No. 1 1939, January.

Riverview College Observatory.

RIVERVIEW, ~~SYDNEY~~ N.S.W

SEISMOLOGICAL BULLETIN.

Φ = 33° 49' 49" S. λ = 151° 9' 30" E. h = 41·9 m Foundation : Triassic sandstone

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW.)
2. Weichert 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	s:1	$\frac{r}{T_o^2}$
A^N	(1)	213	8.4	4.2	0.015
	(3)	91	12.1	2.7	0.012
A^E	(1)	243	8.2	4.3	0.017
	(3)	76	9.2	4.8	0.013
A^Z	(2)	62	5.1	4.5	0.042

No.	Date	Phase	Time (Greenwich)	Per	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks
	1939		h. m. s.	s.	mm	mm	mm	km.	
1	Jan. 5	ePEZ	11 24 03	2		0.3	0.1	2420 (21°8)	
		ePN	24 05	2	0.2				
		iE	24 10	5		+1.4			
		iSN	27 58	5	-1.3				
		iE	28 07	5		-2.0			
		eLE	29.6	22					
		eLN	30.9	17					
		ME	31 39	16		0.5			
		MN	32 52	12	0.3				
		F	12 20						
2	" 9	eN	03~~x~~22.4						Microseisms present.
		e(S)N	24 46	7	0.6				
		eLN	25.7	14					
		MN	27 52	12	0.5				
3	" 10	eE	11 22 14	7		0.4			Microseisms present.
		eLN	24.2	13					
		MN	26 38	12	0.3				
		F	11 40						
4	" 11	e(L)	11 02.5	13					Small, and obscured by microseisms.
5	" 15	e?N	08 01.4						Preliminaries obcured by microseisms.
		eLN	08.8	11					
		MNE	10.3	11	0.7	1.0			
		F	09 15						
6	" 16	eN	02 24.9	7					Masked by microseisms.
		eE	32.2	8					
		eLE	34.6	17					
		ME	42 42	12		0.3			
		MN	44 49	12	0.3				
		F	03 20						

(Continued on next sheet)

RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h.	m.	s.	Per	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1939					s.	mm	mm	mm	km,	
7	Jan. 22	e?$_N$	13	36	34	5					Preliminaries very small & obscured by microseisms.
		e$_N$		37	25	5					
		e$_Z$		37	29	3					
		i(S)$_N$		42	14	7	+1.5				
		m$_N$		42	33	11	2.1				
		≠$_E$		42	36	7					
		m$_E$		42	46	7		1.3			
		SS?$_N$		44	15	11	2.5				
		SSS?$_N$		45	14	11	3.0				
		eL$_E$		46.3		17					
		eL$_N$		48.3		20					
		ME$_1$		49	44	13		8.7			
		MZ1		49	53	14			0.5		
		ME$_2$		51	48	11		12.0			
		MN$_1$		52	26	13	13.0				
		MZ2		52	29	14			0.6		
		MN$_2$		54	29	10	15.3				
		ME3		54	46	10		12.5			
		MN3		55	48	10	18.8				
		F	15	25							
8	" 22	e$_{NE}$	18	47	02	5?					Masked by micro-seisms.
		e$_N$		51	47	10?					
		eL$_N$		54	48	23					
		ME		56	46	13		1.0			
		MN		57	01	13	0.5				
		F	19	25							
9	" 25	eP$_{NEZ}$	03	45	55	10				11,220 (101°)	
		iPP?$_{NE}$		49	31	7	+1.0	-1.8			
		iPP$_N$		49	51	8	+1.5				
		iZ		50	04	7			+0.2		
		m$_{NE}$		50	07	12	1.5	1.1			
		m$_N$		50	20	12	2.0				
		i$_E$		50	24	8		-1.3			
		mNE		50	33	8	2.3	1.7			
		mZ		50	41	7			0.2		Macelwane's tables seem to give best fit for the phases
		iPPP$_N$		52	08	6	+1.5				
		m$_E$		52	36	7			1.5		
		i$_N$		56	30	5	+3.3				
		iSKS$_E$		56	34	7		-4.0			
		iSKS$_N$		56	35	7	+5.0				
		SKKS$_{NE}$		57	10	8	6.3	3.1			
		S?$_E$		57	57	8		2.7			
		eP$_{NE}$		59	01	20					
		PPS$_{NE}$		59	30	20	2.8	2.2			
		SS$_{NE}$	04	04	28	14	3.0	2.5			
		SSS?$_N$		08	31	13	2.0				
		eLQ$_{NE}$		14.0		60					
		eLR$_{NE}$		17.8		43					
		MN		24	38	17	2.7				
		MZ		25	07	16			0.2		
		ME		25	31	17		3.8			
		e$_E$	05	21.8		47					From 05 21.8 to 05 44 long waves, periods 47 to 60 seconds.
		e$_N$		22.0		60					
		eW$_2$N		49.8		30					
		F	06	55							

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RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1939		h. m. s.	s.	mm	mm	mm	km,	
10	Jan. 25	e_N	17 29.7						
		eNE	31.4	10					
		eL_E	33.8	24					
		MN_1	35 48	19	1.2				
		MN_2E	38 45	12	1.8	1.6			
		F	18 10						
11	" 26	$e(L)_E$	10 44.6	15?					Small and obscured by microseisms.
12	" 26	e_N	17 47.0	7					
		eL_N	48.4	14?					
		ME	51 52	13		0.2			
		MN	54 26	12	0.3				
		F	18 05						
13	" 27	$i?_E$	05 38 54			-0.8			Preliminaries obscured by heavy microseisms.
		eL_{NE}	45.6	13					
		MN	46 32	12	2.1				
		ME	48 07	10		2.6			
		F	Lost in No.14.						
14	" 27	eL_N	06 49.9	13					
		MN	51 45	12	0.4				
		ME	51 49	10		0.4			
		F	07 15						
15	" 30	ePZ	02 24 06	3				2990	
		iPNEZ	24 07	5	+4.0	+0.8	-0.8	(26?9)	iP Dilatation.
		iNEZ	24 15	7	+35.0	+4.3	-4.5		Azimuth NNE.
		iPPE	24 46	7		+7.5			
		PPP_N	24 59	10	29.0				
		mE	25 04	8		7.4			
		mE	27 22	11		13.7			
		iP_cP_N	27 27	12	+15.0				
		i_N	27 49	12	-27.5				
		iS_N	28 42	12	+56.5				Wiechert NS & EW
		mNE	28 55	18	>69	11.8			partly deranged
		mZ	29 04	12			2.5		after iS.
		m_{EZ}	29 13	18		14.4	3.3		EW measurements
		mN	29 21	20	>73				from Mainka after
		iSS_E	29 40	13		-28.0			28m 42s and NS
		iE	29 59	10?		-25.5			after 29m 21s.
		mE	30 32	13		24.0			
		eL_Z	31.1	28					
		iE	31 09	13		-31.0			
		eL_{NE}	31.4	28					
		ME	32 51	16		>55			
		MN	32 56	22	>72				
		MZ_1	34 12	17			11.3		
		MZ_2	38 18	11			11.2		
		F	Lost in No.16.						
16	" 30	e_N	05 29 44						
		$e(S)_N$	33 37	13					From Mainka.
		mN	34 10	18	2.7				
		mE	34 56	12		1.3			
		m_N	34 42	18	2.8				
		eL_E	37.1	20					
		ME	39 44	13		4.7			
		MN	40 00	14	6.2				
		F	07 15						

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RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h.	m.	s.	Per	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1939					s.	mm	mm	mm	km,	
17	Jany.30	$e(S)_N$	08	58	11	10					From Mainka.
		eL_N	09	02	.3	18					
		ME		03	22	14		0.3			
		bMN		03	29	14	0.5				
		F	09	30							
18	" 30	$e(S)_N$	12	36	36	9					From Mainka.
		eL_E		40	.7	17					
		ME		43	19	11		0.3			
		F	13	05							
19	" 30	iP_N	23	56	08	4	-0.8				
		ePZ		56	08	3					
		iZ		56	52	4			-0.3		
		mZ		56	55	4			0.6		
		iNE		57	03	7	+2.0	-0.8			
		mZ		57	10	6			0.5		
		mNE		57	17	7	6.1	1.1			
		iN		59	48	7	+3.0				
		$e(S)_N$	00	00	35	10					
		mE		00	46	10		3.0			
		mN		00	49	10	4.5				
		iN		01	56	14	+5.5				
		iE		02	12	8		-5.0			
		MN_1		02	32	9	10.9				
		ME_1		02	53	8		15.5			
		MN_2		03	53	8	17.7				
		ME_2		03	58	8		25.5			
		F	01	25							
20	" 31	$e(S)_N$	04	24	52	10					
		eL_N		28	.8	23					
		MN		30	17	13	0.4				
		F	04	50							

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D.J.K.O'CONNELL, S.J.
Director.

WM.O'LEARY, S.J.
1939, Feb.13.

Riverview College Observatory.

RIVERVIEW, ~~SYDNEY~~ N.S.W.

SEISMOLOGICAL BULLETIN.

Φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m Foundation : Triassic sandstone

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW.)
2. Weichert 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	ε:1	$\frac{r}{T_o^2}$
A^N	(1)	214	8.5	4.1	0.015
	(3)	92	12.1	4.7	0.010
A^E	(1)	235	8.3	4.3	0.017
A^Z	(3)	79	9.3	5.9	0.013
	(2)	70	5.1	3.1	0.Ø37

No.	Date	Phase	Time (Greenwich) h.	m.	s.	Per s.	Amplitude. A_N mm.	A_E mm.	A_Z mm.	Δ km.	Remarks
	1939										
21	Feb. 1	e_{NE}	01	46	00	3					
		eZ		46	18	1					
		e_E		52	52	4		0.5			
		i_N		53	31	4	+1.0				
		MZ		57	34	5			0.2		
		MN		57	47	7	6.4				
		ME		57	51	8		4.3			
		F	02	40							
22	" 2	$i(P)_N$	23	23	05	4	+0.6				Obscured by heavy microseisms.
		$i(S)_N$		27	25	7	+1.3				
		eL_N		30.4		24					
		ME		31	32	14		1.2			
		MN		32	31	14	1.0				
		F	00	15							
23	" 3	ePE_Z	05	31	53	5				2710	
		iP_{NE}		32	02	8	-3.0	-1.7		(24°4)	
		m_N		33	12	7	3.6				
		$i(S)_N$		36	11	9	+4.5				
		iS_{NE}		36	18	9	-10.5	+5.3			
		mE		36	38	13		11.8			
		SS_N		36	45	13	33.5				
		mE		37	20	13		9.3			
		eL_E		37.6		23					
		m_N		37	45	15	11.7				
		MN		41	01	13	31.0				
		ME		41	13	13		39.3			
		MZ		41	59	13			0.4		
		F	08	10							
24	" 3	e_N	15	30.0							
		eL_N		33.6		13					
		ME		36	15	10		0.4			
		MN		36	50	10	0.3				
		F	16	00							
25	" 3	$e(P)_E$	20	20	35	7					
		PP?E		21	06	7		0.6			
		$e(S)_N$		24	31	4					
		eL_N		26.7		18					
		MN		30	05	13	1.3				
		ME		30	31	18		1.3			
		F	21	10							
26	" 4	eP_N	05	25	02	5				2665	
		eS_E		29	18	7				(24°0)	
		iS_{NE}		29	26	8	+1.4	-1.2			
		SS_N		29	46	10	1.6				
		eL_N		31.0		20					
		M_1		34	28	13	1.0	1.7			
		ME_2		36	58	9		3.7			
		MN_2		37	53	9	2.7				
		F	Lost in No.27								

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RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1939		h. m. s.	s.	mm.	mm.	mm.	km,	
27	Feb. 4	$e(P)_N$	06 12 59	5					
		eS_E	17 21	7					
		S_N	17 28	10	0.5				
		eL_N	20.0	16					
		MN	21 28	13	0.8				
		ME	23 54	9		1.3			
		F	07 10						
28	" 4	e_N	11 47 03	5					
		MN	49 11	11					
		ME	52 58	12					
		F	12 00						
29	" 7	eP_{NZ}	07 12 55	3				3335	
		$PP?_N$	13 24	5	0.6			(30°0)	
		iS_N	17 54	5	-0.6				
		eS_E	17 56	5		0.3			
		i_N	18 02	5	-1.0				
		eL_E	21.6	17					
		ME	25 05	11		0.5			
		MN	26 17	11	0.2				
		F	07 50						
30	" 8	e_{NE}	06 29 54	7					
		$e(L)_N$	37.7	12					
		F	06 50						
31	" 9	$e(P)_N$	02 37 05	3					
		$PP?_N$	37 39	7?					
		eS_N	41 25	10					
		eL_N	44.6	17					
		ME	47 17	11		0.6			
		MN	48 27	10	0.4				
		F	03 15						
32	" 9	e_N	11 58 11	3					
		mN	12 03 49	7					
		eL_N	17.1	26					
		ME	20 20	20		0.1			
		F	12 35						
33	" 11	e_E	12 39 49	1					Very small nearby shock.
		i_N	40 02	1	-0.3				
		F	12 42						
34	" 16	e_{NE}	19 11 38	6					
		eL_N	30.1	20					
		MN	36 00	17	0.1				
		F	20 00						
35	" 20	ePN	03 51 12	3	+0.7			2445	
		iPP_N	51 43	5	+1.3			(22°0)	
		eS_N	55 38	6					
		e_N	55 52	8					
		SS_N	56 03	8	1.8				
		eL_N	58.6	27					
		ME	04 00 25	13		1.8			
		MN	01 08	13	1.6				
		F	04 50						
36	" 23		00 43 to						Shallow waves.
			00 55 approx.						No time marks.
37	" 23	e_N	10 26.1						
		$e(L)_N$	30.3	19					Shallow waves.
		ME	36 17	12		0.3			

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RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h.	m.	s.	Per s.	Amplitude A_N mm.	A_E mm.	A_Z mm.	Δ km,	Remarks
	1939										
38	Feb.23	e(L)$_N$	23	25.1		14?					
		MN		32	10	13	0.2				
		F	23	55							
39	" 24	e_E	11	26.4							
		ME		29	54	11		0.3			
		F	11	40							
40	" 24	e_E	14	55.8							
		ME	15	00	03	13		0.3			
		F	15	10							
41	" 28	iP_N	02	41	54	3	±1.1			2890 (26°0)	E-W indecipherable owing to entangling of lines. Felt at Katawi, Kokopo, New Britain R.F.6, Tavuilui 6, Sum Sum Plantation, Kokopo 4-5, Malapo & Kurudui 4, Meinduk, Baining 4, Gasmata 3, Nodup, Rabaul 2.
		S_N		46	22	9					
		SS?$_N$		47	45	14	1.7				
		m_N		47	45	8	1.0				
		m_N		49	51	7	3.0				
		eL_N		51	.0	24					
		MN		53	37	17	2.0				
		F	03	30							

D.J.K.O'CONNELL, S.J.
Director.

Riverview College Observatory.

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SEISMOLOGICAL BULLETIN.

Φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m Foundation : Triassic sandstone

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW.)
2. Weichert 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	s:1	$\frac{r}{T_o^2}$
A^N	(1)	210	8.4	3.9	0.021
	(3)	98	11.9	3.0	0.010
A^E	(1)	235	8.3	3.7	0.026
A^Z	(3)	80	9.3	5.5	0.014
	(2)	62	5.1	3.4	0.031

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude. A_N mm	A_E mm	A_Z mm	Δ km.	Remarks
42	1939 March 2	e?N	07 06.6	3					Heavy microseisms, present.
		iN	07 25	3	+0.6				
		iE	07 35	3		-0.8			
		iE	09 07	3		-1.3			
		SN	11 25	11	1.0				
		iE	12 26	5		-1.2			
		mN	13 01	15	1.2				
		eLE	14.9	17					
		ME1	18 36	11		3.1			
		MN	20 12	13	4.6				
		ME2	20 57	12		4.5			
		F	06 50						
43	" 4	eN	06 09.6						
		eLE	13.1	18					
		M	20 11	10	3.3	2.0			
		F	06 50						
44	" 7	eLQE	02 07.2	39					Earlier phases completely obscured by very heavy microseisms.
		eLRN	09.6	21					
		ME	14 07	13		11.2			
		MN	14 51	11	3.8				
		F	03 10						
45	" 7	iE	17 26 20	5		+1.3			Felt at Kurudui, Kokopo, New Britain R.F.5, and at Kokopo 2.
		iN	26 26	5	+1.5				
		mN	26 42	10	1.7				
		e(L)E	27.6	24					
		MN	30 49	13	1.7				
		ME	31 00	13		2.8			
		F	18 10						
46	" 8	e?Z	22 04 07						Very small.
		ePZ	04 12	2				2800 (25?2)	
		ePN	04 14	4					Felt at Buku Passage, Kieta, New Guinea R.F.5, Nodup, Rabaul 3.
		iPN	04 17	4	-0.8				
		PP?N	04 45	5	1.2				
		iSNE	08 36	7?	-1.5	+1.0			
		mE	09 00	6		1.3			
		mN	09 04	8	3.2				
		SS?N	09 33	17	1.3				
		iE	10 19	7		+4.0			
		eL	11.0	17					
		ME	13 12	14		2.0			
		MN	13 43	17	1.9				
		F	23 15						
47	" 11	eE	11 09 55						
		eLN	13.5	17					
		M	15 08	15	0.3	0.3			
		F	11 30						

(Continued on next sheet)

RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude A_N mm.	Amplitude A_E mm.	Amplitude A_Z mm.	Δ km,	Remarks
	1939								
48	March 13	eL_N	04 14.0	15					
		F	04 20						
49	" 13	$e(P)_E$	05 17 39	7					
		eL_N	24.5	19					
		eL_E	25.1	24					
		MN	26 33	16	0.6				
		ME	26 50	19		0.6			
		F	06 20						
50	" 15	MN	08 22 03	10	0.2				A few small surface waves.
		ME	27 17	11		0.1			
51	" 15	ME	10 13 11	10		0.2			A few small surface waves.
		MN	17 53	10	0.2				
52	" 15	MN	11 09 20	10	0.2				A few small surface waves.
		ME	13 12	10		0.2			
53	" 15	MN	12 38 38	10	0.2				A few small surface waves.
54	" 15	ME	12 51 22	10		0.2			A few small surface waves.
		MN	52 48	10	0.2				
55	" 15	MN	13 43 27	10	0.2				A few small surface waves.
56	" 18	e_N	17 06 15						
		eL_N	10.0	17?					
		MN	11 25	12?	0.2				
		ME	11 56	11		0.2			
		F	17 20						
57	" 20	i_N	03 42 29	5	-1.1				
		i_E	42 33	5		+1.2			
		i_N	42 56	5	-1.8				
		m_E	42 56	7		0.6			
		i_E	43 31	7		-1.6			
		i_N	43 36	6	-2.2				
		m_E	43 58	8		1.5			
		e_E	50.1	26					
		$e(L)_E$	54.1	26					
		eL_N	56.1	25					
		ME	59 23	22		0.4			
		MN	04 00 03	21	0.8				
		F	04 30						
58	" 21	iP_E	01 22 04	5		+1.1		7265	
		eP_N	22 04	5				(65°4)	
		$iPcP_E$	22 36	5		+1.2			
		iS_{NE}	30 47	7	+0.8	-1.5			
		iPS_N	31 00	7	+3.5				
		m_E	31 09	6		4.6			
		m_{NE}	32 17	6	2.3	3.3			
		SS_N	35 15	9	2.3				
		$SSS?_N$	38 20	26	6.4				
		eL_N	39.4	45					
		eL_E	40.2	39					
		MN_1	43 01	28	15.8				
		ME_1	46 17	23		16.3			
		MN_2	47 12	10	21.2				
		ME_2	48 43	21		25.0			
		F	04 35						

(Continued on next sheet)

RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude A_N mm.	Amplitude A_E mm.	Amplitude A_Z mm.	Δ km,	Remarks
	1939								
59	March 21	iP_{NE}	07 59 49	5	-1.1	+0.5		2890 (26°0)	
		S_N	08 04 17	9					
		i_E	04 27	5		-1.3			
		m_N	04 29	9	1.6				
		m_E	04 53	7		1.2			
		m_N	05 03	7	1.8				
		eL_{NE}	07.1	19					
		M_N	08 51	13	0.8				
		M_E	12 06	9		2.6			
		F	09 05						
60	" 21	eL_N	09 18.2	16					
		M_E	21 20	14		0.2			
		F	09 30						
61	" 22	eP_{NZ}	03 51 31	4				3065 (27°6)	
		eE	53.0						
		iS_E	56 02	5		+2.4			
		eS_N	56 02	9					
		m_{NE}	56 20	12	2.0	1.3			
		SS_N	56 53	11	3.2				
		m_N	58 13	9	2.8				
		m_E	58 47	10		2.7			
		eL_E	04 00.5	23					
		eL_{NZ}	00.7	22					
		L_N	01 19	22	4.7				
		M_E	01 40	18		7.9			
		MZ_1	05 00	9			0.2		
		M_N	05 06	12	4.7				
		MZ_2	08 30	9			0.2		
		F	05 15						
62	" 22	$e(P)_{NE}$	07 28 17						
		$e(S)_N$	32 43	8					
		eL_N	36.3	18					
		e_E	36.7	13					
		MN_1	38 03	14	1.1				
		MN_2	40 03	14	1.6				
		ME_1	41 05	16		2.1			
		MZ	41 17	17			0.1		
		ME_2	42 08	16		2.8			
		F	09 20						
63	" 23	i_E	16 26 21	5		+1.2			Heavy micro-seisms present.
		e_N	26 44	5					
		m_E	26 44	5		1.3			
		i_E	31 31	5		-1.1			
		e_N	31 47	10					
		m_N	32 03	8	1.2				
		eL_E	33.4	28					
		eL_N	34.0	24					
		M_E	34 52	21		0.7			
		M_N	35 32	17	0.7				
		F	18 10						

(Continued on next sheet)

RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h.	m.	s.	Per	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1939					s.	mm	mm	mm	km,	
64	March 26	$i?_E$	03	57	19	4		-1.0			Heavy microseisms present. $iE?$ and $iN?$ may be only large microseisms.
		$i?_N$		58	19	3	+0.5				
		i_E		58	49	2?					
		i_N		59	17	5	+0.7				
		e_N	04	01	09	7					
		i_E		01	15	3		-0.9			Reported felt in Central Australia.
		e_Z		01	23	3					
		i_N		02	00	5	+15.1				
		i_E		02	04	3		+7.2			Looks like multiple shock.
		i_Z		02	05	4			-3,5		
		MN_1		02	26	5	46±				
		i_Z		02	29	4			-3.5		
		$L?_E$		02	33	7					
		m_Z		02	59	7			3.3		
		ME_1		03	02	7		35±			
		MN_2		03	20	5	20.0				
		ME_2		03	35	5		22.7			
		MZ_1		03	36	5			7.0		
		MZ_2		03	49	5			7.9		
		F	04	55							
65	" 29	e	00	32	05	3					
		M		36	00	7	1.7	1.1			
		F	03	50							

D.J.K.O'CONNELL,S.J.
Director.

Riverview College Observatory.

RIVERVIEW, ~~SYDNEY.~~ N.S.W.

SEISMOLOGICAL BULLETIN.

Φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m Foundation : Triassic sandstone

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW.)
2. Weichert 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	ε:1	$\frac{r}{T_o^2}$
A^N	(1)	218	8.8	4.2	0.018
	(3)	95	11.7	6.0	0.010
A^E	(1)	227	8.2	4.3	0.022
	(3)	77	9.4	4.4	0.015
A^Z	(2)	62	5.2	2.9	0.033

No.	Date	Phase	Time (Greenwich)	Per	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks
	1939		h. m. s.	s.	mm.	mm.	mm.	km.	
66	April 1	e_E	02 10.m30	6					
		e_E	14 17	8					
		eL_N	17.4	20					
		MN	19 39	14	0.3				
		ME	20 43	16		0.2			
		F	02 40						
67	" 1	e_N	05 13 20	1					
		i_N	13 27	1	+0.3				
		MN	13 50	4	0.4				
		F	05 16						
68	" 3	iP_N	15 50 50	2	+0.5			2380 (21°4)	
		eP_E	50 50	3					
		eS_N	54 39	9					
		e_E	54 46	9?					
		eL_N	56.3	21					
		ME	57 29	15		0.3			
		MN	57 57	13	0.6				
		F	16 25						
69	" 3	$e(L)_N$	23 19.2	16?					
		MN	22 03	9	0.3				
		F	23 30						
70	" 4	iP_{NE}	10 16 00	5	-0.5	-0.7		2530 (22°8)	
		PP_E	16 23	5		0.5			
		PPP_N	16 34	4	0.7				
		iS_N	20 02	8	-2.1				
		iS_E	20 05	8		-2.0			
		m_{NE}	20 15	8	3.8	2.7			
		SS_{NE}	20 38	8	1.7	1.0			
		eL_E	21.7	27					
		ME	23 03	21		1.0			
		MN	23 55	17	1.0				
		F	11 15						
71	" 4	e_N	11 48 37	8					
		e_E	49 10	10					
		eL_E	50.4	22					
		eL_N	51.0	21					
		MN	52 55	7	0.5				
		ME	53 15	8		0.3			
		F	12 20						
72	" 5	eN	06 38,9	8					Felt in New Britain at Kurudui R.F. 3, at Rabaul R.F.2.
		eL_N	41.1	23					
		MN	42 24	14	0.2				
		F	07 00						
73	" 5	i_E	13 03 12	2		-0.5			Very small shock. Felt in Melbourne & Geelong, Victoria.
		i_N	03 24	2	+0.7				
		F	13 05						

(Continued on next sheet)

RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude A_N mm.	Amplitude A_E mm.	Amplitude A_Z mm.	Δ km,	Remarks
	1939								
74	April 5	iPNE	16 47 29	7	-3.2	-4.3			Focal depth below normal? About 100 Km. If deep focus
		iNE	47 38	7	-7.6	-12.3			
		PPNE	47 47	7	13.0	24.8			pP 16 47 47
		mE	48 05	5		18.6			sPE 48 46
		mN	48 07	5	12.3				sSE 51 35
		mE	48 19	7		9.0			sSN 51 37
		mN	48 30	7	13.8				Δ 19°
		mE	48 46	7		10.4			If normal depth
		mN	49 12	7	11.7				Δ 21°6
		mE	49 28	7		8.2			P and S groups
		mN	49 46	7	10.3				very striking.
		mE	50 19	7		8.0			Wiechert N-S de-
		mNE	51 03	7	7.0	6.2			ranged after 51m
		iSNE	51 25	9	+17.0	+26.8			37s. E-W partly
		mE	51 35	10		67.0			deranged after 51m
		mN	51 37	12	100+				37s.
		?N	52 16	23					
		eLE	53.1	26					
		MN1	54 06	16	19.2				MN from Mainka.
		ME	54 12	17		28+			
		MN2	55 29	14	21.6				
		F	20						
75	" 11	eN	17 58 25						
		eLN	18 04.4	14					
		MN	06 43	11	0.2				
		F	18 20						
76	" 15	eN	08 59.2	8					A few small waves
		F	09 05						masked by micros.
77	" 15	eN	11 29.3	7					Do. do. do. do.
		eE	31.0	7					
		F	11 45						
78	" 15	eE	14 57.1	8					Do. do. do. do.
		eN	58.1	8					
		F	15 05						
79	" 15	eN	20 08 09	8					Masked by micro-
		eLE	14.6	25					seisms.
		ME	16 51	17		0.7			
		MN	17 10	16	1.3				
		F	21 20						
80	" 18	eNE	06 41 24	9					Earlier phases
		iN	47 37	8	-0.9				obscured by micro-
		eE	47 39	11					seisms.
		eNE	52 39	20					
		eNE	56 18	20					
		eLN	07 07.6	41					
		eLE	08.2	32					
		M1	12 32	26	0.6	0.5			
		MN2	16 01	21	1.5				
		ME2	17 18	20		1.5			
		F	09 35						
81	" 19	eLE	12 51.7	21					
		eLN	51.9	20					
		MN	54 08	10	0.4				
		ME	55 44	11		0.5			
		F	13 15						
82	" 20	iPNE	22 10 34	5	-1.2	+1.0			
		mNE	11 04	6	1.7	2.0			
		eLN	14.3	12					
		eLE	14.4	13					

(Continued on next sheet)

RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude A_N mm.	Amplitude A_E mm.	Amplitude A_Z mm.	Δ km.	Remarks
	1939								
82	Apr.20	ME_L	22 14 52	12		4.3			
	cont.	MN_1	14 58	12	5.7				
		ME_2	16 43	10		8.7			
		MN_2	16 49	11	7.5				
		F	00 30						
83	" 21	i_N	04 40 31	3	-0.7				
		i_E	41 34	2		-0.3			
		F	04 45						
84	" 21	e_N	04 49 58	8					A few small waves.
		F	05 00						
85	" 24	e_N	12 43 00	5					"
		eL_E	49.1	17					
		eL_N	49.6	16					
		M	51 30	14	0.2	0.2			
		F	13 00						
86	" 24	$e(L)_N$	21 16.2	18?					
		MN	20 00	14	0.5				
		ME	20 36	16		0.3			
		F	21 50						
87	" 30	eP_{NE}	03 00(30)	8				2890	Clock correction
		iP_{NEZ}	00(40)	8	+4.5	+1.5	-0.5	(26°0)	uncertain. Times
		m_E	00(47)	8		2.3			may be in error by
		m_N	00(52)	8	9.1				as much as -36s.
		iPP_N	01(05)	10	-2,6				
		iPP_E	01(06)	10		-10.5			
		iPP_Z	01(07)	8			+4.1		
		m_N	01(16)	10	28.5				
		m_E	01(21)	10		13.5			
		m_Z	01(26)	8			5.7		
		m_N	01(27)	10	31.5				
		m_E	01(42)	10		11.5			
		m_N	02(40)	10	31+				
		m_E	02(43)	9		10.1			
		PcP?N	04(25)	9	25.0				
		PcP?E	04(29)	9		22.3			
		i_Z	04(55)	12			+7.3		Wiechert N-S part-
		iS_E	05(00)	12		+18.0			ially deranged aft-
		iS_N	05(01)	12?→30					er S. Mainka N-S
		i_E	05(14)	12		-35.0			pen off paper sev-
		SS_E	05(42)	20		>70	70		eral times after S
		m_Z	05(59)	12			7.5		Wiechert E-W part-
		i_E	06(36)	24		+80			iallt deranged afte
		i_E	07(37)	20		>-50			03h 06m.
		MZ	09(29)	18			12.0		
		ME	10(12)	14		>75			iE & ME from Mainka.
		F	Obscured by No.88						
88	" 30	e_N	07 16(03)	7					Small aftershock
		eL_N	18(.6)	13					masked by micro-
		ME	21(35)	9		0.4			seisms.
		F	07 50						
89	" 30	ME	08 02(50)	14		0.3			Masked by micros.
90	" 30	e_E	09 21(47)	6					
		eL_N	26(00)	16					
		ME	27(22)	14		0.5			
		MN	28(40)	11	0.3				
		F	09 55						
91	" 30	e_N	14 08(00)	5					
		eL_E	16(.8)	16					
		M	18(00)	12	0.7	2.8			
		F	15 10						

D.J.K.O'CONNELL, S.J.
Director.
1939, April 30.

SUPPLEMENTARY NOTES
TO
EARTHQUAKE NO.15, 1939 January 30, 2h.

Supplied by courtesy of the Prime Minister's Department, Canberra, and the Director of Agriculture, Territory of New Guinea.

Extract from Report of J. I. Merrylees, Esq., District Officer, Kieta, Territory of New Guinea:

" Kieta.
On Monday January 30 seven shocks were recorded, the first and most severe occurring at 12.20 p.m., when an intensity of 6, direction north-west to south-east, duration 45 seconds, was noted. This shock was noted on M.V."Malaita", at sea off Arigua, when passengers and crew thought that the vessel had touched ground. The remaining shocks were of 2 to 3 seconds duration, intensities varying from 3 to 4, and direction invariably the same, north-west to south-east.

Damage was slight, one tank had the tap wrenched loose, crockery fell from shelves and a few bottles were broken in Burns Philp's store as a result of shocks at 12.20 and 3.14 p.m.
Tremors at the rate of one or two a day, intensity 4 to 5, duration several seconds, direction north-west to south-east, have occurred ever since and are still occurring(Feb.10).

Buin.
Mr. Bilston reports that about 12.20 p.m. on January 30th he was working on the erection of a new bridge across the MULIKO RIVER, when without warning the ground shook violently and the staging for the new bridge collapsed. Two other shocks followed within a few minutes, the earth movement making it practically impossible to stand up. Several trees fell and the old bridge was completely broken. Tremors of varying intensity continued at five to ten minute intervals all that day and night. On 31st the tremors became less frequent, being at intervals of half an hour on that day and at about hourly intervals up to and including February 3rd. The direction of the shock was north to south and the severest shocks appear to have been felt along a line northenorth-west of KIHILI Methodist Mission.

Casualties. At BARILO two women were killed by falling ground and one woman by a falling tree; another woman was injured as a result of being partially buried in falling ground. Falling trees resulted in the death of a youth at TUALAGAI and another youth at LUKARURU, and one woman died as the result, it is thought, of shock. General reports of other natives being injured have been received but no details are available, and it is not thought that such injuries are very serious.

Damage to Property. The missinoary's house at KIHILI leaned over to a dangerous angle and had to be abandoned. A number of bridges on the property were destroyed. The Marist Mission Church at TUREBOIRU collapsed and the Father's house was partly dislodged from the piles and had to be propped up. At the Marist Mission at MUGUAI the Father's house collapsed, as did the Refectory, and the Sisters' quarters had to be propped up. At the Marist Mission at PAPAPATUAI the Father's house, which is on 10 foot piles, leaned to a dangerous angle, but was propped up and saved. Mr. Ebery reported the destruction of a shed.
The bridge over the LOLORU RIVER was left standing but the approaches were badly cracked and broken; shelters over other bridges were broken and the approaches cracked and generally damaged. Many roads show crevasses and on the road traversed by Mr. Bilston from MULIKO RIVER to Kangu Station a number of cracks in the ground were observed. Fences surrounding native gardens were broken and three or four houses were destroyed in each village near the station. Falking trees blocked roads but these are being removed.

KANGU (Buin) Station escaped lightly and none of the buildings were damaged. In the residence the stove overturned, crockery was broken and a cupboard in the office overturned.

The damage reported was all done during the three major shocks on

January 30 and, it will be noted, that the worst damage appeared to be located in Buin Native District, and area north-west of KANGU.

Puruata.

No abnormal tremor was reported on January 30, although one of usual intensity was noted by the Native Constable in charge at about noon. He did not notice any subsequent shocks. On February 2 I observed from the deck of "Maiwara" that Mt. Bagana was erupting apparently molten lava at irregular intervals, but averaging about 12 times per hour over a period of 6 hours. The smoke did not appear heavy and was blowing to the north, so it was possible to see the red ball of lava emerge from the crater at the top and the rivers of fire roll down the sides. A channel to the north-west took four out of five flows and channels to the west and to the south-west shared the other flows. At a distance of 15 miles it was impossible to estimate the width of the lava flows, but it was observed that they could be watched to about one-third of the distance down the summit, after which the streams disappeared, but whether this was due to the cooling of the lava or its disappearance into deep gorges cannot be determined.

The Native Constable in charge of the Base Camp had not heard of any damage in the area, in fact he was surprised to learn that there had been a series of major shocks in Buin. "

Report from K.W.Bilston, Patrol Officer, Buin Police Post, Kieta.

1939, Jan.30. First tremors 12h 20m.(p.m.),Duration 10s.,R.F.9 Intensity
Main shock 12 21 " 10s. 9 "
After tremors 12 22 " 10s. 9 "
Thereafter every 10 minutes until about 4 a.m. on January 31, every half hour until 6 a.m. on Feb.1 and every half hour till Feb.3.
Direction from (main Shock)-North to South.
No. of shocks- Three main shocks and several hundred minor shocks.
Special Notes. There were considerable and terrifying rumbles, like thunder as the shocks approached. A great amount of damage to native houses was done and there have been 6 deaths reported amongst the natives. Fissures have opened in many places to a maximum width of 12 in. and there are signs that the coast line from near Buin Police Post north-east for 5 miles has fallen perhaps a foot. On Feb.4 tremors of a minor nature were still being felt.

Report from E.G.Slee, Kokopo, New Britain.

On Tuesday, January 31, 1939 at 5.30 p.m. it was noticed that the sea at Kokopo receded lower than an ordinary low tide, and then rapidly rose to above normal high tide level. This occurred three times in the space of approximately 20 minutes. On Thursday and Friday, Feb. 2 & 3, unusually high tides have been experienced. It is possible that Tuesday's occurrence may be connected with the tidal wave in the Solomon Islands.

----oOo----

The Earthquake of Hanuary 30, 2h. was felt in the following places;

Bulolo, Morobe, New Britain,	Intensity	R.F.3,
Neinduk, Baining, New Britain,	"	R.F.2
Massawa, Baining, New Britain,	"	R.F.3
Botanical Gardens, Rabaul,	"	R.F.3
Tavui lui, Rabaul,New Britain,	"	R.F.3
Kokopo, New Britain,	"	R.F.3

----oOo----

RIVERVIEW COLLEGE OBSERVATORY,
RIVERVIEW, N.S.W.

D.J.K.O'CONNELL,S.J.
Director.

RIVERVIEW COLLEGE OBSERVATORY acknowledges with thanks the receipt of the undermentioned Bulletins and Publications during February, March and April, 1939.

Adelaide	1939 January-March Preliminary.
Apia	1938 October-1939 March.
Batavia	1937 October-1938 March.
Bergen	1937 January-December.
Brisbane	1938 December-1939 March.
Bucarest	1938 December.
Christchurch	1938 December,1939 January Provisionl.
Collmberg (Leipzig)	1939 January,February.
Denver	1938 January-May.
Firenze	1938 November, December.
Fordham	1938 October-December.
Fort de France	1938 July-December.
Gottingen	1938 January-September.
Hamburg	1938 October 23-December 31.
Helwan	1938 December, 1939 January.
Hong Kong	1938 December-1939 February.
Jesuit Seismological Assoc.	1938 Nos. 34-~~36~~45
Kew	1938 December-1939 March.
Kongisberg	1933,1934,1935 May-Dec.,1936 Jan-July
Koti	1938 January-October.
Ksara	1936 January-December.1939Jan.Feb.Prov.
La Plata	1938 October December. 1932,1933,1934.
Malaga	1937 July-December.
Manila	1938 November-1939 January.
Melbourne	1938 October-December. 1939 Jan-Mar.P
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Paris	1938 November-1939 January.
Pasadena	1938 April-August, Local shocks Oct-Dec. Prelim.1939 Jan.,Feb.
Perth	1939 January,February.
Phu Lien	1938 June-August. Sept-Dec.Prelim.
Rathfarnham	1938 October,November.
San Fernando	1938 November,December.
Sofia	1936 July-December.
Strasbourg	1938 November-1939 Jany. Bull.d'ech.1,
Sydney	1938 November. 2,1939.
Stuttgart	1937,1938 December, 1939 January.
Tokyo	1938 January-June.
Toledo	1938 August,September.
Tyosen	1936 January-December.
Uccle	1938 Nos.2,3.(March 16-June 30).
Upsala	1937 July-1938 June.
U.S.C.& G.S.	1939 Jan.20,25,30,Feb.3,9.
Venezia	1934 July-1935 March.
Wellington & N.Z.Stations	1938 December, 1939 January.
Weston	1938 July-October.
Yung Yuen Fang	1936 August 13-December 31.
Zi-Ka-Wei	1937 Jan.30-Dec.25. Oct.Nov.Prelim., 1938 January-March.
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D.J.K.O'CONNELL,S.J.
Director.
1939, May 9th.

Riverview College Observatory.

RIVERVIEW, ~~SYDNEY~~. N.S.W.

SEISMOLOGICAL BULLETIN.

Φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m Foundation : Triassic sandstone

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW.)
2. Weichert 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	ε:1	$\frac{r}{T_o^2}$
A^N	(1)	214	8.7	4.0	0.022
	(3)	100	12.0	3.1	0.012
A^E	(1)	232	8.2	3.9	0.019
	(3)	74	9.3	6.5	0.017
A^Z	(2)	61	5.3	3.5	0.039

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude. A_N mm	A_E mm	A_Z mm	Δ km.	Remarks
92	1939 May 1	e_N	04 34.7						
		$e(L)_N$	37.9	16					
		MN	42.5	14	0.5				
		ME	42.7	14		0.5			
		F	05 25						
93	" 1	$eP?_N$	06 10 11	3?					
		e_N	11 55	6?					
		e_E	19 21	8					
		iS_E	19 50	7		-0.5			
		eS_N	19 50	7					
		$?_E$	21 39	11		0.6			
		eLQ_E	31.8	27					
		eLR_N	33.7	27					
		MN	40 32	15	0.5				
		ME	40 44	16		0.7			
		F	Lost in No.94.						
94	" 1	e_E	07 23.2						
		eL_E	28.0	14					
		ME	28 32	12		0.5			
		F	07 45						
95	" 1	e_N	16 37.2	3					
		$e(L)_E$	39.6	16?					
		eL_N	41.0	14					
		F	16 55						
96	" 1	e_E	19 11 53	1					Times ± 1s. Reported felt at Port Augusta, Parachilua and Mot-pena Station, South Australia.
		e_N	11 55						
		i_E	12 21	2		-0.3			
		i_N	12 23	2	+0.4				
		m_E	12 25	2		0.4			
		m_N	12 37	3	0.5				
		ME	13 14	7		0.3			
		MN	13 16	4	0.4				
		F	19 16						
97	" 2	$e(S)_N$	13 41 43						Early phases obscured by micro-seisms.
		$e(SS)_E$	49 37	20					
		eL_N	14 04.8	24					
		eL_E	05.6	34					
		MN	10 57	18	0.3				
		ME	13 43	18		0.5			
		F	16 00						
98	" 3	$e(S)_E$	07 15 45	10					
		$e(S)_N$	15 47	10					
		m_E	16 10	10		0.5			
		m_N	16 12	10	0.8				
		$eL?_N$	18.7	20					
		ME_1	20 41	12		2.8			
		MN	22 39	11	1.6				
		ME_2	23 17	10		4.7			
		F	08 15						

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RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1939		h. m. s.	s.	mm.	mm.	mm.	km,	
99	May 3	e_N	16 32.4	4					
		e_N	36.2	4					
		eL_E	38.2	16					
		eL_N	39.0	18					
		M_E	41.9	12		0.3			
		M_N	42.3	16	0.2				
		F	16 00						
100	" 4	M_N	07 07 22	14	0.2				A few waves
		M_E	08 15	12		0.2			
101	" 5	e	12 27.5	3					Short period waves masked by micro-seisms.
		m_N	32 18	4	1.1				
		F	12 38						
102	" 6	e_N	17 18.5						
		M_N	28 11	14	0.2				
		M_E	30 43	14		0.2			
		F	17 45						
103	" 6	eP_N	20 09 53	4	0.3			2745	
		iS_E	14 18	6		+0.7		(24°7)	
		eS_N	14 18	6	0.5				
		m_N	14 38	11	1.2				
		m_N	16 00	12	1.5				
		eL_N	17.4	18					
		M	19 03	14	4.1	3.1			F 21h 15m.
104	" 8	$e?_E$	02 06 52						
		$eP'?_E$	07 13	5					
		i_N	09 27	4	+0.5				
		ePP_E	12 29	8					
		ePP_N	12 37	8?					
		$iSKKS_E$	19 27	8		-0.6			
		eSS_E	35.3	44?					
		eSS_N	35.4	44?					
		$eSSS_{NE}$	41.3	28					
		m_N	43 49	26	0.5				
		m_E	48 32	20		0.3			
		eL_N	03 01.5	40?					
		M_E	26 32	18		0.4			
		M_N	26 31	18	0.4				F 04h 20m.
105	" 10	e_E	08 08 16	14					
		eL_N	25.7	30					
		M_N	29 19	20	0.2				
		M_E	31 33	20		0.1			F 09h 10m.
106	" 11	$e?_E$	17 48.5?						
		e_N	53.0?						Clock correction uncertain.
		eL_N	55.8?	12					
		M_N	57.5?	12	0.3				
		M_E	58.8?	10		0.2			F 18h 20m.
107	" 14	iP_{NE}	18 17 32	5	+0.3	-0.9			
		m_E	17 57	4		0.6			
		m_N	22 24	9	0.4				
		eL_E	23.2	30					
		eL_N	24.3	19					
		M_E	25 26	17		0.3			
		M_N	27 00	13	0.3				F 19h 05m.
108	" 17	e_{NE}	00 22.2	5					
		e_E	27.5	10					
		eL_E	29.5	15					
		M_N	31 34	12	0.2				
		M_E	35 01	12		0.3			
		F	01 10						

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RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude A_N mm	A_E mm	A_Z mm	Δ km,	Remarks
	1939								
109	May 17	e_N	15 18.0	4					
		e_E	19.0	4					
		e_N	23.4	13					
		eL_E	27.0	25					
		eL_N	27.8	23					
		ME_1	29 02	15		1.4			
		MN	30 27	13	0.6				
		ME_2	31 12	12		2.1			
110	" 17	eP_N	18 40 23	4	0.3			6265 (56°.4)	F 16h 15m.
		e_E	40 34	4					
		iS_E	48 19	6		-0.7			
		e_N	48 39	6?					
		eL_{NE}	56.8	24					
		MN	19 02 19	22	0.5				F 19h 50m.
111	" 18	e_N	05 29 54	4					
		i_{NE}	30 49	4	+0.2	-0.5			
		eL_N	33.6	18					F 05 40
112	" 21	e_E	20 27 08	4					
		i_{NE}	31 11	6	-1.2	+0.6			Deep focus.
		m_N	31 16	6	2.0				
		e_N	34 21	8					
		e_E	34 24	8					
		i_{NE}	36 43	7	+2.8	-1.9			F 20h 50m.
113	" 22	e_{NE}	01 49.7	6					Early phases obscured by heavy microseisms.
		$i(S)_E$	51 47	7		-2.0			
		$e(S)_N$	51 48	7					
		m_{NE}	52 11	7	1.8	4.7			
		i_N	52 21	7	+3.3				
		m_E	52 50	12		4.8			
		m_N	53.30	11	4.2				
		eL_N	54.5	26					
		M	55 01	14	4.7	5.3			F 01h 50m.
114	" 26	e_E	17 50 53	4					Looks like 2 overlapping shocks- small one followed by a larger one.
		e_N	50 51.2	4					
		e_N	56 15	15	May be L of 1st shock,				
		e_{NE}	58 08	16	short period waves su-				
		MN	18 02 10	16	0.5 perposed. 2nd shock				Max. of 1st.
					may begin about here.				
		i_E	04 14	7		-1.4			
		i_N	04 15	7	-0.9				
		$e(L)_E$	04 51	16					L of 2nd shock?
		e_Z	05 24	3					1st wave on Z-
		i_N	05 37	8	+1.8				short period.
		i_E	06 46	8		+4.0			
		e_Z	06 58	4					
		m_{NE}	07 58	8	8.0	10.6			
		i_Z	07 59	4			-0.7		
		ME	08 23	16		14.0			
		MN_1	08 29	16	7.8				
		MN_2	09 04	13	8.8				
		MZ	10 36	14			0.3		
		MN_3	10 46	13	10.6				
115	" 27	e_E	12 46 25	7					F 19h 50m.
		e_N	47 01	7?					Very small and indefinite.
		ME	47 58	10					
		MN	49 33	10					
		F	12 55						

D.J.K.O'CONNELL?S.J.
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Riverview College Observatory.

RIVERVIEW, SYDNEY, N.S.W

SEISMOLOGICAL BULLETIN.

Φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m Foundation : Triassic sandstone

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW.)
2. Weichert 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	ε:1	$\frac{r}{T_o^2}$
A^N	(1)	213	8,6	4.0	0.024
	(3)	97	11.8	2.9	0.010
A^E	(1)	229	8.0	3.7	0.022
	(3)	67	9.3	11.6	0.016
A^Z	(2)	59	5.1	6.0	0.031

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude. A_N mm	A_E mm	A_Z mm	Δ km.	Remarks
	1939								
116	June 2	iP_{NEZ}	03 41 28	6	+0.5	-0.5	+0.5		Focus below normal. Alternative interpretation; iP 03 41 38, pP_N 43 14, iS_N 48 00, iS_E 48 04, isS_{NE} 51 21. Depth about 600km. Δ 51° Δ(normal Depth)45°
		i_{NE}	41 32	6	-0.9	+0.7			
		PcP_N	43 14	7	0.8				
		iS_N	48 00	9	-3.2				
		iS_E	48 04	8		+1.5			
		isS_{NE}	51 21	10	+5.5	+7.2			
		m_N	54 43	14	1.7				
		eL_E	57.4	21					
		M_E	59 47	14		1.8			
		M_N	04 00 45	10	2.2				
		F	05 10						
117	" 4	e_N	00 35.7						
		i_E	37 04	5		-1.0			
		e_N	39 55	10					
		i_E	41 22	5		+1.3			
		i_N	41 41	4	+1.3				
		m_E	43 07	7		1.2			
		m_N	43 10	8	1.6				
		m_{NE}	43 50	7	3.3	1.4			
		i_N	44 05	7	+2.3				
		i_N	46 17	7	+1.5				
		i_E	46 21	7		-1.5			
		F	01 00						
118	" 4	eL_N	12 14.3	14					
		M_E	17 24	14		0.2			
		M_N	19 29	11	0.3				
		F	12 35						
119	" 4	e_Z	15 32 14	4					Early phases masked by microseisms.
		e_E	33 15	7					
		i_E	33 56	4		-1.0			
		eL_E	34.3	18					Short period waves superimposed on L.
		i_N	34 21	4	+0.8				
		M_E	35 22	11		1.4			
		M_N	37 00	12	2.5				
		F	15 55						
120	" 5	$e?_{NE}$	12 25 54	1					Very small.
		e_{NE}	26 25	3					
		i_{NE}	26 29	3	+1.0	-0.5			Small nearby shock.
		e_Z	26 29	3					
		m_N	26 49	5	2.5				
		eL_E	27.3	8					
		M_E	27 59	5		0.6			
		M_Z	28 01	4			0.2		
		F	12 30						
121	" 7	eL_N	01 24.2	18					
		M_E	25 14	18		0.2			
		F	01 45						

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RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h.	m.	s.	Per	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1939					s.	mm	mm	mm	km,	
122	June 8	eE	15	32	26	5					Microseisms obscure earlier phases
		eN		34	43	11					
		eLE		38.3		22					
		eLN		38.6		28					
		ME		40	33	15		0.4			
		MN		42	41	13	0.3				
		F	16	00							
123	" 8	iPNE	20	53	53	4	-0.7	-1.2			
		iE		55	23	6		-2.3			E-W component shows evidence of a focal depth below normal.
		iN		55	25	6	+1.0				
		mE		55	31	6		4.6			
		iN		55	49	6	-2.1				
		iN		59	25	6	+1.0				
		iE		59	38	6		-1.0			
		iE		59	57	8		-1.1			
		eN	21	00	08	10					
		eLN		02	22	21					
		i(ScS)E		04	06	6		-3.2			
		i(ScS)N		04	07	6	-2.7				
		MN		05	52	12	2.0				
		F	21	50							
124	" 9	eN	19	20	56						Preliminary phases very small and indefinite.
		eE		23	20	8					
		eN		23	53	6					
		eZ		24	27						
		eE		25	23	6		0.7			
		eN		25	38	8	0.7				
		iNE		26	31	7	-3.6	-6.0			
		mE		26	59	6		18.3			
		mN		27	03	6	8.0				
		mE		27	43	6		12.3			
		mN		27	45	6	8.8				
		L?N		28	21	13					
		eZ		29	52	10					Max. begins on Z.
		iN		30	07	10	+6.0				" " " N.
		ME1		30	14	10		9.6			
		MN		30	44	9	17.7				
		MZ		30	54	9			1.2		
		ME2		31	27	8		12.2			
		F	20	30							
125	" 10	e?N	09	53.3							
		eE		55	50	5					
		eZ	10	00	13	3					
		eNE		00	04	5					
		mE		00	32	5		2.7			
		mN		00	42	5	1.8				
		mNE		01	21	5	1.6	1.6			
		mZ		01	31	4			0.3		
		MN		04	42	8	2.7				
		ME		05	54	7		1.6			
		F	10	25							
126	" 13	iNE	20	47	35	4	-0.3	+0.4			
		eN		53	50	6					Phases very small.
		mN		57	09	5	0.3				
		mE		57	14	8		0.3			
		iE		59	51	5		+1.0			
		eLN	21	07.8		15					
		MN		11	42	13	0.1				
		F	21	30							

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RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per	Amplitude			Δ	Remarks
					A_N	A_E	A_Z		
	1939		h. m. s.	s.	mm	mm	mm	km,	
127	June 16	e_N	05 58.3						
		eL_E	06 04.3	17					
		ME	06 40	12		0.3			
		F	06 15						
128	" 16	eL_N	11 27.4	17					
		MN	29 35	14	0.2				
		F	11 40						
129	" 17	eE	12 11 28	5					From Mainka-Wiechert driving clock stopped. Times uncertain- minute marks very indefinite.
		eN	18 30						
		eL_E	21.2	16					
		MN	22 48	14	0.2				
		ME	25 30	13		0.2			
		F	13 00						
130	" 22	e_N	20 02.4	18					
		eL_E	30.6	28					From Mainka.
		MN	35 49	18	0.1				
		ME	36 10	18		0.1			
		F.	21 20						
131	" 27	$e?_{NE}$	23 12.1						
		eNE	12 58						
		iS_N	19 40	8	-1.0				
		iS_E	19 46	8		-1.2			
		iSS_{NE}	23 05	10	+1.0	-1.4			
		mE	23 20	14		2.8			
		mN	23 32	14	1.5				
		eL_N	28.0	23					
		ME	30 05	16		0.8			
		MN	32 40	17	0.8				
		F	00 50						
131	" 28	e_N	11 50 22	4					
		eL_N	55.2	21					
		eL_E	55.6	16					
		MN	58 38	8	1.9				
		ME	12 00 21	8		1.7			
		F	12 40						

D. J. K. O'CONNELL, S.J.
Director.

Riverview College Observatory.

RIVERVIEW, ~~SYDNEY~~ N.S.W.

SEISMOLOGICAL BULLETIN.

Φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m Foundation : Triassic sandstone

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW.)
2. Weichert 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	ε:1	$\frac{r}{T_o^2}$
A^N	(1)	212	8.4	4.1	0.025
	(3)	92	11.7	3.7	0.012
A^E	(1)	240	8.0	3.3	0.028
A^Z	(3)	74	9.2	7.8	0.015
	(2)	63	5.0	5.9	0.040

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude. A_N mm	A_E mm	A_Z mm	Δ km.	Remarks
	1939								
133	July 2	e_N	16 57 13	7					
		e_E	57 42	6					
		i_N	17 01 21	6	+0.5				
		i_E	01 24	6		-0.5			
		eL_N	02.1	20					
		M	03 39	16	0.5	0.5			
		F	17 30						
134	" 2	eL_N	22 07.7	18					A few waves.
135	" 5	eP_{NZ}	22 46 13	4					Deep focus.
		iP_{NEZ}	46 14	4	-0.5	+0.7	e0.4		
		$i(S)_N$	50 13	8	+3.5				From Mainka-
		$i(S)_E$	50 16	8		+1.4			lost on Wiechert
		m_N	50 26	8	6.6				while changing
		m_N	50 40	8	2.6				papers.
		i_N	53 26	9	-11.4				
		i_E	53 34	9		-2.3			
		m_E	53 46	9		4.1			
		i_{NE}	55 47	8	+14.7	+5.1			
		i_E	55 51	8		-9.5			
		F	23 50						
136	" 6	i_N	01 15 03	6	-1.5				
		i_E	15 06	6		-1.0			
		m_N	15 08	6	2.4				
		m_E	15 10	6		1.4			
		MN	19 35	16	0.3				
		F	01 35						
137	" 12	eP_Z	23 04 48	3					
		i_{NZ}	04 56	4	+0.6				
		i_E	05 02	4		-0.2			
		e_N	05 51	8					From Mainka.
		m_{NE}	06 26	8	1.2	0.3			
		iS_E	10 00	5		+0.7			
		eS_N	10 02	10					
		m_E	13 19	10		4.8			
		m_N	13 47	9	2.6				
		M_E	14 00	10		7.3			
		eL_N	14.0	32					
		m_E	15 06	10		6.9			
		ME_1	16 28	16		24.5			
		MN_1	16 55	8	19.0				
		ME_2	20 08	8		24.4			
		MN_2	20 27	8	19.0				
		F	00 45						

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RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude A_N mm	Amplitude A_E mm	Amplitude A_Z mm	Δ km,	Remarks
	1939								
138	July 16	e_N	08 31.0						
		e'_N	35.7						
		eL_N	40.5	19					From Mainka.
		MN	41 42	15	0.2				
		ME	41 50	15		0.2			
		F	09 00						
139	" 19	e_N	23 19.0						
		i_N	19 07	6	-0.8				From Mainka.
		iZ	19 10	3			+0.3		
		e_E	19 13	4					
		eL_E	22.0	21					Short period waves
		M	24.6	10	1.3	2.1			superimposed.
		F	00 00						
140	" 20	i_E	02 32 35	8		-2.0			Early phases mask-
		i_{NE}	35 47	8	-4.0	+1.7			ed by microseisms.
		i_{NE}	37 48	6	-2.2	+2.2			
		MN	41 10	11	0.5				
		F	03 05						

D.J.K.O'CONNELL, S.J.
Director.
1939, August 9.

RIVERVIEW COLLEGE OBSERVATORY acknowledges with thanks the receipt of the undermentioned Bulletins and Publications during May, June and July, 1939.

Adelaide	1939 April-June Provisional.
Apia	1939 April-June.
Agra	1939 April-September.
Batavia	1938 April-June.
Berkeley & affiliated Stations	1937 October-December.
Bombay	1938 April-September.
Brisbane	1939 April-June.
Bucarest	1939 February-May.
Calcutta	1938 April-September.
Cape Girardeau	1938 June-October.
Christchurch	1939 March-May Provisional., June.
Collmberg	1939 March-May.
Colombo	1938 April-September.
Dehra Dun	1938 April-September.
Denver	1938 June, July.
Firenze	1939 January-March.
Florissant	1938 June-September.
Fordham	1939 January-March.
Fort de France	1939 January-March.
Graz	1938 No.2. (Feb.17-May 18).
Hamburg	1939 January-March.
Helgoland	1939 January-March.
Helwan	1939 February-April.
Hong Kong	1939 March-May.
Hukuoka	1938 July-December.
Hyderabad	1938 April-September.
Jena	1937 January-December.
Jesuit Seismological Association	1939 Nos.1-7,10,12,15,17.
Karlsruhe	1938 July-December.
Kew	1939 April-June.
Kobe	1937 April-December.
Kobenhavn	1936 January-September (37-39).
Kodaikanal	1938 April-September.
Koti	1938 November,December.
Ksara	1939 March-May Provisional.
La Plata	1938 December, 1939 January.
Lemberg	1938 No.1 (January 1-March 27).
Little Rock	1938 September-December.
Manila	1939 February-April. March-May Prov.
Melbourne	1939 January-March. April-June Prov.
Moncalieri	1938 January-December.
Nagoya	1938 January-December.
New Guinea (Dept.of Agriculture)	1939 EQ.Records March-June.
New Guinea (through courtesy of Prime Minister's Dept.Canberra). Report of Seismic Activity in Kieta District April 1939.	
Ottawa	1938 December,1939January-April.
Paris	1939 February-April.
Pasadena	1939 No.11 Preliminary (March,April).
Perth	1939 April-June.
Prague	1938 April-Dec. 1939 Jan.-March.
Rathfarnham	1939 March-June 12.
Roseneath	1939 No.2 (Febrtary,March).
Scoresby-Sund	1936 January-June (No.14).
Saint Louis	1938 June-September.
Strasbourg	1939 February-April, Bull.d'ech.3-5.
Stuttgart	1939 March-May.
Sydney	1938 December, 1939 January-April.
Tiflis	1937 July-September (No.3).
Tyosen	1936 January-December.
Uccle	1938 Nos.4-7, 1939 No.1.
U.R.S.S.Stations Teleseismiques	1937 July-December,1938 Jany-April.
U.R.S.S. " Regionales Asie Cent.	1937 January-September.
U.R.S.S. " " de la Crimee	1937 January December.
U.R.S.S. " " du Caucase	1933,1934,1935,1936,1937,1938 No.1.
U.S.C.& G.S.	1939 April-June.
Wellington & N.Z.Stations	1939 March-June.
Weston	1938 November, December.
Zi-Ka-Wei	1928 No.6-12, 1929 No.1-2.
Zurich	1931-1937.

Meteorological Observatory, Royal University, Malta.	Meteorological records for Sept., Oct. 1938, January to April 1939. General Abstract of Meteorological records Sept., Oct. 1938, Jany-Apr. 1939. Rainfall Sept. Oct. 1938, Jany-Apr. 1939. Rainfall returns from Govt. Elementary Schools Sept., Oct. 1938, Jany-Apr. 1939.
Observatorio Astronomico y Meteorologico de Quito.	Boletin Meteorologico Enero, Febrero, Marzo de 1938.
Observatoire de Zi-Ka-Wei.	Revue Mensuelle No. 396-399.
Weather Bureau, Manila.	Climate of the Philippines.
Academy of Sciences of Ukr. SSR. Kyiw.	Symposium of the Geophysical Observatory No. 1.
Osservatorio Meteorologico e Geodynamico, Moncalieri.	Anno 1938. Osservazioni Sismische dell'Anno 1938. Osservazioni Meteorologische dal Dicembre/al Nov. 1938.
Imperial Academy, Tokyo.	1929 Proceedings of the Imperial Academy, Vol. XV, Nos. 3, 4, 5. 1939 Mar. Apr. May.
Observatorio Central Meteorologico Lisboa.	Anais do Observatorio Central Meteorol ogico II Parte, Vol. LXVII, Ano de 1936.
Earthquake Research Institute, Tokyo Imperial University.	Bulletin of the Earthquake Research Institute Vol. XVII, Part I, March 1939.
Schweizerischen Meteorologischen Zentralanstalt, Zurich.	Jahresbericht des Erdbebendienstes 1931-1937.
Meteorological Department, Government of India.	Seismological Bulletin April-Sept., 1938.
Koninklijk Magnetisch en Meteorologisch Observatorium te Batavia.	Aardbevingen in den Oost Indischen Archipel waargenomen gedurende het jaar 1937. Pilot Balloon observations Oct-Dec. 38.
U.S. Department of Commerce.	Coast & Geodetic Survey. Review of the year (1938). Special Publication 216.
Osservatorio Meteorico-Geodynamico di Montecassino.	Osservazioni Meteoro-Sismische Gennaio, Febbraio, Marzo 1939. Boll. Anno 1938
Netherlands Indies Geological Survey.	Uitgaven van den dienst van den mijnbouw in Nederlandsch-Indie 1930-1939.
R. Instituto Geofisico e Geodetico Messina.	Geofisica pura e applicata, Vol. 1, Fasc. 1.
Dominion Observatory, Ottawa.	Publications-Vol. 12, Bibliography of Seismology No. 20. Oct. Nov. Dec. 1938.
Imperial Marine Observatory, Kobe.	Seismological Bulletin Vol. XIII, Nos. 2 3, 4. From Apr. 1, 1937 to Dec. 31, 1937.
Weston College Observatory.	The Eledtromechanical Transducer in the New Benioff Seismograph. James J. Devlin, S.J.
Observatoire de Ksara.	Climatologie Aeronautique Tome II, 1937.
Netherlands Indies Vulcanological Survey	Bulletin No. 86

Reichsanstalt für Erdbebenforschung, Jena.	Veroffentlichungen Heft 33,34. Vortäge von Mitgliedein der Reichsanstalt für Erdbebenf.gehalten zu Jena auf der Tagung der Deutschen Geophysikalische Gesellschaft im Oktober 1938. Sonderdruck aus der Zeitschr.fur Geophysik Jahrg.14,Heft 1/2,1938(Über die Verwendung Langperiodischen Seismometer. Von.G.Krumbach). Beiträge zur Geologie von Thüringen Herausgegeben vom Thüringischen Geologischen Verein,BandV,Heft 2.
Dept. of Scientific and Industrial Research, Wellington.	Apia Observatory, Annual Report for 1936.
Nagoya Branch Observatory of the Central Meteorological Observatory.	Seismological Bulletin Vol.IX.
Státní Ústav Geofysikalni Praha.	Annuaire de l'Institut Geophysique de la Republique Tscheco-Slovaque 1930-1938, III.
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Air Ministry, London.	Meteorological Office Geophysical Memoirs No.76. (4th No.,Vol.IX)

D.J.K.O'CONNELL,S.J.
1939, Aug.1.

Riverview College Observatory.

RIVERVIEW, ~~SYDNEY~~. N.S.W.

SEISMOLOGICAL BULLETIN.

Φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m Foundation : Triassic sandstone

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW.)
2. Weichert 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	ε:1	$\frac{r}{T_o^2}$
A^N	(1)	222	8.4	4.0	0.017
	(3)	86	11.9	3.6	0.011
A^E	(1)	239	8.1	4.0	0.017
	(3)	75	9.4	5.3	0.016
A^Z	(2)	63	5.1	7.3	0.035

No.	Date	Phase	Time (Greenwich)	Per	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks
	1939		h. m. s.	s.	mm	mm	mm	km.	
141	Aug. 2	e_N	01 33.4	?					
		eLQ_E	34.1	33					
		eLR_N	41.2	30					
		MN	46 46	18	0.3				
		F	02 20						
142	" 2	eL_E	05 38.3	17					Earlier phases obscured by micro-seisms.
		ME	39 25	14		0.4			
		MN	40 09	15	0.2				
		F	05 50						
143	" 3	eL_E	02 46.6	20					Earlier phases obscured by micro-seisms.
		MN	47 47	16					
		F	03 04						
144	" 8	e_N	20 04.9	6					
		e_E	05.5	6					
		eL_E	08.8	16					
		MN	10 06	13	0.2				
		ME	12 15	12		0.3			
		F	20 35						
145	" 12	iP_{NE}	02 12 23	5	-1.0	-0.7		2670 (24°0)	Focal Depth about 250 Km. Azimuth NE. H 02 07 26
		mNE	12 37	5	2.0	2.3			
		iN	12 57	5	+1.5				
		ipP_{NE}	13 08	6	-2.2	-2.5			
		iS_N	16 23	6	-3.0				
		iS_E	16 25	6		-2.2			
		mN	16 36	6	8.9				
		mNE	17 06	8	5.5	5.0			
		iE	17 33	6		-5.7			
		isS_N	17 46	8	-11.5				
		mE	17 52	8		5.8			
		mN	19 56	8	2.5				
		mE	20 00	8		1.8			
		mN	20 59	12	2.4				
		$iScS?_N$	23 14	7	-5.7				
		$iScS?_E$	23 16	7		+2.5			
		iN	24 38	7	-3.8				
		iE	24 40	7		+2.2			
		F	03 30						
146	" 13	$e(P?)_N$	04 21 55	4					In minute mark-microseisms pre-cede.
		iE	22 05	4		+1.1			
		mN	22 11	4	0.6				
		$e(S?)_E$	25 46	8					
		eL_E	28.0	18					
		MN	30 37	13	0.3				
		F	04 55						

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RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h.	m.	s.	Per	Amplitude A_N mm.	A_E mm.	A_Z mm.	Δ km,	Remarks
	1939										
147	Aug. 18	iP_E	22	20	53	4		-0.7		2470 (22°2)	Focal depth perhaps below normal.
		eP_Z		20	54						
		iP_N		20	55	5	-0.7				
		mE		21	16	7		2.3			
		eS_N		24	50	10					
		iS_E		24	56	10		-7.7?			S is the most outstanding phase.
		iS_N		24	57	10	+15.6				
		mE		25	06	12		11.9			
		eL_E		26	.2	20					
		MZ_1		26	58	19			0.2		
		ME, MZ_2		28	41	16		10.6	0.2		
		MN		28	55	15	10.5				
		F	00	15							
148	" 19	eP_Z	00	52	21					2450 (22°0)	
		iP_E		52	23	4		-0.7			
		iP_N		52	25	4	+0.5				
		mN		53	00	5	0.7				
		iS_{NE}		56	24	6	-2.1	-4.5			
		mN		56	29	8	3.2				
		mN		56	42	12	2.7				
		eL_N		58	.2	19					
		eL_E		58	.3	21					
		ME	01	00	12	15		2.0			
		MN		00	24	15	2.5				
		F	02	00							
149	" 23	iP_E	04	43	58	6		+1.2		2420 (21°8)	
		iPP_E		44	26	6		-1.0			
		PPP_E		44	34	6		1.3			
		iS_N		47	58	8	+1.2				
		eL_N		50	.2	17					
		iMN		52	46	10	+2.5				
		MN		54	06	11	4.6				
		ME		56	45	12		1.3			
		F	06	05							
150	" 25	$e?_Z$	03	53	14						Felt in New Guinea at Rabaul R.F.6, and Kokopo R.F.6.
		e_N		54	58	6					
		$e(S)_N$		59	02	20					
		mN		59	36	20	1.1				
		eL_N	04	02	.5	33					
		ME		04	24	18		0.7			
		MN		05	50	16	0.8				
		F	04	40							
151	" 27	iP_{NZ}	11	22	34	4	+0.2		+1.2	2240 (20°1)	iP Condensation.
		iP_E		22	35	4		+0.4			
		iS_N		26	18	5	-0.8				
		iS_E		26	19	5		-0.7			
		F	11	45							
152	" 29	e_N	08	19	.1						Obscured by microseisms.
		MN		22	00	12	0.5				

D.J.K.O'CONNELL, S.J.
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RIVERVIEW, ~~SYDNEY.~~ N.S.W.

SEISMOLOGICAL BULLETIN.

Φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m Foundation : Triassic sandstone

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW.)
2. Weichert 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	ε:1	$\frac{r}{T_o^2}$
A^N	(1)	206	8.6	4.4	0.618
	(3)	92	11.9	5.1	0.011
A^E	(1)	244	7.9	4.0	0.025
	(3)	74	9.4	3.4	0.015
A^Z	(2)	63	5.2	8.7	0.031

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude. A_N mm	A_E mm	A_Z mm	Δ km.	Remarks
	1939								
153	Sept. 2	e_N	05 21.5						Heavy microseisms present.
		MN	23 59	15	0.2				
		ME	25 15	12		0.2			
		F	05 35						
154	" 2	eP_E	09 04.14	4				2770	
		iP_N	04 17	6	+1.0			(24°9)	
		e_Z	04 18						
		i_E	05 13	5		-0.7			
		iS_E	08 41	9		-1.0			
		iS_N	08 44	9	+1.5				
		SS_N	09 25	9	1.8				
		eLQ_N	09.9	22					
		eLR_E	11.2	24					
		MN	12 40	18	1.3				
		ME	13 05	17		0.8			
		F	10 10						
155	" 7	eN_E	13 57.2	5					Small waves-no definite phases.
		F	14 15						
156	" 8	eP?Z	12 17 32						
		eP_{NEZ}	17 35	4				9420	
		i_N	17 42	6	+1.0			(84°8)	
		eS_N	28 02	10					
		eS_E	28 07	9					
		mN_E	28 19	10	1.4	1.0			
		PS_{NE}	28 42	10	1.7	0.9			
		eSS_N	33 49	16					
		mN	34 24	20	1.1				
		eLQ_N	40.3	52					
		eLQ_E	40.4	52					
		eLR_N	45.0	24					
		ME	49 15	16		2.5			
		MZ	50 55	18			0.1		
		MN	51 07	16	4.1				
		eW_{2N}	14 28.4	28					
		MN	35 58	18	0.2				
		F	15 05						
157	" 12	eP?N	12 11 54						
		iP_E	11 56	4		-0.4			
		e_N	12 14	5					
		i_E	12 20	5		-0.9			
		eS_{NE}	17 07	9					S may be a little earlier at 16m 58s..
		eL_E	19.3	28					
		MN	19 54	14	0.5				
		ME	21 13	16		0.5			
		F	12 55						

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RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich)	Per	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1939		h. m. s.	s.	mm	mm	mm	km,	
158	Sept.14	e_N	18 15.6	7					
		ME	21 10	12		0.2			
		MN	22 26	12	0.1				
		F	18 35						
159	" 15	e_N	11 54 55						
		eL_N	12 02.3	20					
		MN	05 26	16	0.2				
		ME	07 10	16		0.2			
		F	12 40						
160	" 16	e_N	07 38.7						
		ME	44 36	15		0.2			
		MN	44 56	15	0.2				
		F	07 55						
161	" 17	$i(P)_N$	19 24 38	5	-1.0				
		iE	24 41	5		-0.4			
		$PP?_{NE}$	24 58	6	0.9	0.3			
		$e(S)_E$	28 10	16					
		$e(S)_N$	28 14	16					
		mE	29 09	12		1.3			
		mN	29 26	12	1.3				
		mE	30 13	11		1.5			
		MN	31 19	11	1.1				
		F	19 45						
162	" 18	eL_N	10 16.4	14					Masked by micro-seisms.
		MN	17 24	14	0.4				
		F	10 25						
163	" 20	iP_{NE}	07 32 39	5	-1.1	+0.5			iP Compression. Azimuth SSE. Train of large waves begins with iS and continues till 7h 38.5m on E-W. Long waves unidentifiable. Surface waves not very prominent. This record is very similar to that of Sept.17 at 19h.
		iP_{NEZ}	32 41	5	+4.3	-2.0	+0.4		
		iS_E	36 12	15		-2.7			
		eS_N	36 16	15					
		MN	39 29	11	2.5				
		MZ	39 59	11			0.1		
		ME	42 03	10		2.1			
		F	08 45						
164	" 22	eL	01 54.9	24					A few long waves.
		F	02 10						
165	" 24	eN	03 53.6						Masked by micro-seisms.
		F	04 00						
166	" 24	eL_N	16 07.0	20					
		MN	10 41	20					
		F	16 20						

D.J.K.O'Connell, S.J.
Director.

RIVERVIEW COLLEGE OBSERVATORY acknowledges with thanks the receipt of the undermentioned Bulletins and Publications during August and September 1939.

Adelaide	1939	July, August Provisional.
Batavia	1938	July-September.
Brisbane	1939	July, August.
Bucarest	1939	June, July.
Christchurch	1939	July Provisional.
Collmberg	1939	June.
Fort de France	1939	April, May, June.
Gottingen	1938	Oct-Dec., 1939 January-March.
Hamburg	1939	April-June (nr.4,5,6.)
Helgolamd	1939	April-June (nr.4.5,6)
Helwan	1939	May-July.
Hong Kong	1939	June, July.
Jesuit Seismological Association	1939	Nos.8,11,13,16,20.
Kew	1939	July.
Ksara	1939	June, July Provisional.
La Plata	1939	February-June.
Malaga	1938	January-June.
Manila	1939	May-July. June-August Prelim.
Melbourne	1939	April-June. July, Aug.Prov.
New Guinea(Earthquake Notes)	1939	April-August.
Ottawa	1939	May, June.
Oxford(Internat.Seismol.Summy.)	1933	July-September.
Paris	1939	May, June.
Pasadena	1938	Sept. Local shocks nos.2-6.Prel.12.
Perth	1939	July, August.
San Fernando	1939	January-June.
Strasbourg	1939	May, June.
Stuttgart	1939	June, July.
Sydney	1939	May, June.
Toledo	1939	January-March.
Tiflis	1937	October-December (no.4).
U.S.C.& G.S	1937	March-May. 1939 June, July, Aug.
Wellington & N.Z.Stations	1939	July.
Zagreb	1936	Sept.21-Dec.29(nos.23-26).

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Tananarive, Un Cinquantenaire l'Observatoire 1889-1939.Ch.Poisson,S.J.
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D.J.K.O'CONNELL,S.J.
Director.
1939,October 1.

Riverview College Observatory.

RIVERVIEW, ~~SYDNEY~~, N.S.W.

SEISMOLOGICAL BULLETIN.

Φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m Foundation : Triassic sandstone

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW.)
2. Weichert 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_0	s:1	$\frac{r}{T_0^2}$
A_N(1)	224	8.4	4.3	0.013
(3)	96	12.2	3.0	0.011
A_E(1)	242	8.0	3.9	0.023
(3)	77	9.3	3.3	0.014
A_Z(2)	65	5.1	5.8	0.058

No.	Date	Phase	Time (Greenwich)	Per	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks
	1939		h. c m. s.	s.	mm	mm	mm	km.	
167	Oct. 3	eE	13 47 01	3					Phases very small.
		iNE	51 30	4	+0.5	-0.3			
		iE	56 29	4		+0.4			
		iN	56 30	4	+0.3				
		F	14 10						
168	" 7	e?NE	20 49 52	7					Masked by heavy microseisms. P and S hard to identify.
		eZ	50 37						
		?NE	51 15	?					
		eNE	55 07	8					
		mN	58 41	8	2.6				
		eLE	21 00.4	18					
		MZ	01 45	8			0.2		
		ME	01 50	8		12.5			
		MN	01 54	8	17.3				
		F	22 10						
169	" 9	ePNE	02 22 54	4				2380	
		ePZ	22 55	3				(21?4)	
		iE	23 07	6		+1.3			
		PPNE	23 21	6	1.1	1.8			
		iS_N	26 50	10	+1.5				
		iE	26 57	8		-1.2			
		iN	27 01	11	+4.0				
		mE	27 11	8		2.9			
		SS_N	27 17	13	5.7				
		eLN	28.8	15					
		eLE	28.9	16					
		MN	31 56	13	7.3				
		ME	32 19	12		2.5			
		F	03 50						
170	" 10	eN	18 43.5						
		iE	52 48	8?		-0.6			
		eN	52.8	19					
		eLE	19 04.5	25					
		MN	07 21	19	0.3				
		ME	10 25	22		0.2			
		F	Lost in No.171.						
171	" 10	eNE	19 42.6						
		ME	46 29	13		0.9			
		MN	46 35	12	1.6				
		F	21 30						
172	" 11	eN	09 20.7						
		ME	24 45	13		0.1			
		MN	27 02	13	0.1				
		F	09 40						
173	" 11	MN	18 58 16	15	0.2				A few shallow waves.

(Continued on next sheet)

RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude A_N mm	A_E mm	A_Z mm	Δ km,	Remarks
	1939								
174	Oct.14	eN	22 37.7						
		MN	43 33	15	0.2				
		ME	45 58	15		0.1			
		F	22 50						
175	" 16	eNE	17 36 16	8					
		eLNE	38.6	17					
		MN	39 59	11	0.6				
		ME	40 19	12		0.3			
		F	17 50						
176	" 17	iPNEZ	06 27 15	6	-8.0	-7.5	+2.0		iP Condensation,
		mNEZ	27 21	6	15.1	14.1	3.4		Azimuth NE. Focal
	PPP?	pP?Z	27 53	6			2.7		depth below normal
	"	pP?N	27 55	7	13.3				Some evidence of a
		mZ	28 19	5			2.8		depth of about 200 km.
		mE	28 22	6		17.7			Δ 23°6, H 06 22.3
		mN	28 35	7	12.0				If normal depth,
		mE	29 39	7		11.8			Macelwane's tables
		mN	29 50	6	13.2				give Δ 22°8, H 6 22 12
		iSNE	31 24	8	-24.0	+17.5			Jeffreys & Bullen;
		iN	31 33	14	+55.0				Δ 23°6, H 06 22 09.
		iE	31 48	9		+43.0			
		mZ	32 13	6			2.0		
		isS?N	32 22	12	+40.0				
		iE	32 35	8		-32.0			
		iN	32 48	14	-44.5				
		eLEZ	33.2	30					
		eLN	33.5	30					
		ME	34 30	9		19.1			
		MN	36 59	14	14.7				
		F	08 40						
177	" 17	iPNE	09 04 39	4	-0.7	+0.9		2570	May be aftershock
		mE	05 31	5		1.0		(23°1)	of previous earth-
		mN	05 49	5	0.8				quake.
		iSNE	08 50	6	+1.5	-0.7			
		mN	09 00	8	1.8				
		mN	09 29	9	2.1				
		mN	09 36	9	2.1				
		mE	09 40	8		0.6			
		eLN	11.4	18					
		MN	12 23	9	0.7				
		F	09 40						
178	" 21	eN	08 47 23	6					
		eLE	48.4	16					
		eLN	48.7	16					
		ME	49 32	11		0.2			
		MN	51 08	16	0.3				
		F	09 05						
179	" 26	eNE	08 11.1	5					
		MN	15 03	7	0.3				Very small record.
		F	08 25						
180	" 26	iPE	21 30 50	4		+0.5			
		eN	31 13	6					
		eS?E	35 07	8					
		eLE	38.3	19					
		eLN	38.6	19					
		MNE	40 20	17	0.3	0.3			
		MN2	43 54	14	0.6				
		F	22 40						

(Continued on next sheet)

RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude A_N mm.	Amplitude A_E mm.	Amplitude A_Z mm.	Δ km.	Remarks
	1939								
181	Oct.27	e_N	06 02.4						
		$e(L)_E$	10.1	16					
		eL_N	12.4	18					
		M_N	14 35	11	0.2				
		F	06 30						
182	" 27	e_N	11 02 27	7					
		eL_N	10.3	20					
		eL_E	11.1	18					
		M_E	14 10	15	0	0.2			
		M_N	15 02	11	0.2				
		F	11 30						
183	" 30	iP_{NE}	13 19 25	4	-0.1	-0.5		38°	Focal depth about 500 Km.?
		$i(pP)_{NE}$	20 54	6	-0.3	-0.7			
		m_E	21 02	6		1.1			
		i_N	24 47	8	-0.6				
		e_E	25 35	11					
		$iN(S)$	25 52	8	-1.4				
		$e(sS)_N$	27 34	17					
		m_N	27 46	17	1.1				
		$i(ScS)_E$	29 36	6		+1.0			
		$i(ScS)_N$	29 37	7	+2.0				
		M_N	30 23	15	0.6				
		F	14 20						
184	" 30	e_N	17 50 26						
		e_{NE}	56 45 31						
		mNE	59 54	5	0.3	0.2			
		F	18 15						
185	" 30	e_{NE}	22 06 23	8					
		e_N	11 58	15					
		eL_E	13.2	25					
		eL_N	14.3	19					
		M_E	16 02	15		1.1			
		M_N	17 50	13	1.1				
		F	23 30						
	CORRECTION.								
145	Aug.12 for read	isS_N	02 17 46 17 49						

D.J.O'CONNELL, S.J.
Director.
1939, December 2.

Riverview College Observatory.

RIVERVIEW, SYDNEY. N.S.W

SEISMOLOGICAL BULLETIN.

Φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m **Foundation : Triassic sandstone**

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW.)
2. Weichert 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	ε:1	$\frac{r}{T_o^2}$
A^N	(1)	218	8.8	4.5	0.012
	(3)	96	12.1	3.2	0.011
A^E	(1)	247	8.0	4.6	0.014
	(3)	78	9.4	4.2	0.017
A^Z	(2)	59	5.2	6.5	0.037

No.	Date	Phase	Time (Greenwich)	Per	Amplitude. A_N	Amplitude. A_E	Amplitude. A_Z	Δ	Remarks
	1939		h. m. s.	s.	mm.	mm.	mm.	km.	
186	Dec. 1	e?N	05 53.1						
	Nov.	eN	56.8	6					Masked by micro-seisms.
		eLN	06 00.3	12					
		MN	01.3	12	0.2				
		F	Lost in No.187.						
187	" 1	e(P)NE	06 12 49	6					
		iSNE	17 08	8	-0.9	-0.8			
		mE	17 18	8		1.9			
		mN	17 53	7	1.7				
		eLN	19.0	22					
		ME	20 49	14		0.5			
		MN	21 03	14	1.2				
		F	07 10						
188	" 3	eN	19 44 43	6					
		eSN	48 55	12?					
		eLN	52.2	22					
		MN	54 13	16	0.3				
		ME	54 21	16		0.1			
		F	20 20						
189	" 8	e(P)NE	19 10 08						
		iNE	11 27	4	-0.4	+0.5			
		e(S)N	15 42	10?					
		eLN	17.1	20					
		MN	18 56	15	0.8				
		ME	19 17	15		0.3			
		F	20 00						
190	" 9	eLN	13 48.3	16					
		MN	52 41	11	0.3				
		F	14 05						
191	" 10	iPN	16 54 23	3	-0.5			2400 (21°6)	
		ePZ	54 23	3					
		iNE	54 30	6	+0.7	-0.5			
		iSE	58 20	17		-2.0			
		iSN	58 22	8	-1.0				
		mE	59 12	13		2.1			
		mN	59 26	13	1.2				
		MN	17 01 40	11	1.2				
		ME	01 56	11		2.8±			
		F	18 10						

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RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Δ	Remarks
	1939			s.	mm.	mm.	mm.	km,	
192	Nov. 10	iP$_{NZ}$	20 26 12	4	-0.5		+0.2	2650 (23°8)	iP Condensation.
		iS$_N$	30 30	10	+1.2				
		mN	30 44	11	2.8				
		mE	32 16	7		1.3			
		mN	32 27	6	1.3				
		eL$_N$	33.6	23					
		ME$_1$	35 04	16		2.8			
		MN$_1$	35 33	16	1.4				
		ME$_2$	37 53	11		4.0			
		MZ	38 06	9			0.1		
		MN$_2$	39 41	11	3.5				
		F	21 50						
193	" 14	iP$_{NE}$	12 43 08	6	-0.2	+0.6		2680 (24°1)	
		eS$_E$	47 28	8		0.4			
		eL$_N$	50.4	20					
		eL$_E$	51.1	19					
		MN	51 39	16	0.5				
		ME	53 37	16		0.3			
		F	13 50						
194	" 15	e(P)$_{NE}$	17 14 44	7					
		eL$_N$	22.0	21					
		eL$_E$	22.1	21					
		MN	23 12	16	0.9				
		ME	23 34	16		0.3			
		F	18 05						
195	" 17	eN	09 12 12	4					Small and obscured by microseisms.
		mN	13 36	6	0.7				
		MN	18 22	13	0.2				
		ME	18 38	13		0.2			
		F	09 35						
196	" 17	eNE	18 49 11	4					Small and obscured by microseisms.
		eE	52 08	6					
		mE	52 32	6		0.4			
		iN	54 37	5	0.9				
		F	19 00						
197	" 18	eN	00 22 34	8					
		e(S)$_E$	24 00	10					
		eL$_N$	27.2	15					
		MN	30 08	11	0.5				
		F	00 50						
198	" 18	e?N	01 55 40						Disturbed by visitor.
		eL$_N$	02 12.6	28					
		eL$_E$	12.9	24					
		F	02 35						
199	" 18	eN	12 18 09	8					
		MN	23 08	12	0.2				
		F	12 40						
200	" 20	eN	13 38 20	3					Small shock masked by microseisms
		iE	41 26	3		-0.4			
		MN	42 36	8	0.2				
		F	13 48						
201	" 21	eZ	11 20 22	4					Masked by microseisms.
		eN	20.9	8					
		eE	21.0	?					
		eN	25.0	8					
		eE	25 33	8					
		eNE	29 30	9					
		ME	34 02	12		0.5			
		MN	35 23	10	0.5				
		F	12 15						

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RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h.	m.	s.	Per	Amplitude A_N	A_E	A_Z	Δ	Remarks
	1939					s.	mm.	mm.	mm.	km,	
202	Nov.21	eP?NE	21	35	16	5					Preliminaries masked by micro-seisms.
		eN		35	27	6					
		eE		35	35	?					
		e(S)NE		38	59	10					
		iN		41	06	8	+1.3				
		iE		41	10	8		-0.8			
		iE		42	17	8		+4.9			
		iN		42	18	8	+3.4				
		eLN		43.4		20					
		MN		44	51	17	1.5				
		ME		45	08	15		1.8			
		F	22	35							
203	" 23	e?N	07	24.1							
		eLN		35.1		24					
		MN		38	23	11	0.1				
		F	07	55							
204	" 24	e(P)N	23	29	01	4					
		e(S)N		33	06	8					
		mN		33	20	10					
		eLN		35.4		21					
		ME		37	19	18		0.4			ME from Mainka.
		MN		39	39	12	2.3				
		F	00	30							
205	" 25	eN	07	09	45						
		MN		20	14	12	0.3				
		ME		20	43	12		0.1			
		F	07	35							
206	" 27	eNE	03	18.4		4					
		F	03	30							

D.J.O'CONNELL, S.J.
Director.
1939, December 2.

RIVERVIEW COLLEGE OBSERVATORY acknowledges with thanks the receipt of the undermentioned Bulletins and Publications during October and November 1939.

Adelaide.....1939 September, October Preliminary.
Apia.....1939 July-September.
Batavia.....1938 October-December.
Brisbane.....1939 September, October.
Christchurch.....1939 August, September Provisional.
Hong Kong.....1939 August, September.
Hukuoka.....1939 January-July.
Ksara.....1939 August Provisional.
Manila.....1939 August, Sept., Sept.,Oct.Prel.
Melbourne.....1939 September, October Provisional.
New Guinea (Dept.of Agriculture).1939 July-October Earthquake records.
" " (through courtesy of Prime Minister's Dept.Canberra) 1939 Feb.8 Earthquake Notes.
Ottawa.....1939 July-September.
Pasadena.....1939 Preliminary No.13.
Perth.....1939 September.
Phu Lien.....1939 March, April.
Pittsburgh.....1939 September.
Rathfarnham.....1939 July 12-August 31.
San Fernando.....1939 July, August.
Sydney.....1939 July, August.
Tokyo.....1938 July-December.
Toledo.....1937 January-June,1939 April-June.
U.S.C.& G.S. Washington.....1939 Sept.8,21,28, Oct.17,19.
Wellington & N.Z.Stations.....1939 August, September.

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D.J.K.O'CONNELL,S.J.
Director.
1939, December 1st.

Riverview College Observatory.

RIVERVIEW, ~~SYDNEY~~. N.S.W.

SEISMOLOGICAL BULLETIN.

Φ = 33° 49′ 49″ S. λ = 151° 9′ 30″ E. h = 41·9 m Foundation : Triassic sandstone

INSTRUMENTS:

1. Wiechert Astatic Pendulum Seismometer (1000 kilo.) (NS, EW.)
2. Weichert 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	s:1	$\frac{r}{T_o^2}$
A^N	(1)	216	8.7	4.8	0.011
	(3)	97	12.1	2.9	0.011
A^E	(1)	250	8.1	4.4	0.012
	(3)	82	9.1	6.0	0.018
A^z	(2)	58	5.1	6.8	0.054

No.	Date	Phase	Time (Greenwich)	Per	Amplitude. A_N	Amplitude. A_E	Amplitude. A_z	Δ	Remarks
	1939		h. m. s.	s.	mm.	mm.	mm.	km.	
207	Dec.1	e(P)E	06 42 12	4					Microseisms present.
		eN	42 30	7					
		eLE	52.1	21					
		MN	52 56	14	0.8				
		ME	54 47	16		0.6			
		F	07 45						
208	" 5	eE	08 57.5	10					Heavy microseisms present.
		eE	09 00.4	11					
		eE	07.4	18					
		eLE	26.2	23					
		ME1	34 28	18		0.5			
		ME2	39 11	16		0.7			
		MN	40 13	17	0.5				
		F	11 20						
209	" 7	eN	11 39 48	4					
		eLN	43.9	19					
		eLE	44.1	19					
		MN	45 16	11	0.6				
		ME	45 34	11		0.8			
		F	12 30						
210	" 9	eN	19 31.5						
		eLN	37.6	21					
		MNE	40 12	10	0.4	0.1			
		F	19 55						
211	" 9	eE	20 25 07	3					Small waves, no definite phases.
		eN	27 25	3					
		mNE	30 05	4	0.7	0.8			
		F	20 50						
212	" 12	eNE	05 47 34	5					
		MN	48 56	10	0.4				
		ME	49 34	10		0.3			
		F	06 00						
213	" 15	eN	00 28 04	1					
214	" 16	ePN	10 58 33	6					A few very small, short period waves from nearby shock superimposed on microseisms.
		iPN	58 37	6	-0.9			8280 (74°5)	
		iSN	11 08 12	7	-0.9				
		iSE	08 13	7		+1.5			
		iPSN	08 33	7	+1.5				
		mN	08 44	8	2.1				
		iE	08 46	8		-1.5			
		eSSN	13 22	13					
		eL?E	22.1	?					
		eLN	24.0	27					
		ME	26 12	23		0.3			
		MN	27 05	25	0.5				
		F	12 00						

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RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude A_N mm.	Amplitude A_E mm.	Amplitude A_Z mm.	Δ km,	Remarks
	1939								
215	Dec.17	eN	08 05.1	3.					From Mainka. Wiechert deranged from 04h to 11h 30m.
		mE	08 42	6		0.3			
		mN	08 55	5	0.5				
		F	08 30						
216	" 18	iP$_{NE}$	06 31 37	5	+0.6	+0.6		2650	
		PP$_N$	32 06	5	0.7			(23°8)	
		eS$_N$	35 55	7					
		mE	36 19	8		1.5			
		SS$_N$	36 31	9	1.4				
		mN	37 13	12	1.4				
		MN	39 36	15	1.0				
		ME	40 02	15		0.5			
		F	07 40						
217	" 18	i(P)$_N$	10 27 56	6	+1.5				Preceded by microseisms.
		iS$_E$	31 31	6		+1.0			
		iN	31 38	6	+1.3				Reported felt at Kerema, Gulf Div., Papua, R.F.5.
		ME	34 36	9		2.1			
		F	11 20						
218	" 20	iN	13 15 54	4	+0.8				
		eNE	19 12	5	0.5	0.5			
		eNE	19 33	5	0.5	0.6			
		F	13 40						
219	" 21	iP$_Z$	21 08 32	3			-0.7		
		iP$_{NEZ}$	08 35	8	-10.5	+8.5	+2.6	4360	Condensation, NW.
		PP$_{EZ}$	09 53	8		26.5	8.3	(39°2)	
		mN	10 16	11	22.0				
		mZ	11 14	8			6.0		
		mNE	11 21	17	47.8	44.0			Very prominent wave.
		iN	14 26	12	+12.0				
		iS$_E$	14 45	8		>+45.			
		iN	14 58	13	+64:				Wiechert partly deranged.
		mE	15 00	12		>80			
		mZ	15 13	7			4.6		
		mN	15 35	13	45.5				
		mE	15 56	18		>80			
		mN	16 17	17	69.0				
		iSSS$_N$	18 02	11	>85				
		iSSS$_E$	18 08	16		*>33.6			*From Mainka.
		mZ	18 18	13			4.5		
		mN	18 26	12	>90.				
		mEZ	19 10	15		*39.4	5.8		
		eL$_E$	20.3	44?					
		eL$_Z$	20.5	63					
		eLN	21.0	52		*			
		MNE	23 08	28	>95	>45			
		MZ	28 47	17			8.3		
		F	(01 05)						
220	" 22	e?$_N$	05 02.0						Masked by microseisms.
		eN	07 38	8					
		eNE	10 05	7					
		eN	14 55	9					
		mN	21 51	15	0.4				
		eLNE	42.5	27					
		MN	46 09	20	0.5				
		ME$_1$	48 44	20		0.9			
		ME$_2$	59 33	15		1.2			
		F	07 05						

(Continued on next sheet.)

RIVERVIEW COLLEGE OBSERVATORY.

RIVERVIEW, N.S.W.

SEISMOLOGICAL BULLETIN.

No.	Date	Phase	Time (Greenwich) h. m. s.	Per s.	Amplitude A_N mm.	A_E mm.	A_Z mm.	Δ km.	Remarks
	1939								
221	Dec.25	e?N	16 30 02						
		eN	30 44	5					
		e_E	31 07	7					
		$e(S)_N$	35 28	7					
		eL_E	38.4	24					
		ME_1	41 03	16		2.6			
		MN_1	41 14	18	1.4				
		ME_2	42 20	14		3.5			
		MN_2	43 51	11	2.6				
		F	17 45						
222	" 27	e?N	00 15 03	6					
		eE	17 40	6					Probably only a large microseism.
		eN	18 16	6					
		iN	21 16	6	-0.7				
		mE	22 06	8		0.7			
		mE	26 12	9		1.0			
		mN	26 32	9	0.8				
		eLQ_N	50.2	100					
		MN_1	01 03 05	24	1.6				
		ME_1	11 34	23		4.6			
		MZ_1	11 40	20			0.1		
		MN_2	13 01	15	2.8				
		MZ_2	16 48	21			0.4		
		ME_2	17 00	19		7.6			
		eN	30 41	80	.....	.....	.....		Long waves (of 2nd shock?) from 01h 30.7m to 01h 39m.
		W_2?E	01 56						
		F	Lost in No.223						
223	" 27	$e(P)_{NEZ}$	03 09 26	5?	.....	.....	.....		May be earlier,
		$i(S)_{NE}$	14 34	10	+1.2	-1.0			Multiple shock?
		mE	19 11	7		1.7	.....		Beginning of M?
		mN	19 12	10	2.8				
		mE	20 03	7		6.1			
		ME	20 52	6		11.0			
		MZ	21 05	6			0.8		
		MN	21 11	6	8.0				
		L?E	22.2	26	.....	.....	.....		L of 2nd shock?
		L?N	22.7	20					
		MN	24 02	13	12.3				
		MZ	24 07	14			0.8		
		ME	24 54	9		11.3			
		MN	25 20	9	15.3				
		F	04 20						
224	" 28	eP_{NE}	00 02 45	4				4850	
		iS_{NE}	07 17	5	-0.5	-0.9		(25?6)	
		eL_N	09.3	14					
		MN	11 25	15	0.8				
		ME	11 56	15		0.5			
		F	01 00						
25	" 29	eN	23 19.4						
		eL_N	24.1	28?					Shallow waves.
		F	23 40						
26	" 30	eNE	01 37.3	11					
		F	02 00						Small waves masked by heavy microseisms.
27	" 30	eNE	02 32.1						Do. do. do. do
		F	02 55						

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