A. M. D. G.

Riverview College Observatory

$\phi = 33° 49' 49''$ S.
$\lambda = 10^{h.} 4^{m.} 38^{s.}$ E.
$h = 41{\cdot}9$ metres.

Seismological Bulletins--Notation Employed, Instruments, Reductions, &c.

NOTATION.—That of the **Göttingen Geophysical Institute** (slightly modified).

The following Abbreviations are employed :—

A.—Character of the Earthquake.

I.=perceptible; II.=striking; III.=very striking.
d (=*terrae motus domesticus*) = local.
v (= ,, ,, *vicinus*) = near (less than 1000 km.)
r (= ,, ,, *remotus*) = distant (1000 to 5000 km.)
u (= ,, ,, *ultimus*) = very distant (over 5000 km.)

B.—Phases.

P (=*undae primae*) = 1st prelim. tremors (commencement).
S (= ,, *secundae*) = 2nd ,, ,, (,,).
L (= ,, *longae*) = "principal phase," long waves, Rayleigh waves (commencement).
M (= ,, *maximae*) = maximum amplitude of L waves.
C (=*coda*) = a prominent wave among the "after-tremors" (Nachläufer).
F (=*finis*) = last perceptible movement (non-microseismic).
PR_1, PR_2, ····· SR_1, SR_2, ····· = 1st, 2nd ····· reflected waves of P and S.
PS = so-called "Wechselwellen"—*i.e.*, waves whose longitudinal character has been altered by reflection to transversal.
M_{rI} = L waves which have traversed the major arc.
M_{rII} = ,, ,, ,, ,, ,, ,, minor ,, + 2πR.

C.—Wave-Elements, Units, &c.

T = complete Period of earth-particle (in seconds).
A = Amplitude ,, ,, ,, measured from median position, in microns, μ; ($1\mu = \frac{1}{1000}$ m.m.).
Δg = maximum acceleration of earth-particle (in milligals): 1 milligal = $\frac{1}{1000}$ Gal (C. G. S. unit of acceleration).
= 10^{-3} cm/sec.^{2} (or approximately, $g \times 10^{-6}$, since 1 gal = $\frac{g}{980}$ nearly).

i (=*impetus*) = abrupt commencement, clearly defined.
e (=*emersio*) = gradual ,, not clearly defined.
E′ =*stylus-displacement* for 1″ of tilt (inclination), in m.m.
E, N, Z = EW, NS, and Vertical components of earth-oscillation, respectively.
Ep. = approximate distance from Epicentre (or epicentral area), in km.
E. Q. =earthquake.

N.B.—Phase-symbols, numerical values, &c., in brackets ( ) are to be considered as *probable* only.

[See other side.]

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

No. 1. MARCH, 1909.

Seismological Bulletin.

$\phi = 33°\,49'\,49''$ S.
$\lambda = 10^{h}.\ 4^{m}.\ 38^{s}.$ E.G.

(For further details, see inside of cover.)

No.	Date.	Character.	Phase.	Time. (Greenwich Midnight = 0)	Period. (T)	A (Earth-particle.)			Δg			REMARKS.
						E	N	Z	E	N	Z	
	Mar.			h. m. s.	s.	μ	μ	μ	milligal			m.
1	(17 / 18)	II r	P	23 5	2		2			2		N.B.—Phase-times only correct to 0·5 (chronograph not in action till March 26.)
			i S	11	7	11	8		0·9	0·6		
			e L	19								
			M	20	18	233	196		2·9	2·4		Ep. = 4200 km.
			F	0 20								
2	„ 22	I r	i P	22 9·0	4							
				9·2	4		30½			7·6		See note, supra.
			i L	12	12		23½			0·7		Ep. = 1000 km.
			F	23 30							1·1	
3	„ 24	I r	P	18 6								See note, supra.
			e L	12	7							
			MN	14	8		1·9			0·1		
			ME	15	8	1·9			0·1			
			F	40								
4	„ 27	I r	e P	13 21·5								Ep. = 1700 km.
			(PR)	22 18	11							
			L	26 36								
			M	27·7	18	23	28		0·3	0·3		
			F	50								

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

No. 2. APRIL, 1909.

Seismological Bulletin.

$\phi = 33°\,49'\,49''$ S.
$\lambda = 10^{h}.\ 4^{m}.\ 38^{s}.$ E.G.

(For further details, see inside of cover.)

No.	Date.	Character.	Phase.	Time. (Greenwich Midnight = 0)	Period. (T)	A (Earth-particle.)			Δg			REMARKS.
						E	N	Z	E	N	Z	
				h. m. s.	s.	μ	μ	μ	milligal			
5	April10	II_r	P	5 34 23	5	2	1		0·3	0·2		Ep. = 4400 km.
			PR_1	35 52	5	9	7		1·4	1·1		
			(S)	40·5	(11)							
			i L	43·0								
			MN	43 16	13		72½			1·1		
			ME_1	48 40	13	38			0·9			
			ME_2	54 44	15	64			1·1			
			F	7 5								
6	„ 12	I_r	P	1 9·6	5	2½	3½		0·4	0·6		Ep. = 1300 km (?).
			L	13·7	7		6½			0·5		
			M_1	14·7	7	17	14		1·4	1·1		
			M_2	19·4	10		46			1·8		
			F	2 50								
7	„ 25	I_r	P	22 6 37	3	3½	1½		1·6	0·7		
			(L)	15·7	18							
			M	16·5	18	50	28		0·6	0·3		
			F	35								
8	„ „	I	P	22 50·5	2	2	2		1·8	2·1		Ep. = 4400 km. Probably same origin as No. 7.
			S	53 37	10	18	9		0·7	0·4		
			e L	23 0·0	20	74			0·7			
			M	4·5	15	120	57		2·1	1·0		
			F	30								
9	„ 27	III_r	e P	12 49·2	4½							Ep. = 3500 km. (Probably N.W. New Guinea.)
			S	54 16	5½	6½						Felt by Mr. A. E. C. Lyall at Mapia, St. David's Islands, (N.W. New Guinea).
			e L	13 0·9	11							
			M_1	1·9	9	145	170		7·2	8·4		N.B.—At 13h. 3·5m., displacement of zero-line {29m. m. on EW seismogram; 8·5 „ „ NS „}
			MN_2	3 30	9		200			9·9		
			ME_2	5 43	8	128			8·0			corresponding to tilt-components of {1·7″ eastwards; 0·6″ southwards} respectively.
			C	35	10							
			F	14 50								[E′(EW) = 17·2 m. m., and E′(NS) = 13·0 m. m.]
10	„ (29/30)	I_r	e P	23 3·3								Ep. = 4300 km (?).
			e (L)	16·4								
			M	19 19	18	22	31		0·2	0·4		
			F	0 20								

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

No. 3. MAY, 1909.

Seismological Bulletin.

$\phi = 33°49'49''$ S.
$\lambda = 10^{h}.4^{m}.38^{s}$ E.G.

(For further details, see inside of cover.)

No.	Date.	Character.	Phase.	Time. (Greenwich Midnight = 0)	Period. (T)	A (Earth-particle.) E	A N	A Z	Δg E	Δg N	Δg Z	REMARKS.
				h. m. s.	s.	μ	μ	μ	milligal			
11	May 2	II r	P	7 1 42	4½							Ep. = 2500 km.
			(S)	5 45	7							
				5 53	7	50	31		4	2·5		
			e L	7·5	16							
			M	9 23	12	18	33		0·5	0·9		
			F	8 20								
12	„ „	I r	P	18 16 5	3							Ep. = 2500 km.
			S	20 9	6							Probably a second disturbance from same origin as
				20 15	6	9	11		1·1	1·3		No. 11: the phase-features are strikingly similar.
			e L	21·9	14							
			ME	22 39	16	27			0·4			
			MN	26 13	11		12			0·4		
			CE	34 13	10	7½			0·3			
			CN	37 49	9		5½			0·3		
			F	19 40								
13	„ 4	I r	e	14 50·8	4							
			(e L)	59 6								
			M	15 0 22	10	1½	2½		0·06	0·9		
			F	15 20								
14	„ 11	I r	P	3 35 53								
			(e L)	40·2								
			M	42 51	2½		3			1·8		
			F	4 0								
15	„ „	I r	e (P)	13 11 13								Ep. = 2000 km.
			e L	17·8								
			ME	21 6	10	3½			0·14			
			MN	22 33	10		10			0·4		
			F	55								
16	„ 12	I r	e	1 2·8								
			M	15 5	14		4½			0·9		
			F	28								
17	„ 13	I ?	e	18 29·2								
			ME	29 25	16	7½			0·1			
			MN	34 6	11		1½			0·5		
			F	45								
18	„ 14	I r	P	0 12·1								Ep. = 5500 km.
			S	19 54	6	2½			0·28			
			(e L)	24 22								
			M	25 28	12	4			0·1			
			F	50								
19	„ 24	I r	e	7 17·5								
			ME	19 20	9	1¼			0·06			
			MN	20 39	9		1½			0·07		
			F	35								

(Continued on next sheet.)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

No. 3. MAY, 1909 (continued).

Seismological Bulletin.

$\phi = 33°\,49'\,49''$ S.
$\lambda = 10^{h}.\ 4^{m}.\ 38^{s}.$ E.G.

(For further details, see inside of cover.)

No.	Date.	Character.	Phase.	Time. (Greenwich Midnight = 0)	Period. (T)	A (Earth-particle.)			Δ_g			REMARKS.
						E	N	Z	E	N	Z	
				h. m. s.	s.	μ	μ	μ	milligal			
20	May 25	I_r	e P	4 55·6	4							Ep. = 3400 km.
			(S)	5 0 46	7							
			e L	5·3								
			ME_1	7 6	16	112			1·7			
			MN_1	10 2	12		64			1·8		
			MZ	10 24	15			80			1·4	
			ME_2	11 6	11	46			1·5			
			MN_2	12 10	10		43½			1·7		
			F	6 20								
21	„ 26	II_r	e P	2 9·2	2½							Ep. = 5600 km (?).
			(S)	16 27	10		17			0·68		
			e L	21·0								
			MN_1	23 33	14		131			2·67		
			MZ	24 28	13			73			1·7	
			MN_2	25 13	13		111			2·63		
			F	4 0								
22	„ 30	II_r	e P	21 7·8	2½	½	½		0·3	0·27		Ep. = 3400 km.
				8 10	5	2½	2		0·4	0·3		
			(PR_1)	9 47	5	4	5½		0·64	0·86		
			S	13 1	8	16	8½		0·99	0·52		
			e L	16·6								
			M	19 32	15	402	456		7·16	8·11		
			F	23 0								

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

No. 4. JUNE, 1909.

Seismological Bulletin.

$\phi = 33°\,49'\,49''$ S.
$\lambda = 10^{h.}\,4^{m.}\,38^{s.}$ E.G.

(For further details, see inside of cover.)

No.	Date.	Character.	Phase.	Time. (Greenwich Midnight = 0)	Period. (T)	A (Earth-particle.) E	A N	A Z	Δg E	Δg N	Δg Z	REMARKS.
				h. m. s.	s.	μ	μ	μ	milligal			
23	June 3	III r	i P	18 50 20	5	3	1		0·48	0·16		Ep. = 6000 km.
			(SR_1)	57 58	8	6	5¼		0 38	0·33		The "Sumatra" earthquake, but epicentre probably submarine, at a considerable distance (SW) from the island.
			e L	19 2·2								
			MN	15 14	11		92			3·04		
			ME	16 0	17	322			4·46			
			MZ	16 16	18			155			1·9	
			F	22 5								
24	„ 7	I r	i P	15 52 26	4							
			e L	55 4								
			M	55 46	7							
			F	16 0								
25	„ 8	III u	e P	6 5·7	5	1	1		0·02	0·16		Ep. = 12,000 km.
			(PR_1)	11 27	9		1½			0·07		Severe E.Q. in Copiapo (Chile).
			(S)	20 27	12	5	4¼		0·14	0·11		
			(e L)	37·0								
			M	43 47	17	19	9½		0·26	0·13		MZ just barely perceptible.
			F	8 25								
26	„ 12	II r	i P	20 25 55	7	9	11		0·75	0·88		Ep. = 1400 km., and almost certainly SSE, in Tasman Sea.
				26 13	7		21			1·75		Microseismic waves unusually large all day (T = 4s., A = 3·0 μ to 4·5 μ), due to a cyclonic depression to the South-east, the centre of which was situated, at time of E.Q., about 800 km. WSW of the Bluff (New Zealand).
			L	30 13	8	130	40		8·11	2·5		
			MN_1	30 23	7		93			7·64		
			ME	33 29	8	229			14·34			
			MN_2	33 33	8		135			8·4		(cf. No. 81.)
			MZ	34 45	8			70			4·4	
			MN_3	36 21	8		148			9·2		
			MN_4	37 10	8		156			9·7		
			C	21 11	10		20			0·8		
			F	55								
27	„ 14	I r	e P	7 19·9	7	½			0·03			Ep. = 1300 km.
			e L	23·9	10							
			MN	24 9	10		5½			0·2		
			ME	25 38	10	9½			0·4			
			F	45								
28	„ 22	I ?	e	0 52·0	3							
			M	56 13	4	1	¾		0·2	0·2		
			F	1 0								
29	„ 26	I r	i P (z)	?	1½			6			1·1	
			e	9 29·0	5							
			MN	37 5	8		3½			0·2		
			ME	38 52	7	1¼			0·1			
			MZ	?	15			86			1·5	
			F	55								

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

No. 4. JUNE, 1909. (continued.)

Seismological Bulletin.

$\phi = 33°49'49''$ S.
$\lambda = 10^h.4^m.38^s$. E.G.

(For further details, see inside of cover.)

No.	Date.	Character.	Phase.	Time. (Greenwich Midnight = 0)	Period. (T)	A (Earth-particle.)			Δ_g			REMARKS.
						E	N	Z	E	N	Z	
				h. m. s.	s.	μ	μ	μ	milligal			
30	June 27	II_r	i P	7 20 21	4							Ep. = 1400 km.
				20 35	4	13	12		3·4	3·05		
			L	24 33	8							
			M	24 45	8	87	104		5·5	6·5		
				30 45	14	57	92		1·2	1·9		
			C	37·5	9		13			0·7		
			F	9 5								
31	„ 28	I_r	e P	15 20·0	3	2	¾		0·8	0·3		Ep. = 2700 km (?).
			(S)	24 24	6	1¾			0·2			
			e L	26·5	15							
			MN	27 38	12		9½			0·3		
			ME	28 58	12	5			0·1			
			F	50								
32	„ 30	I_r	e	1 47·1	6							
			M	58 33	8		2			0·1		
			F	2 10								
33	„ „	I_v	e	13 37·0								
			M	40 13	12		2			0·05		
			F	50								

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

No. 5. JULY, 1909.

Seismological Bulletin.

$\phi = 33°49'49''$ S.
$\lambda = 10^{h}.4^{m}.38^{s}$ E.G.

(For further details, see inside of cover.)

No.	Date.	Character.	Phase.	Time. (Greenwich Midnight = 0)	Period. (T)	A (Earth particle.)			Δg			REMARKS.
						E	N	Z	E	N	Z	
				h. m. s.	s.	μ	μ	μ	milligal			
34	July 1	I_r	e P	12 59 0	3							Ep. = 2500 km.
			(S)	13 3·0	4							
			e L	4·9	15							
			M	6·8	12	2	5¼		0·05	0·1		
			F	20								
35	„ „	I_v	e	17 17·2								
			M	24·5	9		1½			0·07		
			F	35								
36	„ 7	III_u	i (P)	21 48·8								Ep. = 11,500 km.
			e	54·9	3							Destructive E.Q. in Kashmir.
			i S	22 1·7	8	3¾	2½		0·2	0·16		
			(PS)	2·6	8		2½			0·16		
			e L	9·7	12							
			M	10·2	12	13½	16		0·37	0·44		
			C	39·8	17	15			0·2			
			F	23 25								
37	„ 30	III_u	i P	11 17 27	8	5¼			0·3			Ep. = 13,000 km.
			(PR_1)	21 15	12	9			0·2			Destructive E.Q. in Mexico (Chilpanzingo).
			i	27 55	14	14			0·3			
			S	30 51	12	10			0·3			
			(SR_1)	35 51	18	29			0·35			
			(e L)	42 37	18	26			0·32			
				44·8	26	27			0·16			
				46·2	20	36			0·36			
			MZ	12 3 30	18			1¼			0·1	
			ME	4 5	14	24			0·5			
			MN	7 53	16		16½			0·3		
			C	16·6	14	14			0·3			
			F	13 45								

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

No. 6. AUGUST, 1909.

Seismological Bulletin.

$\phi = 33°49'49''$ S.
$\lambda = 10^h.\ 4^m.\ 38^s.$ E.G.

(For further details, see inside of cover.)

No.	Date.	Character.	Phase.	Time. (Greenwich Midnight = 0)	Period. (T)	A (Earth-particle.)			Δ_g			REMARKS.
						E	N	Z	E	N	Z	
				h. m. s.	s.	μ	μ	μ	milligal			
38	Aug. 4	I v	e	20 30·4								
			ME	32 10	7	3			0·3			
			MN	33 6	7		2			0·1		
			F	50								
39	„ 7	I r	e P	16 56·2	5	$\frac{3}{4}$			0·13			Ep. = 3300 km.
			(S)	17 1 16	7	3			0·3			
			e L	6·3	14							
			MN	7 29	11		$11\frac{1}{2}$			0·4		
			ME	10 12	15	19			0·3			
			F	18 20								
40	„ 9	I r	e (P)	11 44·0								
			e L	47·3	16							
			M	53 23	10	3			0·1			
			F	12 10								
41	„ 10	I ?	(e)	1 54·8								
			M	58 3	10	2			0·08			
			F	2 10								
42	„ „	I r	(e)	6 58·6								
			M	7 4 29	15	5			0·08			
			F	10								
43	„ „	I r	e	14 41·5	6	$1\frac{1}{4}$			0·16			
			M	47 59	9	$3\frac{1}{2}$			0·17			
			F	15 5								
44	„ 18	II r	i P	0 44 11	$3\frac{1}{2}$	41	16		13·5	5·1		Ep. = 2500 km.
				44 46	6		20			2 2		(cf. No. 11, May 2.)
			(S)	47 59	8	58			3·6			The first 5 min. lost on Z (changing paper). On Z, short waves (6s.) very prominent from 0h. 48m. to 0h. 51m., superimposed on long waves.
				48 26	8	77			4·8			
			e L	50·2	16							
				50·2	(18)			77			0·9	
			MN	52 18	11		76			2·5		
			ME	55 44	10	31			1·2			
			F	2 5								
45	„ 26	I r	e P	20 26·2	4							Ep. = 4200 km.
			(S)	32 13	7		2			0·2		
			e L	38 7	?							
			M	41 1	(12)		$5\frac{1}{4}$	63		0·1	1·7	
			F	21 15								

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

No. 7. SEPTEMBER, 1909.

Seismological Bulletin.

$\phi = 33°49'49''$ S.
$\lambda = 10^{h}.\ 4^{m}.\ 38^{s}.$ E.G.

(For further details, see inside of cover.)

No.	Date.	Character.	Phase.	Time. (Greenwich Midnight = 0)	Period. (T)	A (Earth-particle.)			Δg			REMARKS.
						E	N	Z	E	N	Z	
				h. m. s.	s.	μ	μ	μ	milligal			
46	Sept. 6	I_r	P	14 38 53	4							
			S	43 54	7	3			0·2			Epicentre = 3200 km.
			e L	45·9	11							
			MN	47 53	(8)		(7)			(0·4)		
			ME	49 59	11	13			0·4			
			F	15 20								
47	„ (8 9)	II_r	i P	23 26 34	5		1½			0·2		Ep. = 4000 km.
			PR_1	28 0	5		2			0·3		Felt at Mapia, St. David's Islands (N.W. New Guinea) by Mr. A. E. C. Lyall.
			S	32 22	7		3			0·2		
			e L	37·9	(19)							(See No. 9.)
			M	43·3	12	58	104	19	1·6	2·8	1·1	
			F	0 50								
48	„ 11	I_r	i P	11 1 40	3·5		4			1·2		
			(S)	10 22	6		2½			0·3		
			e L	14·7	18	24	27		0·3	0·3		
			MN	23 44	11		19			0·6		
			ME	25 58	11	10			0·3			
			F	12 20								
49	„ 16	I_r	i P	19 5 55	4	4½	3½		1·1	0·9		
			i(PR_1)	6 22	4	4	5½		1·0	1·3		
			e (S)	11·6	5·5		1			0·1		
			i L	18·9	(18)							
			MN	22 0	9		4½			0·2		
			ME	22 50	14	7			0·1			
			F	20 10								
50	„ 21	I_u	e P	18 59·4								
			e (S)	19 8·6	7		1			0·1		
			(e L)	15·4	20							
			M	22·0	12	4	7½		0·1	0·2		
			F	50								
51	„ 25	I_v	e	11 32·5								
			M	34·0	9	2½	2½		0·1	0·1		
			F	44								

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

No. 8. OCTOBER, 1909.

Seismological Bulletin.

$\phi = 33°49'49''$ S.
$\lambda = 10^h.4^m.38^s$ E.G.

(For further details, see inside of cover.)

No.	Date.	Character.	Phase.	Time. (Greenwich Midnight = 0)	Period. (T)	A (Earth-particle.) E	A N	A Z	Δg E	Δg N	Δg Z	REMARKS.
				h. m. s.	s.	μ	μ	μ	milligal			
52	Oct. 1	I_v	e P	4 29 3	5							Ep. = 600 km.
				30 54	5		6			1·0		
			e L	31·2	(10)							
			MZ	31 32	6			6			0·7	
			MN	33 50	10		7			0·3		
			ME	34 20	8	$3\frac{1}{2}$			0·2			
			F	55								
53	" "	I_v	e P	11 18·3								Ep. = 980 km.
			e L	21·2	12							
			M	21·8	10	$1\frac{1}{2}$	4		0·06	0·16		
			F	40								
54	" "	I_r	e P	12 45·2								Ep. = 1300 km.
			e L	49·2								
			M	49 35	12		$4\frac{1}{2}$			0·1		
			F	13 5								
55	" 3	$I_?$	(e)	1 30·5								A few long waves.
			F	45								
56	" 3	I_r	(e)	2 10·3								
			e L	14·1	15							
			M	16 51	12	7			0·2			
			F	40								
57	" 3	I_v	(e)	22 36·4								
			MN	39 48	12		$5\frac{1}{4}$			0·1		
			ME	40 7	12	3			0·08			
			F	23 0								
58	" 4	II_r	e P	13 45·3								Ep. = 1400 km.
			(PR_1)	46 13	12		13			0·3		
			e L	49·6	(20)							
			ME_1	51 49	15	$6\frac{1}{2}$			0·1			
			MN_1	52 0	15		34			0·6		
			ME_2	54 9	12	$6\frac{1}{4}$			0·2			
			MN_2	57 23	10		11			0·4		
			MZ	14 1 30	10			3			0·1	
			F	35								
59	" "	I_v	e	16 12·0								
			M	16·3	7	1	$2\frac{1}{4}$		0·07	0·2		
			F	25								
60	" 21	II_v	(e P)	21 54·3								Ep. = about ~~500~~ 250 km.
			i (L)	55 8								The nearest E.Q. yet recorded here.
			M	56·3	11	53	29		1·7	0·9		
			F	22 20								
61	" 23	I_v	e	17 40·6								
			L	41 50	14							
			M	42·9	11	$2\frac{3}{4}$			0·09			
			F	50								

(Continued on next sheet.)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

No. 8. OCTOBER, 1909 (continued).

Seismological Bulletin.

$\phi = 33°49'49''$ S.
$\lambda = 10^h.4^m.38^s$ E.G.

(For further details, see inside of cover.)

No.	Date.	Character.	Phase.	Time. (Greenwich Midnight = 0)	Period. (T)	A (Earth-particle.)			Δg			REMARKS.
						E	N	Z	E	N	Z	
				h. m. s.	s.	μ	μ	μ	milligal			
62	Oct. 23	I_r	i P	21 15 50	{1 5	3	1½		0·5	0·2		Ep. = 1300 km.
			(PR_l)	16 32	5½	3			0·4			
			e L	19·8								
			ME	20 52	5	14			2·2			
			MN	21 5	7		14			1·2		
			F	22 20								
63	„ 30	II_r	i P	10 23 47	4	2	1½		0·4	0·3		Ep. = 3500 km.
			PR_l	25 6	4	3	3½		0·8	0·9		Shortly after S, well-marked long-period waves (Angenheister), T = 25 — 30s.
			i S	28 59								
			i(PS)	29 4	6	4	14		0·5	1·6		
			ME	35 11	7	49			3·9			
			MN	36 23	4		36			9·0		
			F	11 35								
64	„ 31	I_u	(e P)	10 48·4								E.P. = 9000 km (?)
			(PR_l)	52 18	18	5			0·06			
			(S)	58 36	24	13			0·1			
			e L	11 9·8	28							
			MN	10 49	20		19			0·19		
			ME	16 48	20	15			0·15			
			e(M_{rI})	52·1	15	1½			0·03			
			F	13								
65	„ „	I_v	e P	16 58·4								Ep. = 500 km.
			i	58 47	8	2	3½		0·1	0·2		
			e L	59·9	13							
			MN	17 1 59	10		3½			0·1		
			ME	2 48	8	4			0·2			
			F	35								

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

No. 9. NOVEMBER, 1909.

Seismological Bulletin.

$\phi = 33°49'49''$ S.
$\lambda = 10^{h}.\ 4^{m}.\ 38^{s}.$ E.G.

(For further details, see inside of cover.)

No.	Date.	Character.	Phase.	Time. (Greenwich Midnight = 0)	Period. (T)	A (Earth-particle.)			Δg			REMARKS.
						E	N	Z	E	N	Z	
				h. m. s.	s.	μ	μ	μ	milligal			
66	Nov. 3	II v	e P	6 20·6								Ep. = 1400 km.
			PR_1	21 11	3		3			1·4		
			L	24 43	10		$2\frac{3}{4}$			0·1		
			ME	26 27	10	16			0·6			
			MN_1	26 41	10		23			0·9		
			MN_2	31 31	8		12			0·7		
			F	8 0								
67	„ 10	II r	i P	6 24 21	9		3			0·1		Ep. = 2900 km.
			(PR_1)	24 53	11		10			0·3		
			i (L)	33 7	11	18	51		0·6	1·7		
			M_1	34 9	11	37	63		1·2	2·1		
			MN_2	40 49	15		77			1·4		
			ME_2	41 6	15	32			0·6			
			F	8 35								
68	„ 19	I ?	(e)	7 1·5								A succession of tremors for several hours.
			(e)	42·2								
			(e)	8 30·5								
			L	9 1·7	8		$1\frac{1}{2}$			0·1		
			L	20·5	10		1			0·03		
			F	11 20								
69	„ 20	I r	(e P)	12 44·9	5							
			(e L)	55·9	(6)							
			MN	13 6 40	15		7			0·1		
			ME	8 10	11	2			0·07			
			F	55								
70	„ 28	II r	i P	1 4 23	5	2			0·3			Ep. = 2000 km.
			(PR_1)	5 14	5	5			0·8			
			e L	10·2	12							
			MZ	14 9	12			8			0·22	
			MN	14 50	11		32			1·0		
			ME	15 31	14	11			0·2			
			F	2 20								
71	„ „	I r	(e P)	18 25·9								Ep. = 1300 km. (?)
			e L	29·9								
			M	32 44	11	$1\frac{1}{4}$	4		0·04	0·1		
			F	50								
72	„ 29	I v	(e)	11 29·3								
			M	33 11	11		$1\frac{1}{2}$			0·05		
			F	40								

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

No. 10. DECEMBER, 1909.

Seismological Bulletin.

$\phi = 33°49'49''$ S.
$\lambda = 10^{h}.4^{m}.38^{s}$ E.G.

(For further details, see inside of cover.)

No.	Date.	Character.	Phase.	Time. (Greenwich Midnight = 0)	Period. (T)	A (Earth-particle.)			Δg			REMARKS.
						E	N	Z	E	N	Z	
				h. m. s.	s.	μ	μ	μ	milligal			
73	Dec. 3	I r	e P	3 14·2	4							Ep. = 1400 km.
			L	18 30	13							
			MN	18 50	13		21			0·5		
			ME	24 8	15	13			0·2			
			MZ	25 52	(15)			8			0·14	
			F	4 10								
74	„ 4	I r	e P	16 19 9	5							Ep. = 2900 km.
			S	24 28	7		1¼			0·1		
			e L	26 5	22							
			MN_1	30 17	12		8½			0·2		
			ME	30 32	12	17			0·5			
			MN_2	37 51	8		5			0·3		
			F	17								
75	„ 5	I v	e	0 2·6								
			M	3 56	10		1¾			0·07		
			F	13								
76	„ 8	II r	i P	9 5 49	4	3	4¼		0·7	1·1		Ep. = 2900 km.
			i S	10 23	9	13	12		0·6	0·6		
			(PS)	10 40	9	6½	21		0·3	1·0		
			e L	13·3	17							
			ME	17 3	12	37			1·0			
			MN	17 45	13		35			0·8		
			F	10 20								
77	„ 9	II r	i P	15 39 26	1¼			12			8·3	E.P. = 2900 km
				39 36	1¼			28			7·2	Recorded only on Z. [Shortly after local midnight (14h. 3m.), equilibrium of Astatic Pendulum disturbed (cause unknown). Re-adjusted at 21h. 34m.]
			i S	44 2	12			136			3·8	
			e L	46·8	20							
			MZ	50·2	15			403			72·0	
			F	17 10								
78	„ „	?		21 43 4	9	2½	2½		0·1	0·1		Only terminal portion recorded (v. supra) viz.: from 21h. 34m. till commencement of No. 79. Nos. 78 and 79 perhaps after-shocks of 77. Also, cf. Nos. 74 and 76.
79	„ „	II r	e P	21 54·0								Ep. = 3600 km.
			(S)	59 30	8		3½			0·2		
			e L	22 4·5	12							
			MN	9 2	12		39			1·1		
			ME	10 42	13	66			1·6			
			F	23 10								
80	„ (9/10)	II r	i P	23 37 10	6	1½	18		0·2	2·0		Ep. = 5500 km.
			PR_1	39 12	4	6	13	6½	1·5	3·3	1·6	E.Q. in Guam, Ladrone Islands.
			S	~~42 25~~ 44 26	8	7½	14		0·4	0·9		
			i	47 38	(12)	53	26		1·5	0·7		
			L	51 24	(20)							
			ME	53 50	12	46			1·3			
			MZ	56 18	8			15			0·95	
			MN	56 20	8		20			1·2		
			F	1 10								

(Continued on next sheet.)

RIVERVIEW COLLEGE OBSERVATORY,

SYDNEY, N.S.W.

No. 10. DECEMBER, 1909 (*continued*).

Seismological Bulletin.

$\phi = 33°49'49''$ S.
$\lambda = 10^{h}.4^{m}.38^{s}$ E.G.

(For further details, see inside of cover.)

No.	Date.	Character.	Phase.	Time. (Greenwich Midnight = 0)	Period. (T)	A (Earth-particle.) E	A N	A Z	g E	g N	g Z	REMARKS.
				h. m. s.	s.	μ	μ	μ	milligal			
81	Dec. 22	II_r	i P	12 52 2	7	15	9	11	1·2	0·7	0·9	Ep. = 1300 km. Since about 7h., microseismic waves steadily increased in amplitude, attaining 7·6 μ (T = 3·5s.) at 11h. 36m. They were due to the coalescence, off the Queensland coast, of two elongated low-pressure "tongues," giving rise to a cyclonic storm with rather steep barometric gradients. (cf. No. 26, June 12.)
			L	56 0								
			ME	56 4	9	54			2·7			
			MZ	56 8	9			69			3·4	
			MN	13 0 42	11		55			1·8		
			F	14 5								
82	„ 23	II_r	e P	19 27·2								Ep. = 2100 km. On records of EW component, Nos. 82 and 83 obscured by large microseismic tremors, even exceeding those of yesterday (A = 8·2 μ, T = 3·8s.)
			e L	33·5	(16)							
			M	36·8	10		18			0·7		
			F	20 20								
83	„ „	I_r	e (S)	22 25·4	(12)							
			e L	29·3	20							
			M	31·2	16		42			0·6		
			F	23 10								
84	„ 28	II_r	e P	19 26·3	4							Ep. = 2200 km. At 19h. 27·3m., unusual occurrence of long waves (T = 20s.), perhaps due to a distant E.Q. slightly earlier.
			e	27·3	20							
			S	30·0	?							
			e L	33·2	(18)							
			M	37·2	11	48	32		1·6	1·1		
			F	20 55								