 19	—	3 48.8	0.7	"	—
Granada	"	—	—	3 50.3	—	Bif.	—
Eskdalemuir	"	3 19	—	3 46	1.0	M.	—
Edinburgh	"	3 15.5	—	3 46.6	0.9	"	—
Bidston	"	3 19.1	—	3 48.3	1.6	"	—
Stonyhurst	"	3 19.8	—	3 48.3	1.0	"	—
West Bromwich	"	—	—	3 54	1.0	"	—
Shide	"	3 9.3?	—	3 54	1.5	"	—
Haslemere	"	3 45	—	3 51.3	0.8	"	—
Guildford	"	—	—	3 54.6	3.5	"	—
Kew	"	3 42.9	—	3 48.8	1.1	"	—
Paris	"	3 25	—	3 45	—	"	—
Aachen	"	3 18.6	—	3 42	—	W.	—
Heidelberg	"	—	—	3 50.5	—	"	—
Göttingen	"	3 18.1	—	3 42	—	"	—
Hamburg	"	3 18	—	3 41	—	"	—
Florence	"	3 38.3	—	3 43.6	—	A.	—
Vienna	"	3 7.5	3 18	3 49	—	"	—
Breslau	"	3 7.6	3 18.1	3 45.5	—	W.	—
Königsberg	"	3 17	—	3 44.7	—	"	—
Lemberg	"	3 24.4	—	3 46.1	—	B.O.	—
Czernowitz	"	3 2	—	3 53	—	Ma.	Formosa.
Pulkovo	"	3 6.5	3 15.7	3 31.5	—	G.	—
Cairo	"	3 6	—	3 48.2	0.3	M.	—
Tiflis	"	3 5.9	3 14.6	3 32.6	—	G.	—
Mauritius	"	—	—	3 38.4	—	"	—
Tashkent	"	3 3.7	—	3 38	—	M.	—
Kodaikanal	"	3 9.9	3 23.3	3 26.1	0.4	G.	—
Colombo	"	3 10.4	—	3 30	0.4	"	—
Irkutsk	"	3 1.5	3 6.6	3 12.4	—	G.	Liu-Kiu Islands.
Batavia	"	3 1.8	—	3 16	—	W.	—
Tsingtau	"	2 58.2	3 0.6	3 2.6	—	"	—
Manila	"	2 57.7	2 59.7	3 15.9	—	"	Formosa.
Zi-ka-wei	"	2 38.2	2 59.6	3 0.9	—	"	—
Osaka	N.S.	2 59.3	—	3 8.5	—	O.	—
Riverview	"	3 14.2	—	3 31.7	—	"	—
Honolulu	E.W.	3 16.3	—	3 42.7	0.2	M.	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
<i>January 9, continued</i>							
Edinburgh	E.W.	—	—	12 7.9	—	M.	—
Shide	"	11 50.7	—	11 56.7	0.1	"	—
Pulkovo	"	11 16.5	—	11 49.3	—	G.	—
Cairo	N.S.	11 57	—	—	—	M.	—
Irkutsk	"	11 22.1	—	—	—	G.	—
Manila	"	12 38.1	12 43.4	12 51.6	—	W.	Formosa.
Zi-ka-wei	"	12 41.8	—	—	—	"	—
Osaka	"	11 12.6	—	11 15	—	O.	—
	"	11 15.2	—	11 23.7	—	"	—
	"	12 39.6	—	12 36	—	"	—
<i>January 10</i>							
Eskdalemuir	E.W.	8 25	—	—	0.1	M.	—
Edinburgh	"	—	—	8 26.5	—	"	—
Bidston	"	—	—	8 28	—	"	—
Stonyhurst	"	8 16.6	—	8 26	0.3	"	—
Shide	"	—	—	8 26.3	0.1	"	—
Guildford	N.S.	8 14.3	—	8 28.7	1.6	"	—
Kew	"	—	—	8 29	—	"	—
Pulkovo	E.W.	7 45.9	7 55	8 11.1	—	"	—
Cairo	"	7 48	—	8 15.4	—	G.	—
Tiflis	"	7 45.5	—	—	—	M.	—
Calcutta	"	7 40.3	—	7 54	—	G.	—
Irkutsk	"	7 41	7 46	—	—	M.	—
Batavia	"	7 46	—	7 48	—	W.	—
Tsingtau	"	7 37.8	7 40.6	7 41.8	—	"	—
Manila	"	7 37.2	7 39.1	7 41.4	—	"	Formosa.
Zi-ka-wei	"	7 36.5	7 38.3	7 39	—	"	—
Osaka	N.S.	7 38.7	—	7 47.7	—	O.	—
<i>January 11</i>							
Cork	E.W.	13 39	—	14 31	2.0	M.	—
Rio Tinto	"	13 39	—	14 39	1.5	"	—
San Fernando	N.S.	13 41.2	—	14 42.5	3.5	"	—
Paisley	"	13 45	—	14 28	3.3	"	—
Granada	E.W.	—	—	14 30.8	—	"	—
Eskdalemuir	"	13 42	—	14 37	—	Bif.	—
Edinburgh	"	13 42	—	14 28	2.5	M.	—
Bidston	"	13 36	—	14 27.1	1.6	"	—
Stonyhurst	"	13 35.5	13 38.3	14 25.2	1.9	"	—
West Bromwich	"	13 14	13 29.2	14 26.7	3.8	"	—
Shide	"	13 39	—	14 29.7	4.0	"	—
Haslemere	"	13 39	—	14 29	1.2	"	—
Guildford	"	13 32.5	—	14 24.7	2.5	"	—
Kew	"	—	—	14 27.5	6.0	"	—
Paris	"	—	—	14 30	8.0	"	—
Aachen	"	13 39.8	13 45.3	14 25.2	2.3	"	—
Heidelberg	"	13 6.2	—	14 21.6	0.6	"	—
Göttingen	"	13 19.2	—	14 31.1	1.7	"	—
Hamburg	"	13 32.6	—	—	—	"	—
Florence	N.S.	13 30.2	13 35	14 6	—	A.	—
Innsbruck	"	13 34.9	13 41.4	14 20	—	"	—
Padova	"	13 34.3	13 43.4	14 5	—	Ma.	—
Triest	"	13 41.4	13 49.6	14 8	—	V.	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
<i>January 11, continued</i>							
Pompeii	E.W.	13 34.4	—	—	—	O.A.	—
Graz		13 34.9 ?	—	14 6.7	—	W.	—
Vienna		13 30.8 ?	13 41.3	14 17	—	"	—
				14 23	—	"	—
Breslau		13 31	13 41.2	14 20	—	"	—
Sarajevo	N.S.	13 29.8	13 40.7	14 18.1	—	"	—
Cape Town	E.W.	13 42	—	14 12	0.3	M.	—
Budapest		13 34.5	—	14 15	—	W.	—
				14 31	—	"	—
Konigsberg		13 30.8	13 40.9 ?	14 10.1	—	"	—
Lemberg		13 26.9	—	13 52.5	—	B.O.	—
Czernowitz		13 30.2	13 40.7	14 2	—	Ma.	—
Pulkovo		13 29.7	13 40.1	14 1.6	—	G.	Philippines.
Cairo	"	13 29	—	13 41.2	2.5	M.	—
				14 15.4	3.0	"	—
Ksara	"	13 29.6	13 40.3	14 17.9	—	Ma.	—
Tiflis	"	13 29	13 30	13 58.9	—	G.	—
Seychelles	"	13 28	—	13 58.5	5.0	M.	—
Mauritius	"	13 23	—	13 48	5.0	"	—
Bombay	"	13 26.7	—	13 52.2	3.5	"	—
Kodalkanal	"	13 25.6	13 32	13 54.1	4.3	"	—
Colombo	"	13 25	—	13 49.4	4.6	"	—
Calcutta	"	—	—	13 43.6	—	"	—
Irkutsk	"	13 26.1	13 33.7	13 45.9	—	G.	Celobes.
				13 48.3	—	"	—
Batavia	"	13 20.9	13 23.9	13 27	—	W.	Celobes, etc.
Perth	"	13 23.6	—	13 36.2	9.0	M.	—
				13 40.3	12.0	"	—
Tsingtau	"	13 23.8	13 29.3	13 37.8	—	W.	—
				13 38.8	—	"	—
Manila	"	13 20	13 22.8	13 26.4	—	"	—
				13 26.5	—	"	—
Zi-ka-wei	"	13 23	13 28	13 36.2	—	"	—
				13 36.8	—	"	—
Osaka	N.S.	13 23.8	—	13 36.4	—	O.	—
Adelaide	E.W.	13 24	—	13 44.2	12.8	M.	—
Sydney	"	13 25.1	13 32	13 45.3	11.6	"	—
Riverview	"	13 25.1	13 31.6	13 43	—	"	—
				13 46.5	—	"	—
Samoa	"	13 27.9	13 36.8	13 54	—	W.	—
Honolulu	"	13 29.5	—	13 40.5	1.2	M.	—
St. Louis	"	13 39.1	—	—	—	W.	—
Toronto	"	13 34.2	13 36	—	0.8	M.	—
Ottawa	"	13 38.4	13 45.6	—	—	B.	—
Harvard Univ.	"	—	13 21.2 ?	—	—	B.O.	—
<i>January 13</i>							
Edinburgh	E.W.	—	—	15 46	—	M.	—
Shide	N.S.	15 20	—	15 30	0.1	"	—
Cairo	"	15 44	—	—	—	"	—
Irkutsk	"	15 30.8	15 38.2	15 53.3	—	G.	? Aleutian Ids.
Manila	"	15 25	—	15 28.9	—	W.	—
Edinburgh	E.W.	—	—	20 45.8	—	M.	—
Bidston	"	20 43.2	—	20 45	0.1	"	—
Shide	"	—	—	20 44	0.1	"	—
Aachen	"	20 30	—	—	—	W.	—
Pulkovo	"	19 46.7	19 57	20 23.7	—	G.	—
Cairo	"	19 33	—	20 16	0.3	M.	—
Mauritius	"	19 54	—	19 56	—	"	—
Kodalkanal	"	19 46.7	19 47.9	19 52	0.6	"	—
Irkutsk	"	19 41.2	19 48.8	20 5.1	—	G.	? Aleutian Ids.
Batavia	"	19 32.2	19 33.1	19 34	—	W.	Sumatra.
Adelaide	"	—	—	20 3.6	0.7	M.	—
Fernando Noronha	"	—	—	20 34	0.2	"	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
<i>January 15</i>							
Cork	E.W.	19 4.1	—	19 40	0.5	M.	—
Rio Tinto	"	19 2	—	19 36	0.5	"	—
San Fernando	N.S.	19 13.4	—	19 41.3	0.6	"	—
Paisley	E.W.	19 14.5	—	19 42.5	0.6	"	—
Granada	"	19 3.2	—	19 4	—	C.	—
Eskdalemuir	"	—	—	19 39	0.5	M.	—
Edinburgh	"	19 4.1	—	19 42.5	0.3	"	—
Bidston	"	19 14.3	19 20.4	19 35.7	1.0	"	—
Stonyhurst	"	19 4.1	—	19 40	0.5	"	—
Shide	"	19 8	—	19 34	0.5	"	—
Haslemere	"	19 16.2	—	19 38.7	0.8	"	—
Guildford	N.S.	19 4.2	—	19 36.7	1.0	"	—
Kew	E.W.	19 14	—	19 40.9	0.6	"	—
Aachen	"	19 4.8 ?	19 15.1 ?	19 38	—	W.	—
Strassburg	"	19 4.9	—	—	—	"	—
Heidelberg	"	19 5	—	19 48	—	"	—
Gottingen	"	—	—	19 42	—	"	—
Hamburg	"	19 5	—	—	—	"	—
Padova	"	19 5.3	19 15.9	—	—	V.	—
Triest	"	—	19 16.2 ?	—	—	W.	—
Graz	"	19 5.4	19 16.2	—	—	"	—
Vienna	"	19 5.4	19 16.5	—	—	"	—
Breslau	"	19 5.5	19 15.1	—	—	"	—
Cape Town	"	20 9.7	—	19 44	—	M.	—
Konigsberg	"	19 5.5	—	20 11.7	0.2	W.	—
Pulkovo	"	19 5.6	19 16.3	19 48.7	—	G.	? Mexico.
Cairo	"	19 7	—	20 7	0.3	M.	—
Tiflis	"	—	—	20 2	—	G.	—
Kodalkanal	"	20 30.1	—	—	—	M.	—
Colombo	"	20 32	—	—	—	"	—
Irkutsk	"	19 12	19 21.8	20 2.9	—	G.	? N. America.
Manila	"	19 11	—	—	—	W.	—
Adelaide	"	—	—	20 7.4	0.8	M.	—
Riverview	"	19 54.8	—	20 1.8	—	"	—
Honolulu	"	19 12.6	—	19 27.4	0.8	"	—
Victoria	"	19 1.4	19 8.3	19 24	0.7	"	—
St. Louis	"	18 58.1	19 2.1	—	—	W.	—
Toronto	"	18 58.2	—	19 14.3	0.8	M.	—
Ottawa	"	18 59.2	19 4.8	19 15	—	B.	—
Harvard Univ.	N.S.	18 59	19 4.5	—	—	B.O.	—
Fernando Noronha	E.W.	18 50	19 12	19 33	1.2	M.	—
<i>January 19</i>							
Rio Tinto	E.W.	17 26	—	18 6	1.0	M.	—
San Fernando	N.S.	17 29	—	18 4.6	1.8	"	—
Paisley	E.W.	17 28	—	18 6.5	1.1	"	—
Granada	"	17 18.4	17 29.2	17 51.1	—	C.O.	—
Eskdalemuir	"	—	—	18 9	1.1	M.	—
Edinburgh	"	17 22.4	—	18 4.2	0.4	"	—
Bidston	"	17 28.8	17 35.6	18 9.6	0.4	"	—
Stonyhurst	"	17 18.6	—	18 2.5	0.8	"	—
West Bromwich	"	17 17.3	17 27.6	18 6	1.2	"	—
Shide	N.S.	17 40	—	18 4	0.7	"	—
Haslemere	E.W.	17 29	—	18 6.5	1.3	"	—
Guildford	N.S.	17 14.2	—	18 3.8	2.0	"	—
Kew	E.W.	17 34.2	—	18 3.3	0.9	"	—
Paris	"	17 18.4	17 28.5	18 5.5	1.0	"	—
Aachen	"	17 18	17 22.2	17 41	—	"	—
Strassburg	"	17 17.8	17 27.9	17 50	—	W.	—
Heidelberg	"	17 16.8	17 27.8	17 59	—	"	—
Gottingen	"	17 17.7	17 27.8	17 39	—	"	—
				17 43	—	"	—
Hamburg	"	17 17.8	17 27.8	17 49	—	"	—
Florence	"	17 19.2	17 27.5	17 44	—	A.	—
				17 46.2	—	"	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
<i>January 19, continued</i>							
Innsbruck		17 17.5	17 27.4	17 51	—	Ma.	—
Badna		17 39	—	—	—	W.	—
Triest		17 22.4	17 27.1	17 44	—	W.	—
Monte Cassino		17 16.4	—	—	—	Ca.	—
Pola		—	17 27.3	—	—	W.	—
Pompeii	E.W.	—	17 26.9	—	—	O.A.	—
Laibach		17 17.9	17 28	17 38.3	—	G.	—
Graz		17 17.3	17 29.9	—	—	W.	Alaska.
Vienna		17 17.3	17 29.9	17 54	—	"	—
Breslau		17 17.4	17 27	17 52	—	"	—
Sarajevo	N.S.	17 17.3	17 26.4	17 46.2	—	"	—
Cape Town	E.W.	17 26.3	—	17 59.3	0.7	M.	—
Budapest	"	17 17.3	17 26.4	17 55	—	W.	—
Konigsberg	"	17 17.2	17 23.8	17 48.5	—	"	—
Lemberg	"	17 17	17 29.2	17 50.3	—	B.O.	—
Czernowitz	"	17 16.7	17 25.8	17 38	—	Ma.	—
Pulkovo	"	17 16.9	17 23.2	17 43.6	—	G.	N. of Sumatra.
				17 46.6	—		
Cairo	"	17 16	—	17 44	4.1	M.	—
Ksara	"	17 15.7	17 23.3	17 37.1	—	Ma.	—
Makeyevka	"	17 15.9	17 24.2	17 37.1	—	G.	—
				17 38.2	—		
Tiflis	"	—	—	17 42.5	—	M.	—
Seychelles	"	17 19.5	—	17 27	6.5	"	—
Mauritius	"	17 11.4	—	17 22.2	5.4	"	—
Bombay	"	17 9.7	—	17 17.1	15.4	"	—
Kodaikanal	"	17 9.5	17 11.8	17 14.6	>17.5	"	—
Colombo	"	17 7.3	—	17 9.9	—	"	—
Calcutta	"	17 9.7	—	17 21.4	—	"	—
Irkutsk	"	17 14.9	17 22.2	17 31.8	—	G.	Bay of Bengal.
Batavia	"	17 10.3	17 14.3	17 15	—	W.	—
Perth	"	17 18.3	—	17 27.6	5.0	M.	—
Tsingtau	"	17 14	17 29.7	17 35	—	W.	—
Manila	"	17 12.7	17 16.1	17 29.9	—	"	—
Zi-ka-wei	"	17 13.7	17 20.2	17 32.3	—	"	—
Osaka	N.S.	17 15.1	—	17 40.5	—	O.	—
Adelaide	E.W.	—	17 29.6	17 39.9	3.1	M.	—
Sydney	"	17 23.1	—	17 47.9	0.8	"	—
Riverview	"	17 17.1	17 25.7	17 39.6	—	"	—
Honolulu	"	—	17 23.4	—	0.3	"	—
Victoria	"	18 12	—	18 32.6	0.2	"	—
Toronto	"	18 12.2	—	18 30.6	0.4	"	—
Ottawa	"	17 28.1	17 40	—	—	B.	—
Harvard Univ.	"	17 43.9	—	—	—	B.O.	—
Fernando Noronha	"	17 39.5	—	18 24	3.5	M.	—
<i>January 19-20</i>							
Rio Tinto	E.W.	0 23	—	0 41	0.7	M.	—
San Fernando	N.S.	0 10.3	—	0 59.6	1.1	"	—
Paisley	E.W.	0 15	—	0 35.5	0.2	"	—
Granada	"	0 0.8	0 11.5	0 42.9	—	C.O.	—
Eskdalemuir	"	—	—	0 35	0.3	M.	—
Edinburgh	"	0 9.2	—	0 34.6	0.1	"	—
Bidston	"	0 19.5	—	0 39.7	0.2	"	—
Stonyhurst	"	23 50	—	0 42	0.4	"	—
West Bromwich	"	23 59	0 9.8	0 40	0.5	"	—
Shide	"	0 10.2	—	0 44	0.7	"	—
Haslemere	"	0 43.3	—	0 44.8	0.8	"	—
Guildford	N.S.	—	—	0 40.3	0.3	"	—
Kew	E.W.	0 9.5	—	0 42.9	0.3	"	—
Paris	"	0 0	0 10	0 34	—	"	—
Aschen	"	0 0.2	0 9.6	0 33	—	W.	—
Strassburg	"	23 59.9	0 9.9	—	—	"	—
Heidelberg	"	23 59.9	0 9.6	0 32.4	—	"	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
<i>January 19-20, continued</i>							
Göttingen		23 59.6	0 9.3	0 25	—	W.	—
Hamburg		23 59.5	0 9	0 31	—	A.	—
Florence	E.W.	23 17.2	—	23 36	—	Ma.	—
Innsbruck		23 59.9	0 9.9	—	—	Ma.	—
Triest		23 59.9	0 9.9	0 32	—	W.	—
				0 37	—		
Monte Cassino		23 58.8	—	—	—	C.	—
Pompeii		23 59.9	—	—	—	O.A.	—
Graz	"	23 59.8	0 9.7	—	—	W.	—
Vienna	"	23 59.7	0 9.4	0 32	—	"	—
Breslau	"	23 59.3	0 9.1	0 30	—	"	—
Sarajevo	"	0 0	0 9.9	0 31.7	—	"	—
				0 38.1	—		
Budapest		23 59.6	0 9.7	—	—	"	—
Lemberg		23 58.9	—	0 30.6	—	B.O.	—
Czernowitz		23 59.4	0 9.4	0 30	—	Ma.	—
				0 34	—		
Pulkovo		23 58.3	0 6.7	0 20.2	—	G.	Kurile Ids.
				0 21.4	—		
Cairo		0 1	0 11.5	0 46	0.5	M.	—
Ksara	N.S.	0 0.1	0 10	0 34.2	—	Ma.	—
Makeyevka	"	23 58.9	0 7.8	0 24.2	—	G.	—
Tiflis	"	23 59	0 8.1	0 25.9	—	"	—
				0 28.8	—		
Mauritius	E.W.	0 42	—	0 48	—	M.	—
Kodaikanal	"	23 59.7	—	—	—	"	—
Irkutsk	"	23 54	23 59.1	0 4.1	—	G.	Kurile Ids.
				0 5.2	—		
Batavia		23 58.6	0 7.2	0 8	—	W.	—
Tsingtau		23 53.3	23 57.6	—	—	"	—
Manila		23 55.8	—	—	—	"	—
Zi-ka-wei		23 53.6	23 58.2	—	—	"	—
Osaka	N.S.	23 51.9	—	23 55.5	—	O.	—
Honolulu	E.W.	23 58.2	0 5.4	0 11	0.5	M.	—
Victoria	"	0 4.7	—	—	—	"	—
Toronto	"	0 0	—	—	—	"	—
Ottawa	"	0 9.8	0 15.3	—	—	B.	—
Fernando Noronha	"	—	—	0 42	0.1	M.	—
<i>January 20</i>							
San Fernando	N.S.	16 3	—	16 15	0.9	M.	—
Paisley	E.W.	15 50	—	16 33	0.3	"	—
Eskdalemuir	"	—	—	16 34	0.1	"	—
Edinburgh	"	—	—	16 34.3	—	"	—
Bidston	"	16 16.7	16 22.5	16 33.6	0.3	"	—
Stonyhurst	"	15 42.2	—	16 26	0.3	"	—
				16 34	0.4	"	—
Shide	"	16 15.3	—	16 19.5	0.3	"	—
				16 25	0.5	"	—
Guildford	N.S.	15 57.7	—	16 7.9	1.0	"	—
Kew	E.W.	—	—	16 34	0.2	"	—
Aschen	"	16 9	—	16 24	—	W.	—
Heidelberg	"	16 5	—	16 30	—	"	—
Hamburg	"	16 24	—	—	—	"	—
Cape Town	"	—	—	15 34	0.1	M.	—
Pulkovo	"	—	—	16 27.3	—	G.	—
Cairo	"	15 49	—	16 20	0.3	M.	—
Tiflis	"	15 9.4	—	—	—	G.	—
Mauritius	"	15 35.7	—	15 45.4	—	M.	—
Irkutsk	"	13 11.2	15 27.7	16 1.4	—	G.	—
Sydney	"	15 2.5	—	15 6.8	0.3	M.	—
Riverview	"	—	15 3.1	15 5.4	—	"	—
Honolulu	"	—	—	15 37	0.1	"	—
Fernando Noronha	"	—	—	15 44.5	0.1	"	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
<b>January 23</b>							
Guldford		14 10·3	—	14 41·1	0·3	G.	—
Pulkovo		14 36	—	—	—	—	—
Cairo	N.S.	14 37	—	—	—	M.	—
Mauritius	E.W.	14 46·1	—	14 52·9	—	G.	—
Tashkent		14 24·6	—	—	—	—	—
Irkutsk		14 12	14 21·6	14 36·6	—	G.	—
				14 37·1	—	—	—
Batavia		14 9	—	14 17	—	W.	—
Manila		14 8	—	—	—	—	—
Adelaide	"	—	—	14 21·3	1·0	M.	—
Sydney	"	14 5·2	—	14 15·6	0·7	"	—
Riverview	"	13 59·3 ?	14 6·7	14 11·3	—	"	—
Honolulu	"	14 10·8	14 18·4	14 32·2	1·1	"	—
Victoria	"	14 44·3	—	—	0·3	"	—
Toronto	"	14 48·2	14 55·6	15 16·7	0·3	"	—
Harvard Univ.	"	—	14 46·5 ?	—	—	B.O.	—
San Fernando	N.S.	15 17·5	—	15 33·5	—	M.	—
Edinburgh	E.W.	—	—	15 28·7	—	"	—
Shide	"	—	—	15 30	0·1	"	—
Haslemere	"	—	—	15 32	0·1	"	—
Guldford	N.S.	—	—	15 32·7	0·07	"	—
Tiflis	"	—	—	15 6·7	—	G.	—
<b>January 26</b>							
Edinburgh	E.W.	—	—	19 42	—	M.	—
Strassburg		19 20·3	—	—	—	W.	—
Innsbruck		19 20·4	—	—	—	Ma.	—
Graz		19 20·5	—	—	—	W.	—
Vienna		19 20·3	—	—	—	—	—
Breslau		19 20·3	—	—	—	"	—
Pulkovo		19 19·7	19 28·9	—	—	G.	—
Cairo	"	19 24	—	—	—	M.	—
Makeyevka	"	19 22·9	—	—	—	G.	—
Tashkent	"	19 21·2	—	—	—	"	—
Irkutsk	"	19 18·5	19 24·4	—	—	"	—
Riverview	"	19 13·1	—	—	—	"	—
<b>January 27</b>							
San Fernando	N.S.	19 54·5	—	20 5	—	M.	—
Granada		—	—	20 4·2	—	O.	—
Eskdalemuir	E.W.	—	—	20 4	0·2	M.	—
Edinburgh	"	19 51·3	—	20 5·7	0·1	"	—
Bidston	"	19 51·7	—	20 2	0·1	"	—
West Bromwich	"	19 49·5	—	20 3	0·2	"	—
Shide	"	—	—	20 1	0·5	"	—
Haslemere	"	—	—	20 1·6	0·1	"	—
Guldford	"	—	19 52·8	20 2·3	0·1	"	—
Kew	"	—	—	20 3	—	"	—
Paris	"	19 55	—	—	—	—	—
Aachen	"	19 44·5	19 49·6	19 56	—	W.	Persia.
Strassburg	"	19 44·5	—	—	—	"	—
Heidelberg	"	19 43·2	19 47·9	19 55	—	"	—
Hamburg	"	19 44	19 49·4	19 57·1	—	"	—
	"	—	—	19 57·9	—	"	—
Florence	"	19 43·8	19 48·3	19 53	—	A.	—
Innsbruck	"	19 43·8	19 48	19 56·6	—	Ma.	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
<b>January 27, continued</b>							
Padova		19 43·8	—	—	—	Y.	—
Triest		19 43·5	—	—	—	W.	—
Pompeii	E.W.	19 42	19 47·6	19 53	—	O.A.	—
Laibach		19 43·4	19 47·5	19 51·5	—	G.	—
Graz		19 43·4	19 47·5	19 52·8	—	W.	—
Vienna		19 43·3	19 47·3	19 54·7	—	"	—
Breslau		19 43·6	19 47·7	19 54·5	—	"	—
Sarajevo	"	19 42·9	19 46·5	19 51	—	"	Persia.
Cape Town	"	20 19·1	—	20 29·2	0·2	M.	—
Rudapest	"	19 43	—	19 52·1	—	W.	—
Konigsberg	"	19 43·5	19 47·5	19 55·8	—	"	Persia.
Lemberg	"	19 33·8	—	19 55	—	B.O.	—
Czernowitz	"	19 42·2	19 45·5	—	—	"	Lake Urmia.
Pulkovo	"	19 43·6	19 47·6	19 51·3	—	G.	N. of Lake Van.
				19 52·6	—	—	—
Cairo	N.S.	19 42	—	19 47·6	1·4	M.	—
Kasara	"	19 39·4	19 41·2	19 44·2	—	Ma.	—
Makeyevka	"	19 40·9	19 42·7	19 47·1	—	G.	—
Tashkent	"	19 43·4	19 47·3 ?	—	—	"	—
Irkutsk	"	19 46·8	19 56·8	20 6·9	—	"	—
<b>January 31</b>							
San Fernando	N.S.	23 6	—	—	—	M.	—
Edinburgh	E.W.	—	—	23 40·5	—	"	—
Bidston	"	23 39·7	—	23 40·6	0·2	"	—
Shide	"	—	—	23 32·5	0·2	"	—
				23 43	1·0	"	—
Haslemere	"	—	—	23 43	0·3	"	—
Guldford	"	23 22·3	—	23 42	0·15	"	—
Kew	"	23 39·1	—	23 40·6	0·2	"	—
Aachen	"	—	—	23 40	—	W.	—
Innsbruck	"	23 41·9	—	—	—	Ma.	—
Padova	"	23 43·1	—	—	—	W.	—
Triest	"	23 42·7	—	—	—	"	—
Monte Cassino	"	23 40·8	—	—	—	Ca.	—
Pompeii	"	23 41	—	23 42·4	—	O.A.	—
Graz	"	23 43·7	—	23 44·3	—	W.	—
Vienna	"	—	—	23 45·6	—	"	—
Sarajevo	"	23 40·7	—	23 41·9	—	"	—
Pulkovo	"	23 9·8	—	23 41·3	—	G.	—
Cairo	"	23 48	—	—	—	M.	—
Tiflis	"	—	—	23 48·7	—	G.	—
Tashkent	"	23 37	—	0 3·6	—	"	—
Irkutsk	"	—	—	23 43·2	—	"	—
				23 46·4	—	"	—
Honolulu	"	22 54·8	23 4·2	23 16·8	0·4	M.	—
Victoria	"	23 2·7	23 3·5	23 11·2	0·5	"	—
Toronto	"	22 53·8	22 58·4	23 9	0·2	"	—
Ottawa	"	22 54·6	23 0·6	23 8·6	—	B.	—
Harvard Univ.	N.S.	22 54·9	23 0·8	—	—	B.O.	—

British Association for the Advancement  
of Science.

SEISMOLOGICAL COMMITTEE.

Observations and formal business to  
J. H. BURGESS,  
Earthquake Observatory,  
SHIDE, Isle of Wight.

Special inquiries to  
Prof. H. H. TURNER,  
University Observatory,  
OXFORD.

Monthly Bulletin for February, 1913.

In place of the Circulars hitherto issued by the Shide Observatory twice a year, it is proposed to issue Monthly Bulletins containing a list of Earthquakes recorded at the Milne Stations, and at those Foreign Stations which send lists to Shide. The present form is probably susceptible of improvement, but it seems advisable to continue it for a year before making alterations.

The Stations are arranged in the order of longitude, starting from the Azores and travelling eastward.

The Russian Stations and those using the Wiechert instrument usually publish several maxima. For the purpose of this Bulletin the first is always given; if the amplitude of this maximum is not the greatest, then the maximum having the greatest amplitude is also given.

Observers are asked to send a copy of their Registers each month.

The time employed is Greenwich mean time (civil) expressed in hours, minutes, and decimals of a minute; 24 or 0 hours = midnight.

The amplitudes recorded in the 6th column refer only to the Milne instruments, and are given in millimetres and decimals of a millimetre.

LIST OF STATIONS, arranged in order of Longitude,  
starting from the Azores and travelling Eastward:—

STATION.	Latitude.	Longitude.	STATION.	Latitude.	Longitude.
1. Azores .. ..	37°44' N.	25°41' W.	46. Beirut .. ..	33°54' N.	35°28' E.
2. Cape Verde ..	16.30 N.	24. 0 W.	47. Ksara .. ..	33.49 N.	35.52 E.
3. Ascension ..	7.57 S.	14.21 W.	48. Makeyevka ..	48. 2 N.	37.59 E.
4. Cork .. ..	51.53 N.	8.28 W.	49. Tiflis .. ..	41.45 N.	44.47 E.
5. Rio Tinto ..	37.46 N.	6.38 W.	50. Baku .. ..	40.23 N.	49.54 E.
6. San Fernando	36.27 N.	6.12 W.	51. Seychelles ..	4. 5 S.	55. 5 E.
7. St. Helena ..	15.55 S.	5.44 W.	52. Mauritius ..	20. 5 S.	57.53 E.
8. Paisley .. ..	55.50 N.	4.26 W.	53. Tashkent ..	41.19 N.	69.17 E.
9. Granada .. ..	37.11 N.	3.36 W.	54. Bombay .. ..	18.53 N.	72.48 E.
10. Eskdalemuir ..	55.19 N.	3.12 W.	55. Kodaikānal ..	10.14 N.	77.27 E.
11. Edinburgh ..	55.55 N.	3.11 W.	56. Colombo .. ..	6.56 N.	79.50 E.
12. Bidston .. ..	53.24 N.	3. 4 W.	57. Calcutta .. ..	22.32 N.	88.20 E.
13. Stonyhurst ..	53.50 N.	2.28 W.	58. Cocos .. ..	12.12 S.	96.54 E.
14. W. Bromwich	52.32 N.	2. 0 W.	59. Irkutsk .. ..	52.16 N.	104.19 E.
15. Shide .. ..	50.41 N.	1.17 W.	60. Batavia .. ..	6.11 S.	106.47 E.
16. Haslemere ..	51. 5 N.	0.43 W.	61. Perth .. ..	31.57 S.	115.50 E.
17. Gullford .. ..	51.15 N.	0.35 W.	62. Tsingtau .. ..	36. 4 N.	120.19 E.
18. Kew .. ..	51.28 N.	0.19 W.	63. Manila .. ..	14.34 N.	120.58 E.
19. Accra .. ..	5.51 N.	0.11 W.	64. Zi-ka-wei ..	31.11 N.	121.25 E.
20. Paris .. ..	48.48 N.	2.30 E.	65. Osaka .. ..	34.39 N.	135.26 E.
21. Aachen .. ..	50.46 N.	6. 4 E.	66. Adelaide ..	34.56 S.	138.35 E.
22. Strassburg ..	48.55 N.	7.46 E.	67. Tokio .. ..	35.42 N.	139.45 E.
23. Heidelberg ..	49.24 N.	8.24 E.	68. Melbourne ..	37.50 S.	144.58 E.
24. Göttingen ..	31.33 N.	9.58 E.	69. Sydney .. ..	33.52 S.	151.12 E.
25. Hamburg .. ..	53.33 N.	9.59 E.	70. Riverview ..	33.52 S.	151.12 E.
26. Florence .. ..	37.11 N.	11.15 E.	71. Christchurch	43.31 S.	172.37 E.
27. Innsbruck ..	47.16 N.	11.24 E.	72. Wellington ..	41.16 S.	174.48 E.
28. Padova .. ..	45.24 N.	11.52 E.	73. Fiji .. ..	20. 0 S.	178. 0 E.
29. Trieste .. ..	45.38 N.	13.46 E.	74. Samoa .. ..	13.48 S.	171.45 W.
30. Monte Cassino	41.29 N.	13.48 E.	75. Fanning Island	4. 0 N.	159.40 W.
31. Pola .. ..	44.51 N.	13.50 E.	76. Honolulu .. ..	21.19 N.	158. 3 W.
32. Pompeii .. ..	40.44 N.	14.30 E.	77. Victoria .. ..	48.23 N.	123.19 W.
33. Laibach .. ..	46. 3 N.	14.31 E.	78. Santa Clara ..	37.26 N.	121.57 W.
34. Malta .. ..	35.54 N.	14.31 E.	79. St. Louis .. ..	38.38 N.	90.14 W.
35. Graz .. ..	47. 4 N.	15.27 E.	80. Toronto .. ..	43.39 N.	79.23 W.
36. Vienna .. ..	48.14 N.	16.21 E.	81. Lima .. ..	12. 3 S.	77. 3 W.
37. Breslau .. ..	51. 4 N.	16.59 E.	82. Baltimore ..	39.17 N.	76.37 W.
38. Sarajevo .. ..	43.52 N.	18.25 E.	83. Ottawa .. ..	45.23 N.	75.42 W.
39. Cape Town ..	33.56 S.	18.28 E.	84. Harvard University	42.22 N.	71. 7 W.
40. Budapest .. ..	47.29 N.	19. 4 E.	85. La Paz .. ..	16.29 S.	68. 9 W.
41. Königsberg ..	54.49 N.	20.29 E.	86. Bermuda .. ..	32.19 N.	64.51 W.
42. Lemberg .. ..	49.20 N.	24. 1 E.	87. Pilar .. ..	31.40 S.	63.51 W.
43. Czernowitz ..	48.18 N.	25.56 E.	88. Trinidad .. ..	10.40 N.	61.30 W.
44. Pulkovo .. ..	59.46 N.	30.19 E.	89. Chacarita .. ..	34.35 S.	58.28 W.
45. Cairo .. ..	29.51 N.	31.30 E.	90. Fernando Noronha	3.50 S.	32.25 W.

The letters in the 7th column stand for: A. = Alfani; B. = Bosch; Bif. = Bifilar; B.O. = Bosch-Omori; C. = Cartuja; Ca. = Cancani; C.O. = Cartuja-Omori; G. = Galitzin; M. = Milne; Ma. = Mainka; O.A. = Omori-Alfani; V. = Vicentini; W. = Wiechert.

Guildford and West Bromwich use a modification of the Milne.

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>February 7</b>							
San Fernando	E.W.	3 58	—	4 24	0.6	M.	—
Granada	—	—	—	3 58.5	—	O.	—
Edinburgh	—	—	—	4 18.4	—	M.	—
Bidston	—	4 3.7	—	4 14.6	0.2	—	—
Shide	—	3 36.7	—	4 2	0.3	—	—
Haslemere	—	4 14.7	—	4 16.4	0.4	—	—
Kew	—	4 4.2	—	4 11.2	0.2	—	—
Paris	—	3 22.3	—	—	—	—	—
Aachen	—	—	—	4 0	—	W.	—
Triest	—	—	—	—	—	G.	P <sub>3</sub> 3-53.
Laibach	N.S.	—	—	3 57.2	—	W.	—
Graz	—	—	—	—	—	W.	P <sub>3</sub> 3-52.
Vienna	—	3 57	—	—	—	—	—
Breslau	—	3 20	3 31 ?	4 10	—	—	—
Konigsberg	—	—	—	—	—	Ma.	P <sub>3</sub> 3-43.5.
Czernowitz	—	—	—	3 59	—	G.	9690 kms.
Pulkovo	—	3 15.5	3 26.2	3 42.7	—	—	—
Cairo	E.W.	3 19	—	4 21	0.2	M.	—
Tiflis	—	3 15	3 26.1	3 49.2	—	G.	—
Tashkent	—	3 13.8	—	3 43.2	—	—	—
Colombo	—	3 45	—	3 54	0.3	M.	—
Irkutsk	—	3 11.4	3 18.6	3 27.9	—	G.	15.5N. 148.8E.
Batavia	—	3 10.7	—	3 18	—	W.	—
Manila	—	3 8	—	3 13.9	—	—	E. Mariana Ids.
Zi-ka-wei	—	3 8.4	3 13.2	—	—	—	—
Osaka	N.S.	3 7.6	—	3 16.8	—	O.	—
Adelaide	E.W.	3 7.2	3 18.1	3 31.3	1.0	M.	—
Sydney	—	3 17.6	3 21.2	3 25.9	1.5	—	2300 kms.
Riverview	—	3 11.1	3 18	3 24.7	—	—	5240 kms.
Honolulu	—	3 10.5	3 24.3	3 33	2.2	—	—
Victoria	—	3 44.3	3 50.3	4 15.7 ?	0.2	—	—
Toronto	—	3 45.2 ?	—	4 15.1 ?	0.3	—	—
Ottawa	—	3 42.1 ?	—	—	—	B.	—
Fernando Noronha	—	3 27	—	4 8.7	0.2	M.	—
<b>February 10</b>							
Edinburgh	E.W.	—	—	22 21.7	—	M.	—
Bidston	—	22 14.7	—	22 18.7	0.1	—	—
Shide	—	22 8.5	—	22 20.5	0.2	—	—
Guildford	—	—	—	22 20.5	0.1	—	—
Kew	—	—	—	22 18	—	—	—
Paris	—	—	—	—	—	—	P <sub>3</sub> 22-13.
Cairo	—	22 16	—	22 26	0.2	M.	—
<b>February 11</b>							
San Fernando	N.S.	21 47	—	—	—	M.	—
Graz	—	21 59.3	—	—	—	W.	—
Pulkovo	—	21 57.9	22 6.7	—	—	G.	Near Japan.
Tashkent	—	21 55.7	—	22 13.2	—	—	—
Irkutsk	—	21 52.8	21 58.4	—	—	G.	27N. 135.2E.
Manila	—	21 51.1	—	—	—	W.	—
Zi-ka-wei	—	21 48.8	—	21 51.1	—	O.	—
Osaka	N.S.	21 48.4	—	21 53	—	—	—
<b>February 11-12</b>							
San Fernando	E.W.	0 50	—	0 57	—	M.	—
Paisley	—	0 43	—	0 46	0.2	—	—
Eskdalemuir	—	—	—	0 46	0.1	—	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>February 11-12, continued</b>							
Edinburgh	E.W.	—	—	0 45	—	M.	—
Bidston	—	0 35.8	—	0 46.2	0.2	—	—
Stonyhurst	—	—	—	0 53	—	—	—
Shide	—	—	—	0 47.5	0.3	—	—
Haslemere	—	0 46 ?	—	—	—	—	—
Guildford	—	—	—	23 33	0.2	—	—
Kew	—	—	—	0 51	—	—	—
Paris	—	0 3.5	—	—	—	—	—
Aachen	—	23 59	—	0 6	—	W.	—
Hamburg	—	0 0	—	—	—	—	—
Laibach	N.S.	0 33.3	—	—	—	G.	—
Graz	—	—	—	—	—	W.	P <sub>3</sub> 0-11.
Pulkovo	—	23 47.2	23 58.9	0 26.4	—	G.	10960 kms.
Cairo	E.W.	23 59	—	0 30.2	—	—	—
Mauritius	—	9 8.6	—	0 37	0.3	M.	—
Tashkent	—	23 46.5	23 54.2	0 11	0.6	G.	? 6130 kms.
Kodaikanal	—	23 49.9	—	0 16.1	—	—	—
Colombo	—	0 1	—	—	—	M.	—
Irkutsk	—	23 45	23 52.2	0 6.5	—	G.	—
Batavia	—	23 39.4	23 42.9	23 45	—	W.	Celebes.
Tsingtau	—	—	23 50 ?	—	—	—	—
Manila	—	23 38.8	—	—	—	—	—
Adelaide	—	—	—	0 1	0.5	M.	—
Sydney	—	23 50.2	23 54	0 1.7	0.4	—	3200 kms.
Riverview	—	23 59.3	—	0 1.5	—	—	—
Honolulu	—	23 57.6	—	0 22.6	0.1	—	—
Fernando Noronha	—	—	—	1 3 ?	0.2	—	—
<b>February 13</b>							
Strassburg	—	16 41.7	—	16 42.7	—	W.	—
Innsbruck	—	16 41	—	—	—	Ma.	—
Padova	—	16 40.1	16 40.3	—	—	V.	Tuscan Apennines.
Triest	—	16 40.7	—	—	—	W.	—
Graz	—	16 41.7	—	—	—	—	<1000 kms.
Breslau	—	16 44	—	—	—	—	—
<b>February 14</b>							
San Fernando	N.S.	20 4	—	20 21.6	—	M.	—
Granada	—	19 11.2	—	—	—	C.	—
Edinburgh	E.W.	—	—	20 19.5	—	M.	—
Bidston	—	20 8.3	—	20 23.6	0.1	—	—
Shide	N.S.	—	—	19 11.5	0.1	—	—
Guildford	—	—	—	20 32.3	0.1	—	—
Paris	—	—	—	19 26.5	0.2	—	—
Aachen	—	—	—	—	—	—	P <sub>3</sub> 20-2.
Strassburg	—	19 54	—	20 8	—	W.	—
Hamburg	—	19 11.2	—	19 14	—	—	—
Innsbruck	—	19 54	—	—	—	—	—
Padova	—	19 13.8	19 14.7	—	—	Ma.	—
Laibach	—	19 15	—	—	—	V.	—
Graz	—	20 4	—	20 9.1	—	G.	—
Breslau	—	19 13.7	—	—	—	W.	—
Pulkovo	—	19 11.1	—	—	—	—	—
Cairo	E.W.	19 31	—	19 57.6	—	G.	—
Tiflis	—	19 12	—	—	—	M.	? Two eqkes.
Mauritius	—	19 45.6	—	19 46.6	—	M.	—
Tashkent	—	18 36.8 ?	18 47.4	19 19.2	—	G.	? 9500 kms.
Irkutsk	—	19 3.9	19 13.8	19 30.1	—	—	Solomon Ids.
Batavia	—	19 1.3	—	19 4	—	W.	—



STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>February 14, continued</i>							
Manila		19 0·5	—	19 11·4	—	W.	—
Zi-ka-wei		19 0·6	—	—	—	W.	—
Osaka	N.S.	19 1	—	19 10·2	—	O.	—
Adelaide	E.W.	—	19 8·6	19 12·3	1·7	M.	—
Riverview		18 57·5	19 1·5	19 5·8	—	—	2400 kms.
Honolulu		—	—	19 20·8	0·8	—	—
Fernando Noronha		—	—	20 39	0·3	—	—
<i>February 15</i>							
Granada		19 31·9	—	—	—	C.	—
Strassburg		19 22·4	—	—	—	W.	—
Innsbruck		19 23·8 ?	—	19 25·5	—	Ma.	—
Padova		19 23·1	—	—	—	V.	—
Monte Cassino		19 22·5	—	—	—	Ca.	—
Graz		19 22·4	—	—	—	W.	—
Vienna		19 22·3	—	—	—	—	—
Breslau		19 11·6	—	—	—	—	—
Pulkovo	E.W.	19 21·9	19 31·7	20 3·6	—	G.	8540 kms.
Cairo		19 32	—	—	—	M.	—
Baku		19 35·6 ?	—	—	—	G.	—
Irkutsk		19 15·5	19 25·8	19 28·7	—	—	9065 kms.
Manila		19 20	—	19 20·5	—	W.	—
Sydney		19 8·3	—	19 13·5	0·5	M.	—
Riverview		19 8·1	19 12·1	19 16	—	—	2450 kms.
Honolulu		19 18·9	—	19 24·5	0·5	—	—
Paisley	E.W.	21 48	—	21 54	0·1	M.	—
Edinburgh		—	—	21 54·2	—	—	—
Bidston		21 48·3	—	21 57·2	0·1	—	—
Stonyhurst		21 44·4	—	21 53·6	0·1	—	—
Shide	N.S.	21 12	—	22 1	0·3	—	—
Haslemere	E.W.	—	—	21 54·2	0·2	—	—
Kew		—	—	21 40	—	—	—
Paris		21 22·4	—	—	—	—	—
Aachen		—	—	21 45	—	W.	—
Hamburg		21 42	—	—	—	—	—
Graz		21 13 ?	—	—	—	—	—
Konigsberg		21 7·7	—	—	—	—	—
Pulkovo		21 11	—	21 41	—	G.	—
Cairo	N.S.	21 52	—	21 57	0·1	M.	—
Tiflis		21 11	21 20·2	21 40·9	—	G.	7860 kms.
Baku		—	—	21 43·3	—	—	—
Tashkent		21 9·6	21 17·2	21 34·5	—	—	6000 kms.
Irkutsk		21 5·6	21 11·2	21 18·8	—	—	3510 kms.
Zi-ka-wei		21 4·1	21 8·5	—	—	W.	—
Osaka	N.S.	21 2	—	21 5·9	—	O.	—
Honolulu	E.W.	21 16·1	—	21 26·1	0·1	M.	—
<i>February 18</i>							
Edinburgh	E.W.	—	—	1 18·9	—	M.	—
Bidston		1 15	—	1 16·9	0·1	—	—
Stonyhurst		—	—	1 29·5	—	—	—
Shide		—	—	1 19·3	0·2	—	—
Haslemere		—	—	1 23·8	0·2	—	—
Kew		—	—	1 21	—	—	—
Paris		—	—	—	—	—	P <sub>3</sub> 1-16.
Tashkent		0 5	—	—	—	G.	—
Victoria		0 38	0 39·7	0 40·9	0·1	M.	—
St. Louis		0 47·1 ?	—	—	—	W.	—
Toronto		0 55·8	0 57·8 ?	0 58·7	0·2	M.	—
Ottawa		0 50·2 ?	0 55·2	—	—	B.	3200 kms.

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>February 19</i>							
Breslau	E.W.	22 31·9	22 41·4	—	—	W.	—
Pulkovo		22 30·7	22 38·1	—	—	G.	C. Africa.
Tiflis		22 31·7	—	—	—	—	—
Tashkent		22 30	—	—	—	—	—
Irkutsk		22 26·9	22 31·1	—	—	—	1920 kms.
Zi-ka-wei		22 28·8	22 31·7	—	—	W.	—
<i>February 20</i>							
Rio Tinto	E.W.	9 36	—	10 1	1·0	M.	—
San Fernando	N.S.	9 22·5	—	10 2·6	2·8	—	—
Paisley	E.W.	9 18	—	9 57	0·3	—	—
Granada		9 12·6	9 23·8	9 46·1	—	Bif.	10310 kms.
Eschdlemuir		9 10	—	9 46	0·5	—	—
Edinburgh		9 11·7	—	9 50·4	0·1	M.	—
Bidston		9 30·5	—	9 44·6	0·6	—	—
Stonyhurst		9 12·4	—	9 48	0·6	—	—
West Bromwich		9 10·3	9 20·8	9 55	0·8	—	—
Shide		9 37	—	9 52·5	1·2	—	—
Haslemere		—	—	9 50·4	1·3	—	—
Guildford		9 12·2	9 21·4	9 47·7	0·7	—	—
Kew		9 14·7	—	9 47·5	0·4	—	—
Paris		9 11·4	9 21·7	9 46	—	—	—
Aachen		9 11·2	9 21·2	9 41·6	—	W.	8800 kms.
Strassburg		9 11·3	9 21·4	9 38·2	—	—	—
Heidelberg		9 11·2	9 19·9	9 54	—	—	—
Göttingen		9 11	9 20·8 ?	9 40	—	—	—
Hamburg		9 11	9 20·6	9 42·2	—	—	8300 kms.
Florence		9 15·4	9 22·4	9 51	—	A.	—
Innsbruck		9 11·3	9 21·2	9 40·5	—	Ma.	8700 kms.
Triest		—	9 21·8	9 44	—	W.	—
Monte Cassino		—	9 11·7	—	—	Ca.	—
Laibach	N.S.	9 11·1	9 21·1	9 44·5	—	G.	8830 kms.
Graz		9 11·1	9 21·1	9 48·7	—	W.	? Alaska.
Vienna		9 11·1	9 20·9	9 51	—	—	—
Breslau		9 10·8	9 20·4	9 45	—	—	8570 kms.
Sarajevo	N.S.	9 11·3	9 21·3	9 50·6	—	—	>8000 kms.
Cape Town	E.W.	—	—	9 44	—	M.	—
Konigsberg		9 10·7	9 20	9 38·8	—	W.	? 8250 kms.
Lemberg		9 6·9	9 20·6	9 40·3	—	D.O.	9000 kms.
Pulkovo		9 9·6	9 18·1	9 30·7	—	G.	N. of Yezo.
Cairo	N.S.	9 11·4	—	9 25·3	0·5	M.	—
Ksara		9 10·9	9 21·3	—	—	Ma.	—
Tiflis		9 10·1	9 19	9 39	—	G.	48.5N. 147.3E.
Mauritius	E.W.	9 52	—	9 40·9	—	M.	—
Tashkent		9 8·4	9 15·8	9 53·9	—	G.	5800 kms.
Bombay		—	—	9 31·4	—	—	—
		—	—	9 32·5	—	—	—
		—	—	9 38·6	0·7	M.	—
		—	—	9 42	—	—	—
Kodai kanal		9 10	—	9 19·2	0·2	—	—
Colombo		9 19	—	9 42	0·5	—	—
Calcutta		8 50·9	—	9 27·9	—	—	—
Irkutsk		9 4·8	9 9·4	9 16	—	G.	42.4N. 140.7E.
Batavia		9 8·9	9 16·9	9 19	—	W.	—
Manila		9 5·7	—	9 13	—	—	—
Zi-ka-wei		9 3·6	9 7·2	9 10	—	—	—
Osaka	N.S.	9 1·3	—	9 4·8	—	O.	—
Adelaide	E.W.	8 43·8	—	9 21·5	0·5	M.	—
Sydney		9 20·1	—	9 35	0·2	—	—
Riverview		9 11 ?	9 20·4 ?	9 41·5	—	—	? 8000 kms.
Honolulu		9 16	—	9 28	0·6	—	—
Victoria		9 17·4	—	—	—	—	—
Toronto		9 19·6	—	—	—	—	—
Ottawa		9 10·6	9 21·9 ?	—	—	B.	? 10600 kms.
Harvard Univ.		—	9 22·9 ?	—	—	B.O.	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>February 23</b>							
Paisley	E.W.	3 20	—	3 42	0.2	M.	—
Granada	—	—	—	3 39	—	O.	—
Eskdalemuir	..	3 17	—	3 43.5	0.2	M.	—
Edinburgh	..	3 17.8	—	3 48	—	..	—
Stonyhurst	..	3 16.4	—	3 46	0.2	..	—
West Bromwich	..	3 15.2	3 24 ?	3 39	0.1	..	—
Shide	..	3 7.5	—	3 41.5	0.5	..	—
Kew	..	—	—	3 41	—	..	—
Paris	..	—	3 17.9	—	—	..	—
Heidelberg	..	—	—	—	—	..	—
Gortingen	..	3 36	—	—	—	W.	P <sub>3</sub> 3-40.
Hamburg	..	—	—	—	—	..	P <sub>3</sub> 3-41.
Laibach	N.S.	3 19.2	—	—	—	G.	P <sub>3</sub> 3-40.
Graz	..	—	—	—	—	W.	P <sub>3</sub> 3-40.
Konigsberg	..	—	—	—	—	..	P <sub>3</sub> 3-46.1.
Pulkovo	..	3 10.8	3 21.6 ?	3 40.3	—	G.	—
				3 51.5	—	..	—
Cairo	E.W.	3 20	—	4 10.2	0.3	M.	—
Tiflis	..	—	—	3 52.4	—	G.	—
Baku	..	3 15.8	—	3 52.5	—	..	—
Tashkent	..	3 17.3	—	4 6.5	—	..	—
				4 13.1	—	..	—
Irkutsk	..	3 16.2	3 27.8	3 57.7	—	..	10780 kms.
				4 7.4	—	..	—
Honolulu	..	3 17.3	—	3 36	0.3	M.	—
Victoria	..	3 25.5	—	3 34	0.5	..	—
Toronto	..	3 11.6	3 17.8	3 21.1	0.2	..	—
Baltimore	..	3 15.5	—	3 20	0.3	..	—
Ottawa	..	3 3.1 ?	3 10.1 ?	—	—	H.	5350 kms.
<b>February 24</b>							
Edinburgh	E.W.	—	—	2 33.8	—	M.	—
Stonyhurst	..	—	—	2 37	—	..	—
Laibach	N.S.	2 20.4	—	—	—	G.	—
Pulkovo	..	2 3.6	2 9.2	2 16.5	—	..	3740 kms.
Cairo	N.S.	2 16	—	2 18	0.1	M.	—
Tiflis	..	2 1.3	—	—	—	G.	—
Baku	..	1 58.3	—	2 8.6	—	..	—
Tashkent	..	2 7.9 ?	—	—	—	..	—
Irkutsk	..	—	—	—	—	..	—
Strassburg	..	11 58.9 ?	—	—	—	W.	—
Innsbruck	..	11 55.6	—	—	—	Ma.	—
Padova	..	11 55.5	—	—	—	V.	—
Triest	..	11 56.1	—	—	—	W.	—
Pola	N.S.	11 55.9	—	—	—	V.	—
Pompeii	E.W.	11 56.5	—	11 56.8	—	O.A.	—
Laibach	N.S.	11 54.8	11 55.9	11 56.9	—	G.	Albania.
Graz	..	11 55.1	—	11 57.1	—	W.	? 800 kms.
Vienna	..	11 56.9	—	—	—	..	—
Breslau	..	11 56	—	—	—	..	—
Sarajevo	E.W.	11 54.2	—	11 55.2	—	..	N.W. Albania.
Budapest	..	11 56.5	—	—	—	..	—
<b>February 25</b>							
Pompeii	E.W.	14 38 ?	—	—	—	O.A.	—
Pulkovo	..	14 43.2	14 49.4 ?	—	—	G.	—
Cairo	..	14 41	—	—	—	M.	—
Baku	..	14 39 ?	14 48 ?	—	—	G.	—
Tashkent	..	14 37 ?	14 42.7 ?	—	—	..	? 3960 kms.
Irkutsk	..	14 30.7	14 40.9	15 5.5	—	..	9010 kms.
Batavia	..	14 28.3	—	14 38	—	W.	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>February 25, continued</b>							
Manila	..	14 27.8	—	—	—	W.	—
Sydney	E.W.	14 23.8	14 27.7	14 29.7	0.3	M.	—
Riverview	..	14 23.4	14 27.5	14 30.5	—	..	2500 kms.
Samoa	..	14 23.9	—	14 29.1	—	W.	—
<b>February 27</b>							
Granada	..	16 31.1	16 37.6	16 51.8	—	Bif.	4780 kms.
				16 54.1	—	..	—
Edinburgh	E.W.	—	—	16 57.2	—	M.	—
Bidston	..	16 54	—	16 56.8	0.2	..	—
Shide	..	—	—	16 57	0.2	..	—
Guildford	N.S.	—	—	17 13.4	—	..	—
Kew	E.W.	—	—	17 0	—	..	—
Paris	..	16 41.5	—	—	—	..	—
Aachen	..	16 31	—	—	—	W.	—
Hamburg	..	16 41	—	16 54	—	..	—
				17 5	—	..	—
Innsbruck	..	16 30.6	—	16 39.5	—	Ma.	—
Padova	..	16 30.5	—	—	—	V.	—
Laibach	N.S.	16 29.3	—	17 0	—	G.	—
Graz	..	16 30.3	—	—	—	W.	—
Vienna	..	16 30.3	—	—	—	..	—
Breslau	..	16 30.6	16 36.8	16 50	—	..	? Turkestan.
Cape Town	E.W.	16 50	—	16 50.6	0.6	M.	—
Konigsberg	..	—	—	—	—	W.	P <sub>3</sub> 16-43.
Pulkovo	..	16 31.3	16 37.9	16 50	—	G.	N. of Abyssinia.
Cairo	..	16 28	—	16 33	0.3	M.	—
Ksara	..	16 27.4	16 34.3 ?	16 36.5	—	Ma.	—
Tiflis	..	16 28.6	16 33.4 ?	—	—	G.	3070 kms.
Baku	..	16 28.5	16 33.3	16 38.1	—	..	3030 kms.
Tashkent	..	16 30.2	16 36	16 46.7	—	..	3960 kms.
Colombo	..	16 45	—	—	—	M.	—
Calcutta	..	16 50.5	—	—	—	..	—
Irkutsk	..	16 33.4	16 41.9	16 58.1	—	G.	6965 kms.
<b>February 27</b>							
San Fernando	N.S.	—	—	22 38.5	—	M.	—
Edinburgh	E.W.	—	—	22 26.3	—	..	—
Bidston	..	22 21.5	—	22 26.5	0.1	..	—
Shide	..	22 18.5	—	22 30.3	0.2	..	—
Kew	..	—	—	22 30	—	..	—
Hamburg	..	—	—	22 35	—	..	—
Laibach	N.S.	22 10.5	—	—	—	G.	—
Pulkovo	..	21 24.5	—	22 9.7	—	..	—
Baku	..	21 34.9	—	22 2.6	—	..	—
Tashkent	..	21 33.7	—	21 56.4	—	..	—
Irkutsk	..	21 22.2	21 30.7	21 48.2	—	..	7050 kms.
Tsingtau	..	—	21 30 ?	—	—	W.	—
Manila	..	21 17.5	—	21 24	—	..	—
Sydney	E.W.	21 28.8	—	21 30.9	0.3	M.	—
Riverview	..	21 27.4	—	21 32.5 ?	—	..	—
Honolulu	..	21 32.7	—	21 48.6	0.3	..	—

# British Association for the Advancement of Science.

## SEISMOLOGICAL COMMITTEE.

Observations and formal business to  
J. H. BURGESS,  
Earthquake Observatory,  
SHIDE, Isle of Wight.

Special inquiries to  
Prof. H. H. TURNER,  
University Observatory,  
OXFORD.

### Monthly Bulletin for March, 1913.

In place of the Circulars hitherto issued by the Shide Observatory twice a year, it is proposed to issue Monthly Bulletins containing a list of Earthquakes recorded at the Milne Stations, and at those Foreign Stations which send lists to Shide. The present form is probably susceptible of improvement, but it seems advisable to continue it for a year before making alterations.

The Stations are arranged in the order of longitude, starting from the Azores and travelling eastward.

The Russian Stations and those using the Wiechert instrument usually publish several maxima. For the purpose of this Bulletin the first is always given; if the amplitude of this maximum is not the greatest, then the maximum having the greatest amplitude is also given.

Observers are asked to send a copy of their Registers each month.

The time employed is Greenwich mean time (civil) expressed in hours, minutes, and decimals of a minute; 24 or 0 hours = midnight.

The amplitudes recorded in the 6th column refer only to the Milne instruments, and are given in millimetres and decimals of a millimetre.

### LIST OF STATIONS, arranged in order of Longitude, starting from the Azores and travelling Eastward:—

STATION.	Latitude.	Longitude.	STATION.	Latitude.	Longitude.
1. Azores .. ..	37°44' N.	25°41' W.	46. Beirut .. ..	33°54' N.	35°28' E.
2. Cape Verde ..	16.30 N.	24. 0 W.	47. Ksara .. ..	33.49 N.	35.52 E.
3. Ascension ..	7.57 S.	14.21 W.	48. Makeyevka ..	48. 2 N.	37.59 E.
4. Cork .. ..	51.53 N.	8.28 W.	49. Tiflis .. ..	41.43 N.	44.47 E.
5. Rio Tinto ..	37.46 N.	6.38 W.	50. Baku .. ..	40.23 N.	49.54 E.
6. San Fernando	36.27 N.	6.12 W.	51. Seychelles ..	4. 5 S.	55. 5 E.
7. St. Helena ..	15.55 S.	5.44 W.	52. Mauritius ..	20. 5 S.	57.53 E.
8. Paisley .. ..	55.50 N.	4.26 W.	53. Tashkent ..	41.19 N.	69.17 E.
9. Granada .. ..	37.11 N.	3.36 W.	54. Bombay .. ..	18.53 N.	72.48 E.
10. Eskdalemuir	55.19 N.	3.12 W.	55. Kodaikāmal ..	10.14 N.	77.27 E.
11. Edinburgh ..	55.55 N.	3.11 W.	56. Colombo ..	6.56 N.	79.50 E.
12. Bidston .. ..	53.24 N.	3. 4 W.	57. Calcutta .. ..	22.32 N.	88.20 E.
13. Stonyhurst ..	53.50 N.	2.28 W.	58. Cocos .. ..	12.12 S.	96.54 E.
14. W. Bromwich	52.32 N.	2. 0 W.	59. Irkutsk .. ..	52.16 N.	104.19 E.
15. Shide .. ..	50.41 N.	1.17 W.	60. Batavia .. ..	6.11 S.	106.47 E.
16. Haslemere ..	51. 5 N.	0.43 W.	61. Perth .. ..	31.57 S.	115.50 E.
17. Guildford ..	51.15 N.	0.35 W.	62. Tsingtau .. ..	36. 4 N.	120.19 E.
18. Kew .. ..	51.28 N.	0.19 W.	63. Manila .. ..	14.34 N.	120.58 E.
19. Accra .. ..	5.31 N.	0.11 W.	64. Zi-ka-wei ..	31.11 N.	121.25 E.
20. Paris .. ..	48.48 N.	2.30 E.	65. Osaka .. ..	34.39 N.	135.26 E.
21. Aachen .. ..	50.46 N.	6. 4 E.	66. Adelaide ..	34.56 S.	138.35 E.
22. Strassburg ..	48.35 N.	7.46 E.	67. Tokio .. ..	35.42 N.	139.45 E.
23. Heidelberg ..	49.24 N.	8.24 E.	68. Melbourne ..	37.50 S.	144.58 E.
24. Göttingen ..	51.33 N.	9.58 E.	69. Sydney .. ..	33.52 S.	151.12 E.
25. Hamburg .. ..	53.33 N.	9.59 E.	70. Riverview ..	33.52 S.	151.12 E.
26. Florence ..	37.11 N.	11.15 E.	71. Christchurch	43.31 S.	172.37 E.
27. Innsbruck ..	47.16 N.	11.24 E.	72. Wellington ..	41.16 S.	174.48 E.
28. Padova .. ..	45.24 N.	11.52 E.	73. Fiji .. ..	20. 0 S.	178. 0 E.
29. Trieste .. ..	45.38 N.	13.46 E.	74. Samoa .. ..	13.48 S.	171.45 W.
30. Monte Cassino	41.29 N.	13.48 E.	75. Fanning Island	4. 0 N.	159.40 W.
31. Pola .. ..	44.51 N.	13.50 E.	76. Honolulu ..	21.19 N.	158. 3 W.
32. Pompeii .. ..	40.44 N.	14.30 E.	77. Victoria .. ..	48.23 N.	123.19 W.
33. Laibach .. ..	46. 3 N.	14.31 E.	78. Santa Clara ..	37.26 N.	121.57 W.
34. Malta .. ..	35.54 N.	14.31 E.	79. St. Louis .. ..	38.38 N.	90.14 W.
35. Graz .. ..	47. 4 N.	15.27 E.	80. Toronto .. ..	43.39 N.	79.23 W.
36. Vienna .. ..	48.14 N.	16.21 E.	81. Lima .. ..	12. 3 S.	77. 3 W.
37. Breslau .. ..	51. 4 N.	16.59 E.	82. Baltimore ..	39.17 N.	76.37 W.
38. Sarajevo .. ..	43.52 N.	18.25 E.	83. Ottawa .. ..	45.23 N.	75.42 W.
39. Cape Town ..	33.56 S.	18.28 E.	84. Harvard University	42.22 N.	71. 7 W.
40. Budapest ..	47.29 N.	19. 4 E.	85. La Paz .. ..	16.29 S.	68. 9 W.
41. Königsberg ..	54.49 N.	20.29 E.	86. Bermuda .. ..	32.19 N.	64.51 W.
42. Lemberg .. ..	49.20 N.	24. 1 E.	87. Pilar .. ..	31.40 S.	63.51 W.
43. Czernowitz ..	48.18 N.	25.56 E.	88. Trinidad .. ..	10.40 N.	61.30 W.
44. Pulkovo .. ..	59.46 N.	30.19 E.	89. Chacarita .. ..	34.35 S.	58.28 W.
45. Cairo .. ..	29.51 N.	31.30 E.	90. Fernando Noronha	3.50 S.	32.25 W.

The letters in the 7th column stand for: A. = Alfani; B. = Bosch; Bif. = Bifilar; B.O. = Bosch-Omori; C. = Cartuja; Ca. = Cancani; C.O. = Cartuja-Omori; G. = Galitzin; M. = Milne; Ma. = Mainka; O.A. = Omori-Alfani; V. = Vicentini; W. = Wiechert.

Guildford and West Bromwich use a modification of the Milne.

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>March 1</b>							
Paisley	E.W.	15 11-5	—	15 31-5	0-2	M.	—
Edinburgh	"	15 19-7	—	15 23-2	0-1	"	—
Bidston	"	15 21-5	15 26	15 34-3	0-4	"	—
Stonyhurst	"	15 7-7	—	15 32-3	0-2	"	—
West Bromwich	"	—	—	15 30	0-1	"	—
Shide	"	—	—	15 34	0-5	"	—
Haslemere	"	—	—	15 27	0-3	"	—
Guildford	N.S.	—	—	15 24-7	0-2	"	—
Kew	E.W.	15 20-9	—	15 25-4	0-2	"	—
Paris	—	—	—	15 20	—	—	—
Aachen	—	—	—	15 19	—	W.	—
Strassburg	—	—	—	—	—	—	P <sub>3</sub> 15-15.
Heidelberg	—	—	—	—	—	—	P <sub>3</sub> 15-15.
Göttingen	—	15 16 ?	—	—	—	—	—
Hamburg	—	—	—	15 24	—	—	—
Laibach	N.S.	14 52-6	—	15 18-4	—	G.	—
Graz	—	14 54	—	—	—	W.	—
Vienna	—	—	—	—	—	—	P <sub>3</sub> 15-15.
Königsberg	—	—	—	—	—	—	P <sub>3</sub> 15-13.
Pulkovo	—	14 46-6	—	15 10-1	—	G.	—
Cairo	—	15 0	—	15 20	0-2	M.	—
Tiflis	—	14 49	—	15 19-6	—	G.	—
Baku	—	14 39-9 ?	14 48	15 4-8	—	—	? 6550 kms.
Tashkent	—	14 45	—	14 57	—	—	—
Colombo	—	14 41	—	—	—	M.	—
Irkutsk	E.W.	14 37-7	14 42	14 48-8	—	G.	2510 kms.
Batavia	—	14 39	—	—	—	W.	—
Tsingtau	—	14 33-4	—	14 40	—	—	—
Manila	—	14 30-3	14 35	14 39-3	—	—	Guam.
Zi-ka-wei	—	—	—	14 37-4	—	—	—
Riverview	—	15 9-2	—	15 13	—	—	? < 500 kms.
<b>March 3</b>							
Edinburgh	E.W.	—	—	3 46-5	—	M.	—
Bidston	"	3 43-7	—	3 46-8	0-1	"	—
Kew	"	—	—	3 48	—	—	—
Paris	—	3 36-5	—	—	—	—	—
Aachen	—	—	—	3 49	—	W.	—
Hamburg	—	—	—	3 49	—	—	—
Laibach	N.S.	3 36-7	—	3 56-2	—	G.	—
Graz	—	—	—	—	—	W.	P <sub>3</sub> 3-50.
Pulkovo	—	3 35-2	—	—	—	G.	—
Tiflis	—	—	—	—	—	—	P <sub>3</sub> 3-59.
Baku	—	—	—	3 57-6	—	—	—
Tashkent	—	—	—	4 2-7	—	—	—
Irkutsk	—	3 26-2	3 30-9 ?	3 49-3	—	—	Sea of Okhotsk.
Honolulu	E.W.	3 0	—	3 21-5	0-3	M.	—
Victoria	"	3 5-8	—	3 8-2	0-8	—	—
Santa Clara	"	3 5-3	—	3 9-8	—	W.	1172 kms.
St. Louis	—	—	3 12 ?	3 20	—	—	—
Toronto	"	3 18-4	—	—	0-1	M.	Guatemala.
Ottawa	"	3 12-7 ?	3 18-8 ?	3 24-1	—	B.	? 4200 kms.
Granada	—	20 16-2	—	21 11-6	—	C.O.	—
Edinburgh	E.W.	—	—	20 55	—	M.	—
Shide	—	—	—	20 55	0-2	—	—
Haslemere	"	—	—	20 55	0-2	—	—
Paris	—	20 22	—	—	—	—	—
Aachen	—	20 42 ?	—	—	—	W.	—
Heidelberg	—	20 14	—	—	—	—	—
Göttingen	—	20 14-5	20 24-6 ?	—	—	—	—
Hamburg	—	20 14-3	—	—	—	—	—
Florence	—	—	—	20 25	—	A.	—
Innsbruck	—	20 14-6	—	20 26-5	—	Ma.	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>March 3, continued</b>							
Laibach	N.S.	20 14-2	20 24-5	20 48	—	G.	? 9100 kms.
Graz	—	20 14-4	20 24-5	—	—	W.	9600 kms.
Vienna	—	20 15-3	20 24-5 ?	—	—	—	7780 kms.
Breslau	—	20 14-2	20 24-5	20 46	—	—	7900 kms.
Königsberg	—	—	—	—	—	—	P <sub>3</sub> 20-43-8.
Lemberg	—	20 15-4 ?	—	—	—	B.O.	—
Czernowitz	—	—	20 22	—	—	Ma.	—
Pulkovo	—	20 13-1	20 22-1	20 46-6	—	G.	? S. of Japan.
Cairo	E.W.	20 24	—	—	—	M.	—
Tiflis	—	20 12-9	20 21-5	20 35-2	—	G.	7200 kms.
Baku	—	20 12-8	20 21-8	—	—	—	—
Tashkent	—	20 10-8	—	—	—	—	—
Irkutsk	—	20 9-1	20 14-8	—	—	—	25.3N. 69.3E.
Batavia	—	20 9	—	20 16	—	W.	—
Tsingtau	—	20 4-7	20 6-5	20 7-3	—	—	980 kms.
Manila	—	20 5-8	—	20 8-8	—	—	—
Zi-ka-wei	—	20 3-9	—	20 5-8	—	—	—
Osaka	N.S.	20 4-3	—	20 8-4	—	O.	—
<b>March 4</b>							
Edinburgh	E.W.	—	—	8 14-2	—	M.	—
Shide	—	—	—	7 53	0-1	—	—
Guildford	N.S.	—	—	7 42	0-2	—	—
Paris	—	—	—	—	—	—	P <sub>3</sub> 7-50.
Aachen	—	—	—	—	—	W.	P <sub>3</sub> 7-50.
Hamburg	—	—	—	—	—	—	P <sub>3</sub> 7-48.
Laibach	—	7 46	—	—	—	G.	—
Königsberg	—	—	—	—	—	W.	P <sub>3</sub> 7-49-1.
Pulkovo	—	7 2	—	—	—	G.	—
Cairo	—	—	—	7 33	0-3	M.	—
Tiflis	—	7 17-5 ?	—	—	—	G.	—
Baku	—	7 16-7 ?	—	7 41-9	—	—	—
Mauritius	E.W.	7 20-1	—	7 46-5	—	—	—
Tashkent	—	7 5-7	7 14-2	7 32-7	—	M.	6950 kms.
Kodaikanal	—	7 22-5	—	—	—	M.	—
Colombo	—	7 22	—	—	—	—	—
Irkutsk	—	7 4-7	7 12-2	—	—	G.	5925 kms.
Batavia	—	6 59-2	7 2-6	7 3-2	—	W.	Celebes.
Manila	—	6 58-6	7 1-3	7 6-4	—	—	—
Zi-ka-wei	—	7 1-5	—	—	—	—	—
Riverview	—	7 10-3	—	7 28-1	—	—	—
Honolulu	—	—	—	7 43-4	0-1	M.	—
Paris	—	—	—	—	—	—	P <sub>3</sub> 12-3.
Aachen	E.W.	—	—	—	—	W.	P <sub>3</sub> 12-7.
Pulkovo	—	12 7-5	—	12 11-5	—	G.	—
Baku	—	—	—	12 19-1	—	—	—
Tashkent	—	—	—	12 27-7	—	—	—
Irkutsk	—	11 43-8	—	12 28-7	—	—	—
Victoria	—	11 53-6	—	12 25-1	—	—	—
St. Louis	—	11 49-5	—	11 55-7	0-1	M.	—
Toronto	—	—	11 30-2	—	—	W.	4450 kms.
Ottawa	—	11 37-7	—	—	—	M.	—
—	—	11 31-2	11 36-6	—	—	B.	3580 kms.
<b>March 6</b>							
Rio Tinto	E.W.	2 44	—	2 52	0-4	M.	—
San Fernando	N.S.	2 41-5	—	3 0-3	0-5	—	—
Granada	—	2 20-3	—	2 51	—	C.O.	—
Eskdalemuir	—	—	—	2 45-5	0-4	M.	—
Edinburgh	E.W.	—	—	2 45-6	0-3	—	—
Bidston	—	2 38-3	2 42-2	2 49-1	0-5	—	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>March 6, continued</i>							
Stonyhurst	E.W.	—	—	2 48.5	0.6	M.	—
Shide	N.S.	2 19	—	2 48	2.2	—	—
Haslemere	F.W.	—	—	2 48	0.9	—	—
Guildford	N.S.	2 17.6	2 26.9	2 45.3	0.5	—	—
Kew	E.W.	2 37.3	—	2 46	1.0	—	—
Paris	N.S.	—	—	—	—	P <sub>3</sub> 2-39.	—
Aachen	—	2 32	—	2 42	—	W.	—
Heidelberg	—	2 27.4	—	2 41.9	—	—	—
Hamburg	—	2 18.7	—	2 40	—	—	6-7000 kms.
Laibach	—	—	—	2 40.9	—	G.	—
Graz	—	2 18.4	2 26	—	—	W.	6000 kms.
Vienna	—	—	—	—	—	—	P <sub>3</sub> 2-40.
Breslau	—	2 18.2	—	2 39	—	—	—
Konigsberg	—	—	—	2 41.2	—	—	—
Czernowitz	—	—	—	—	—	Ma.	P <sub>3</sub> 2-35.
Pulkovo	—	2 17.4	2 23.9	2 32.1 (2 33.3)	—	G.	33N. 85E.
Cairo	—	2 24	—	3 8.9	1.4	M.	—
Ksara	—	2 58.6	3 4.2	3 11.7	—	Ma.	—
Tiflis	—	2 15.8	—	2 36.1	—	G.	—
Baku	—	2 15.1	2 19.8	2 25.1	—	—	2970 kms.
Mauritius	E.W.	2 32	—	2 35.3	0.5	M.	—
Tashkent	—	2 12.5 ?	2 15.2 ?	—	—	G.	? 1330 kms.
Bombay	—	—	—	2 16.6	2.7	M.	—
Kodaikanal	—	2 16.9	—	2 23.6	0.4	—	—
Colombo	—	2 22.2	—	2 24.2	0.5	—	—
Irkutsk	—	2 14.8	2 19.6	2 24.1	—	G.	Nepaul.
Zi-ka-wei	—	2 14.8	—	2 28.5	—	W.	—
Osaka	N.S.	2 24	—	2 34.8	—	O.	—
Cork	E.W.	11 30	—	11 45	1.0	M.	—
San Fernando	—	11 35	—	11 49.5	0.6	—	—
Paisley	—	11 37	—	11 42.3	0.5	—	—
Granada	—	11 15.1	11 24.3	11 44.2	—	C.O.	7980 kms.
Eskdalemuir	—	11 23	—	11 45.5	1.3	M.	—
Edinburgh	—	—	—	11 40.2	0.7	—	—
Bidston	—	11 20	11 29.7	11 43.1	1.0	—	—
West Bromwich	—	—	—	11 42	1.2	—	—
Shide	—	11 12.5	—	11 42	1.5	—	—
Haslemere	—	11 32.9	—	11 42.3	1.6	—	—
Guildford	N.S.	11 7.9	11 26.7 ?	11 39.5	1.0	—	—
Kew	E.W.	—	—	11 40.4	1.9	—	—
Paris	—	11 22.5	—	—	—	—	—
Aachen	—	11 18	—	11 35.6	—	W.	—
Strassburg	—	11 13.9	—	—	—	—	—
Heidelberg	—	11 27	—	11 36.9	—	—	—
Hamburg	—	11 13.6	11 25.8	11 35.9	—	—	6-7000 kms.
Florence	—	11 14.5	11 21.5	11 36	—	A.	—
Insbruck	—	—	—	11 36.5	—	Ma.	—
Triest	—	—	11 21.1 ?	11 36.2	—	—	—
Pompeii	—	11 13.5	—	11 22	—	O.A.	—
Laibach	—	10 58.5 ?	11 8.8 ?	11 35.7	—	G.	? 9100 kms.
Graz	—	11 13.3	11 20.8	11 36.5	—	W.	5900 kms.
Vienna	—	11 13.2	11 24	11 36.7	—	—	—
Breslau	—	11 13.2	—	11 34	—	—	—
Cape Town	—	11 52.9	—	12 1	0.1	M.	—
Konigsberg	—	11 19.4	—	11 31.9	—	W.	—
Lemberg	—	11 14.6	—	—	—	E.O.	—
Czernowitz	—	11 12.4	11 19	11 31	—	Ma.	? 5500 kms.
Pulkovo	—	11 12.3	11 18.9	11 27.4 11 28.5	—	G.	32N. 84E.
Cairo	—	11 11	11 17.7	11 38	0.5	M.	—
Tiflis	—	11 10.4	—	11 22.2 11 23.2	—	G.	—
Baku	—	11 9.6	11 14.4	11 21.8 11 23.3	—	—	3010 kms.
Seychelles	—	11 22.5	—	—	—	M.	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>March 6, continued</i>							
Mauritius	E.W.	11 26.6	—	11 30	0.9	M.	—
Tashkent	—	11 7.6 ?	11 10 ?	—	—	G.	? 1330 kms.
Bombay	—	11 10.2	—	11 11.9	11.0	M.	—
Kodaikanal	—	—	—	11 14.3	5.0	—	—
Colombo	—	11 13.8	—	11 47.9	2.5	—	—
Calcutta	—	10 37.9	—	11 7.9	—	—	—
Irkutsk	—	11 9.8	11 14.4	11 19	—	G.	Pamirs.
Batavia	—	11 13	—	11 24	—	W.	—
Tsingtau	—	11 15.9	—	11 22.6	—	—	—
Manila	—	11 11.5	11 17.4	11 29	—	—	—
Zi-ka-wei	—	11 10.9	11 16.4	11 23.7	—	O.	—
Osaka	N.S.	11 12.1	—	11 29.9	—	—	—
Honolulu	E.W.	—	—	12 6	0.1	M.	—
Victoria	—	12 1.7	—	—	—	—	—
Toronto	—	12 2.5	—	—	—	—	—
Ottawa	—	11 28.6	—	—	—	B.	—
<i>March 8</i>							
Rio Tinto	E.W.	16 30	—	16 34	0.7	M.	—
San Fernando	—	16 26.5	—	16 51.5	0.5	—	—
Paisley	—	16 23	—	16 40	0.6	—	—
Granada	—	16 4.9	16 14.6	16 35.6	—	Inf.	8700 kms.
Eskdalemuir	—	—	—	16 41	0.5	M.	—
Edinburgh	—	16 14.9	—	16 41	0.4	—	—
Bidston	—	16 24	—	16 40.8	0.7	—	—
Stonyhurst	—	—	—	16 50	0.6	—	—
West Bromwich	—	16 8.5	—	16 41.5	0.2	—	—
Shide	—	16 8.5	—	16 35.5 16 45.5 16 41.6	0.6 0.6 0.7	—	—
Haslemere	—	16 38	—	—	—	—	—
Guildford	N.S.	16 0	16 10	16 38.9	0.5	—	—
Kew	E.W.	16 26.5	—	16 41.9	0.7	—	—
Paris	—	16 9	—	16 34	—	—	—
Aachen	—	16 6	—	16 33	—	W.	—
Strassburg	—	—	—	16 35	—	—	—
Heidelberg	—	16 27	—	16 40.3	—	—	—
Göttingen	—	—	—	16 37	—	—	—
Hamburg	—	16 16	—	16 35	—	—	—
Florence	—	16 16.5	16 25	16 44	—	A.	—
Triest	—	16 26.5	—	—	—	W.	—
Laibach	N.S.	16 3.5 ?	16 13.2 ?	16 38.5	—	G.	? 8400 kms.
Graz	—	16 17.7	—	16 45.5	—	W.	—
Vienna	—	—	—	16 42	—	—	—
Konigsberg	—	—	—	—	—	—	P <sub>3</sub> 16-38.9.
Czernowitz	—	—	—	16 45	—	Ma.	—
Pulkovo	—	16 7.5	16 17.2	16 33.1	—	G.	? C. America.
Cairo	E.W.	16 20	—	17 13	0.3	M.	—
Makeyevka	—	—	16 40.6 ?	16 57.9	—	G.	—
Tiflis	—	—	—	16 53.9	—	—	—
Baku	—	—	16 22.1 ?	16 44.7 16 56	—	—	—
Mauritius	—	17 4.3	—	17 12.2	0.4	M.	—
Tashkent	—	16 24 ?	—	16 51.3	—	—	—
Irkutsk	—	16 11.1 ?	16 23.1 ?	16 49.9 16 57.7	—	G.	Guatemala.
Zi-ka-wei	—	—	—	—	—	W.	P <sub>3</sub> 17-0.3.
Honolulu	—	16 12.5	16 20.4	16 25.9	0.5	M.	—
Victoria	—	16 3.5	—	16 18.4	1.3	—	—
Santa Clara	—	16 12	—	16 13.7	—	W.	Guatemala.
St. Louis	N.S.	15 57.7	16 2.7	—	—	—	3800 kms.
Toronto	E.W.	16 1.4	16 7.7	16 10.2	1.8	N.	Guatemala.
Ottawa	—	16 4.1	16 7.1	16 11	—	B.	1330 kms.
Fernando Noronha	—	16 17.5	—	16 41.7	1.3	M.	—
<i>March 10</i>							
Eskdalemuir	E.W.	—	—	15 10	0.2	M.	—
Edinburgh	—	—	—	15 16.6	—	—	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>March 10, continued</i>							
Bidston	E.W.	15 4:7	—	15 12:4	0:3	M.	—
Shide	N.S.	15 1	—	15 13:5	0:5	"	—
Haslemere	E.W.	15 12:3	—	15 13	0:1	"	—
Guildford	N.S.	15 9:7	—	15 13:5	0:2	"	—
Kew	E.W.	—	—	15 14	—	"	—
Paris	—	14 59:1	—	—	—	"	—
Aachen	—	15 8	—	15 12	—	W.	—
Strassburg	—	14 7:3	—	—	—	"	—
Hamburg	—	15 6	—	—	—	"	—
Laibach	N.S.	—	—	—	—	G.	P <sub>3</sub> 15-8.
Pulkovo	—	14 28	—	15 2:9	—	"	—
Cairo	E.W.	14 18	—	—	—	M.	—
Tiflis	—	—	—	15 5:7	—	G.	—
Baku	—	14 33	—	15 0:7	—	"	—
Mauritius	"	14 48	—	—	—	M.	—
Tashkent	—	—	—	14 54:3	—	G.	—
Irkutsk	—	14 5:1	—	14 49:3	—	"	—
Adelaide	"	14 6:4	—	14 16:5	0:8	M.	—
Sydney	"	13 55:5	—	14 7:9	0:6	"	—
Riverview	—	14 3:4	—	14 8:3	—	"	—
Samoa	—	14 17:2	—	14 17:7	—	W.	—
Victoria	"	14 42 ?	—	—	—	M.	—
Toronto	"	14 55:8	—	—	—	"	—
Shide	E.W.	—	—	19 20	0:1	M.	—
Aachen	—	19 43 ?	—	—	—	W.	—
Hamburg	—	19 38:7	—	19 40	—	"	—
Laibach	N.S.	19 42	—	—	—	G.	—
Pulkovo	—	19 30	—	19 33:7	—	"	—
Cairo	E.W.	19 36	—	—	—	M.	—
Tiflis	—	—	—	—	—	G.	P <sub>3</sub> 19-21.
Baku	—	19 19	—	—	—	"	—
Tashkent	"	19 15	—	—	—	"	—
Bombay	—	19 15	—	19 15:2	0:4	M.	—
Irkutsk	—	19 19:3	—	—	—	G.	—
<i>March 12</i>							
Edinburgh	E.W.	—	—	22 43:5	—	M.	—
Bidston	"	22 38:7	—	22 41	0:1	"	—
Stonyhurst	"	—	—	22 47:5	0:1	"	—
Shide	"	—	—	22 44:5	0:1	M.	—
Kew	"	—	—	22 42	—	"	—
Paris	—	—	—	—	—	"	P <sub>3</sub> 22-36.
Aachen	—	—	—	22 42	—	W.	—
Laibach	N.S.	—	—	—	—	G.	P <sub>3</sub> 22-31-8.
Pulkovo	—	21 52	—	22 28:9	—	"	—
Cairo	E.W.	22 2	—	—	—	M.	—
Makeyevka	—	—	—	—	—	G.	P <sub>3</sub> 22-56.
Tiflis	—	22 1:1	—	22 29	—	"	18N. 136.2E.
Baku	—	21 50:9 ?	22 0:3 ?	22 19:9	—	"	—
Tashkent	—	21 57:9	—	22 22:1	—	"	—
Colombo	"	22 11 ?	—	22 16:1	—	"	—
Manila	—	21 41:8	21 44:5	21 48:1	—	M.	—
Zi-ka-wei	—	21 45:5	—	—	—	W.	—
Honolulu	"	—	—	22 19	0:2	M.	—
<i>March 14</i>							
Azores	E.W.	9 6	—	9 25:2	1:6	M.	—
Rio Tinto	—	9 1	—	9 58	9:5	"	—
San Fernando	N.S.	9 4:5	—	10 4:5	9:0	"	—
Faisley	E.W.	9 9:5	—	9 56	3:7	"	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>March 14, continued</i>							
Granada	—	9 0:1	9 11:8	9 23:8	—	Bif.	11,000 kms.
Eskdalemuir	E.W.	9 0:5	—	9 57:1	—	"	—
Edinburgh	"	9 1:8	—	9 54:5	5:8	M.	—
Bidston	"	9 4:6	9 11:2	9 50:8	6:0	"	—
Stonyhurst	"	9 0:9	9 9:8	9 48:7	4:0	"	—
West Bromwich	"	8 59:5	9 12	9 54:5	9:5	"	—
Shide	"	9 0	9 12	9 50	8:0	"	—
Haslemere	"	9 0:2	9 15:6	9 52	7:5	"	—
Guildford	N.S.	8 58:2	9 9:3	9 43:3	8:4	"	—
Kew	E.W.	9 1:8	—	9 48:5	5:9	"	—
Paris	—	8 59:7	9 9:9	—	—	"	—
Aachen	—	8 59:3 ?	9 10:9	9 39:5	—	W.	Sumatra.
Strassburg	—	8 59:1	9 10:2	9 43:7	—	"	—
Heidelberg	—	8 59:1	9 9:9	9 43:2	—	"	—
Gottingen	—	8 58:7	9 9:5	9 44:6	—	"	? Moluccas.
Hamburg	—	8 58:9	9 9:2	9 38	—	"	—
Florence	"	8 56	9 1	9 39:1	—	A.	—
Innsbruck	—	8 59	9 9:4	9 18:5	—	Ma.	9280 kms.
Zadova	—	8 59:1	9 9:7	9 29:7	—	V.	Moluccas.
Triest	—	8 59:1	9 9:9	9 43	—	W.	3670 kms.
Monte Cassino	—	8 58:6	—	9 29:7	—	Ca.	Philippines.
Pola	N.S.	8 58:8	9 9:4	9 19:5	—	W.	6900 kms.
Pompeii	E.W.	8 59:1	9 9	—	—	O.A.	Philippines.
Laibach	N.S.	8 58:3	9 9:4	—	—	G.	10,100 kms.
Graz	—	8 59:2	9 10:2 ?	9 36:1	—	W.	10,300 kms.
Vienna	—	8 58:6	9 9:4	9 42:5	—	"	9700 kms.
Breslau	—	8 58:8	9 9:3 ?	9 37	—	"	—
Cape Town	E.W.	9 0:8	—	9 15	2:1	M.	—
Budapest	—	8 59:1	9 9:2	9 25:2	1:3	W.	—
Konigsberg	—	8 58:7	9 8:5	9 39	—	"	—
Lemberg	—	8 58:2	9 4:1	9 50	—	"	—
Czernowitz	—	8 58:1	9 8	9 36:9	—	"	Sunda Archipelago.
Pulkovo	—	8 57:7	9 7:9	9 36:4	—	"	? 5000 kms.
Cairo	"	8 58:2	—	9 36	—	Ma.	? 8400 kms.
Ksara	—	8 57:8	9 8	9 30:3	6:0	M.	Philippines.
Tiflis	—	8 57	9 8	9 33:4	—	Ma.	9600 kms.
Baku	—	8 56:5	9 5:4	9 22:8	—	G.	—
Seychelles	"	8 57	—	9 50:6	—	M.	7470 kms.
Mauritius	"	8 55:9	9 5:6	9 33	4:0	"	—
Tashkent	"	8 55:3	—	9 7:6	10:0	"	—
Bombay	"	8 54:4	—	—	—	G.	—
Kodalkanal	"	8 54:9	9 8:2	9 22:7	7:0	M.	—
Colombo	"	8 54:1	—	9 22:5	10:0	"	—
Calcutta	"	8 45:2 ?	—	9 2:2	11:5	"	—
Irkutsk	—	8 53:9	9 1:1	8 57:4 ?	> 17:0	"	—
Batavia	—	8 50:1	8 50:6 ?	9 19:6	—	G.	Philippines.
Perth	"	8 52:4	8 55:9	—	—	W.	Sangir Id.
Tsingtau	—	8 51:4	8 56:6	9 1:5	12:0	M.	3470 kms.
Manila	—	8 47:6	—	9 0:7	—	W.	Talaut, Siao and Sangir Ids.
Zi-ka-wei	—	8 50:6	8 55:1	—	—	"	—
Osaka	N.S.	8 51:3	—	8 59:2	—	O.	—
Adelaide	E.W.	8 59:2	8 59	9 2:9	33:7	M.	—
Sydney	"	8 58:6	9 0	9 9:6	18:0	"	4400 kms.
Riverview	"	8 53:3	9 0:2	9 7:1	—	"	Sangir Id.
Samoa	—	8 56:8	9 5:6 ?	9 10:2	—	W.	—
Honolulu	"	8 57:2	—	9 28:7	8:6	M.	—
Victoria	"	8 58:6	9 9:1	9 14	4:2	"	N.E. Celebes.
Santa Clara	"	9 3:8	—	9 10:5	—	W.	9364 kms.
St. Louis	—	9 6	9 16	—	—	"	8800 kms.
Toronto	"	—	9 7:3	9 19:9	0:9	M.	N.E. Celebes.
Ottawa	—	9 4:4	—	—	—	B.	—
Fernando Noronha	"	9 12:5	—	9 47	4:0	M.	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>March 14, continued</i>							
Cairo	E.W.	18 20	—	—	—	M.	—
Baku	..	18 12-9 ?	18 17 ?	18 25-1	—	..	—
Mauritius	..	18 13-3	—	18 16-1	0-5	..	—
Bombay	..	18 11-6	—	18 12-9	0-3	..	—
Kodaikanal	..	18 11-5	—	18 13-3	0-6	..	—
Colombo	..	18 10	—	18 16	0-3	..	—
Irkutsk	..	18 23-4	—	18 39-5	—	G.	—
<i>March 18</i>							
Eskdalemuir	E.W.	—	—	2 7	0-1	M.	—
Edinburgh	..	1 51-3	—	2 2-3	—	..	—
Bidston	..	1 53-7	—	2 3-6	0-2	..	—
Stonyhurst	..	1 49	—	2 12	<0-1	..	—
West Bromwich	..	1 47-5	—	2 8	0-2	..	—
Shide	..	—	—	2 3-7	0-2	..	—
Haslemere	..	—	—	2 2	0-2	..	—
Kew	..	—	—	2 2	—	..	—
Paris	..	1 55-5	—	—	—	..	—
Aachen	..	—	—	1 58	—	W.	—
Heidelberg	..	1 44	—	2 5	—	..	—
Gottingen	..	1 48	—	2 5	—	..	—
Hamburg	..	1 54	—	1 59-4	—	..	—
Florence	..	—	—	2 3-1	—	A.	—
Triest	..	1 54-9	—	—	—	W.	—
Laibach	N.S.	1 30-7	1 43-2	2 2-3	—	G.	? 12,200 kms.
Graz	..	1 30	—	1 57-6	—	W.	—
Vienna	..	1 31-4	—	2 2-5	—	..	—
Breslau	..	1 31-1	1 40-6	2 1-3	—	..	—
Czernowitz	..	1 31 ?	—	—	—	Ma.	—
Pulkovo	..	1 29-7	1 36-5	1 48-4	—	G.	61N, 137E.
Cairo	E.W.	1 48	—	2 13	0-2	M.	—
Tiflis	..	1 31	1 38-9	1 54-8	—	G.	—
Baku	..	1 30-8	1 38-6	1 57 1 54-8 1 55-6	—	..	6190 kms.
Colombo	..	2 5 ?	—	—	—	M.	—
Irkutsk	..	1 26-3	1 30-5	1 33-6	—	G.	Tibet.
Batavia	..	1 17	—	—	—	W.	—
Manila	..	1 15-3	—	—	—	..	—
Zi-ka-wei	..	1 33-1	—	1 40-6	—	..	—
Honolulu	..	—	—	1 47-3	0-1	M.	—
Victoria	..	1 48-6	—	1 49-8	0-2	..	—
Toronto	..	2 0-5	—	2 5-1	0-3	..	—
Shide	E.W.	—	—	7 4-5 ?	0-7	M.	—
Tiflis	..	—	—	—	—	G.	P <sub>3</sub> 7-5.
Baku	..	6 32-5 ?	—	7 10-6	—	..	—
Tashkent	..	6 37-3	—	7 5-9	—	..	—
Irkutsk	..	6 24-1 ?	—	6 47-5	—	..	—
Manila	..	6 22-5	—	—	—	W.	—
Honolulu	..	6 21-1	—	6 31-5	0-5	M.	—
<i>March 19</i>							
Paisley	E.W.	19 5	—	19 42	0-2	M.	—
Edinburgh	..	—	—	19 41-5	—	..	—
Bidston	..	19 36-3	—	19 45	0-1	..	—
Stonyhurst	..	18 58	—	19 45	0-1	..	—
West Bromwich	..	—	—	19 45	0-2	..	—
Shide	N.S.	19 31	—	19 39-5	0-2	..	—
Kew	E.W.	—	—	19 45	—	..	—
Paris	N.S.	—	—	—	—	..	P <sub>3</sub> 19-34.
Aachen	..	—	—	19 39	—	W.	—
Hamburg	..	—	—	—	—	..	P <sub>3</sub> 19-29.

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>March 19, continued</i>							
Laibach	N.S.	19 30-1	—	—	—	G.	—
Graz	..	—	—	—	—	W.	P <sub>3</sub> 19-39.
Konigsberg	..	—	—	—	—	..	P <sub>3</sub> 19-34-1.
Pulkovo	E.W.	18 56-3	—	19 30-1	—	G.	—
Cairo	..	19 38	—	—	—	M.	—
Tiflis	..	—	—	19 27-7	—	G.	—
Baku	..	19 0-6	—	19 21-2	—	..	—
Tashkent	..	18 54-3 ?	—	19 16-4	—	..	—
Irkutsk	..	18 51-9	—	19 5-9	—	..	—
Tsingtau	..	18 51-8	—	18 54-1	—	W.	—
Manila	..	18 48	18 51-1	18 53-9	—	..	N. Formosa.
Zi-ka-wei	..	18 48	—	18 50	—	O.	—
Honolulu	..	—	—	19 29	0-1	M.	—
<i>March 23</i>							
Cape Town	E.W.	—	—	1 37-4	0-1	M.	—
Cairo	N.S.	1 17-6	—	1 19	0-2	..	—
Ksara	E.W.	1 13	—	—	—	Ma.	—
Tiflis	..	1 15-1	—	1 23-7	—	G.	—
Baku	..	1 14-9 ?	—	1 25-9	—	..	—
Tashkent	..	1 15-5 ?	—	1 20-4	—	..	—
Irkutsk	..	1 27-4	—	1 31-9	—	..	—
Rio Tinto	E.W.	21 8	—	21 48	0-6	M.	—
Granada	..	21 5-6	21 17	21 50	—	C.O.	? 10,550 kms.
Eskdalemuir	..	21 4-5	—	21 47-5	0-4	M.	—
Edinburgh	..	21 41-6	—	21 44-5	0-1	..	—
Bidston	..	21 11-2	—	21 44-2	0-3	..	—
Stonyhurst	..	21 12	—	21 48-9	0-2	..	—
West Bromwich	..	21 3	21 12-7	21 40-5	0-1	..	—
Shide	N.S.	21 5-5	—	21 43	1-0	..	—
Haslemere	E.W.	21 26	—	21 48-5	0-9	..	—
Guildford	N.S.	—	—	21 42-7	0-2	..	—
Kew	E.W.	21 12-2	—	21 47	0-4	..	—
Paris	..	21 4-6	21 12-2	21 40	—	..	—
Aachen	..	21 0-6 ?	21 10-9	21 37	—	W.	Japan.
Strassburg	..	21 1-6	—	21 40-8 ?	—	..	—
Heidelberg	..	21 4-6	21 11-8 ?	21 44	—	..	—
Gottingen	..	21 4-3	—	21 39	—	..	—
Hamburg	..	21 4-4	21 10-7	21 38-1	—	..	—
Florence	..	21 5	21 14	21 41	—	A.	—
Innsbruck	..	21 4-7	—	21 41-1	—	Ma.	? 10,000 kms.
Padova	..	21 2-7	—	—	—	V.	—
Triest	..	21 4-7	21 10-8	21 40	—	W.	—
Pola	N.S.	21 0	—	21 59-2	—	..	Philippines.
Pompeii	E.W.	21 5	—	—	—	O.A.	—
Laibach	N.S.	21 0-3	21 10-9	21 39-3	—	G.	9480 kms.
Graz	..	21 0-7	21 10-8	—	—	W.	9900 kms.
Vienna	..	21 0-5	21 10-8	21 42	—	..	9160 kms.
Breslau	..	21 0-3	21 11	21 38	—	..	—
Sarajevo	..	21 0-8	21 10-9	21 42-3	—	..	Magelhaes Archipelago.
Cape Town	E.W.	—	—	21 11	0-1	M.	—
Budapest	..	21 3	—	21 46	—	W.	—
Konigsberg	..	20 59-9	21 10-1	21 34-7	—	..	? 9100 kms.
Lemberg	..	20 55-2	—	—	—	B.O.	—
Czernowitz	..	21 10-3	21 20-4 ?	21 39	—	Ma.	—
Pulkovo	..	20 59-4	21 9-3	21 25-5	—	G.	Bonin Ids.
Cairo	..	20 59	—	—	—	M.	—
Ksara	..	20 59-1	—	—	—	Ma.	—
Tiflis	..	20 59-4	21 9-3	21 29-5	—	G.	31.7N. 148.3E.
Baku	..	20 58-9	21 8-6	21 28-5	—	..	8480 kms.
Mauritius	..	21 10-5	—	21 13-7	—	M.	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>March 23, continued</i>							
Tashkent		20 57.7	21 6	21 21	—	G.	6860 kms.
Bombay	E.W.	20 58.2	—	21 9.3	0.5	M.	—
Kodakanal	"	20 57	21 6.8	21 25.1	0.5	"	—
Colombo	"	21 3	—	21 8	0.3	"	—
Calcutta	"	20 55.4	—	21 11.2	—	"	—
Irkutsk	"	20 55	21 1.2	21 8.5	—	G.	Bayley Ids.
Batavia	"	20 52.6	—	20 59.1	—	W.	Times approx.
Manila	"	20 52.1	20 56.3	21 1.4	—	"	—
Zi-ka-wei	"	20 51.9	20 55.6	20 56.9	—	"	—
Osaka	N.S.	20 50.7	—	20 53.9	—	O.	—
Adelaide	E.W.	—	21 5.6	21 16	1.2	M.	—
Sydney	"	21 4.1	21 9.2	21 18.3	1.0	"	4000 kms.
Riverview	"	20 57.4	21 4.1	21 16.9	—	"	5000 kms.
Honolulu	"	20 56.8	—	21 5.2	1.0	"	—
Victoria	"	21 0.1	—	21 9.4	0.3	"	—
Toronto	"	21 8.7	—	—	—	"	—
Ottawa	"	21 4.9?	21 11.5?	—	—	B.	? 4000 kms.
<i>March 24</i>							
Eskdalemuir	N.S.	—	—	11 5.5	0.1	M.	—
Edinburgh	E.W.	—	—	11 11.3	—	"	—
Bidston	"	11 0.8	—	11 11	0.1	"	—
Shide	"	—	—	11 4	0.1	"	—
Haslemere	"	11 3	—	11 4	0.1	"	—
Kew	"	—	—	11 7	—	"	—
Paris	"	10 42.5	10 49.4	—	—	"	? 5100 kms.
Aachen	"	10 48.8	—	10 59	—	W.	—
Heidelberg	"	10 52	—	10 59	—	"	—
Hamburg	"	10 42.4	—	10 50.9	—	"	—
Innsbruck	"	10 41.7	—	—	—	Ma.	—
Padova	"	10 40.5	10 43.2	—	—	V.	—
Laibach	N.S.	10 41.8	—	—	—	G.	—
Graz	"	10 41.4	—	—	—	W.	—
Vienna	"	10 41.3	10 48.5?	—	—	"	—
Breslau	"	10 41.5	10 53.6?	11 0	—	"	—
Cape Town	E.W.	—	—	11 15	0.1	M.	—
Konigsberg	"	10 42.2	10 47.1	—	—	W.	? Caucasus.
Czernowitz	"	10 39	—	10 56	—	Ma.	—
Pulkovo	"	10 41.4	10 47.1	10 53.6	—	G.	26N. 44E.
Cairo	"	10 40	—	10 54.9	—	"	—
Ksara	"	10 38.3	10 41.6	10 44.1	—	M.	2000 kms.
Tiflis	"	10 38.2	10 41.3	10 43.7	—	G.	27.7N. 53.4E.
Baku	"	10 37.4	10 40.1	10 44.9	—	"	1510 kms.
Tashkent	"	10 38.7	10 42.4	10 47.3	—	"	2170 kms.
Bombay	"	10 43	—	10 48.5	0.2	M.	—
Colombo	"	10 53	—	10 55.5	0.2	"	—
Irkutsk	"	10 42.6	10 49.3	10 59.9	—	G.	E. Coast of Persian Gulf.
Paisley	E.W.	—	—	16 50	—	M.	—
Shide	"	16 10	—	16 49	0.1	"	—
Paris	"	—	—	—	—	"	P <sub>3</sub> 16-50.
Aachen	"	—	—	—	—	W.	P <sub>3</sub> 16-48.
Pulkovo	"	16 2.9	16 13.4	16 40.5	—	G.	9420 kms.
Cairo	"	16 13	—	—	—	M.	—
Baku	"	16 0.5	16 9.9	16 29.2	—	G.	—
Tashkent	"	16 7.6	16 14.3?	16 25.2	—	"	? 4960 kms.
Colombo	"	16 3	—	16 4	0.4	"	—
Irkutsk	"	16 0.7	16 18.2	16 22.1	—	G.	? 6600 kms.
Batavia	"	16 18.6	16 19.4	16 22	—	W.	Sumatra F.
Manila	"	16 36	—	—	—	"	—
Zi-ka-wei	"	16 7.7	—	—	—	"	—
Sydney	"	16 17.7	—	—	—	M.	—
Paris	"	—	—	—	—	"	P <sub>3</sub> 20-32.

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>March 24, continued</i>							
Aachen		—	—	—	—	W.	P <sub>3</sub> 20-33.
Laibach	N.S.	20 27.9	—	—	—	G.	—
Pulkovo	"	20 8.3	—	20 34.9	—	"	—
Cairo	E.W.	19 55	—	—	—	M.	—
Baku	"	—	—	20 18.2	—	G.	—
Tashkent	"	—	—	20 13.9	—	"	—
Irkutsk	"	19 41	—	19 59.8	—	"	—
Sydney	"	19 28.5	—	—	—	M.	—
Riverview	"	19 27	19 29.2?	19 33.8	—	"	—
<i>March 25</i>							
Shide	E.W.	—	—	2 31.7	0.1	M.	—
Haslemere	"	2 25.9	—	2 27.8	0.1	"	—
Hamburg	"	2 12	—	—	—	"	—
Laibach	N.S.	2 11	—	—	—	G.	—
Pulkovo	"	2 0.4	—	2 20.9	—	"	—
Cairo	"	2 1	—	—	—	M.	—
Ksara	E.W.	1 57.1	2 0.5	2 3.6	—	Ma.	2030 kms.
Baku	"	1 57.7	2 0.1?	2 4.4	—	G.	—
Tashkent	"	1 57.7	2 1.3	2 5.7	—	"	2160 kms.
Irkutsk	"	2 11.7	—	—	—	"	—
Shide	N.S.	14 13.7	—	14 38.7	0.1	M.	—
Paris	"	—	—	—	—	"	P <sub>3</sub> 14-22.6.
Aachen	"	—	—	—	—	W.	P <sub>3</sub> 14-21.
Hamburg	"	14 15	—	14 21	—	"	—
Graz	"	14 9.2?	14 9.7	14 10	—	"	260 kms.
Vienna	"	14 9.5	14 13.7?	—	—	"	—
Breslau	"	14 9.6	—	—	—	"	—
Konigsberg	"	14 9.4	—	—	—	"	—
Pulkovo	"	14 8.9	14 12.7	14 18.5	—	G.	42.2N. 45.9E.
Cairo	E.W.	14 9	—	—	—	M.	—
Ksara	"	14 6.1	14 8.6	14 10.5	—	Ma.	1400 kms.
Tiflis	"	14 4.8	14 5.3	—	—	G.	44N. 45.7E.
Baku	"	14 4.1	14 4.4	—	—	"	180 kms.
Tashkent	"	14 7.7	14 10.8	—	—	"	1710 kms.
Irkutsk	"	14 17	14 24	—	—	"	? Caucasus.
<i>March 26</i>							
Eskdalemuir	E.W.	—	—	22 47.5	<0.1	M.	—
Edinburgh	"	—	—	22 46.1	—	"	—
Bidston	"	22 35.2	—	22 45.2	0.1	"	—
Stonyhurst	"	22 35	—	22 56	0.1	"	—
West Bromwich	"	—	—	22 42	0.1	"	—
Shide	"	21 50	—	22 46.7	0.5	"	—
Haslemere	"	22 45	—	22 48.3	0.2	"	—
Kew	"	—	—	22 44	—	"	—
Paris	"	22 4.2	—	—	—	"	—
Hamburg	"	22 0	—	22 34	—	"	—
Laibach	N.S.	22 0.3	—	22 40.9	—	G.	—
Graz	"	22 15	—	—	—	W.	—
Pulkovo	"	21 48.8	21 59.3	22 21.2	—	G.	9340 kms.
Cairo	E.W.	21 59.5	—	—	—	M.	—
Tiflis	"	21 49.1	21 59.2	22 20.8	—	G.	8950 kms.
Mauritius	"	22 10.5	—	22 14.5	0.5	M.	—
Tashkent	"	21 46.3	21 54.9	22 14.3	—	G.	7140 kms.
Irkutsk	"	21 45	21 52.5	22 5.8	—	"	40.2N. 129.6E.
Batavia	"	21 41	—	21 45	—	W.	S.E. of Luzon.
Tsingtau	"	21 42.5	—	21 54.7	—	"	—
Manila	"	21 39.1	—	21 42	—	"	—
Zi-ka-wei	"	21 41.8	21 43.5	—	—	"	—
Osaka	N.S.	21 42.3	—	21 43.9	—	O.	—
Riverview	"	—	21 53.1	22 5.3	—	"	—
Honolulu	E.W.	21 57.7	—	22 17.5	0.4	M.	—



STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>March 27</b>							
Granada		3 21.1	3 27.6	3 41.8 3 45	—	Bif.	4810 kms.
Eskdalemuir	E.W.	—	—	3 46.5	0.1	M.	—
Edinburgh	"	—	—	3 54.4	—	"	—
Didston	"	3 34.3	3 43.7	3 46.8	0.3	"	—
Stonyhurst	"	3 38.3	—	3 43.4	<0.1	"	—
West Bromwich	"	3 21.5	3 33	3 51	0.1	"	—
Shide	"	3 22	—	3 57	0.1	"	—
Guildford	N.S.	—	—	3 51	0.3	"	—
Kew	E.W.	—	—	3 50	—	"	—
Paris		3 20.6	—	—	—	—	—
Strassburg		3 20.8	—	—	—	W.	—
Hamburg		3 21	—	—	—	—	—
Florence		3 20.9	3 28.9	3 35 3 45	—	A.	—
Innsbruck		3 20.5	3 21.7	—	—	Ma.	—
Padova		3 20.3	—	—	—	V.	—
Triest		3 20.1	3 25.9	—	—	W.	3940 kms.
Laibach	N.S.	3 20.1	3 26.1?	3 49.8	—	G.	—
Graz		3 20.2?	3 26	—	—	W.	4050 kms.
Vienna		3 20.3	3 26.1?	—	—	"	—
Cape Town	E.W.	3 40.6	—	3 42.5	0.7	M.	—
Pulkovo		3 21.2	3 27.8	3 34.2	—	G.	? Arabia or Abyssinia.
Cairo		3 15	—	3 20.4	0.6	M.	—
Ksara		3 17.2	3 22.7	3 28.2	—	Ma.	3600 kms.
Tiflis		3 19.6	3 24.2	3 37.9	—	G.	15.5N. 39.5E.
Mauritius		—	—	3 34.3	—	M.	—
Tashkent		3 20.1	3 25.9	3 36.4 3 37.3	—	G.	4000 kms.
Bombay		3 20.9	—	3 31.5	0.3	M.	—
Colombo		3 29	—	3 37	0.2	"	—
Calcutta		3 28.5	—	3 44.3	—	"	—
Paisley	E.W.	—	—	9 18.5	0.1	M.	—
Shide		—	—	9 18.3	0.2	"	—
Haslemere		9 13.7	—	9 15	0.1	"	—
Paris		9 27	—	—	—	—	—
Aachen		10 0	—	10 13	—	W.	—
Florence		9 10.9	—	9 45	—	A.	—
Vienna		9 5.4	—	—	—	W.	—
Pulkovo		9 24.5?	9 35.2	10 1	—	G.	? Arabia or Abyssinia.
Cairo		9 33	—	—	—	M.	—
Mauritius		9 46	—	9 50	0.3	"	—
Tashkent		9 21.6?	9 30.4	9 53.3	—	G.	? 7360 kms.
Irkutsk		9 20.4	9 28	9 42.5	—	"	40.2N. 129.6E.
Batavia		9 18	—	9 23	—	W.	—
Manila		9 14.5	—	—	—	—	—
Zi-ka-wei		9 16.4	—	—	—	—	—
Honolulu		9 46.5	—	9 53	0.3	M.	—
<b>March 30</b>							
Shide	E.W.	—	—	8 37	0.1	M.	—
Guildford	N.S.	—	—	8 0.7	0.1	"	—
Pulkovo		8 53.5	—	—	—	G.	P <sub>3</sub> 8-28.5.
Irkutsk		8 43.6	8 47.9	8 50	0.8	M.	—
Adelaide		8 41.6	—	8 52	—	"	—
Riverview		—	—	—	—	—	—
Samoa		—	—	—	—	W.	P <sub>3</sub> 8-40.
Edinburgh		—	—	10 13.2	—	M.	—
Bidston		9 58.2	—	10 9.6	0.1	"	—
Shide		—	—	10 8	0.1	"	—
Kew		—	—	10 6	—	"	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>March 30, continued</b>							
Paris		—	—	—	—	—	P <sub>3</sub> 10-1.
Hamburg		—	—	—	—	—	P <sub>3</sub> 10-0.
Laibach	N.S.	10 1.9	10 13.2	—	—	G.	? 10,500 kms.
Pulkovo		—	—	—	—	"	P <sub>3</sub> 9-45.
Irkutsk		—	—	—	—	"	P <sub>3</sub> 9-45.
<b>March 31</b>							
Azores	E.W.	4 4.5	—	—	—	M.	—
Cork	"	3 55	—	4 37	1.5	"	—
Rio Tinto	"	3 58	—	4 31	1.0	"	—
San Fernando	"	4 5	—	4 42.9	4.5	"	—
Paisley	"	4 2.5	—	4 39.3	0.9	"	—
Granada	"	3 54.3	4 4.8	4 31.9	—	Bif.	9370 kms.
Eskdalemuir	"	3 57	—	4 28.5	1.5	M.	—
Edinburgh	"	4 2.2	—	4 36.3	0.9	"	—
Bidston	"	4 2.4	4 13.7	4 33.6	2.1	"	—
Stonyhurst	"	4 1.5	—	4 29.7	1.5	"	—
West Bromwich	"	3 53.2	4 3	4 34.4	1.4	"	—
Shide	"	3 53.7	4 13.7	4 30.5	1.5	"	—
Haslemere	"	4 5.3	4 18.6	4 29.9	1.6	"	—
Guildford	"	3 54	4 3.2	4 33.1	1.3	"	—
Kew	"	4 3.2	—	4 38	2.2	"	? 9000 kms.
Paris	"	3 53.3	4 3.5	4 31	—	W.	? 8800 kms.
Aachen	"	3 53.1	4 3.1	4 27	—	"	—
Strassburg	"	3 53.3	4 3.6	4 20.5	—	"	—
Heidelberg	"	3 53.2	4 3.4	4 37.1	—	"	—
Göttingen	"	3 58	4 3	4 20	—	"	? 8500 kms.
Hamburg	"	3 52.8	4 2.6	4 20.1	—	"	8550 kms.
Florence	N.S.	3 53.9	4 6.7	4 31	—	A.	—
Innsbruck		3 53.3	4 3.2	4 37.3	—	Ma.	8600 kms.
Padova		3 53.5	4 3.9	4 33.2	—	V.	—
Triest		3 53.6	4 4.1	—	—	W.	9430 kms.
Monte Cassino		3 54	4 3.7	—	—	Ca.	Japan.
Pola		3 53.6	4 4	4 39.8	—	W.	9360 kms.
Pompeii	E.W.	3 54	4 4	—	—	O.A.	Japan.
Laibach	N.S.	3 53.5	4 3.7	4 30.8	—	G.	9000 kms.
Graz		3 53.4	4 3.7	4 33.4 4 35.4	—	W.	9000 kms.
Vienna		3 53.3	4 3.8	4 30	—	"	9400 kms.
Breslau		3 53.8	4 2.6	4 29	—	"	—
Sarajevo	"	3 53.5	4 3.8	4 31	—	"	Aleutians.
Cape Town		4 29.7	—	4 31.7	0.2	M.	—
Konigsberg	E.W.	3 52.7	4 2.1	4 25.5 4 29.9	—	W.	Aleutians.
Lemberg		3 53.6	—	4 26.2	—	B.O.	? 8000 kms.
Czernowitz		3 53.1	4 3.2	4 22	—	Ma.	? 8900 kms.
Pulkovo		3 51.9	4 0.7	4 14.7	—	G.	Aleutians.
Cairo	"	3 58	—	4 50.7	1.0	M.	—
Ksara	"	3 54.2	4 4.6	4 35.6	—	Ma.	9300 kms.
Tiflis	"	3 53.2	4 3.5	4 9.5	—	G.	43.3N. 172E.
Mauritius	"	4 35.5	—	4 45.9	0.5	M.	—
Bombay	"	4 3.4	—	4 38	2.1	"	—
Kodaikanal	"	4 5	—	4 38.5	0.7	"	—
Colombo	"	4 5.7	—	4 47.1	0.9	"	—
Calcutta	"	3 54.3	—	4 43.8	—	"	—
Irkutsk	"	3 49.4	3 56.3	4 4.5	—	G.	Aleutians.
Batavia	"	3 54	—	3 59	—	W.	—
Tsingtau	"	3 49.5	3 55.7	4 9.6	—	"	4520 kms.
Manila	"	3 51.5	3 56.2	4 2.3	—	"	—
Zi-ka-wei	"	3 49.7	3 56.8	4 7.1	—	"	—
Oskaka	N.S.	3 48.2	—	4 2.1	—	O.	—
Adelaide	E.W.	4 5.3	—	4 40.8	0.3	M.	—
Riverview		3 54	4 4.1	4 23.4	—	"	9500 kms.

STATION	Com- ponent	P <sub>1</sub>		P <sub>2</sub>		Max.		Amp. MM.	Machine	Remarks
		H. M.	H. M.	H. M.	H. M.	H. M.	H. M.			
<i>March 31, continued</i>										
Samoa		4 0	—	—	—	—	—	—	W.	—
Honolulu	E.W.	3 47.9	—	—	4 1.6	4.6	—	—	M.	—
Victoria	"	3 43.1	3 53.6	—	4 6	2.5	—	—	"	—
Santa Clara	"	3 49.1	—	—	3 49.7	—	—	—	W.	4217 kms.
St. Louis	"	3 51.2	3 59.5	4 17	—	—	—	—	"	6800 kms.
Toronto	"	3 59.9	4 0.7	4 19.4	—	3.0	—	—	M.	—
Baltimore	"	4 2.2	4 9	4 22	—	3.0	—	—	"	—
Ottawa	"	3 51.7	4 0.4	4 16	—	—	—	—	B.	7250 kms.
Edinburgh	E.W.	—	—	—	18 30.2	—	—	—	M.	—
Bidston	"	18 18.7	—	—	18 28.3	0.2	—	—	"	—
Shide	"	—	—	—	18 32	0.1	—	—	"	—
Guildford	N.S.	18 20.4	—	—	18 42.3	0.4	—	—	"	—
Paris	"	17 56	—	—	—	—	—	—	W.	P <sub>3</sub> 18-12.
Aachen	"	—	—	—	—	—	—	—	"	P <sub>3</sub> 18-6.
Hamburg	"	—	—	—	—	—	—	—	G.	—
Lahach	"	—	—	—	18 32.4	—	—	—	"	—
Pulkovo	"	—	—	—	18 14.3	—	—	—	"	—
Cairo	E.W.	18 15	—	—	—	—	—	—	M.	—
Tiflis	"	17 10.4	—	—	18 8	—	—	—	G.	—
Tashkent	"	17 19	—	—	17 57.2	—	—	—	"	—
Sydney	"	16 57.7	17 3.4	—	17 9.1	0.5	—	—	M.	4000 kms.
Riverview	"	16 56.6	17 2.4	—	17 7.1	—	—	—	"	4000 kms.
Honolulu	"	—	—	—	17 14	0.1	—	—	"	—
Victoria	"	17 21.6	—	—	—	—	—	—	"	—
Ottawa	"	—	—	—	—	—	—	—	B.	P <sub>3</sub> 17-44.1.
Edinburgh	E.W.	—	—	—	23 23.7	—	—	—	M.	—
Bidston	"	23 3.1	—	—	23 15	0.2	—	—	"	—
Stonyhurst	"	23 7.6	—	—	23 30.5	0.1	—	—	"	—
Shide	"	23 3	—	—	23 13	0.2	—	—	"	—
Haslemere	"	—	—	—	23 18	0.1	—	—	"	—
Guildford	N.S.	—	—	—	23 42.3	<0.1	—	—	"	—
Kew	E.W.	—	—	—	23 15	—	—	—	"	—
Paris	"	23 7	—	—	—	—	—	—	"	—
Aachen	"	—	—	—	—	—	—	—	"	P <sub>3</sub> 23-6.
Hamburg	"	—	—	—	—	—	—	—	"	P <sub>3</sub> 23-12.
Pulkovo	"	—	—	—	—	—	—	—	G.	P <sub>3</sub> 23-3.
Cairo	"	22 13	—	—	—	—	—	—	M.	—
Tiflis	"	22 1.8?	—	—	—	—	—	—	G.	—
Tashkent	"	21 54?	—	—	22 57.7	—	—	—	"	—
Irkutsk	"	—	22 5.4?	—	—	—	—	—	"	—
Adelaide	"	22 1.3	—	—	22 6.8	0.8	—	—	M.	—
Riverview	"	21 48.5	21 54.3?	—	21 59.7	—	—	—	"	4000 kms.
Samoa	"	21 46.9	—	—	21 49.9	—	—	—	W.	—
					22 0.3	—	—	—		—

**British Association for the Advancement  
of Science.**

*SEISMOLOGICAL COMMITTEE.*

Observations and formal business to  
J. H. BURGESS,  
Earthquake Observatory,  
SHIDE, Isle of Wight.

Special inquiries to  
Prof. H. H. TURNER,  
University Observatory,  
OXFORD.

**Monthly Bulletin for April, 1913.**

A further change is adventured in the present Circular. The comparative tables in the last three Bulletins show that for the smaller earthquakes the detailed information from the Milne Stations is often inaccurate and seldom of much value. It has therefore been decided not to print it at present, though it is collated and filed at Shide. The Chart accompanying the Bulletin shows at a glance what earthquakes have been recorded at the various Stations, and details with regard to any of them may be obtained from Shide if required.

The following figures for the four months January to April, 1913, may be of interest. The earthquake of March 14 was recorded at 66 Stations; that of Jan. 19 at 63 Stations. 7 earthquakes were recorded at from 51 to 60 Stations; 10 at from 41 to 50; and 16 at from 31 to 40. The figures for the separate months are given in the following table; no notice was taken (on the day-sheets on which the information is collected) of earthquakes recorded at fewer than 5 Stations.

For the present it has been decided to give full details for such earthquakes only as are recorded at 31 Stations at least. According to the table, this would mean the 100 largest earthquakes of the year.

MONTH	Number of Stations recording an Earthquake :					
	5 to 10	11 to 20	21 to 30	31 to 40	41 to 50	Over 50
January...	3	5	3	2	4	2
February	5	5	5	1	0	1
March ...	6	9	7	3	2	3
April ...	9	13	6	10	4	3
Total ...	23	32	21	16	10	9

**But it is requested that no change as yet be made in the information sent to Shide, as Observers will not be able to select the large earthquakes from the records at a single Station.**

The Stations are arranged in the order of longitude, starting from the Azores and travelling eastward.

The Russian Stations and those using the Wiechert instrument usually publish several maxima. For the purpose of this Bulletin the first is always given; if the amplitude of this maximum is not the greatest, then the maximum having the greatest amplitude is also given.

Observers are asked to send a copy of their Registers each month.

The time employed is Greenwich mean time (civil) expressed in hours, minutes, and decimals of a minute; 24 or 0 hours = midnight.

The amplitudes recorded in the 6th column refer only to the Milne instruments, and are given in millimetres and decimals of a millimetre.

The letters in the 7th column stand for: A. = Alfani; B. = Bosch; Bif. = Bifilar; B.O. = Bosch-Omori; C. = Cartuja; Ca. = Cancani; C.O. = Cartuja-Omori; G. = Galitzin; M. = Milne; Ma. = Mainka; O.A. = Omori-Alfani; V. = Vicentini; W. = Wiechert.

Guildford and West Bromwich use a modification of the Milne.

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>April 2-3</b>							
Limerick	E.W.	—	—	0 42.5?	—	—	—
San Fernando	"	0 47.5	—	0 54.5	0.5	M.	—
Paisley	"	0 26	—	0 50	0.2	"	—
Granada	"	0 7.5	—	0 42.8	—	C.O.	—
Eskdalemuir	N.S.	—	—	0 49.5	0.1	M.	—
Edinburgh	E.W.	0 38.9	—	0 47.1	0.1	"	—
Bidston	"	0 39.3	—	0 49.2	0.3	"	—
Stonyhurst	"	0 34.8	—	0 49.5	0.2	"	—
West Bromwich	"	0 14	0 19	0 29	0.1	"	—
Shide	"	0 37.5	—	0 45.5	0.2	"	—
Haslemere	"	—	—	0 49	0.2	"	—
Guildford	N.S.	0 14.7	0 23.6	0 41.6	0.1	"	—
Kew	E.W.	0 40.9	—	0 43.5	0.2	"	—
Paris	"	—	0 16?	0 48	—	"	—
Aachen	"	0 15.7	—	0 44	—	W.	—
Straessburg	"	—	—	—	—	"	P <sub>3</sub> 0-30.
Heidelberg	"	0 15	—	0 48	—	"	—
Gottingen	"	0 35	—	0 40	—	"	—
Florence	"	0 21.4	—	0 40.3	—	A.	—
Innsbruck	"	—	—	0 47.6	—	Ma.	—
Triest	"	—	—	—	—	W.	P <sub>3</sub> 0-38.
Graz	"	0 16	—	—	—	"	—
Vienna	"	—	—	0 39	—	"	—
Breslau	"	0 5.2	—	0 44	—	"	—
Budapest	"	0 31.5	—	0 45	—	"	—
Konigsberg	"	0 12.4	—	0 41.1	—	"	—
Czernowitz	"	0 4.8?	—	0 40	—	Ma.	—
Pulkovo	"	0 4.1	0 12.8	0 28	—	G.	29N. 121E.
Helwan, Cairo	"	23 58	—	0 30.3	—	M.	—
Tifis	"	0 20	—	0 51.7	0.2	"	—
	"	0 4	0 12.7	0 36	—	G.	7250 kms.
	"	—	—	0 36.9	—	"	—
Tashkent	"	0 1.8	0 8.9	0 24.1	—	"	5440 kms.
Irkutsk	"	23 58.8	0 3.5	0 19.9	—	W.	Bokhara.
Batavia	"	—	0 7.9?	0 8	—	"	—
Tsingtau	"	23 55.5	23 58.2?	0 0	—	"	1560 kms.
Manila	"	23 57.9	—	—	—	"	—
Zi-ka-wei	"	23 55.2	—	23 58.2	—	"	—
	"	—	—	23 59.3	—	"	—
Osaka	N.S.	23 54	—	23 55.1	—	O.	—
Riverview	"	0 8.2	—	0 29.4	—	"	S. Japan.
Honolulu	E.W.	0 12.6	—	0 30	0.1	M.	—
<b>April 7</b>							
San Fernando	N.S.	14 16	—	14 59	0.7	M.	—
Paisley	E.W.	14 34.5	—	14 54.5	0.3	"	—
Granada	"	15 2	—	14 39.9	—	C.O.	—
Eskdalemuir	N.S.	—	—	14 51	0.4	M.	—
Edinburgh	E.W.	14 12.9	—	14 57.2	0.1	"	—
Bidston	"	14 11.2	—	14 41.7	0.5	"	—
Stonyhurst	"	14 36.6	—	14 49	0.2	"	—
West Bromwich	"	14 3.5	—	14 52	0.6	"	—
Shide	"	14 35	—	14 56	0.5	"	—
Haslemere	"	—	—	14 56	0.2	"	—
Guildford	"	14 1	14 11.3	14 44.3	0.4	"	—
Kew	"	14 11.2	—	14 55.3	0.4	"	—
Paris	"	—	14 11.9	14 38	—	"	—
Aachen	"	—	14 11.1	14 40	—	W.	—
Heidelberg	"	14 2.9	14 11.4	14 41.8	—	"	—
Gottingen	"	14 0.8	—	—	—	"	—
Hamburg	"	14 0.7?	14 10.8	14 38.5	—	"	? 9900 kms.
	"	—	—	14 46.6	—	"	—
Florence	"	14 4.6	14 17	14 37	—	A.	—
Innsbruck	"	—	—	14 40	—	Ma.	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>April 7, continued</b>							
Padova	"	14 1	14 11.2	14 45.6	—	V.	—
Triest	"	14 10.9?	—	14 28.9	—	W.	—
Laibach	N.S.	14 12	14 22.9	14 38.9	—	G.	? 9900 kms.
Graz	"	14 4	14 11.2	14 45.3	—	W.	—
Vienna	"	14 10.8	—	14 38.5	—	"	—
Breslau	"	14 0.4?	14 10.8?	14 43.5?	—	"	—
Budapest	"	14 10.9	—	14 42.4	—	"	—
Konigsberg	"	—	14 9.9	14 34.4	—	"	—
Lemberg	"	13 59.3	14 10.2	14 39.9	—	B.O.	? 9800 kms.
Czernowitz	"	14 10.2?	—	14 39	—	Ma.	—
	"	—	—	14 44	—	"	—
Pulkovo	"	13 59.1	14 8.6	14 30.5	—	G.	30.6N. 141.8E.
	"	—	—	14 33.5	—	"	—
Helwan, Cairo	E.W.	14 4	14 12.2	14 50.5	0.4	M.	—
Tifis	"	—	14 8.7?	—	—	G.	—
Tashkent	"	13 57.5	14 5.5	14 19.3	—	"	6490 kms.
	"	—	—	14 24.7	—	"	—
Bombay	"	14 1.9	—	14 31	0.4	M.	—
Kodialkanal	"	14 27.2	—	—	—	"	—
Colombo	"	14 29	—	14 31.5	—	"	—
Calcutta	"	14 2.6	—	14 18.9	—	"	—
Irkutsk	"	13 55.2	14 0	14 5.9	—	G.	35N. 134.5E.
Batavia	"	—	14 4?	—	—	W.	—
Tsingtau	"	13 50.9	—	13 58.9	—	"	—
Manila	"	13 53.2	13 57.7	14 4.9	—	"	—
Zi-ka-wei	"	13 51.4	—	13 59.2	—	"	—
	"	—	—	14 1.9	—	"	—
Osaka	N.S.	13 49.3	—	13 52.4	—	O.	—
Honolulu	E.W.	14 4.8	—	14 18.4	2.0	M.	—
<b>April 8</b>							
Limerick	E.W.	—	—	3 15.6?	—	—	—
San Fernando	N.S.	—	—	3 29.5	—	M.	—
Eskdalemuir	"	—	—	3 22.5	0.1	"	—
Edinburgh	E.W.	—	—	3 44.8	—	"	—
	"	—	—	3 27.2	—	"	—
Bidston	"	3 19	—	3 21.7	0.2	"	—
Stonyhurst	"	3 8.4	—	3 21.7	0.1	"	—
West Bromwich	"	3 10	—	3 20	0.1	"	—
Shide	N.S.	—	—	3 27.5	0.2	"	—
Guildford	E.W.	2 42	—	3 17.7	0.2	"	—
Kew	"	3 11	—	3 20.8	0.1	"	—
Paris	"	—	—	—	—	"	P <sub>3</sub> 3-11.
Aachen	"	2 44	—	3 13	—	W.	—
Heidelberg	"	2 35	2 44.4	—	—	"	—
Gottingen	"	—	—	—	—	"	P <sub>3</sub> 3-5.
Hamburg	"	2 33.6	2 43.8	3 11	—	"	9100 kms.
Florence	"	—	2 43.8	3 11.3	—	A.	—
Laibach	N.S.	2 43.7	2 54.6	3 10.9	—	G.	? 9900 kms.
Graz	"	—	2 44.2	3 17	—	W.	—
Vienna	"	2 44.1	—	—	—	"	—
Konigsberg	"	—	—	—	—	"	P <sub>3</sub> 3-3.9.
Czernowitz	"	2 43.2	—	3 12	—	Ma.	—
Pulkovo	"	2 32.1	2 41.6	3 0	—	G.	30.6N. 141.8E.
Helwan, Cairo	E.W.	2 38	—	—	—	M.	—
Tifis	"	—	—	—	—	G.	P <sub>3</sub> 3-0.
Tashkent	"	—	—	2 55.9	—	"	—
	"	—	—	2 57.7	—	"	—
Irkutsk	"	2 27.4	—	2 52.8	—	"	—
Tsingtau	"	2 24.8	—	2 32.8	—	W.	—
Manila	"	2 26.5	—	2 34.8	—	"	—
Zi-ka-wei	"	2 22.9	—	2 32.1	—	"	—
	"	2 50.3	—	2 52.5	—	"	—
Osaka	N.S.	2 22.3	—	2 25.1	—	O.	—
Honolulu	E.W.	2 38	—	2 52	0.6	M.	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>April 9</b>							
Limerick	E.W.	—	18 16:6?	—	—	—	—
Rio Tinto	"	18 14	—	18 43	0.3	M.	—
San Fernando	"	18 16	—	18 46.8	1.2	"	—
Paisley	"	18 21	—	18 58	0.4	"	—
Granada	"	18 5.8	18 17	18 48.1	—	Bif.	10,200 kms.
Eskdalemuir	N.S.	—	—	18 58	0.5	M.	—
Edinburgh	E.W.	18 19.7	—	18 57.2	0.1	"	—
Bidston	"	18 19.6	—	18 55.5	0.7	"	—
Stonyhurst	"	18 19	—	18 53.5	0.2	"	—
West Bromwich	"	18 17	—	18 52	0.1	"	—
Shide	N.S.	18 10	—	18 22.5	0.5	"	—
Haslemere	E.W.	—	—	18 57	1.2	"	—
Guildford	"	18 17.7	—	18 56.4	0.2	M.	—
Kew	"	—	—	18 53.9	0.4	"	—
Paris	"	18 6.7	—	18 53.8	0.3	"	—
Aachen	"	18 12	—	18 45	—	"	—
Heidelberg	"	18 9.7	—	18 52	—	W.	—
Hamburg	"	18 12.5	18 21.6	18 51	—	"	7650 kms.
Florence	"	18 11	18 17.6	18 55	—	"	—
Innsbruck	"	—	—	18 40	—	A.	—
Triest	"	18 10.9	18 18.1	18 45	—	"	—
Laibach	N.S.	18 7.7	18 19.1	18 52	—	Ma.	5590 kms.
Graz	"	18 11.4	18 20.7	18 54.2	—	W.	10,500 kms.
Vienna	"	—	—	—	—	G.	8000 kms.
Sarajevo	N.S.	18 11.1	18 18.5	—	—	W.	Pa 18-38.
Cape Town	E.W.	18 1.4	—	—	0.9	M.	8000 kms.
Lemberg	"	—	—	18 8.6	—	E.O.	Pa 18-8.7.
Pulkovo	"	18 11.4	18 22.9	18 46.4	—	G.	Atlantic Ocean.
Helwan, Cairo	"	17 41.7	18 18.9	18 42.5	0.5	M.	—
Ksara	"	—	—	18 50.6	0.7	"	—
Tiflis	N.S.	18 12.1	18 18.1?	18 53	—	Ma.	—
Mauritius	E.W.	18 12.4	—	18 49.4	—	G.	9350 kms.
Tashkent	"	18 23.5	—	18 57.7	—	"	—
Bombay	"	18 18.2	—	19 8.9	—	M.	—
Kodaikanal	"	18 20.3	—	18 53.9	0.1	"	—
Colombo	"	18 54	—	19 0.5	—	"	—
Irkutsk	"	18 12.4	18 25.2	19 7.2	—	G.	13,000 kms.
Batavia	"	18 11	—	19 10.5	—	"	—
Manila	"	18 11.8	—	—	—	W.	—
Zi-ka-wei	"	18 12.1	—	18 17.3	—	"	—
Osaka	N.S.	18 12.5	—	—	—	O.	—
Riverview	"	18 8.4?	18 17.5?	18 40.4	—	"	7500 kms.
Honolulu	E.W.	—	—	18 32.5	0.2	M.	—
<b>April 13</b>							
Limerick	E.W.	7 4.6	—	7 39.6	3.0	—	—
Cork	"	—	—	7 44	1.5	M.	—
San Fernando	N.S.	7 4	—	7 47	5.0	"	—
Paisley	E.W.	7 3	—	7 58.5	0.8	"	—
Granada	"	6 55.4	7 6.5?	7 35.8	—	Bif.	110,120 kms.
Eskdalemuir	N.S.	—	—	7 45.9	—	"	—
Edinburgh	E.W.	7 3.5	—	7 37	2.0	M.	—
Bidston	"	—	—	7 36.1	0.6	"	—
Stonyhurst	"	7 2.7	—	7 35	0.9	"	—
West Bromwich	"	7 4.2	—	7 36.8	0.8	"	—
Shide	"	6 56	7 3	7 37.5	2.7	"	—
Haslemere	"	—	—	7 38.7	3.0	"	—
Guildford	N.S.	—	7 3.9	7 38.2	1.5	"	—
				7 39.8	0.8	"	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>April 13, continued</b>							
Kew	E.W.	7 4.1	—	7 34	1.1	M.	—
Paris	"	6 53.2	7 3.9	7 40.5	2.0	"	—
Aachen	"	6 53.1	7 3.3	7 36	—	W.	—
Heidelberg	"	6 53.4	7 3.8	7 25.2	—	"	—
Gottingen	"	6 52.7	7 3.3	7 34.2	—	"	—
Hamburg	"	6 52.7	7 2.8	7 35.4	—	"	8900 kms.
Florence	"	6 47.7	7 3.7	7 25	—	"	—
Innsbruck	"	6 53	7 3.6	7 32.3	—	A.	—
Padova	"	6 52.7	7 3.7	7 26	—	Ma.	—
Triest	"	7 5.2?	—	7 28.2	—	"	—
Pola	"	—	—	7 35	—	V.	—
Laibach	N.S.	6 51.7	7 3	7 30.1	—	W.	—
Graz	"	6 53	7 3.1	7 35.8	—	G.	10,340 kms.
Vienna	"	6 52.7	7 3	7 26.6	—	"	—
Breslau	"	6 52.5?	7 2.8?	7 35.7	—	"	—
Sarajevo	E.W.	6 52.7	7 3	7 26	—	W.	9000 kms.
Konigsberg	"	6 50.7?	7 2.7	7 26	—	"	9100 kms.
Lemberg	"	7 1.5	—	7 33.1	—	"	—
Pulkovo	"	6 51.4	7 0.4	7 33.4	—	"	—
Helwan, Cairo	"	6 53	7 3.6	7 34	—	"	—
Tiflis	"	6 51.3	7 0.1	7 24.5	0.6	M.	—
Mauritius	"	7 3.5	—	7 5.5	—	G.	7370 kms.
Tashkent	"	6 49.3?	6 56.6?	7 23.4	—	"	—
Bombay	"	6 53.2	—	7 28.5	—	M.	—
Kodaikanal	"	7 2	—	7 9.7	—	G.	5680 kms.
Colombo	"	7 14.8	—	7 19.8	1.5	M.	—
Calcutta	"	6 48.9	—	7 22.3	0.5	"	—
Irkutsk	"	6 46.2	6 51.3	7 27.3	0.5	"	—
Batavia	"	—	—	6 57.4	—	G.	32.2N. 134.6E.
Tsingtau	"	6 42.9	6 45.2	6 59.2	—	"	—
Manila	"	6 45	—	7 3?	—	W.	—
Zi-ka-wei	"	6 42.4	—	6 47.5	—	"	1270 kms.
Osaka	N.S.	6 41.5	—	6 51.3	—	"	—
Riverview	"	—	—	6 46.6	—	"	—
Honolulu	E.W.	6 59.7	—	6 43.2	—	O.	—
Victoria	"	7 28.3	—	7 21.8	0.5	M.	—
Toronto	"	7 27.8	—	7 15.9	—	"	—
Ottawa	"	6 59.5?	—	7 45.5	0.2	"	—
				—	—	B.	—
<b>April 14</b>							
Limerick	E.W.	—	—	8 48.7	3.2	—	—
San Fernando	"	8 44.5	—	8 49.5	0.7	M.	—
Paisley	"	8 10	—	8 49	0.9	"	—
Granada	"	—	—	8 48.3	—	Bif.	—
Eskdalemuir	N.S.	—	—	8 46	0.7	M.	—
Edinburgh	E.W.	8 17.8	—	8 39.9	0.4	"	—
Bidston	"	8 13.3	—	8 40.8	1.3	"	—
Stonyhurst	"	8 13.2	—	8 40.8	0.5	"	—
West Bromwich	"	8 13	—	8 46	1.5	"	—
Shide	"	—	—	8 49.3	1.7	"	—
Haslemere	"	—	—	8 43.5	0.8	"	—
Guildford	N.S.	8 2.4	8 13.2	8 43.1	0.6	"	—
Kew	E.W.	—	—	8 40.7	0.5	"	—
Paris	"	8 4.7	8 12.2	8 40	—	"	—
Aachen	"	8 4	—	8 35	—	W.	—
Heidelberg	"	—	—	8 41	—	"	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>April 14, continued</i>							
Hamburg		—	8 11?	8 34	—		
Graz		8 1-3	—	—	—	W.	
Vienna		8 0-7	—	8 38	—	"	
Breslau		8 0-7?	8 11?	8 35?	—	"	
Konigsberg		8 9-8	—	8 31-8	—	"	
Czernowitz		—	—	8 35	—	Ma.	
Pulkovo		7 59-6	8 8-7	8 25-1	—	G.	23N. 117E.
				8 33-6	—		
Helwan, Cairo	E.W.	8 0	—	8 43-1	0-2	M.	
Tiflis		7 59-1	8 7-8	8 25-6	—	G.	7250 kms.
				8 31-9	—		
Tashkent		7 52?	8 7-5	8 17-9	—	"	
				8 20-2	—		
Bombay		8 4-8	—	8 19-8	0-2	M.	
Colombo		8 3-6	—	8 18	0-4	"	
Calcutta		7 58-3	—	8 8-5	—	"	
Irkutsk		7 54-8	7 59-9	8 5-9	—	G.	25.8N. 123.6E.
Batavia		7 54	—	7 56	—	W.	
Tsingtau		7 51-5	7 54-5	7 56	—	"	1740 kms.
Manila		7 50-6	—	7 53-1	—	"	
Zi-ka-wei		7 50-5	7 51-9	7 53	—	"	
Osaka	N.S.	7 52-8	—	8 0-8	—	O.	
Honolulu	E.W.	—	—	8 31-2	0-2	M.	
<i>April 18</i>							
San Fernando	N.S.	14 11-8	—	14 26	0-4	M.	
Faisley	E.W.	13 20	—	14 22	0-3	"	
Eskdalemuir	N.S.	—	—	14 23-5	0-2	"	
Edinburgh	E.W.	—	—	14 18-7	—	"	
Bidston		14 12-7	14 15-9	14 23-4	0-2	"	
Stonyhurst		—	—	14 22-4	0-2	"	
West Bromwich		—	—	14 20	0-1	"	
Shide		13 54	—	14 21	0-5	"	
				14 23-7	—		
Haslemere		—	—	14 22	0-2	"	
Guildford	N.S.	—	—	14 22-1	0-9	"	
Kew	E.W.	14 15-5	—	14 22-4	0-2	"	
Paris		13 44-1	—	14 9	—	W.	
Aachen		13 58	—	14 9	—	"	
Heidelberg		13 38	—	14 14	—	"	
Gottingen		—	—	—	—	"	
Hamburg		13 37	—	—	—	"	
Florence		—	—	14 15?	—	A.	
Triest		—	—	—	—	W.	
Laibach	N.S.	13 38-3	—	—	—	G.	
Graz		13 35-7	—	14 17-7	—	W.	
Vienna		—	13 42-3?	—	—	"	
Konigsberg		—	—	—	—	"	
Czernowitz		13 37-4?	13 45-1?	14 10	—	Ma.	
Pulkovo		13 26	13 36-5	14 0-6	—	G.	
Helwan, Cairo	N.S.	13 38	—	—	—	M.	
Tiflis		13 26-4	13 36-1	13 56-2	—	G.	8470 kms.
				14 18-6	—		
Tashkent		13 23-4	13 31-5	13 47	—	"	? 6570 kms.
				13 51-7	—		
Bombay	E.W.	13 37-4	—	13 46-5	0-4	M.	
Kodakamal		13 39-2	—	13 48-6	0-2	"	
Colombo		13 36-5	—	13 44	0-5	"	
Irkutsk		13 21-8	13 28-5	13 40-2	—	G.	Philippines.
Batavia		13 19-9	13 24-4	13 25	—	W.	N.E. Mindanao.
Manila		13 15-3	—	13 18-5	—	"	N.E. Mindanao.
Zi-ka-wei		13 18-4	13 22-4	13 29-6	—	"	
Osaka	N.S.	13 19-2	—	13 30-6	—	O.	
Adelaide	E.W.	13 28-2	—	13 44-3	0-5	M.	
Riverview		13 22-6?	13 29-2?	13 46-6	—	"	? 5000 kms.
Honolulu		13 34-3	—	13 52-5	0-2	"	

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>April 18</i>							
Limerick	E.W.	—	—	20 22-9	1-5		
San Fernando	N.S.	19 27-5	—	20 15	1-0	M.	
Granada		—	—	20 15-1	—	Bif.	
				20 17-6	—		
Eskdalemuir		—	—	20 12-5	0-9	M.	
Edinburgh	E.W.	19 28-3	—	20 5	0-1	"	
Bidston		19 28-7	—	20 10-6	0-7	"	
Stonyhurst		19 19-5	19 30-4	20 11-5	0-9	"	
West Bromwich		—	—	20 8-5	1-0	"	
Shide		19 26	—	20 10-3	1-5	"	
Haslemere		—	—	20 10-2	0-8	"	
Guildford	N.S.	19 9-9	19 30-4	20 0-7	0-5	"	
Kew	E.W.	—	—	20 10	0-5	"	
Paris		19 27-3	—	20 8	—	"	
Aachen		—	—	19 58	—	W.	
Heidelberg		19 26	—	20 8-6	—	"	
Gottingen		19 27-6	—	19 57	—	"	
Hamburg		19 20?	—	20 3	—	"	
Florence		19 25-9	—	19 58	—	A.	
				20 1	—		
Triest		19 26-1	—	—	—	W.	
Laibach	N.S.	19 16-2?	19 26-7	20 2	—	G.	? 9400 kms.
Graz		19 16-5	19 27-5	—	—	W.	? 10,000 kms.
Vienna		19 16?	—	19 55	—	"	? 10,000 kms.
Breslau		19 26-4?	—	19 58?	—	"	
Konigsberg		19 23-8	—	19 52-3	—	"	
Leunberg		19 23-3	—	—	—	B.O.	
Czernowitz		19 14-7?	19 26-5	19 59	—	Ma.	? 11,100 kms.
Pulkovo		19 15-1	19 25-4	19 44-1	—	G.	E. of Philippine
				19 56-3	—		
Ksara	N.S.	19 14-2	19 15-2?	—	—	Ma.	
Tiflis		19 14-5	19 24-2	19 42-8	—	G.	5.2N. 121.3E.
				19 52-2	—		
Mauritius	E.W.	19 32-6	—	19 41-2	0-5	M.	
Tashkent		19 12-6	19 20-6	19 36-1	—	G.	6520 kms.
				19 39-4	—		
Bombay		19 11-2	—	19 36-5	1-1	M.	
Kodakamal		19 10-7	—	19 35-1	0-9	"	
Colombo		19 11	—	19 32-3	1-6	"	
Calcutta		19 7-7	—	19 30-6	—	"	
Irkutsk		19 10-9	19 17-5	19 29-2	—	G.	Philippines.
Batavia		19 8	19 12-3	19 13	—	W.	N.E. Mindanao.
Tsingtau		19 8-2	19 12-9	19 19-9	—	"	2950 kms.
Manila		19 4-4	—	19 7-4	—	"	Philippines.
Zi-ka-wei		19 7-5	19 11-5	19 18-3	—	"	
				19 18-7	—		
Osaka	N.S.	19 8-2	—	19 19-3	—	O.	
Adelaide	E.W.	19 13	—	19 33-5	0-5	M.	
Riverview		—	—	19 37-2	—	"	
Honolulu		19 14-3	19 23-8	19 41	0-4	"	
Toronto		20 18-7	—	—	—	"	
Ottawa		—	—	—	—	B.	P <sub>3</sub> 20-15.
<i>April 20</i>							
Limerick	E.W.	3 27-1?	—	3 38-1	0-5		
Edinburgh		—	—	3 38-9	—	M.	
Bidston		3 29-6	—	3 37-1	0-3	"	
Stonyhurst		3 27-6	—	3 36-5	0-2	"	
West Bromwich		3 26	—	3 34	0-1	"	
Shide		3 28	—	3 35-3	0-3	"	
Haslemere		—	—	3 35-6	0-3	"	
Kew		—	—	3 34	—	"	
Paris		3 25	—	—	—	"	
Heidelberg		3 18-8	3 24	3 31	—	"	
Gottingen		3 19-1	3 22-8	3 27	—	W.	
Hamburg		3 19-3	3 24	3 29-5	—	"	Erivan.
				3 29-7	—		

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>April 20, continued</i>							
Florence		3 15.7 ?	3 23.4	3 30.3	—	A.	—
Padova		3 18.9	3 23.3	—	—	V.	—
Triest		3 18.6	3 22.8	3 28.6	—	W.	—
				3 30	—		
Pompeii	E.W.	3 19.7	3 22.9	—	—	O.A.	—
Laiibach	N.S.	3 18.7	3 22.5	3 29	—	G.	2280 kms.
Graz		3 18.5	3 22.5	3 26.9	—	W.	2500 kms.
Vienna		3 18.4	3 22.3	3 27	—		2890 kms.
Cape Town	E.W.	—	—	3 57.4	0.1	M.	—
Budapest		3 18.1	—	3 27	—	W.	—
Konigsberg		3 18.4	3 22.4	3 25.3	—		? 2400 kms.
				3 25.5	—		
Lemberg		3 14.8	—	—	—	B.O.	—
Czernowitz		3 17.1	3 19.8	3 24	—	Ma.	? 1800 kms.
Pulkovo		3 15.3	3 21.9	3 24.1	—	G.	41N. 43.8E.
				3 25	—		
Helwan, Cairo		3 18	—	3 28.2	0.2	M.	—
Ksara	N.S.	3 16.3	3 19.2	3 20.8	—	Ma.	1650 kms.
Tiflis		3 13.8	3 14	—	—	G.	90 kms.
Mauritius	E.W.	—	—	3 47.2	—	M.	—
Tashkent		3 18	3 21.7	3 30.7	—	G.	—
Irkutsk		3 21.6	3 27.8	3 36.4	—		E. in Caucasus.
Manila		3 39	—	—	—	W.	N.E. Mindanao.
<i>April 24</i>							
Limerick	E.W.	10 36.4 ?	—	11 26.4	2.0		—
Cork		11 18	—	11 30	1.0	M.	—
San Fernando	N.S.	10 53	—	11 32.7	1.2		—
Paisley	E.W.	10 52	—	11 26	0.7		—
Granada		10 45.2	—	11 29.2	—	Bif.	—
Eskdalemuir	N.S.	10 34	—	11 24.5	1.4	M.	—
Edinburgh	E.W.	10 49.5	—	11 19.2	0.4		—
Bidston		10 41.6	—	11 25.6	1.0		—
West Bromwich		10 40	10 49	11 24	1.0		—
Shide		—	—	11 27	3.0		—
Haslemere		—	—	11 25.4	0.9		—
Guildford		—	10 44.7 ?	11 13.1	0.1		—
	N.S.			—	—		—
Kew	E.W.	—	—	11 22.6	1.0		—
Paris		10 26.7	10 40.2	11 20	—		—
Aachen		10 24	—	11 9	—	W.	—
Heidelberg		10 32	—	11 9	—		—
Göttingen		10 29	—	11 10	—		—
Hamburg		10 30 ?	—	11 9.6	—		—
Florence		10 10.6	10 10.6	11 11	—	A.	—
				11 15	—		—
Padova		10 39.8	—	—	—	V.	—
Triest		10 39.5	—	—	—	W.	—
Laiibach	N.S.	10 30.3	10 40.3	11 13.3	—	G.	? 8800 kms.
Graz		10 29	10 40.4	11 7.8	—	W.	9500 kms.
Vienna		10 29.5	10 40.4	11 8	—		9900 kms.
Breslau		10 28.8 ?	10 40	11 7	—		—
				11 15	—		—
Konigsberg		—	10 39.4 ?	11 5	—		—
Lemberg		10 17.2	—	10 39.5	—	R.O.	—
Czernowitz		10 26.1 ?	10 38.8	11 7	—	Ma.	? 12,000 kms.
Pulkovo		10 27.9	10 38.2	10 56.9	—	G.	Philippines.
				11 2.3	—		—
Helwan, Cairo	E.W.	10 24	—	—	—	M.	—
Tiflis		10 27.2	10 37	10 56.7	—	G.	8650 kms.
Mauritius	E.W.	10 21.6	10 32.3	10 51.6	0.4	M.	—
Tashkent		10 25.4	10 33.5	10 48.5	—	G.	6600 kms.
				10 49.3	—		—
Bombay	E.W.	10 24	—	10 51.3	0.6	M.	—
Kodaikanal		10 23.1	—	10 50.6	1.1		—
Colombo		9 54.4	—	10 16.5	0.6		—
				10 17.5	—		—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>April 24, continued</i>							
Calcutta	E.W.	10 29.4	—	10 42.8	—	M.	—
Irkutsk		10 23.8	10 30.4	10 46.3	—	G.	Philippines.
				10 45.8	—		—
Batavia		10 10.8	—	10 28	—	W.	N.E. Mindanao.
Tsingtau		10 20.9	10 25.6	10 34.7	—		2960 kms.
Manila		10 17.1	—	—	—		N.E. Mindanao.
Zi-ka-wei		10 20.2	10 24.3	10 31.6	—		—
Osaka	N.S.	10 20.9	—	10 31.9	—	O.	—
Riverview		10 24.3	10 31.2	10 35.2	—		Mindanao.
Honolulu	E.W.	10 27	10 36.5	10 59.8	1.0	M.	—
Victoria		10 36.5	—	10 42.6	0.2		—
Toronto		11 0	—	—	—		—
Ottawa		—	—	—	—	B.	P <sub>3</sub> 10-11.2.
Granada		—	—	13 19.5	—	O.	—
Eskdalemuir	E.W.	—	—	13 21.5	0.2	M.	—
Bidston		—	—	13 16.8	0.7		—
Stonyhurst		—	—	13 16	0.2		—
West Bromwich		12 39.5	—	13 22	0.2		—
Shide		12 59.3	13 21.3	13 39.3	0.9		—
Guildford		13 5	—	13 22	<0.1		—
Kew		13 3.5	—	13 16.3	0.2		—
Paris		—	12 40.2 ?	13 24	—		—
Aachen		—	—	13 11	—	W.	—
Heidelberg		12 19.7	—	13 24	—		—
Göttingen		—	—	13 10	—		—
Hamburg		—	—	—	—		—
Florence		—	—	—	—		—
Padova		12 39.1	—	—	—	V.	—
Laiibach	N.S.	—	12 39.6 ?	13 12.7	—	G.	—
Vienna		12 28.8	12 39.5	13 18.5	—	W.	9500 kms.
Breslau		—	12 40.2 ?	—	—		—
Konigsberg		12 29.6 ?	—	13 13 ?	—		—
Lemberg		—	12 39.4 ?	—	—		—
Czernowitz		12 26.8	—	12 39.4	—	B.O.	—
		12 25.9 ?	12 39.2	13 12	—	Ma.	—
				13 17	—		—
Pulkovo		12 27.9	12 38.3	13 2.8	—	G.	Philippines.
Tiflis		12 27.4	12 37.1	13 0	—		—
				13 6.3	—		—
Tashkent		12 38	—	12 49.4	—		—
Bombay	E.W.	12 31.7	—	12 51.6	0.2	M.	—
Kodaikanal		12 35.4	—	12 51.1	0.4		—
Colombo		12 31.6	—	12 48	0.5		—
Irkutsk		12 23.8	12 30.6	12 42.9	—	G.	Philippines.
				12 47.9	—		—
Batavia		12 20.9	12 25.3	12 27	—	W.	N.E. Mindanao.
Tsingtau		12 21.1	12 25.7	12 33.7	—		2900 kms.
Manila		12 17.1	—	—	—		N.E. Mindanao.
Zi-ka-wei		12 20.3	12 24.2	12 28.8	—		—
Osaka	N.S.	12 21.2	—	12 31.1	—	O.	—
Riverview		12 24.3	12 31.2	12 45.8	—		5300 kms.
Honolulu	E.W.	12 27.6	12 36.6	13 3.6	0.5	M.	—
<i>April 25</i>							
Azores	E.W.	18 22.2	—	—	—	M.	—
Limerick		18 15.8	—	19 5.4	9.7		—
Cork		—	—	19 27	1.0		—
San Fernando	N.S.	18 16	—	19 19.3	4.5		—
Paisley	E.W.	18 20	—	19 18.5	1.5		—
Granada		18 17.2 ?	18 25.9 ?	18 59.8	—	Bif.	—
Eskdalemuir		18 11.5	—	19 3	2.1	M.	—
Edinburgh		18 14.6	—	19 2.8	0.7		—
				19 17.9	1.0		—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>April 25, continued</i>							
Bidston	E.W.	18 15.1	18 21.6	18 59.5	2.0	M.	—
Stonyhurst	"	—	18 21	19 0	1.4	"	—
West Bromwich	"	—	18 21	19 4	2.5	"	—
Shide	"	18 22.2	18 21.5	19 5.3	5.5	"	—
Haslemere	"	18 10.1	18 21	19 2.5	4.5	"	—
Guildford	"	18 15	—	19 4	2.0	"	—
Kew	"	18 10.9	18 21.4	18 52	—	"	—
Paris	"	18 10.5 ?	18 21.1 ?	18 52	—	W.	? 9550 kms.
Aachen	"	—	—	18 59	—	"	—
Heidelberg	"	18 10.6	18 19.1	19 4.5	—	"	—
Gottingen	"	18 10.2	18 20.9	18 51	—	"	9600 kms.
Hamburg	"	18 10.3	18 20.9	18 50.8	—	"	9450 kms.
Florence	N.S.	18 5.6	18 21.1	18 50	—	A.	—
Padova	"	18 10.3	18 20.9	19 9.9	—	V.	—
Triest	"	18 13.5 ?	18 20.9	18 54.7	—	W.	? 5800 kms.
Pola	E.W.	—	18 20.8	18 59.1	—	"	—
Pompeii	"	18 11.1	—	—	—	O.A.	Japan.
Laibach	N.S.	18 10.2	18 20.9	18 54.4	—	G.	9570 kms.
Graz	"	18 10.2	18 20.8	18 56.4	—	W.	9560 kms.
Vienna	"	18 10.1	18 20.7	18 50.2	—	"	9700 kms.
Brescia	"	18 10.1 ?	18 21.5 ?	18 49.7	—	"	? Japan.
Sarajevo	N.S.	18 9.9	18 21.4	18 50.2	—	"	—
Cape Town	E.W.	18 21.5	—	18 22.8	0.2	M.	—
Budapest	"	18 10.1	18 21.3	18 59.8	—	W.	—
Konigsberg	"	18 10.1	18 20.2	18 46.3	—	"	? 9000 kms.
Lemberg	"	18 9.5	18 20.2	18 59.5	—	E.O.	? 12,000 kms.
Czernowitz	"	18 9.7 ?	18 20.1	18 43	—	Ma.	? 9000 kms.
Pulkovo	"	18 9.1	18 19.5	18 41.6	—	G.	Philippines.
Helwan, Cairo	N.S.	18 9.6	18 21.1	18 57.1	—	M.	—
Ksara	E.W.	18 9.4	—	—	—	Ma.	—
Tiflis	"	18 8.4	18 18.4	19 37.2	—	G.	8800 kms.
Mauritius	N.S.	18 7.2	—	18 29.7	1.0	M.	—
Tashkent	"	18 6.6	18 14.9	18 30.4	—	G.	6790 kms.
Bombay	E.W.	18 6	—	18 34.1	3.0	M.	—
Kodalkanal	"	18 6.7	18 14.8	18 31	3.0	"	—
Colombo	"	18 4.5	—	18 11.8	3.5	"	—
Calcutta	"	18 4.2	—	18 22.4	—	"	—
Irkutsk	"	18 4.9	18 11.8	18 29.5	—	G.	Philippines.
Batavia	"	18 2	18 6	18 8	—	W.	Philippines.
Tsingtau	"	18 2.3	18 7	18 12.1	—	"	2960 kms.
Manila	"	17 58.5	—	—	—	"	N.E. Mindanao.
Zi-ka-wei	"	18 1.5	18 5.5	18 8.9	—	W.	—
Osaka	"	18 2.4	—	18 11.5	—	O.	—
Sydney	E.W.	18 5.2	18 11.5	18 35.7	2.2	M.	4100 kms.
Riverview	"	18 5.3	18 12.4	18 27	—	"	Mindanao.
Honolulu	"	18 8.2	18 17.3	18 36.8	6.4	"	—
Victoria	"	18 10	18 19.7	18 24.6	0.8	"	—
St. Louis	"	—	18 23.7 ?	19 15.4	1.9	W.	—
Toronto	"	18 18	—	19 19.5	0.3	M.	—
Ottawa	"	18 17.1	18 24.6 ?	—	—	B.	? 5900 kms.
Harvard Univ.	N.S.	—	—	19 10.7	—	B.O.	—
<i>April 26</i>							
San Fernando	E.W.	5 13	—	5 37.5	0.7	M.	—
Granada	"	—	—	5 28.2	—	Bif.	—
Eskdalemuir	N.S.	—	—	5 26	0.3	M.	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>April 26, continued</i>							
Edinburgh	E.W.	4 48.9	—	5 26.9	0.1	M.	—
Bidston	"	4 34.3	4 45.7	5 6.2	1.0	"	—
Stonyhurst	"	4 34.5	4 46.2	5 21.5	0.3	"	—
West Bromwich	"	—	—	5 29	0.2	"	—
Shide	"	—	—	5 28.7	1.2	"	—
Haslemere	"	—	—	5 28.5	0.4	"	—
Guildford	"	5 5	—	5 13.6	0.2	"	—
Kew	"	4 54.1	—	5 22.1	0.3	"	—
Paris	"	4 31.2	4 45.9 ?	—	—	"	—
Aachen	"	4 30	—	5 16	—	W.	—
Heidelberg	"	4 23.5	—	5 29	—	"	—
Gottingen	"	—	—	5 15	—	"	—
Hamburg	"	4 23	—	—	—	"	—
Florence	"	4 48.6	—	5 21	—	A.	—
Graz	"	4 33.5	—	5 25.5	—	W.	—
Vienna	"	4 53.1	4 43.5 ?	5 15	—	"	—
Konigsberg	"	—	4 45.2 ?	—	—	"	—
Czernowitz	"	4 29.9	4 45.1 ?	5 12	—	Ma.	—
Pulkovo	"	4 18.7	4 29.1	5 0.4	—	G.	Philippines.
Helwan, Cairo	"	4 6	—	5 8.7	—	M.	—
Tiflis	"	4 8.1	4 28.9	4 57.3	—	G.	—
Mauritius	"	4 41.5	—	4 48.2	—	M.	—
Tashkent	"	4 5.3	—	4 40.3	—	G.	—
Bombay	"	4 27.1	—	4 56	0.3	M.	—
Kodalkanal	"	4 17.8	—	4 52.9	0.7	"	—
Colombo	"	4 15.5	4 34.5	4 51.2	1.0	"	—
Calcutta	"	4 13.8	—	4 37.7	—	"	—
Irkutsk	"	4 14.6	4 21.3	4 31.8	—	G.	Philippines.
Batavia	"	4 11.5	4 13.6	4 19	—	W.	—
Tsingtau	"	4 11.9	4 16.4	—	—	"	2880 kms.
Manila	"	4 8.2	—	—	—	"	—
Zi-ka-wei	"	4 11.1	4 15.2	4 21.7	—	"	—
Osaka	N.S.	4 11.8	—	4 26.1	—	O.	—
Sydney	E.W.	4 12.5	4 22	4 33.9	0.7	M.	8300 kms.
Riverview	"	4 16.9 ?	4 25.3 ?	4 32.5	—	"	Philippines.
Honolulu	"	4 26.4	—	4 50	0.3	"	—
<i>April 28</i>							
Limerick	E.W.	19 36.4 ?	—	—	—	"	—
Faisley	"	19 20	—	19 48	0.2	M.	—
Eskdalemuir	N.S.	—	—	19 40	0.2	"	—
Edinburgh	E.W.	19 24.8	—	19 47.8	0.1	"	—
Bidston	"	19 36.3	—	19 39.7	0.3	"	—
Stonyhurst	"	19 21	—	19 38.5	0.2	"	—
West Bromwich	"	19 3	—	19 45	0.2	"	—
Shide	"	19 35	—	—	—	"	—
Haslemere	"	—	—	19 40	0.4	"	—
Guildford	"	18 55.3	19 6.5	19 45.9	0.3	"	—
Kew	"	19 38	—	19 46.7	0.2	"	—
Paris	"	—	—	—	—	"	P <sub>3</sub> 19-35.
Aachen	"	19 4.9 ?	—	19 34.9	—	W.	—
Heidelberg	"	19 3.8	—	—	—	"	—
Gottingen	"	19 3.6	—	19 34	—	"	—
Hamburg	"	19 3.6	—	—	—	"	—
Florence	"	19 4.1	19 22	19 42	—	A.	—
Triest	"	19 3.6 ?	—	—	—	W.	—
Laibach	N.S.	18 56.6 ?	—	19 35	—	G.	—
Graz	"	—	19 2.7	—	—	W.	—
Vienna	"	18 53.6 ?	19 3.6	19 33	—	"	8690 kms.
Konigsberg	"	—	—	19 33.5	—	"	—
Czernowitz	"	19 2.9	19 10.6 ?	19 38.7	—	Ma.	P <sub>3</sub> 19-29.1.
Pulkovo	"	18 52	19 2.3	19 26.8	—	G.	? 5500 kms. nr. Philippines.



STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>April 28, continued</i>							
Helwan, Cairo	E.W.	19 1	—	—	—	M.	—
Ksara	N.S.	18 52	—	—	—	Ma.	—
Tiflis		18 51.2	19 0.1	19 23.9	—	G.	7400 kms.
				19 30.1			
Bombay	E.W.	18 55.3	—	19 13.6	0.2	M.	—
Colombo		18 55	—	19 10.4	0.9	"	—
Calcutta		18 48.9	—	19 7.2	—	"	—
Irkutsk		18 47.8	18 54.6	19 6.4	—	G.	Philippines.
Batavia		18 49.9	18 49.4	18 51	—	W.	N.E. Mindanao.
Manila		18 41.3	—	—	—	"	N.E. Mindanao.
Zi-ka-wei		18 44.4	18 48.4	18 56.8	—	"	—
Osaka	N.S.	18 45.7	—	18 56.4	—	O.	—
Sydney	E.W.	18 55.3	—	—	0.2	M.	—
Riverview		18 48.3	18 55.3	19 9.6	—	"	Mindanao.
Honolulu		19 0.5	—	19 25.5	0.3	"	—
<i>April 29</i>							
Limerick	E.W.	3 42.7 ?	—	—	—	—	—
Eskdalemuir	N.S.	—	—	4 9	0.2	M.	—
Edinburgh	E.W.	—	—	4 14.4	—	"	—
Bidston		3 59.6	—	4 8.7	0.3	"	—
Stonyhurst		4 2.5	—	4 6	0.1	"	—
Shide		—	—	4 15	—	"	—
Haslemere		—	—	4 15	0.3	"	—
Guildford		3 38	—	4 15.6	0.3	"	—
Kew		4 7.1	—	4 15.3	0.2	"	—
Paris		—	—	—	—	"	P <sub>3</sub> 4-9.
Aachen		3 33.9 ?	—	4 4	—	W.	—
Heidelberg		3 33.7	—	—	—	"	—
Gottingen		3 33.5	—	4 4	—	"	—
Hamburg		3 33	—	—	—	"	—
Laibach	N.S.	3 30 :	—	4 4.8	—	G.	—
Graz		3 27 :	3 37.5 ?	—	—	W.	9500 kms.
Vienna		3 22.7 ?	3 33.1 ?	—	—	"	? 9300 kms.
Konigsberg		—	—	—	—	"	P <sub>3</sub> 3-58.
Czernowitz		3 21.7 ?	3 32.1	4 8	—	Ma.	—
Pulkovo		3 21	3 31.3	3 55.8	—	G.	nr. Philippines.
Helwan, Cairo	E.W.	3 30	—	—	—	M.	—
Tiflis		3 21 :	3 30	3 53.9	—	G.	—
Tashkent		—	—	3 41.9	—	"	—
Bombay		3 28.2	—	3 42.4	0.1	M.	—
Colombo		3 37	—	—	—	"	—
Irkutsk		3 16.8	3 23.5	3 36.4	—	G.	5010 kms.
Batavia		3 13.8	3 18.4	3 21	—	W.	N.E. Mindanao.
Tsingtau		3 10.4	3 18.8	3 26.5	—	"	6870 kms.
Manila		3 10.3	—	—	—	"	N.E. Mindanao.
Zi-ka-wei		3 13.3	3 17.3	3 22.8	—	"	—
				3 25.9	—	"	—
Osaka	N.S.	3 14.1	—	3 24	—	O.	—
Riverview		3 19.4	3 24.2	3 28	—	"	Mindanao.
Honolulu	E.W.	—	—	3 55.1	0.1	M.	—
<i>April 29-30</i>							
Limerick	E.W.	23 59.7 ?	—	—	—	—	—
San Fernando		23 52.5	—	0 25	0.6	M.	—
Paisley		0 2	—	0 26.7	0.3	"	—
Granada		—	—	0 25.8	—	O.	—
Eskdalemuir	N.S.	—	—	0 16.5	0.3	M.	—
Edinburgh	E.W.	23 59.1	—	0 15.7	0.1	"	—
Bidston		23 51.2	—	0 17.8	0.4	"	—
Stonyhurst		0 0.7	—	0 15.5	0.1	"	—
				0 28.4	—	"	—
West Bromwich		—	—	0 16	0.1	"	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>April 29-30, continued</i>							
Shide	E.W.	23 39	—	0 22	0.2	M.	—
Guildford		23 36.4	—	0 18	0.2	"	—
Kew		23 59.5	—	0 22.7	0.2	"	—
Paris		23 41.8	23 51.4	—	—	"	? 8900 kms.
Aachen		—	—	0 12	—	W.	—
Heidelberg		23 38	—	—	—	"	—
Gottingen		23 51.4	—	0 12	—	"	—
Hamburg		23 49.8	—	—	—	"	—
Innsbruck		23 41.4	—	—	—	Ma.	—
Padova		23 41.5	—	—	—	V.	—
Triest		—	—	—	—	W.	P <sub>3</sub> 0-15.
Graz		23 41.3	23 51.5	—	—	"	9000 kms.
Vienna		23 41.2	—	0 15	—	"	—
Sarajevo	N.S.	23 41.5	—	0 18.4	—	"	9090 kms.
Konigsberg		—	—	—	—	"	P <sub>3</sub> 0-5.9.
Lemberg		23 9.1 ?	—	—	—	B.O.	—
Czernowitz		23 41	23 50.8	0 14	—	Ma.	? 8500 kms.
Pulkovo		23 39.8	23 48.4 ?	0 1.6	—	G.	7120 kms.
				0 12.2	—	"	—
Tiflis		23 41	23 50.8	0 1.5	—	G.	8550 kms.
				0 12.5	—	"	—
Tashkent		23 40	23 48.8	0 4.6	—	G.	7340 kms.
				0 5	—	"	—
Irkutsk		23 36.9	23 43.2	23 51.9	—	G.	4575 kms.
				0 40.9	—	"	—
Tsingtau		0 34.7	—	—	—	W.	—
Zi-ka-wei		0 30.4	—	—	—	"	—
Riverview		—	—	0 13.5	—	"	—
Honolulu	E.W.	23 37.3	—	23 50.7	0.5	M.	—
St. Louis		—	—	—	—	W.	P <sub>3</sub> 0-5.1.
Toronto		23 47.2	0 6.8	0 14.6	0.3	M.	—
Ottawa		23 40.2	23 49.1	0 10	—	B.	? 7500 kms.
Harvard Univ.	N.S.	—	—	0 12.5	—	B.O.	—
<i>April 30</i>							
Limerick	E.W.	11 40.7 ?	—	—	—	—	—
Rio Tinto		11 58	—	12 30	0.9	M.	—
San Fernando		11 58.5	—	12 31	2.0	"	—
Paisley		12 5	—	12 31.5	0.5	"	—
Granada		11 47.9	11 59.2 ?	12 28.5	—	Bif.	? 10,400 kms.
Eskdalemuir	N.S.	11 46	—	12 24.5	0.9	M.	—
Edinburgh	E.W.	11 55.7	—	12 24.6	0.2	"	—
Bidston		11 55.7	12 4.9	12 27.2	0.4	"	—
Stonyhurst		—	—	12 32	0.3	"	—
West Bromwich		—	—	12 27	0.7	"	—
Shide		11 47	12 6 ?	12 28.5	1.0	"	—
Haslemere		—	—	12 27.6	0.6	"	—
Guildford		11 45.3	11 54	12 27.3	0.7	"	—
Kew		12 2.1	—	12 30.6	0.4	"	—
Paris		11 46.8	11 56.8	12 28	—	"	—
Aachen		11 22	—	12 6	—	W.	—
				12 27	—	"	—
Heidelberg		11 46.8	11 56	12 23	—	"	—
Gottingen		11 46.5	11 56.3 ?	12 22	—	"	8500 kms.
Hamburg		11 46.3	—	12 20.9	—	"	—
				12 28	—	"	—
Florence		11 52.6	11 57	12 24	—	A.	—
				12 34	—	"	—
Innsbruck		11 46.9	—	12 31	—	Ma.	—
Padova		11 47	11 57.4	12 30.7	—	V.	—
Triest		11 47	11 57.4	12 28	—	W.	9400 kms.
				12 30	—	"	—
Graz		11 46.9	11 57.4	12 31.3	—	"	9500 kms.
Vienna		11 46.8	11 56.6	12 29	—	"	8550 kms.
Breslau		11 46.8 ?	11 56.6 ?	12 33 ?	—	"	Alaska.
Sarajevo		11 47	11 56	12 30	—	"	9500 kms.
Budapest		11 46.7	—	12 31	—	"	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		h. m.	h. m.	h. m.	mm.		
<i>April 30, continued</i>							
Konigsberg		—	—	12 18	—	W.	—
Lemberg		11 32.5	—	12 29.6	—	D.O.	—
Czernowitz		11 46.7?	11 56.8	12 14.6	—	Ma.	—
				12 24.6			
Pulkovo		11 45.5	11 54.1	12 7.9	—	G.	Aleutian Ids.
				12 20.9			
Helwan, Cairo	E.W.	11 51	—	12 40.1	0.5	M.	—
Ksara	N.S.	11 47.8	11 58.2	12 37	—	Ma.	—
				12 39			
Mauritius	E.W.	12 35±	—	—	—	M.	—
Tashkent		11 46.1	—	12 15.8	—	G.	—
				12 19.4			
Bombay	"	11 59.9	—	12 32.8	0.7	M.	—
Kodaikanal	"	11 58.7	—	12 34.6	0.5	"	—
Colombo	"	12 27	—	12 45	0.5	"	—
Calcutta	"	11 10.8	—	12 18.4	—	"	—
Irkutsk		11 43.2	11 50.5	11 58.9	—	G.	Aleutian Ids.
Tsingtau		11 43.3	11 50.3	12 5	—	W.	5300 kms.
Manila		11 45	—	—	—	"	—
Zi-ka-wei		11 43.7	11 51	12 2.2	—	"	—
Osaka	N.S.	11 42.2	—	11 59.3	—	O.	—
Adelaide	E.W.	11 58.8	—	12 38.2	0.7	M.	—
Riverview		11 49.3?	11 58.2?	12 22.5	—		? 7500 kms.
Honolulu	"	11 41.3	—	11 53.3	1.0	"	—
St. Louis		—	11 52.2?	—	—	W.	? 8000 kms.
Toronto	"	11 47.2	11 52.4	12 13.4	1.4	M.	—
Ottawa		11 44.8	11 53	12 11	—	B.	6650 kms.
Harvard Univ.	"	—	11 53.8?	—	—	B.O.	—

British Association for the Advancement  
of Science.—Seismological Committee.

Observations and formal business to  
J. H. BURGESS,  
Earthquake Observatory,  
SHILDE, Isle of Wight.

Special inquiries to  
Prof. K. H. TURNER,  
University Observatory,  
OXFORD.

Monthly Bulletin for May, 1913.

For the present it has been decided to give full details for such earthquakes only as are recorded at 31 Stations at least. According to the table printed in the last Bulletin, this would mean the 100 largest earthquakes of the year.

But it is requested that no change as yet be made in the information sent to Shide, as Observers will not be able to select the large earthquakes from the records at a single Station.

Observers are asked to send a copy of their Registers each month.

The Stations are arranged in the order of longitude, starting from the Azores and travelling eastward.

The Russian Stations and those using the Wiechert instrument usually publish several maxima. For the purpose of this Bulletin the first is always given; if the amplitude of this maximum is not the greatest, then the maximum having the greatest amplitude is also given.

The time employed is Greenwich mean time (civil) expressed in hours, minutes, and decimals of a minute; 24 or 0 hours = midnight.

The amplitudes recorded in the 6th column refer only to the Milne instruments, and are given in millimetres and decimals of a millimetre.

The letters in the 7th column stand for: A. = Alfani; B. = Bosch; Bif. = Bifilar; B.O. = Bosch-Omori; C. = Cartuja; Ca. = Cancani; C.O. = Cartuja-Omori; G. = Galitzin; M. = Milne; Ma. = Mainka; O.A. = Omori-Alfani; V. = Vicentini; W. = Wiechert.

Guildford and West Bromwich use a modification of the Milne.

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
May 8							
Azores	E.W.	18 54.2	—	18 57.6	1.5	M.	—
Limerick	"	18 55	—	—	—	—	—
Rio Tinto	"	19 5.8?	—	20 7	0.5	"	—
San Fernando	N.S.	18 52.5	—	20 18.5	1.0	"	—
Paisley	E.W.	18 58	—	20 5	0.3	"	—
Granada	"	18 55	19 13.8?	19 40.5	—	Bif.	? 16-18,000 kms.
Eschdenair	N.S.	—	—	19 46	0.5	M.	—
Edinburgh	E.W.	18 58	—	19 17.2	0.2	"	—
Bidston	"	18 55	—	19 23.7	0.4	"	—
Stonyhurst	"	19 0.8	—	19 59.6	0.2	"	—
West Bromwich	"	18 48?	18 54	19 13.5	0.6	"	—
Shide	N.S.	18 54	—	20 2.5	0.6	"	—
Haslemere	E.W.	—	—	20 10	0.3	"	—
Guildford	"	18 44.7	18 54.7	19 39	0.7	"	—
Kew	"	18 54.8	—	20 1	0.3	"	—
Paris	"	18 54.8	19 8.5	19 58	—	"	—
Aachen	"	18 54.8	19 8.4?	—	—	W.	—
Heidelberg	"	18 54.8	—	18 55	—	"	—
Göttingen	"	18 54	—	—	—	"	—
Hamburg	"	18 54.7	—	—	—	"	—
Florence	N.S.	18 55.1	18 59.1	19 20	—	A.	—
Munster	"	18 54.8	18 58.5?	—	—	M.	? 2170 kms.
Padova	"	18 54.7	18 55	—	—	V.	—
Triest	"	18 54.8	—	—	—	W.	—
Pola	"	18 55.1	—	18 55.1	—	"	—
Pompeii	E.W.	18 36.1	—	—	—	O.A.	—
Laibach	N.S.	18 54.8	19 8.6	—	—	G.	> 14,000 kms.
Graz	"	18 54.9	19 8.6?	—	—	W.	? 15,000 kms.
Vienna	"	18 54.7	—	—	—	"	—
Breslau	"	18 54.9?	—	—	—	"	4800 kms.
Sarajevo	"	18 54.9	—	—	—	"	—
Cape Town	E.W.	19 11.8	—	19 14.3	0.2	M.	—
Budapest	"	18 54.8	—	18 55	—	W.	—
Königsberg	"	18 54.7	—	—	—	"	—
Lemberg	"	18 54.6	18 58.1	19 1.5	—	B.O.	2400 kms.
Czernowitz	"	18 54.7	19 5.9?	19 50	—	Ma.	10,800 kms.
Pulkovo	"	18 46.1	19 7.5	19 35.8	—	G.	68, 179E.
Helwan, Cairo	"	—	—	19 25.1	0.6	M.	—
Ksara	"	18 54.4	—	—	—	Ma.	—
Mauritius	"	19 1.3	—	19 5.9	0.5	M.	—
Tashkent	"	18 54.1	—	—	—	G.	—
Kodalkanal	"	18 54.7	19 5.3	19 6.5	0.5	M.	—
Colombo	"	18 54	—	19 52	0.2	"	—
Calcutta	"	18 53	19 6.1	19 4.2	—	"	—
Irkutsk	"	18 43.2	18 48.5	19 24.9	—	G.	3565 kms.
Perth	"	18 45.4	—	19 17.4	1.7	M.	—
Manila	"	18 46.4	18 54.3	18 58.5	—	W.	—
Zi-ka-wei	"	18 38.2	—	18 41.8	—	"	—
Osaka	N.S.	18 41	—	18 53.1	—	O.	—
Adelaide	E.W.	18 43.4	18 50	19 0.6	3.4	M.	—
Sydney	"	18 37.5	18 42.1	18 52.8	1.5	"	4200 kms.
Riverview	"	18 42	18 47.3	—	—	"	3500 kms.
Honolulu	"	18 42.8	18 40	18 53.9	2.5	"	—
Victoria	"	18 47.4	—	18 59.3	0.3	"	—
Toronto	"	18 54.1	—	19 9.5	0.2	"	? Two Eqqs.
Ottawa	"	18 54	19 0.8	—	—	B.	5100 kms.
Harvard Univ.	"	18 54	19 1.5	—	—	B.O.	6000 kms.
La Paz	"	18 32.3	18 59.4	19 25.1	—	Bif.	? Mexico.
				19 30			
May 18							
Limerick	E.W.	2 25.5	—	3 19.5	—	—	—
Rio Tinto	"	—	3 3.1	3 31	1.0	M.	—
San Fernando	N.S.	2 41	—	3 22.2	1.5	"	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>May 18, continued</i>							
Paisley	E.W.	2 30	—	3 15.3	0.5	M.	—
Granada	"	2 28	2 40.7	3 12	—	Bif.	12,700 kms.
Eskdalemuir	"	—	—	3 11.5	0.6	M.	—
Edinburgh	"	2 33.9	—	3 12	0.2	"	—
Bidston	"	2 32.4	2 37.8	3 17.4	1.1	"	—
Stonyhurst	"	2 28.6	—	3 12.7	0.5	"	—
West Bromwich	"	2 27.6	2 34	3 18	0.6	"	—
Shide	"	2 27	—	3 21	1.0	"	—
Haslemere	"	—	—	3 14.7	1.5	"	—
Guildford	"	2 22.2	2 34.2	3 11.1	0.9	"	—
Kew	"	2 37	—	3 21.4	0.5	"	—
Paris	"	2 28	2 34	—	—	"	—
Aachen	"	2 27.6	—	3 7	—	W.	—
Heidelberg	"	2 27.6	2 36.6	3 9	—	"	—
Gottingen	"	2 23.1	2 33.5	2 58.5	—	"	—
Hamburg	"	2 22.9	2 33.8	3 7.7	—	"	12,000 kms.
				3 9.4	—		
Florence	"	2 28.5	2 37	3 2	—	A.	—
Innsbruck	"	2 27.6	—	3 7.5	—	Ma.	11,000 kms.
				3 12.5	—		
				3 15.9	—		
Padova	"	2 27.1	2 33.9	—	—	V.	—
Triest	"	2 33.9	—	3 2	—	W.	—
Pola	N.S.	2 21.1	2 34	3 18.8	—	"	—
Pompeii	E.W.	2 27.2	—	—	—	O.A.	—
Laibach	N.S.	2 22.2	2 33.8	3 6.3	—	G.	10,830 kms.
				3 14.3	—		
Graz	"	2 26.5	2 35.7	3 6	—	W.	9000 kms.
				3 8.8	—		
Vienna	"	2 26.2	2 33.6	3 5	—	"	6070 kms.
				3 10.5	—		
Breslau	"	2 22.8	2 33.5	3 3.5	—	"	10,700 kms.
Sarajevo	E.W.	2 27.6	2 33.9	3 7	—	"	9000 kms.
Cape Town	"	—	—	2 32.4	0.1	M.	—
Budapest	"	2 24.7	—	3 11	—	W.	—
Konigsberg	"	2 23.4	—	2 57.1	—	"	—
Lemberg	"	2 26.4	2 35.5	3 10.7	—	B.O.	11,300 kms.
Czernowitz	"	2 22.5	2 33.1	3 1	—	Ma.	9500 kms.
Pulkovo	"	2 22	2 31.6	2 49.6	—	G.	Bonin Ids.
				2 53.8	—		
Helwan, Cairo	"	2 18	—	—	—	M.	—
Ksara	N.S.	2 28.8	—	3 4	—	Ma.	—
Makeyevka	"	2 22.1	2 32.6	3 4.5	—	G.	29.48N. 156.10E.
				3 7.1	—		
Tiflis	"	2 22.9	2 33.3	2 54.5	—	"	9320 kms.
				3 5.2	—		
Seychelles	E.W.	2 33	—	3 0	1.5	M.	—
Mauritius	"	2 31.7	—	2 57.7	0.7	"	—
Tashkent	"	2 20.3	2 29.6	2 49.4	—	G.	7930 kms.
				2 55.1	—		
				2 55.5	0.5	M.	—
Bombay	"	2 20.7	—	—	—	"	—
Kodaikanal	"	2 30.3	2 37.5	2 56.4	0.6	"	—
Colombo	"	2 17.9	—	2 38.2	—	G.	1 Pacific Coast of Japan.
Batavia	"	2 17.2	2 23.7	2 24.1	—	W.	—
Perth	"	2 23	—	—	—	M.	—
Tsingtau	"	2 14.3	2 19.9	2 24.6	—	W.	3750 kms.
Manila	"	2 14.4	—	2 19.9	—	"	—
				2 20.7	—		
Zi-ka-wei	"	2 14.8	2 19.6	2 23.6	—	"	—
Osaka	N.S.	2 14	—	2 21.1	—	O.	—
Riverview	"	2 17.6	2 24.5	2 31.4	—	"	5200 kms.
				2 34.7	—		
Honolulu	E.W.	2 18.5	2 26.2	2 40	1.7	M.	—
Victoria	"	2 21.1	2 31.3	3 14.3	0.3	"	—
Toronto	"	—	2 38.1	3 17.5	0.1	"	—
				3 8.1	—		
Harvard Univ.	N.S.	—	—	—	—	B.O.	P <sub>3</sub> 3-8.3.
La Paz	E.W.	2 32.7	2 51.4	3 28.8	—	Bif.	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>May 19</i>							
Azores	F.W.	13 0.7	—	—	—	M.	—
San Fernando	N.S.	13 56	—	16 2	0.5	"	—
Paisley	E.W.	13 45	—	15 52	0.5	"	—
Granada	"	13 51.6	15 56.8	15 59.5	—	Bif.	3410 kms.
Eskdalemuir	N.S.	—	—	15 52.5	0.3	M.	—
Edinburgh	E.W.	15 50.8	—	15 52.1	0.1	"	—
West Bromwich	"	15 48.5	—	15 55	3.2	"	—
Shide	"	15 48	—	15 55.3	0.6	"	—
Haslemere	"	—	—	15 56.6	0.2	"	—
Guildford	"	15 49.2	15 52.5	15 58.3	3.5	"	—
Paris	"	15 49.9	15 53.5	—	—	"	Iceland.
Aachen	"	15 49	15 53	15 58	—	W.	—
Heidelberg	"	15 50.1	15 54	—	—	"	—
Gottingen	"	15 49.8	15 53.6	15 59	—	"	2150 kms.
Hamburg	"	15 49.5	15 53	15 56	—	"	2080 kms.
				15 58	—		
Florence	"	15 42.9	—	15 55.3	—	A.	—
Innsbruck	"	15 50.6	15 55	—	—	Ma.	2770 kms.
Padova	"	15 51.9	15 55.7	—	—	V.	—
Pola	"	15 51.1	—	15 56.1	—	W.	—
Pompeii	F.W.	15 52	—	—	—	O.A.	—
Laibach	N.S.	15 51.3	15 55.2	16 2.8	—	G.	2290 kms.
Graz	"	15 50.9	15 55.5	—	—	W.	2930 kms.
Vienna	"	15 50.8	15 55.3	—	—	"	2840 kms.
Breslau	"	15 50.3	15 54.5	—	—	"	2600 kms.
Konigsberg	"	15 50.2	15 54.3	16 0.8	—	"	Iceland.
Lemberg	"	15 42.3	—	15 55.9	—	B.O.	—
Czernowitz	"	15 51.8	15 56.2	16 5.5	—	Ma.	6400 kms.
Pulkovo	"	15 50.4	15 54.5	15 57.4	—	G.	62.4N. 19.1W.
Helwan, Cairo	"	15 58	—	—	—	M.	—
Makeyevka	"	15 52.2	15 57.6	16 8.3	—	G.	60.31N. 16.14W.
Tashkent	"	15 44.7	15 52.1	16 7.1	—	"	75840 kms.
Irkutsk	"	15 53	16 2.8	16 20.3	—	"	6200 kms.
<i>May 21</i>							
Rio Tinto	E.W.	15 4	—	15 20	0.2	M.	—
San Fernando	N.S.	14 46.5	—	15 22.2	0.5	"	—
Paisley	F.W.	—	—	15 8	0.1	"	—
Eskdalemuir	N.S.	—	—	15 12.5	0.1	"	—
Edinburgh	E.W.	—	—	15 10.7	—	"	—
Bidston	"	14 55	—	15 8.6	0.3	"	—
Shide	"	—	—	15 8	0.3	"	—
Haslemere	"	—	—	15 8.8	0.4	"	—
Guildford	"	—	—	15 10.5	0.1	"	—
Kew	"	14 58.5	—	15 9.5	0.2	"	—
Paris	"	14 11.4	—	—	—	"	—
Aachen	"	14 9.9	—	15 0	—	W.	—
				15 2	—		
Heidelberg	"	—	—	—	—	"	P <sub>3</sub> 14-52.
Gottingen	"	14 8	—	14 57	—	"	—
Hamburg	"	14 9	—	—	—	"	—
Laibach	"	14 11	—	15 1.9	—	G.	—
Graz	"	14 17.5	—	14 50.6	—	W.	—
Vienna	"	—	—	14 59	—	"	—
Czernowitz	"	14 43.4	—	14 58	—	Ma.	—
Pulkovo	"	14 7.9	14 17.3	14 46.2	—	G.	Riu Kiu Ids.
Helwan, Cairo	"	14 7	—	15 40	0.2	M.	—
Makeyevka	"	14 7.8	14 17.3	14 52.5	—	G.	8210 kms.
Tiflis	"	14 9.4	14 18.8	14 52.3	—	"	—
				14 35.5	—		
Tashkent	"	14 1.6	14 12.1	14 38.2	—	"	9500 kms.
Irkutsk	"	14 0	14 9.3	14 25.9	—	"	7985 kms.
				14 27.9	—		
Batavia	"	13 57	—	14 1	—	W.	—
Tsingtau	"	13 55	—	—	—	"	—
Manila	"	13 55	—	—	—	"	—
Zi-ka-wei	"	13 57.2	14 3.9	14 12.4	—	"	—
Osaka	N.S.	13 56.9	—	14 12.7	—	O.	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>May 21, continued</i>							
Adelaide	E.W.	—	—	14 9.4	1.7	M.	—
Sydney	"	13 54.4	13 59.4	14 5.9	1.8	"	3600 kms.
Riverview	"	13 54.3	13 59.6	14 5.6	—	"	3500 kms.
Honolulu	"	13 58.7	14 6.8	14 21.1	1.5	"	—
Victoria	"	14 43.8	—	—	—	"	—
<i>May 24-25</i>							
Azores	E.W.	23 41.4	—	—	—	M.	—
Limerick	N.S.	23 43	23 49.4	0 22.4	—	"	—
Rio Tinto	E.W.	—	—	0 17.1	1.0	"	—
San Fernando	N.S.	23 48	—	—	—	"	—
Paisley	E.W.	23 49	—	0 19.5	0.8	"	—
Granada	E.W.	23 37.9	23 49.5	0 12.3	—	Bif.	? 11,000 kms.
Eskdalemuir	"	—	—	0 26	0.9	M.	—
Edinburgh	"	23 50.5	—	0 27.8	0.5	"	—
Bidston	"	23 49.2	23 57.8	0 26.5	0.8	"	—
Stonyhurst	"	23 50.4	—	0 23	0.6	"	—
West Bromwich	"	23 46	—	0 20	0.3	"	—
Shide	"	23 49	—	0 22	3.3	"	—
Haslemere	"	—	—	0 24	1.5	"	—
Guildford	"	23 39.2	23 49.2	0 21.2	0.3	"	—
Kew	"	23 49.9	—	0 24	0.6	"	—
Paris	"	23 38.6	23 49.2	0 17	—	"	—
Aachen	"	23 43.7	23 52.2?	0 16	—	W.	—
Heidelberg	"	23 49.6	—	0 19.5	—	"	—
Gottingen	"	23 42.3	23 52.5?	0 19.5	—	"	—
Hamburg	"	23 49.3	—	0 20	—	"	—
Florence	"	23 47.8	23 52	0 21	—	A.	—
Innsbruck	"	—	—	0 18.5	—	Ma.	—
Padova	"	23 42.1	23 52	0 28.7	—	V.	—
Triest	"	23 43.6	23 49.8	0 26	—	W.	7500 kms.
Pompeii	"	23 43	—	—	—	O.A.	—
Laibach	"	23 39	23 49.6	0 28.4	—	G.	9550 kms.
Graz	"	23 42.8	23 53.2	0 19.6	—	W.	9200 kms.
Vienna	"	23 43.6	23 52.9	0 18	—	"	7960 kms.
Breslau	"	23 43.3?	23 53.1	0 27.1	—	"	—
Cape Town	"	0 1.1	—	—	—	M.	—
Konigsberg	"	23 50.6	—	0 23.4	—	W.	—
Lemberg	"	23 37.7	23 53.9?	0 26.1	—	B.O.	—
Czernowitz	"	23 44.7?	23 54	0 15	—	Ma.	—
Pulkovo	"	23 40	23 52.7	0 18.6	—	G.	208. 72W.
Helwan, Cairo	"	23 41	23 49.5	0 34.6	2.3	M.	—
Ksara	N.S.	23 44.9	—	—	—	Ma.	—
Makeyevka	"	23 45.3	23 58.2	0 30.6	—	G.	8720 kms.
Tiflis	"	23 47.8	0 44	0 33.1	—	"	? 13,000 kms.
Mauritius	E.W.	23 53.7	—	0 35	—	M.	—
Bombay	"	—	—	0 29.6	0.5	"	—
Irkutsk	"	23 44.8	0 0.9?	0 51.1	0.6	"	—
Batavia	"	23 44.8?	—	0 36.8	—	G.	? 15,000 kms.
Tsingtau	"	—	—	23 47	—	W.	—
Honolulu	"	23 49.6	23 56.7	0 14.1	3.1	"	—
Ottawa	"	0 36.3	0 45.5	—	—	B.	7800 kms.
La Paz	"	23 27.2?	23 29.6?	0 31.3?	—	Bif.	1300 kms.
<i>May 29</i>							
Limerick	E.W.	13 50	—	14 25	—	"	—
Rio Tinto	N.S.	14 28	—	14 36	0.3	M.	—
San Fernando	N.S.	14 23.4	—	14 35.5	0.5	"	—
Paisley	E.W.	13 50	—	14 23	0.5	"	—
Eskdalemuir	N.S.	—	—	14 26	0.4	"	—
Edinburgh	E.W.	13 53	—	14 24.3	0.2	"	—
Bidston	"	14 0.6	14 7.2	14 26.2	0.6	"	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>May 29, continued</i>							
Stonyhurst	E.W.	13 53.5	—	14 27	0.2	M.	—
West Bromwich	"	—	—	14 33	0.3	"	—
Shide	"	13 52	—	14 30	0.5	"	—
Haslemere	"	—	—	14 28.3	0.5	"	—
Guildford	"	13 53	—	14 23.2	0.4	"	—
Kew	"	14 3	—	14 27.8	0.7	"	—
Paris	"	13 43.8?	—	14 26.7	0.4	"	—
Aachen	"	13 46.1	—	14 20	—	"	—
Heidelberg	"	13 59.6	—	14 19	—	W.	—
Gottingen	"	13 52.4	—	14 23	—	"	—
Hamburg	"	13 41.9	13 52.3	14 17	—	"	9300 kms.
Florence	"	13 45.5	13 50	14 19	—	A.	—
Padova	"	13 42.1	13 52.6	14 22	—	V.	—
Triest	"	13 52.4	—	14 22	—	W.	—
Pompeii	"	13 51	—	—	—	O.A.	—
Laibach	"	13 42.1	13 52.2	14 23.1	—	G.	9000 kms.
Graz	"	13 41.8	13 52.3	14 19.8	—	W.	9350 kms.
Vienna	"	13 41.7	13 52.2	14 19.5	—	"	9600 kms.
Breslau	"	13 41.4?	13 51.7?	14 19.1	—	"	—
Konigsberg	"	13 41.3	13 51.4	14 18.4	—	"	? 8900 kms.
Lemberg	"	13 58.6	—	—	—	B.O.	—
Czernowitz	"	13 42.9?	13 51.2	14 14.3	—	Ma.	—
Pulkovo	"	13 40.7	13 50.3	14 8.5	—	G.	22.7N. 128.3E.
Ksara	N.S.	13 42	—	14 11.9	—	"	—
Makeyevka	"	13 40.4	13 49.8	14 12.2	—	Ma.	—
Tashkent	"	13 38	13 45.1	13 57.1	—	G.	8010 kms.
Bombay	E.W.	13 43.2	—	13 59.3	0.1	M.	—
Columbo	"	13 45.5	—	—	—	"	—
Irkutsk	"	13 36.1	13 41.8	13 48.7	—	G.	22.6N. 128.1E.
Batavia	"	13 35.2	—	13 45	—	W.	F. N. Luzon.
Tsingtau	"	13 32.2	13 35.7	13 39.7	—	"	2040 kms.
Manila	"	13 30.2	—	—	—	"	Pens thrown off.
Zi-ka-wei	N.S.	13 32.1	—	13 38.5	—	"	F. N. Luzon.
Osaka	"	13 33.8	—	13 48	—	O.	—
Honolulu	E.W.	13 50.1	—	14 13.2	0.4	M.	—
<i>May 30</i>							
Azores	E.W.	12 7.7	—	—	—	M.	—
Limerick	"	12 9.1	—	13 5.1	—	"	—
Rio Tinto	"	12 17	—	13 20.1	—	"	—
San Fernando	"	12 8.5	—	13 21	2.5	"	—
Paisley	"	12 12	—	13 19.5	7.3	"	—
Granada	"	12 4.9?	12 16.5	13 15	1.2	"	—
Eskdalemuir	"	12 8.5	—	12 54.2	—	Bif.	? 10,830 kms.
Edinburgh	"	12 8.3	—	13 10	1.9	M.	—
Bidston	"	12 8.3	—	13 8.6	1.9	"	—
Stonyhurst	"	12 9	12 14.2	13 11	2.0	"	—
West Bromwich	"	12 9	12 14.2	13 9.7	3.1	"	—
Shide	"	12 13.5	—	13 10.1	2.4	"	—
Haslemere	"	12 8	12 25	12 57	3.2	"	—
Guildford	"	12 8	—	13 8	6.9	"	—
Kew	"	12 3	—	13 9.5	2.5	"	—
Paris	"	12 10.4	—	12 53?	2.5	"	—
Aachen	"	12 1.3	12 14.2	13 0.7	2.4	"	—
Heidelberg	"	12 8.7	—	13 6.3	2.3	"	—
Gottingen	"	12 8.5?	—	13 9.9	2.3	"	—
Hamburg	"	12 8.2	—	12 47	—	"	—
Paris	"	12 8.2	12 18.6?	12 48	—	"	—
Aachen	"	12 6.7	12 19.8?	12 49	—	W.	—
Heidelberg	"	12 6.7	12 19.8?	12 54.7	—	"	—
Gottingen	"	12 6.1	12 16.8?	13 1.6	—	"	—
Hamburg	"	12 6.2	12 17.6	12 43	—	"	? 10,700 kms.

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>May 30, continued</i>							
Florence	E.W.	12 8.4	—	{ 12 48 12 52	—	A.	—
Innsbruck		12 6.2	12 14	12 50	—	Ma.	? 6500 kms.
Padova		12 6.1	12 15.3	12 51.8	—	V.	—
Triest		12 8.3	12 18.2	12 42	—	W.	8700 kms.
Pola		12 9.5	—	{ 12 49.9 12 50.4	—	"	—
Pompeii	"	12 6.8	—	—	—	O. A.	—
Laibach		12 6.1	12 18.2	12 47.2	—	G.	11,550 kms.
Graz		12 6.1	12 18	12 40.2	—	W.	? Java.
Vienna		12 6.1	12 17.9	12 49	—	"	11,300 kms.
Breslau		12 6	12 17.4	12 48	—	"	—
Sarajevo	"	12 6.1	12 17.5	12 50.5	—	"	? 11,000 kms.
Cape Town	"	12 17.5?	—	—	—	M.	—
Budapest		12 7.3	—	12 47	—	W.	—
Konigsberg		12 5.8?	12 14.3?	{ 12 42.2 12 48.3	—	"	—
Lemberg		12 7.1	12 20	12 53.9	—	B. O.	11,500 kms.
Czernowitz		12 6.5?	12 16.8	12 40.7	—	Ma.	—
Pulkovo		12 1.8	12 14.1	12 37.5	—	G.	6S. 154E.
Helwan, Cairo		12 1.2	12 7.3	13 3.7	0.6	M.	—
Ksara	N.S.	12 6.7	12 12.4?	—	—	Ma.	—
Makeyevka		12 1.6	12 15.7	{ 12 53.2 12 57.9	—	G.	Maxima in vertical.
Seychelles	E.W.	12 12	—	12 44	2.5	M.	—
Mauritius	"	11 42.7	12 10.7	12 37.2	3.5	"	—
Tashkent	"	12 0	12 10.5?	12 29.9	—	G.	—
Bombay	"	11 56.3	—	12 39.3	1.0	M.	—
Kodaikanal	"	11 59.7	12 9.2	12 39.7	1.0	"	—
Colombo	"	11 59.8	12 8.5	12 35.8	1.0	"	—
Irkutsk	"	11 38.2	12 7.4	{ 12 25.7 12 27.2	—	G.	1N. 159.6E.
Batavia		11 55.7	11 58.3?	12 13	—	W.	—
Perth	"	11 51	—	12 19	8.0	M.	—
Tsingtau	"	11 55.1?	12 2.5?	12 8.2	—	W.	5680 kms.
Manila		11 54.5	12 6.2	12 7.5	—	"	—
Zi-ka-wei		11 55.6	12 1.4	12 6.5	—	"	—
Osaka	N.S.	11 55.2	—	12 8.6	—	O.	—
Adelaide	E.W.	11 53.8	11 58.8	12 5.7	12.5	M.	—
Sydney	"	11 53.9	11 58.3	12 19	6.0	"	3600 kms.
Riverview	"	11 53.2	11 58	12 5.7	—	"	? South of New Pomerania.
Victoria	"	12 6.8	—	12 49.6	7.4	"	—
Santa Clara	"	—	—	12 40	—	W.	—
Toronto	"	12 9.7	—	{ 12 57 13 13.9	0.8 1.3	M.	—
Ottawa		12 8	12 17.6	12 53	—	B.	? 8400 kms.
Harvard Univ.	"	12 9.5?	12 13.2	12 42.5	—	B. O.	—
La Paz	"	12 6.6	12 21.2?	{ 13 6.4 13 28.2	—	Bif.	? Two Eqkes.

British Association for the Advancement  
of Science.—Seismological Committee.

Observations and formal business to  
J. H. BURGESS,  
Earthquake Observatory,  
SHIDE, Isle of Wight.

Special inquiries to  
Prof. H. H. TURNER,  
University Observatory,  
OXFORD.

Monthly Bulletin for June, 1913.

For the present it has been decided to give full details for such earthquakes only as are recorded at 31 Stations at least. According to the table printed in the April Bulletin, this would mean the 100 largest earthquakes of the year.

But it is requested that no change as yet be made in the information sent to Shide, as Observers will not be able to select the large earthquakes from the records at a single Station.

Observers are asked to send a copy of their Registers each month.

The Stations are arranged in the order of longitude, starting from the Azores and travelling eastward.

The Russian Stations and those using the Wiechert instrument usually publish several maxima. For the purpose of this Bulletin the first is always given; if the amplitude of this maximum is not the greatest, then the maximum having the greatest amplitude is also given.

The time employed is Greenwich mean time (civil) expressed in hours, minutes, and decimals of a minute; 24 or 0 hours = midnight.

The amplitudes recorded in the 6th column refer only to the Milne instruments, and are given in millimetres and decimals of a millimetre.

The letters in the 7th column stand for: A. = Alfani; B. = Bosch; Bif. = Bifilar; B.O. = Bosch-Omori; C. = Cartuja; Ca. = Cancani; C.O. = Cartuja-Omori; G. = Galitzin; M. = Milne; Ma. = Mainka; O.A. = Omori-Alfani; V. = Vicentini; W. = Wiechert.

Guildford and West Bromwich use a modification of the Milne.

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>June 4</b>							
Limerick	E.W.	10 17.7	—	11 13.7	—	—	—
Rio Tinto	"	10 47	—	11 20	0.6	M.	—
San Fernando	"	10 38	—	11 51	1.0	"	—
Paisley	"	10 23	—	11 16.3	0.3	"	—
Granada	"	10 14	10 26.9	11 6.1	—	Bif.	Marianas.
				11 8.1			
Eskdalemuir	N.S.	—	—	11 15	0.7	M.	—
Edinburgh	E.W.	10 25.2	—	11 14.4	0.2	"	—
Bidston	"	10 24	—	11 28.9	0.4	"	—
Stonyhurst	"	10 26	—	11 15.8	0.7	"	—
Shide	"	10 23	—	11 15.7	1.7	"	—
Haslemere	N.S.	—	—	11 16	0.8	"	—
Kew	E.W.	10 23.1	—	—	—	"	—
Paris	"	10 18.2	10 35.2?	11 1	—	"	—
Aachen	"	10 17.8?	—	11 0	—	W.	—
Heidelberg	"	10 16	—	11 7.4	—	"	—
Göttingen	"	10 16.2	10 27.3?	10 59	—	"	—
Hamburg	"	10 16.6	—	10 59.4	—	"	—
Florence	"	10 11?	—	11 2	—	A.	—
Padova	"	10 16	10 25.9	11 13.3	—	V.	—
Triest	"	10 17.6	—	—	—	W.	—
Graz	"	10 17.5	10 27.1	10 57.3	—	"	8350 kms.
Vienna	"	10 17.2	10 26.2?	11 2	—	"	—
Breslau	"	10 17.7?	—	11 3?	—	"	—
Cape Town	"	—	—	10 59.9	0.1	M.	—
Budapest	"	10 17.2	—	—	—	W.	—
Lemberg	"	10 9.5?	10 26.2	—	—	B.O.	—
Czernowitz	"	10 16?	10 26	10 55	—	Ma.	—
Pulkovo	"	10 11.5	10 22.1	10 43.7	—	G.	Marianne Ids.
Helwan, Cairo	"	10 12	—	11 8	0.3	M.	—
Mauritius	"	10 19.3	—	10 40.1	1.0	"	—
Tashkent	"	10 9.6	10 19.8	10 43.1	—	G.	8970 kms.
Bombay	"	—	—	10 55.2	0.3	M.	—
Kodakkanal	"	10 17.7	10 25.9	10 44.9	0.5	"	—
Colombo	"	10 15.5	—	10 43.5	0.3	"	—
Irkutsk	"	10 8	10 16.6	10 29.2	—	G.	1.1S. 148.8E.
				10 33.9			
Batavia	"	10 4.5	10 6.7?	10 7	—	W.	—
Perth	"	10 4.7	—	10 23.2	10.0	M.	—
Tsingtau	"	10 4.6	10 11.3	—	—	W.	4930 kms.
Manila	"	10 3.5	10 7.3	10 14.6	—	"	—
Zi-ka-wei	"	10 4.8	10 10.8	10 16.7	—	"	—
Osaka	N.S.	10 4.6	—	10 19.2	—	O.	—
Adelaida	E.W.	10 5	10 8.8	10 16.8	7.5	M.	—
Sydney	"	10 3.7	10 8.9	10 19.1	4.1	"	4400 kms.
Riverview	"	10 3.8	10 9	10 15.5	—	"	3500 kms.
Honolulu	"	10 7.8	10 16.1	10 33.6	4.2	"	—
Ottawa	"	10 18.6?	10 30.6?	11 4	—	B.	? 12,500 kms.
Harvard Univ.	"	—	—	—	—	B.O.	P <sub>5</sub> 10-52.1
La Paz	"	10 17.5?	10 35?	11 20.7	—	Bif.	—
				11 26.5			
Pilar	"	10 17?	—	11 19.5	0.2	M.	—
Fernando Noronha	"	10 21.5	—	10 54	0.1	"	—
<b>June 13</b>							
Limerick	"	—	—	3 46.4	—	—	—
San Fernando	N.S.	2 48.5	—	3 43.7	1.1	M.	—
Granada	"	3 4.8	3 16.4	3 39.1	—	Bif.	? 10,750 kms.
Eskdalemuir	"	—	—	3 54.5	0.3	M.	—
Edinburgh	E.W.	—	3 41?	3 58.8	0.1	"	—
Bidston	"	3 23.8	3 29.6	3 48.3	0.2	"	—
Stonyhurst	"	—	—	3 51	0.1	"	—
Shide	"	3 9.5	—	3 57.5	0.2	"	—
Haslemere	"	—	—	3 57.6	0.3	"	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>June 13, continued</i>							
Guildford	E.W.	3 10·8	3 20	3 51·2	0·2	—	—
Kew	—	—	—	3 52	—	M.	—
Paris	—	3 10·2	—	3 48	—	—	—
Aachen	—	3 10·5?	3 20·6?	3 47	—	W.	—
Heidelberg	—	3 38	—	—	—	—	—
Hamburg	—	3 10·7	3 20·5	3 48	—	—	—
Florence	—	3 10·2	3 19	3 44	—	A.	—
Graz	—	3 10	3 18?	3 49	—	W.	? 7000 kms.
Vienna	—	3 10·4	3 20·1	3 49	—	—	? 8400 kms.
Cape Town	—	3 5	—	3 10	0·2	M.	—
Czernowitz	—	—	—	—	—	Ma.	P <sub>3</sub> 3-18.
Pulkovo	—	3 7·2?	3 22	3 53·2	—	G.	31S. 21W.
Helwan, Cairo	—	3 7	3 17·1	3 53·6	1·0	M.	—
Mauritius	N.S.	3 12·2	—	3 26·4?	1·0	—	—
Tashkent	—	3 12·5	—	4 3	—	G.	—
Irkutsk	—	3 11·2	3 21·8?	—	—	—	9570 kms.
Zi-ka-wei	—	4 2	—	—	—	W.	—
Riverview	—	—	—	3 42·5	—	—	—
Honolulu	E.W.	—	—	4 2	0·1	M.	—
La Paz	—	3 0·3	3 7·4	3 21·1	—	Bif.	5440 kms.
Pilar	—	2 55?	3 6·1	3 10·2	0·6	M.	—
<i>June 14</i>							
Limerick	E.W.	8 58·8	—	—	—	M.	P <sub>3</sub> 9-17.
Rio Tinto	—	8 50·7	—	—	—	—	—
Paisley	—	8 49·4	8 59·8?	9 27·5	—	Bif.	Mexico.
Granada	—	8 49	—	—	—	—	—
Eskdalemuir	—	8 49	—	—	—	M.	—
Edinburgh	—	8 59·1	—	—	—	—	—
Bidston	—	8 59	9 5·4	—	—	—	—
Stonyhurst	—	9 0·2	—	—	—	—	—
Shide	N.S.	8 59	—	9 28·7	0·9	—	—
Guildford	E.W.	—	—	—	—	—	P <sub>3</sub> 9-14·8.
Kew	—	8 59·7	—	—	—	—	—
Paris	—	8 49·5	8 59·8	9 26·5	—	—	9200 kms.
Aachen	—	8 49·6	9 0·5	9 22	—	W.	—
Heidelberg	—	8 49·7?	—	9 26	—	—	—
Hamburg	—	8 49·7	9 0·1	9 24	—	—	9400 kms.
Padova	—	8 50	—	—	—	V.	—
Triest	—	9 0·8	—	—	—	W.	—
Graz	—	8 50·7	9 0·9	9 27	—	—	9000 kms.
Vienna	—	8 50·2	9 0·8	9 32	—	—	9500 kms.
Sarajevo	N.S.	8 50·4	9 0·5	9 32	—	—	Mexico.
Pulkovo	—	8 50·2	9 0·7	9 24·5	—	G.	Mexico.
Helwan, Cairo	E.W.	8 56·6	9 5·2	—	—	M.	—
Makeyevka	—	8 51	9 1·7	—	—	G.	9670 kms.
Tashkent	—	8 56·6	—	—	—	—	—
Irkutsk	—	8 56	—	9 35·1	—	—	—
Manila	—	8 55	—	—	—	W.	? Mexico.
Honolulu	—	8 55·2	—	9 7·7	0·2	M.	—
Ottawa	—	8 43·7	8 49·2	9 1·7	—	B.	—
Harvard Univ.	—	8 43·7	8 49	—	—	B.O.	—
La Paz	—	8 44·9	8 49·2	9 3·8	—	Bif.	—
Pilar	—	8 52·4	—	9 3·6	0·1	M.	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>June 14</i>							
Azores	E.W.	9 42	—	9 57·9	2·4	M.	—
Limerick	N.S.	9 38·6	9 43·3	9 53·8	—	—	Balkans.
Cork	E.W.	9 32	—	9 54	10·0	M.	—
Rio Tinto	—	—	—	9 42	3·5	—	—
San Fernando	N.S.	9 39·5	—	9 49	11·0	—	—
Paisley	E.W.	—	—	9 49	7·8	—	—
Granada	—	9 28·4	9 42·7	9 46·9	—	Bif.	Bulgaria.
Eskdalemuir	—	—	—	9 48·6	—	—	—
Edinburgh	—	—	—	9 51·5	7·5	M.	—
Bidston	—	—	—	9 47·5	4·0	—	—
Stonyhurst	—	9 0·2	9 40	9 57·2	3·9	—	—
Shide	N.S.	9 38·7	—	9 47·1	8·0	—	—
Haslemere	E.W.	—	9 42·2	9 46·3	15·0	—	—
Guildford	—	—	—	9 47·6	5·5	—	Balkans.
Kew	—	—	—	9 46·4	—	—	—
Paris	—	9 37·3	9 40·4	—	4·9	—	—
Aachen	—	9 36·9	9 40	9 42·6	—	W.	Bulgaria.
Heidelberg	—	9 36·5	9 38·8	9 41·4	—	—	—
Gottingen	—	9 36·5	9 39·1	9 39·8	—	—	Bulgaria.
Hamburg	—	9 36·7	9 39·6	9 42·7	—	—	N. Bulgaria.
Florence	—	9 35·9	9 36·9	9 40	—	A.	—
Innsbruck	—	9 35·9	9 38·2?	9 40·5	—	Ma.	Bulgaria.
Padova	—	9 35·7	9 39	9 46·2	—	V.	Bulgaria.
Triest	—	9 35·4	9 37·2	9 38·5	—	W.	F. in Balkans.
Pola	—	9 35·4	9 37·1	9 39·3	—	—	—
Pompeii	Vert.	9 35·4	—	9 39·3	—	—	Sea of Marmora.
Graz	—	9 35·3	9 37·1	9 38·8	—	A.	Bulgaria.
Vienna	—	9 35·3	9 37·2	9 38·8	—	W.	E. Roumelia.
Sarajevo	—	9 34·6	9 35·6	9 39·4	—	—	Tirnovo.
Cape Town	E.W.	10 9·8	—	9 39·4	—	—	Bulgaria.
Lemberg	—	9 34·7	—	9 36·6	1·2	M.	—
Czernowitz	—	9 34·6	9 35·7	9 37·8	—	B.O.	Bulgaria.
Pulkovo	—	9 37·2	9 40·8	9 37·6	—	Ma.	580 kms.
Helwan, Cairo	—	—	—	9 43	—	G.	Bulgaria.
Ksara	—	9 36·3	9 39·9	9 47·5	9·0	M.	—
Makeyevka	—	9 35·7	—	9 41·3	—	Ma.	2110 kms.
Seychelles	—	9 57	—	9 50·1	—	G.	Balkans.
Mauritius	—	9 51·7	10 0·5	10 1·7	—	—	—
Bombay	—	9 43·6?	—	10 7·6	0·5	—	—
Kodaikanal	—	9 50·7	10 6·7	9 49·6	0·5	—	—
Colombo	—	9 54·5	9 59·9	10 7·9	—	—	—
Calcutta	—	9 50·2	—	10 15·4	1·2	—	—
Irkutsk	—	9 42·4	9 49·6	10 12	1·1	—	—
Batavia	—	9 46·3?	—	10 12·1	—	—	—
Tsingtau	—	9 42·1	—	10 0·6	—	G.	Bulgaria.
Manila	—	9 58	—	10 0·6	—	—	—
Zi-ka-wei	—	9 44·7	9 54·1	10 1·6	—	—	—
Osaka	N.S.	9 46·2	—	10 0	—	W.	—
Riverview	—	—	—	10 11	—	—	—
Honolulu	E.W.	—	—	10 24·6	—	—	—
Ottawa	—	9 44·3	9 53·2	10 18·4	—	—	—
Harvard Univ.	—	9 44·1	9 53·1	10 17·1	—	—	—
La Paz	—	9 51·5	10 3·6	10 52·3	—	—	—
Pilar	—	10 6·1	—	10 54·3	—	—	—
La Paz	—	—	—	10 43·1	0·5	M.	—
Pilar	—	—	—	—	—	B.O.	—
—	—	—	—	10 10	—	B.	7635 kms.
—	—	—	—	10 34·4	—	Bif.	—
—	—	—	—	10 43·6	0·6	M.	—



STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
June 22							
Limerick	N.S.	14 2	14 12.4	14 47.4	—	—	—
Cork	E.W.	14 3	—	14 47	1.0	M.	—
Rio Tinto	"	14 13	—	14 50	1.5	"	—
San Fernando	"	14 4	—	14 53.7	5.1	"	—
Paisley	"	14 8	—	14 45	1.1	"	—
Granada	"	14 3.5	14 14.5	14 31.3	—	Bif.	52N. 178.2W.
Eskdalemuir	N.S.	14 2	—	14 44	1.6	M.	—
Edinburgh	E.W.	14 2.4	—	14 39.2	0.5	"	—
				14 41.7			
Bidston	"	14 2.2	14 11.4	14 40.7	1.6	"	—
Stonyhurst	"	14 5.1	—	14 43	1.2	"	—
				14 59	1.2	"	—
Shide	N.S.	14 2.5	—	14 45.5	1.7	"	—
Haslemere	E.W.	14 5.2	—	14 46.7	2.0	"	—
Guildford	"	14 2.8	14 12.2	14 49.9	0.9	"	—
Kew	"	14 14	—	14 50.3	1.6	"	Times approx.
Paris	"	14 2.5	14 12.5	14 39	—	"	—
				14 46			
Aachen	"	14 2.3	14 12.2	14 37	—	W.	—
				14 39			
Heidelberg	"	14 2.7	14 17.5	14 32	—	"	—
Göttingen	"	14 2.2	14 12.1	14 29	—	"	? 8600 kms.
Hamburg	"	14 2	14 11.7	14 38.8	—	"	Aleutians.
Florence	"	14 0.2	14 13.5?	14 25	—	A.	—
				14 40			
Innsbruck	"	14 2.6	14 12.7	—	—	Ma.	? 9000 kms.
Padova	"	14 1.6	14 13.1	14 47.5	—	V.	—
Triest	"	14 13?	—	14 40	—	W.	—
Pola	"	—	14 12.9	14 41.4	—	"	—
				14 46.2			
Pompeii	"	14 12.5	—	—	—	O.A.	—
Graz	"	14 2.6	14 12.7	14 30.9	—	W.	Alaska.
Vienna	"	14 2.5	14 12.4	14 44	—	"	8700 kms.
				14 44.5			
Sarajevo	N.S.	14 2.8	14 13	14 42.3	—	"	Aleutians.
				14 46.8			
Budapest	"	14 2.5	—	14 45.1	—	"	—
Lemberg	"	13 58.1?	14 8.4	14 36.2	—	B.O.	? 12,000 kms.
Czernowitz	"	14 2.3	14 12.2	14 34	—	Ma.	8700 kms.
				14 38			
Pulkovo	"	14 1.1	14 10	14 25.2	—	G.	50.8N. 178.6E.
Helwan, Cairo	E.W.	14 3	14 7.3	15 0	0.6	M.	—
Ksara	N.S.	14 3	14 13	—	—	Ma.	—
Makeyevka	"	14 2.1	14 11.7	14 33.6	—	G.	Aleutians.
				14 37.2			
Mauritius	E.W.	14 11.7	14 54.9	14 57.1	0.5	M.	—
Bombay	"	—	—	14 44.4	2.0	"	—
Kodaikanal	"	14 14	—	—	—	"	—
Colombo	"	14 16	14 26.4	14 52.8	0.4	"	—
Calcutta	"	14 5.9	14 11.5	14 54.7	—	"	—
Irkutsk	"	13 58.6	—	14 13.1	—	G.	? Aleutians.
Batavia	"	14 3?	—	14 15	—	W.	—
Tsingtau	"	13 57.6	14 4.2	14 13.6	—	"	4830 kms.
Manila	"	14 0.5	—	14 29.4	—	"	—
Osaka	N.S.	13 57.5	—	14 9.6	—	O.	—
Adelaide	E.W.	14 10.7	14 14.7	14 41.4	0.8	M.	—
Riverview	"	14 13.6?	14 19.8?	14 34.7	—	"	? 4500 kms.
				14 35.6			
Honolulu	"	13 56.1	14 2	14 10.8	9.0	"	—
Santa Clara	"	13 58.4	14 4.6	14 11.2	1.0	W.	Alaska.
Baltimore	"	14 10.2	14 20.2?	14 35	2.0	M.	—
Ottawa	"	14 0.8	14 9.2	—	—	B.	7000 kms.
Harvard Univ.	"	14 1.2	14 10.2	14 28.5	—	B.O.	—
La Paz	"	14 10.5	14 21.5?	15 0.7	—	Bif.	—
Pilar	"	14 12.2	—	14 55.9	0.4	M.	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
June 26							
Azores	E.W.	5 17.8	—	5 21.3	4.2	M.	—
Limerick	"	5 17.4	5 31.4	4 6 12.8	—	"	—
				4 6 21.4			
Cork	"	—	—	6 36	3.0	M.	—
Rio Tinto	"	5 16	—	6 44	6.5	"	—
San Fernando	N.S.	5 17.2	—	6 40	15.0	"	—
Paisley	E.W.	5 20	—	7 6.5	8.0	"	—
Granada	"	5 17.3	5 31.8	6 19.4	—	Bif.	12,570 kms.
Eskdalemuir	"	5 17	—	6 52.5	4.3	M.	—
Edinburgh	"	5 17.2	—	6 28.5	3.3	"	—
Bidston	"	5 17.1	5 32.2	6 51.8	6.9	"	—
Stonyhurst	"	5 20.7	5 42.3	6 27.7	7.3	"	—
				6 26	8.2	"	—
Shide	"	5 17.3	—	6 26	7.0	"	—
				6 50			
Haslemere	"	5 18.2	6 8.6	6 31	7.0	"	—
Kew	"	5 18	—	6 45.9	4.8	"	Times approx.
				7 7.2			
Paris	"	5 17.1	—	—	—	"	—
Aachen	"	5 17	5 28.5?	7 0.5	—	W.	—
Heidelberg	"	5 17	5 30.4?	6 23.4	—	"	—
Göttingen	"	5 16.9	5 31	6 12	—	"	16,300 kms.
Hamburg	"	5 16.9	5 30.9	6 14	—	"	Melanesia.
				6 19			
Florence	"	5 17.5	—	5 48	—	A.	—
				6 36.6			
Innsbruck	"	5 17.1	5 30.7	6 16.5	—	Ma.	13-14,000 kms.
				6 21.5			
Padova	"	5 17.3	—	6 24.4	—	V.	—
Triest	"	5 17.1	5 36.4	6 4	—	W.	10,000 kms.
Pola	N.S.	5 17	5 27.9	6 21.2	—	"	10,000 kms.
Pompeii	E.W.	5 17.2	—	—	—	O.A.	—
Graz	"	5 17.1	5 31.3	6 0.8	—	W.	? Patagonia.
Vienna	"	5 17	5 31.4	6 15.5	—	"	12-14,000 kms.
Sarajevo	N.S.	5 17.4	5 28.4	6 18.6	—	"	Micronesia.
Cape Town	E.W.	5 19	—	6 7.5	0.4	M.	—
Budapest	"	5 17.1	5 31.4	6 17.9	—	W.	—
Lemberg	"	5 17.2	5 24.4	6 16.2	—	B.O.	? 6000 kms.
Czernowitz	"	5 17	5 27.4	6 0.7	—	Ma.	9500 kms.
Pulkovo	"	5 13.7	5 29.5	5 58.3	—	G.	23S. 186E.
				6 10.2			
Helwan, Cairo	N.S.	5 18.6	5 35.9	6 49.3	8.0	M.	—
Ksara	E.W.	5 17	—	6 29	—	Ma.	—
Makeyevka	"	5 14.3	—	—	—	G.	—
Seychelles	"	5 20	—	6 6	10.5	M.	—
Mauritius	"	5 11.4	5 20.7	5 53.7	8.0	"	—
Tashkent	"	5 12.7	—	7 14.2	—	G.	—
Bombay	"	5 17.1	—	5 26.8	2.5	M.	—
				6 9.8	3.6	"	—
Kodaikanal	"	5 9.7	—	5 27.4	2.5	"	—
				6 11.5	3.2	"	—
Colombo	"	5 16.3	5 25.7	6 13.9	2.5	"	—
Calcutta	"	4 48.1	5 11.5	6 12.6	—	"	—
Cocos	"	5 11	—	5 22	13.0	"	—
Irkutsk	"	5 11.1	5 21.9	5 44.2	—	G.	10.6S. 177.9E.
Batavia	"	5 9.2	5 19.1	5 40	—	W.	—
Pertth	"	5 7.6	5 16.1	5 36.3	12.0	M.	—
Tsingtau	"	5 8.8	5 19.4	5 35.5	—	W.	9500 kms.
Manila	"	5 9.1	5 13.6	5 19.9	—	"	—
Zi-ka-wei	"	5 9.5	5 19.6	5 36.7	—	"	—
Osaka	N.S.	5 8.9	—	5 35	—	O.	—
Adelaide	E.W.	5 5.4	5 12.1	5 22	23.0	M.	—
Sydney	"	4 59.7	5 3.6	5 16	23.3	"	4200 kms.
Riverview	"	5 4	5 9.8	5 15.1	—	"	Tonga Group.
Honolulu	"	5 6.2	5 12	5 16.5	7.2	M.	—
Ottawa	"	5 11.8	5 25.9	—	—	B.	7500 kms.
Harvard Univ.	"	5 11.8	5 25.6	5 57	—	B.O.	—
La Paz	"	5 11	5 21.8	5 46.6	—	Bif.	9750 kms.
Pilar	"	5 10.4	—	5 45.4	4.9	M.	—
				6 1.3	5.0	"	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		н. м.	н. м.	н. м.	мм.		
June 28							
Limerick	N.S.	9 2·1	—	9 8·4	—	—	—
Paisley	E.W.	9 2	—	9 7	0·4	M.	—
Granada	—	8 56·5	8 59·6	9 5	—	Bif.	Calabria.
Eskdalemuir	—	—	—	9 6·5	0·2	M.	—
Edinburgh	—	—	—	9 7·4	—	—	—
Bidston	—	9 1	—	9 6·3	0·3	—	—
Stonyhurst	—	9 4·6	—	9 9·7	0·5	—	—
Shide	N.S.	9 0	—	9 4·3	0·5	—	—
Haslemere	E.W.	9 3·6	—	9 6·2	0·6	—	—
Guildford	—	8 59·7	9 1·6	9 4·3	—	—	—
Kew	—	9 1	—	9 6·1	0·6	—	—
Paris	—	8 56·1	8 58·9	9 1	—	—	Calabria.
Aachen	—	8 56	—	9 1	—	W.	—
Heidelberg	—	8 55·9	—	8 59·6	—	—	—
Gottingen	—	9 0	—	9 1	—	—	—
Hamburg	—	8 56·4	8 59·2	9 1·6	—	—	Calabria.
Florence	—	8 54·7	—	8 55·9	—	A.	—
Innsbruck	—	8 54·9	8 56·6	—	—	Ma.	Calabria.
Padova	—	8 54·8	8 57	—	—	W.	Cosenza.
Triest	—	8 54·4	8 55·7	8 56·8	—	—	E. Lower Italy.
				8 56·9	—	—	—
Pola	—	8 54·6	—	8 56·7	—	W.	—
				8 57·2	—	—	—
Pompeii	Vert.	8 53·3	—	8 54·5	—	A.	Calabria.
Graz	—	8 54·6	8 56·3	8 57·6	—	W.	Calabria.
Vienna	—	8 55·5	8 57 ?	8 59·1	—	—	Calabria.
Sarajevo	E.W.	8 53·9	—	8 55	—	—	Calabria.
Budapest	—	8 55·1	8 56·8	8 59	—	—	—
Czernowitz	—	8 55·5 ?	8 57·6	9 1	—	Ma.	Calabria.
Pulkovo	—	8 57·7	9 1·8	9 5·2	—	G.	39.7N. 13.9E.
Helwan, Cairo	—	8 59	—	—	—	M.	—
Ksara	—	9 6·8	9 10·1 ?	—	—	Ma.	—
Makeyevka	—	8 57	9 0·5	9 4·8 ?	—	G.	Calabria.
				9 5·5	—	—	—
Tashkent	—	9 0·4 ?	9 6·4 ?	—	—	—	4270 kms
Irkutsk	—	9 2·8	9 10·9	9 24·5	—	—	Cosenza.
Honolulu	—	10 2·4	—	10 15	0·1	M.	—

SUPPLEMENT.

JUNE, 1913.

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
June 4							
West Bromwich	E.W.	10 16	—	10 48	0.3		—
Laibach		10 23.2	—	11 0.8	—	G.	—
Tiflis		10 11	10 21.7	10 53.2	—	"	—
Victoria	"	10 21.2	—	11 1	1.2	M.	—
Toronto	"	10 25	—	11 4.4	0.3	"	—
June 13							
Laibach		3 10.2	3 19.5?	3 45.2	—	G.	—
June 14							
West Bromwich	E.W.	8 58	—	9 20	0.2		—
Tiflis		8 56.3	9 5.9	—	—	G.	—
Victoria	"	8 50.9	—	9 2.7	2.0	M.	—
Toronto	"	8 46	—	8 59.3	0.3	"	—
West Bromwich	E.W.	9 37.7	9 41.7	9 50	30.0		—
Tiflis		9 36.7	9 39.5	10 0.1	—	G.	1610 kms.
Victoria	"	9 54.9	—	10 28.3	0.8	M.	—
Toronto	"	9 53.4	—	10 20.3	2.0	"	—
June 22							
West Bromwich	E.W.	14 6.5	—	14 50	2.5		—
Laibach		14 2.7	14 11.7	14 36	—	G.	—
Victoria	"	13 57.2	—	14 15.2	2.9	M.	—
Toronto	"	14 0.8	—	14 28.5	1.7	"	—
June 26							
West Bromwich	E.W.	5 17	5 31	6 27	19.0		Friendly Ids.
Laibach		5 16.8	—	—	—	G.	—
Victoria	"	5 9.3	—	5 52.7	6.2	M.	—
Toronto	"	5 10.2	—	6 25.6	4.8	"	—
June 28							
West Bromwich	E.W.	8 57.7	9 0.5	9 4.7	1.5		—
Laibach		8 54.3	8 55.8	8 57.5	—	G.	—
Tiflis		8 57.7	9 1.7	9 7.3	—	"	2460 kms.

June 4th, 0-1 hrs. West Bromwich, Tiflis.  
 June 6th, 2-3 hrs. Laibach.  
 June 8th, 1-2 hrs. Tiflis.  
 June 11th, 6-7 hrs. West Bromwich, Laibach.  
 June 14th, 11 hrs. West Bromwich, Tiflis, Victoria, Toronto.  
 June 19th, 0 hrs. Tiflis.  
 June 19th, 17 hrs. Laibach.  
 June 21st, 21 hrs. Laibach, Tiflis.  
 June 22nd, 8 hrs. Tiflis.  
 June 26th, 22 hrs. Laibach, Tiflis.  
 June 27th, 2 hrs. Tiflis.

British Association for the Advancement  
of Science.—Seismological Committee.

Observations and formal business to  
J. H. BURGESS,  
Earthquake Observatory,  
SHIDE, Isle of Wight.

Special inquiries to  
Prof. H. H. TURNER,  
University Observatory,  
OXFORD.

Monthly Bulletin for July, 1913.

For the present it has been decided to give full details for such earthquakes only as are recorded at 31 Stations at least. According to the table printed in the April Bulletin, this would mean the 100 largest earthquakes of the year.

But it is requested that no change as yet be made in the information sent to Shide, as Observers will not be able to select the large earthquakes from the records at a single Station.

Observers are asked to send a copy of their Registers each month.

The Stations are arranged in the order of longitude, starting from the Azores and travelling eastward.

The Russian Stations and those using the Wiechert instrument usually publish several maxima. For the purpose of this Bulletin the first is always given; if the amplitude of this maximum is not the greatest, then the maximum having the greatest amplitude is also given.

The time employed is Greenwich mean time (civil) expressed in hours, minutes, and decimals of a minute; 24 or 0 hours = midnight.

The amplitudes recorded in the 6th column refer only to the Milne instruments, and are given in millimetres and decimals of a millimetre.

The letters in the 7th column stand for: A. = Alfani; B. = Bosch; Bif. = Bifilar; B.O. = Bosch-Omori; C. = Cartuja; Ca. = Cancani; C.O. = Cartuja-Omori; G. = Galitzin; M. = Milne; Ma. = Mainka; M.S. = Milne-Shaw; O.A. = Omori-Alfani; S. = Stattesini; V. = Vicentini; W. = Wiechert.

Guildford and West Bromwich use a modification of the Milne.

STATION	Com- ponent	P <sub>1</sub>		P <sub>2</sub>		Max. H. M.	Amp. MM.	Machine	Remarks
		H. M.	H. M.	H. M.	H. M.				
July 6									
Limerick	E.W.	—	—	17 18.4	—	—	—	—	—
San Fernando	N.S.	16 49.5	—	17 43.5	0.6	—	—	—	—
Granada	—	16 22 ?	16 34.2 ?	17 19.5	—	—	—	—	? 11,750 kms.
Eskdalemuir	—	—	—	17 19	0.3	—	—	—	—
Edinburgh	E.W.	—	—	17 41.3	—	—	—	—	—
Bidston	—	16 40	—	16 47.1	0.1	—	—	—	—
Stonyhurst	—	16 44	—	17 20.8	0.5	—	—	—	—
West Bromwich	—	16 39.5 ?	16 46	17 22	0.2	—	—	—	—
Shide	N.S.	16 31.7	—	17 29	0.5	—	—	—	—
Guildford	E.W.	16 34.5	16 46.1	17 19.8	0.4	—	—	—	11,025 kms.
Kew	—	16 51	—	17 22	0.2	—	—	—	—
Paris	—	16 32.9	16 41.6	17 20	—	—	—	—	—
Aachen	—	16 32	—	17 14.5	—	—	—	W.	—
Moncalieri	—	16 4.3 ?	16 31.4	17 22.7	—	—	—	S.	—
Heidelberg	—	16 33.1	—	17 20.6	—	—	—	—	—
Hamburg	—	16 29.3	—	17 9	—	—	—	—	—
Florence	—	—	16 34.6	17 0	—	—	—	A.	—
Triest	—	16 29.9	16 37.7	17 8	—	—	—	W.	6400 kms.
Graz	—	16 31.8	16 41	—	—	—	—	—	—
Vienna	—	16 37.6	—	17 18	—	—	—	—	—
Konigsberg	—	16 37.3	—	17 10.2	—	—	—	—	2200 kms.
Lemberg	—	16 28.6	—	17 14.3	—	—	—	B.O.	—
Czernowitz	—	—	16 37.2 ?	17 4	—	—	—	—	—
Pulkovo	—	16 24.1	16 37	16 59.5	—	—	—	G.	—
Helwan, Cairo	—	16 18	16 30	17 16.3	0.4	—	—	M.	16N. 149E.
Tihs	—	16 28.5	16 36.9	17 7.5	—	—	—	G.	—
Mauritius	—	16 32.3	—	16 49	0.5	—	—	M.	—
Tashkent	—	16 23.8 ?	16 32.7	16 51.9	—	—	—	G.	—
Bombay	—	16 33	—	16 52.1	0.4	—	—	M.	—
Colombo	—	16 29	—	16 50.6	0.7	—	—	—	—
Calcutta	—	16 20.7	16 27.8	16 44.6	—	—	—	—	—
Cocos	—	—	—	16 30	1.0	—	—	—	—
Irkutsk	—	16 22.5	16 30.4	16 43.6	—	—	—	G.	0.4N. 132.0E.
Batavia	—	16 17.6	16 21.7	16 24	—	—	—	W.	—
Perth	—	16 25.3	—	16 35.4	1.5	—	—	—	—
Tsingtau	—	16 20.1	16 25.8	16 30.6	—	—	—	W.	3900 kms.
Manila	—	16 16.9	16 20.1	16 26.2	—	—	—	—	—
Osaka	—	16 20	16 25.6	16 31.7	—	—	—	O.	4450 kms.
				16 33.3	—	—	—	—	—
Adelaide	—	16 18.5	16 25	16 34.7	2.3	—	—	M.	—
Sydney	—	16 21.2	16 26.5	16 45.7	1.0	—	—	—	3500 kms.
Honolulu	—	16 25.8	16 35.4	16 52.7	0.8	—	—	—	—
Lima	—	16 32 ?	—	16 37 ?	1.0	—	—	—	—
La Paz	—	16 33.1	—	—	—	—	—	—	—
July 7									
Rio Tinto	E.W.	18 17	—	19 40	0.5	—	—	M.	—
San Fernando	N.S.	17 58	—	19 11	1.8	—	—	—	—
Granada	—	17 56.1	18 6.5 ?	18 47.6	—	—	—	Bif.	? 9310 kms.
Eskdalemuir	—	—	—	18 59.5	0.3	—	—	M.	—
Edinburgh	E.W.	18 5.6	—	18 58.8	0.1	—	—	—	—
Bidston	—	18 7	—	18 58.5	0.7	—	—	—	—
Stonyhurst	—	18 0.8	—	19 0	0.6	—	—	—	—
West Bromwich	—	17 58	18 14	18 50	0.2	—	—	—	—
Shide	—	17 59	—	18 14.3	—	—	—	—	—
				18 53.5	—	—	—	—	—
Kew	—	18 10	—	19 3.6	0.3	—	—	—	—
Paris	—	17 58.2	18 4.9 ?	18 42	—	—	—	—	—
				18 59	—	—	—	—	—
Aachen	—	17 57.8	—	18 43	—	—	—	W.	—
Moncalieri	—	17 56.1	18 14.5	18 58.8	—	—	—	S.	—
Heidelberg	—	17 57	—	18 44.6	—	—	—	—	—
Hamburg	—	17 55.6	—	18 43.2	—	—	—	—	—
Florence	—	17 58.1	18 8.1	18 45	—	—	—	A.	—
Innsbruck	—	17 55.7	18 4.5	—	—	—	—	Ma.	7400 kms.
Padova	—	17 57.2	18 4.7	—	—	—	—	V.	—
Triest	—	17 55.7	18 4.4	18 43	—	—	—	W.	7500 kms.
				18 45	—	—	—	—	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>July 7, continued</i>							
Pompeii	E.W.	17 59	—	—	—	O.A.	—
Laibach		17 57·8	18 8	18 49·6	—	G.	—
Graz		17 55·7 ?	18 4·1	18 48	—	W.	—
Vienna		17 55·6	18 7·3	18 39	—	"	11,000 kms.
Budapest		17 58	—	18 38·7	—	"	—
Konigsberg		17 56·7	—	18 37·4	—	"	—
Lemberg		17 56·9	—	18 42	—	B.O.	—
Czernowitz		17 56·5 ?	18 3 ?	18 44	—	Ma.	—
Pulkovo		17 51·1	18 3·9	18 26·7	—	G.	9.6S. 153.4E.
Helwan, Cairo	"	17 57	—	18 28 ?	0·3	M.	—
Makeyevka	"	17 55·6	18 5·2	18 33·9	—	G.	—
Mauritius	"	—	—	18 25·4	1·5	M.	—
Tashkent	"	17 49·6	18 0·2	18 20·7	—	G.	9590 kms.
Bombay	"	17 58·5	—	18 28·3	0·3	M.	—
Kodaikanal	"	17 55·6	—	17 58·7	0·4	"	—
Calcutta	"	17 57	18 7·7	18 24	—	"	—
Irkutsk	"	17 47·9	17 57	18 11·7	—	G.	13.0S. 132.3E.
Batavia	"	17 45·1	17 52·9	17 54	—	W.	—
Perth	"	17 45	—	18 5	3·0	M.	—
Tsingtau	"	17 45·7	17 53	18 2·2	—	W.	5600 kms.
Manila	"	17 44·1	17 49·3	17 56·2	—	"	—
Zi-ka-wei	"	17 45·2	17 51·7	17 57·9	—	"	—
Osaka	"	17 45·7	—	17 58	2·0	O.	4140 kms.
Sydney	"	17 44·5	—	17 53·8	—	M.	1750 kms.
Honolulu	"	17 45·9	17 53	18 11·5	1·8	"	—
Victoria	"	18 6	18 20·4	18 38·6	1·3	M.	—
Toronto	"	—	18 9·8 ?	—	—	"	—
Ottawa	"	17 57·3	18 7·3	—	—	B.	10,000 kms.
Harvard Univ.	"	17 47·7	—	—	—	B.O.	—
La Paz	"	17 56·2	18 8·7	18 45·6	—	Bif.	—
				18 48·5	—		—
				18 54	0·5	M.	—
Pilar	"	—	—	—	—		—
<i>July 8</i>							
Limerick	N.S.	—	—	0 20	—	—	—
San Fernando	E.W.	23 4	—	23 46	0·6	M.	—
Granada		22 27·8	—	23 27·1	—	Bif.	—
Edinburgh	"	—	—	22 51·4	—	M.	—
Bidston	"	22 51	—	23 31·4	0·4	"	—
Stonyhurst	"	22 39·7	—	23 32·5	0·1	"	—
Shide	"	—	—	22 52	0·1	"	—
Kew	"	23 8·5	—	0 44·9	0·2	"	—
Paris	"	22 29·5	—	23 10	—	"	—
Aachen	"	22 29	22 37 ?	23 13	—	W.	—
Moncalieri	"	22 29·1	22 41·3	—	—	S.	—
Heidelberg	"	—	—	—	—		P <sub>3</sub> 23-11·6.
Innsbruck	"	22 27·4	—	—	—	Ma.	—
Triest	"	22 30	—	23 9	—	W.	—
Laibach	"	22 29·7	—	23 10	—	G.	—
Graz	"	22 28·5	22 39	23 8	—	W.	9400 kms.
Vienna	"	22 27·1	22 45 ?	23 11	—	"	—
Lemberg	"	22 31·6 ?	—	—	—	B.O.	—
Pulkovo	"	22 22·6	22 36 ?	23 0·1	—	G.	Probably Pacific.
Helwan, Cairo	"	22 27	—	—	—	M.	—
Makeyevka	"	22 27·1	22 34·8	23 16·4	—	G.	6100 kms.
Mauritius	N.S.	22 21	—	22 54·8	—	M.	—
Tashkent	"	22 21	22 31·7	22 51·2	—	G.	9680 kms.
Bombay	E.W.	—	22 31	—	—	M.	—
Irkutsk	"	22 19·4	22 28·6	22 45·2	—	G.	4.8S. 142.2E.
Batavia	"	22 16·5	22 23·2	22 25	—	W.	—
				22 38	—		—
Tsingtau	"	22 17·2	22 24·4	—	—	"	5600 kms.
Manila	"	22 15·4	22 19·7	22 26·1	—	"	—
Zi-ka-wei	"	22 16·7	22 22·5	—	—	"	—
Osaka	"	22 16·5	—	22 28·8	—	O.	—
Adelaide	"	—	—	22 19·7	0·8	M.	—
Honolulu	"	22 17·3	22 25·9	22 30·4	1·6	"	—
Victoria	"	22 33·6	—	—	—	"	—
Toronto	"	22 31	—	—	—	"	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>July 8, continued</i>							
Ottawa	E.W.	22 28·5	22 36·2 ?	—	—	B.	6200 kms.
Harvard Univ.	"	—	—	—	—	B.O.	P <sub>3</sub> 22-3·2.
La Paz	"	22 27·2	22 30	—	—	Bif.	—
Fernando Noronha	"	22 27·5	—	22 51·5	0·2	M.	—
<i>July 12</i>							
Limerick		10 41·8	—	11 27	—	—	—
Rio Tinto	E.W.	11 18	—	11 29	0·5	M.	—
San Fernando	N.S.	11 23·5	—	11 39	1·0	"	—
Granada	"	10 37·3	10 48·8	11 24·4	—	Bif.	10,730 kms.
Eskdalemuir	"	10 37	—	11 24	0·3	M.	—
Edinburgh	E.W.	10 48·5	—	11 25·3	0·1	"	—
Bidston	"	10 48	10 54·3	11 18·3	0·5	"	—
Stonyhurst	"	10 47	—	11 35	0·5	"	—
West Bromwich	"	10 40	—	11 30	1·0	"	—
Shide	"	—	—	11 28·5	0·7	"	—
Haslemere	"	—	—	11 25·4	0·8	"	—
Guildford	"	10 45·1	10 56·7	11 24·3	0·3	"	10,850 kms.
Kew	"	—	—	10 27·6 ?	0·4 ?	"	—
Paris	"	10 37·4	10 48	11 28	—	"	9600 kms.
Aachen	"	10 37	10 47·7	11 25·5	—	W.	—
Moncalieri	"	10 37·2	10 48·2	11 28·4	—	S.	—
Heidelberg	"	10 38·2	10 50·6	11 30·2	—	"	—
Hamburg	"	10 36·9	—	11 24·7	—	"	—
Innsbruck	"	—	—	11 18	—	Ma.	—
Padova	"	10 37·7	10 48·2	—	—	V.	—
Triest	"	10 40	10 47·7	11 14	—	W.	6500 kms.
				11 24	—		—
Graz	"	10 37·1	10 47·5 ?	11 18·5	—	"	—
Vienna	"	10 36·8	10 47·5	11 22·5	—	"	1 9600 kms.
Sarajevo	"	10 36·5	10 47	11 23	—	"	9000 kms.
Budapest	"	10 42·4	—	11 15·8	—	"	—
Lemberg	"	10 59·1	—	11 26·5	—	B.O.	9290 kms.
Czernowitz	"	10 36	10 47	11 21·7	—	Ma.	9290 kms.
Pulkovo	"	10 35·8	10 45·6	11 3	—	G.	27.9N. 144.4E.
Helwan, Cairo	"	10 40	10 49	11 31	0·4	M.	—
Makeyevka	"	10 36	10 46	11 9·2	—	G.	Bonin Ids.
				11 16·4	—		—
Tiflis	"	10 35·9	10 45·8	11 6	—	"	8720 kms.
Tashkent	"	10 34·2 ?	10 42·2 ?	10 58·1	—	"	—
Bombay	"	10 42·8	—	11 6	—	"	6520 kms.
Kodaikanal	"	10 47·4	—	—	0·5	M.	—
Colombo	"	10 44	10 59	11 4	—	"	—
Calcutta	"	10 32·1	10 39·7	10 57·5	—	"	—
Irkutsk	"	10 31·3	10 37·2	10 45·4	—	G.	29.2N. 143.4E.
Batavia	"	10 32·6	10 39·5	10 40·8	—	W.	—
Tsingtau	"	10 28·7	10 33·2	10 36·7	—	"	2820 kms.
				10 37·2	—		—
Manila	"	10 29·1	10 33·2	10 41·7	—	"	—
Zi-ka-wei	"	10 28·2	10 31·9	10 36·4	—	"	—
Osaka	"	10 26·9	—	10 29·7	—	O.	1660 kms.
Honolulu	"	10 38·6	10 41·4	10 55·9	2·0	M.	—
Victoria	"	10 44·8	—	11 22·7	0·2	"	—
Toronto	"	—	—	11 1·5 ?	—	"	—
Ottawa	"	10 48·3	10 53·2	—	—	B.	3300 kms.
Harvard Univ.	"	—	—	—	—	B.O.	P <sub>3</sub> 10-56·1.
Pilar	"	—	—	11 40	—	M.	—
<i>July 22</i>							
Limerick	E.W.	7 2·3	—	7 56·4	—	—	—
San Fernando	"	7 40	—	8 10	0·6	M.	—
Eskdalemuir	"	—	—	7 59	0·2	"	—
Edinburgh	"	7 15·3	—	—	—	"	—
Bidston	"	7 13·6	—	7 55	0·4	"	—
Stonyhurst	"	7 10·6	—	7 53	0·2	"	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>July 22, continued</i>							
West Bromwich	E.W.	6 50.3	—	7 53	0.2	M.	—
Shida	"	6 57	7 8.3	7 43.4	—	"	710,325 kms.
Guildford	"	—	—	8 3	—	"	—
Kew	"	6 56.9	7 13.9	7 36	—	"	—
Paris	"	6 55	—	7 40.7	—	W.	—
Aachen	"	6 55.7	7 7	7 55.3	—	S.	—
Moncalieri	"	6 56.5	—	7 47	—	"	—
Heidelberg	"	6 55	—	7 43	—	"	—
Hamburg	"	—	—	7 50	—	A.	—
Florence	"	6 53.5	7 0.5?	—	—	Ma.	—
Innsbruck	"	6 52.8	7 0.5	7 44	—	W.	6100 kms.
Triest	N.S.	6 51	—	—	—	O.A.	—
Pompeii	"	6 53.5	7 2	—	—	W.	6900 kms.
Graz	"	6 53.5	7 2.7	7 46	—	"	—
Vienna	"	—	—	7 41.4	—	"	—
Konigsberg	"	6 55	—	7 40	—	Ma.	—
Czernowitz	"	6 48.9	7 1.5	7 27.3	—	G.	5S. 155E.
Pulkovo	"	6 50.9	7 3.8	7 30.2	—	"	12,880 kms.
Makeyevka	"	6 48.7	6 59.3	7 31.2	—	"	9570 kms.
Tiflis	E.W.	6 47.7	7 21	—	—	M.	—
Mauritius	"	6 47.3	6 57.7	7 22.9	—	G.	9280 kms.
Tashkent	"	6 52.5	—	7 29.1	0.2	M.	—
Romney	"	6 53.3	—	7 11.5	—	"	—
Calcutta	"	6 45.9	6 54.7	7 8.5	—	G.	3.8S. 147.1E.
Irkutsk	"	6 44	—	7 0	—	W.	—
Batavia	"	6 41.7	—	—	—	"	—
Manila	"	6 42.9	6 49.7	—	—	"	—
Zi-ka-wei	"	6 43.4	—	6 54.6	—	O.	3860 kms.
Osaka	"	—	—	6 55.3	—	"	—
Adelaide	"	6 42.6	6 46.5	6 58.1	2.3	M.	—
Honolulu	"	6 44.3	6 51.7	7 9.4	1.1	"	—
Victoria	"	7 13.4	7 19.3?	7 38.9	0.3	"	—
Toronto	"	7 27.4	—	—	—	"	—
Ottawa	"	7 0.3	7 11.5	—	—	B.	71,300 kms.
Harvard Univ.	"	6 46.1	6 54.1	—	—	B.O.	—
La Paz	"	6 54.4	6 57.4	—	—	Bif.	—
Pilar	"	7 13.4	—	—	—	M.	—
Fernando Noronha	"	7 3.7	—	7 18.5	0.1	"	—
				8 11			
<i>July 25</i>							
Limerick	E.W.	—	—	13 16.9	—	—	—
Cork	"	13 0	—	13 31.4	—	—	—
San Fernando	N.S.	12 55	—	13 18.5	0.5	M.	—
Granada	"	12 49.6	12 59.6	13 18.6	—	Bif.	8500 kms.
Eskdalemuir	"	—	—	13 21	0.1	M.	—
Edinburgh	E.W.	12 59.2	—	13 22.2	—	"	—
Bidston	"	12 59.6	—	13 19.6	0.3	"	—
Stonyhurst	"	13 1.4	—	13 22	0.5	"	—
West Bromwich	"	—	12 59	13 18	0.2	"	—
Haslemere	"	—	—	13 21	0.8	"	—
Guildford	"	12 50	12 59.3	13 17.2	0.1	"	Jamaica.
Kew	"	13 1.8	—	13 22	0.5	"	—
Paris	"	12 50	12 59.7	13 19	—	"	78500 kms.
Aachen	"	12 43	—	—	—	"	—
Moncalieri	"	12 50.2	13 0.4	13 22.6	—	W.	—
Heidelberg	"	12 49.4	13 0	—	—	"	—
Hamburg	"	12 50.3	13 0.5	—	—	"	9000 kms.
Triest	"	12 50.3?	13 1	—	—	W.	9500 kms.
Graz	"	12 50.7	13 1.3	13 24.5	—	"	9500 kms.
Vienna	"	12 50.8	—	13 23	—	"	—
Konigsberg	"	12 50.8	13 1.4	13 30.9	—	"	—
Czernowitz	"	—	—	13 29	—	Ma.	—
Pulkovo	"	12 51.1	13 1.6	13 23.1	—	G.	16N. 78W.
Helwan, Cairo	"	13 3	—	13 53	0.2	M.	—
Makeyevka	"	12 51.3	13 2.7	—	—	G.	10,640 kms.

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>July 25, continued</i>							
Tiflis	"	12 56.9	13 6.3	13 40.6	—	G.	—
Tashkent	"	12 48.6	—	13 15.8	—	"	—
Irkutsk	"	12 57.7	13 7.4?	13 25.9	—	W.	—
Zi-ka-wei	"	—	—	—	—	"	Ps 13-47.
Honolulu	E.W.	13 2.1	—	13 21.1	0.1	M.	—
Victoria	"	13 0.7	—	13 9.9	0.2	"	—
Toronto	"	—	12 51.3	12 56.6	2.6	"	—
Lima	"	12 48.2	—	12 56.8	1.0	"	—
Ottawa	"	12 44.8	12 50.2	12 57.1	—	B.	3600 kms.
La Paz	"	12 44.5	12 52.1	13 0.4	—	Bif.	—
Pilar	"	12 53	—	—	—	M.	—
Fernando Noronha	"	12 46	12 53	13 9.5	0.5	"	—
				13 19.4			
<i>July 26</i>							
Azores	E.W.	21 3.6	—	21 7.5	—	M.	—
Limerick	"	20 55.1	—	21 0.5	2.6	"	—
Cork	"	21 0	—	21 2	1.0	"	—
Rio Tinto	"	21 1	—	21 4	0.7	"	—
San Fernando	"	21 5	—	21 8.5	0.7	"	—
Granada	"	20 57.8	—	21 7.2	—	Bif.	75300 kms.
Eskdalemuir	N.S.	20 54.5	21 4.6	20 59.5	0.7	M.	—
Edinburgh	E.W.	20 56.8	—	21 0.3	0.6	"	—
Bidston	"	20 56.6	—	20 59.5	0.3	"	—
Stonyhurst	"	20 58.3	—	21 1.3	1.2	"	—
West Bromwich	"	20 54.5	20 57.8	21 2.5	4.0	"	—
Haslemere	"	20 59	—	21 2	1.5	"	—
Guildford	"	20 55.2	20 59.2	21 4.3	4.2	"	72470 kms.
Kew	"	20 57.4	—	20 59.9	0.4	"	—
Paris	"	20 55.9	20 59.8	21 4	—	"	72350 kms.
Aachen	"	20 55.7	20 59.4	21 2	—	W.	—
Moncalieri	"	20 56.6	—	21 7.8	—	S.	—
Heidelberg	N.S.	20 56.1	21 0.5	21 4.2	—	"	—
Hamburg	"	20 55.6	20 59.1	21 3.7	—	"	2100 kms.
Florence	"	20 55.4	—	21 6	—	A.	—
Innsbruck	"	20 56.5	21 1.2	21 6	—	Ma.	2850 kms.
Padova	"	20 57.3	21 2	—	—	V.	—
Triest	"	20 56.8	21 2.5	21 5	—	W.	3850 kms.
Pola	"	21 2.8	—	21 7.1	—	"	—
Pompeii	E.W.	20 58	—	—	—	O.A.	Japan.
Vienna	"	20 56.7	21 1.2	21 9.5	—	W.	2800 kms.
Breslau	"	20 56.4	21 0	21 6.5	—	"	—
Budapest	"	20 56.8	—	21 13.8	—	"	—
Konigsberg	"	20 56	21 0	21 6.6	—	"	—
Lemberg	"	20 58.1	—	21 10.6	—	"	73500 kms.
Czernowitz	"	21 2.1	21 2.6	21 11.5	—	B.O.	Roumania.
Pulkovo	"	20 56.1	21 0.2	21 4.1	—	G.	67.5N. 18.6W.
Helwan, Cairo	"	21 6	—	—	—	M.	—
Makeyevka	"	20 58.5	21 4.2	21 7	—	G.	3910 kms.
Tiflis	"	21 0.6	21 5.4	21 16.3	—	"	—
Tashkent	"	21 0.5	21 7.8	21 18.8	—	"	—
Irkutsk	"	21 0.5	21 8.1	21 24.6	—	"	—
Victoria	"	21 18	—	—	—	M.	—
Toronto	"	—	21 9.2?	21 14.5	0.3	"	—
Ottawa	"	20 58.4	21 4.2	—	—	B.	4000 kms.
Harvard Univ.	"	20 58.5?	21 4.4	—	—	B.O.	4140 kms.
Fernando Noronha	"	—	—	21 14.8	0.1	M.	—
<i>July 28</i>							
Azores	E.W.	5 59.2	—	—	—	M.	—
Limerick	N.S.	5 52.7	—	6 30.8	—	"	—
Rio Tinto	E.W.	6 0	6 3.2	6 26	3.0	"	—
San Fernando	N.S.	5 51	—	6 31.5	3.9	"	—
Paisley	E.W.	6 15	—	6 33	1.6	"	—
Granada	"	5 52.1	6 2.6	6 25.9	—	Bif.	9470 kms.
Eskdalemuir	"	5 52.5	—	6 33	1.1	M.	—
Edinburgh	"	5 52.8	—	6 33.2	1.6	"	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>July 28, continued</i>							
Bidston	E.W.	5 52	5 55.7	6 31.8	2.5	M.	—
Stonyhurst	"	6 0	—	6 34.1	2.1	"	—
West Bromwich	"	—	6 2.5	6 34	0.8	"	—
Shide	"	5 54	6 3	6 30	1.1	M.S.	—
Haslemere	"	6 3.2	—	6 32.7	5.0	M.	—
Guildford	"	5 53.6	6 3.2	6 32	1.6	"	Peru.
Kew	"	6 2.6	—	6 32.6	3.8	"	—
Paris	"	5 52.7	6 3.3	6 32	—	"	? 9500 kms.
Aachen	"	5 52.9	—	6 33	—	W.	—
Moncalieri	"	5 55	6 5.3	6 37.8	—	S.	—
Heidelberg	"	5 57	6 3.4	6 33	—	"	—
Hamburg	"	5 56	—	6 36.2	—	"	—
Florence	"	5 58?	—	6 33	—	A.	—
Innsbruck	"	5 55	—	—	—	Ma.	—
Padova	"	5 52.9	6 3.7	6 35.7	—	V.	—
Triest	"	5 57	6 3.8	{ 6 30.5 6 36.5	—	W.	5100 kms.
Pompeii	N.S.	5 57	—	—	—	O.A.	Japan.
Graz	"	5 58.4	6 3.9	6 31.5	—	W.	? 9400 kms.
Vienna	"	5 54.4	6 4	6 38	—	"	? 8400 kms.
Cape Town	E.W.	—	—	6 27	0.2	M.	—
Budapest	"	—	—	6 31?	—	W.	—
Konigsberg	"	5 55.1	6 5.6	6 25.5	—	Ma.	—
Czernowitz	"	—	6 4.7	6 41	—	G.	—
Pulkovo	"	5 54	6 8.1	6 36.1	—	"	Near W. Coast of S. America.
Makeyevka	"	5 53.2?	6 13.2?	{ 6 35.8 6 37.2	—	"	—
Tashkent	"	5 58.7	—	6 50.6	—	"	—
Calcutta	"	5 59.3?	—	6 25.8?	—	M.	—
Irkutsk	"	5 58.9	6 20.9	6 51.1	—	G.	—
Batavia	"	6 0	—	—	—	W.	—
Zi-ka-wei	"	—	—	—	—	"	P <sub>3</sub> 6-54.
Honolulu	"	6 3.3	6 9.7	6 27.4	0.7	M.	—
Victoria	"	5 52.1	6 1.1?	6 24.9?	0.2	"	—
Toronto	"	5 45	5 57.7	6 13.7	0.3	"	—
Lima	"	5 40.3	—	5 42.7	>14.5	"	—
Ottawa	"	5 49.7	5 58	—	—	B.	6800 kms.
Harvard Univ.	"	5 49.6?	5 57.6	—	—	B.O.	6450 kms.
La Paz	"	5 40.9	5 42.2	5 42.7	—	Bif.	S. of Peru.
Pilar	"	5 43.5	—	5 48.9	3.9	M.	—
Fernando Noronha	"	—	5 45.5?	6 5.4	11.5	"	—
Limerick	N.S.	12 20.5	—	{ 13 31.9 13 37	—	"	—
Rio Tinto	E.W.	13 14	—	13 25	1.7	M.	—
San Fernando	N.S.	13 8.5	—	13 27	1.6	"	—
Granada	"	12 17.1	—	13 21.9	—	Bif.	—
Eskdalemuir	E.W.	—	—	13 39	0.6	M.	—
Edinburgh	"	12 42.7	—	13 40.5	0.2	"	—
Bidston	"	13 11.2?	13 16.7	13 36.8	0.5	"	—
Stonyhurst	"	13 26.6?	—	13 39.8	1.0	"	—
West Bromwich	"	12 39	—	13 35	0.3	"	—
Shide	"	12 39?	—	13 30	0.2	M.S.	—
Guildford	"	13 28.2	—	13 33.1	0.4	"	—
Kew	"	13 18.6?	—	13 34.8	0.5	M.	—
Paris	"	12 18?	—	13 31	—	"	—
Aachen	"	12 20	—	13 33	—	W.	—
Moncalieri	N.S.	12 20	12 41	13 32.1	—	S.	—
Heidelberg	"	—	—	—	—	"	P <sub>3</sub> 13-19.
Hamburg	"	12 19?	—	13 34	—	"	—
Florence	"	13 14.3	—	13 29.5	—	A.	—
Triest	"	12 18.7	—	13 25.5	—	W.	—
Graz	"	—	—	13 35	—	"	—
Vienna	"	12 18.4?	—	13 37	—	"	—
Cape Town	E.W.	12 34	—	12 47	0.3	M.	—
Konigsberg	"	12 25.2	—	12 36.6	—	W.	—
Czernowitz	"	—	—	13 35	—	Ma.	—
Pulkovo	"	12 17.8	12 32	13 19.6	—	G.	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>July 28, continued</i>							
Makeyevka	"	12 12.7?	12 31.8?	12 38.3	—	G.	—
Mauritius	N.S.	12 24	—	12 36.5	0.8	M.	—
Tashkent	"	12 18.3	—	12 59.9	—	G.	—
Bombay	E.W.	12 4.8	—	12 52.6	0.5	M.	—
Colombo	"	12 36	—	12 53	—	"	—
Irkutsk	"	12 18.1	12 34.7	13 3.9	—	G.	—
Batavia	"	12 9	—	—	—	W.	—
Adelaide	"	12 3.6	—	12 11.4	2.3	"	—
Sydney	"	12 4.6	12 7.6	12 12.6	0.7	M.	1675 kms.
Honolulu	"	12 22	12 35.3	12 47.6	0.2	"	—
Lima	"	12 44.5	—	12 48.1	0.8	"	—
Pilar	"	12 19.9	—	12 46.1	0.6	"	—
Fernando Noronha	"	12 26.8	—	13 16	0.6	"	—

**British Association for the Advancement  
of Science.—Seismological Committee.**

Observations and formal business to  
J. H. BURGESS,  
Earthquake Observatory,  
SHIDE, Isle of Wight.

Special inquiries to  
Prof. H. H. TURNER,  
University Observatory,  
OXFORD.

**Monthly Bulletin for August, 1913.**

For the present it has been decided to give full details for such earthquakes only as are recorded at 31 Stations at least. According to the table printed in the April Bulletin, this would mean the 100. largest earthquakes of the year.

**But it is requested that no change as yet be made in the information sent to Shide,** as Observers will not be able to select the large earthquakes from the records at a single Station.

Observers are asked to send a copy of their Registers each month.

The Stations are arranged in the order of longitude, starting from the Azores and travelling eastward.

The Russian Stations and those using the Wiechert instrument usually publish several maxima. For the purpose of this Bulletin the first is always given; if the amplitude of this maximum is not the greatest, then the maximum having the greatest amplitude is also given.

The time employed is Greenwich mean time (civil) expressed in hours, minutes, and decimals of a minute; 24 or 0 hours = midnight.

The amplitudes recorded in the 6th column refer only to the Milne instruments, and are given in millimetres and decimals of a millimetre.

The letters in the 7th column stand for: A. = Alfani; B. = Bosch; Bif. = Bifilar; B.O. = Bosch-Omori; C. = Cartuja; Ca. = Cancani; C.O. = Cartuja-Omori; G. = Galitzin; M. = Milne; Ma. = Mainka; M.S. = Milne-Shaw; O.A. = Omori-Alfani; S. = Stiattesi; V. = Vicentini; W. = Wiechert.

Guildford and West Bromwich use a modification of the Milne.

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>August 1</b>							
Rio Tinto	E.W.	17 25	—	18 6	2.2	M.	—
San Fernando	N.S.	17 24.5	—	18 8.3	4.0	"	—
Granada	"	17 24.2	7 35.3	18 0.2	—	Bif.	—
Eskdalemuir	"	17 23	—	18 3.5	1.2	M.	—
Edinburgh	E.W.	17 22.8	—	17 57.4	0.6	"	—
Ediston	"	17 22.7	17 32.2	17 56.8	1.9	"	—
Stonyhurst	"	17 33	—	17 59	1.9	"	—
West Bromwich	"	17 22.5	17 33	17 58	1.5	"	—
Shide	N.S.	17 20.5	17 35.5	18 3	4.0	M.	—
Haslemere	E.W.	17 31.7	—	17 59	3.0	"	—
Guildford	"	17 22.5	17 33	18 3.2	1.0	"	—
Kew	"	17 31.7	—	18 4.6	1.5	"	—
Paris	"	17 23.2	17 33.5	17 59	—	"	? 9000 kms.
Aachen	"	17 23	17 33	17 57	—	W.	8880 kms.
Moncalieri	N.S.	17 23.4	17 33.8	18 6.3	—	S.	—
Heidelberg	"	17 23.2	17 33.2	18 0.8	—	"	—
Hamburg	"	17 22.7	17 32.4	17 57.1	—	"	—
				17 58.9	—	"	—
Florence	"	17 23.5	17 34	17 53	—	A.	—
Innsbruck	"	17 23.2	17 33.3	17 57.5	—	Ma.	8880 kms.
Padova	"	17 23.4	17 33.6	17 49.4	—	V.	—
Triest	"	17 23.2	17 33.4	17 51.4	—	W.	9000 kms.
				17 55	—	"	—
Pola	"	17 23.3	17 33.6	17 34.4	—	"	9100 kms.
				17 56.1	—	"	—
Pompeii	"	17 23.6	17 36.5	18 6	—	O.A.	16,700 kms.
Leibach	"	17 23.1	17 33.4	17 57.8	—	G.	—
Graz	"	17 23.1	17 33.2	17 54.3	—	W.	8900 kms.
Vienna	"	17 23	17 32.9	17 53.7	—	"	8760 kms.
Breslau	"	17 22.9	17 32.5	17 54	—	"	Alaska.
Sarajevo	"	17 23.4	17 33.5	17 56.5	—	"	? 9000 kms.
Cape Town	E.W.	18 28.2	—	18 32.7	0.1	M.	—
Konigsberg	"	17 22.3	17 31.6	17 56.2	—	W.	7960 kms.
Lemberg	"	17 22.7	17 32.3	17 51.9	—	B.O.	8700 kms.
Czernowitz	"	17 22.7	17 32.2	17 50.3	—	Ma.	8200 kms.
Pulkovo	"	17 21.5	17 30.1	17 43.6	—	G.	47.3N. 155E.
				17 47.3	—	"	—
Helwan, Cairo	N.S.	17 25	17 34.9	18 12	0.8	M.	—
Ksara	"	18 23.5	18 33.6	18 57.1	—	Ma.	8900 kms.
Makeyevka	"	17 22.3	17 31.3	—	—	G.	—
Tiflis	"	17 22.4	17 31.7	18 2.3	—	"	7980 kms.
				18 9	—	"	—
Mauritius	"	18 11.6	—	18 22.1	—	M.	—
Tashkent	"	17 21	17 29.1	17 42.1	—	G.	6500 kms.
Bombay	E.W.	17 22.5	—	17 53.6	1.5	M.	—
Kodaikanal	"	17 22.1	17 31.9	17 33.4	0.5	"	—
				17 39.8	1.1	"	—
Colombo	"	17 24.3	17 34.2	18 7.3	0.6	"	—
Calcutta	"	17 28.4	17 33.5	17 50.8	—	"	—
Irkutsk	"	17 17.5	17 22.8	17 28.6	—	G.	50.5N. 155.3E.
Batavia	"	17 22.2	—	17 25.1	—	W.	—
Manila	"	17 19.2	—	—	—	"	—
Zi-ka-wei	"	17 17.2	17 22.4	17 27.1	—	"	—
Osaka	"	17 15.6	17 19.5	17 23.2	—	O.	2590 kms.
				17 23.9	—	"	—
Adelaide	"	—	—	18 3.3	0.5	M.	—
Victoria	"	—	—	—	—	"	—
St. Louis	"	—	17 33 ?	—	—	W.	P <sub>3</sub> 17-27.
Toronto	"	17 6.4	—	17 42.9	0.6	M.	—
Lima	"	18 8.5	—	18 19.7	0.2	"	—
Ottawa	"	17 22.8	17 32.5	—	—	B.	8350 kms.
Harvard Univ.	E.W.	17 23.4	17 33.4	—	—	B.O.	8090 kms.
La Paz	"	17 30.5	17 47.7	18 27	—	Bif.	—
Eilat	"	17 53.2	—	18 37	0.3	M.	—
Fernando Noronha	"	17 27.5	—	18 39	0.2	"	—



STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>August 6</b>							
Azores	E.W.	22 26·5	—	22 53·9	3·0	M.	—
Rio Tinto	"	—	—	23 2	14·0	"	—
San Fernando	N.S.	22 27	—	23 6	14·0	"	—
Granada	"	22 27·1	22 37·6	22 57·3	—	Bif.	9370 kms.
Eskdalemuir	E.W.	22 28	—	23 7	6·1	M.	—
Edinburgh	"	22 27·8	—	23 8·4	4·6	"	—
Bidston	"	22 27·9	22 39	23 7·4	8·3	"	—
Stonyhurst	"	22 27·4	22 38	23 5·5	4·5	"	—
				23 12·7	6·7	"	—
West Bromwich	"	22 27·8	22 38·4	23 8	37·0	—	—
Shide	"	22 27·5	22 38·7	23 4·5	2·5	M.S.	—
Haslemere	"	22 28·5	22 39	23 6·2	13·0	M.	—
Guildford	"	22 27·8	22 39·2	23 6·1	8·6	"	? 10,615 kms.
Kew	"	22 26·9	—	23 6·4	>17·0	"	—
				23 7·3	—	"	—
Paris	"	22 27·9	22 38·5	23 2	—	"	? 9500 kms.
				23 7	—	"	—
Aachen	"	22 28·1	22 38·6 ?	23 7	—	W.	10,000 kms.
Moncalieri	"	22 28·1	22 38·6	23 12·1	—	S.	—
Heidelberg	"	22 28·2	22 39·1	23 9·3	—	"	—
				23 13·4	—	"	—
Hamburg	"	22 28·2	—	23 6·6	—	"	Peru.
				23 9·1	—	"	—
Florence	"	22 28·2	22 38·9	23 0	—	A.	—
				23 7	—	"	—
Innsbruck	"	22 28·2	22 38·8	23 5·5	—	Ma.	9500 kms.
Padova	"	22 28·2	22 39·4	22 51·5	—	V.	Peru.
Triest	"	22 28·3	22 39·3	22 52	—	W.	Peru.
				23 11	—	"	—
Pola	"	22 28 ?	22 39·8	23 2·4	—	"	11,000 kms.
Pompeii	"	22 29·2	22 39	—	—	O.A.	8000 kms.
Laibach	"	22 28·5	22 39·1	23 17·7	—	G.	—
Graz	"	22 28·5	22 39·4	23 0	—	W.	Peru.
Vienna	"	22 28·5	22 38·9	23 12·5	—	"	9300 kms.
Breslau	"	22 28·6 ?	22 39·7 ?	23 12·9	—	"	—
Sarajevo	"	22 28·6	22 40·3	23 11·1	—	"	10,000 kms.
Cape Town	"	22 27·6	—	23 1·3	1·3	M.	—
Budapest	"	22 28·7	22 39·3	23 13·1	—	W.	—
Konigsberg	"	22 28·8	22 40·7	23 4·7	—	"	11,300 kms.
Lemberg	"	22 32·6	22 43·2	23 11·8	—	B.O.	11,300 kms.
Czernowitz	"	22 29	22 40·1	22 50	—	Ma.	Peru.
Pulkovo	"	22 29·1	22 41·4	23 2·7	—	G.	11,985. 74.2W.
Helwan, Cairo	"	22 28·6	22 38·7	23 23·4	14·0	M.	—
Ksara	"	22 34	22 44·2 ?	23 4	—	Ma.	9000 kms.
Makeyevka	N.S.	22 30·7	22 43·5	23 4	—	G.	? 12,700 kms.
Tifis	"	22 30	22 35	23 20·5	—	"	—
Mauritius	"	22 34·6	—	23 21·1	6·0	M.	—
Tashkent	"	22 28·4 ?	22 34 ?	23 19·5	—	G.	—
Bombay	E.W.	22 34·1	—	23 40·4	9·2	M.	—
Kodaikanal	"	22 28·8	22 47·7	23 46·7	4·1	"	—
Colombo	"	22 36·5	22 50 ?	23 43·2	3·9	"	—
Calcutta	"	22 34·1	22 38·2	23 49·4	—	"	—
Cocos	"	—	—	23 50	3·0	"	—
Irkutsk	"	22 34	22 47·5	23 24·1	—	G.	Peru.
Batavia	"	22 21·5	22 35·3	22 41	—	W.	Peru.
				23 23	—	"	—
Perth	"	22 18	—	0 13·3 ?	2·2	M.	—
Tsingtau	"	22 34·6	22 47·1 ?	23 24	—	W.	12,250 kms.
Manila	"	22 22	22 34·4	23 1	—	"	—
Zi-ka-wei	"	22 35·5	—	—	—	O.	11,600 kms.
Osaka	"	22 34·4	—	23 25·6	—	M.	—
Adelaide	"	22 27·6	—	23 18·6	4·4	"	—
Sydney	"	22 28·5	22 34·6	23 13·2	0·6	"	4200 kms.
Honolulu	"	22 29·3	22 39·2	23 4·1	5·2	"	—
Victoria	"	22 27·2	—	23 3·4	7·2	"	—
Santa Clara	"	22 26·1	—	22 55·7	—	W.	2818 kms.
St. Louis	"	22 24·1	22 29·5	22 44·9	—	"	3600 kms.
Toronto	"	22 20·7 ?	—	22 33·7	4·3	M.	—
Lima	"	22 16·9	—	—	>14·5	"	—
Ottawa	"	22 24·8	22 33·2	22 49	—	B.	Peru.
Harvard Univ.	N.S.	22 24·5	22 32·6	22 49·3	—	B.O.	Peru.

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>August 6, continued</b>							
La Paz	E.W.	22 15·9	—	22 22	—	Bif.	Peru.
Pilar	"	22 18·5	—	22 26·4	16·0	M.	—
Fernando Noronha	"	22 25·5 ?	—	22 45·5	13·0	"	—
<b>August 13</b>							
San Fernando	E.W.	—	—	5 46·5	1·5	M.	—
Granada	"	4 40·6	4 50·3	5 23·8	—	Bif.	—
Eskdalemuir	"	4 40	—	5 38·5	0·6	M.	—
Edinburgh	"	4 44·4	—	5 38	0·2	"	—
Bidston	"	4 51·2	—	5 42·8	0·9	"	—
Stonyhurst	"	4 45	—	5 41·5	0·4	"	—
West Bromwich	"	4 39	4 52	5 31	0·5	"	—
Shide	"	4 49	—	5 24	0·5	M.S.	—
				5 37·5	—	"	—
Haslemere	"	5 16	—	5 40·3	1·0	M.	—
Guildford	"	4 40·8	4 50·8	5 27·5	0·8	"	8850 kms.
Paris	"	4 40	—	—	—	"	—
Aachen	"	4 38·7	4 50·1	5 25	—	W.	—
Moncalieri	"	4 39·4	4 48·3	5 30·5	—	S.	—
Heidelberg	"	4 43·5	4 53	—	—	"	—
Hamburg	"	4 39·3	—	5 23·6	—	"	—
Florence	"	4 42·7	4 54 ?	5 21·5	—	A.	—
Innsbruck	"	4 49·7	—	—	—	Ma.	—
Padova	"	4 39·8	4 49·7	5 1·4	—	V.	—
Pompeii	"	4 39·1	4 50·2	—	—	O.A.	—
Graz	"	4 39	4 49·2	5 24	—	W.	9000 kms.
Vienna	"	4 38·6	4 50	4 26	—	"	? 10,600 kms.
				4 30·5	—	"	—
Breslau	"	4 40	4 42·7	—	—	"	—
Sarajevo	"	4 38·5	4 49·8	5 30·6	—	"	>9000 kms.
Cape Town	"	4 49	—	4 49·1	0·3	M.	—
Lemberg	"	4 38·7	4 49·1	—	—	B.O.	? 11,000 kms.
Czernowitz	"	4 38·5	4 48·8	5 20	—	Ma.	? Ecuador.
Pulkovo	"	4 38·5	4 49·2	5 13·6	—	G.	2.9S. 108.1E.
Helwan, Cairo	"	4 36·5	—	5 18·7	1·4	M.	—
Ksara	"	4 38·6	4 48·4	—	—	Ma.	—
Makeyevka	"	4 37·4	4 47·4	5 7·2	—	G.	8840 kms.
Tifis	"	4 37·2	4 46·6	5 4·6	—	"	9.9S. 111.7E.
Mauritius	"	4 36·6	—	4 51·4	5·0	G.	—
Tashkent	"	4 35·5	4 43·5	4 56	—	M.	—
Bombay	"	4 33·1	—	4 49·7	1·6	M.	—
Kodaikanal	"	4 28·8	4 40·8	4 48	5·8	"	—
Colombo	"	4 31·2	4 36·2	4 46·3	2·4	"	—
Calcutta	"	4 37·4	4 41·5	4 54·2	—	"	—
Cocos	"	—	—	4 37	2·0	"	—
Irkutsk	"	4 35·6	4 43·6	4 59·3	—	G.	2.1S. 109.3E.
Batavia	"	4 26·2	—	—	—	W.	—
Perth	"	4 31·4	—	4 40·4	2·2	M.	—
Tsingtau	"	4 33·9	4 40·5	4 51·5	—	W.	4930 kms.
Manila	"	4 31·3	4 33·7 ?	4 38·7	—	"	—
Zi-ka-wei	"	4 33·4	4 39·2	4 48·3	—	"	—
Osaka	"	4 34·6	—	4 59	—	O.	7040 kms.
Adelaide	"	4 33·9	—	4 55·3	3·3	M.	—
Sydney	"	4 34·5	4 41·5	4 59·2	0·9	"	—
Honolulu	"	—	—	5 30·6	0·5	M.	5175 kms.
Victoria	"	5 48·6 ?	—	—	—	"	—
Toronto	"	5 44·2	—	—	—	"	—
Ottawa	"	4 45·1	—	—	—	B.	? 9500 kms.
La Paz	"	5 45·7 ?	5 58·5 ?	6 53·2 ?	—	Bif.	—
Pilar	"	4 52·6	—	—	—	M.	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>August 15</b>							
Rio Tinto	E.W.	20 0	—	20 11	0.5	M.	—
San Fernando	N.S.	19 27.5	—	20 15.5	0.7	—	—
Granada	—	19 18	19 30.7	20 1.8	—	Bif.	12,600 kms.
Eskdalemuir	—	—	—	20 15	0.3	M.	—
Edinburgh	E.W.	19 27.7	—	20 16.5	0.1	—	—
Bidston	—	19 27.4	—	19 56.5	0.3	—	—
Stonyhurst	—	19 28	—	20 17.5	0.2	—	—
West Bromwich	—	19 18.4	19 26.5	20 9	0.2	—	—
Shide	—	19 29	—	19 57	0.1	M.S.	—
Haslemere	—	19 53.2	—	20 2.6	0.9	M.	—
Guildford	—	19 15.8	19 26.7	20 4.7	0.2	—	—
Paris	—	19 16.7	19 27.2	19 56	—	—	? 9400 kms.
Aachen	—	19 16.3	—	19 54	—	W.	—
Moncalieri	—	19 19.7 ?	19 30.6	20 7.5	—	S.	—
Heidelberg	—	19 27	—	20 9	—	—	—
Hamburg	—	19 16.6	19 26.6	19 55	—	—	—
Florence	—	19 22.5	19 33	19 54	—	A.	—
Innsbruck	—	—	—	—	—	Ma.	P <sub>3</sub> 20-3.5.
Pola	—	—	—	20 3.1	—	W.	—
Graz	—	19 16.2	19 26.8	20 1	—	—	9500 kms.
Vienna	—	19 16.4	19 26.7	20 3	—	—	9200 kms.
Breslau	—	19 16.2	—	—	—	—	—
Budapest	—	19 26.4	—	20 8	—	—	—
Lemberg	—	19 26.4	—	19 57.7	—	D.O.	? 11,400 kms.
Czernowitz	—	19 15.8	19 26.2	19 57	—	Ma.	? 9300 kms.
Pulkovo	—	19 15	19 24.8	19 42.4	—	G.	26.9N. 141.5E..
Helwan, Cairo	—	19 22	—	20 11	0.4	M.	—
Makeyevka	—	19 14.9	19 24.6	19 42.6	—	G.	—
Tashkent	—	19 13.3	19 21.5	19 41.7	—	—	6750 kms.
Bombay	—	19 23.7	—	19 45.9	0.3	M.	—
Irkutsk	—	19 10.4	19 16.4	19 26.4	—	G.	28N. 143.9E.
Tsingtau	—	19 7.8	19 11.8	19 15.8	—	W.	2430 kms.
Manila	—	19 8.4	—	19 16.6	—	—	—
Zi-ka-wei	—	19 7.4	19 10.9	19 16.7	—	—	—
Osaka	—	19 5.5	—	19 9	—	O.	1610 kms.
Sydney	—	19 20.9	—	19 35.9	0.2	M.	—
Honolulu	—	—	19 19.8	19 35.2	1.2	—	—
Victoria	—	19 52.7	—	—	—	—	—
Toronto	—	19 21.6	—	—	—	—	—
Ottawa	—	19 27.4	19 35.3	—	—	B.	? 6800 kms.
Harvard Univ.	—	19 27.4 ?	19 35 ?	19 54.6	—	B.O.	—
La Paz	—	19 23	—	19 24.9	—	C.	Peru.
Fernando Noronha	—	—	—	19 49	0.1	M.	—
<b>August 31</b>							
Ascension	E.W.	7 16	—	7 17	1.0	M.	—
San Fernando	—	7 36	—	7 54	—	—	—
Bidston	—	7 16.7	—	7 38.5	0.2	—	—
Stonyhurst	—	7 14.3	—	7 35.5	—	—	—
Shide	—	6 54	—	7 30	—	M.S.	—
Guildford	—	7 22.2	7 28.8	—	—	—	—
Paris	—	6 24 ?	—	7 22	—	—	P <sub>3</sub> 7-21.
Aachen	—	6 26.4	6 46.6 ?	7 50.8	—	W.	—
Moncalieri	—	6 24.6	—	7 24	—	S.	—
Hamburg	—	6 24.6	—	—	—	—	—
Graz	—	6 24.9	6 37 ?	—	—	W.	—
Vienna	—	6 24.7	—	7 24	—	—	—
Czernowitz	—	6 26	—	7 27	—	Ma.	—
Pulkovo	—	—	6 36.8	7 0.7	—	G.	—
Tiflis	—	6 26.4	—	7 15.3	—	—	—
Mauritius	N.S.	—	—	6 58.1	—	M.	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>August 31, continued</b>							
Tashkent	—	6 24.4	—	7 4.4	—	G.	—
Bombay	E.W.	—	—	7 4	—	M.	—
Colombo	—	6 54.6	—	7 11	0.3	—	—
Cocos	—	6 43	—	6 53	1.5	—	—
Batavia	—	6 15.7	—	6 44	—	W.	—
Perth	—	6 22	—	6 38.4	3.0	M.	—
Manila	—	6 18	—	—	—	W.	—
Osaka	—	6 15.2	—	6 13.4	—	O.	—
Adelaide	—	6 11.6	6 16.7	6 24.1	2.1	M.	—
Sydney	—	6 9.7	6 14.1	6 17.4	1.5	—	2680 kms.
Honolulu	—	6 16.4	6 21.5	6 33.5	0.7	—	—
Victoria	—	6 55.7	—	—	—	—	—
Toronto	—	7 9	—	—	—	—	—
Ottawa	—	—	—	—	—	B.	P <sub>3</sub> 6-57.2.
Fernando Noronha	—	6 53.7	—	7 58	0.3	M.	—
Rio Tinto	E.W.	18 22 ?	—	18 37 ?	0.4	M.	—
San Fernando	N.S.	18 3	—	18 39.5	0.5	—	—
Granada	—	17 31.9	—	18 31	—	Bif.	—
Eskdalemuir	—	—	—	18 29.5	0.2	M.	—
Bidston	—	17 54.8	—	18 29.7	0.3	—	—
Stonyhurst	E.W.	17 56	—	18 32	0.2	—	—
West Bromwich	—	—	—	18 30	0.1	—	—
Shide	—	17 58.5	—	18 28	0.2	M.S.	—
Haslemere	—	18 18.8	—	18 26	0.4	M.	—
Guildford	—	17 44.3	17 53.7 ?	18 23.9	0.3	—	8050 kms.
Paris	—	—	—	18 27	—	—	—
Aachen	—	17 14	—	18 21	—	W.	—
Moncalieri	—	17 41.2	17 56.4	18 26	—	S.	—
Heidelberg	—	—	—	18 25	—	—	—
Hamburg	—	17 32 ?	—	—	—	—	—
Florence	—	17 50	—	18 25	—	A.	—
Triest	—	—	—	18 15.4	—	W.	—
Graz	—	17 33 ?	17 42	—	—	—	—
Vienna	—	17 32.2	—	18 20	—	—	—
Czernowitz	—	17 41	—	18 20	—	Ma.	—
Pulkovo	—	17 26.8	17 38.6	18 2.2	—	G.	11,230 kms.
Helwan, Cairo	—	17 43	—	—	—	M.	—
Tiflis	—	17 29.4 ?	17 39 ?	18 9.9	0.1	G.	? 8370 kms.
Mauritius	N.S.	17 45 ±	—	—	—	M.	—
Tashkent	E.W.	17 24.4 ?	17 34.8	17 59.5	—	G.	9250 kms.
Batavia	—	17 21.1	—	17 22.2	—	W.	—
Perth	—	17 21.8	—	17 38.5	3.0	M.	—
Manila	—	17 18.6	—	17 29	—	W.	—
Zi-ka-wei	—	17 19.9	17 26	17 33.7	—	O.	—
Osaka	—	17 19.5	—	17 34.6	—	M.	—
Adelaide	—	—	17 24.2	17 31.3	2.1	—	—
Sydney	—	17 23	17 25.8	17 30	1.5	M.	1800 kms.
Honolulu	—	17 30.6	17 36.8	17 46.2	0.8	—	—
Victoria	—	17 58.9	—	—	—	—	—
Toronto	—	18 11	—	—	—	—	—
Ottawa	—	—	—	—	—	B.	P <sub>3</sub> 18-7.
Harvard Univ.	—	18 1 ?	—	—	—	B.O.	—

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**Monthly Bulletin for September, 1913.**

For the present it has been decided to give full details for such earthquakes only as are recorded at 31 Stations at least. According to the table printed in the April Bulletin, this would mean the 100 largest earthquakes of the year.

**But it is requested that no change as yet be made in the information sent to Shide,** as Observers will not be able to select the large earthquakes from the records at a single Station.

Observers are asked to send a copy of their Registers each month.

The Stations are arranged in the order of longitude, starting from the Azores and travelling eastward.

The Russian Stations and those using the Wiechert instrument usually publish several maxima. For the purpose of this Bulletin the first is always given; if the amplitude of this maximum is not the greatest, then the maximum having the greatest amplitude is also given.

The time employed is Greenwich mean time (civil) expressed in hours, minutes, and decimals of a minute; 24 or 0 hours = midnight.

The amplitudes recorded in the 6th column refer only to the Milne instruments, and are given in millimetres and decimals of a millimetre.

The letters in the 7th column stand for: A. = Alfani; B. = Bosch; Bif. = Bifilar; B.O. = Bosch-Omori; C. = Cartuja; Ca. = Cancani; C.O. = Cartuja-Omori; G. = Galitzin; M. = Milne; Ma. = Mainka; M.S. = Milne-Shaw; O.A. = Omori-Alfani; S. = Stiattesi; V. = Vicentini; W. = Wiechert.

Guildford and West Bromwich use a modification of the Milne.

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
September 3							
Rio Tinto	E.W.	21 8	—	22 24	1.0	M.	—
San Fernando	"	21 11	—	22 26	2.1	"	—
Granada	"	21 11.2	21 21.8	22 11.1	—	Bif.	9510 kms.
Edinburgh	"	21 12.3	—	22 19.8	0.1	M.	—
Bidston	"	21 12.6	—	21 14.8	0.2	"	—
				22 7.2	0.5	"	—
Stonyhurst	"	21 14.5	—	22 8.5	0.2	"	—
West Bromwich	"	21 10.5	21 22.4	21 58	0.3	"	—
Shide	"	21 11.5	—	22 5	0.5	"	—
Haslemere	"	—	—	22 43.4	0.9	"	—
Guildford	"	21 13.1	—	22 2.5	0.6	"	—
Aachen	"	21 10.4	21 22.8	21 57	—	W.	? 12,000 kms.
Moncalieri	"	21 10.4	21 22.6	22 0.2	—	S.	—
Heidelberg	"	21 10.8	—	22 0	—	W.	—
Hamburg	"	21 11.3 ?	21 22	21 56.2	—	"	9750 kms.
Florence	"	21 7.6 ?	21 12.6	21 44	—	A.	—
				22 5	—	"	—
Innsbruck	"	21 10.5	—	—	—	Ma.	—
Padova	"	21 11	21 13.9	—	—	V.	—
Pola	"	—	—	22 0.8	—	W.	—
Pompeii	"	21 13.1	—	21 15.1	—	O.A.	—
Graz	"	21 12	21 22.3	21 50.6	—	W.	9000 kms.
Sarajevo	"	21 22.1	—	21 55.5	—	"	—
Cape Town	"	21 29.1	—	—	—	M.	—
Budapest	"	21 11.8	—	22 1	—	W.	—
Lemberg	"	21 12	—	21 57.3	—	B.O.	—
Czernowitz	"	21 11.5	21 21.5	21 55	—	Ma.	—
Pulkovo	"	21 5.9	21 18.5	21 42.8	—	G.	7.5S. 150.8E.
Helwan, Cairo	"	21 11.4	21 20.1	—	—	M.	—
Ksara	"	21 10.5	21 11.1 ?	—	—	Ma.	—
Tiflis	"	21 6.4	21 18.5	21 46	—	G.	13.7S. 141.6E.
Mauritius	"	21 5.3	—	21 40	2.0	M.	—
Tashkent	"	21 4.4	21 15.1	21 36.3	—	G.	9680 kms.
Bombay	"	21 13.6	—	21 20	0.5	M.	—
Kodalkanal	"	22 2.8	—	—	—	"	—
Colombo	"	21 3.3	21 13.7	21 19.2	0.3	"	—
Calcutta	"	21 11.3	—	21 29.6	—	"	—
Cocos	"	21 4	—	21 4.5	2.5	"	—
Irkutsk	"	21 2.7	21 11.9	21 26.3	—	G.	6.5S. 150.3E.
Batavia	"	21 30.4	21 30.8	21 32	—	W.	—
Perth	"	21 0.2	—	21 10.2	2.0	M.	—
Tsingtau	"	21 1.5	21 7.9	21 16.5	—	W.	4660 kms.
Manila	"	20 57.9	—	21 8.7	—	"	—
Zi-ka-wei	"	20 59.9	21 6.6	21 14.4	—	"	—
Osaka	"	20 59.5	—	21 13.1	—	O.	4680 kms.
Adelaide	"	20 58.2	21 3.2	21 10.2	5.7	M.	—
Sydney	"	20 57.3	21 2.4	21 7.8	3.6	"	3270 kms.
Honolulu	"	20 0.7 ?	20 8.2 ?	—	—	"	—
Victoria	"	21 8.4	—	21 58.4	0.8	"	—
Toronto	"	21 17.4	—	21 51.8	0.3	"	—
Lima	"	—	—	22 2	0.5	"	—
Ottawa	"	21 11.7	21 19.4	—	—	B.	—
Harvard Univ.	"	21 17.5 ?	21 26 ?	—	—	B.O.	—
La Paz	"	21 11.4	—	22 35.6	—	Bif.	—
Pilar	"	21 14.2	—	22 8.8	0.3	M.	—
Fernando Noronha	"	21 41	21 55.5	22 8	0.5	"	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
September 16							
Rio Tinto	E.W.	12 23	—	12 27	1·5	M.	—
San Fernando	"	12 18	—	12 30	1·5	"	—
Granada	"	12 5·4	12 12·5	12 28·2	—	Bif.	5460 kms.
Eskdalemuir	"	—	—	12 32·5	0·3	M.	—
Bidston	"	12 15·2	12 19	12 30·9	0·2	"	—
Stonyhurst	"	—	—	12 32	0·1	"	—
West Bromwich	"	—	—	12 34	0·5	"	—
Guildford	"	12 1·4	—	12 33·9	0·9	"	—
Aachen	"	12 6	12 17	{ 12 28	—	W.	—
				{ 12 32			
Moncalieri	"	12 5·2	12 12·2	12 25	—	S.	—
Heidelberg	"	12 5·4	12 12·7	12 29·3	—	W.	—
Hamburg	"	12 5·8	—	12 36·8	—	"	—
Florence	"	12 3·7	12 14·9	12 23	—	A.	—
Triest	"	12 4·8	12 11·5	12 23	—	W.	5000 kms.
Graz	"	12 4·9	12 15·2	12 32·4	—	"	? 9000 kms.
Cape Town	"	12 17·8	—	12 21·3	0·6	M.	—
Lemberg	"	12 5·2	—	12 18·6	—	B.O.	—
Czernowitz	"	12 3	12 11·2	12 26	—	Ma.	—
Pulkovo	"	12 6·1	12 13·8	12 26·5	—	G.	4.5N. 39.5E.
Helwan, Cairo	"	12 2·1	12 6·3	12 10·7	2·0	M.	—
Ksara	"	12 2·6	12 7·4	12 14·2	—	Ma.	3000 kms.
Makeyevka	"	12 5·9	12 13·1	12 26·1	—	G.	5500 kms.
Tiflis	"	12 3·8	12 9·8	12 16·4	—	"	—
Mauritius	"	12 7·9	—	12 14·8	0·5	M.	—
Tashkent	"	12 5·1	12 11·9	{ 12 23·6	—	G.	E. Africa.
				{ 12 28·9			
Bombay	"	12 17·2	—	12 20·7	1·2	M.	—
Kodaikanal	"	12 17·7	—	12 23·3	0·9	"	—
Colombo	"	12 20·2	—	12 23·5	1·0	"	—
Cocos	"	12 35	—	12 42	0·7	"	—
Irkutsk	"	12 8·1	12 17·6	12 38·8	—	G.	—
Honolulu	"	—	—	13 38	0·1	M.	—
La Paz	"	—	—	13 8·3	—	Bif.	—
Pilar	"	12 59·2	—	—	—	M.	—
Fernando Noronha	"	12 13	—	12 35·3	0·4	"	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
September 30							
Granada		7 38·8	7 42·9	7 52	—	Bif.	2480 kms.
Edinburgh	E.W.	7 45·1	—	7 54·6	0·1	M.	—
Bidston	"	7 44·4	7 49·3	7 52·6	0·2	"	—
Stonyhurst	"	7 47	—	7 53·5	0·2	"	—
West Bromwich	"	7 39·2	7 43·2	7 52	0·5	"	—
Snide	"	—	—	7 46·5	—	M.S.	—
Guildford	N.S.	7 27·2	—	7 36·3	0·8	M.	—
Aachen	"	7 38·5	7 42·5	7 47	—	W.	2400 kms.
Moncalieri	E.W.	7 37	7 40·7	7 47·1	—	S.	—
Heidelberg	"	7 38·1	7 41·6	7 46·7	—	W.	—
Hamburg	"	7 38·5	7 42·5	7 47·3	—	"	2390 kms.
Florence	"	7 37	7 40	{ 7 42·7	—	A.	—
				{ 7 44·7			
Padova	"	7 37·2	7 42	—	—	V.	—
Triest	"	7 36·9	7 39·5	7 41·8	—	W.	1500 kms.
Pola	"	7 29·3?	—	7 41·9?	—	"	1840 kms.
Laibach	"	7 37·1	7 40·7	7 44·5	—	G.	—
Graz	"	7 37	7 39·7	7 42·6	—	W.	1330 kms.
Vienna	"	7 35·3	—	7 42·4	—	"	—
Sarajevo	"	7 36	7 38	7 40·7	—	"	1150 kms.
Cape Town	"	—	—	8 14·1	0·1	M.	—
Budapest	"	7 37·5	7 40·7	7 42·7	—	W.	—
				{ 7 44·1			
Konigsberg	"	7 38·4	7 42·2	7 47·4	—	"	? 2290 kms.
Lemberg	"	7 30·4?	—	7 42·8?	—	B.O.	—
Czernowitz	"	7 37	7 39·8	7 42·7	—	Ma.	1600 kms.
Pulkovo	"	7 39·3	7 43·7	7 46·7	—	G.	35.3N. 21.5E.
Helwan, Cairo	"	7 38	—	7 44·3	0·6	M.	—
Ksara	"	7 36·2	7 38·2	7 39·6	—	Ma.	1200 kms.
Makeyevka	"	7 39	7 42·2	7 45·6	—	G.	—
Tiflis	"	8 10·9	8 14·3	8 18·6	—	"	34.2N. 23.8E.
Tashkent	"	7 40·8	7 45·5	7 58	—	"	2390 kms.
Irkutsk	"	7 43·6	7 51·7	—	—	"	6500 kms.

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The time employed is Greenwich mean time (civil) expressed in hours, minutes, and decimals of a minute; 24 or 0 hours = midnight.

The amplitudes recorded in the 6th column refer only to the Milne instruments, and are given in millimetres and decimals of a millimetre.

The letters in the 7th column stand for: A. = Alfani; Aga. = Agamennone; B. = Bosch; Bif. = Biflar; B.O. = Bosch-Omori; C. = Cartuja; Ca. = Cancani; C.O. = Cartuja-Omori; G. = Galitzin; M. = Milne; Ma. = Mainka; M.S. = Milne-Shaw; O.A. = Omori-Alfani; S. = Stiattesi; V. = Vicentini; W. = Wiechert.

Guildford and West Bromwich use a modification of the Milne. Hamburg uses machines by Wiechert and von Rebeur-Paschwitz-Hecker. Heidelberg's machine is an astatic pendulum made at the Observatory. Riverview has two Wiecherts and one Mainka.

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>October 2</b>							
Azores	E.W.	4 33.9	—	—	—	M.	—
Cork	"	4 44	—	5 19	1.0	"	—
Rio Tinto	"	4 45	—	5 25	0.6	"	—
San Fernando	"	4 37	—	5 2.5	1.0	"	—
Granada	"	4 35.3	4 45.1	5 2.8	—	Bif.	7.5N. 80.8W.
Eskdalemuir	"	4 35.3	4 45.2	—	—	G.	8.7N. 81.5W.
Bidston	"	4 38.3	4 44.7	5 8.1	2.0	M.	—
Stonyhurst	"	4 38.9	4 46.6	5 10.7	1.0	"	—
West Bromwich	"	4 35.5	4 45.5	5 6	2.0	"	—
Shide	"	—	4 44.8	5 6	0.5	M.S.	—
Guildford	"	4 35.2	4 45.2	5 6.2	0.9	M.	8855 kms.
Aachen	"	4 35.9	4 46.1	5 4	—	W.	9000 kms.
Moncalieri	"	4 36	4 45.5	5 25.1	—	S.	—
Heidelberg	"	4 36	4 46.4	5 7.3	—	—	—
Hamburg	"	4 36.1	4 46.5	5 3.2	—	—	9300 kms.
				5 10	—		
Florence	"	4 35.2	4 46.1	5 12	—	A.	—
Padova	"	4 36.3	4 46.7	—	—	V.	Panama.
Triest	"	4 36.4	4 46.8	4 47.3	—	W.	9200 kms.
Pompeii	"	4 36.5	—	4 48.7	—	O.A.	—
Laibach	N.S.	4 36.5	4 47	5 4.5	—	G.	—
Graz	"	4 36.4	4 46.9	5 9	—	W.	Panama.
Zagreb	"	4 36.5	4 47	5 8	—	"	9500 kms.
				5 19	—		
Vienna	"	4 36.5	4 47	5 3	—	—	9400 kms.
Cape Town	E.W.	4 47.2	—	—	—	M.	—
Konigsberg	"	—	4 47.7	5 6.4	—	W.	Panama.
Czernowitz	"	4 40.3 ?	4 47.4	5 14	—	Ma.	75500 kms.
Pulkovo	"	4 36.9	4 48	5 3.2	—	G.	9N. 78W.
Helwan, Cairo	"	4 44	4 49.2	5 37	0.6	M.	—
				5 42.8	—		
Makeyevka	"	4 37	4 48.8	—	—	G.	—
Tiflis	"	4 42.6	—	5 4.8	—	—	—
Mauritius	"	4 52.9	—	5 39.1	1.0	M.	—
Tashkent	"	4 44.4	5 1.3	5 19.4	—	G.	15,600 kms.
Bombay	"	5 43	—	5 59.3	0.4	M.	—
Irkutsk	"	4 43.7	4 51.7	5 20.5	—	G.	6370 kms.
Batavia	"	4 45	—	4 58	—	W.	—
Tsingtau	"	5 20.8	—	5 33	—	—	—
Manila	"	4 43.5	—	—	—	"	—
Zi-ka-wei	"	—	—	5 41.3	—	—	—
Adelaide	"	5 3.8	5 31.6	5 44.9	0.9	M.	—
Honolulu	"	4 35	4 45.3	5 2.8	1.6	"	—
Victoria	"	4 34.9	—	5 2.3	1.0	"	—
Santa Clara	"	4 32.2	—	4 55.2	—	W.	6670 kms.
St. Louis	N.S.	4 29.8	4 34.2	4 41.2	—	"	3100 kms.
Toronto	E.W.	4 31.9	—	4 46.4	8.0	M.	—
Lima	"	4 28	—	4 37.8	8.0	"	—
Ottawa	N.S.	4 30.9	4 36.8	4 47	—	B.	4120 kms.
Harvard Univ.	"	4 30.9	4 36.6	4 50.6	—	B. O.	3910 kms.
La Paz	E.W.	4 29.3	4 33.9	4 41.1	—	Bif.	2900 kms.
Pilar	"	4 33.4	—	4 38.5	1.1	M.	—
				4 49.8	1.4		
<b>October 4</b>							
Granada	"	18 29.5	18 31.9 ?	18 34.3	—	Bif.	—
Eskdalemuir	E.W.	—	—	—	—	G.	P <sub>2</sub> 18-35.
Edinburgh	"	—	—	18 48	—	M.	—
Bidston	"	19 35.3	—	19 37.7	0.1	—	—
Stonyhurst	"	18 28.4	—	—	—	—	—
West Bromwich	"	18 26.2	—	18 36	0.5	—	—
Shide	"	—	—	18 36	0.1	—	—
Guildford	"	18 28.9	18 31.2	18 34.9	—	"	1330 kms.
Aachen	"	18 31.1	—	18 32.5	—	W.	—
Moncalieri	"	18 27.6 ?	18 29	18 30.2	—	S.	—
Heidelberg	"	18 28.5	—	—	—	—	—
Hamburg	"	18 31	—	18 35.4	—	—	S. Italy.

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>October 4, continued</i>							
Florence	N.S.	18 26·2	18 26·8	18 27·1	—	A.	—
Padova		18 27·1	18 28·6	—	—	V.	Campobasso.
Triest		18 27·1	18 27·8?	18 28·6	—	W.	—
Monte Cassino		18 26	—	—	—	Ag.	Molise.
Pola		18 27·1	—	18 28·2	—	W.	400 kms.
Pompeii	E.W.	18 26·3	—	18 26·5	—	O.A.	—
Laibach	N.S.	18 27·1	18 28·8?	18 32	—	G.	—
Graz		18 27·4	18 28·7	18 29·3	—	W.	Naples.
Zagreb		18 27·1	18 28·4	18 28·5	—	—	500 kms.
Vienna		18 27·7	18 28·9?	18 30·9	—	—	Naples.
Sarajevo	E.W.	18 26·9	18 27·5	18 28·2	—	—	? 500 kms.
Budapest		18 27·6	18 28·9	18 30·6	—	—	—
Konigsberg		—	—	18 36·1	—	—	S. Italy.
Lemberg		18 28·7	—	18 33·3	—	B.O.	1900 kms.
Czernowitz		18 28·6	—	18 33	—	Ma.	—
Pulkovo		18 30·7	18 34·5	18 37·2	—	G.	2390 kms.
Helwan, Cairo		18 34	—	—	—	M.	—
Makeyevka		18 30·6	18 34·2	18 37	—	G.	—
Ekaterinburg		18 32·6	18 37·9?	—	—	—	3530 kms.
Tashkent		18 22	—	—	—	—	—
Irkutsk		—	18 47·8?	19 1·2	—	—	—
Granada		22 17·2	22 26·8	—	—	Bif.	8370 kms.
Eskdalemuir		22 17·4	22 27·2	—	—	G.	8850 kms.
Edinburgh	E.W.	—	—	22 58·5	—	M.	—
Bidston		22 36	22 40·9	22 51·5	0·3	—	—
Stonyhurst		22 23·5	—	22 52	0·1	—	—
West Bromwich		—	—	22 51	0·2	—	—
Shide		—	22 26·2	22 50	0·1	—	—
Guildford		22 23	22 27·5	22 34·7	—	—	—
Aachen		22 18·2	22 23·2	22 46	—	W.	8800 kms.
Moncalieri	N.S.	22 18	22 28	—	—	S.	—
Hamburg		22 18	22 28·5?	—	—	—	? Panama.
Florence		—	—	22 27·8	—	A.	—
Padova		22 17	22 28·5	—	—	V.	—
Triest		22 18·3	—	22 29·2	—	W.	—
Laibach		—	22 20·2?	—	—	G.	—
Graz		22 18·4	22 28·9	—	—	W.	9400 kms.
Zagreb		22 18·3	22 29·3	22 50	—	—	—
Vienna		22 18·5	22 30·3	—	—	—	—
Konigsberg		—	22 29?	—	—	—	—
Lemberg		22 13·3	—	—	—	B.O.	—
Pulkovo	E.W.	22 18·8	22 29·2?	22 47·3	—	—	9270 kms.
Helwan, Cairo		22 30·1	—	—	—	M.	—
Makeyevka		22 18·9	22 29·5?	—	—	G.	9610 kms.
Ekaterinburg		22 24·4	22 33·5?	23 2·2	—	—	7730 kms.
Tashkent		22 26·3	22 32·6?	23 1·8	—	—	—
Irkutsk		—	—	23 7	—	—	—
Honolulu		22 27·7	—	22 44·3	0·3	M.	—
Victoria		22 26·6	—	—	—	—	—
St. Louis		22 11·6	—	—	—	W.	—
Toronto		22 9·4	—	22 28·8	1·4	M.	—
Lima	N.S.	22 4·2	—	22 20·3	1·2	—	—
Ottawa	E.W.	22 12·8	22 18·7	—	—	B.	4130 kms.
Harvard Univ.		22 12·4?	22 17·9	—	—	B.O.	? 3725 kms.
La Paz		22 11·3	22 15	22 24·3	—	Bif.	Panama.
Pilar		22 10·3	—	22 32·2	—	M.	—
<i>October 11</i>							
San Fernando	E.W.	1 55	—	3 11	1·0	M.	—
Granada		—	—	2 45·8	—	Bif.	—
Eskdalemuir		1 53·4	2 5·5	—	—	G.	—
Zagreb		22 18·3	22 29·3	22 50	—	W.	—
Bidston		1 53·7	—	2 15	0·2	M.	—
				2 55	0·7		

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>October 11, continued</i>							
Stonyhurst	E.W.	2 5	—	2 55·7	0·6	M.	—
West Bromwich		1 57	2 2·5	2 55	2·5	—	—
Shide		1 49·5	2 2·1	2 58	1·0	—	—
Guildford		1 52	2 5	(2 40·4	0·3)	—	13,200 kms.
				(2 48·3	0·8)	—	—
Aachen		1 55·2	2 5·1	2 37	—	W.	8675 kms.
Moncalieri	N.S.	1 51·5	2 4·6	2 54·1	—	S.	—
Heidelberg		1 54	—	2 47·4	—	—	—
Hamburg		1 55·3	—	2 46	—	—	—
Florence	E.W.	—	2 16	2 48	—	A.	—
Innsbruck		—	—	—	—	Ma.	P <sub>3</sub> 2-32·5.
Laibach	N.S.	1 54·3	2 4	2 41·8	—	G.	—
Graz		1 55·6	2 4·6	2 45·8	—	W.	8900 kms.
Zagreb		—	—	2 48	—	—	—
Vienna		1 53·5	—	2 44	—	—	—
Budapest		1 59·8	—	2 46·9	—	—	—
Konigsberg		1 55·6	2 4	2 33·2	—	—	8150 kms.
Lemberg		—	—	—	—	B.O.	P <sub>3</sub> 2-45·2.
Czernowitz		—	2 1	2 40·7	—	Ma.	—
Pulkovo		1 48·8	2 1·3	2 28·1	—	G.	6.28. 150.5E.
Helwan, Cairo	E.W.	1 54	2 3·8	—	—	M.	—
Makeyevka		1 48·8	2 1·4	2 29	—	G.	12,420 kms.
Tiflis		1 48·3	2 0·9	2 39·7	—	—	12,780 kms.
Mauritius		1 56·2	—	2 28·2	1·5	M.	—
Ekaterinburg		1 47·5	1 58·1	2 27·9	—	G.	9800 kms.
Tashkent		1 47	1 57·5	2 17	—	—	6.48. 146.2E.
Bombay		1 56·1	—	2 26·8	0·4	M.	—
Kodaikanal		1 45·9	—	—	—	—	—
Colombo		1 56	—	—	—	—	—
Cocos		1 40·5	1 48	2 11	1·5	—	—
Irkutsk		1 45·5	1 54·5	2 7·1	—	G.	6.08. 147.7E.
Batavia		1 42·7	1 49·3	1 52	—	W.	—
Perth		—	—	2 1·5	—	W.	—
Tsingtau		1 43·2	1 50·5	1 59·2	9·0	M.	5660 kms.
Manila		1 42	—	—	—	—	—
Zi-ka-wei		1 42·5	1 49·3	1 59·4	—	—	—
Osaka		1 42·7	1 48·8	1 59	—	O.	4950 kms.
Adelaide		1 40·2	—	1 55	8·6	M.	—
Sydney		1 43·1	—	1 53·9	4·0	—	—
Honolulu		1 44·2	1 52·2	2 8·1	5·6	—	—
Victoria		1 57	—	—	—	—	—
St. Louis		2 3·3?	—	—	—	W.	—
Toronto		2 5·4	—	—	—	M.	—
Ottawa		2 2·1	2 8·1	—	—	B.	4230 kms.
Harvard Univ.		—	2 8·2	—	—	B.O.	—
La Paz		1 53·9	—	—	—	Bif.	—
Pilar		1 57·1	—	2 50·6	0·2	M.	—
San Fernando	N.S.	4 25·5	—	5 40	—	M.	—
Granada		4 27·3	4 37·6	5 25·6	—	Bif.	9160 kms.
Eskdalemuir		—	4 26·9	—	—	G.	—
Bidston	E.W.	4 28·3	—	5 27	0·6	M.	—
Stonyhurst		—	—	5 28·2	0·7	—	—
West Bromwich		4 25·4	4 37·7	5 30	6·5	—	—
Shide		—	4 28·5	5 29	1·5	—	—
Haslemere		—	—	5 30·7	1·5	—	—
Guildford		4 22·4	4 36·3	5 22·1	1·1	—	14,700 kms.
Aachen		4 27·1	4 37·1	5 9	—	W.	8750 kms.
Moncalieri	N.S.	4 24·7?	4 36·5	5 25·4	—	S.	—
Heidelberg		4 27·2	4 36·9	5 20·4	—	—	—
Hamburg		4 26·7	4 36·6	5 18	—	—	8650 kms.
Florence		4 26·9	4 35·7	5 15	—	A.	—
Innsbruck		—	—	5 18	—	Ma.	—
Padova		4 21·7	—	5 19·6	—	V.	—
Pompeii		4 18	—	—	—	O.A.	—
Laibach		4 26·9	4 36·8	5 10·1	—	G.	—
Graz		4 26·9	4 36·6	5 17·6	—	W.	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>October 11, continued</i>							
Zagreb		4 25.5	4 36	4 5 11.4	—	W.	—
Vienna		4 25.2	4 36.4	5 15	—	"	? 10,300 kms.
Sarajevo		—	—	5 20	—	"	—
Cape Town	E.W.	—	—	4 43.8	0.1	M.	—
Budapest	N.S.	4 26.9	—	5 19.9	—	W.	—
Konigsberg		4 26.1	4 35.5	5 11.8	—	—	—
Lemberg		4 12.8	—	5 19.2	—	B.O.	—
Czernowitz		—	4 35.7	5 13	—	Ma.	—
Pulkovo		4 20.6	4 33.2	5 2.2	—	G.	6.7S, 150E.
Makeyevka		4 20.5	4 32.9	5 6.2	—	"	12,120 kms.
Tiflis		4 20.3	4 33.7	5 10.2	—	"	? 13,000 kms.
Mauritius	E.W.	3 53.1	—	5 4.1	2.3	M.	—
Ekaterinburg		4 23.2	4 29.9	4 56.5	—	G.	—
Tashkent		4 18.9	4 29.2	4 48.7	—	"	10,390 kms.
Bombay	"	4 4.4	—	5 7.1	0.5	M.	—
Kodaikanal	"	4 18.2	—	4 52.8	0.5	"	—
Calcutta	"	4 12.5	—	5 19.6	—	"	—
Cocos	"	4 12	4 19.5	4 43	1.5	"	—
Irkutsk	"	4 17.3	4 26.4	4 39.5	—	G.	6.0S, 148.5E.
Batavia	"	4 14.1	4 20.3	4 22	—	W.	—
Perth	"	—	—	4 34.2	7.5	M.	—
Tsingtau	"	4 15.2	4 22.5	4 32.2	—	W.	5660 kms.
Manila	"	4 13.8	—	—	—	"	—
Zi-ka-wei	"	4 14.5	4 21.2	4 28.2	—	"	—
Osaka	"	4 14.1	4 18	4 28.4	—	O.	5220 kms.
Adelaide	"	—	—	4 27.7	—	M.	—
Sydney	"	4 16.6	4 18.9	4 22.7	6.7	"	1270 kms.
Honolulu	"	4 2.3	4 16.5	4 39.7	17.0	"	—
Victoria	"	4 14.3	4 39.1	5 3.7	1.8	"	—
St. Louis	"	—	—	—	—	W.	P <sub>3</sub> 5-5.6.
Toronto	"	4 37.9 ?	—	5 27.2	0.8	M.	—
Ottawa	"	4 27	4 39.3	—	—	B.	? 11,500 kms.
Harvard Univ.	"	4 27.5	4 39.5 ?	—	—	B.O.	—
La Paz	"	4 25.8	4 41.7 ?	5 34	—	Bif.	—
Pilar	"	4 28.8	—	5 29.9	0.3	M.	—
Ascension	E.W.	—	—	10 40	4.0	M.	—
Cork	"	9 53	—	10 12	1.0	"	—
Rio Tinto	"	10 0	—	10 17	1.9	"	—
San Fernando	N.S.	9 34	—	10 15.5	6.0	"	—
Granada	"	9 23.7	—	10 6.5	—	Bif.	—
Eskdalemuir	"	9 22.2	9 32.3	—	—	G.	44N, 159E.
Edinburgh	E.W.	9 22.4	—	10 5.2	0.5	M.	—
Bidston	"	9 23	9 32.7	10 0.7	1.5	"	—
Stonyhurst	"	—	—	10 5.1	0.7	"	—
West Bromwich	"	9 22.8	9 33	10 1	4.0	"	—
Shide	N.S.	9 29.1	9 31.5	10 9.9	2.5	"	—
Haslemere	E.W.	9 29.1 ?	9 33.7	10 1.8	3.5	"	—
Guildford	N.S.	9 29.1 ?	9 32.4	9 57.9	0.8	"	—
Aachen	"	9 22.3	9 32.5	9 56.7	—	W.	9100 kms.
Moncalieri	E.W.	9 22.6	9 33	10 1.2	—	S.	—
Heidelberg	"	9 23	9 31.5	10 3.9	—	"	—
Hamburg	"	9 22	9 31.9	9 55.6	—	"	8670 kms.
Florence	"	9 22.9	9 32.2	10 0	—	A.	—
Innsbruck	"	9 24.4	9 35.4 ?	10 4	—	Ma.	? 11,000 kms.
Padova	"	9 22.6	9 32.9	10 6.1	—	V.	—
Pompeii	"	9 21	9 34	9 55	—	O.A.	Japan.
Laiibach	N.S.	9 22.3	9 32.5	9 57.1	—	G.	—
Graz	"	9 22.3	9 32.5	9 56.4	—	W.	9000 kms.
Zagreb	"	9 22.2	9 32.4	9 57.7	—	"	9100 kms.
Vienna	"	9 22.1	9 32.3	10 3	—	"	9000 kms.
Sarajevo	"	9 21.5	9 32.6	10 4.4	—	"	9000 kms.
Budapest	"	—	9 32.2	10 1.5	—	"	—
Konigsberg	"	9 21.5	9 31	9 53	—	"	8120 kms.
Lemberg	"	9 4.6	9 15	10 3	—	B.O.	? 10,800 kms.
Czernowitz	"	9 21.7	9 31.5	9 58	—	W.	8500 kms.

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>October 11, continued</i>							
Pulkovo		9 29.8	9 29.6	9 48.3	—	G.	39.7N, 143.9E.
Helwan, Cairo	N.S.	9 21.5	9 31.8	10 6.7	1.1	M.	—
Ksara	"	9 22.3	9 33.4	10 2.1	—	Ma.	9000 kms.
Makeyevka	"	9 20.9	9 29.9	9 47.3	—	G.	7670 kms.
Tiflis	"	9 21.1	9 30.4	9 49.5	—	"	7930 kms.
Ekaterinburg	"	9 19.3	9 26.9	9 39.8	—	"	40.41N, 145.25E.
Tashkent	"	9 16.4	9 27.1	9 43.7	—	"	40.4N, 144E.
Bombay	E.W.	9 27.3	—	9 50.3	1.1	M.	—
Kodaikanal	"	—	—	10 3.5	0.5	"	—
Calcutta	"	9 4	9 8.7	9 40.6	—	"	—
Cocos	"	—	9 26.5 ?	9 28	0.6	"	—
Irkutsk	"	9 16	9 21.1	9 28.5	—	G.	38.2N, 143.7E.
Batavia	"	9 19.7	9 27.6	9 29	—	W.	—
Tsingtau	"	9 14.2	9 17.6	9 21	—	"	2010 kms.
Manila	"	9 16.7	9 23.4	9 34.5	—	"	—
Zi-ka-wei	"	9 14.4	9 18.1	9 23.3	—	"	—
Osaka	"	10 11.9	—	10 14.6	—	O.	920 kms.
Honolulu	"	—	—	9 27.8	1.5	M.	—
Victoria	"	9 28	9 48.1 ?	9 35.7	0.3	"	—
Toronto	"	9 28	—	9 55.7	0.3	"	—
Ottawa	N.S.	9 22.7 ?	9 33.4	—	—	B.	? 9700 kms.
Harvard Univ.	E.W.	—	9 33.6	—	—	B.O.	—
La Paz	"	9 29.9	—	11 14	—	Bif.	—
Pilar	"	9 10.1	—	10 58	0.4	M.	—
<i>October 12</i>							
Rio Tinto	E.W.	17 59	—	18 6	0.2	M.	—
San Fernando	N.S.	17 55	—	18 9	1.5	"	—
Granada	"	—	—	18 3	—	Bif.	—
Eskdalemuir	"	17 16.1	17 26.2	—	—	G.	43N, 156E.
Edinburgh	E.W.	17 26.5	—	18 5.5	0.1	M.	—
Bidston	"	17 26.9	—	17 55	0.3	"	—
Stonyhurst	"	17 27.4	—	17 54	0.1	"	—
West Bromwich	"	17 19	—	17 54	—	"	—
Shide	"	17 26.2	—	17 53	0.4	M.S.	—
Haslemere	"	—	—	17 55.4	0.8	M.	—
Guildford	"	17 15.4	17 27.7	18 6.7	—	"	—
Aachen	"	17 16.2	17 26.7	17 50.3	—	W.	9400 kms.
Moncalieri	N.S.	17 23	17 32.5	18 1.5	—	S.	—
Heidelberg	"	—	—	17 58	—	"	—
Hamburg	"	17 15.6	17 25.8	17 54.2	—	"	9900 kms.
Florence	"	—	17 26.9	17 52	—	A.	—
Innsbruck	"	17 16.3	—	—	—	Ma.	—
Padova	"	17 16.3	17 26.8	17 59.7	—	V.	—
Pompeii	E.W.	17 17	—	—	—	O.A.	—
Laiibach	N.S.	17 16.3	17 26.5	17 57.2	—	G.	—
Graz	"	17 16.1	17 26.3	17 50	—	W.	9000 kms.
Zagreb	"	17 16.2	17 26.1	17 53	—	"	—
Vienna	"	17 16	17 26.2 ?	17 54	—	"	? 8800 kms.
Sarajevo	"	17 16.4	17 26.6	17 57.9	—	"	—
Budapest	"	17 15.8	17 26.1	17 55.5	—	"	—
Konigsberg	"	17 15.2	17 24.9	17 59.7	—	"	8450 kms.
Lemberg	"	17 18.4	—	17 26	—	B.O.	—
Czernowitz	"	17 15.6	17 25.3 ?	17 52	—	"	? 8000 kms.
Pulkovo	"	17 14.7	17 23.5	17 42.5	—	G.	39N, 142.8E.
Helwan, Cairo	E.W.	17 26	—	—	—	M.	—
Makeyevka	"	17 14.6	17 23.4	17 43.3	—	G.	—
Tiflis	"	17 15	17 24.2	17 44.5	—	"	? 45.9N, 149.5E.
Ekaterinburg	"	17 13.2	17 20.8	17 39.1	—	"	43.30N, 149.27E.
Tashkent	"	17 13.3	17 21	17 37	—	"	39.2N, 143.8E.
Irkutsk	"	17 9.9	17 15.1	17 22.3	—	"	42.9N, 148.4E.
Manila	"	—	—	—	—	W.	? P <sub>3</sub> 17-16.
Zi-ka-wei	"	17 8.3	17 12.2	17 17.2	—	"	—
Osaka	N.S.	17 5.8	—	17 8.8	—	O.	870 kms.
Honolulu	E.W.	—	—	17 21.2	0.4	M.	—
Harvard Univ.	"	—	—	—	—	B.O.	P <sub>3</sub> 17-56.3.

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>October 14</b>							
Azores	E.W.	8 28.9	—	—	—	M.	—
Rio Tinto	"	8 35	—	10 12	0.8	"	—
San Fernando	N.S.	8 26	—	9 59.5	4.0	"	—
Granada	"	8 28.4	—	9 2.1	—	Bif.	—
Eskdalemuir	"	—	8 28	—	—	G.	—
Edinburgh	E.W.	8 28	—	9 14.7	0.2	M.	—
Bidston	"	8 28.4	8 39.3	9 42.6	0.4	"	—
Stonyhurst	"	8 29	—	9 13.7	0.5	"	—
West Bromwich	"	8 28.9	—	8 52	1.4	"	—
Shide	"	8 28	8 40	8 53	0.2	M.S.	—
Haslemere	"	8 29	—	8 53	1.0	M.	—
Guildford	"	8 28.1	8 42.9	9 3.3	0.7	"	15,800 kms.
Aachen	"	8 28.2	—	9 0	—	W.	—
Moncalieri	N.S.	8 28.1	8 41.3	9 13.1	—	S.	—
Heidelberg	"	8 28.2	—	8 28.5	—	"	—
Hamburg	"	8 28	—	8 51	—	"	—
Florence	E.W.	8 28.3	8 35	8 50	—	A.	—
Innsbruck	"	8 28.2	8 42.4 ?	8 52	—	Ma.	—
Padova	"	8 28.2	—	—	—	V.	—
Triest	"	8 28.2	—	8 50.7	—	W.	—
Monte Cassino	"	8 28	—	—	—	Ag.	—
Pola	"	8 28.2	—	8 28.4	—	W.	—
Pompeii	"	8 28.3	8 32.3	—	—	O.A.	—
Laiabach	"	8 28.2	8 38.2	9 18.8	—	G.	—
Graz	"	8 28.1	8 42.3	9 12.7	—	"	14,500 kms.
Zagreb	"	8 28.2	8 36.4 ?	—	—	W.	—
Vienna	"	8 28	8 42.3	9 16	—	"	—
Sarajevo	N.S.	8 28.1	8 38.6	9 18.9	—	"	—
Cape Town	E.W.	8 36.3	—	8 43	0.2	M.	—
Budapest	"	8 28	—	8 51	—	W.	—
Konigsberg	"	8 27.9	8 31.4 ?	9 11	—	"	—
Lemberg	"	8 26.6	8 31.6 ?	—	—	B.O.	—
Czernowitz	"	8 27.9	8 31.5	8 50	—	Ma.	? 7000 kms.
Pulkovo	"	8 25.3 ?	—	9 5.5	—	G.	? 14,000 kms.
Helwan, Cairo	"	—	—	9 45.9	1.0	M.	> 13,000 kms.
Makeyevka	"	8 26	8 41.1	—	—	G.	—
Tifis	"	8 27.6	8 40.2 ?	—	—	"	—
Seychelles	"	8 29	—	9 18	2.0	M.	—
Mauritius	"	8 22.3	8 31.8 ?	9 5	6.0	"	—
Ekaterinburg	"	8 27.2	8 37.7	9 0.7	—	G.	9440 kms.
Tashkent	"	8 26.6	8 33.4	9 0	—	"	10N, 116E.
Bombay	"	8 32.2	—	9 13.9	1.1	M.	—
Kodalkanal	"	7 59.7	—	9 14.9	1.2	"	—
Colombo	"	7 55	8 22.4	8 33.5	1.3	"	—
Cocos	"	8 19	8 23	9 1	3.6	"	—
Irkutsk	"	8 21.5	8 31.8	—	—	G.	11.6S. 164.1E.
Batavia	"	8 18.9	8 27.1	8 27.5	—	W.	—
Perth	"	8 18.3	8 24.6	8 40.7	12.5	M.	—
Tsingtau	"	8 20.9	8 30	8 40.4	—	W.	7750 kms.
Manila	"	8 18.5	—	8 28.1	—	"	—
Zi-ka-wei	"	8 19.5	8 28.3	—	—	"	—
Osaka	"	8 19	—	8 29.1	—	O.	3940 kms.
Adelaide	"	—	8 15	8 27.9	22.2	M.	New Hebrides.
Sydney	"	8 13.3	—	8 18.6	14.0	"	—
Honolulu	"	8 5.9	8 18	8 31.1	3.4	"	—
Victoria	"	8 21.8	—	8 35.2	0.2	"	—
St. Louis	"	8 27.6	8 38.1 ?	—	—	W.	—
Toronto	"	8 29	—	8 39.5	0.3	M.	—
Lima	"	8 23	—	9 4.2	1.2	"	—
Ottawa	"	8 28.1	8 38.8	—	—	B.	9600 kms.
Harvard Univ.	"	8 28.4 ?	—	8 48	—	B.O.	—
La Paz	"	8 27.3	8 37.8	9 3	—	Bif.	9390 kms.
Pilar	"	8 20.2	8 36.2	8 38.9	0.7	M.	—

STATION	Component	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>October 23</b>							
Granada	"	15 11.5	15 21.2	15 42.8	—	"	Panama.
Eskdalemuir	"	—	15 22.3	—	—	"	—
Edinburgh	E.W.	15 23.2	—	15 52.8	0.1	M.	—
Bidston	"	15 27.1	15 36.2	15 45	0.3	"	—
West Bromwich	"	—	15 18.5	15 44	0.2	"	—
Shide	"	—	15 27	15 49.5	1.0	"	—
Haslemere	"	—	—	15 51.8	0.5	"	—
Guildford	N.S.	15 12.3	15 21.7	15 45.2	0.2	"	8045 kms.
Aachen	"	15 23	—	15 43	—	W.	—
Heidelberg	"	—	—	—	—	"	P <sub>3</sub> 15-47.
Hamburg	"	15 23	—	—	—	"	F. in Panama.
Florence	"	15 24.6	—	15 50.6	—	A.	—
Triest	"	—	15 24.2	—	—	W.	—
Graz	"	15 13.8	15 23.3	—	—	"	—
Vienna	"	15 13.8	—	—	—	"	—
Konigsberg	"	—	—	—	—	"	P <sub>3</sub> 15-34.3.
Pulkovo	E.W.	15 13.5	15 24.7	15 42.5	—	G.	10,320 kms.
Helwan, Cairo	"	15 28	—	—	—	M.	—
Makeyevka	"	15 15.1	—	—	—	G.	—
Tifis	"	15 20.7	—	—	—	M.	—
Mauritius	"	16 14.4	—	16 17.4	—	"	—
Ekaterinburg	"	15 19.6	—	16 2.9	—	G.	11,000 kms.
Tashkent	"	15 26.7	15 38.3	15 59	—	"	12,000 kms.
Irkutsk	"	15 27.7	—	15 45.6	—	"	—
Honolulu	"	15 31.6	15 35.8	15 44	0.2	M.	—
Victoria	"	15 31.1 ?	—	15 39.3	—	"	—
St. Louis	"	15 8.4 ?	15 13.2	15 16.3	—	W.	—
Toronto	"	15 15.3	—	15 25.6	0.8	M.	Panama.
Lima	"	15 4.7	—	15 15.9	1.7	B.	4150 kms.
Ottawa	N.S.	15 8	15 13.9	—	—	"	—
Harvard Univ.	E.W.	—	15 13.4	—	—	B.O.	—
La Paz	"	15 6.6	15 11.4	15 21.3	—	Bif.	3090 kms.
Pilar	"	15 14.2	—	15 27.3	0.3	M.	—
<b>October 29</b>							
Eskdalemuir	"	—	4 56.9	—	—	G.	—
Edinburgh	E.W.	4 58.1	—	5 42.6	0.1	M.	—
Bidston	"	4 51.7	—	5 44.6	0.3	"	—
West Bromwich	"	4 44	—	5 39	0.1	"	—
Shide	"	4 45.5	4 56.4	5 41	0.2	"	—
Guildford	"	4 47.4 ?	—	5 35	—	"	—
Aachen	"	4 56.1	—	5 39	—	W.	—
Moncalieri	N.S.	4 42.5 ?	4 55.3	5 30.2	—	S.	—
Heidelberg	"	—	—	5 33	—	"	—
Hamburg	"	4 45.1	4 55.8	5 25	—	"	9690 kms.
Padova	"	4 44.5 ?	—	—	—	V.	—
Triest	"	—	4 55.2	5 27	—	W.	—
Graz	"	4 44.9	4 55.1	—	—	"	9900 kms.
Vienna	"	4 44.7	4 55.1	5 28	—	"	9300 kms.
Konigsberg	"	4 44.9	4 54.7	5 27.6	—	"	—
Lemberg	"	4 54.8	—	5 26.2	—	B.O.	—
Czernowitz	"	4 43	4 53.9	5 24	—	Ma.	—
Pulkovo	"	4 44.1	4 54	5 15.1	—	G.	68, 84E.
Helwan, Cairo	E.W.	4 51	4 57.1	5 15.4	1.1	M.	—
Makeyevka	"	4 43	4 52.3	5 22.3	—	G.	7950 kms.
Tifis	"	4 42.6	4 51.1	5 12.6	—	"	0.6N, 98E.
Seychelles	"	4 54	—	5 0	2.0	M.	—
Mauritius	"	4 45.5	—	4 52.6	1.0	"	—
Ekaterinburg	"	—	4 51.2	5 8.2	—	G.	1.17N, 101.19E.
Tashkent	"	4 40.9	4 47.8	4 59.8	—	"	1N, 92.4E.
Bombay	"	4 44.1	—	4 51	0.7	M.	—
Colombo	"	4 37.6	4 40.6	4 43.9	1.6	"	—



STATION	Com- ponent	F <sub>1</sub>		F <sub>2</sub>		Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	H. M.	MM.			
<i>October 29, continued</i>									
Calcutta	E.W.	4 0·6	—	4 52·5	—	—	—	M.	—
Cocos	"	—	4 36 ?	4 38	—	—	2·5	"	—
Irkutsk	"	4 41·3	4 48·7	5 9·2	—	—	—	G.	0S, 104E.
Batavia	"	4 34·9	4 37	4 40	—	—	—	W.	Felt in West Sumatra.
Tsingtau	"	4 39·9	4 46·3 ?	4 58·8	—	—	—	"	450 kms.
Manila	"	4 37·5	—	4 51·8	—	—	—	"	—
Zi-ka-wei	"	4 39·5	4 45·4	4 57·1	—	—	—	"	4200 kms.
Osaka	"	4 40·8	4 51·2	5 3·9	—	—	—	O.	9310 kms.
Adelaide	"	4 48·6	—	5 11·5	0·9	—	—	M.	—
Sydney	"	4 50·7	—	5 9	0·3	—	—	"	—
Honolulu	"	—	—	5 32·1	0·4	—	—	"	—
Victoria	"	5 52·4	—	—	—	—	—	"	—
Toronto	"	5 54·1	—	6 3·5	0·2	—	—	"	—
Lima	"	6 0	—	6 10·8	0·2	—	—	"	—

**British Association for the Advancement  
of Science.—Seismological Committee.**

Observations and formal business to  
J. H. BURGESS,  
Earthquake Observatory,  
SHIDE, Isle of Wight.

Special inquiries to  
Prof. H. H. TURNER,  
University Observatory,  
OXFORD.

**Monthly Bulletin for November, 1913.**

For the present it has been decided to give full details for such earthquakes only as are recorded at 31 Stations at least. According to the table printed in the April Bulletin, this would mean the 100 largest earthquakes of the year. A further change in the Bulletin will commence with January, 1914.

**But it is requested that no change as yet be made in the information sent to Shide,** as Observers will not be able to select the large earthquakes from the records at a single Station.

Observers are asked to send a copy of their Registers each month.

The Stations are arranged in the order of longitude, starting from the Azores and travelling eastward.

The time employed is Greenwich mean time (civil) expressed in hours, minutes, and decimals of a minute; 24 or 0 hours = midnight.

The amplitudes recorded in the 6th column refer only to the Milne instruments, and are given in millimetres and decimals of a millimetre.

The letters in the 7th column stand for: A. = Alfani; Aga. = Agamennone; B. = Bosch; Bif. = Bifilar; B.O. = Bosch-Omori; C. = Cartuja; Ca. = Cancani; C.O. = Cartuja-Omori; G. = Galitzin; M. = Milne; Ma. = Mainka; M.S. = Milne-Shaw; O.A. = Omori-Alfani; S. = Stiattesi; V. = Vicentini; W. = Wiechert.

Guildford and West Bromwich use a modification of the Milne. Hamburg uses machines by Wiechert and von Rebeur-Paschwitz-Hecker. Heidelberg's machine is an astatic pendulum made at the Observatory. Riverview has two Wiecherts and one Mainka.

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<b>November 4</b>							
Rio Tinto	E.W.	10 18	—	10 48	0.4	M.	—
San Fernando	N.S.	10 22.5	—	10 47.5	1.0	..	—
Granada	..	10 19.1	10 29.2	10 44.3	—	Bif.	8900 kms.
Eskdalemuir	..	—	10 24.3	—	—	G.	—
Edinburgh	E.W.	—	—	10 53	—	M.	—
Bidston	..	10 29.7	10 39.4	10 50.8	0.4	..	—
West Bromwich	..	10 26	10 35	10 54	0.8	..	—
Shide	..	10 25.2	10 37	10 53	0.7	..	—
Aachen	..	10 24.4	—	10 51	—	W.	—
Moncalieri	..	10 17.2	10 30.7	10 57.3	—	S.	—
Heidelberg	..	—	—	10 52	—	W.	—
Hamburg	..	10 24	—	10 53	—	..	—
Triest	..	—	—	10 46	—	..	—
Graz	..	—	—	—	—	..	P <sub>3</sub> 10.46.
Zagreb	..	—	—	—	—	..	P <sub>3</sub> 10.52.
Vienna	..	—	—	10 56	—	..	—
Breslau	..	—	—	10 50 ?	—	..	—
Konigsberg	..	—	—	11 1.5	—	..	—
Czernowitz	..	—	—	10 0	—	Ma.	—
Pulkovo	..	10 28.1	—	10 55.9	—	G.	>10,000 kms.
Helwan, Cairo	..	10 27	—	11 6.2	0.9	M.	—
Makeyevka	..	10 27	—	—	—	G.	—
Tiflis	..	10 28.6 ?	10 37	11 10.6	—	..	6910 kms.
Mauritius	..	—	—	11 8.6	—	M.	—
Ekaterinburg	..	10 27.7	10 37.1	11 6.7	—	G.	—
Tashkent	..	10 23.8	—	11 9.2	—	..	—
Bombay	..	—	—	11 27	—	M.	—
Colombo	..	—	—	11 31	0.3	..	—
Calcutta	..	—	—	11 28.5 ?	—	..	—
Irkutsk	..	10 23	10 41.5	11 13.3	—	G.	—
Honolulu	..	10 23.7	—	10 47	0.6	M.	—
Victoria	..	10 21.8	—	10 44.9	0.2	..	—
Toronto	..	10 19.3	—	10 36.7	—	..	—
Ottawa	N.S.	10 18.4	10 25.5 ?	—	—	B.	5300 kms.
Harvard Univ.	E.W.	—	—	—	—	B.O.	P <sub>3</sub> 10-31.
La Paz	..	10 1.9	10 2.9	10 4	—	Bif.	73W. 14.15S.
Pilar	..	10 4.5	—	10 14.1	2.0	M.	—
<b>November 10</b>							
Azores	E.W.	22 33.3	—	22 51.1	2.6	M	—
San Fernando	N.S.	21 32.5	—	22 49	3.2	..	—
Granada	..	21 32.6 ?	—	22 34.3	—	Bif.	Peru.
Eskdalemuir	..	21 32 ?	—	—	—	G.	—
Edinburgh	E.W.	21 35.5	—	—	—	M.	—
Bidston	..	21 32.4	21 38.6	22 43.7	1.7	..	—
Stonyhurst	..	21 31.6	—	22 42.1	1.9	..	—
West Bromwich	..	21 32	21 44	22 37	1.2	..	—
Shide	..	21 32.5	21 47.2	22 47	1.5	..	—
Haslemere	..	—	—	22 50	1.5	..	—
Guildford	..	21 33.2	21 47.6	22 40.4	0.5	..	? 14,800 kms.
Aachen	..	21 31.9	—	22 28	—	W.	Peru.
Moncalieri	N.S.	21 32	21 43.6	22 44.1	—	S.	—
Heidelberg	..	21 31.9	—	22 32.3	—	W.	—
Hamburg	..	21 31.9	—	22 33	—	..	—
Innsbruck	..	21 32	—	22 30	—	Ma.	—
Padova	..	21 32.1	21 32.2	—	—	V.	—
Triest	..	21 32	—	22 37	—	W.	Peru.
Monte Cassino	..	21 32.2	—	—	—	Ag.	—
Pompeii	E.W.	21 32.2	—	21 33.8	—	O.A.	—
Laibach	N.S.	21 32.1	21 35.8 ?	22 34.8	—	G.	—
Graz	..	21 32	21 42.4	—	—	W.	9300 kms.
Zagreb	..	21 32	21 34.4 ?	21 33.7	—	..	1300 kms.
Vienna	..	21 31.9	21 43 ?	22 33	—	..	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>November 10, continued</i>							
Breslau		21 31·8 ?	21 34·7 ?	22 32 ?	—	W.	—
Budapest		21 31·9	—	22 33·9	—	"	—
Konigsberg		—	21 35·3 ?	22 25·3	—	"	Peru.
Lemberg		21 30·3	21 42·2	—	—	B.O.	? 8500 kms.
Czernowitz		21 35·3 ?	—	22 28	—	Ma.	—
Pulkovo		21 28·2	21 41·8	22 27·4	—	G.	148, 165E.
Helwan, Cairo	E.W.	21 32	21 36	22 49·1	0·5	M.	—
Ksara	"	21 31·8	21 34·4	21 35·4	—	Ma.	1500 kms.
Makeyevka	"	21 28·1	21 41·3	22 18·9	—	G.	13,600 kms.
Tiflis	"	21 31·5	—	22 15·3	—	"	Peru.
Mauritius	"	21 28·8	—	22 7·5	5·0	M.	—
Ekaterinburg	"	21 27·2	21 41·5	22 18	—	G.	> 13,000 kms.
Tashkent	"	21 26·7	21 40·8	22 8·5	—	"	—
Bombay	"	—	—	22 14·7	0·6	M.	—
Calcutta	"	21 24	21 34·6	22 4·1	—	"	—
Cocos	"	21 23	21 32	21 51·5	3·0	"	—
Irkutsk	"	21 25·3	21 35·8	21 54·4	—	G.	10.9S, 169.2E.
Batavia	"	21 22·7	21 30·9	21 48	—	W.	—
Manila	"	21 22·1	—	—	—	V.	—
Zi-ka-wei	"	21 23·2	21 31·8	21 46·1	—	W.	7100 kms.
Osaka	"	21 22·8	21 30·8	21 39·6	—	O.	6880 kms.
Adelaide	"	21 9·0	21 18·8	21 32·9	5·2	M.	—
Honolulu	"	21 21·8	21 29·2	21 40·4	8·8	"	—
Victoria	"	21 35·5	—	22 12·3	1·7	"	—
Toronto	"	21 37·9 ?	—	22 32·4	0·9	"	—
Ottawa	"	21 50 ?	—	—	—	B.	—
Harvard Univ.	"	—	—	—	—	B.O.	P <sub>3</sub> 22-11·5.
La Paz	"	21 31·3	21 42·1	22 16·9	—	Bif.	9970 kms.
Pilar	"	21 42·5	—	22 21·3	1·1	M.	—
<i>November 15</i>							
San Fernando	E.W.	6 49	—	7 15·5	0·7	M.	—
Granada	"	—	—	6 55	—	Bif.	—
Eskdalemuir	"	—	—	—	—	G.	P <sub>3</sub> 6-35.
Edinburgh	"	—	—	7 3	—	M.	—
Bidston	"	6 48·5	—	6 56·2	0·2	"	—
Stonyhurst	"	5 16·5 ?	—	6 50·5	0·2	"	—
West Bromwich	"	—	—	6 50	0·1	"	—
Shide	N.S.	—	—	6 53	—	"	—
Aachen	"	5 46·8	—	6 50	—	W.	—
Heidelberg	"	5 45·6 ?	—	—	—	"	—
Hamburg	"	5 46·3	—	6 47	—	"	—
Innsbruck	"	5 46·5	—	—	—	Ma.	—
Padova	"	5 46·7	—	—	—	V.	—
Triest	"	5 46·6	—	6 47	—	W.	—
Pompeii	E.W.	5 46·8	—	6 47·4	—	O.A.	—
Graz	"	5 46·4	—	—	—	W.	—
Zagreb	"	5 46·6	—	6 50	—	"	—
Vienna	"	5 46·5	—	—	—	"	—
Konigsberg	"	5 49·9	—	6 47·2	—	"	—
Pulkovo	"	5 43·8 ?	—	6 39	—	G.	near New Caledonia.
Helwan, Cairo	N.S.	5 43	—	—	—	M.	—
Makeyevka	"	5 55·3	6 7·7	—	—	G.	21N, 146.9E.
Tiflis	"	5 46	5 59·1 ?	6 32·3	—	"	? > 13,000 kms.
Mauritius	E.W.	6 15·3	—	6 21·3	2·1	M.	—
Ekaterinburg	"	—	—	6 28·8	—	G.	—
Tashkent	"	5 46·3	6 1·4 ?	6 28·8	—	"	? 15,900 kms.
Kodaikanal	"	—	—	6 22·1 ?	—	M.	—
Irkutsk	"	5 50·4	5 57·1	6 14·9	—	G.	20.6W, 145.8E.
Batavia	"	5 37·3	5 45·6	5 47	—	W.	—
Perth	"	5 36·5	—	6 0	2·7	M.	—
Zi-ka-wei	"	5 37·5	—	—	—	W.	—

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>November 15, continued</i>							
Adelaide	E.W.	5 33·2	—	5 44·6	1·5	M.	—
Sydney	"	5 31·7	5 35·5	5 39·2	2·6	"	2225 kms.
Honolulu	"	5 36·5	5 44·1	5 56·1	1·4	"	—
Victoria	"	6 13·3	—	—	—	"	—
Toronto	"	—	—	—	—	"	P <sub>3</sub> 6-48·5.
Ottawa	"	5 59·4 ?	6 10·6 ?	—	—	B.	? 10,300 kms.
La Paz	"	5 56·3	—	—	—	"	—
Pilar	"	6 24 ?	—	—	—	M.	—
<i>November 19</i>							
San Fernando	E.W.	3 52·5	—	4 41	1·1	M.	—
Granada	"	3 39·9	3 50·3	4 25·8	—	Bif.	9310 kms.
Eskdalemuir	"	—	3 45·7 ?	—	—	G.	—
Edinburgh	"	3 42	—	4 41·3	0·2	M.	—
Bidston	"	3 46·5	3 50·3	4 32·6	0·4	"	—
Stonyhurst	"	3 46 ?	—	4 39·1	1·0	"	—
West Bromwich	"	—	—	4 32	0·8	"	—
Shide	"	3 39·5 ?	3 49 ?	4 33	0·7	"	—
Aachen	"	3 39	—	4 21	—	W.	—
Moncalieri	N.S.	3 38·4 ?	3 53·5 ?	4 34·2	—	S.	—
Heidelberg	"	3 36·7	—	4 21	—	W.	—
Hamburg	"	3 37	—	4 22	—	"	—
Triest	"	—	? 3 46±	4 17	—	"	—
Zagreb	"	3 38·1	3 44·1	4 21·4	—	"	—
Breslau	"	—	—	4 19 ?	—	"	—
Cape Town	E.W.	—	—	3 45·4	0·2	M.	—
Konigsberg	"	—	—	4 15·8	—	W.	—
Lemberg	"	3 37·6	3 46·9 ?	—	—	B.O.	—
Czernowitz	"	3 44	—	4 16	—	Ma.	—
Pulkovo	"	3 34·6 ?	3 44·1 ?	4 19·4	—	G.	8290 kms.
Helwan, Cairo	"	3 34	3 45·3	4 23·2	2·0	M.	—
Tiflis	"	3 30 ?	—	—	—	G.	—
Mauritius	N.S.	3 32·5	—	3 50	1·5	M.	—
Ekaterinburg	"	3 33·3	3 43	4 6·2	—	G.	2.55S, 120.35E.
Tashkent	"	3 31	3 39·7	3 59·1	—	"	1.7N, 127.3E.
Bombay	E.W.	3 30·3	—	3 57·1	1·1	M.	—
Kodaikanal	"	3 29·2	—	3 52·5	2·0	"	—
Colombo	"	3 28·7	—	3 46·9	1·6	"	—
Calcutta	"	—	—	3 54·1	—	"	—
Irkutsk	"	3 30·1	3 37·9	3 49·7	—	G.	6250 kms.
Batavia	"	3 23·9	3 27·3	3 32	—	W.	F. in Celebes.
Perth	"	3 29·5	—	3 41·2	7·0	M.	—
Manila	"	3 24·4	3 27·4	3 38·9	—	W.	—
Zi-ka-wei	"	3 27	3 32·3	3 36·5	—	"	3600 kms.
Osaka	"	3 27·9	3 33·7	3 51	—	O.	4620 kms.
Adelaide	"	3 19·1	3 32·9	3 41·8	8·0	M.	—
Sydney	"	3 27·6	3 34·1	3 48·3	1·7	"	—
Honolulu	"	3 33·3	3 42·6	4 6·4	0·8	"	—
Victoria	"	3 51	—	—	—	"	—
Toronto	"	3 55·6 ?	—	—	—	"	—
Ottawa	N.S.	3 43·6 ?	3 54·2 ?	—	—	B.	? 9600 kms.
Harvard Univ.	E.W.	3 44·7 ?	4 0·3 ?	—	—	B.O.	—
La Paz	"	3 40·5	3 55·9	3 56·4	—	Bif.	—
Pilar	"	4 41·7	—	4 51·9	0·4	M.	—

STATION	Com- ponent	P <sub>1</sub>		P <sub>2</sub>		Max.		Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	H. M.	H. M.	MM.			
November 23										
San Fernando	E.W.	22 9.2	—	22 21	—	22 21	—	0.8	M.	—
Granada	—	—	21 42.4	22 8.5	—	22 8.5	—	—	Bif.	—
Eskdalemuir	—	—	21 38.7	—	—	—	—	—	G.	—
Edinburgh	"	21 39.5	—	22 9.7	—	22 9.7	—	0.1	M.	—
Bidston	"	21 51.4	21 58.3	22 9.6	—	22 9.6	—	0.2	"	—
Stonyhurst	"	21 39.1	—	22 9	—	22 9	—	0.1	"	—
West Bromwich	"	21 50	—	21 58	—	21 58	—	0.1	"	—
Shide	"	21 36.5 ?	—	22 27	—	22 27	—	0.3	"	—
Aachen	—	21 39.7	—	22 4	—	22 4	—	—	W.	—
Moncalieri	"	21 37.2	21 50.2	22 7.4	—	22 7.4	—	—	S.	—
Heidelberg	—	—	—	22 4.7	—	22 4.7	—	—	—	—
Hamburg	—	21 29.4	21 39	21 58	—	21 58	—	—	W.	—
Innsbruck	—	—	—	22 8	—	22 8	—	—	Ma.	—
Triest	—	21 36.2 ?	—	22 2.5	—	22 2.5	—	—	W.	—
Zagreb	—	21 30.1	21 40.3 ?	22 7	—	22 7	—	—	"	—
Vienna	—	—	—	22 5	—	22 5	—	—	"	—
Breslau	—	—	—	22 10 ?	—	22 10 ?	—	—	"	—
Budapest	—	—	—	22 6.7	—	22 6.7	—	—	"	—
Lemberg	—	21 40.6	—	—	—	—	—	—	B.O.	—
Czernowitz	—	—	—	22 4.5	—	22 4.5	—	—	Ma.	—
Pulkovo	—	21 27.1 ?	21 36.6	21 58.8	—	21 58.8	—	—	G.	8130 kms.
Helwan, Cairo	"	21 39	—	22 17.2	—	22 17.2	—	0.4	M.	—
Tiflis	—	21 29.3	21 38.5	22 5.9	—	22 5.9	—	—	G.	50.3N, 157.9E.
Ekaterinburg	—	21 27.4	21 34.7	21 50.1	—	21 50.1	—	—	"	54.36N, 170.44E.
Tashkent	—	21 28.1 ?	21 36.5 ?	21 54.9	—	21 54.9	—	—	"	? N. Japan.
Bombay	"	21 59.4	—	22 8.3	—	22 8.3	—	1.0	M.	—
Kodaikanal	"	—	—	22 2.8 ?	—	22 2.8 ?	—	—	"	—
Colombo	"	22 6	—	22 11	—	22 11	—	—	"	—
Calcutta	"	21 43.3	—	21 57.5	—	21 57.5	—	—	"	—
Irkutsk	—	21 24.7	21 30.5	21 39.3	—	21 39.3	—	—	G.	4035 kms.
Batavia	—	21 39	—	21 40	—	21 40	—	—	W.	—
Zi-ka-wei	—	21 24.9	21 30.1	—	—	—	—	—	"	—
Osaka	—	21 23.4	21 28.2	21 33.1	—	21 33.1	—	—	O.	3560 kms.
Honolulu	"	21 33	21 37.1	21 45.8	—	21 45.8	—	0.6	M.	—
Victoria	—	—	21 36.5	—	—	—	—	—	"	—
St. Louis	"	21 34.3	—	—	—	—	—	—	W.	—
Toronto	"	21 44.4	—	—	—	—	—	—	M.	—
Ottawa	"	21 32.2 ?	—	—	—	—	—	—	B.	—
Harvard Univ.	"	—	21 38.6 ?	—	—	—	—	—	B.O.	—

British Association for the Advancement  
of Science.—Seismological Committee.

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Observations and formal business to  
J. H. BURGESS,  
Earthquake Observatory,  
SHIDE, Isle of Wight.

Special inquiries to  
Prof. H. H. TURNER,  
University Observatory,  
OXFORD.

Monthly Bulletin for December, 1913.

For the present it has been decided to give full details for such earthquakes only as are recorded at 31 Stations at least. According to the table printed in the April Bulletin, this would mean the 100 largest earthquakes of the year. A further change in the Bulletin will commence with January, 1914.

But it is requested that no change as yet be made in the information sent to Shide, as Observers will not be able to select the large earthquakes from the records at a single Station.

Observers are asked to send a copy of their Registers each month.

The Stations are arranged in the order of longitude, starting from the Azores and travelling eastward.

The time employed is Greenwich mean time (civil) expressed in hours, minutes, and decimals of a minute; 24 or 0 hours = midnight.

The amplitudes recorded in the 6th column refer only to the Milne instruments, and are given in millimetres and decimals of a millimetre.

The letters in the 7th column stand for: A. = Alfani; Aga. = Agamennone; B. = Bosch; Bif. = Bifilar; B.O. = Bosch-Omori; C. = Cartuja; Ca. = Cancani; C.O. = Cartuja-Omori; G. = Galitzin; M. = Milne; Ma. = Mainka; M.S. = Milne-Shaw; O.A. = Omori-Alfani; S. = Stiattesi; V. = Vicentini; W. = Wiechert.

Guildford and West Bromwich use a modification of the Milne. Hamburg uses machines by Wiechert and von Rebeur-Paschwitz-Hecker. Heidelberg's machine is an astatic pendulum made at the Observatory. Riverview has two Wiecherts and one Mainka.

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
December 15							
San Fernando	N.S.	18 40	—	18 51.5	0.5	M.	—
Eskdalemuir	—	—	—	—	—	G.	P <sub>3</sub> 16-26.5.
Edinburgh	E.W.	18 30.2	—	18 41.2	0.2	M.	—
Bidston	—	18 24	—	18 41.7	0.3	—	—
Stonyhurst	—	18 6.5	—	18 34.3	0.1	—	—
West Bromwich	—	18 27.5	—	18 42	1.7	—	—
Shide	—	17 57	18 15 ?	18 44	1.0	—	—
Guildford	—	17 57.7	18 8.3	18 43	0.6	—	9435 kms.
Aachen	—	18 7 ?	—	18 37	—	W.	—
Moncalieri	—	18 7.4 ?	—	18 39.2	—	S.	—
Heidelberg	—	—	—	18 39.4	—	—	—
Hamburg	—	—	—	18 36	—	—	—
Triest	—	18 6 ?	—	18 39	—	W.	? 10,000 kms.
Graz	—	—	—	—	—	—	? P <sub>3</sub> 18-0.
Zagreb	—	17 56	18 6.3 ?	—	—	—	—
Vienna	—	17 55.6	—	18 39	—	—	—
Budapest	—	17 57.5	—	—	—	—	—
Konigsberg	—	—	18 5.7 ?	18 32.6	—	—	—
Czernowitz	—	—	—	—	—	Ma.	P <sub>3</sub> 18-26.
Pulkovo	—	17 54.7	18 3.8	18 22	—	G.	7750 kms.
Helwan, Cairo	—	18 37	—	—	—	M.	—
Tiflis	—	17 54.1	18 3	18 26	—	G.	7410 kms.
Ekaterinburg	—	17 55	18 0.6	18 13.5	—	—	6000 kms.
Tashkent	—	17 59.1	17 59	18 14.3	—	—	26.7N. 124.3E.
Calcutta	—	17 58.3	—	18 3.9	—	M.	—
Irkutsk	—	17 49.8	17 54.9	—	—	G.	24.6N. 118.1E.
Batavia	—	17 50.3	17 55.5	17 56	—	W.	—
Zi-ha-wei	—	17 45.3	—	17 47.7	—	—	—
Ostka	—	17 48	—	17 54.1	—	O.	1960 kms.
Honolulu	—	18 1.6	18 11.6	18 27.1	0.4	M.	—
December 21							
Cork	E.W.	15 56	—	16 26	1.0	M.	—
Rio Tinto	—	16 2	—	16 40	0.6	—	—
San Fernando	N.S.	16 0	—	16 34	1.0	—	—
Granada	—	15 49.3	16 0.1	16 25.7	—	Bif.	? 9700 kms.
Eskdalemuir	—	15 59.9	—	16 23.5	—	G.	—
Edinburgh	E.W.	15 57.7	—	16 24.8	0.6	M.	—
Bidston	—	16 0.2	16 8.8	16 29	2.4	—	—
Stonyhurst	—	15 59.5	16 8.2	16 28.5	1.0	—	—
West Bromwich	—	16 0	16 9.2	16 28.5	—	—	—
Shide	—	15 59	16 9	16 25.4	2.0	—	—
Guildford	—	15 52.3	16 2.4	16 27.2	—	—	8875 kms.
Aachen	—	15 58.3	—	16 20.5	—	W.	—
Moncalieri	N.S.	15 59.5	16 8.3	16 27.8	—	S.	—
Heidelberg	—	15 58	16 5.1	16 21	—	—	—
Hamburg	—	15 58	—	16 17	—	—	—
Innsbruck	—	15 49.5	15 58.8	16 20	—	Ma.	8000 kms.
Padova	—	15 49.5	15 59.1	—	—	V.	—
Triest	—	15 58.6	16 6.9	16 17.6	—	W.	6700 kms.
Pompeii	—	15 48	—	—	—	O.A.	—
Graz	—	15 49.2	15 58.5	16 20.1	—	W.	8000 kms.
Zagreb	—	15 49.2	15 58.3	16 19.3	—	—	7800 kms.
Vienna	—	15 49.1	—	16 23	—	—	—
Budapest	—	—	—	16 18.7	—	—	—
Konigsberg	—	16 2.2 ?	—	16 14.6	—	—	—
Lemberg	—	15 56.1	—	16 19.8	—	B.O.	? 6200 kms.
Czernowitz	—	15 56.5	—	16 15	—	Ma.	—
Pulkovo	—	15 48.1	15 56.3	16 11.5	—	G.	6710 kms.
Helwan, Cairo	E.W.	15 55	16 3.9	16 19	0.9	M.	—
Tiflis	—	15 46.9	15 54.1	16 6.3	—	G.	5680 kms.
Mauritius	—	16 3.5	—	16 12.1	0.6	M.	—
Ekaterinburg	—	15 44.1	15 50.6	16 0.4	—	G.	23.57N. 99.25E.

STATION	Com- ponent	P <sub>1</sub>	P <sub>2</sub>	Max.	Amp.	Machine	Remarks
		H. M.	H. M.	H. M.	MM.		
<i>December 21, continued</i>							
Tashkent		15 44.4	15 49.6	—	—	G.	3470 kms.
Bombay	E.W.	15 49.3	—	15 56.8	2.5	M.	—
Kodalkanal	"	15 46.5	—	15 58.3	3.0	"	—
Colombo	"	15 46	—	15 58.3	3.0	"	—
Calcutta	"	15 39.6	—	15 46.7	—	"	—
Cocos	"	15 55 ?	—	15 59.5 ?	3.5	"	—
Irkutsk	"	15 43.7	15 48.5	15 53.3	—	G.	25N. 102E.
Batavia	"	15 44.2	15 55.7	15 58	—	W.	—
Manila	"	15 42.5	15 46.4	15 52	—	"	—
Zi-ka-wei	"	15 42.1	15 43.7	15 48.2	—	"	—
Osaka	"	15 45	15 49.8	15 57.6	—	O.	3580 kms.
Adelaide	"	—	16 7.2	16 23.2	1.1	M.	—
Honolulu	"	16 2.7	—	16 23.2	0.8	"	—
Victoria	"	16 21.9	—	16 32.9	0.7	"	—
St. Louis	"	—	—	16 46.2	—	W.	—
Toronto	"	16 12.7	—	16 45.5	1.0	M.	—
Ottawa	"	16 16.2 ?	—	—	—	B.	—
Harvard Univ.	"	—	16 32.2 ?	—	—	B.O.	—
<i>December 25</i>							
Azores	E.W.	6 50.6	—	6 52.7	3.0	M.	—
San Fernando	"	7 0.5	—	7 2	1.0	"	—
Granada	"	6 52.6	6 54.9	6 59.7	—	Bif.	? 1310 kms.
Eskdalemuir	"	6 55	6 59.9	—	—	G.	32N. 27W.
Edinburgh	"	7 0.2	—	7 5.9	0.1	M.	—
Bidston	"	7 0	—	7 4.3	0.3	"	—
West Bromwich	N.S.	6 55.1	6 59.9	7 5	0.8	"	—
Shide	E.W.	—	—	7 5	0.8	"	—
Guildford	"	6 55.8	6 59.6	7 4.8	1.7	"	2280 kms.
Aachen	"	6 55.4 ?	7 0.8 ?	7 4	—	W.	? 3600 kms.
Moncalieri	N.S.	6 56.5	7 0.9	7 6.8	—	S.	—
Heidelberg	"	6 55.6 ?	—	7 8	—	"	—
Hamburg	"	6 55.8	—	7 6.9	—	"	—
Innsbruck	"	6 55.9	7 1.5	—	—	Ma.	3900 kms.
Padova	"	6 56	—	—	—	V.	—
Triest	"	6 56.1	7 1.9	7 8.3	—	W.	4080 kms.
Pompeii	"	? 6 56.2	—	—	—	O.A.	—
Graz	"	6 56.2	7 2.2	7 11.1	—	W.	—
Zagreb	"	6 56.3	7 2.2	7 11.5	—	"	? 4100 kms.
Vienna	"	6 56.3	7 2.4 ?	7 11	—	"	—
Breslau	"	6 56.3	7 2.1 ?	7 11	—	"	—
Cape Town	E.W.	—	—	7 47.8	0.1	M.	—
Konigsberg	"	6 56.8	7 3.2	7 13.1	—	W.	? 4700 kms.
Lemberg	"	6 57 ?	—	—	—	B.O.	—
Czernowitz	"	6 57.2	—	7 18	—	Ma.	—
Pulkovo	"	6 57.5	7 4.5	7 13	—	G.	35N. 37W.
Tihs	"	6 59	7 7.4 ?	—	—	"	? 6850 kms.
Ekaterinburg	"	—	—	7 33.6	—	"	—
Tashkent	"	7 0.6	7 10.5	7 28.2	—	"	? 9900 kms.
Irkutsk	"	7 1.5	7 12	7 29.8	—	"	9475 kms.
Honolulu	"	7 17.5	—	7 47.8	0.2	M.	—
Victoria	"	—	—	7 27.4	0.3	"	—
Toronto	"	7 1	—	—	—	"	—
Ottawa	N.S.	6 58.9 ?	—	—	—	B.	—
Harvard Univ.	E.W.	7 1.9	—	—	—	B.O.	—