

No. 1

1923, January.

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

h=41.9 m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

	V	$T_0$	$e:1$	$\frac{r}{T_0^2}$
$A_N$ (1)	168	7.3	3.4	0.02
(3)	114	8.7	3.0	0.02
$A_z$ (1)	170	8.4	3.9	0.015
(3)	182	9.2	5.6	0.04
$A_z$ (2)	91	5.0	6.5	0.05

No.	Date.	Phase.	Time (Greenwich)			Per.	Amplitude			$\Delta$	Remarks.	
			h.	m.	s.		$A_N$	$A_E$	$A_z$			
1	1923 Jan. 5	eP	17	56	43					2930		
		eS	18	01	21	8	2	-		(26.4°)		
		PS		01	45	8	11	0.5				
		eL		03	.0	13						
		ME <sub>1</sub>		03	58	6			7			
		MN <sub>1</sub>		06	04	14	18					
		ME <sub>2</sub>		07	47	11			18			
		MN <sub>2</sub>		08	30	12	17					
		MZ <sub>1</sub>		08	39	13				7		
		ME <sub>3</sub>		12	21	10			14			
		MN <sub>3</sub>		15	04	8	10					
		ME <sub>4</sub>		16	15	9			10			
		MZ <sub>2</sub>		17	06	11				7		
		F		19	20							
		e?		1	12	.3						Heavy microseisms.
		(S?)			17	.7						
		L			20	.3	16					
		e <sub>1</sub>			20	56	12	6				
		e <sub>2</sub>			21	47	11			8		
		" 8			22	38	12	6				
" 2			1	50								
" P			10	00	57							
" eL				12	.8	24						
" ME <sub>1</sub>				13	36	20			5			
" MN <sub>1</sub>				18	37	18	3					
" ME <sub>2</sub>				27	14	14			1			
" MN <sub>2</sub>				29	47	14	2					
" F				11	25							
" 4	" 14	eP	19	44	58	5	-	1				
		eL		48	.0	16						
		M		48	.8	12	3	3				
		F		20	05							
" 5	" 21	eP	13	43	58	4	-	0.5	2610			
		IS		48	12	9	-1	-5	(23.5°)			
		PS		48	22	9	2	5				
		eL		50	.7	24						
		ME		51	16	20		11				
		MN		52	28	14	5					
		F		14	30							
" 7	" 21	eP	18	03	28	?			2290			
		eS		07	16	8	0.5	1				
		ME		11	31	16		2				
		MN		11	36	18	3					
		F		18	40							

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No. 1 (continued)

1923, January.

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

h=41.9 m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW)
2. Wiechert Vertical Seismometer (80 kilo.)
3. Mainka Conical Pendulum Seismometer (480 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

	V	T <sub>0</sub>	e: 1	$\frac{r}{T_0^2}$
A <sub>x</sub>				
A <sub>y</sub>	(See last sheet)			
A <sub>z</sub>				

No.	Date.	Phase.	Time (Greenwich)				Amplitude			$\Delta$	Remarks.
			h.	m.	s.	s.	A <sub>x</sub>	A <sub>y</sub>	A <sub>z</sub>		
7	1923 Jan. 22	P	1	00.7	5	"	"	"	km.	P uncertain $\pm$ 0.2 min.	
		PR <sub>1</sub>		01 20	5	4	5		2980?		
		eS <sub>1</sub>		05 24	7	0.5	2				
		PS		05 42	7	"	6				
		eL		06.2	12						
		MN <sub>1</sub>		07 28	13	37					
		ME		09 00	20		39				
		ME		09 42	12			6			
		MN <sub>2</sub>		10 02	12	34					
		F	2	30							
8	" 22	eP?	9	27 52					9300?		
		e(S?)		38 20	?						
		eL		53.5	30						
		ME <sub>1</sub>		54 44	25		12				
		MN <sub>1</sub>	10	03 12	16	5					
		ME <sub>2</sub>		04 48	16		5				
		ME <sub>3</sub>		09 55	16		5				
		MN <sub>2</sub>		12 33	16	5					
		w <sub>2</sub> waves (L rep 1)		eW <sub>2</sub>	11	16.8					
				ME <sub>1</sub>		23 48	16		3		
		MN		24 48	16	9					
		ME <sub>2</sub>		29 32	16		5				
		F	12	05							
9	" 24	eP	18	53 52					2690		
		eS		58 12	8	1	2		(24.2°)		
		eL		58.8	18						
		ME		59 19	16		20				
		MN		59 52	12	5					
		F	19	55							
10	" 27	eP	16	31 18							
		eL		40.7	13						
		MN		41 33	12	3					
		ME		42 45	15		7				
		F	17	30							
11	" 27	e	23	07.9							
		eL		23.3	17						
		MN		23 41	14	2					
		ME		24 58	16		5				
		F	23	45							
		" 29	eP	18	08 27					2400	
		eS		12 24					(21.6°)		
eL		13.0	8								
		ME <sub>1</sub>		13 20	7		3				
		MN		14 45	7	2					
		ME <sub>2</sub>		16 20	7		3				
		F	19	15							

S. P. ...



No. 2

1923, February.

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

h=41.9 m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

	V	$T_0$	$\epsilon : 1$	$\frac{r}{T_0^2}$
$A_N \left\{ \begin{matrix} 1 \\ 3 \end{matrix} \right\}$	173 125	7.1 8.5	3.6 3.3	0.02 0.02
$A_N \left\{ \begin{matrix} 1 \\ 3 \end{matrix} \right\}$	161 113	8.5 9.0	4.2 4.2	0.015 0.03
$A_Z \left\{ \begin{matrix} 2 \end{matrix} \right\}$	74	4.5	4.0	0.09

No.	Date.	Phase.	Time (Greenwich)			Per.	Amplitude			$\Delta$	Remarks.
			h.	m.	s.		$A_N$	$A_E$	$A_Z$		
13	1923 Feb. 1	iP	19	29	36	4	+1	+3		2260 (20.3°)  Computed Azimuth:- 245° (N. 65° E.) (Rarefaction)  $\phi, 23\frac{1}{2}^{\circ}$ S. $\lambda, 171^{\circ}$ E. h m s O., 19 24 56	
			29	32	4	+10	+23				
		PR <sub>1</sub>	30	19	5	11	20				
			33	21	6	+28	-13				
		S	33	48	6	50	65				
			33	9	16						
		eL	34	48	7	39					
			35	07	7		15				
		MN <sub>1</sub>	35	07	7						
			37	42	10	41					
		ME <sub>1</sub>	37	59	10		29				
			37	59	10						
		ME <sub>2</sub>	39	44	10		21				
21	20										
14	" 1	eP	21	38	42	6	0.5	1	2340 (21.0°)  h m s O., 21 33 42		
			42	34	6	+5	-9				
		iS	42	49	6	8	16				
			47	14	11	5					
		PS	47	14	11						
			48	10	11		2				
		MN	48	10	11						
22	40										
15	" 2	eP	5	20	54	4	0.5	0.5	8770 (78.9°)  h. m s O., 5 08 54		
			30	53	8	0.7	1				
		eS	31	14	8	+14	+20				
			51	16	20		30				
		iPS	51	16	20						
			52	35	20	25					
		ME <sub>1</sub>	52	35	20						
			57	06	20	33					
		MN <sub>1</sub>	57	06	20						
			57	11	18		24				
		ME <sub>2</sub>	6	00.9	17	32	38				
			06	.7	16	27	38				
		M <sub>3</sub>	10	.7	16	24	19				
			16	.4	14	11	17				
		M <sub>4</sub>	16	.4	14	11	17				
22	.8		15	15	24						
M <sub>5</sub>	9	45									
	5	41	42	4	-	1					
eP	43	33	4	2	7						
	45	.6	15								
eL	46	.6	13	14	13						
	6	30									
M	6	30									
	6	30									
F	6	30									
	6	30									

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# Riverview College Observatory,

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

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

h=41.9 m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

	V	T <sub>0</sub>	ε : 1	$\frac{r}{T_0^2}$
A <sub>x</sub>				
A <sub>y</sub>	(See last sheet)			
A <sub>z</sub>				

No.	Date.	Phase.	Time (Greenwich)				Per.	Amplitude			Δ	Remarks.
			h.	m.	s.	s.		A <sub>x</sub>	A <sub>y</sub>	A <sub>z</sub>		
17	1923 Feb. 3	eP	16	14	34	2				km. 9790 (88.1°)	Computed Azimuth:- 186° (N. 6° E.) (Rarefaction)	
		i		14	59	3	+10	+1	-10			
		eS		25	23	9	16	8				
		i		25	41	9	-39	-43				
		PS		26	05	20	360	690				
				28	02	12	117	23				
		eSR <sub>1</sub>		31	33	20	190	42				
				32	39	20	504	195				
		eSR <sub>2</sub>		35	37	18	80	85				
		eL		37	7	42						
		ME <sub>1</sub>		38	42	38		1800				
		MN <sub>1</sub>		39	55	33	910					
		ME <sub>2</sub>		40	29	32		1020				
		MN <sub>2</sub>		44	03	32	970					
		MN <sub>3</sub>		47	01	25	610					
		ME <sub>3</sub>		48	32	20		330				
		MZ <sub>1</sub>		49	16	20			390			
		ME <sub>4</sub>		52	49	18		420				
		MN <sub>4</sub>		53	31	19	640					
		MZ <sub>2</sub>		54	14	18			400			
		ME <sub>5</sub>		55	55	16		340				
		MN <sub>5</sub>	17	04	12	17	450					
		MZ <sub>3</sub>		04	33	17			480			
		ME <sub>6</sub>		05	00	16		207				
		ME <sub>7</sub>		09	12	15		210				
		MN <sub>6</sub>		15	14	16	190					
		ME <sub>8</sub>		18	57	14		175				
		MN <sub>7</sub>		23	03	16	135					
		ME <sub>9</sub>		32	12	14		70				
		MN <sub>8</sub>		39	12	15	60					
		ME <sub>10</sub>		40	10	16		100				
		CE <sub>1</sub>		48	51	16		60				
CN <sub>1</sub>		48	59	16	40							
W <sub>2</sub> waves (L rep 1)		eW <sub>2</sub>	57	2	60							
		CE <sub>2</sub>	18	12	43	16		36				
		CN <sub>2</sub>		19	37	20	42					
		CE <sub>3</sub>		21	12	16		50				
		CN <sub>3</sub>		27	51	16	50					
		CE <sub>4</sub>		29	27	20		80				
		CE <sub>5</sub>		35	29	17		55				
		CN <sub>4</sub>		39	07	16	100					
		CN <sub>5</sub>		45	53	16	37					
		CE <sub>6</sub>	19	04	31	17		14				
		F	22	00								
18	" 3	eP	19	06	12	5	3	1				
		i		06	25	5	+5	+13				
				06	42	5	1	8				

F lost in No. 17



# Riverview College Observatory,

## SYDNEY, N.S.W.

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

 $h = 41.9$  m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

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

No.	Date.	Phase.	Time (Greenwich)			Per.	Amplitude			$\Delta$ km.	Remarks.
			h.	m.	s.		$A_x$ $\mu$	$A_y$ $\mu$	$A_z$ $\mu$		
19	1923 Feb. 8	e?	0	02.8							
		eS	06	45	8	1	4				
		PS	07	02	10	2	6				
		eL	09.4	20							
		ME	10	20	16		7				
		MN	11	12	14	5					
20	" 8	F	0	40							
		eP	3	08	11						
		eS	12	11	9	0.5	1		2440 (21.9°)		h m s 0., 3 03 11
		eL	14.4	20							
		ME	15	28	16		3				
		MN	16	58	16	2					
21	" 12	F	3	35							
		eL	2	42.9	20						
		ME <sub>1</sub>	44	41	18		2				
		MN <sub>1</sub>	45	44	16	3					
		MN <sub>2</sub>	50	54	16	5					
		ME <sub>2</sub>	51	58	15		3				
22	" 12	F	3	45							
		e(S?)	<del>14</del> 18	16.7							
		eL	21.0	17							
		ME	22	54	16		5				
		MN	23	20	16	5					
		F	<del>14</del> 19	55							
23	" 15	e?	9	53	19						
		e	10	01	02	7	2	2			
		M	01.7	6		32	18				N.E. analyses from Seismometer N°3
		F	10	25							
24	" 18	e(S?)	10	48.4	16						
		ME	51	27	12		3				
		MN	51	33	12	2					
		F	12	10							
25	" 19	eP	6	23	12	6	0.5	0.5		3240?	
		e(S?)	28	12	7	0.5	0.5				
		eL	30.5	12							
		ME <sub>1</sub> , MN <sub>1</sub>	34.7	9		33	18				
		ME <sub>2</sub>	36	30	8		32				
		ME <sub>3</sub>	38	48	8		30				
		MN <sub>2</sub>	39	39	8	23					
		F	7	40							

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(continued)

1923, February.

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

h=41.9 m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

	V	T <sub>0</sub>	e: l	$\frac{r}{T_0^2}$
A <sub>x</sub>				
A <sub>y</sub>	(See last sheet)			
A <sub>z</sub>				

No.	Date.	Phase.	Time (Greenwich)				Amplitude			$\Delta$	Remarks.
			h.	m.	s.	Per.	A <sub>x</sub>	A <sub>y</sub>	A <sub>z</sub>		
26	1923 Feb. 23	iP	5	59	51	4	-2	+3		4540 (40.8°)	h m s 0., 5 51 51
			6	00	14	5	3	2			
		iS	06	08	7	-7	+4				
			09	12	8	6	2				
		eSR <sub>1</sub>	09	33	7	15	24				
			13.2	20							
		eL	17.2	10		12	10				
		M <sub>1</sub>	20	21	10		11				
		ME <sub>2</sub>	21	12	13	29					
		MN <sub>2</sub>	23	56	12		5				
ME <sub>3</sub>	26	12	10	9							
MN <sub>3</sub>											
27	" 24	eP	7	50						9280 (83.5°)	h m s 0., 7 35 01
			7	47	41	5	0.5	-			
		eS	58	05	9	6	1				
		PS	59	03	16	22	30				
		eSR <sub>1</sub>	8	03	33	14	4	8			
			12.7	25							
		eL	15	12	18		29				
		ME <sub>1</sub>	17	08	18	24					
		MN <sub>1</sub>	21	18	20		30				
		ME <sub>2</sub>	22	55	18	55					
		MN <sub>2</sub>	26	01	16		27				
		ME <sub>3</sub>	26	46	16	32					
		MN <sub>3</sub>	29	55	16		32				
		ME <sub>4</sub>	31	12	20	42					
		MN <sub>4</sub>	33	45	16		21				
		ME <sub>5</sub>	35	55	16	37					
		MN <sub>5</sub>	41	29	16		13				
		CE <sub>1</sub>	43	11	16	25					
CN <sub>1</sub>	47	33	16		23						
CE <sub>2</sub>	53	12	14	15							
CN <sub>2</sub>	57	35	16		11						
CE <sub>3</sub>											
F	10	55									
28	" 27	eP	13	50	27	6	1	-		2660 (23.9°)	h m s 0., 13 40 47
			13	54	45	7	-	1			
		eS	55	05	7	1	1				
		PS	56.4	20							
		eL	57	33	14	5					
		MN <sub>1</sub>	59	22	9		4				
		ME <sub>1</sub>	14	01	25	11	5				
		MN <sub>2</sub>	01	43	10		4				
		ME <sub>2</sub>									
		F	14	45							

*S. F. Pigot S.F.*



No. 3

1923, March.

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

	V	$T_0$	$\epsilon : 1$	$\frac{r}{T_0^2}$
$A_N$ (1)	165	7.8	2.7	0.02
$A_N$ (3)	124	8.6	3.4	0.03
$A_E$ (1)	171	7.7	3.1	0.015
$A_E$ (3)	143	9.0	2.7	0.04
$A_Z$ (2)	76	5.0	4.7	0.03

No.	Date.	Phase.	Time (Greenwich)				Per.	Amplitude			$\Delta$ km.	Remarks.
			h.	m.	s.	s. (4)		$A_N$ $\mu$	$A_E$ $\mu$	$A_Z$ $\mu$		
29	1923 Mar. 2	eP	16	57	17	8		1	$\frac{1}{2}$		5190 (46.7°)  H m s 0., 16 48 37	
		PR <sub>1</sub>		59	08	9		1	2			
		iS	17	04	09	12	+22	+12				
		FS		04	34	12		6	12			
		SR <sub>1</sub>		07	13	14		22	21			
				07	45	11		11	40			
		eL		11.	1		?					
		ME <sub>1</sub>		15	09	16			66			
		MN <sub>1</sub>		15	58	16		26				
		ME <sub>2</sub>		17	09	15			38			
		MN <sub>2</sub>		18	44	16		60				
		ME <sub>3</sub>		20	13	16			66			
		MN <sub>3</sub>		24	29	14		48				
		ME <sub>4</sub>		24	57	14			40			
		ME <sub>5</sub>		28	19	15			49			
		WE <sub>1</sub>		31	52	14			27			
		CN		35	13	12		24				
CE <sub>2</sub>		38	58	14			15					
F		19	55									
30	" 3	e?	22	15.	4							
		e?		20.	0							
		eL		25.	2	20						
		ME		30	21	19			9			
		F		23	30							
31	" 4	eP	6	59	53	4	-	$\frac{1}{2}$		3540 (31.8°)  h m s 0., 6 53 06		
		PR <sub>1</sub>		7	01	19	6	-	$\frac{1}{3}$			
		eS		05	13	8	4	4				
		eL		08.	0	20						
		MN		11	49	12		42				
		ME		12	45	12			21			
		F		8	20							
32	" ( 9 10	e?	23	18.	7							
		e?		23.	0							
		eL		27.	4	19						
		ME <sub>1</sub>		29	05	15			3			
		MN		30	31	12		2				
		ME <sub>2</sub>		34	15	13		5				
		F		0	10							

(Continued on next sheet)

**ERRATUM.** 1923, Feb. 12 (No. 22) :  
For 12h. read 14h.



No. 3 (Continued)

1923, March.

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

 $h = 41.9$  m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

	V	T <sub>0</sub>	ε: 1	r T <sub>0</sub> <sup>2</sup>
A <sub>N</sub>				
A <sub>E</sub>	(See last sheet)			
A <sub>Z</sub>				

No.	Date.	Phase.	Time (Greenwich)				Per.	Amplitude			Δ	Remarks.
			h.	m.	s.	s.		A <sub>N</sub> μ	A <sub>E</sub> μ	A <sub>Z</sub> μ		
33	1923 Mar. 10	eP	8	11	15	4	-	1		2600 (23.4°)	h m s 0., 8 05 50	
		eS		15	28	8	-	1/2				
		eL		19.	2							
		ME		21	15	16		11				
		MN		23	15	12	8					
		F	9	35								
34	" 14	cP	20	52	32	5	1/2	1/2		4880 (46.9°)	h m s 0., 20 44 12	
		iS		59	08	7	-3	-				
		PS		59	44	7	1	1				
		SR <sub>2</sub>	21	02	34	8	7	0				
		eL		05.	3	18						
		ME <sub>1</sub>		12	19	20		40				
		MN <sub>1</sub>		13	15	20	40					
		MZ <sub>1</sub>		13	41	19			27			
		ME <sub>2</sub>		13	53	15		27				
		MN <sub>2</sub>		16	21	15	19					
		MZ <sub>2</sub>		16	33	15			16			
		ME <sub>3</sub>		17	28	14		17				
		ME <sub>4</sub>		19	21	14		17				
		MN <sub>3</sub>		20	27	12	4					
F <sub>3</sub>	22	25		3)								
35	" (16 17	cP	22	10	08	12)	2	2		4900 (44.1°)	h m s 0., 22 01 48	
				10	24	12		2	-			
		eS		16	45	10		10	3			
		PS		17	15	10		7	4			
		eSR <sub>1</sub>		20	02	12		11	7			
				20	15	12		39	25			
		eL		22.	2	20						
		MN <sub>1</sub>		28	41	16		51				
		ME <sub>1</sub>		28	49	16			80			
		MZ <sub>1</sub>		30	55	18						85
		MN <sub>2</sub>		31	08	17		80				
		ME <sub>2</sub>		32	15	18			100			
		MN <sub>3</sub>		33	31	15		56				
		ME <sub>3</sub>		34	06	13			45			
		MZ <sub>2</sub>		35	24	16						37
		MN <sub>4</sub>		35	41	15		40				
		ME <sub>4</sub>		37	36	12			25			
		MZ <sub>3</sub>		38	30	15						44
		CN		44	54	14		9				
		CE		44	58	14			13			
F	1	00										

(Continued on next sheet)



No. 3 (Continued)

1923, March.

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

 $h = 41.9$  m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

	V	T <sub>0</sub>	e: 1	$\frac{r}{T_0^2}$
A <sub>N</sub>				
A <sub>E</sub>	(See last sheet)			
A <sub>Z</sub>				

No.	Date.	Phase.	Time (Greenwich)			Per.	Amplitude			$\Delta$	Remarks.
			h.	m.	s.		A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
36	1923 Mar. 18	eP?	6	41	11						Felt slightly in Wellington, N.Z.
		eS?		44	58						
		MN		52	39	16?					
		F	7	15							
37	" 19	e	15	25.6							
		ME	31	19	12			4			
		MN	32	57	14		2				
		F	16	00							
38	" 24	eP	12	52	57	3	$\frac{1}{2}$	$\frac{3}{4}$		5220	h m s 0., 12 41 17
		eS	13	02	28	7		1		(74.0°)	
		i		02	33	7	+13	+11			
		PS		03	25	7	7	2			
		SR <sub>1</sub>		07	17	10	3	2			
		eL <sub>1</sub>		13.4	20						
		MN <sub>1</sub>		14	36	18	14				
		ME <sub>1</sub>		18	40	20		28			
		MN <sub>2</sub>		21	16	18	24				
		ME <sub>2</sub>		21	32	18		22			
		MN <sub>3</sub>		23	48	20	62				
		ME <sub>3</sub>		25	26	22		75			
		MN <sub>4</sub>		27	32	20	47				
		MN <sub>5</sub>		28	18	20	62				
		ME <sub>4</sub>		29	32	19		57			
		MZ <sub>1</sub>		29	39	19			18		
		MN <sub>6</sub>		32	36	24	48				
		ME <sub>5</sub>		33	18	20		53			
		MZ <sub>2</sub>		36	20	20			30		
		ME <sub>6</sub>		36	32	20		77			
		MN <sub>7</sub>		36	52	20	43				
		MZ <sub>3</sub>		42	17	18			25		
		ME <sub>7</sub>		42	36	18		31			
		F	15	45							
39	" 26	e(S?)	14	08	45	10		1			
		eL		11.6	16						
		ME <sub>1</sub>		12	56	14		3			
		MN <sub>1</sub>		15	03	12	2				
		ME <sub>2</sub>		15	25	12		3			
		F	14	50							

(Continued on next sheet)



No. 3 (Continued)

1923, March.

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

 $h = 41.9$  m.

Foundation: Triassic sandstone.

## INSTRUMENTS:

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

	V	T <sub>0</sub>	e: 1	$\frac{r}{T_0^2}$
A <sub>N</sub>				
A <sub>E</sub>	(See last sheet)			
A <sub>Z</sub>				

No.	Date.	Phase.	Time (Greenwich)				Per.	Amplitude			$\Delta$	Remarks.
			h.	m.	s.	s.		A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
40	1923 Mar. 28	iP	4	35	17	4	-5	+4	+15	3670 (33.0°)	h m s 0., 4 28 17	
		iS		40	45	6	+11	+6				
		iPS		41	22	7	-13	+8				
		MN <sub>1</sub>		45	10	6	19					
		ME <sub>1</sub>		45	49	7		16				
		MZ <sub>1</sub>		46	42	3.5			11			
		MN <sub>2</sub>		47	29	7	37					
		MZ <sub>2</sub>		48	00	3			15			
		ME <sub>2</sub> , MN <sub>3</sub>		48.2		6	38	23				
		ME <sub>3</sub>		50	28	6		23				
		MN <sub>4</sub>		50	35	6	24					
		ME <sub>4</sub>		52	10	7		27				
		MN <sub>5</sub>		56	38	8	23					
		ME <sub>5</sub>		56	52	8		13				
		CE	5	01	33	7		6				
		CN		01	59	7	4					
41	" 28	F	5	40						3450 (31.0°)	h m s 0., 20 29 14	
		eP	20	35	54							
		eS		41	08	?						
		SR <sub>1</sub>		42	58	?						
		ME <sub>1</sub>		46	40	7		6				
		MN		47	00	6	7					
		MZ <sub>1</sub>		47	22	3			5			
		MZ <sub>2</sub>		48	35	4			3			
		ME <sub>2</sub>		51	33	6		5				
		F	21	00								

*E. F. Page*



No. 4

1923, April.

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

h = 41.9 m.

Foundation: Triassic sandstone.

## INSTRUMENTS:

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

	V	$T_0$	$\epsilon: 1$	$\frac{r}{T_0^2}$
$A_x$ (1)	158	7.8	2.5	0.02
$A_x$ (3)	126	8.7	3.0	0.04
$A_x$ (1)	165	7.7	3.0	0.015
$A_x$ (3)	151	9.0	3.9	0.05
$A_z$ (2)	83	4.8	3.8	0.05

No.	Date.	Phase.	Time (Greenwich)				Per.	Amplitude			$\Delta$	Remarks.
			h.	m.	s.	s.		$A_x$	$A_x$	$A_z$		
											km.	
42	1923 Apr. 13	eP	10	08	55	5	-	$1\frac{3}{4}$	$1\frac{3}{4}$	2210?		
		i(S?)		12	36	6	-2	+10				
		i(SR <sub>1</sub> ?)		13	13	6	2	-14				
		eL		14.2		16						
		ME <sub>1</sub>		18	38	12		12				
		MN		18	48	12	5					
		ME <sub>2</sub>		23	04	10		6				
		F		11	00							
42a	" 13	i(P?)	10	10	21	4	-	+3	+2 $\frac{1}{2}$			
		i(PR <sub>1</sub> ?)		11	36	6	-	-6				
				11	45	6	-	9	7			
		i(S?)		15	39	8	-6	+2 $\frac{1}{2}$				
		F		Lost in N:42								
43	" 13	e(S?)	15	55	30							
		eL	16	08.9		28						
		ME <sub>1</sub>		15	32	26		13				
		MN <sub>1</sub>		17	25	22	9					
		ME <sub>2</sub>		18	17	20		14				
		MN <sub>2</sub> , MZ		19.4		20	18		10			
		F		17	15							
				17	15							
44	" 17	eL?	17	18.1		?			A few long waves.			
		F	17	40								
45	" 19	e	3	17	53							
		eS		24	49	14	4	16				
		eL		30.4		30						
		ME <sub>1</sub>		34	36	28		140				
		MN <sub>1</sub>		40	10	22	62					
		ME <sub>2</sub>		40	57	17		53				
		MZ <sub>1</sub>		41	00	20			40			
		MN <sub>2</sub>		41	19	19	67					
		ME <sub>3</sub>		44	53	14		24				
		MZ <sub>2</sub>		45	18	16			10			
		F		5	40							
		46	" 23	e	3	36.4						
MN				52	13	22	9					
ME				52	39	22		9				
F				4	20							
47	" 27	e	10	40.5								
		e		43.6		8	-	$\frac{1}{2}$				
		eL		48.7		22						
		M		51.6		20	3	4				
		F		11	10							
48	" 30	e?	20	06.4		5	$\frac{1}{2}$	1				
		e(S?)		10	09	7	$2\frac{1}{2}$	2				
		ME		11	13	10		$\frac{1}{2}$				
		MN		12	51	18	8					
		F		20	35							

*S. F. Riggs*



No. 5

1923, May.

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

h=41.9 m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

	V	T <sub>0</sub>	$\epsilon: 1$	$\frac{r}{T_0^2}$
A <sub>x</sub> 1	162	7.7	2.7	0.015
A <sub>x</sub> 3	117	8.7	2.8	0.037
A <sub>x</sub> 1	177	7.7	3.2	0.01
A <sub>x</sub> 3	155	9.0	2.4	0.045
A <sub>z</sub> 1	76	5.0	4.3	0.04

No.	Date.	Phase.	Time (Greenwich)			Per.	Amplitude			$\Delta$ km.	Remarks.
			h.	m.	s.		A <sub>x</sub> $\mu$	A <sub>y</sub> $\mu$	A <sub>z</sub> $\mu$		
49	1923 May. 4	eS	16	50	53	8	2	-		Alaska.	
		PS		51	54	8	-	8			
		eSR <sub>1</sub>		58	28	12	1	1 $\frac{1}{2}$			
			17	00	02	16	9	8			
		o		07	42	22					
				08	42	26	-	30			
		eL		12	8	24					
		ME <sub>1</sub>		15	28	20		20			
		MN <sub>1</sub>		14	55	20	25				
		MN <sub>2</sub> , MZ <sub>1</sub>		18	3	18	26		24		
		ME <sub>2</sub>		19	42	16		23			
		MZ <sub>2</sub>		20	17	18			16		
		MZ <sub>3</sub>		26	00	18			16		
		MN <sub>3</sub>		31	47	16	0				
ME <sub>3</sub>		32	56	16		17					
OE		47	10	16		3					
ON		47	44	15	4						
F	19	55									
50	" 4 5	eP	22	45	10	4	1	1	4380 (39.4°) 0., 22 53 00 <sup>s</sup>		
		eS		51	19	5	1 $\frac{1}{2}$	1 $\frac{1}{2}$			
		eL		54	5	?					
		MN		57	18	?					
		ME	23	01	19	8		1			
51	" 10	F	0	35							
		eL	4	37	4	16					
		MN <sub>1</sub>		41	05	12	1 $\frac{1}{2}$				
		MN <sub>2</sub>		43	30	14	2				
52	" 11	ME <sub>2</sub>		46	08	?					
		MN <sub>3</sub>		51	39	12	1 $\frac{1}{2}$				
		F	5	35							
		e	5	58	2	5	1 $\frac{1}{2}$				
		ME	7	06	55	7		1 $\frac{1}{2}$			
		MN		07	32	7					
		F	7	30							

(Continued on next sheet)



# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

Foundation : Triassic sandstone.

**INSTRUMENTS :**

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

	V	T <sub>0</sub>	ε : 1	$\frac{r}{T_0^2}$
A <sub>x</sub>				
A <sub>y</sub>	(See last sheet)			
A <sub>z</sub>				

No.	Date.	Phase.	Time (Greenwich)			Per.	Amplitude			Δ	Remarks.
			h.	m.	s.		A <sub>x</sub>	A <sub>y</sub>	A <sub>z</sub>		
53	1923 May. 11	eP	8	29	44	3	$\frac{1}{2}$	$\frac{1}{2}$		km. 2680 (24.1°)	Short wave-lengths. h m s 0., 8 14 09
		PR <sub>1</sub>		30	16	4	4	$\frac{1}{2}$			
		eS		34	03	6	2	$\frac{1}{2}$			
		MN <sub>1</sub>		34	59	8	2				
		ME <sub>1</sub>		35	47	6		2			
		ME <sub>2</sub>		39	44	8		1			
		F	9	05							
54	" 12	eP	1	28	50					5500 (49.9°)	h m s 0., 1 19 50
		iS		36	13	6	+5	+5			
		PS		36	34	6	-	3			
		eL		42.	8	28					
		MN <sub>1</sub>		46	39	20	36				
		MZ		49	36	20			30		
		ME <sub>1</sub>		49	52	20		34			
		MN <sub>2</sub>		51	15	16	22				
		ME <sub>2</sub>		53	13	18					
				F	3	15					
55	" 14	c	11	31.	3						
		ME		35	30	14		2			
		MN		36	33	?					
56	" 15	e	21	46.	4						
		eL		50.	1	16					
		MN		54	26	12	2				
		ME		54	43	12		2			
		F	22	15							
57	" 16	e?	18	15.	5						
		eL		18.	2	18					
		ME		18	56	14		6			
		MN		19	51	13	2				
		F	18	45							
58	" (23 24	e(PR <sub>1</sub> ?)	22	55.	7	6	-	$\frac{1}{2}$			
		e(S?)	23	01.	2	11	$\frac{1}{2}$				
		eL		19.	2	20?					
		MN <sub>1</sub>		28	56	16	6				
		ME <sub>1</sub>		35	38	16		6			
		MN <sub>2</sub>		35	47	16	11				
		ME <sub>2</sub>		52	16	15		5			
				F	0	55					

(Continued on next sheet)



# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

 $h = 41.9$  m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

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

No.	Date.	Phase.	Time (Greenwich)			Per.	Amplitude			$\Delta$ km.	Remarks.	
			h.	m.	s.		$A_x$ $\mu$	$A_y$ $\mu$	$A_z$ $\mu$			
59	1923 May. 26	e	8	53.6								
		eL		55.3	?							
		ME <sub>1</sub>	58	45	15			11				
		MN <sub>1</sub>	59	53	16		9					
		ME <sub>2</sub>	9	01	15	12			6			
		MZ <sub>2</sub>	02	34	12					3		
60	" 28	F	9	25								
		eS?	1	45	28	6	$\frac{1}{2}$	3				
		eL		52.8	24							
		MN <sub>1</sub>	58	02	17		25					
		MN <sub>2</sub>	2	00	50	12		16				
		ME <sub>1</sub>	01	49	14				7			
61	" 29	MN <sub>3</sub>	04	52	10		8					
		ME <sub>2</sub>	16	41	15				7			
		F	3	05								
		e	9	11.6	4							
		eL	13	32	20							
		MN	14	45	11		$1\frac{1}{2}$					
62	" 30	ME	17	07	8				1			
		F	9	25								
		e	13	47.7								
		eL	50.7	16								
		M	51.5	12			3		2			
		F	14	05								
63	" 30	e?	15	01.2								
		eL	07.5	16								
		ME	09	14	12				5			
		MN	09	22	12		2					
		F	15	25								
		e	21	30.2								
64	" 31	ME	47	31	12							
		MN	48	19	12		2					
		F	22	05								
		<i>S. J. Paget</i>										



No. 6

1923, June

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

 $h = 41.9$  m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

	V	T <sub>0</sub>	$\epsilon: 1$	$\frac{r}{T_0^2}$
A <sub>n</sub> (1)	162	7.7	3.2	0.01
(3)	131	8.7	2.7	0.03
A <sub>n</sub> (1)	174	7.5	3.1	0.01
(3)	157	9.0	2.2	0.04
A <sub>n</sub> (2)	79	4.9	4.3	0.05

No.	Date.	Phase.	Time (Greenwich)				Amplitude			$\Delta$	Remarks.
			h.	m.	s.	s.	A <sub>n</sub>	A <sub>z</sub>	A <sub>r</sub>		
65	1923 June 1	eP	17	35	58	4				7760 (70.0°)	h m s 0., 17 24 48
		iS		45	06	6	-3	4			
		eL		55.4		26					
		ME <sub>1</sub>		59	52	16		14			
		MN <sub>1</sub>	18	01	05	16	14				
		ME <sub>2</sub>		02	10	15		15			
		MN <sub>2</sub>		03	23	14	16				
		ME <sub>3</sub>		08	57	16		14			
		MN <sub>3</sub>		09	40	16	11				
		MZ		14	44	18			8		
F Lost in N°66											
66	" 1	eP	20	26	57	4				7770 (70.1°)	h m s 0., 20 15 47
		S		36	06	6	3	5			
		eL		46.2		?					
		ME <sub>1</sub>		50	55	16		9			
		MN <sub>1</sub>		51	44	17	5				
		MN <sub>2</sub> , MZ		57.9		18	14		8		
		ME <sub>2</sub>		59	59	14		5			
		eW <sub>2</sub>	22	54.9							
		ME <sub>2</sub>		58	44						
		F	23	15							
67	" 2	ME	1	52	58	14		1½			
		MN		57	22	14	3				
		F	1	25							
68	" 2	e?	4	46.9							
		eL		54.6		16					
		MN		56	40	12	2				
		ME		57	45	12		1½			
		F	5	35							
69	" 2	eP	12	45	10	5	-	6		2770 (25.1°)	h m s 0., 12 39 30
		eS		49	36	7	6	-			
		eL		51.2		16					
		MZ		53	00	14			9		
		ME		53	44	14		5			
		MN		55	19	10	8				
		F	13	55							
70	" 2	e?	14	24.2		5					
		eL		33.3		18					
		MN		36	53	11	2				
		ME		37	34	15		5			
		F	15	35							

(Continued on next sheet)



No. 6 (Continued)

1923, June

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

 $h = 41.9$  m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

	V	T <sub>0</sub>	ε: 1	$\frac{r}{T_0^2}$
A <sub>N</sub>				
A <sub>E</sub>	(See last sheet)			
A <sub>Z</sub>				

No.	Date.	Phase.	Time (Greenwich)			Per.	Amplitude			Δ	Remarks.
			h.	m.	s.		A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
71	1923 June 3	e?	11	57.1	6						
		e	12	09.0	14						
		eL		18.9	26						
		MN		21 56	20	5					
		ME		23 28	18			3			
72	" 17	F	12	40							
		e?	21	17.8							Short wave-lengths
		eL		21.1	10						
		ME		22 45	9			1½			
73	" 17	MN		23 44	8	1					
		F	21	35							
		eP	22	18 21	4	1	1		2350	h m s	O., 22 13 21
		iS		22 14	6	1	-2		(21.1°)		
		PS		22 22	6	3	4				
		eL		23.1	12						
		ME		24 11	7			1½			
		F	22	40		2					
		iP	8	22 38	4	1	1½		4640	h m s	O., 8 14 33
		i		22 49	4	1	+9		(22.7°)		
74	" 18	PR <sub>1</sub>		24 05	5	1	2				
				24 21	7	2	23				
				25 05	7	8	10				Short wave-lengths.
		i(seeA)		28 05	5	+4	-7				
		eS		29 01	8	1	3				
		PS		29 27	8	2	8				
		i(seeB)		31 04	11	-65	+26				A, B: perhaps the
		eL		31.7	20						iP and iS of a
		MN <sub>1</sub> , ME <sub>1</sub>		32.5	14	13	22				nearer earthquake.
		i		33 04	7	+21	-18				
		MN <sub>2</sub>		33 34	13	22					
		MZ		34 05	16					13	
				34 23	8	13	21				
		ME <sub>2</sub>		36 38	18		23				
		ME <sub>3</sub>		39 21	13		18				
MN <sub>3</sub>		39 43	12		14						
F	10	50									

(Continued on next sheet)



No. 6 (Continued)

1923, June

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

 $\phi = 33^{\circ} 49' 19'' \text{ S.}$ 
 $\lambda = 151^{\circ} 9' 30'' \text{ E.}$ 
 $h = 41.9 \text{ m.}$ 

Foundation: Triassic sandstone.

## INSTRUMENTS:

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

	V	T <sub>0</sub>	ε: l	r T <sub>0</sub> <sup>2</sup>
A <sub>N</sub>				
A <sub>E</sub>	(See last sheet)			
A <sub>Z</sub>				

No.	Date.	Phase.	Time (Greenwich)		Per. s.	Amplitude			Δ km.	Remarks.	
						A <sub>N</sub> μ	A <sub>E</sub> μ	A <sub>Z</sub> μ			
75	1923 June 22	eP	6	56	20	4	$\frac{3}{4}$	1		h m s 8360 0., 6 44 30 (75.2°)	
		eS	7	05	58	8	-	1 $\frac{1}{2}$			
				06	07	2		$\frac{5}{4}$	3		
		SR <sub>1</sub>	11	16	9		2 $\frac{3}{4}$		4		
		eL	18	9	25						
		MN <sub>1</sub>	24	37	22		83				
		ME <sub>1</sub>	25	15	22			50			
		MN <sub>2</sub>	27	29	22		83				
		MN <sub>3</sub>	31	12	18		60				
		ME <sub>2</sub>	31	50	17			37			
		MZ	32	59	19				18		
		ME <sub>3</sub>	38	46	16			48			
		CN	49	37	15		9				
		CE	51	45	14			8			
76	" 22	F	9	20						h m s 2490 0., 20 45 54 (22.3°)	
		eP	20	51	04	3	-	2			
				53	26	6		-4	-4		
		iS		55	08	7		14	14		
		eL		56	9	22					
		MZ		57	18	18			6		
		ME		58	29	18			18		
77	" 24	MN		59	00	16	12			h m s 3000 0., 12 38 40 (27.0°)	
		F	22	05							
		eP	12	44	40	4	-	$\frac{1}{2}$			
		PR <sub>1</sub>		45	08	4	-	2			
		eS		49	23	?					
		eL		51	2	24					
		MN		53	50	15	4				
ME		54	27	18			8				
F	13	50									

*E. J. Pigot 87.*



No. 7

1923, July.

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

h=41.9 m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

	V	$T_0$	$\epsilon: 1$	$\frac{r}{T_0^2}$
$A_x(1)$	69	7.7	2.7	0.02
$A_x(3)$	113	8.7	2.9	0.03
$A_x(1)$	180	7.5	3.4	0.01
$A_x(3)$	143	8.9	2.0	0.04
$A_z(2)$	81	4.8	4.0	0.06

No.	Date.	Phase.	Time (Greenwich)		Per.	Amplitude			$\Delta$ km.	Remarks.
			h.	m. s.		$A_x$ $\mu$	$A_y$ $\mu$	$A_z$ $\mu$		
78	1923 July 2	eS?	2	51.3	?				Heavy microseisms.	
		eL	3	01.1	20?					
		ME		03 10	14		4			
		MN		06 18	14	5				
		F	3	40						
79	" 4	eL	23	14.2	20					
		ME		15 52	15		4			
		MN		17 09	12	5				
		F	23	55						
80	" 7	e?	12	51.3					Heavy microseisms.	
		eL		50.5	22					
		MN		59 22	16	4				
		ME	13	00 42	14		5			
		F	13	20						
81	" 12	iP	3	22 05	3	-3	-7		h m s 3140 (28.2) O., 3 15 55	
		ePR <sub>1</sub>		23 02	4	1	-			
		iS		26 58	6					
		SR <sub>1</sub>		28 12	6	4	-			
				28 22	6	4	-			
		eL		29.2	?					
		MN <sub>1</sub>		30 02	21	70				
		ME <sub>1</sub>		31 28	21		70			
		MZ		31 59	21			24		
		MN <sub>2</sub>		32 00	14	42				
		MN <sub>3</sub>		36 01	10	21				
		ME <sub>2</sub>		36 45	12		11			
		ME <sub>3</sub>		46 59	10		10			
		CN	4	03 01	10	14				
		CE		03 57	11		5			
F	5	30								
82	" 12	e	9	25.1	8					
		eL		27.4	21					
		MN		28 12	21	19				
		ME		30 06	21		15			
		F	10	10						

(Continued on next sheet)



No. 7 (Continued)

1923, July.

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

 $h = 41.9$  m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

	V	T <sub>0</sub>	e: l	$\frac{r}{T_0^2}$
A <sub>x</sub>				
A <sub>y</sub>	(See last sheet)			
A <sub>z</sub>				

No.	Date.	Phase.	Time (Greenwich)				Per.	Amplitude			$\Delta$	Remarks.
			h.	m.	s.	s.		A <sub>x</sub>	A <sub>y</sub>	A <sub>z</sub>		
83	1923 July 13	eP	11	24	33	4				km. 7270 (65.4°)	h m s 0., 11 13 46	
		eS		33	16	8						
				33	20	8		5	-			
		i		34	28	6	+5	-8				
				34	37	6	11	8				
		eL		43.2		?						
		ME <sub>1</sub>		45	33	21		35				
		ME <sub>2</sub>		50	43	19		46				
		MN		51	28	21	43					
		MZ		53	31	18			25			
		ME <sub>3</sub>		54	20	18		39				
		e(W <sub>2</sub> )		13	57.5							
		F		14	10							
84	"	13 e	16	13.0		8						
		MN		16	16	11	1 1/2					
		ME		17	00							
85	"	F	16	40								
		14 e	0	27.2		?						
		ME		33	30	21		4				
		MN		33	51	20	3					
86	"	16 F	0	45								
		iP	13	43	45	7	-2	-3	km. 2840 (25.5°)	h m s 0., 13 30 02		
		iS		48	16	8	-8	-7				
		eL		49.9		25						
		ME <sub>1</sub> , MZ		51.6		18		59			17	
		MN <sub>1</sub>		51	43	16	63					
		ME <sub>2</sub>		57	01	12		14				
		MN <sub>2</sub>		58	06	10	9					
		ME <sub>3</sub>	14	02	27	8		11				
		F	15	05								
87	"	17 eP	0	32	36	?					km. 3870 (35.0°)	Short wave-lengths. h m s 0., 0 25 23
		eS		38	16	4	3	2				
		PS		38	40	4	8	5				
		SR <sub>1</sub>		40	05	6	5	-				
		eL		41.7		?						
		MN <sub>1</sub>		41	58	12	5					
		ME <sub>1</sub>		43	46	6		2				
		MN <sub>2</sub>		43	52	6	2					
		ME <sub>2</sub>		45	16	6		3				
		F	1	20								

(Continued on next sheet)



No. 7 (Continued)

1923, July

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

 $h = 41.9$  m.

Foundation : Triassic sandstone.

**INSTRUMENTS :**

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

	V	T <sub>0</sub>	ε : 1	$\frac{r}{T_0^2}$
A <sub>x</sub>				
A <sub>y</sub>	(See last sheet)			
A <sub>z</sub>				

No.	Date.	Phase.	Time (Greenwich)			Per.	Amplitude			Δ	Remarks.
			h.	m.	s.		A <sub>x</sub>	A <sub>y</sub>	A <sub>z</sub>		
	1923										
88	July 18	e	0	20.6	?						
		e		22.1	5						
		F	0	40							
89	" 22	eP	14	31 25	4						
		oS		41 17							
				41 44	12		4	5			
		SR <sub>1</sub>		47 25	12		3	3			
		eL <sub>1</sub>		56.4	?						
		MN <sub>1</sub>		59 50	21		4				
		ME <sub>1</sub>	15	00 25	14			6			
		MN <sub>2</sub>		03 07	21		11				
		ME <sub>2</sub>		03 33	14			8			
		MN <sub>3</sub>		07 26	15		7				
		F	16	10							
90	" 24	e	13	10.1	11						
		ME		10 47	10			1			
		MN		10 51	13		2				
		F	13	15							
91	" 26	e(P?)	7	34 55							
		eS		39 55	10						
		MN		42 50	12		4				
		ME		46 38	12			5			
		F	8	15							
92	" 26	eP?	10	02 25							
		eS		07 59	11						
		MN		14 29	11		2½				
		ME		14 41	12			3			
		F	10	45							
93	" 27	e	11	43.2							
		eL		48.9							
		MN		49 43	11		2½				
		ME		49 49	10			2			
		F	12	20							

h m s  
8630 0., 14 19 21  
(77.6°)

3240?

E. F. Pigot S. J.



No. 8

1923, August.

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

h=41.9 m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

	V	$T_0$	$\epsilon: 1$	$\frac{r}{T_0^2}$
$A_x$ (1)	171	7.7	2.9	0.02
(3)	129	8.7	3.3	0.03
$A_x$ (1)	178	7.6	3.0	0.01
(3)	151	9.0	2.3	0.03
$A_z$ (2)	82	4.8	4.0	0.07

No.	Date.	Phase.	Time (Greenwich)			Per.	Amplitude			$\Delta$	Remarks.	
			h.	m.	s.		$A_x$	$A_y$	$A_z$			
						$\mu$	$\mu$	$\mu$	km.			
94	1923 Aug. 4	eL	16	25.6	25							
		MN		27 21	16	4						
		ME		27 38	18		8					
95	" 5	F	17	00								
		e	1	14.6								
		eL		15.3	20							
96	" 5	MN		18 26	16	10						
		ME		20 41	12		2					
		F	1	35								
97	" 6	e	10	20.1								
		e		24.1								
		eL		27.5	16							
98	" 7	MN		28 47	14	10						
		ME		30 42	12		2					
		F	10	55								
99	" 9	e	22	32.4							Short wave-lengths.	
		F	22	45								
		e	14	50.4								
100	" 10	ME		55 26	12		1					
		MN		57 06	12	1						
		F	15	15								
101	" 11	e	21	25.0								
		ME		27 10	14			1 $\frac{1}{2}$				
		MN		28 14	16	2						
		F	21	40								
		eP	22	20 39	6							
		e		25 06								
				25 25	7	5	6					
				26 35	8	6	8					
		eL		26.9								
		ME <sub>1</sub>		27 35	11			11				
MN <sub>1</sub> , ME <sub>2</sub>		30.8	12	18	40							
MZ		33 07	9				4					
ME <sub>3</sub>		33 30	9		12							
MN <sub>2</sub>		34 58	8	7								
CN <sub>2</sub>		40 48	8	2								
CE		41 48	9		3							
F										Lost in changing papers.		
e	1	04 47										
e		10 43	9			3						
eL		17.8	40									
MN <sub>1</sub>		19 10	31	71								
ME <sub>1</sub>		19 23	24		52							
MN <sub>2</sub>		26 24	22	21								
ME <sub>2</sub>		27 06	14		9							
F	2	15										

(Continued on next sheet)



# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

h = 41.9 m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

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

No.	Date.	Phase.	Time (Greenwich)			Per. s.	Amplitude			$\Delta$ km.	Remarks.
			h.	m.	s.		$A_N$ $\mu$	$A_E$ $\mu$	$A_Z$ $\mu$		
	1923 Aug. 12	e?	10	17	6						
		eS		24	58	?					
		eL		37	9	20					
		ME		45	22	18		5			
		MN		45	45	18	8				
		F	11	10							
101	" 15	e	6	48	3						
		eL	7	01	0	23					
		MN		03	26	12	3				
		F	8	15							
104	" 16	eS?	20	44	6						
		eL	21	02	8	27					
		MN		13	09	20	7				
		F	21	40							
105	" 17	eP	12	16	23					2940 (26.4°)	h m s 0., 12 10 31
		eS		21	02						
		eL		24	7	30					
		MZ		25	40	23			11		
		ME <sub>1</sub>		27	34	14		31			
		MN <sub>1</sub>		27	59	14	29				
		ME <sub>2</sub>		28	33	11		34			
		MN <sub>2</sub>		38	02	10	14				
		ME <sub>3</sub>		38	50	10		12			
		F	13	45							
106	" 19	eP	10	56	01	?				2260 (20.3°)	h m s 0., 10 51 17
		eS		59	46	7	14				
				59	57	7	3		7		
		eL	11	02	4	17					
		MN		03	38	14	3				
		F	11	20							
107	" 19	e?	12	30	05						
		eS		34	50						
		eL		37	7	28					
		ME <sub>1</sub>		41	32	15		25			
		MN <sub>1</sub>		42	11	18	32				
		ME <sub>2</sub>		43	19	13		33			
		MN <sub>2</sub>		43	33	13	22				
		MZ		44	07	13			12		
		ME <sub>3</sub>		45	34	11		19			
		CE		51	15	9		4			
		CN		52	20	9	5				
		F	13	45							

(Continued on next sheet)



No. 8 (Continued)

1923, August.

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

 $h = 41.9$  m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

	V	T <sub>o</sub>	e: 1	$\frac{r}{T_o^2}$
A <sub>N</sub>				
A <sub>E</sub>	(See last sheet)			
A <sub>Z</sub>				

No.	Date.	Phase.	Time (Greenwich)			Per.	Amplitude			$\Delta$ km.	Remarks.
			h.	m.	s.		A <sub>N</sub> $\mu$	A <sub>E</sub> $\mu$	A <sub>Z</sub> $\mu$		
108	1923 Aug. 20	e?	18	21.2							
		eL		29.4	25						
		MN <sub>1</sub>	31	49	13	22					
		ME <sub>1</sub>	31	57	13		10				
		MZ	32	43	12				10		
		MN <sub>2</sub>	34	17	10	17					
		ME <sub>2</sub>	33	45	8		6				
		F	19	20							
109	" 20	e	19	29.5							
		e		33.3	5	1½					
		eL		34.7	?						
		MN <sub>1</sub>	36	00	13	5					
		ME <sub>1</sub>	36	16	13		11				
		ME <sub>2</sub>	38	04	8		4				
		MZ	38	19	11				3		
		MN <sub>2</sub>	38	24	10	55					
110	" 27	F	20	25							
		e	7	49.5							
		eL		50.9							
		MN <sub>1</sub>	52	22	17	3					
		ME <sub>1</sub>	52	57	17		5				
111	" 27	ME <sub>2</sub>	55	34	10			3			
		F lost in N <sup>o</sup> 111									
		eL	8	14.8							
		ME <sub>1</sub>	15	53	16		4				
		MN	16	30	14	1½					
112	" 28 (29)	ME <sub>2</sub>	18	30	12		3				
		F	8	45							
		eS	23	43	57						
		eSR <sub>1</sub>	49	54							
		eL	0	06.4	31						
		MN <sub>1</sub>	09	16	23	4					
		ME	09	54	21		7				
		F	2	30							

(Continued on next sheet)



No. 8 (Continued)

1923, August,

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

h=41.9 m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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3. Mainka Conical Pendulum Seismometer (450 kilo.) (NS, EW)
4. Galitzin Aperiodic Seismometer, with galvanometer registration (NS, EW, Vert.)

	V	T <sub>0</sub>	ε: 1	$\frac{r}{T_0^2}$
A <sub>N</sub>				
A <sub>E</sub>	(See last sheet)			
A <sub>Z</sub>				

No.	Date.	Phase.	Time (Greenwich)			Per.	Amplitude			Δ	Remarks.
							A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
			h.	m.	s.	s.	μ	μ	μ	km.	
113	1923 Aug. 29	e	4	39.2							A few long waves.
114	" 29	e?	20	19.9							
		e		24.2	10						
		eL		27.1	?						
		ME	29	49	12			7			
		MN	31	06	12		3				
		F	20	35							
115	" 29	e	21	55.7							
		eL	22	00.6							
		ME	01	17	10			1½			
		F	22	20							
116	" 30	eP	2	56	18					5600?	
		eS?	3	03	33						
		eL		07.8							
		MN	08	32	16		4				
		F	3	15							
117	" 31	e	11	19.6							
		eL		22.4	20						
		ME	23	50	14			3			
		MN	24	02	19		6				
		F lost in N <sup>o</sup> 118									
118	" 31	eL	11	32.5	24						
		MN	34	45	20						
		ME	35	51	13			9			
		F	12	35							
119	" 31	eL	12	58.9							
		MN	59	24	17		5				
		ME	13	01	22	13		2			
		F	13	20							

E. F. Pigot S. J.



# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

**INSTRUMENTS :**

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

	V	$T_0$	$\epsilon : 1$	$\frac{r}{T_0^2}$
$A_N$ (1)	165	7.8	2.6	0.02
(3)	126	8.7	3.4	0.03
$A_E$ (1)	183	7.6	1.8	0.01
(3)	154	9.0	2.3	0.04
$A_Z$ (2)	77	4.9	4.2	0.07

No.	Date.	Phase.	Time (Greenwich)			Per.	Amplitude			$\Delta$	Remarks.
			h.	m.	s.		$A_N$	$A_E$	$A_Z$		
120	1923 Sep. 1	iP	3	09	47	4	+3	-	-3	7680 (69.1°)	Destructive earth- quake in S.E. Japan
				10	14	5	10	2	6		
				10	51	7	8	4			
				12	34	9	9	6			
			15	22	9	9	5		iP, Dilatation.		
			18	51	10	-41	3				
			19	47	10	50	45				
			24	36	11	24	39				
			27	14	10	28	53				
			29.	3	37					h m s 0., 2 58 35	
			30	33	15	100					
			30	45	21		340				
			32	34	22	240					
			32	47	29		750			PR <sub>1</sub> , PR <sub>2</sub> .....absent.	
			33	39	22	650					
			33	45	24			434			
			34	11	17		440				
			36	01	25			570			
			36.	3	18	470	510				
			37	47	16		360				
			38	55	16	260					
			40	08	15	230					
			41	14	17			255			
			41	30	15		260				
			42	33	16	270					
			43	20	15		300				
	44	08	15	280							
	44	14	18			215					
	46	30	15	165							
	47	39	15		230						
	49	01	14			48					
	49	28	15	110							
	49	59	13		93						
	51	18	13		80						
	53	14	15		174						
	53	12	15	94							
	59	14	14	84							
	59	29	15		90						
	4	01	40	15	108						
	03	14	14	83							
	08	38	15		85						
	09	45	13	48							
	15	52	15		80						
	18	55	14	60							
	20	30									

(Continued on next sheet)



# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

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

No.	Date.	Phase.	Time (Greenwich)	Per.	Amplitude			$\Delta$	Remarks.
					$A_N$	$A_E$	$A_Z$		
120 (Cont.)	Sept. 1 1923	$C_1$	h. 4 <sup>m</sup> 26.1 <sup>s</sup>	15	$\mu$ 24	$\mu$ 75	$\mu$ 92	km.	(It is interesting to record the fact that the late Dr. F. Omori, the great Japanese seismologist, was our guest at Riverview at the time of the disaster, and saw the later waves, - about the time of ME <sub>12</sub> -, being recorded on the seismographs.)
		$C_2$	30.4	15	43	44	57		
		$CN_3$	33 33	15	46				
		$CE_3$	43 40	15		36			
		$CN_4$	44 33	15	31				
		$CE_4$	48 59	15		20			
		$CN_5$	51 14	15	15				
		$eW_2$	5 26.1						
		$MN_1$	26 39	29	16				
		$ME_1$	29 34	17		5			
		$ME_2$	34 26	16		14			
		$MN_2$	36 43	17	9				
		$ME_3$	38 00	17		12			
		$MN_3$	50 51	17	9				
		F	9 35						
121	" 2	eP	2 57 44					7780 (70.0°)	h m s 0., 2 46 27
		iS	3 06 53	6	-8	-43			
		PS	07 36	7	6	3			
			08 05	11	30	15			
		eL	19.4	23					
		$ME_1$	22 47	17		36			
		$MN_1$	24 25	21	53				
		$MZ_1$	26 59	17			22		
		$ME_2$	28 03	14		37			
		$MN_2$	28 10	17	90				
		$ME_3$	31 36	14		28			
		$MN_3$	32 36	17	38				
		$ME_4$	33 21	14		27			
		$MN_4$	33 34	16	40				
		$ME_5$	39 15		32				
		$ME_6$	45 15	14		27			
		$CN$	4 01 40	17	29				
		$CE$	02 57	19		15			
		$eW_2$	5 16.6	23					
		$MN$	25 48	19	3				
$ME$	27 09	18		3					
F	6 00								
122	" 2	eP?	9 38 11					7580?	
		eS	47 10	6	2	-			
		eL	59.6	23					
		$MN$	10 05 44	21	11	15			
		$ME$	06 40	19		15			
F	11 05								

(Continued on next sheet)



# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

 $h=41.9$  m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

	V	T <sub>0</sub>	e: 1	$\frac{r}{T_0^2}$
A <sub>x</sub>				
A <sub>y</sub>	(See last sheet)			
A <sub>z</sub>				

No.	Date.	Phase.	Time (Greenwich)				Per.	Amplitude			$\Delta$	Remarks.
			h.	m.	s.	s.		A <sub>x</sub>	A <sub>y</sub>	A <sub>z</sub>		
											km.	h m s
123	1923 Sept. 9	eP	22	16	05	5	-	1		9020 (81.2°)	0., 22 03 39	
		eS		26	17	6	1	1				
				26	24	6	6	2				
		eL		39	6	40						
		MN <sub>1</sub>		43	55	32	50					
		ME <sub>1</sub>		44	52	32		47				
		MN <sub>2</sub>		49	51	22	21					
		ME <sub>2</sub>		53	02	20		17				
		ME <sub>3</sub>		58	40	20		24				
		F	23	55								
124	" 12	e(P?)	6	01	28							
		e(S?)		07	16	7	1	-				
				07	26	7	7					
		MN <sub>1</sub>		08	24	10	3					
		ME <sub>1</sub>		10	24	7		4				
		MN <sub>2</sub>		11	05	11	3					
		ME <sub>2</sub>		12	38	8		5				
		F	7	00								
1245	" 16	eP	16	41	20	3	1	1		3420 (30.8°)	h m s 0., 16 34 44	
		PR <sub>1</sub>		42	30	7		3				
		eS		46	32	8		1				
		i		46	38	8	+8	-8				
		PS		47	04	11	7	8				
		eL		49	4							
		ME <sub>1</sub>		49	56	8		8				
		ME <sub>2</sub>		51	28	7		18				
		MN <sub>1</sub>		51	40	8	47					
		MN <sub>2</sub>		52	47	6	49					
		MZ <sub>1</sub>		53	10	6			22			
		ME <sub>3</sub>		53	18	6		128				
		MZ <sub>2</sub>		54	12	5			20			
		MN <sub>3</sub>		54	18	5	61					
		ME <sub>4</sub>		54	52	6		80				
		MZ <sub>3</sub>		55	44	6			18			
		ME <sub>5</sub>		56	04	8		87				
		MN <sub>4</sub> , MZ <sub>4</sub>		56.2		6	67		36			
		MN <sub>5</sub>		57	08	7	39					
		ME <sub>6</sub>		58	14	7		52				
MN <sub>6</sub>		59	53	7	24							
ME <sub>7</sub>	17	00	41	7		42						
MN <sub>7</sub>		02	30	8	16							
CE <sub>1</sub>		07	25	9		14						
CN <sub>1</sub>		07	36	10	12							
CE <sub>2</sub>		11	17	8		9						
CN <sub>2</sub>		11	30	9	7							
F	19	20										

Short wave-lengths.



No. 9 (Continued)

1923, September.

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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

h=41.9 m.

Foundation: Triassic sandstone.

**INSTRUMENTS:**

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

	V	T <sub>0</sub>	ε: 1	$\frac{r}{T_0^2}$
A <sub>N</sub>				
A <sub>E</sub>	(See last sheet)			
A <sub>Z</sub>				

No.	Date.	Phase.	Time (Greenwich)		Per.	Amplitude			Δ	Remarks.
			h.	m. s.		A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
						μ	μ	μ	km.	
125	1923 Sept. 17	e(L?)	8	08.7	24					
		ME		16 47	18			8		
		MN		18 40	16	4				
		F	8	40						
127	" 19	eP	8	27 36	4		1		2940 (26.4*)	h m s 0., 8 21 44
		iP		27 40	4		+3			
		e		29 05	5		2			
		iS		32 15	5	-7				
		i		37 28	6	4				
				37 36	6	7	3			
		MN		40 36	8	4				
		ME		41 44	8		1			
128	" 22	F	8	55						
		eP?	15	03 35						
		eS		08 42	10	1				
		eL		10.9	20					
		ME <sub>1</sub>		13 28	15		31			
		LN <sub>1</sub>		13 47	15	22				
		MN <sub>2</sub>		15 47	12	18				
		ME <sub>2</sub>		16 11	12		25			
		ME <sub>3</sub>		20 10	10		10			
		CN		32 24	9	1				
129	" 22	CE		35 13	9		1			
		F	16	10						
		e	21	16.2	7		1			
		eL		35.1	44					
		MN <sub>1</sub>		37 57	32	27				
		MN <sub>2</sub>		44 08	20	7				
		ME <sub>1</sub>		45 31	22		16			
		ME <sub>2</sub>		49 43	20		17			
		ME <sub>3</sub>		54 44	18		16			
		F	22	55						
130	" 23	eP	17	51 58					2460? Very short wave-lengths.	
		e(S?)		56 00	4	1				
		MN		57 14	5	2				
		ME	18	00 19	7		1			
		F	18	10						

(Continued on next sheet)



No.

1923, September.

# Riverview College Observatory,

## SYDNEY, N.S.W.

### SEISMOLOGICAL BULLETIN.

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

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Foundation: Triassic sandstone.

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

	V	T <sub>0</sub>	e: 1	$\frac{r}{T_0^2}$
A <sub>N</sub>				
A <sub>E</sub>	(See last sheet)			
A <sub>Z</sub>				

No.	Date.	Phase.	Time (Greenwich)		Per.	Amplitude			$\Delta$	Remarks.
			h.	m. s.		A <sub>N</sub>	A <sub>E</sub>	A <sub>Z</sub>		
						$\mu$	$\mu$	$\mu$	km.	
131	1923 Sep. 24	e(L?)	3	31.6	18					
		ME		37 52	12		2			
		F	3	45						
132	" 26	iS	8	43 55	7		-3			
		eL		54.0	26					
		ME <sub>1</sub>		55 58	20		17			
		MN <sub>1</sub>		59 54	18	8				
		ME <sub>2</sub>	9	00 23	17		9			
		MN <sub>2</sub>		05 28	13	4				
		ME <sub>3</sub>		05 51	15		8			
		F	10	20						
133	" 27	eP	7	09 37					5320 h m s (47.9°) 0., 7 00 44	
		eS		16 37	6	1	1			
		eSR <sub>1</sub>		20 07	12	1	1			
		eL		25.2	20					
		ME <sub>1</sub>		29 30	17		5			
		ME <sub>2</sub>		33 55	16		6			
		MN <sub>2</sub>		38 51	15	3				
		ME <sub>3</sub>		39 09	15		5			
		F	8	15						
134	" 30	e	1	48.0	6	1	1			
		eL	2	25.8	55					
		ME <sub>1</sub>		28 11	50		38			
		MN <sub>1</sub>		37 51	40	22				
		ME <sub>2</sub>		39 19	34		22			
		MN <sub>2</sub>		40 15	33	21				
		eW <sub>2</sub>		42.6	36					
		MW <sub>2</sub>		43 54	36					
		MN <sub>3</sub>		45 54	20	17				
		ME <sub>3</sub>		51 10	22		20			
		MN <sub>4</sub>	3	01 27	16	4				
		ME <sub>4</sub>		01 34	16		8			
		CE <sub>4</sub>		19 00	16		4			
		F	4	25						

*S. F. Rigot S.F.*



# Riverview College Observatory

SYDNEY, N.S.W.

## SEISMOLOGICAL BULLETIN

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

**INSTRUMENTS:**

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

	V	$T_0$	$\epsilon:1$	$\frac{r}{T_0^2}$
$A_N$ (1)	173	8.0	2.8	0.017
(3)	130	8.6	4.0	0.02
$A_E$ (1)	158	7.7	3.6	0.015
(3)	182	9.0	2.6	0.04
$A_Z$ (2)	81	4.8	4.7	0.05

No.	Date.	Phase.	Time (Greenwich)			Per. s.	Amplitude.			$\Delta$ km.	Remarks.
			h.	m.	s.		$A_N$ $\mu$	$A_E$ $\mu$	$A_Z$ $\mu$		
135	1923 Oct. 1	IP	22	53	12	4		-2 $\frac{1}{2}$		2910 (26:2)	
		eS		34	45	8		8			
		PS		37	40	7	4	2			
		SR <sub>1</sub>		38	01	7	4	12			
		eL		39	08	10					
		ME		39	8	24					
		MN		40	31	20	31	37			
		MZ		41	16	18					
		F		41	31	18			25		
				23	50						
136	" 6	eP	07	43	9						
		eL		50	2	20					
		MN		52	49	12	4				
		ME		54	03	?					
		F		08	10						
137	" 7	IP	03	36	59	6	+4 $\frac{1}{2}$	-3 $\frac{1}{2}$		4310 (37:8)	
		PR <sub>1</sub>		38	34	7	5 $\frac{1}{2}$	5			
		eS		42	47	8	2 $\frac{1}{2}$	2			
		I		42	51	8	+24				
		PS		43	14	10	39	27			
		eL		46	10	11	88	60			
		ME <sub>1</sub>		50	20	24		600			
		MZ <sub>1</sub>		52	51	24			330		
		MN <sub>1</sub>		53	28	22	590				
		ME <sub>2</sub>		54	45	16		670			
		MZ <sub>2</sub>		55	31	18			510		
		ME <sub>3</sub>		55	45	16		790			
		MN <sub>2</sub>		56	05	15	700				
		eP <sub>2</sub>		06	21	8					
ME		27	51	26		5					
MN		33	07	20	5						
F		06	55								
138	" 7	e	08	18	7						
		eL		24	4	20					
		ME		25	12	12		4			
		MN		27	14	12	3				
139	" 10	F	08	40							
		e(s)	22	12	04						
		eL		15	9	16					
		ME		18	40	14		8			
		MN		19	05	13	4				
F		23	15								

(Concluded on next sheet)



No. 10 (concluded)

1923, October.

**RIVERVIEW COLLEGE OBSERVATORY,**

SYDNEY, N.S.W.

**SEISMOLOGICAL BULLETIN.**

No.	Date.	Phase.	Time (Greenwich)			Per. s.	Amplitude.			$\Delta$ km.	Remarks.
			h.	m.	s.		$A_N$ $\mu$	$A_E$ $\mu$	$A_Z$ $\mu$		
140	1923 Oct. 15	eP <sub>E</sub>	07	39	29	4				4180 (37.6)	
		PR <sub>1</sub> E		41	03	4		2			
		eS <sub>NE</sub>		45	16	8					
		MNE		45	25	8	1	3			
		eL		52.0		22					
		ME		55	41	18		28			
		MNZ		56.3		15	45		23		
		F	Lost in No. 141								
141	" 15	eL	08	16.7		20					
		ME		21	47	18		36			
		MN		22	04	18	54				
		MZ		22	16	15			23		
		F	09	50							
142	" 17	e?	05	50.0							
		eL		56.2		16					
		ME	06	01	16	12		3			
		MN		04	31	12	2				
		F	?								
143	" 17	eL	06	50.4		18					
		ME		52	35	10	2				
		ME		54	10	12		3			
		F	07	50							
144	" 18	e(P) <sub>E</sub>	21	09	59						
		e(S) <sub>E</sub>		14	55	87					
		eL		17.4		17					
		ME		20	22	15		5			
		ME		24	18	12	2				
		F	22	00							
145	" 21	e	22	32.6							
		ME		42	59	10		1			
		F	?								
146	" 22	ePN	05	30	56					2820 (25.4)	
		eS <sub>E</sub>		35	18	6					
		MNE		35	32	11	4	9			
		eL		37.0		20					
		ME		38	44	9		4			
		MN		40	09	13	7				
		F	07	40							
147	" 29	eL	19	54.5		19					
		ME		58	10	12		1			
		F	?								



# Riverview College Observatory

SYDNEY, N.S.W.

## SEISMOLOGICAL BULLETIN

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

INSTRUMENTS:

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

	V	T <sub>0</sub>	$\epsilon:1$	$\frac{F}{T_0^2}$
A <sub>N</sub> (1)	170	8.0	3.0	0.018
(3)	122	8.6	3.2	0.03
A <sub>E</sub> (1)	170	7.6	4.6	0.01
(3)	160	9.0	2.1	0.04
A <sub>Z</sub> (2)	82	4.8	4.0	0.06

No.	Date.	Phase.	Time (Greenwich)			Per. s.	Amplitude.			$\Delta$ km.	Remarks.
			h.	m.	s.		A <sub>N</sub> $\mu$	A <sub>E</sub> $\mu$	A <sub>Z</sub> $\mu$		
148	1923 Nov. 2	eP	21	13	56	4				3210	Dilatation.
		1PNZ	14	00		4	-82		-13	(28°9)	
		PR <sub>1</sub> NEZ	14	43		10	37	7	64		
		MN	15	20		12	76				
		1SNE	16	43		6	-27	-16			
		MN	16	57		9	67				
		1NE	19	17		9	-132	+79			
		1SR <sub>1</sub> E	19	51		8		+122			
		SR <sub>1</sub> NEZ	19	54		10	160		69		
		eL	20.4			28					
		NE1	22	22				1760			
		NZ <sub>1</sub>	22	29		33			2540		
		MN <sub>1</sub>	22	37		229	1250?				
		NE2	23	31		18		1140			
		NZ <sub>2</sub>	26	08		18			1270		
		MN <sub>2</sub>	27	54		18	1430*				
		eW <sub>2</sub>	23	50	56	28					
		ME	54	23		20		7			
		MN	55	18		20		7			
		F	01	25							
149	" 3	e	02	45.7							
		ME	52	15		13		4			
		MN	53	12		15	5				
150	" 3	F	03	10							
		e(S)	04	58	51	5					
		eH	59	36		14					
		eL	05	03.4		23			20		
		NZ	04	09		20					
151	" 3	MR	04	15		15		17			
		MN	04	25		22	20				
		F	05	50							
		eP <sub>1</sub>	16	30	12	3			7010		
		eS <sub>2</sub>	38	39		7			(63°1)		
			39	00		6	3				
			40	15		6	3				
			40	30		10		5			
		eL	48.4			30					
		MN <sub>1</sub>	52	30		30	40				
ME <sub>1</sub>	52	49		18		25					
MN <sub>2</sub>	53	57		24	60						
ME <sub>2</sub>	55	23		21		64					
NZ	55	59		21			45				
F	18	20									

(Continued on next sheet)



No. 11 (continued)

1923, November.

**RIVERVIEW COLLEGE OBSERVATORY,**

SYDNEY, N.S.W.

**SEISMOLOGICAL BULLETIN.**

No.	Date.	Phase.	Time (Greenwich)			Per. s.	Amplitude.			$\Delta$ km.	Remarks.
			h.	m.	s.		$A_N$ $\mu$	$A_E$ $\mu$	$A_Z$ $\mu$		
152	1923 Nov. 4	1P <sub>NZ</sub>	00	10	24	4	-2			3235 (29°1)	Dilatation.
		iS <sub>NE</sub>		15	12	8	-17	-13			
		MN		15	22	14	135				
		MNZ		18	45	15	215		57		
		eL		17.3		32					
		ME <sub>1</sub>		19	10	12		130			
		MN <sub>1</sub>		19	33	24	550				
		MZ		19	37	24			270		
		MN <sub>2</sub>		22	34	12	87				
		eW <sub>2</sub>	02	45.5		28					
		MN <sub>1</sub>		47	46	28	14				
		MN <sub>2</sub>		52	41	26	12				
		F	03	20							
		153	" 4	eP?	12	02	06				
e(S)				07	36	9					
eL				08.4		17					
MN				10	22	12	3				
ME				15	17	12		2			
154	" 4	F	12	45							
		e	20	09.0							
		e(S)		13	59	6					
		eL		16.9		26					
		ME		18	27	16		33			
		MZ		19	03	18			18		
		MN		19	10	18	26				
155	" 4	F	21	15							
		eP?	22	20	19						
		eL		28.0		26					
		ME		29	06	14		12			
156	" 5	MN		31	08	14	12				
		F	23	20							
		e <sub>2</sub>	21	39	40						
		eS <sub>NE</sub>		47	28	12					
		SR <sub>1</sub> H		51	43	10	9				
157	" 6	eL		57.3		29					
		MN	22	01	12	29	125		35		
		MZ		02	23	26					
		ME		05	24	18		130			
		F	23	15							
		e(P)	00	27	59						
		eL		32.1		13					
		MNE		33	12	11	2	8			
158	" 7	F	00	45							
		e	04	03	02						
		ME		06	40	9		3			
159	" 10	MN		09	15	9	2				
		F	04	25							
		eP <sub>NE</sub>	21	27	34						
		1P <sub>NEZ</sub>		27	38	5	-5	-6	+1		
		eS <sub>N</sub>		31	44						
160	" 11	iNE		31	51	7	+12	+10			
		MNE		31	57	8	10	14			
		eL		34.2		18					
		MN		35	07	12	18				
		ME		35	15	14		13			
		F	22	15							
		e	15	48.5							

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No. 11 (concluded) 1923, November.

**RIVERVIEW COLLEGE OBSERVATORY,**

SYDNEY, N.S.W.

**SEISMOLOGICAL BULLETIN.**

No.	Date.	Phase.	Time (Greenwich)			Per. s.	Amplitude.			$\Delta$ km.	Remarks.
							$A_N$	$A_E$	$A_Z$		
			h.	m.	s.		$\mu$	$\mu$	$\mu$		
161	1923 Nov. 13	e	11	57.3							
		MN	12	01 39	14	2					
		F	12	10							
162	" 18	ePNE	21	48 31	8						
		eL		59.7	20						
		MN	22	07 05	18	5					
		ME		08 37	18		8				
		F	23	10							
163	" 20	e	17	26.4							
		ME		29 26	10		2				
		MN		32 20	10	2					
164	" 24	F	17	45							
		e	05	14 23							
		e		19 51							
165	" 24	MNE		21.6	8	1	1				
		F	05	35							
		eL	22	35.7	18						
		MN		37 24	14	3					
		ME		38 32	12		2				
166	" 26	F	23	20							
		e(P)	06	13 27							
		eS		17 51	7						
		eL		19.1	24						
		MN		22 21	8	7					
167	" 26	ME		22 30	10		15				
		F	07	45							
		e	12	52.0							
		eL		56.5	22						
		MN		57 58	20	3					
		ME		58 42	17		5				
F	13	30									

 Early phases lost  
during change of  
records.



# Riverview College Observatory

SYDNEY, N.S.W.

## SEISMOLOGICAL BULLETIN

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

**INSTRUMENTS:**

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

	V	$T_0$	$\epsilon:1$	$\frac{r}{T_0^2}$
$A_N$ (1)	158	8.3	2.7	0.02
(3)	120	8.8	4.7	0.03
$A_E$ (1)	168	7.9	4.3	0.01
(3)	162	9.0	2.8	0.03
$A_z$ (2)	79	4.9	4.7	0.06

No.	Date.	Phase.	Time (Greenwich)			Per. s.	Amplitude.			$\Delta$ km.	Remarks.
			h.	m.	s.		$A_N$ $\mu$	$A_E$ $\mu$	$A_z$ $\mu$		
168	1923 Dec. 2	ePNE	14	41	36	4				2600 (23°4)	
		iNE		41	44	4	+5	+7			
		ME		41	49	4		6			
		eSNE		45	43	8					
		iSE		45	48	8		+13			
		iSE		45	49	8	-4				
		MN		46	35	10	9				
		eL		46.8		20					
		MN		48	30	16	41				
		MZ		48	38	18			32		
		ME		49	01	16		33			
F		16	40								
169	" 3	e(p)	08	00	25						
		e(s)		03	56						
		MN		09	00	20	13				
		ME		09	54	20		17			
		MZ		10	41	15			11		
F		08	50								
170	" 5	eP	22	43	18					4480 (40°3)	
		iSE		49	23	6		-5			
		eL		53.0		20					
		MNE		58	00	18	67	73			
F											
171	" 7	eP	23	47	05	4				5520 (49°7)	
		eS		54	10	6					
		eL		59.0		17					
		ME		00	00	49	13	5			
		MN		03	09	11	3				
		F		00	55						
172	" 11	eP	05	18	05	5					
		e(s)		21	52	8					
		MN		22	26	13	7				
		eL		25.6		28					
		ME		27	17	21			23		
		ME		27	35	20		20			
		MN		28	05	20	22				
		F		06	20						
173	" 17	e?	19	59.2							
		MN	20	01	07	9	1				
		ME		01	21	9		2			
		F	20	15							

(Concluded on next sheet)



No. 12 (concluded)

1923, December.

**RIVERVIEW COLLEGE OBSERVATORY,**

SYDNEY, N.S.W.

**SEISMOLOGICAL BULLETIN.**

No.	Date.	Phase.	Time (Greenwich)			Per. s.	Amplitude.			$\Delta$ km.	Remarks.
			h.	m.	s.		$A_N$ $\mu$	$A_E$ $\mu$	$A_Z$ $\mu$		
174	1923 Dec. 19	e(s)	19	19	07						
		eL			24.5	24					
		ME			30 09	20		10			
		MN			31 53	19	10				
175	" 21	F	19	50							
		e	14	26.0							
		ME			26 28	6		3			
		ME			29 42	8		1			
176	" 22	MN			31 12	10	2				
		F	14	40							
		e	11	00.9		20					A few long waves.
		F	11	15							
177	" 23	eL	09	53.4		20					
		ME			54 21	18		5			
		MN			54 56	14	3				
		F	10	25							
178	" 26	eL	14	17.5		18					
		ME			18 20	14		2			
		MN			19 29	15	3				
		F	14	30							
179	" 26	eL	14	36.8		20					
		MNE			36.6	14	3	2			
		F	14	45							
180	" 27	eP	10	34 36		4					
		ME			41 10	16					
		MN			41 42	16	4				
		F	11	00							
181	" 31	eL	15	42.7		20					
		MN			45 15	14	3				
		ME			47 40	14					
		F	16	30				3/			