

ROYAL OBSERVATORY, HONG KONG.

Latitude..... $22^{\circ} 18' 13.2''$ North.

Longitude... $114^{\circ} 10' 18.7''$ East.



Jan - July

MONTHLY SEISMOLOGICAL BULLETIN

1940

JANUARY,

1940.

PREPARED UNDER THE DIRECTION OF

C. W. JEFFRIES, F.R.A.S.

DIRECTOR.

NOTATION.

- P = Time of arrival of longitudinal waves.
 PP = " " " " once reflected.
 S = " " of transverse "
 SKS = " " of transverse-longitudinal waves through core.
 SS = " " of transverse waves once reflected.
 L = " " of long, or surface "
 M = " " of maximum of long waves.
 F = " of end of record.
 A_N = Amplitude (half range) of N.-S. movement.
 A_E = " " " E.-W. "
 T = Period of undamped pendulum (complete swing).



HONG KONG.

PRINTED BY NORONHA & CO., LD.

GOVERNMENT PRINTERS.

1940,

ROYAL OBSERVATORY, HONG KONG. EARTHQUAKES RECORDED IN JANUARY, 1940.
(Milne-Shaw Instruments.)



No. 1940.	Date.	Phase	Greenwich Time (0 = Midn.)	Recorded Period of Waves		A_N	A_E	Remarks.
				N-S	E-W			
			<i>h.m.s.</i>	<i>s.</i>	<i>s.</i>	<i>mm.</i>	<i>mm.</i>	
1	Jan. 1	<i>P</i> <i>S</i> <i>PS?</i> <i>F</i>	12 26 14 35 20 35 37 56 —	... ... ... ...	... ... ... ...	... ... 0.3 ...	 0.4 ...	Largest movement.
2	2	<i>M</i>	5 6 56	3-6	3-6	0.4	0.3	
3	2	<i>M</i>	12 18 0	16-20	16-20	0.2	0.2	In movements from 11h 30m to 13h 30m.
4	6	<i>M</i>	7 25 30	...	...	0.1	0.1	
5	6	<i>P?</i> <i>PP</i> <i>S?</i> <i>M</i> <i>F</i>	8 22 58 24 26 28 46 39 40 9 20 —	 14-17 ...	 14-17 ...	 0.5 ...	 0.4 ...	
6	6	<i>P</i> <i>S_N</i> <i>S_E</i> <i>M</i> <i>F</i>	10 48 9 52 11 52 17 59 35 11 20 —	 10-14 ...	 10-14 ...	 0.3 ...	 0.3 ...	
7	6	<i>P</i> <i>PeP</i> <i>PP</i> <i>S</i> <i>ScS</i> <i>SS</i> <i>L?</i> <i>F</i>	14 14 38 14 54 17 11 23 44 24 26 28 11 37 18 17 15 —	 14-17 ...	 14-17 ...	0.3 _N 2.4 _N 2.5	0.2 _W 2.9 _W 3.0	Largest movement. No definite maximum.
8	7	<i>P?</i> <i>PP</i> <i>S</i> <i>M</i> <i>F</i>	3 28 13 29 4 33 20 41 10 4 35 —	 10-14 ...	 10-14 ...	 0.9 ...	 0.7 ...	
9	7	<i>M</i>	9 34 50	...	...	0.1	0.1	
10	10	<i>M</i>	11 13 30	...	...	0.1	0.1	
11	10	<i>P</i> <i>PP</i> <i>S</i> <i>SS</i> <i>L</i> <i>M</i> <i>F</i>	11 21 45 21 52 25 20 25 30 27 27 28 10 12 20 —	 6-8 ...	 6-8 ...	0.1 _N 4.9 ...	0.1 _W 0.2 5.4 ...	
12	16	<i>M</i>	10 8 30	...	...	0.1	0.1	
13	16	<i>M</i>	13 15 8	...	...	0.1	0.1	
14	17	<i>P</i> <i>PP</i> <i>S</i> <i>SS</i> <i>?</i> <i>M_N</i> <i>L?</i> <i>M_E</i> <i>F</i>	1 21 25 22 23 26 42 28 30 28 55 29 5 30 4 36 21 5 0 —	 10-15	 10-15	0.1 _N ... 4.7 _S 10.4	0.2 _W ... 3.8 _W 8.7 ...	
15	17	<i>M</i>	12 24 0	...	...	0.1	0.1	
16	17	<i>M</i>	19 56 0	...	...	0.1	0.1	

ROYAL OBSERVATORY, HONG KONG. EARTHQUAKES RECORDED IN JANUARY, 1940.
(*Milne-Shaw Instruments*,)—*Continued*.



No. 1940.	Date.	Phase.	Greenwich Time (0=Midn.)	Recorded Period of Waves.		A_N	A_E	Remarks.
				N-S	E-W			
			<i>h.m.s.</i>	<i>s.</i>	<i>s.</i>	<i>mm.</i>	<i>mm.</i>	
17	19	<i>P</i> <i>?</i> <i>S?</i> <i>M</i> <i>F</i>	5 32 33 33 42 35 10 36 6 6 8 —	... ... ... ... ...	... ... ... 4.7 ...	... ... ... ... ...	... ... ... 1.1 ...	N-S component, not recording.
18	20	<i>M</i>	11 34 0	15-18	15-18	0.1	0.1	In movements from 10h 34m to 12h 20m.
19	21	<i>P</i> <i>PP</i> <i>S</i> <i>SS</i> <i>M</i> <i>F</i>	2 48 23 49 5 53 2 54 20 56 0 3 10 —	 7-10 ...	 7-10 ...	 0.4 ...	 0.4 ...	
20	26	<i>P</i> <i>PP?</i> <i>PPP</i> <i>S</i> <i>SS</i> <i>L</i> <i>M_N</i> <i>M_E</i> <i>F</i>	17 8 16 8 20 8 30 11 31 11 44 12 51 13 46 19 16 18 50 —	 8-12	 8-11 ...	 7.5 ... 5.8 ...	... ... ... ... ... ... ... ... ...	
21	27	<i>P?</i> <i>S?</i> <i>M</i> <i>F</i>	14 59 39 15 3 5 4 40 35 —	 10-12 ...	 9-12 ...	 0.5 ...	 0.4 ...	
22	28	<i>M</i>	13 13 35	...	...	0.3	0.3	

T :—N-S Component=12.0'; E-W Component =11.9'.
Damping Ratio :—N-S Component=23:1; E-W Component=19:1.
Normal magnification=150 for both pendulums.
Initial movements are of the pendulums.
Electric current off 26d 2h 1m to 15h 46m and 31d 8h 29m to 23h 17m.

B. D. EVANS,—Assistant Director.

ROYAL OBSERVATORY, HONG KONG.

Latitude.....22° 18' 13.2" North.

Longitude...114° 10' 18.7" East.



MONTHLY SEISMOLOGICAL BULLETIN

FEBRUARY,

1940.

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SKS = " " of transverse-longitudinal waves through core.

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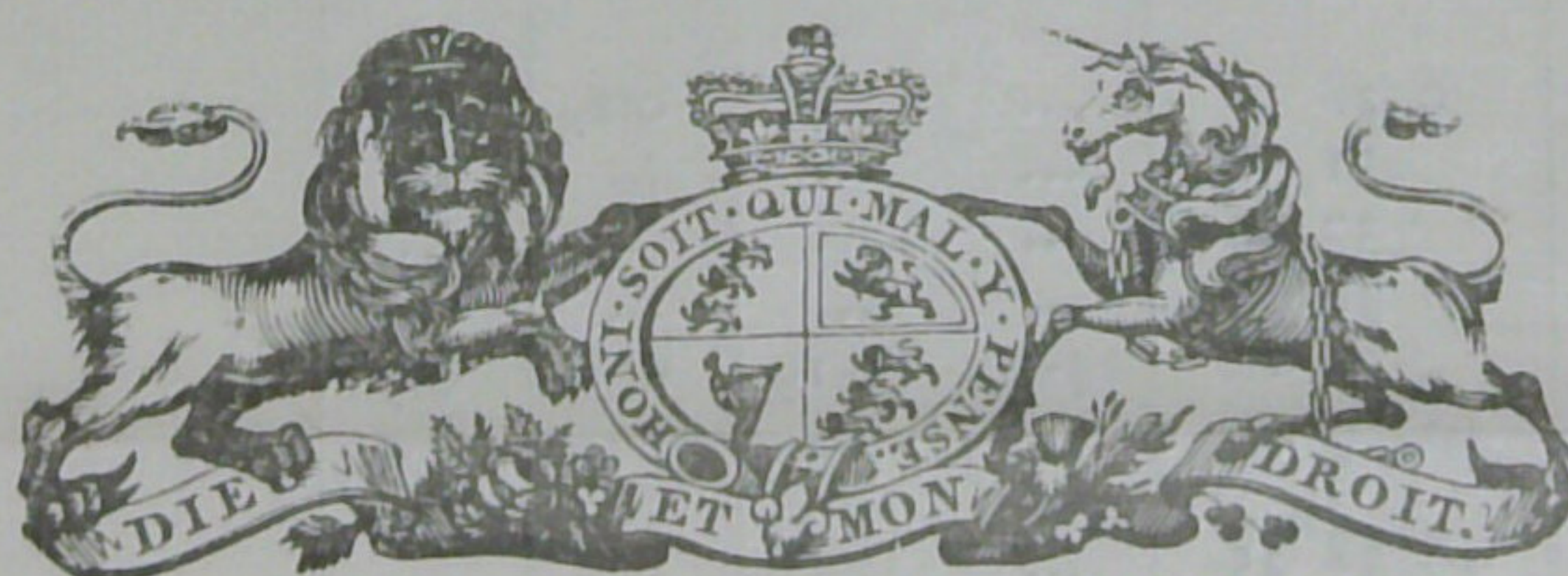
M = " " of maximum of long waves.

F = " of end of record.

A_N = Amplitude (half range) of N.-S. movement.

A_E = " " " E.-W. "

T = Period of undamped pendulum (complete swing).



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(Milne-Shaw Instruments.)



No. 1940.	Date.	Phase	Greenwich Time (0 = Midn.)	Recorded Period of Waves		A_N	A_E	Remarks.
				N-S	E-W			
			<i>h.m.s.</i>	<i>s.</i>	<i>s.</i>	<i>mm.</i>	<i>mm.</i>	
23	Feb. 5	<i>M</i>	6 50 20	...	...	0.1	0.1	
24	5	<i>P?</i> <i>L?</i> <i>M</i> <i>F</i>	7 15 24 17 56 18 28 29 —	...	...	...	...	
25	5	<i>M</i>	8 19 25	...	...	0.3	0.3	
26	7	<i>P</i> <i>PcP</i> <i>PP</i> <i>S</i> <i>PS</i> <i>SS</i> <i>M_N</i> <i>M_E</i> <i>F</i>	17 25 27 26 18 28 25 33 18 33 28 37 11 49 10 51 2 19 5 —	...	...	0.6 _s ...	0.4 _w ...	
27	9	<i>M</i>	13 53 0	...	...	0.1	0.1	
28	9	<i>M</i>	14 13 33	...	...	0.2	0.2	
29	9	<i>P?</i> <i>S</i> <i>L</i> <i>M</i> <i>F</i>	38 30 39 54 40 22 40 44 18 0 —	...	...	...	...	
30	11	<i>P?</i> <i>S?</i> <i>M</i> <i>F</i>	21 32 17 36 24 41 22 50 —	...	...	...	...	
31	12	<i>P?</i> <i>S?</i> <i>SS</i> <i>M</i>	0 26 4 32 31 37 23 50 25	...	...	...	...	
32	12	<i>M</i>	1 27 0	18-20	18-20	0.2	0.2	
33	12	<i>P</i> <i>PP</i> <i>S</i> <i>PS</i> <i>F</i>	8 32 51 35 18 42 40 43 5 9 10 —	...	...	0.3 _N ...	0.4 _E ...	Largest movement.
34	12	<i>P</i> <i>PP</i> <i>S</i> <i>PS</i> <i>M</i> <i>F</i>	9 28 50 31 8 37 54 38 13 59 14 10 19 —	...	...	0.2 _N ...	0.1 _E ...	
35	12	<i>P</i> <i>PP</i> <i>S</i> <i>SS</i> <i>M</i> <i>F</i>	16 38 25 38 49 42 37 43 30 48 25 17 7 —	...	...	...	...	
36	14	<i>S?</i> <i>M₁</i> <i>M₂</i>	2 22 44 31 25 42 20	12-16 12-16	12-16 12-16	0.2 0.3	0.2 0.3	May be two shocks superimposed.
37	14	<i>P?</i> <i>S</i> <i>L</i> <i>M</i> <i>F</i>	11 54 31 55 41 56 10 57 45 12 26 —	...	...	...	...	

ROYAL OBSERVATORY, HONG KONG. EARTHQUAKES RECORDED IN FEBRUARY, 1940.
(Milne-Shaw Instruments.)—Continued.



No. 1940.	Date.	Phase.	Greenwich Time (0=Midn.)	Recorded Period of Waves.		A_N	A_E	Remarks.
				N-S	E-W			
			<i>h.m.s.</i>	<i>s.</i>	<i>s.</i>	<i>mm.</i>	<i>mm.</i>	
38	16	<i>P?</i>	1 10 39	...	...	...	...	
		<i>S?</i>	12 8	...	...	...	...	
		<i>L</i>	13 3	...	...	...	...	
		<i>M</i>	13 37	5-8	5-8	1'0	0'9	
		<i>F</i>	36 —	...	...	...	...	
39	20	<i>P</i>	2 28 31	...	...	0'9 _s	1'3 _E	
		<i>PcP</i>	29 14	...	...	1'6 _s	1'0 _E	
		<i>PP</i>	30 35	...	...	...	...	
		<i>S</i>	36 49	...	...	6'6 _s	4'0 _E	Largest movement.
		<i>ScS</i>	38 6	...	...	...	...	
		<i>SS</i>	41 10	...	...	...	...	
		<i>L?</i>	48 15	13-15	13-15	...	...	
		<i>F</i>	4 50 —	...	...	...	...	
40	20	<i>P?</i>	13 5 45	...	...	...	...	
		<i>PP</i>	8 8	...	...	...	...	
		<i>S</i>	14 49	...	...	...	...	
		<i>PS?</i>	15 3	...	...	...	...	
		<i>SS</i>	19 19	...	...	...	...	
		<i>M</i>	32 33	10-13	11-13	0'4	0'4	
		<i>F</i>	14 29 —	...	...	...	...	
41	22	<i>P</i>	13 32 44	...	...	...	...	
		<i>S</i>	33 51	...	...	...	...	
		<i>L</i>	34 20	...	...	...	...	
		<i>M</i>	34 44	5-8	5-8	2'1	1'7	
		<i>F</i>	14 15 —	...	...	...	...	
42	24	<i>P</i>	12 7 13	...	...	0'1 _s	0'1 _E	
		<i>PP</i>	8 31	...	...	...	...	
		<i>PcP</i>	9 42	...	...	...	...	
		<i>S</i>	12 53	...	...	...	...	
		<i>SS</i>	15 17	...	...	...	...	
		<i>SSS</i>	16 44	...	...	1'4	2'1	Largest movement ; may be ScS.
		<i>L?</i>	18 24	11-16	11-16	...	...	
		<i>F</i>	13 25 —	...	...	...	...	
43	27	<i>M</i>	4 17 7	...	...	0'3	0'1	
44	27	<i>M</i>	4 19 57	...	...	0'5	0'3	
45	27	<i>M</i>	19 27 30	...	...	0'2	0'2	
46	29	<i>P?</i>	16 29 17	...	...	0'5 _s	0'2 _w	
		<i>?</i>	29 39	...	...	0'8 _s	0'4 _w	Largest movement.
		<i>S?</i>	34 12	...	...	...	...	
		<i>?</i>	34 37	...	...	...	...	
		<i>M</i>	55 19	14-18	14-18	0'2	0'2	
		<i>F</i>	17 35 —	...	...	...	...	

T :—N-S Component=11'9" ; E-W Component =12'0".

Damping Ratio :—N-S Component=23:1 ; E-W Component=21:1.

Normal magnification=150 for both pendulums.

Initial movements are of the pendulums.

B. D. EVANS,—Assistant Director.

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MONTHLY SEISMOLOGICAL BULLETIN

MARCH,

1940

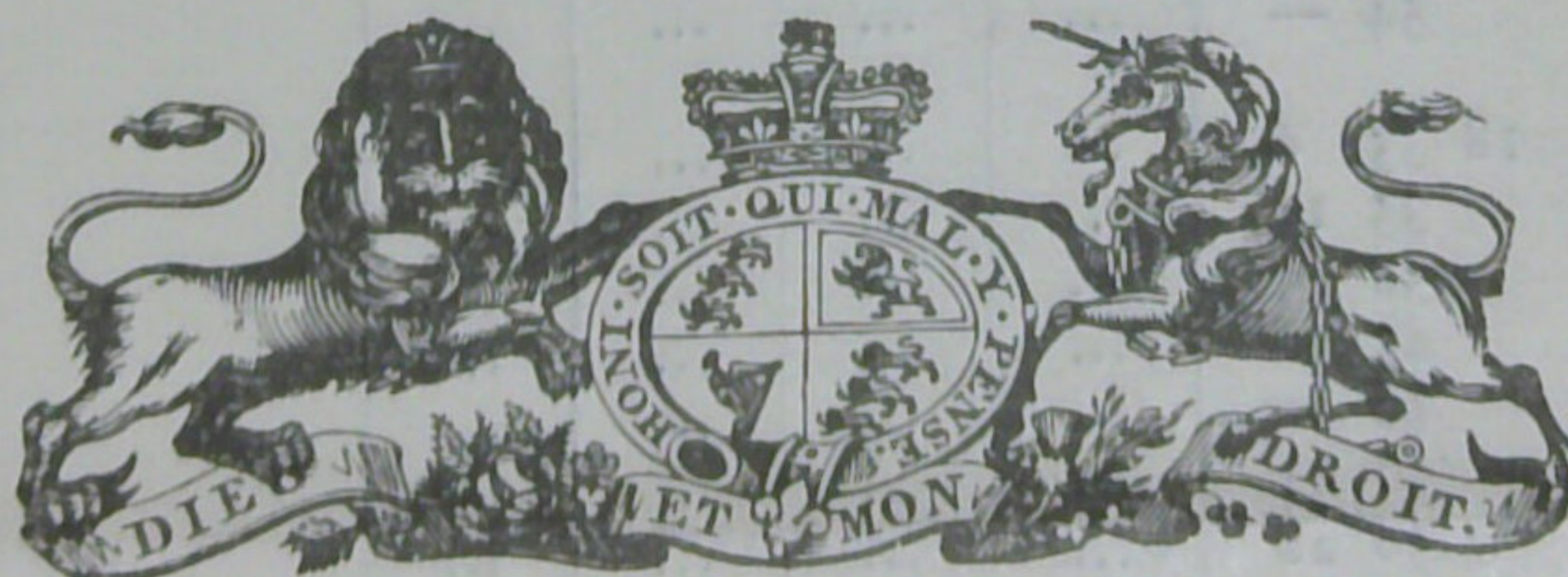
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				N-S	E-W			
			<i>h.m.s.</i>	<i>s.</i>	<i>s.</i>	<i>mm.</i>	<i>mm.</i>	
47	Mar. 1	<i>P</i> <i>S</i> <i>L</i> <i>M_E</i> <i>M_N</i> <i>F</i>	21 29 8 29 37 29 50 29 58 30 8 35 —	 2-3 ...	 2-3 ...	 2'1 ...	 1'8 ...	Small shock felt at Government House.
48	3	<i>P</i> <i>PcP?</i> <i>S</i> <i>SS</i> <i>M</i> <i>F</i>	0 16 20 16 37 25 22 29 30 39 35 1 32 —	 16-20 ...	 16-20 ...	 0'4 ...	 0'4 ...	
49	3	<i>M</i>	8 47 2	6-9	6-9	0'9	0'5	
50	3	<i>P?</i> <i>S?</i> <i>M</i>	12 10 14 14 10 18 37	... ... ...	... ... ...	... ... 0'3	 0'2	
51	3	<i>M</i>	12 26 57	...	...	...	...	P & S masked by ending movements of N° 50.
52	6	<i>M</i>	0 36 43	...	...	0'2	0'1	
53	9	<i>P</i> <i>?</i> <i>S</i> <i>SS</i> <i>PcP</i> <i>L</i> <i>M</i> <i>F</i>	10 51 40 53 54 55 18 55 37 56 8 57 34 11 1 49 13 —	... ... ... ... ... ... ... ...	... ... ... ... ... ... ... ...	0'2 _s 0'5 ...	0'4 _w 0'4 ...	
54	11	<i>P?</i> <i>M</i>	11 36 31 43 47	... ...	... ...	... 0'2	... 0'2	
55	12	<i>P</i> <i>S</i> <i>L</i> <i>M</i> <i>F</i>	22 20 9 21 43 22 19 23 42 54 —	 8-10 ...	 8-10 ...	 1'0 ...	 1'6 ...	
56	14	<i>P</i> <i>PcP</i> <i>PP</i> <i>S</i> <i>ScS</i> <i>SS</i> <i>SSS</i> <i>M_E</i> <i>M_N</i> <i>F</i>	18 35 6 35 14 38 5 45 30 46 10 50 44 56 28 19 1 50 7 46 20 25 —	 14-20 ...	 15-19	 0'9 ...	 1'2	
57	15	<i>P?</i> <i>?</i> <i>S</i> <i>M_N</i> <i>F</i>	5 29 28 33 45 38 40 46 8 6 32 —	 11-16 ...	... ... ... ... ...	... ... ... 0'5 ...	... ... ... ... ...	May be P. E-W no definite maximum.
58	19	<i>P?</i> <i>S</i> <i>M_E</i> <i>F</i>	4 43 25 49 31 5 0 8 5 19 —	... ... ... ...	... ... 8-11 ...	... ... ... ...	... ... 0'4 ...	N-S clock stopped.

ROYAL OBSERVATORY, HONG KONG. EARTHQUAKES RECORDED IN MARCH, 1940.
(Milne-Shaw Instruments.)—Continued.



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				N-S	E-W			
			<i>h.m.s.</i>	<i>s.</i>	<i>s.</i>	<i>mm.</i>	<i>mm.</i>	
59	21	<i>P</i>	13 59 30	...	...	0.3 _S	0.1 _E	
		<i>PP</i>	14 0 40	...	...	...	...	
		<i>S</i>	4 48	...	...	...	...	
		<i>SS</i>	6 59	...	...	...	...	
		<i>M_E</i>	13 18	...	10-15	...	1.4	
		<i>M_N</i>	15 30	10-15	...	1.5	...	
		<i>F</i>	15 23 —	...	...	...	...	
60	27	<i>P</i>	12 41 8	...	...	...	...	N-S chart under-exposed.
		<i>S</i>	49 7	...	...	...	...	
		<i>ScS</i>	51 0	...	...	...	...	
		<i>M_E</i>	13 3 5	...	12-18	...	1.0	
		<i>F</i>	14 20 —	...	...	...	...	
61	27	<i>M_E</i>	19 4 30	...	...	...	0.1	" " " "
62	28	<i>M_E</i>	14 26 10	...	...	...	0.2	" " " "
63	28	<i>P</i>	15 51 11	...	...	...	...	" " " "
		<i>S</i>	52 0	...	...	...	...	
		<i>M_E</i>	53 54	...	10-12	...	16.0	
		<i>F</i>	17 38 —	...	...	...	...	
64	29	<i>P?</i>	21 43 0	...	...	...	...	
		<i>S</i>	47 50	...	...	...	...	
		<i>M_E</i>	55 30	..	12-16	...	0.6	
		<i>M_N</i>	56 0	12-16	...	0.6	...	
		<i>F</i>	22 26 —	...	...	...	...	
65	30	<i>P</i>	6 28 10	...	...	...	...	
		<i>S?</i>	33 30	...	...	...	...	
		<i>SS?</i>	35 20	...	...	...	...	
		<i>M</i>	40 35	12-16	12-16	0.3	0.3	
		<i>F</i>	7 10 —	...	...	...	...	
66	30	<i>M</i>	8 46 0	...	...	0.4	0.4	

T :—N-S Component=12.0' ; E-W Component =12.0".

Damping Ratio, 1st-7th :— N-S Component=24:1; E-W Component=21:1.

8th-31st:— " " 17:1 ; " " 15:1.

Normal magnification=150 for both pendulums.

Initial movements are of the pendulums.

B. D. EVANS,—Assistant Director.

ROYAL OBSERVATORY, HONG KONG.

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APRIL,

1940

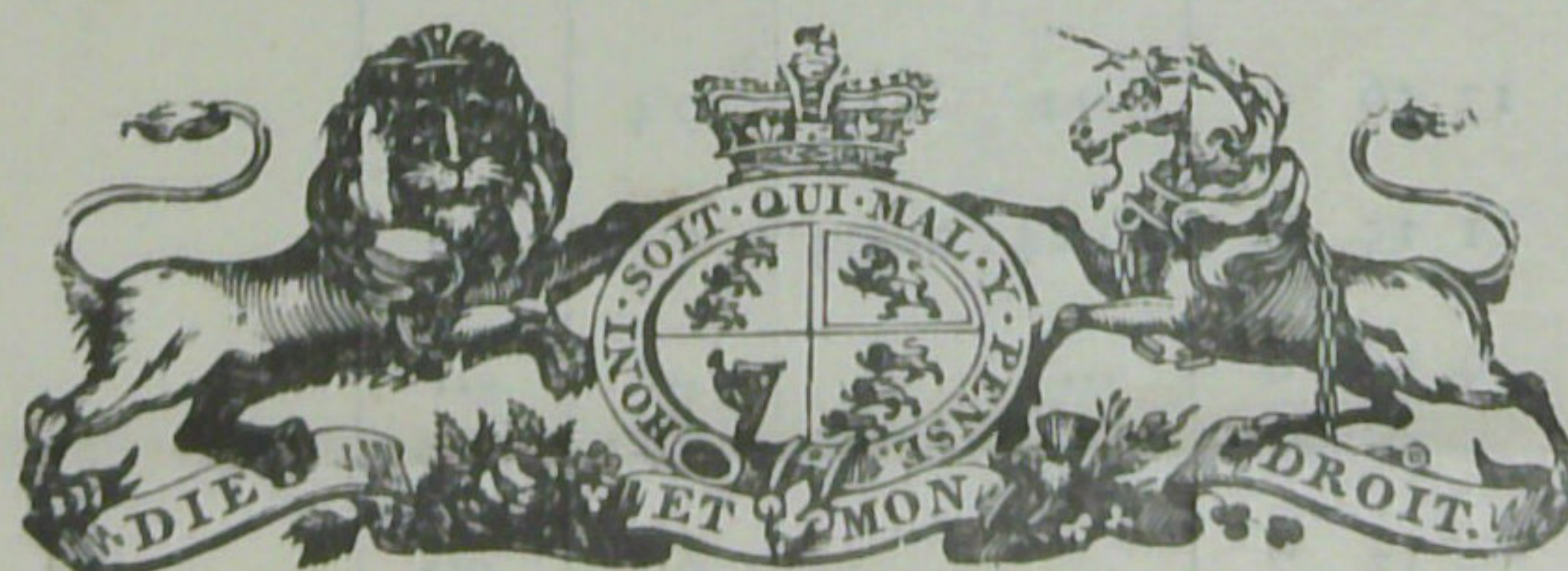
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				N-S	E-W			
			<i>h.m.s.</i>	<i>s.</i>	<i>s.</i>	<i>mm.</i>	<i>mm.</i>	
67	Apr. 1	<i>P</i> <i>PP</i> <i>PcP</i> <i>S</i> <i>L</i> <i>M_E</i> <i>M_N</i> <i>F</i>	11 25 56 27 2 28 45 31 25 36 0 36 20 38 20 13 25 —	 10-15 ...	 10-15 ...	 1.6 ...	 2.0	
68	1	<i>M</i>	14 24 0	...	...	0.1	0.1	
69	1	<i>M</i>	17 47 50	...	...	0.1	0.1	
70	2	<i>M</i>	21 18 8	...	...	2.6	0.6	Local shock.
71	4	<i>M_E</i> <i>M_N</i>	7 15 55 17 17	... ...	... ...	... 0.4	0.4 ...	
72	5	<i>M</i>	16 46 0	...	...	0.4	0.3	
73	6	<i>M</i>	5 27 40	...	...	0.1	0.2	
74	6	<i>M</i>	6 46 15	...	...	1.5	0.5	
75	6	<i>P</i> <i>S</i> <i>L</i> <i>M</i> <i>F</i>	13 45 30 47 59 48 40 49 50 14 47 —	 8-12 ...	 8-12 ...	 8.0 ...	 11.0 ...	
76	6	<i>M</i>	14 27 42	...	...	1.9	0.6	Phases masked by concluding movements of N°75.
77	6	<i>P?</i> <i>M_N</i> <i>M_E</i> <i>F</i>	18 57 20 59 50 19 0 20 27 —	... 8-10	 8-10 ...	... 4.5	 1.9 ...	
78	8	<i>P</i> <i>S?</i> <i>L</i> <i>M</i> <i>F</i>	2 52 43 55 19 56 22 57 40 3 30 —	 8-12 ...	 8-12 ...	 1.0 ...	 1.0 ...	
79	8	<i>M</i>	10 31 30	16-20	16-20	0.1	0.1	
80	8	<i>M</i>	11 39 10	8-12	8-12	0.2	0.2	
81	8	<i>M</i>	17 56 0	8-12	8-12	0.4	0.2	
82	10	<i>M</i>	21 15 0	20-24	20-24	0.1	0.1	
83	11	<i>P?</i> <i>M</i>	9 18 6 30 34	... 11-14	... 10-14	... 0.2	... 0.2	
84	13	<i>M</i>	7 12 7	...	...	0.2	0.2	
85	14	<i>M</i>	12 14 10	...	...	0.1	0.1	
86	14	<i>P</i> <i>S</i> <i>SS</i> <i>L</i> <i>M</i> <i>F</i>	14 37 59 41 24 41 40 42 53 45 20 15 43 —	 10-15 ...	 10-16 ...	 1.1 ...	 1.2 ...	
87	14	<i>M</i>	17 57 40	...	...	0.1	0.1	
88	15	<i>M</i>	6 39 50	...	...	0.1	0.1	
89	15	<i>M</i>	21 3 35	...	...	0.2	0.1	

ROYAL OBSERVATORY, HONG KONG. EARTHQUAKES RECORDED IN APRIL, 1940.
(Milne-Shaw Instruments,)—Continued.



No. 1940.	Date.	Phase.	Greenwich Time (0=Midn.)	Recorded Period of Waves.		A_y	A_E	Remarks.
				N-S	E-W			
			<i>h.m.s.</i>	<i>s.</i>	<i>s.</i>	<i>mm.</i>	<i>mm.</i>	
90	16	<i>P</i>	6 17 8	...	...	0'4 _N	0'5 _E	
		<i>PeP</i>	18 20	...	...	...	...	
		<i>PP</i>	19 7	...	...	...	...	
		<i>S</i>	24 45	...	...	...	...	
		<i>ScS?</i>	27 10	...	...	...	...	
		<i>SS</i>	28 21	...	...	...	...	
		<i>M₁</i>	37 0	...	...	4'0	4'6	
		<i>M₂</i>	43 47	...	...	4'4	5'0	
		<i>M₃</i>	7 17 18	13-15	13-15	5'9	8'5	
		<i>F</i>	9 59 —	...	...	...	...	
91	17	<i>P?</i>	21 51 19	...	...	...	...	
		<i>M</i>	22 3 0	...	...	0'2	0'3	
92	17	<i>P</i>	23 46 48	...	...	...	...	Small local shock.
		<i>M</i>	46 53	...	...	1'0	1'0	
93	18	<i>M</i>	20 7 10	...	...	0'1	0'1	
94	18	<i>M</i>	23 21 23	8-12	8-12	0'4	0'4	
95	19	<i>M</i>	0 43 0	...	...	0'2	0'2	
96	19	<i>M</i>	11 17 20	...	...	0'2	0'2	
97	19	<i>P?</i>	14 54 9	...	...	...	...	
		<i>M</i>	15 6 28	...	...	0'3	0'4	
98	20	<i>P</i>	15 50 29	...	...	0'2 _S	0'2 _E	
		<i>PP?</i>	50 37	...	...	...	...	
		<i>?</i>	50 54	...	...	...	...	
		<i>S</i>	54 10	...	...	1'0	1'0	Maximum movement.
		<i>SS?</i>	54 31	...	...	...	...	
99	20	<i>M</i>	20 18 50	...	...	0'2	0'2	
100	22	<i>M</i>	13 0 20	...	...	0'1	0'1	
101	23	<i>M</i>	4 59 0	...	...	0'1	0'1	
102	24	<i>L?</i>	10 30 8	...	...	...	...	
		<i>S?</i>	36 37	...	...	...	...	
		<i>M</i>	44 12	10-15	11-15	0'5	0'6	
		<i>F</i>	11 13 —	...	...	...	...	
103	26	<i>M</i>	21 16 35	...	...	0'1	0'1	
104	27	<i>P</i>	9 45 51	...	...	...	...	
		<i>S</i>	54 7	...	...	...	...	
		<i>M</i>	10 8 20	12-16	12-16	0'3	0'5	
		<i>F</i>	50 —	...	...	...	...	
105	27	<i>M</i>	11 13 45	...	...	0'1	0'1	
106	27	<i>M</i>	12 29 30	...	...	0'2	0'2	
107	27	<i>P?</i>	18 15 15	...	...	...	...	
		<i>S?</i>	23 33	...	...	...	...	
		<i>M</i>	38 47	12-16	12-16	0'4	0'5	
		<i>F</i>	19 22 —	...	...	...	...	

T :—N-S Component=12'0" ; E-W Component =12'0".

Damping Ratio :—N-S Component=20:1; E-W Component=16:1.

Normal magnification=150 for both pendulums.

Initial movements are of the pendulums.

B. D. EVANS,—Assistant Director.

ROYAL OBSERVATORY, HONG KONG.

Latitude.....22° 18' 13.2" North.

Longitude...114° 10' 18.7" East.



MONTHLY SEISMOLOGICAL BULLETIN

MAY,

1940

PREPARED UNDER THE DIRECTION OF

C. W. JEFFRIES, F.R.A.S.

DIRECTOR.

NOTATION.

- P = Time of arrival of longitudinal waves.
 PP = " " " " once reflected.
 S = " " of transverse "
 SKS = " " of transverse-longitudinal waves through core.
 SS = " " of transverse waves once reflected.
 L = " " of long, or surface "
 M = " " of maximum of long waves.
 F = " of end of record.
 A_N = Amplitude (half range) of N.-S. movement.
 A_E = " " " E.-W. "
 T = Period of undamped pendulum (complete swing).



HONG KONG.

PRINTED BY NORONHA & CO., LD.

GOVERNMENT PRINTERS.

1940,

ROYAL OBSERVATORY, HONG KONG. EARTHQUAKES RECORDED IN MAY, 1940.
(Milne-Shaw Instruments.)



No. 1940.	Date.	Phase	Greenwich Time (0 = Midn.)	Recorded Period of Waves		A_N	A_E	Remarks.
				N-S	E-W			
			<i>h.m.s.</i>	<i>s.</i>	<i>s.</i>	<i>mm.</i>	<i>mm.</i>	
108	May 1	P? S? SS? F	7 59 8 8 3 30 4 28 26 —	... ... ... ...	... ... ... ...	... ... 0'4 ..	 0'3 ...	Maximum movement.
109	1	P? S? L M F	19 7 22 8 1 8 11 8 24 30 —	 4-8 ...	 4-8 ...	 5'3 ...	 1'5 ...	In minute break.
110	2	M	5 57 20	...	...	0'2	0'2	
111	3	M	2 3 0	30-40	...	0'1	...	Long regular waves.
112	3	M	9 10 16	...	...	0'8	...	
113	3	M	14 58 54	...	...	1'1	...	
114	3	M	16 48 47	...	...	0'6	...	
115	4	P PP S SS M F	7 33 31 35 27 41 4 44 53 53 10 8 56 —	 10-14 ...	 10-14 ...	 0'6 ...	 0'8 ...	
116	4	P? S SS M F	21 10 46 18 7 22 0 34 7 22 41 —	 11-15 ...	 11-15 ...	 1'0 ...	 1'5 ...	
117	5	M	3 27 0	18-20	18-20	0'1	0'1	
118	6	M	19 4 26	6-8	6-8	0'2	0'2	
119	7	P? M	22 42 24 23 1 6	... 10-14	... 10-14	... 0'4	... 0'5	
120	10	P PP S M _E M _N F	19 6 3 7 21 11 19 19 40 21 16 55 —	 10-14 ...	 12-14	 0'4 ...	 0'5 ...	
121	11	P? S? M	13 42 19 42 30 42 37	 2-4	 2-5	 0'7	 0'2	Small local shock, unfelt.
122	11	P PP S SS L M F	14 4 4 6 2 11 42 15 30 21 10 24 0 15 35 —	 10-14 ...	 10-14 ...	 0'6 ...	 0'7 ...	
123	11	P PP S SS L M F	21 4 34 4 49 8 3 8 26 10 10 12 17 39 —	 6-8 ...	... ... ... ... ... ... ...	... ... ... ... ... 1'8 ...	 2'3 ...	
124	13	P S L M	43 40 44 9 44 26 44 34	 3-5	 3-5	 1'2	 0'3	" " " "

ROYAL OBSERVATORY, HONG KONG. EARTHQUAKES RECORDED IN MAY, 1940.
(Milne-Shaw Instruments.)—Continued.



No. 1940.	Date.	Phase.	Greenwich Time (0=Midn.)	Recorded Period of Waves.		A_N	A_E	Remarks.
				N-S	E-W			
			<i>h.m.s.</i>	<i>s.</i>	<i>s.</i>	<i>mm.</i>	<i>mm.</i>	
125	14	<i>M</i>	16 10 24	...	...	0.2	0.1	
126	17	<i>M</i>	3 34 30	...	...	0.1	0.1	
127	19	<i>P?</i>	4 57 8	...	...	...	...	
		<i>PP?</i>	5 2 5	...	...	...	...	
		<i>S?</i>	11 20	...	...	...	...	
		<i>M</i>	45 16	13-18	13-17	1.5	0.8	
		<i>F</i>	7 40 —	...	...	...	...	
128	19	<i>P</i>	15 24 37	...	...	...	...	
		<i>?</i>	27 21	...	...	...	...	
		<i>S?</i>	28 50	...	...	...	...	
		<i>SS?</i>	29 56	...	...	...	...	
		<i>M</i>	33 20	7-10	7-10	0.5	0.4	
		<i>F</i>	16 25 —	...	...	...	...	
129	19	<i>M</i>	19 10 15	...	...	0.2	0.1	
130	20	<i>M</i>	11 30 20	...	...	0.2	0.2	
131	21	<i>P?</i>	7 27 10	...	...	...	...	Small local shock, unfelt.
		<i>S?</i>	27 20	...	...	...	...	
		<i>?</i>	27 35	...	...	...	...	
		<i>L</i>	27 46	...	...	...	...	
		<i>M</i>	27 56	3-5	...	1.3	0.3	
		<i>F</i>	39 —	..	...	...	...	
132	21	<i>M</i>	19 10 6	...	...	0.4	0.4	
133	23	<i>M</i>	6 39 30	...	...	0.2	0.2	
134	24	<i>P</i>	16 54 6	...	...	...	...	
		<i>PP?</i>	58 44	...	...	...	...	
		<i>S?</i>	17 6 10	...	...	...	...	
		<i>SS?</i>	14 14	...	...	...	...	
		<i>M₁</i>	27 17	...	...	9.5	8.3	
		<i>M₂</i>	18 15 0	14-16	14-20	12.0	8.3	
		<i>F</i>	21 45 —	...	...	...	...	
135	24	<i>M₁</i>	23 24 0	...	...	0.2	0.2	
		<i>M₂</i>	45 45	14-20	15-20	0.9	0.4	
136	26	<i>M</i>	4 15 7	...	...	0.2	0.2	
137	28	<i>P</i>	9 47 34	...	...	0.3 _s	0.2 _E	
		<i>PP</i>	48 50	...	...	...	...	
		<i>PeP</i>	50 16	...	...	...	...	
		<i>S</i>	53 3	...	...	...	...	
		<i>?</i>	53 24	...	...	...	...	May be S.
		<i>SS</i>	55 20	...	...	...	...	
		<i>ScS</i>	57 55	...	...	...	...	
		<i>M_N</i>	10 1 18	12-16	...	2.5	...	E-W no definite maximum.
		<i>F</i>	11 24 —	...	...	...	...	
138	28	<i>M</i>	14 35 45	...	...	0.1	0.1	
139	29	<i>M</i>	1 22 0	...	...	0.2	0.1	
140	29	<i>P?</i>	2 19 31	...	...	...	...	
		<i>S?</i>	24 45	...	...	...	...	
		<i>M</i>	43 17	11-15	11-15	1.0	...	
		<i>F</i>	3 29 —	...	...	...	...	
141	31	<i>M</i>	0 10 0	...	...	0.1	0.1	
142	31	<i>M</i>	22 44 30	...	...	0.1	0.1	

T :—N-S Component=11.9°; E-W Component =12.0°.

Damping Ratio :—N-S Component=17:1; E-W Component=16:1.

Normal magnification=150 for both pendulums.

Initial movements are of the pendulums.

B. D. EVANS,—Assistant Director.

ROYAL OBSERVATORY, HONG KONG.

Latitude..... $22^{\circ} 18' 13.2''$ North.

Longitude... $114^{\circ} 10' 18.7''$ East.



MONTHLY SEISMOLOGICAL BULLETIN

JUNE & JULY,

1940

PREPARED UNDER THE DIRECTION OF

C. W. JEFFRIES, F.R.A.S.

DIRECTOR.

NOTATION.

P = Time of arrival of longitudinal waves.

PP = „ „ „ „ once reflected.

S = „ „ of transverse „

SKS = „ „ of transverse-longitudinal waves through core.

SS = „ „ of transverse waves once reflected.

L = „ „ of long, or surface „

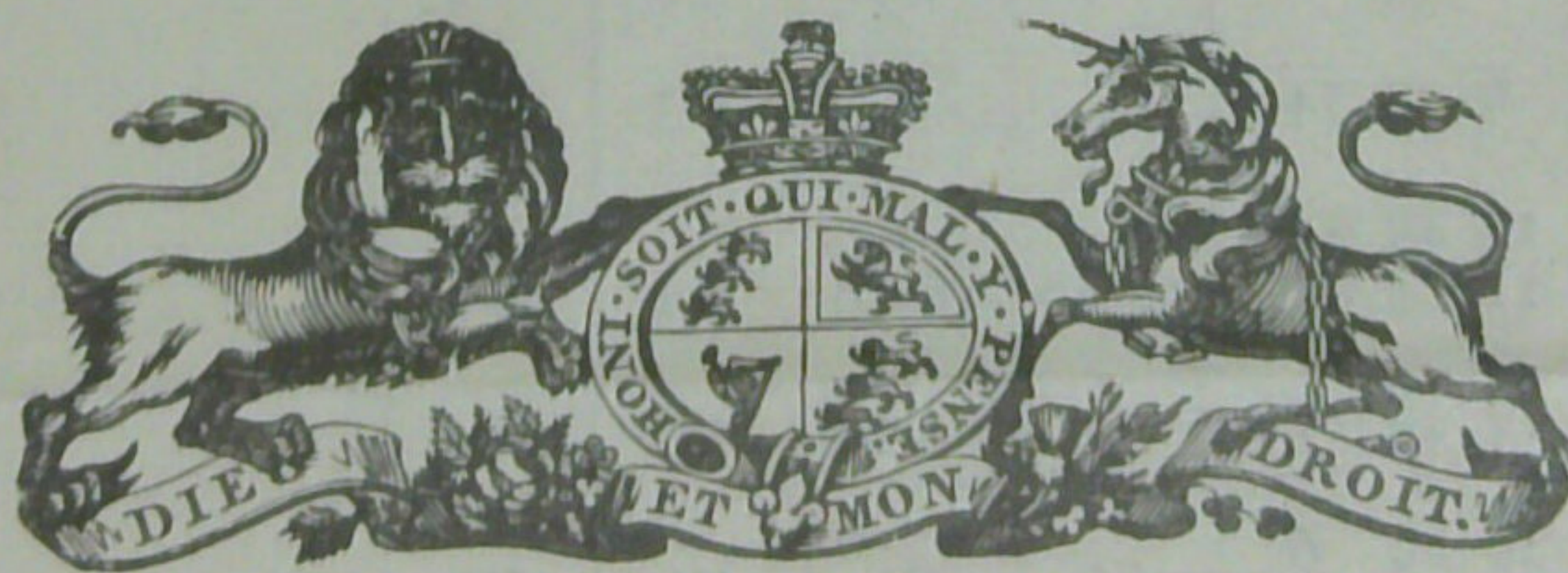
M = „ „ of maximum of long waves.

F = „ of end of record.

A_N = Amplitude (half range) of N.-S. movement.

A_E = „ „ „ E.-W. „

T = Period of undamped pendulum (complete swing).



HONG KONG.

PRINTED BY NORONHA & CO., LD.

GOVERNMENT PRINTERS.

1940.

ROYAL OBSERVATORY, HONG KONG. EARTHQUAKES RECORDED IN JUNE & JULY, 1940.
(Milne-Shaw Instruments.)



No. 1940.	Date.	Phase	Greenwich Time (0 = Midn.)	Recorded Period of Waves		A_N	A_E	Remarks.
				N-S	E-W			
			<i>h.m.s.</i>	<i>s.</i>	<i>s.</i>	<i>mm.</i>	<i>mm.</i>	
143	June 2	<i>M</i>	12 11 20	18-20	18-20	0.1	0.1	
144	2	<i>P?</i> <i>PP?</i> <i>S?</i> <i>?</i> <i>L?</i> <i>M_N</i> <i>F</i>	12 15 10 13 49 19 41 20 6 22 10 23 10 58 —	 8-12 ...	... ... ... ... ... ... ...	.. .. .. .. .. 0.4 ...	 0.6	Masked by movements of 143. Maximum movement E-W component.
145	3	<i>M</i>	19 13 54	12-16	12-16	0.1	0.2	
146	5	<i>P?</i> <i>S?</i> <i>SS?</i> <i>?</i> <i>L?</i> <i>M</i> <i>F</i>	11 17 50 23 0 28 8 31 37 40 0 45 50 13 13 —	 12-16 ...	 12-16 ...	 2.9 ...	 5.1 ...	May be two shocks superimposed. In minute break.
147	5	<i>P</i> <i>?</i> <i>?</i> <i>?</i> <i>S</i> <i>?</i> <i>L</i> <i>M_N</i> <i>M_E</i> <i>F</i>	14 49 18 49 41 49 55 50 32 50 55 51 8 51 24 51 56 52 40 15 33 —	 7-10	 7-10 ...	 3.4 .. 2.9 ...	.. .. .. .. .. .. .. .. .. ...	
148	7	<i>P?</i> <i>S?</i> <i>M</i> <i>F</i>	7 26 50 33 4 37 43 8 3 —	... ... ... ...	... ... ... ...	.. .. 0.3 ...	 0.3 ...	
149	12	<i>M</i>	5 59 40	...	...	0.2	...	12d E-W component no register.
150	12	<i>M</i>	14 15 25	10-14	...	1.0	...	
151	12	<i>M</i>	18 54 42	...	...	0.1	...	
152	14	<i>M</i>	16 10 57	3-5	4-5	1.5	0.3	
153	17	<i>M</i>	6 9 54	...	...	0.3	0.2	
154	17	<i>S?</i> <i>M</i>	10 49 42 11 9 0	... 16-20	... 16-19	.. 0.2	.. 0.2	
155	17	<i>M</i>	14 46 15	...	...	0.1	0.1	
156	17	<i>P?</i> <i>S?</i> <i>M_N</i> <i>M_E</i> <i>F</i>	20 20 6 21 10 21 14 21 20 52 —	 5-7	 5-7 ...	 12.0	 3.0 ...	
157	18	<i>P</i> <i>?</i> <i>S</i> <i>M</i> <i>F</i>	13 56 19 57 46 58 17 59 56 15 4 —	 10-14 ...	 10-14 ...	0.2 _N 3.6 ...	0.1 _W 2.7 ...	
158	18	<i>P?</i> <i>S?</i> <i>M</i> <i>F</i>	18 48 24 56 0 19 14 50 20 5 —	 10-14 ...	 10-14 ...	 0.4 ...	 0.3 ...	In minute break.

ROYAL OBSERVATORY, HONG KONG. EARTHQUAKES RECORDED IN JUNE & JULY, 1940.
(Milne-Shaw Instruments.)—Continued.



No. 1940.	Date.	Phase.	Greenwich Time (0=Midn.)	Recorded Period of Waves.		A_N	A_E	Remarks.
				N-S	E-W			
			<i>h.m.s.</i>	<i>s.</i>	<i>s.</i>	<i>mm.</i>	<i>mm.</i>	
159	22	<i>P</i>	11 41 42	...	...	1'4 _N	0'8 _W	May be S.
		<i>PP</i>	42 9	...	...	...	...	
		?	44 27	...	...	...	...	
		<i>S</i>	45 43	...	...	...	...	
		<i>M_N</i>	46 15	...	...	16'1	...	
		<i>M_E</i>	46 27	...	...	...	10'5	
		<i>M₂</i>	48 30	10-14	10-14	6'9	6'8	
		<i>F</i>	13 34 —	...	...	...	...	
160	26	<i>P</i>	8 6 5	...	...	0'1 _S	0'1 _E	" "
		<i>PP</i>	7 4	...	...	...	...	
		<i>S</i>	10 59	...	...	...	...	
		?	11 18	...	...	...	...	
		<i>M_E</i>	15 41	...	9-11	...	1'1	
		<i>M_N</i>	18 0	9-11	...	0'8	...	
		<i>F</i>	56 —	...	...	...	...	
161	29	<i>M</i>	10 28 12	...	...	0'2	0'3	
162	July 2	<i>M</i>	0 55 37	...	...	0'2	0'3	Masked by microseisms.
163	2	<i>M</i>	18 49 32	...	...	0'1	0'2	
164	2	<i>P?</i>	20 7 44	...	...	...	...	
		<i>S?</i>	12 5	...	...	...	...	
		<i>SS?</i>	13 23	...	...	...	...	
		<i>M</i>	17 16	7-10	7-10	0'4	0'4	
		<i>F</i>	29 —	...	...	...	...	
165	4	<i>P?</i>	6 12 7	...	...	...	...	
		<i>S?</i>	16 3	...	...	...	...	" " "
		<i>M</i>	21 20	...	...	0'3	0'3	
		<i>F</i>	34 —	...	...	...	...	
166	5	<i>M</i>	21 19 16	...	...	0'3	0'3	
167	10	<i>P</i>	5 54 45	...	...	0'6 _S	0'2 _W	
		<i>S</i>	57 28	...	...	...	...	
		?	57 39	...	...	...	...	
		<i>L</i>	58 42	...	...	...	...	
		<i>M₁</i>	39 10	...	...	2'9	2'3	May be two shocks superimposed.
		<i>M₂</i>	6 3 20	7-9	7-9	3'3	4'0	
		<i>F</i>	7 40 —	...	...	...	...	

T :—N-S Component=12'0" ; E-W Component =12'0".

Damping Ratio :—N-S Component=17:1 ; E-W Component=20:1.

Normal magnification=150 for both pendulums.

Initial movements are of the pendulums.

N.B. Registration temporarily discontinued after July 12.

B. D. EVANS,—Assistant Director.

This is the last issue of the Seismological
Bulletin until further notice, registration
having been temporarily suspended.