

SEISMOLOGICAL BULLETIN 1930.

BATAVIA OBSERVATORY, JAVA.

Foundation: River Quaternary.

Greenwich Civil Time. S. Latitude $6^{\circ} 11' 0''$. Height above sealevel 8 m.

E. Longitude $7^{\text{h}} 7^{\text{m}} 20.3^{\text{s}}$. (1)

WIECHERT Horizontal Pendulum, 1000 kilograms.

WIECHERT Vertical Pendulum, 1300 kilograms

PREFACE.

The astatic seismograph of WIECHERT of 1000 kg is registering regularly since December 6th 1908; the vertical seismograph since July 9th, 1926.

The instruments are mounted on heavy brick pillars in a room with thick walls (about 70 centimeters) that is protected against the sun's heat by open galleries around it. The horizontal components are placed in E-W and N-S direction respectively.

The writing styles are lifted electrically every hour for a period of 10 seconds by the Javanese observer on duty. A lifting of two seconds every minute is given by an electrical impulse dial of the Synchronome Company Ltd., London.

For each month the mean constants for that month are applied. T_0 and ϵ , the oscillation period and the coefficient of damping, are determined every week. V , the magnification for very short waves, is determined occasionally only. It is found for the horizontal pendulum by direct measurement, giving the pendulum a displacement by means of the horizontal adjusting screw, the value of which can be determined easily from the pitch (a), the angle of displacement of the screws and the height of the screws (b) and of the centre of gravity (c) above the Cardanic suspension apparatus.

It was found

$$(a) = 1.407 \text{ mm}; (b) = 1225 \text{ mm}; (c) = 895 \text{ mm}.$$

The notation used is that of the Göttingen Geophysical Institute.

The following abbreviations are employed:

CHARACTER OF THE EARTHQUAKE.

I = perceptible; II = moderately strong; III = strong.

d (terrae motus domesticus) = local.

v (" " vicinus) = near (less than 1000 km).

r (" " remotus) = distant (1000 to 5000 km).

u (" " ultimus) = very distant (over 5000 km).

(1) For the E. Longitude of the Observatory, see: J. BOEREMA, Determination of the Eastern Longitude of Batavia; K. Magn. Met. Observ. Batavia, Verhandelingen No. 12, 1924.

ES.

P (undae primae) = 1st preliminary tremors.S (" secundae) = 2nd " "

L (" longae) = principal phase, long waves.

M (" maximae) = maximum amplitude.

C (coda) = prominent waves among the after tremors.

F (finis) = end of perceptible movement.

PR₁, PR₂, SR₁, SR₂, = 1st, 2nd reflected waves of P and S.

PS = waves changed by reflection from longitudinal to transversal oscillation.

WAVE-ELEMENTS, UNITS.

T = complete period in seconds.

A = amplitude, measured from median position in microns.

A_E = E.-W. component of A.A_N = N.-S. " " "

i (impetus) = abrupt commencement, clearly defined.

e (emersio) = gradual commencement, not clearly defined.

MALABAR.

Foundation: Volcanic.

S. Latitude 7° 13'; E. Longitude 107° 37'; Height above sea-level 1550 m.

WIECHERT Horizontal Pendulum 100 kg, NS and EW component. Since July 1911.

Time Signals by Malabar Radio.

Possession of MR. R. A. KERKHOVEN.

MARON.

Foundation: Volcanic.

S. Latitude 7° 34'; E. Longitude 110° 25'; Height above sea-level 960 m. OMORI

Tremometer, one component. Since February 1924.

AMBOINA.

Foundation: Quaternary.

S. Latitude 3° 42'; E. Longitude 128° 10'; Height above sea-level 4 m.

WIECHERT Horizontal Pendulum 1000 kg, NS and EW component. Since October 1924.

Time Signals by Malabar Radio.

MEDAN.

Foundation: Quaternary.

N. Latitude 3° 35'; E. Longitude 98° 41'; Height above sea-level 25 m.

WIECHERT Horizontal Pendulum 1000 kg, NS and EW component. Since July 24th, 1929.

Time Signals by Malabar Radio.

The distances given in the Bulletin Batavia are calculated with the *corrected* time tables of Dr. S. W. Visser. See Verhandelingen Batavia No. 22, 1930. The following table is an extract of these tables.

Distance.	S-P	P-O	S-O	Distance.	S-P	P-O	S-O
	m s	m s	m s		m s	m s	m s
1°	0 13	0 16	0 29	56°	7 44	9 54	17 38
2	25	31	56	57	51	10 1	52
3	38	46	1 24	58	57	8	18 5
4	50	1 1	51	59	8 3	15	18
5	1 1	17	2 18	60	9	22	31
6	12	32	44	61	15	29	44
7	24	47	3 11	62	21	36	57
8	35	2 2	37	63	26	43	19 9
9	47	16	4 3	64	32	49	21
10	57	31	28	65	38	55	33
11	2 8	45	53	66	43	11 2	45
12	19	59	5 18	67	49	8	57
13	30	3 12	42	68	55	14	20 9
14	40	26	6 6	69	9 1	20	21
15	50	39	29	70	6	26	32
16	3 0	52	52	71	11	33	44
17	10	4 4	7 14	72	16	39	55
18	29	17	36	73	21	45	21 6
19	38	29	57	74	27	51	17
20	17	41	8 18	75	32	57	29
21	46	53	39	76	37	12 3	40
22	55	5 4	59	77	43	8	51
23	4 3	16	9 19	78	48	14	22 2
24	11	27	38	79	54	19	13
25	19	38	57	80	59	25	24
26	27	48	10 15	81	10 5	30	35
27	35	58	33	82	11	35	46
28	41	6 9	50	83	16	40	56
29	48	19	11 7	84	21	45	23 6
30	56	28	23	85	26	50	16
31	5 2	37	39	86	31	55	26
32	9	46	55	87	35	13 1	36
33	16	55	12 11	88	40	6	46
34	23	7 4	27	89	45	11	56
35	29	13	42	90	50	16	24 6
36	34	22	56	91	54	21	15
37	40	30	13 10	92	59	26	25
38	47	38	25	93	11 3	31	34
39	53	46	39	94	7	36	43
40	6 1	53	54	95	12	40	52
41	7	8 1	14 8	96	16	45	25 1
42	14	9	23	97	20	50	10
43	20	17	37	98	23	55	18
44	27	24	51	99	28	59	27
45	35	31	15 6	100	31	14 4	35
46	42	39	21	101	33	9	42
47	48	47	35	102	36	14	50
48	56	54	50	103	39	18	57
49	7 2	9 2	16 4	104	41	23	26 4
50	9	9	18	105	44	27	11
51	15	17	32	106	48	31	19
52	21	24	45	107	50	36	26
53	26	32	58	108	52	41	33
54	33	39	17 12	109	55	45	40
55	38	47	25	110	58	50	46

Batavia Observatory.

Principal Earthquakes.

January 1930.

1	Jan. 5	Bat.	I _u	iP	1 30 45	7490 km.
				iS	1 39 36	
4	Jan. 18	Bat.	I _u	iP _E	7 12 26	5180
				iS	7 19 5	
				L	7 29,1	
		Mal.	I	i	7 12 33	
		Amb.	I	P	7 10 40	3960
				S	7 16 12	
9	Jan. 28	Bat.	I	i _{EW}	6 29 29	
				i _N	6 37 58	

Woltovrodon, Feb. 7, 1930.

S.W.V.

STANTS.

1930.	E-W component.			N-S component.			V component.		
	V.	T ₀ .	ε.	V.	T ₀ .	ε.	V.	T ₀ .	ε.
	January	210	6.6	3.1	193	6.8	3.7	330	4.7
February	„	6.7	3.3	„	6.6	3.4	„	4.8	3.4
March	„	6.5	3.4	„	6.6	3.4	„	4.8	2.9

	With lifted pen						With writing pen					
	e ₀			r			e ₀			r		
	EW.	NS.	V.	EW.	NS.	V.	EW.	NS.	V.	EW.	NS.	V.
January	1.12	1.12	1.13	0.0	0.0	0.0	1.13	1.16	1.17	0.35	0.49	1.14
February	„	„	„	„	„	„	1.12	1.14	1.18	0.40	0.39	1.27
March	„	„	„	„	„	„	1.12	1.11	1.16	0.35	0.14	1.31

JANUARY.

No.	Date 1950	Station.	Character.	Phase.	Time (G. C. T.)	Period.	Amplitude (half).		Distance of epicentre	Remarks.
							A _E	A _N		
—	Jan. 2	Amb.	I _v	iP S F	h m s 16 20 48 16 21 8 16 28	sec.	μ	μ	km. 170	Azimuth ESE
—	2	Amb.	I _v	iP S F	16 38 41 16 39 0 16 48				160	Azimuth ESE.
—	2	Amb.	I	e F	19 25 19 28					
1	5	Bat.	I _u	iP iS F	1 50 45 1 59 56 1 52				7480	Azimuth NE. Azimuth NW.
		Med.	I	P i i F	1 (32,0) 1 (39,7) 1 (41,7) 2 (12)					
—	12	Mal.	I _v	eP iS F	15 26 24 15 26 35 15 28				90	
2	14	Bat.	I	eP i _E i _W i F	22 15 55 22 14 44 22 25 46 22 25 48 22 57					
—	16	Mal.	I _v	P iS F	10 21 45 10 21 52 10 25				80	

No.	Date 1950.	Station.	Character.	Phase.	Time (G. C. T.)	Period.	Amplitude (half).		Distance of epicentre.	Remarks.
							A _E	A _N		
5	Jan. 17	Bat.	I	i _W i i _N F	h m s 11 19 55 11 19 45 11 27 2 11 51	sec.	μ	μ	km.	Azimuth NE.
		Med.	I	P i i F	11 (20,7) 11 (20,9) 11 (28,2) 11 (55)					
4	18	Bat.	I _u	iP _{E_v} iS L _v L L _v F	7 12 26 7 15 55 7 19 5 7 27 55 7 29,1 7 50 7 57			42.2 35.7 40.9	5070	Compression.
		Med.	I	P i i i L F	7 (3,9) 7 (4,1) 7 (6,9) 7 (10,7) 7 (27) 7 (44)	54.3				
		Amb.	I _r	P S F	7 10 40 7 16 12 7 57				3960	
5	20	Bat.	I _v	eP _{E_W} iS _N F	5 41 55 5 42 18 3 46				400	
6	20	Bat.	I	e i _S i _W F	7 19 56 7 27 6 7 27 57 7 57					
—	21	Med.	I _v	P iS i F	1 (6,8) 1 (7,7) 1 (8,4) 1 (22)				(300)	Atjeh.
—	21	Med.	I _v	eP i i F	4 (16,5) 4 (17,5) 4 (18,1) 4 (28)					Atjeh.
7	25	Bat.	I _v	iP _v P iS F	14 30 52 14 50 54 14 51 14 14 56 14 50 52 14 51 14 14 52				190	Azimuth NE; dilatation.
		Mal.	I	P iS F	14 50 52 14 51 14 14 52				190	
—	24	Med.	I _v	P i i iS F	6 (8,5) 6 (8,4) 6 (8,8) 6 (9,5) 6 (22)				(350)	Atjeh.
8	25	Bat.	I	P F	1 45 26 2 7					Azimuth WSW.
		Mal.	I	i F	1 45 40 1 52					
		Med.	I	i _{E_W}	1 (47,8)					

No.	Date 1929.	Station.	Char-acter.	Phase.	Time (G. C. T.).			Period.	Amplitude (half).		Distance of epi-centre	Remarks.
					h	m	s		μ	μ		
9	Jan. 28	Bat.	I	i _{NS} F P i S L F	i _{EW} i _N F	1	49.4	27.8			1420	Azimuth NE.
						2	17					
						1	40 51					
						1	41 16					
						1	42 58					
						2	44.5 16					
10	Febr. 2	Bat.	I _u	iP iS F i i F		15	8 55			9120		
						15	18 15					
						15	25					
						15	(6,0)					
						15	(16,8)					
						18	(8)					
11	" 4	Bat.	I	i _N F P iS F		15	57 40			460		
						15	41					
						15	31 15					
—	" 5	Med.	I _v	P S F		2	(57.7)			410		
						2	(58.4)					
						3	(0)					
—	" 5	Med.	I _v	P ₁ P ₂ S ₁ S ₂ F		5	(20,1)			I 410 II 550		
						5	(20,2)					
						5	(20,8)					
						5	(21,2)					
						2	25					
12	" 6	Bat.	II _v	iP i _w iS i _w F		0	56 25			250	Azimuth ESE. Bantam (W. Java).	
						0	56 25					
						0	56 49					
						0	57 27					
						0	49					
						0	49					
		Mal.	I _v	iP S F		0	57 4			260		
						0	57 34					
						0	41					
		Med.	I	eP i i i F		0	(59,0)					
						0	(40,7)					
						0	(42,8)					
15	" 7	Bat.	II _r	iP _w i iS _s F		16	55 53			1050	Fort de Kock (Sumatra's Westkust).	
						16	56 5					
						16	57 45					
						17	5					
						16	(41,5)					
						16	(41,9)					
Med.	III	P i S i F		16	(42,9)			(740)				
				16	(43,3)							
				16	(43,3)							
				17	(39)							

FEBRUARY.

No.	Date 1930.	Sta-tion.	Char-acter.	Phase.	Time (G. C. T.).			Period.	Amplitude half.		Distance of epi-centre.	Remarks.									
					h	m	s		μ	μ											
—	Febr. 8	Amb.	I _v	iP iS F		17	55 25			40											
						17	53 50														
						17	54														
14	" 10	Bat.	I _v	iP _v iP _E S _N F		10	5 1	27.4 15.4		250	Dilatation. Bantam and Lampong Districts (S. Sumatra).										
						10	5 2														
						10	5 28														
		Mal.	I _v	P iS F		10	12														
						10	5 46														
						10	4 25														
15	" 12	Bat.	I	i _v i i _N i eL _v L _v F		6	32 18			520	Compression. Azimuth NW. Azimuth NW.										
						6	32 20														
						6	41 50														
						6	42 22														
						7	1														
						7	20														
—	" 13	Mal.	I _v	P iS F		4	14,0			160	No radio signal recorded.										
						4	14,5														
						4	16														
—	" 13	Amb.	I _v	P S F		16	45 10			160											
						16	45 28														
						16	46														
						16	" 14					Bat.	I	i i i F		18	51 18	27.4 15.4		160	
																18	51 24				
																19	1 39				
Med.	I	i i i i i F		19	11																
				18	(52,6)																
				19	(1,5)																
17	" 14	Bat.	I	i _w i _w i L F i i L L L F		20	52 58	17.0		560	Azimuth ESE. Azimuth ENE. Azimuth NW. Azimuth NW.										
						21	2 47														
						21	5 47														
						21	26														
						21	37														
						21	57														
18	" 15	Bat.	I _v	iP iS F		8	21 5	21 21 19		560	Azimuth ESE. Azimuth ENE. Azimuth NW. Azimuth NW.										
						8	22 4														
						8	28														
						Med.	I					eP i F		8	(22,0)						
														8	(24,1)						
														8	(54)						
		19	" 15	Bat.	I	i _w i i F		18	1 28			560	Azimuth NW.								
								18	2 52												
								18	4 35												
								18	8												

No.	Date 1950.	Station.	Char-acter.	Phase.	Time (G. C. T.).	Period.	Amplitude (half)		Distance of epi-centre.	Remarks.			
							A _E	A _N					
20	Febr. 17	Bat.	I	e	h m s	sec.	μ	μ	550	Minute uncertain.			
				F	5 12 45								
		Amb.	II _v	iP	5 23								
				iS	5 10 13								
21	" 18	Bat.	I	i	2 17 48								
				F	2 24								
22	" 18	Bat.	I	i _w	6 21 56								
				i	6 26 15								
				F	6 52								
23	" 18	Bat.	I _v	iP	17 0 20				510				
				iS	17 1 16								
				F	17 16								
		Med.	I	P	17 (1.8)								
				i	17 (2.1)								
				i	17 (2.6)								
—	" 19	Med.	I	F	17 (5.6)								
				F	17 (5.0)								
—	" 19	Med.	I	P	0 (14.7)				(170)	Azimuth ENE.			
				iS	0 (15.1)								
				F	0 19								
—	" 19	Med.	I _v	P	6 (15.2)				(260?)				
				S?	6 (14.7)								
				F	6 (29)								
—	" 21	Med.	I _v	eP	6 (6.0)				(580)				
				S	6 (6.7)								
				F	6 (16)								
24	" 25	Bat.	I	e	15 48								
				e	15 52								
				F	15 56								
25	" 25	Bat.	I	e	16 56								
				i	16 57 45								
				F	17 2								
26	" 24	Bat.	II	P _E	20 54 55								
				i	20 54 41								
				i	20 55 50								
				F	21 22								
				Med.	I _r							eP	20 (55.6)
												i	20 (56.5)
		Amb.	II _v	S	21 (0.9)								
				F	21 54								
				iP	20 54 14								
				iS	20 55 21								
				F	21 25								
				27	" 25	Bat.	I	i _w	5 20 19				
i	5 26 9												
28	" 27	Bat.	I	F	5 52								
				e	2 19								
				i	2 21 53								
Med.	III _v	I	I	F	2 54				(260)	Pens off; 2 (16.6) iP: azimuth NW.			
				iP	2 (16.0)								
				i	2 (16.1)								
				i	2 (16.5)								
				iS	2 (16.5)								
				iS	2 (16.5)								

No.	Date 1950.	Sta-tion.	Char-acter.	Phase.	Time (G. C. T.)	Period.	Amplitude (half)		Distance of epi-centre.	Remarks.		
							A _E	A _N				
29	Feb. 28	Bat.	I	i	h m s	sec.	μ	μ	km.			
				i _w	25 6 56							
		Med.	II	F	15 8 12							
				P	25 16							
				i	22 (55.9)							
				i	22 (58.2)							
				i	23 (1.4)							
				i	23 (2.6)							
				i	23 (19.5)							
				F	23 (20.5)							
F	25 (21.2)											
F	25 (56)											
MARCH.												
—	March 2	Amb.	I _v	P	18 15 17				140			
				S	18 15 35							
				F	18 17							
—	" 2	Amb.	I _v	P	18 22 0							
				i	18 22 14							
				iS	18 25 15							
50	" 6	Bat.	I	e	15 47 29				110			
				i	15 50 49							
				L	16 14							
—	" 6	Med.	I _v	M	16 21	21.5						
				M	16 30							
				F	16 39							
51	" 8	Bat.	I	i	10 22 48							
				i _E	10 24 18							
				i	10 26 16							
—	" 8	Amb.	I _v	F	10 34				190	Azimuth NE-SE.		
				P	10 21 58							
				iS	10 22 0							
—	" 8	Amb.	I _v	F	10 29				150			
				P	17 2 9							
				S	17 2 24							
52	" 10	Bat.	II _v	F	17 5				320	Azimuth WNW. Compression. Bantam (W. Java).		
				iP	14 58 56							
				iP _v	14 58 28							
53	" 10	Bat.	I _u	i _v	14 58 56				270			
				S	14 59 3							
				F	14 52							
				Mal.	I _v						P	14 58 46
											S	14 59 17
				Med.	I						F	14 42
		e	14 (26.5)									
		—	" 10	Bat.	I _u	F	14 (54)				7670	Azimuth NE-SW. Azimuth NW.
						iP	16 56 16					
						iS	16 45 17					
						F	16 56					
						Med.	I _u					
i	16 (52.6)											
iS	16 (59.8)											
i	16 (41.0)											
i	16 (31.9)											
F	16 (45)											
—	" 10	Med.	I _u	i	16 (45)				(6070)			
				i	16 (45)							
				i	16 (45)							
				i	16 (45)							
				i	16 (45)							
				i	16 (45)							

No.	Date 1930.	Station.	Character.	Phase.	Time (G. C. T.).			Period.	Amplitude (half)		Distance of epicentre.	Remarks.
					h	m	s		sec.	μ		
	March 12	Mal.	I _v	eP	1	26	14				150	
				iS	1	26	51					
				F	1	27						
54	• 13	Bat.	I _v	eP _E	1	21	6				480	
				S	1	21	59					
				F	1	51						
55	• 13	Bat.	III _v	iP	10	45	7				190	Azimuth ENE Dilatation.
				iS	10	45	29					
				F	11	5						
		Mal.	II	iP	10	45	27				290?	
				i	10	45	29					
				S?	10	44	0					
				F	10	50						
		Med.	I	i	10	(45.2)						
				i	10	(48.8)						
				i	10	(49.5)						
				i	10	(49.8)						
				F	11	(8)						
	• 15	Med	I _r	P	14	(25.4)					1020	
				S	14	(27.2)						
				F	14	55						
56	• 14	Bat.	I _v	iP	2	9	6				200	Strong dilatation.
				S	2	9	29					
				F	2	14						
	• 14	Amb.	I	iP _s	18	57	51				80	Azimuth NE-SW.
				iS	18	58	1					
				F	18	41						
	• 15	Amb.	I _v	P	5	59	27				80	
				iS	5	59	57					
				i	5	59	52					
				F	4	9						
57	• 15	Bat.	III _v	iP	6	55	41				510	Az. SW; compression. Azimuth NW.
				iS	6	56	16					
				i	7	56	45					
				F	7	23						
		Mal.	III _v	iP	6	55	54				250	
				iS	6	56	2					
				F	7	16						
		Med.	II	e	7	(0.4)						
				i	7	(8.1)						
				F	8	(21)						
	• 18	Mal.	I _v	P	7	12	54				150	
				iS	7	12	49					
				F	7	14						
	• 18	Amb.	I _v	P	8	48	0				120	
				iS	8	48	14					
				F	8	52						
58	• 21	Bat.	I _v	P	16	46	47				70	Bantam (W. Java).
				iS	16	46	55					
				F	16	50						
		Mal.	I _v	P	16	46	45				140	
				S	16	47	1					
				F	16	48						

No.	Date 1930.	Station.	Character.	Phase.	Time (G. C. T.).			Period.	Amplitude (half)		Distance of epicentre.	Remarks.
					h	m	s		sec.	μ		
39	March 23	Bat.	I	i	7	57	47					Azimuth NW-SE.
				i	7	58	58					Azimuth NW-SE.
				F	7	44						
40	• 23	Bat.	I	i _N	7	50	40					E. Java and Bali.
				F	7	55						
41	• 24	Bat.	I	i	0	46	20					Lamong Dist. (S. Sum.).
				F	0	51						
	• 24	Med.	I _r	eP	19	(55.6)					3700?	
				i	19	(56.9)						
				i	19	(58.1)						
				iS?	19	(58.9)						
				i	19	(59.1)						
				F	19	54						
42	• 26	Bat.	II _r	iP _v	7	16	50				5480	Dilatation. Azimuth ESE.
				iP	7	16	52					
				i _N	7	16	51					
				S _{SN,V}	7	21	56					Kisar (S. Moluccas)?
				i _w	7	21	52					
				iL _v	7	25	52		22.0			
				i _v	7	58	5					
				F	8	58						
		Mal.	I _r	iP	7	16	5				2590	
				i	7	16	56					
				iS	7	20	8					
				L	7	29	4		12			
				i	7	58	8					
				F	7	44						
		Amb.	III _v	iP	7	15	8				560	Azimuth WSW.
				i _s	7	15	50					
				iS _s	7	14	9					
				F	8	44						
		Med.	III _r	iP	7	(15.6)					3250	Azimuth SE-NW.
				i _{SS}	7	(16.2)						
				S _{EW}	7	(20.4)						
				i	7	(22.4)						
				F	8	(47)						
	• 26	Amb.	I _v	eP	11	9	18				550	
				iS	11	10	18					
				F	11	24						
43	• 26	Bat	I	i _w	11	56	55					
				F	12	9						
		Amb.	II _v	iP	11	54	7				360	Azimuth SE-NW.
				S	11	54	48					
				F	12	9						
	• 26	Amb.	I _v	eP	12	49	11				580	
				S	12	50	14					
				F	15	2						
	• 26	Amb.	I	eP	19	26	58					
				F	19	52						
44	• 26	Bat.	I	i	20	20	10					
				F	20	42						
		Amb.	I _v	P	20	17	50				750	
				S	20	19	9					
				F	20	50						

No.	Date 1950.	Station.	Character.	Phase.	Time (G. C. T.)	Period.	Amplitude (half).		Distance of epicentre.	Remarks.	
							A _E	A _N			
					h	m	s	μ	μ	km.	
		Med.	I	eP	20	(22,8)					
				i	20	(24,5)					
				i	20	(28,1)					
				F	20	(58)					
—	March 27	Amb.	I	eP	12	52	8				Poeloe Liran (Timor).
				F	12	53					
—	" 28	Amb.	I _v	iP	15	19	17			140	
				iS	15	19	35				
				F	15	25					
45	" 30	Bat.	I	i	0	53	56				
				i	0	53	28				
				i	0	59	15				
				F	0	44					
		Amb.	I _r	iP	0	50	2			2190	Minutes uncertain.
				S	0	55	56				
				F	0	46					
46	" 40	Bat.	III _v	iP _v	9	5	17			260	
				iP	9	5	19				
				iS?	9	5	49				
				i	9	6	52				
				i	9	7	40				
				F	9	40					
		Mal.	II _v	iP	9	5	11			210	
				iS	9	5	55				
				—	9	15					
		Med.	II	P	9	(7,5)					
				i	9	(10,9)					
				i	9	(12,6)					
				i	9	(24,8)					
				i	9	(52,5)					
				F	10	(24)					
—	" 50	Amb.	I _r	iP	9	21	8			2810	
				iS	9	25	29				
				F	9	45					
47	" 50	Bat.	II	i	15	25	57				Kisar (Timor).
				i	15	24	12				
				F	16	2					
		Amb.	III _v	iP	15	20	53			590	
				iS	15	21	57				
				F	16	14					
		Med.	II	P	15	(27,6)					
				i	15	(29,6)					
				i	15	(52,4)					
				i	15	(54,1)					
				i	15	(58,1)					
				F	16	(25)					
—	" 50	Amb.	I _v	eP	15	50	58			560	Kisar (Timor).
				S	15	51	59				
				F	16	11					
—	" 51	Amb.	I _v	iP	21	10	49			80	
				eS	21	10	58				
				F	21	14					

SEISMOLOGICAL BULLETIN

BATAVIA 1930.

CONSTANTS.

1930.	E-W component.			N-S component.			V component.		
	V.	T ₀ .	ε.	V.	T ₀ .	ε.	V.	T ₀ .	ε.
April	210	6.3	2.9	193	6.6	3.4	330	4.7	3.4
May	"	6.2	2.8	"	6.7	3.5	"	4.7	3.0
June	"	6.2	2.8	"	6.7	3.5	"	4.6	3.4

	With lifted pen						With writing pen					
	e ₀			r			e ₀			r		
	EW.	NS.	V.	EW.	NS.	V.	EW.	NS.	V.	EW.	NS.	V.
April	1.12	1.12	1.13	0.0	0.0	0.0	1.09	1.14	1.18	0.21	0.42	1.18
May	"	"	"	"	"	"	1.09	1.15	1.16	0.52	0.26	1.07
June	"	"	"	"	"	"	1.10	1.14	1.16	0.48	0.55	1.03

APRIL.

No.	Date 1950.	Station.	Character.	Phase.	Time (G. C. T.).	Period.	Amplitude (half).		Distance of epicentre	Remarks.
							A _E	A _N		
—	April 1	Amb.	I _v	P iS F	h m s 5 54 25 5 54 55 5 59	sec.	μ	μ	km. 70	
48	" 1	Bat.	I _v	iP _v P S? i F	11 11 5 11 11 5 11 12 16 11 12 27 11 26				660?	Dilatation
—	" 1	Amb.	I _v	iP iS F	15 2 27 15 2 29 15 4				(20)	
—	" 1	Amb.	I	eP F	17 57.2 17 18					
49	" 2	Bat.	I	P i _w i F	4 19 11 4 21 51 4 24 8 4 55					
—	" 2	Med.	I	eP i F	4 (20,4) 4 (27,0) 4 (50)					
—	" 2	Med.	I	eP i i F	15 (27,0) 15 (29,2) 15 (50,5) 15 45					

No.	Date 1929.	Station.	Character.	Phase.	Time (G. C. T.).			Period.	Amplitude half.		Distance of epicentre.	Remarks.
					h	m	s		μ	μ		
57	April 22	Bat	I	i F	0	17	17				Madjene (S. Celebes).	
—	• 22	Amb.	I _v	iP iS F	15	14	57			540	Bali?	
58	• 23	Bat.	I	e i i F	21	59	50				SW-NE.	
		Amb.	I	eP i L F	21	58	16	15				
		Med.	I	P i eL M M F	21	59	11	18				
					22	1	50	29				
					22	18	41	18.5				
					22	26	15					
					22	32	15					
					22	38						
—	• 24	Med.	I _r	P S F	22	22	11			1550		
					22	24	49					
					22	30						
—	• 25	Med.	I	P F	5	51	17					
					4	2						
59	• 26	Bat.	I	i _w i i F	16	51	12					
					16	51	48					
					16	41	54					
					16	47						
		Med.		i i L F	16	28	20					
					16	38	28					
					16	36		29.5				
					in next							
60	• 26	Bat.	I	i _w i _s i _e F	17	24	5				Bali and E. Java. Destructive in Bali.	
					17	26	10					
					17	27	2					
					17	40						
		Med.	I	e F	17	50	51					
					17	49						
—	• 27	Mal.	I	eP S F	6	44	0			510		
					6	44	55					
					6	48						
61	• 27	Bat.	III _d	iP _v iP iS off	9	57	8			90	Vertical pen off 9h 57m 9s ENE, dilatation. W. Java.	
					9	57	9					
					9	57	20					
					9	57	24					
			Bosch	iP S _{NS} i _{EW} F	9	57	9			70		
					9	57	17					
					9	59	19					
					10	10						
		Mal.	III _d	iP iS F	9	56	35			150	SE-NW.	
					9	57	10					
					10	7						
		Med.	II _r	P i	10	0	44			1890		
					10	1	16					
					10	5	54					

No.	Date 1950.	Station.	Character.	Phase.	Time (G. C. T.).			Period.	Amplitude (half).		Distance of epicentre.	Remarks.
					h	m	s		μ	μ		
62	April 28	Bat.	I _u	iP S L F	14	56	1			5940	WSW-ENE.	
					14	45	30					
					14	55						
		Med.	I _u	iP iS i _E L F	14	56	36			5980	SW-NE.	
					14	44	8					
					14	45	52	21.0				
					14	55						
					15	25						
—	• 27	Amb.	I	iP F	17	57	42				WNW-ESE.	
					17	54						
63	• 27	Bat.	I	eP i F	21	42	46					
					21	47	58					
					22	0						
		Med.	I _u	P S F	21	44	26			6180		
					21	52	8					
					22	10						
64	• 28	Bat.	II	P i i i F	18	41	52					
					18	51	59					
					18	55	10					
					18	55	25					
		Med.	III _u	iP i _w i _s i iS F	18	58	58			5590	SE-NW.	
					18	45	6					
					18	45	18					
					18	45	11					
					18	46	9					
					19	57						
65	• 30	Bat.	I	iP i _N i i _E F	16	18	5				WNW-ESE.	
					16	18	49					
					16	28	1					
					16	29	25					
					16	39						
		Med.	I	i i i i i F	16	17	26					
					16	17	50					
					16	27	59					
					16	28	15					
					16	47						
66	• 30	Bat.	I _v	P i iS F	22	12	45			150	Bantam (W. Java). NE, dilatation. NW.	
					22	12	47					
					22	15	2					
					22	18						
		Mal.	I	P S F	22	12	57			60		
					22	12	44					
					22	15						

MAY.

No.	Date 1950.	Sta- tion.	Char- acter.	Phase.	Time (G. C. T.)			Period.	Amplitude (half).		Distance of epi- centre.	Remarks.
					h	m	s		μ	μ		
67	May 1	Bat.	I	e	1	7	6	18				
		Med.	I	F	1	14	47					
—	• 1	Med.	I	i	3	8	12	54				
					F	3	11					
—	• 1	Med.	I	i	18	53	56					
					F	18	42					
68	• 2	Bat.	I	i	1	31	43	16				
		Med.	I	e	2	2	12					
—	• 2	Med.	I	i	2	11	12					
					L	2	53					
69	• 2	Bat.	I	iP _v	6	12	17	16			5430	WNW, compression.
		Med.	I	i	6	20	52					
—	• 5	Bat.	III _r	iP _v	6	21	13				5160	NW, compression. Rangoon Birma. Bosch. Wiechert.
					F	6	57					
—	• 5	Med.	III	iP	6	57	9				4690	NNW.
					L	6	51					
—	• 5	Amb.	I _v	P	6	55					780	
					F	7	3					
—	• 5	Amb.	I _v	iP	15	51	43				120	
					S	15	56					
—	• 5	Amb.	I _v	iS	15	56	48				780	
					F	15	56					
67	May 1	Bat.	I	e	1	7	6	18				
		Med.	I	F	1	14	47					
—	• 1	Med.	I	i	3	8	12	54				
					F	3	11					
—	• 1	Med.	I	i	18	53	56					
					F	18	42					
68	• 2	Bat.	I	i	1	31	43	16			5430	NW, compression. Rangoon Birma. Bosch. Wiechert.
		Med.	I	e	2	2	12					
—	• 2	Med.	I	i	2	11	12				5160	NNW.
					L	2	53					
—	• 5	Amb.	I _v	P	6	55					4690	
					F	7	3					
—	• 5	Amb.	I _v	iP	15	51	43				780	
					S	15	56					
—	• 5	Amb.	I _v	iS	15	56	48				120	
					F	15	56					
67	May 1	Bat.	I	e	1	7	6	18				
		Med.	I	F	1	14	47					
—	• 1	Med.	I	i	3	8	12	54				
					F	3	11					
—	• 1	Med.	I	i	18	53	56					
					F	18	42					
68	• 2	Bat.	I	i	1	31	43	16			5430	NW, compression. Rangoon Birma. Bosch. Wiechert.
		Med.	I	e	2	2	12					
—	• 2	Med.	I	i	2	11	12				5160	NNW.
					L	2	53					
—	• 5	Amb.	I _v	P	6	55					4690	
					F	7	3					
—	• 5	Amb.	I _v	iP	15	51	43				780	
					S	15	56					
—	• 5	Amb.	I _v	iS	15	56	48				120	
					F	15	56					
67	May 1	Bat.	I	e	1	7	6	18				
		Med.	I	F	1	14	47					
—	• 1	Med.	I	i	3	8	12	54				
					F	3	11					
—	• 1	Med.	I	i	18	53	56					
					F	18	42					
68	• 2	Bat.	I	i	1	31	43	16			5430	NW, compression. Rangoon Birma. Bosch. Wiechert.
		Med.	I	e	2	2	12					
—	• 2	Med.	I	i	2	11	12				5160	NNW.
					L	2	53					
—	• 5	Amb.	I _v	P	6	55					4690	
					F	7	3					
—	• 5	Amb.	I _v	iP	15	51	43				780	
					S	15	56					
—	• 5	Amb.	I _v	iS	15	56	48				120	
					F	15	56					
67	May 1	Bat.	I	e	1	7	6	18				
		Med.	I	F	1	14	47					
—	• 1	Med.	I	i	3	8	12	54				
					F	3	11					
—	• 1	Med.	I	i	18	53	56					
					F	18	42					
68	• 2	Bat.	I	i	1	31	43	16			5430	NW, compression. Rangoon Birma. Bosch. Wiechert.
		Med.	I	e	2	2	12					
—	• 2	Med.	I	i	2	11	12				5160	NNW.
					L	2	53					
—	• 5	Amb.	I _v	P	6	55					4690	
					F	7	3					
—	• 5	Amb.	I _v	iP	15	51	43				780	
					S	15	56					
—	• 5	Amb.	I _v	iS	15	56	48				120	
					F	15	56					
67	May 1	Bat.	I	e	1	7	6	18				
		Med.	I	F	1	14	47					
—	• 1	Med.	I	i	3	8	12	54				
					F	3	11					
—	• 1	Med.	I	i	18	53	56					
					F	18	42					
68	• 2	Bat.	I	i	1	31	43	16			5430	NW, compression. Rangoon Birma. Bosch. Wiechert.
		Med.	I	e	2	2	12					
—	• 2	Med.	I	i	2	11	12				5160	NNW.
					L	2	53					
—	• 5	Amb.	I _v	P	6	55					4690	
					F	7	3					
—	• 5	Amb.	I _v	iP	15	51	43				780	
					S	15	56					
—	• 5	Amb.	I _v	iS	15	56	48				120	
					F	15	56					
67	May 1	Bat.	I	e	1	7	6	18				
		Med.	I	F	1	14	47					
—	• 1	Med.	I	i	3	8	12	54				
					F	3	11					
—	• 1	Med.	I	i	18	53	56					
					F	18	42					
68	• 2	Bat.	I	i	1	31	43	16			5430	NW, compression. Rangoon Birma. Bosch. Wiechert.
		Med.	I	e	2	2	12					
—	• 2	Med.	I	i	2	11	12				5160	NNW.
					L	2	53					
—	• 5	Amb.	I _v	P	6	55					4690	
					F	7	3					
—	• 5	Amb.	I _v	iP	15	51	43				780	
					S	15	56					
—	• 5	Amb.	I _v	iS	15	56	48				120	
					F	15	56					
67	May 1	Bat.	I	e	1	7	6	18				
		Med.	I	F	1	14	47					
—	• 1	Med.	I	i	3	8	12	54				
					F	3	11					
—	• 1	Med.	I	i	18	53	56					
					F	18	42					
68	• 2	Bat.	I	i	1	31	43	16			5430	NW, compression. Rangoon Birma. Bosch. Wiechert.
		Med.	I	e	2	2	12					
—	• 2	Med.	I	i	2	11	12				5160	NNW.
					L	2	53					
—	• 5	Amb.	I _v	P	6	55					4690	
					F	7	3					
—	• 5	Amb.	I _v	iP	15	51	43				780	
					S	15	56					
—	• 5	Amb.	I _v	iS	15	56	48				120	
					F	15	56					
67	May 1	Bat.	I	e	1	7	6	18				
		Med.	I	F	1	14	47					
—	• 1	Med.	I	i	3	8	12	54				
					F	3	11					
—	• 1	Med.	I	i	18	53	56					
					F	18	42					
68	• 2	Bat.	I	i	1	31	43	16			5430	NW, compression. Rangoon Birma. Bosch. Wiechert.
		Med.	I	e	2	2	12					
—	• 2	Med.	I	i	2	11	12				5160	NNW.
					L	2	53					
—	• 5	Amb.	I _v									

No.	Date 1950.	Station.	Character.	Phase.	Time (G. C. T.).			Period.	Amplitude (half)		Distance of epicentre.	Remarks.
					h	m	s		A _E	A _N		
—	May 11	Amb.	I _v	P	7	26	50		μ	μ	80	
				S	7	26	40					
				F	7	54						
—	• 15	Med.	I	P	19	59	52					
				F	20	7						
—	• 15	Mal.	I _v	P	0	56	46				(50)	
				iS	0	56	49					
				F	0	58						
—	• 15	Amb.	I _v	P	15	59	58				180	
				S	14	0	19					
				F	14	5						
—	• 15	Amb.	I _v	i _w	15	12	20				180	
				iP	15	12	22					ENE-WSW.
				S	15	12	45					SW.
				F	15	22						
—	• 15	Med.	I _r	eP	17	57	26				1140	
				S	17	59	26					
				F	17	50						
—	• 16	Amb.	I _v	iP	15	15	52				70	
				S	15	16	0					
				F	15	25						
—	• 17	Mal.	I _v	eP	16	56	25				80	
				iS	16	56	52					
				F	16	57						
77	• 18	Bat.	I	e	0	10	30					
				F	0	25						
		Med.	I _u	eP	0	10	46				5590	
				eS	0	17	57					
				F	0	27						
—	• 18	Amb.	I _v	iP	9	18	40				70	
				iS	9	18	48					
				F	9	24						
—	• 18	Amb.	I _v	iP	9	45	40				80	
				iS	9	45	49					
				F	9	51						
—	• 18	Amb.	I _v	P	10	2	40				70	
				iS	10	2	48					
				F	10	5						
78	• 19	Bat.	I _v	iP _v	11	55	12				700	
				iP	11	55	14					
				S	11	54	50					
				F	12	2						
79	• 19	Bat.	I _r	iP _v	15	10	18				5520	SW, dilatation.
				iP	15	10	22					
				i _v	15	11	54					
				S	15	15	16					SE.
				F	15	30						
		Mal.	I _r	iP	15	10	12				5550	
				iS	15	15	8					
				F	15	18						

No.	Date 1950.	Station.	Character.	Phase.	Time (G. C. T.).			Period.	Amplitude (half)		Distance of epicentre.	Remarks.
					h	m	s		A _E	A _N		
—		Amb.	I _r	iP	15	9	14		μ	μ	5000?	ESE-WNW.
				S?	15	15	49					
				F	15	29						
		Med.	II _r	eP	15	8	52					
				iS	15	15	17					
				F	15	50						
—	May 19	Med.	I _v	iP	22	59	22				550	NW-SE. SW-NE.
				iS	22	40	0					
				F	22	48						
—	• 20	Med.	III _d	iP	7	5	28				90	SE-NW. Atjeh (N. Sumatra).
				iS	7	5	58					
				off	7	5	42					
80	• 20	Bat.	I	e _{EW}	7	50	52					Atjeh. WNW.
				i	7	55	59					
				F	8	9						
—	• 20	Amb.	I _v	P	8	18	24				580	Taroena, Sangir I.
				S	8	19	27					
				F	8	21						
—	• 20	Amb.	I	P	8	46	10					
				i	8	47	10					
				F	9	17						
—	• 22	Amb.	I _v	P	17	47	10				260	
				S	17	47	40					
				F			in next					
—	• 22	Amb.	I _v	P	17	52	55				290	
				S	17	55	6					
				F	18	4						
—	• 25	Amb.	I _v	P	8	50	8				240	
				S	8	50	55					
				F	8	55						
81	• 25	Bat.	I	e _{NS}	16	47	25					
				e	16	55	6					
				F	17	2						
		Med.	I	i	16	50	52					
				F	17	5						
—	• 24	Med.	I _v	iP	19	57	45				290	
				S	16	58	18					
				F	19	41						
—	• 25	Amb.	I	eP	10	29	47					
				F	10	55						
—	• 25	Med.	I _r	eP	25	51	27				1540	
				S	25	54	6					
				F	25	42						
82	• 26	Bat.	I	i	15	57	18					
				F	16	5						
		Med.	I _v	P	15	50	24				800	
				S?	15	51	50					
				F	16	10						
—	• 27	Med.	I _v	iP	7	8	48				450	WNW-ESE. Atjeh.
				iS _s	7	9	36					
				F	7	25						

No.	Date 1950.	Station.	Char-acter.	Phase.	Time (G. C. T.)			Period.	Amplitude half.		Distance of epi-centre.	Remarks.
					h	m	s		A _E	A _N		
85	May 50	Bat.	I _r	P	13	1	7	sec.	μ	μ	km.	
				iS	15	5	52					
				F	15	13						
		Mal.	I	e	15	3	30					
				i	15	3	42					
				F	13	6						
		Med.	I _r	P	15	1	46					
				iS	15	3	42					
				F	15	16						
		Amb.	I _v	P	12	38	57					
				iS	12	39	49					
				F	15	14						

JUNE.

—	June. 1	Mal.	I _v	eP	2	24	8	19	μ	μ	km.					
				S	2	24	20									
				F	2	30										
85	» 1	Bat.	I _r	P	4	0	42	24.4	μ	μ	km.					
				iS	4	7	1									
				F	4	15										
86	» 1	Bat.	I	i	15	16	37	24.5	μ	μ	km.					
				i	15	25	58									
				i	15	27	16									
				i	15	36	12									
				L	15	36										
				F	14	17										
		Med.	I	e	15	17	25									
				i	13	28	25									
				L	15	32										
				F	14	17										
				—	» 5	Med.	I _v						P	10	4	37
													S	10	3	21
F	10	8														
—	» 5	Med.	I _v	eP	19	13	5									
				S	19	13	58									
				F	20	19										
87	» 5	Bat.	I _v	iP _{EW}	25	54	53	Benkoelen (S. Sumatra).	μ	μ	km.					
				i _w	25	54	59									
				S	25	35	46									
				F	25	45										
				Med.	I _v	i	25						56	57		
						S	25						57	55		
		F	25			44										

No.	Date 1950.	Station.	Char-acter.	Phase.	Time (G. C. T.)			Period.	Amplitude (half).		Distance of epi-centre.	Remarks.		
					h	m	s		A _E	A _N				
88	June 4	Bat.	II _r	P _{EW}	9	55	5	sec.	μ	μ	km.	Toetal, Kei-I. (Moluccas). Dilatation.		
				iP _v	9	55	4							
				i	9	55	56							
		Mal.	I _r	F	10	22								
				P	9	54	44							
				i	9	54	52							
		Med.	II _r	iS	9	58	1							
				i	9	58	24							
				F	10	6								
				iP _w	9	56	51							
				S?	10	1	37							
				i	10	5	9							
89	» 5	Bat.	I _v	eP _{NS}	1	11	46	26.8	μ	μ	km.			
				F	1	15								
				P	1	11	20							
		Mal.	I _v	iS	1	11	52							
				F	1	14								
				Bat.	I	e	11						55	55
		i _{SN}	12			2	42							
		L	12			19								
		F	12			25								
		Amb.	I			i	11						52	19
						i	12						2	48
		Med.	I	F	12	46								
eP	11			54	26									
—	» 5	Bat.	I	F	12	58								
				i _N	16	53	50							
				i	16	47	18							
91	» 5	Bat.	I	F	16	55								
				Bat.	I _v	P _N	25	48	10					
						S	25	48	52					
F	25	55												
92	» 5	Bat.	I _v	iP	25	48	59							
				iS	25	48	56							
				F	25	50								
93	» 6	Bat.	I _v	P _v	7	40	15							
				P _N	7	40	16							
				iS	7	40	56							
		Mal.	I _v	F	7	44								
				P	7	40	51							
				iS	7	40	55							
94	» 8	Bat.	I _v	F	7	44								
				P	7	42	25							
				S	7	45	1							
		Mal.	I _v	F	7	35								
				eP	7	42	29							
				S	7	42	54							
		Med.	I _v	F	7	48								
				P	7	46	11							
				S?	7	46	55							
				F	7	56								
				—	» 9	Med.	I _v	iP	11	22	50			
								iS	11	22	55			
F	11	27												

No.	Date 1930.	Sta- tions.	Char- acter.	Phase.	Time (G. C. T.).			Period. sec.	Amplitude (half).		Distance of epi- centre. km.	Remarks.
					h	m	s		μ	μ		
95	June 11	Bat.	II	i _{EV}	0	57	51	45 23.9			5100	Compression.
				i _E	0	59	44					
				L _V	1	11						
				L	1	14						
		Mal	I	F	1	51						
				i	0	57	51					
				i	1	4	5					
		Amb.	II _r	i	1	7	27					
				F	1	11						
				iP	0	57	26					
				i	0	57	56					
				S	1	2	6					
Med.	II	F	2	0								
		i	0	58	55							
		i	0	6	0							
		eL	0	17								
				F	0	57	52					
96	" 11	Bat.	I _v	eP	1	40	15	180			180	W. Priangan (W. Java).
				iS	1	40	56					
				F	1	42						
		Mal.	I _v	iP	1	40	0					
				iS	1	40	14					
				F	1	41						
97	" 11	Bat.	I	eP	10	29	56					
				i	10	54	45					
				F	10	45						
98	" 11	Bat.	I _v	P _v	22	12	25	260			260	Compression. Benkoelen.
				P _w	22	12	25					
				S _s	22	12	54					
				F	22	19						
—	" 14	Mal.	I _v	eP	5	55	56	110			110	
				iS	5	55	49					
				F	5	56						
99	" 15	Bat.	I _v	eP	5	57	22	190			190	Priangan (W. Java).
				S	5	57	46					
				F	5	46						
		Mal.	I _v	iP	5	56	58					
				iS	5	56	58					
				F	5	40						
—	" 16	Med.	I _v	P	8	55	51	570			570	Tangse (Atjeh).
				iS	8	56	15					
				F	9	5						
—	" 16	Mal.	I _v	eP	23	50	4	160			160	Banjoemas.
				iS	23	50	22					
				F	23	52						
100	" 17	Bat.	I _r	P	17	7	25	2260			2260	
				S	17	11	5					
				F	17	15						
101	" 19	Bat.	III _d	i	15	8	5	140? 170			140? 170	Strait Sunda; felt in W. Java and S. Sumatra. Dilatation. (Bosch). (Bosch.)
				iP _{v,EW}	15	8	9					
				iS?	15	8	25					
				iS _{NS}	15	8	29					
				off	15	8	52					
F	15	25										

No.	Date 1950.	Sta- tion	Char- acter.	Phase.	Time (G. C. T.).			Period. sec.	Amplitude (half).		Distance of epi- centre. km.	Remarks.
					h	m	s		μ	μ		
95	June 11	Bat.	II	i _{EV}	0	57	51	45 23.9			5100	Compression.
				i _E	0	59	44					
				L _V	1	11						
				L	1	14						
		Mal	I	F	1	51						
				i	0	57	51					
				i	1	4	5					
		Amb.	II _r	i	1	7	27					
				F	1	11						
				iP	0	57	26					
				i	0	57	56					
				S	1	2	6					
Med.	II	F	2	0								
		i	0	58	55							
		i	0	6	0							
		eL	0	17								
				F	0	57	52					
96	" 11	Bat.	I _v	eP	1	40	15	180			180	W. Priangan (W. Java).
				iS	1	40	56					
				F	1	42						
		Mal.	I _v	iP	1	40	0					
				iS	1	40	14					
				F	1	41						
97	" 11	Bat.	I	eP	10	29	56					
				i	10	54	45					
				F	10	45						
98	" 11	Bat.	I _v	P _v	22	12	25	260			260	Compression. Benkoelen.
				P _w	22	12	25					
				S _s	22	12	54					
				F	22	19						
—	" 14	Mal.	I _v	eP	5	55	56	110			110	
				iS	5	55	49					
				F	5	56						
99	" 15	Bat.	I _v	eP	5	57	22	190			190	Priangan (W. Java).
				S	5	57	46					
				F	5	46						
		Mal.	I _v	iP	5	56	58					
				iS	5	56	58					
				F	5	40						
—	" 16	Med.	I _v	P	8	55	51	570			570	Tangse (Atjeh).
				iS	8	56	15					
				F	9	5						
—	" 16	Mal.	I _v	eP	23	50	4	160			160	Banjoemas.
				iS	23	50	22					
				F	23	52						
100	" 17	Bat.	I _r	P	17	7	25	2260			2260	
				S	17	11	5					
				F	17	15						
101	" 19	Bat.	III _d	i	15	8	5	140? 170			140? 170	Strait Sunda; felt in W. Java and S. Sumatra. Dilatation. (Bosch). (Bosch.)
				iP _{v,EW}	15	8	9					
				iS?	15	8	25					
				iS _{NS}	15	8	29					
				off	15	8	52					
F	15	25										
102	June 19	Bat.	III _d	iP	15	27	55				250	(Bosch) Strait Sunda. (Bosch). (Bosch). (Wiechert).
				iS	15	28	21					
				F	15	35						
				F	14	7						
		Mal.	III _d	e	15	27	55					
				iP	15	27	56					
				iS	15	28	44					
				F	15	45						
		Med.	III	P	15	28	10					
				i	15	52	5					
				i	15	52	55					
				F	15	44						
105	" 19	Bat.	I _v	P _{EW}	15	56	16	180			180	Aftershock.
				iS	15	56	57					
				F	in	102						
104	" 19	Bat.	I _v	iP	16	25	50	160			160	Aftershock.
				S	16	24	8					
				F	16	27						
105	" 19	Bat.	I _v	P	17	2	38	160			160	Aftershock.
				F	17	4						
106	" 19	Bat.	I _v	iP	17	52	45	160			160	Aftershock.
				F	17	54						
107	" 19	Bat.	I _v	P _{EW}	20	45	18	160			160	Aftershock.
				F	20	47						
108	" 19	Bat.	I _v	i _w	22	18	52	160			160	Aftershock.
				i	22	19	17					
				i	22	19	51					
				F	22	25						
109	" 20	Bat.	I _v	P _{EW}	6	8	46	160			160	Aftershock.
				iS	6	9	4					
				F	6	11						
110	" 20	Bat.	I _v	iP _v	7	0	55	160			160	Faint compression. Aftershock.
				iP _w	7	0	57					
				iS	7	0	56					
				F	7	6						
111	" 20	Bat.	I _v	iP _v	8	4	45	180			180	Compression. Aftershock.
				iP _w	8	4	44					
				iS	8	5	5					
112	" 25	Bat.	I	e	21	42	27					
				i	21	46	7					
				F	21	52						

No.	Date 1950.	Sta- tion.	Char- acter.	Phas	Time (G. C. T.).			Period.	Amplitude (half)		Distance of epi- centre.	Remarks.
					h	m	s		sec.	μ		
		Med.	I	i	21	45	26					
				i	22	8	40					
				L	22	35						
				F	23	51						
—	• 29	Mal	I _v	P	4	25	13				90	
				iS	4	25	25					
				F	4	25						
—	• 29	Amb.	I	i	8	4	0					
				F	8	19						
—	• 29	Amb.	I _v	P	19	58.1					(350)	
				iS	19	58.8						
				i	19	40.9						
				F	19	50						

SEISMOLOGICAL BULLETIN

BATAVIA 1930.

CONSTANTS.

1930.	E-W component.			N-S component.			V. component.		
	V.	T ₀ .	ε.	V.	T ₀ .	ε.	V.	T ₀ .	ε.
July	210	6.5	3.0	194	6.8	3.7	330	4.7	3.2
August	210	6.4	2.9	194	6.8	3.7	330	4.7	2.9
September	210	6.5	3.1	194	6.8	3.7	330	4.7	3.9

	With lifted pen						With writing pen					
	e ₀			r			e ₀			r		
	EW.	NS.	V.	EW.	NS.	V.	EW.	NS.	V.	EW.	NS.	V.
July	1.12	1.12	1.13	0.0	0.0	0.0	1.09	1.16	1.16	0.46	0.46	0.74
August							1.10	1.16	1.16	0.52	0.44	0.64
September							1.11	1.15	1.18	0.62	0.53	0.78

JULY.

No.	Date 1930.	Station.	Character.	Phase.	Time (G. C. T.).	Period.	Amplitude (half).		Distance of epicentre	Remarks.					
							A _E	A _N							
115	July 2	Bat.	II _v	iP	h	m	s	sec.	μ	μ	km.	Dilatation West Java.			
				1	40	27									
				1	40	45									
		Mal.	I _v	F	1	48	30.0						16	4500	
				P	1	40									36
				iS	1	40									47
114	" 2	Bat.	II _r	P	21	10		41	55			480			NNW. Calcutta.
				i	21	10		55							
				i	21	11		10							
				i	21	12	27								
				i	21	12	45								
				L _v	21	25									
		Mal.	I _r	L _v	21	52	35						4500		
				F	22	5									
				e	21	11								17	
				i	21	13								9	
				S	21	17								21	
				L	21	23									
Med.	III	F	21	45	35				4500						
		iP	21	8						40					
		i	21	9						18					
		S?	21	12						55					
		F	25	56											
—	" 3	Med.	I	—			7	(11)		35			480	During changing of papers.	
				F			7	57							
115	" 4	Bat.	I _v	eP			9	50		49	35			480	
				S			9	51		42					
				F			9	55							

No.	Date 1950.	Sta- tion.	Char- acter.	Phase.	Time (G. C. T.).	Period.	Amplitude (half)		Distance of epi- centre.	Remarks.
							A _E	A _N		
116	July 5	Bat.	I	e	h	sec.	μ	μ	km.	
				18 5 19						
				F	18 19					
				i	18 6 31					
—	5	Mal.	I	P	20 52 5					
				S	20 32 24					
				F	20 33					
				iS	1 26 58					
—	5	Mal.	I	P	1 26 58					
				iS	1 26 48					
				F	1 28					
				i?	15 20 6					
—	9	Med.	I	i	15 24 40					
				F	15 54					
				P _w	17 0 25					
				S	17 1 13					
—	10	Med.	I	P	17 0 25				440	Tapanoeli.
				S	17 1 13					
				F	17 7					
				P	7 11 48					
—	11	Med.	II _r	iS	7 15 7				2000	
				F	7 55					
				eP	14 4 52					
				S	14 5 9					
117	12	Bat.	I	F	14 9 16				320	Tjimiring, Banjoemas.
				iS	14 4 57					
				F	14 7					
				P	14 4 16					
—	13	Bat.	I	P	14 4 16				180	
				iS	14 4 57					
				F	14 7					
				i _w	19 45 24					
118	13	Bat.	I	i _w	19 45 24	30.4	16.8			
				L _{EW}	19 50					
				M _w	19 52					
				F	20 5					
—	13	Med.	III _u	i	19 59 25				5720	
				eS	19 46 43					
				i	19 47 18					
				F	20 22					
119	14	Bat.	I _v	iP _v	1 1 42				220	WNW; dilatation. Lampongs, S. Sumatra.
				P	1 1 43					
				iS	1 2					
				F	1 8					
—	14	Med.	I	eP	8 52 24					
				i	8 58 14					
				F	9 6					
				L	0 0					
120	15	Bat.	I	L	0 0	50	22			
				L	0 21					
				F	0 28					
				i	23 11 21					
—	14	Med.	I	i	23 11 21					
				L	23 31					
				L	25 58					
				L	0 3					
—	15	Med.	I	L	0 3	15.5	31			
				L	0 50					
				L	0 50					
				F	0 40					

No.	Date 1950.	Sta- tion.	Char- acter.	Phase.	Time (G. C. T.).	Period.	Amplitude (half).		Distance of epi- centre.	Remarks.
							A _E	A _N		
121	July 17	Bat.	I _r	i	h	sec.	μ	μ	km.	Atjeh
				14 41 45						
				F	14 55					
				iP	14 35 44					
—	18	Med.	III _v	iS	14 36 55				460	
				i	14 56 51					
				i	14 36 56					
				F	15 11					
—	18	Med.	I	e	20 23 55					
				i	20 28 48					
				F	20 41					
				iP	15 22 16					
122	19	Bat.	II _v	iS	15 23 20				590	Faint dilatation followed by strong compression. East Java.
				i	15 24 16					
				F	15 58					
				iP	15 22 8					
—	19	Mal.	I _v	S?	15 25 44				900?	
				F	15 28					
				i	15 25 56					
				F	15 41					
—	20	Med.	I _r	iP	15 25 28				2000	
				S	15 28 47					
				F	15 48					
				eP	6 21 45					
—	20	Amb.	I _v	S	6 22 27				590	
				F	6 52					
				iP	14 9 55					
				iS	14 11 57					
125	21	Bat.	I _r	F	14 25				1170	WNW, dilatation.
				i	14 11 52					
				F	14 30					
				iP	17 16 59					
—	21	Bat.	I _v	iS	17 17 17				160	NE, dilatation. West Java.
				F	17 25					
				P	17 16 59					
				iS	17 17 16					
124	21	Bat.	I _v	F	17 20				130	
				iP	17 16 59					
				iS	17 17 17					
				F	17 25					
—	21	Mal.	I _v	P	17 16 59					
				iS	17 17 16					
				F	17 20					
				e _E	9 4 54					
125	22	Bat.	I	F	9 15					
				eP	19 55 38					
				iS	19 44 22					
				F	19 52					
—	22	Bat.	I _u	e	19 55 55				7140	
				i	19 45 46					
				F	20 22					
				P	0 22 51					
126	22	Bat.	I _u	PP	0 26 20				(6500)	
				S _C P _C S	0 32 47					
				S	0 55 52					
				i	0 54 51					
—	22	Med.	I	F	0 40					
				P	4 5 55					
				S	4 6 13					
				F	4 7					
127	25	Bat.	I _u	P	0 22 51				10280	NW, compression. S uth-Italia.
				PP	0 26 20					
				S _C P _C S	0 32 47					
				S	0 55 52					
—	25	Mal.	I _v	i	0 54 51					
				F	0 40					
				P	4 5 55					
				S	4 6 13					
—	25	Med.	I _v	F	4 7				170	
				P	4 5 55					
				S	4 6 13					
				F	4 7					

No.	Date 1950.	Station.	Character.	Phase	Time (G. C. T.)	Period.	Amplitude half		Distance of epicentre.	Remarks.
							A _E	A _N		
128	July 24	Bat.	I _v	eP	5 0 55	sec.	μ	μ	km.	Banjoemas.
				iS	5 1 56					
				iE	5 2 56					
		Mal.	I _v	is	5 2 52					
				F	5 15					
				P	5 0 28					
—	26	Amb.	I	iP	16 25	(50)				
				iS	16 25,1					
				F	16 50					
129	30	Bat.	I _v	i	9 2 24	740?				
				i	9 2 50					
				S?	9 3 44					
		Mal.	I _v	F	9 18					
				i	9 2 42					
				F	9 10					
AUGUST.										
—	Aug. 6	Med.	I _v	iP _E	7 40 16	870				
				iS _S	7 41 49					
				F	7 55					
—	8	Med.	I _v	eP	15 27 57	320				
				S	15 28 5					
				F	15 44					
—	9	Med.	I	i	5 17 28					
				F	5 25					
—	11	Med.	I _v	iP _N	16 26 21	190				
				iS	16 26 45					
				i	16 27 9					
				F	16 44					
130	15	Bat.	I _v	iP	1 58 5	140			140	Dilatation. West Java.
				iS	1 58 19					
				F	1 41					
		Mal.	I _v	P	1 58 9					
				S	1 58 32					
				F	1 59					
—	15	Med.	I _v	P	25 19 8	560				
				iS	25 20 9					
				F	25 31					
131	15	Bat.	I	iP	25 52 46	140			140	
				iP _v	25 52 48					
				iS	25 55 2					
		Mal.	I	F	25 55 55					
				P	22 52 55					
				S	22 55 16					
—	17	Med.	I	eP	9 0 45					
				i	9 2 55					
				F	9 20					

No.	Date 1950.	Station.	Character.	Phase.	Time (G. C. T.)	Period.	Amplitude half		Distance of epicentre.	Remarks.									
							A _E	A _N											
—	Aug. 17	Med.	I _v	P	25 32 15	sec.	μ	μ	km.	210									
				S	25 32 59														
				F	25 59														
132	18	Bat.	I	i	10 12 22	16.8													
				i	10 15 51														
				i	10 18 55														
				i _N	10 18 59														
				i _E	10 19 9														
				i	10 20 5														
				L	10 58														
				L	11 9														
				L	11 16														
				e	10 12 35														
				i	10 19 35														
				i	10 27 59														
133	18	Bat.	I _r	P _w	11 25 56	20.0				2650									
				eS	11 29 46														
				F	11 55														
				134	20						Bat.	I	P	4 52 29	17.7				
													F	4 58					
													135	20					
P	21 0 52																		
i _N	21 6 50																		
L _v	21 11																		
L	21 17,9																		
F	21 49																		
136	23	Bat.	I	P	21 0 42	14.8													
				i	21 7 45														
				i	21 9 55														
				i	21 14 5														
				F	21 20														
				137	24						Bat.	I	i	11 5 24	22.7				
i	11 13 12																		
F	11 19																		
eP	11 2 18																		
i	11 11 47																		
i	11 11 57																		
—	24	Med.	I	eL	11 22														
				F	11 50														
				e _{EW}	9 17 48														
				i _w	9 24 35														
				i _N	9 24 40														
				F	9 32														
—	24	Med.	II _d	iP	21 59 58	180				N. Sumatra.									
				iS	22 0 15														
				F	22 3														
—	25	Mal.	I _v	eP	2 26 4	350				Central Java.									
				iS	2 27 2														
				F	2 29														
—	26	Med.	I	i	4 4 6					Tangse Atjeh.									
				F	4 12														

No.	Date 1950.	Station.	Character.	Phase.	Time (G. C. T.).			Period.	Amplitude (half).		Distance of epicentre. km.	Remarks.
					h	m	s		A _E	A _N		
138	Aug. 26	Bat.	III _d	iP	3	57	49			140	off 3 58 5 on 4 1 50 NE. dilatation, West-Java.	
				iS	3	58	5					
	• 27	Med.	I _r	eP	25	25	56	15.5		1140		
				S	25	27	57					
	• 30	Med.	I	eL	10	21	2	68.0		370	Central Java.	
				F	10	44						
	• 31	Mal.	I _v	P	2	18	21			140		
				iS	2	19	35					
	• 31	Med.	I	eP	5	52	59			360		
				i	5	55	15					
139	• 31	Bat.	I _v	P	8	7	35			370	Central Java.	
				iS	8	8	17					
		Mal.	II _v	P	8	8	10			140		
				S	8	8	26					
				F	8	15						

SEPTEMBER.

140	Sept. 1	Bat.	I	i _w	5	56	52			5240	
				F	5	44					
	• 1	Med.	II _u	iP	5	22	54			390	
				eS	5	29	45				
	• 1	Med.	I	i	5	52	1			360	
				F	5	54					
	• 7	Mal.	I _v	eP	18	57	40			360	
				iS	18	58	24				
	• 11	Med.	I	e	4	4	17			360	
				i	4	6	17				
	• 12	Bat.	I _v	e	11	46	28			360	Central Java. In hour eclipse.
				i	11	47,6	19				
	• 13	Mal.	I _v	F	11	57				360	
				P	11	47	10				
	• 13	Med.	I	S	11	47	51			360	
				F	11	50					
	• 15	Med.	I	e	18	10	15			360	

No.	Date 1950.	Station.	Character.	Phase.	Time (G. C. T.).			Period.	Amplitude (half).		Distance of epicentre. km.	Remarks.
					h	m	s		A _E	A _N		
142	Sept. 14	Bat.	I _u	i	18	11	51			6170		
				i	18	13	7					
	• 14	Med.	I	i	18	14	58			6170		
				F	18	24						
	• 14	Bat.	I	i _N	3	12	25			6170		
				i	3	15	18					
	• 14	Med.	I	iS	3	20	6			6170		
				F	3	20	58					
	• 14	Med.	I	e	3	12	45			6170		
				i	3	22	45					
	• 14	Med.	I	eL	3	39				6170		
				F	3	57						
143	• 14	Bat.	I	iP _v	17	23	2			190	Compression. Strong dilatation, Azimuth NW.	
				i _v	17	25	5					
	• 14	Med.	I	iP	17	23	5			190		
				i	17	25	48					
	• 14	Med.	I	i	17	31	0			190		
				i	17	31	46					
	• 14	Med.	I	i	17	52	26			190		
				F	17	42						
	• 15	Med.	I _v	e	17	24	12			190		
				i	17	53	15					
	• 15	Med.	I _v	i	17	54	5			190		
				F	17	50						
	• 15	Med.	I _v	P	20	3	4			190		
				iS	20	3	26					
	• 15	Med.	I _v	F	20	16				190		

144	• 17	Bat.	I _v	eP	21	55	48			130	
				iS	21	56	5				
	• 20	Med.	I _r	eP	4	22	55			1140	
				S _N	4	24	54				
	• 20	Med.	I _r	F	4	54				1140	

145	• 21	Bat.	III _u	iP _v	25	10	46			1140	Dilatation.
				i _s	25	10	47				
	• 21	Med.	III	i _v	25	10	50			1140	Dilatation. Azimuth SSE.
				iP	25	10	52				
	• 21	Med.	III	i _N	25	12	24			1140	Compression.
				i _w	25	16	11				
	• 21	Med.	III	i _v	25	18	58			1140	
				i _E	25	19	59				
	• 21	Med.	III	i	25	22	21			1140	
				i _s	25	24	5				
	• 21	Med.	III	F	24	8				1140	
				e	25	11	2				
	• 21	Med.	III	i	25	12	7			1140	
				i	25	22	57				
	• 21	Med.	III	i	25	25	27			1140	
				i	25	25	48				
	• 21	Med.	III	F	25	58				1140	
				iP	25	9	10				
	• 21	Med.	III	i	25	13	17			1140	
				i	25	15	55				
	• 21	Med.	III	F	25	55				1140	

No.	Date 1930.	Station.	Char-acter.	Phase.	Time (G. C. T.).			Period.	Amplitude half.		Distance of epi-centre.	Remarks.
					h	m	s		A _E	A _N		
146	Sept. 22	Bat.	I	i _v	1	42	52	28.5 16.1	μ	μ	km.	Dilatation.
				i	1	42	59					
				i	1	52	14					
				L	2	10						
				M _{EW}	2	20						
				F	2	35						
		Med.	I	P	1	44	12	14.5 26 14.8 14	μ	μ	km.	
				i	1	49	28					
				i	1	54	15					
				i	1	54	59					
				L	2	18						
				L	2	21						
147	• 22	Bat.	I	e	5	12,7	8800	μ	μ	km.		
				F	5	21						
				eP	5	0						
		Med.	II _u	i	5	5						56
				i	5	6						30
				iS	5	7						22
Med.	I	F	5	37								
		i _s	7	21	46							
		i	7	22	44							
148	• 22	Bat.	I	i _N	14	25	47	2550	μ	μ	km.	Azimuth SE.
				i	14	27	8					
				i	14	28	12					
				i _N	14	31	32					
				F	14	35	55					
				iP	14	24	55					
		Med.	III _r	iS	14	25	29					
				iS	14	28	56					
				i _s	14	35	20					
				F	15	16						
				e	12	15	40					
				i	12	17	56					
149	• 24	Bat.	I	i	7	44	5	11.8	μ	μ	km.	
				F	7	45	14					
				F	7	52						
		Med.	I	e	7	46						
				L	7	58						
				F	8	12						
180	• 24	Bat.	I _r	P _v	12	12	22	19.9	μ	μ	km.	Compression. Azimuth W.
				P	12	12	26					
				S	12	16	54					
				L _v	12	25						
		Med.	I	F	12	32						
				i	12	13	0					
181	• 25	Bat.	I	i	12	18	8		μ	μ	km.	
				F	15	10						
				e	18	42	21					

No.	Date 1930.	Station.	Char-acter.	Phas.	Time (G. C. T.).			Period.	Amplitude (half)		Distance of epi-centre.	Remarks.	
					h	m	s		A _E	A _N			
—	Sept. 27	Med.	II _u	P	18	38	46	sec.	μ	μ	km.	8590	
					i	18	59						54
					i	18	42						37
					iS	18	45						45
					i _{NS}	18	47						22
152	• 30	Bat.	I	i _N	15	11	22						
					i _N	15	15						44
					i	15	19						37
—	• 30	Med.	II	i	15	7	19						
					i	15	9						57
					F	15	35						
155	• 30	Med.	I	i	21	31	34						
					i _E	21	32						20
					i _N	21	32						29
					i	21	58						32
					F	22	35						
155	• 30	Bat.	I	i _{EW}	22	28	16	17					
					i	22	30						0
					L _v	22	40						
					F	22	40						
					F	25	19						

SEISMOLOGICAL BULLETIN

BATAVIA 1930.

CONSTANTS.

1930.	E-W component.			N-S component.			V component.		
	V.	T ₀ .	ε.	V.	T ₀ .	ε.	V.	T ₀ .	ε.
October	210	6.6	3.3	194	6.7	3.3	330	4.5	2.3
November	210	6.7	3.3	194	6.8	3.6	330	4.7	2.4
December	210	6.8	3.3	194	6.8	3.4	330	4.6	2.4

	With lifted pen						With writing pen					
	e ₀			r			e ₀			r		
	EW.	NS.	V.	EW.	NS.	V.	EW.	NS.	V.	EW.	NS.	V.
October	1.12	1.12	1.13	0.0	0.0	0.0	1.10	1.11	1.16	0.78	0.43	0.63
November	"	"	"	"	"	"	1.12	1.12	1.18	0.76	0.46	0.72
December	"	"	"	"	"	"	1.13	1.13	1.18	0.73	0.50	0.64

N. B. The seismograph at Maron has been destroyed in December during an eruption of Mount Merapi.

BELATED RECORDS FROM AMBOINA.

SEPTEMBER.

No.	Date 1930.	Station.	Character.	Phase.	Time (G. C. T.).			Period.	Amplitude (half).		Distance of epicentre.	Remarks.	
					h	m	s		A _E	A _N			
146	Sept. 22	Amb.	I	i	1	41	9	15.0	μ	μ	km.		
				i	1	49	5						
				M	2	8							
				F	2	48							
—	" 28	Amb.	I _v	eP	19	10	18				190		
				S	19	10	40						
				F	19	22							
—	" 30	Amb.	I	iP	21	26	47				1980?		
				S?	21	50	4						
				F	22	21							

OCTOBER.

154	Oct. 1	Bat.	I	e	3	0	4					
				F	5	12						
		Med.	I	i	2	57	56					
				F	5	2	40					
155	" 1	Bat.	I _v	iP _v	10	8	51				160	Dilatation. W. Priangan (W. Java). Azimuth NE.
				i	10	8	52					
				iP	10	8	55					
				iS	10	9	12					
				F	10	13						

No.	Date 1950.	Station.	Char-acter.	Phase.	Time (G. C. T.)			Period.	Amplitude (half).		Distance of epi-centre.	Remarks.
					h	m	s		A _E	A _N		
		Mal.	I _v	P	10	9	4				180	
				iS	10	9	25					
				F	10	11						
156	Oct. 2	Bat.	I _v	iP _v	23	22	54				170	Dilatation. Priangan (W. Java.)
				iP _N	23	22	55					
				iS _s	23	22	55					
				F	23	29						
		Mal.	II _v	iP	23	22	56				150	
				iS	23	22	51					
				F	23	27						
		Amb.	II _v	iP	18	11	25				590	Manokwari (N. New Guinea).
				iS	18	12	27					
				F	18	29						
		Med.	I _v	P _w	99	58	53				720?	
				i	99	59	1					
				S?	99	59	51					
				F	99	45						
		Med.	I	P	22	58	7					
				i	22	59	28					
				i	22	40	55					
				i	22	41	42					
				F	22	55						
157		Bat.	II _u	P _v	100	29	57					Faint dilatation. Azimuth WNW.
				iP	100	29	44					
				L	100	57		19				
				F	111	28						
		Med.	II _u	P	100	24	56					
				i	100	54	44					
				L	100	55		37				
				F	111	34						
		Amb.	I	iP	100	27	5					Azimuth SSW-NNE.
				i	100	27	47					
				L	100	47		28				
				F	111	5						
158		Bat.	I _u	iP _v	00	47	52					Compression. Azimuth NNW.
				iP	00	47	53					
				i	00	57	58					
				i	00	57	56					
				i _N	00	57	40					
				i	00	57	50					
				F	11	1						
		Med.	II _u	P _s	00	47	8				7750	
				i	00	47	28					
				S	00	57	12					
				F	11	1						
159		Bat.	I _v	iP _v ;eP	22	59					190	Dilatation. W. Priangan.
				iS	22	21						
				F	22	1						
		Mal.	I _v	P _{EW}	22	57					110	
				iS	22	50						
				F	22	1						
160		Bat.	I _v	iP	44	50					200	Dilatation? W. Priangan and Bantam (W. Java).
				S	44	53						
				F	44	1						
		Mal.	I _v	P	44	24					160	
				iS	44	42						
				F	44	1						

No.	Date 1950.	Station.	Char-acter.	Phase.	Time (G. C. T.)			Period.	Amplitude (half).		Distance of epi-centre.	Remarks.
					h	m	s		A _E	A _N		
161	Oct. 17	Bat.	I _u	e	9	7	0					
				i	9	9	57					
				F	9	15						
		Med.	I _u	P	9	5	16					
				i	9	6	11					
				F	9	15						
162	" 21	Bat.	I _v	P	11	56	6					Lebong Donok (Benkoelen, S. Sumatra).
				F	12	0						
		Med.	I _v	e	11	57	58					
				F	12	5						
165	" 22	Bat.	I _u	i _w	18	14	16					
				i	18	20	56					
				F	18	29						
		Amb.	I _r	P	18	11	5				2600	
				S	18	15	9					
				F	18	28						
164	" 25	Bat.	I	e	9	8	10					
				i	9	18	25					
				F	9	51						
165	" 24	Bat.	II _u	iP	20	25	56				5170	Azimuth N 76 E, Compression.
				S _{Ns}	20	50	21					
				L _v	20	59		46				
				L _v	20	44		25				
				F	21	18						
		Mal.	I _r	iP	20	25	45				4980	
				S	20	50	19					
				F	20	54						
		Med.	III _u	iP	20	25	59				5490	Azimuth ENE.
				iS	20	51	4					
				F	22	15						
		Amb.	II _r	iP	20	20	7				4920	
				i	20	20	58					
				S	20	26	56					
				L	20	56.5		41				
				F	21	40						
		Mal.	I	P	15	52	1				160	
				iS	15	52	20					
				F	15	54						
166	" 28	Bat.	I	e _{EW}	21	18	50					
				i _s	21	25	27					
				L	21	57		29.6				
				F	21	47						
		Med.	I _u	iP	21	25	52				5120	
				i	21	25	14					
				S	21	50	15					
				F								
					in next							
		Amb.	I	i	21	16	27					
				L	21	25	54					
				F	21	52		22				
		Med.	II _v	iP	21	59	47				570	Nias and Poelau Tello (Tapanoeli, N. Sumatra).
				S	21	40	49					
				F	21	56						
167	" 31	Bat.	I	e	10	40.0						
				L	10	55		30.0				
				L	11	1		20				
				F	11	9						



No.	Date 1959.	Station	Char-acter.	Phase.	Time (G. C. T.)			Period.	Amplitude (half).		Distance of epi-centre.	Remarks.
					h	m	s		A _E	A _N		
		Med	I	e L F	10 11 11	54 1,5 41	0 22			km.		
NOVEMBER.												
168	Nov. 1	Bat.	I _v	i F	5 5	8 13	55				Central Java.	
		Mal.	I _v	P iS F	5 5 5	8 9 11	59 10			90		
169	" 3	Bat.	I	i F	18 19	45 0	37					
	" 4	Amb.	I	i i F	14 14 15	41 47,0 15	41				In minute eclipse.	
	" 4	Amb.	I _v	P S F	17 17 17	55 54 57	41			260		
170	" 4	Bat.	I	e i F	15 15 16	54,0 57 6	52					
		Med.	II _u	P _N i i _N S F	15 15 15 15 16	43 47 48 50 15	1 21 54 56			6040		
171	" 8	Bat.	II _r	iP _v P _w iS F	5 5 5 5	26 26 29 36	16 17 10			1710	Dilatation. 10 S 121.3 E; 5 ^h 22 ^m 40 ^s .	
		Mal.	I _r	eP iS i F	5 5 5 5	26 29 56 40	22 14 52			1690		
		Amb.	II _r	iP S i F	5 5 5 5	24 26,8 56 54	59 10			(1020)	Azimuth ESE. In minute eclipse. Azimuth SE.	
		Med.	II _r	iP i iS F	5 5 5 5	27 27 50 59	1 4 51			2140	Azimuth WNW.	
172	" 8	Bat.	I _v	eP S F	4 4 4	28 28 57	12 47			510		
		Mal.	I _v	eP S F	4 4 4	28 29 52	55 7			280		
175	" 9	Bat.	III _r	P _v iP iP _v i S i _v	19 19 19 19 19 19	14 14 14 15 19 19	10 12 15 8 11 22			5590	Compression. Azimuth W. Dilatation. Sorong and Manokwari (NW-New Guinea.	

No.	Date 1950.	Sta-tion.	Char-acter.	Phase.	Time (G. C. T.)			Period.	Amplitude (half).		Distance of epi-centre.	Remarks.
					h	m	s		A _E	A _N		
				L _v L _v L _v eP i i S F iP iS P iS F	19 19 19 19 19 19 19 19 19 19 19 19 20	25 26 31 14 14 15 19 41 10 11 22 20 52	19 19 19					
		Mal.	I _r								28 20 15 5150	
		Amb.	III _v								570	Azimuth SSW.
		Med.	III _r								5850	
174	Nov. 9	Bat.	I	e i F	21 21 21	20,0 25 50	48					
		Amb.	I _v	P S F	21 21 21	14,7 15,7 35					(360)	In minute eclipse. In minute eclipse.
		Med.	I	e i F	21 21 21	24,6 50 44	15					
	" 10	Amb.	I _v	P S F	4 4 4	18 19 25	22 21				540	
	" 10	Amb.	I _v	eP S F	4 4 4	42 45 25	57 51				480	
	" 10	Amb.	I _v	P S F	7 7 7	42 45 55	50 27				520	
	" 10	Amb.	I _v	P iS F	8 8 8	51 52 47	46 47				360	
175	" 10	Bat.	I _r	e i _v L F	15 15 14 14	50 50 5 16	25 55					NE. New Guinea. Compression.
		Amb.	II	iP iE L M F P i _N S F	15 15 15 15 14 15 15 15 15 14	46 50 50 54 42 50 51 57 58	44 5 20 15 15 15 21 15				5400	
176	" 11	Bat.	I	e i F P S F	8 8 8 8 8 9	56 41 51 55 40 5	51 44 56 52 52				5550	

No.	Date 1950.	Station.	Character.	Time (G. C. T.).			Period.	Amplitude (half)		Distance of epicentre.	Remarks.	
				h	m	s		A _E	A _N			
177	Nov. 15	Bat.	I	e	25	10	51	sec.	μ	μ	km.	Azimuth W.
				i	25	13	19					
		Amb.	I _v	F	25	27					590	
				iP	25	6	15					
				iS	25	7	17					
		Med.	I	F	25	56						
				i	25	11	41					
				i	25	17	8					
				F	25	20						
	• 15	Med.	I _v	P	6	21	0				580?	Tapanoeli.
				S?	6	21	45					
				F	6	26						
	• 15	Med.	I _v	P _{NS}	7	16	9				400	Tapanoeli.
				S	7	16	54					
				F	7	22						
	• 15	Med.	I _v	eP	19	26	52				560	
				S	19	27	55					
				F	19	52						
	• 15	Mal.	I _v	eP	19	54	55				85	
				iS	19	54	45					
				F	19	55						
	• 16	Med.	I _v	eP	5	27	52				970	
				eS	5	29	56					
				F	5	40						
	• 16	Med.	I _v	eP _{NS}	11	18	20				550	Tapanoeli.
				S _{EW}	11	18	38					
				F	11	27						
	• 16	Amb.	I _v	P	17	41,0					(590)	In hour eclipse.
				S	17	41	44					
				F	17	51						
	• 18	Med.	I _v	eP	15	56	56				670	Keetaradja (Atjeh).
				S	15	58	8					
				F	16	8						
	• 19	Amb.	I _v	P _{NS}	2	15	14				520	
				iS _{EW}	2	14	11					
				F	2	25						
	• 19	Amb.	I _v	P	7	12,4					(670)	In minute eclipse.
				iS	7	15	56					
				F	7	21						
	• 21	Med.	II _v	iP _w	4	56	45				210	N. Sumatra.
				iS	4	57	9					
				i	4	57	22					
				F	4	50						
	• 22	Med.	I	e	14	11		20				
				eL	14	55		22				
				eL	14	47		17				
				eL	14	55,2						
				F	15	22						
	• 24	Amb.	I _v	P	12	25	52				600	
				S	12	24	57					
				F	12	29						

No.	Date 1950.	Station.	Character.	Phase.	Time (G. C. T.).			Period.	Amplitude (half)		Distance of epicentre.	Remarks.
					h	m	s		A _E	A _N		
—	Nov. 24	Amb.	I	P	14	21	10					
				i	14	22	24					
				F	14	25	56					
				F	14	52						
—	• 24	Amb.	I _v	P	16	14	50				580	
				S	16	15	55					
				F	16	18						
178	• 25	Bat.	II _u	P _v	19	11	46				5800	Japan. Dilatation. Azimuth SW.
				iP _v	19	11	50					
				P _v	19	11	55					
				iS	19	19	17					
				L	19	28,1		21				
				L _v	19	51	25	21				
				M	19	59	50	12.4	220	91		
				F	20	6						
		Amb.	II	P	19	11	8					
				i	19	12	5					
				L	19	16,5		20				
				M	19	19	54	18				
				F	20	15						
		Med.	III _u	P	19	11	47				5540	
				iS	19	18	55					
				L	19	29,8		53				
				M	19	50	45	20				
				F	20	11						
—	• 30	Amb.	I _v	iP	11	40	54					
				iS	11	40	56					
				F	11	42						

DECEMBER.

179	Dec. 2	Bat.	I	i	7	7	59					
				i	7	17	18					
				F	7	19	57					
		Med.	I _r	P	7	7	16				4480?	
				i	7	10	52					
				eS?	7	15	19					
				i	7	16,0						
				F	7	56						
180	• 2	Bat.	I _v	P _w	20	19	54				400	Benkoelen and Palembang (S. Sumatra).
				P _v	20	19	47					
				iS	20	20	19					
				F	20	28						
		Med.	I _v	e _N	20	21	14				510	
				S	20	25	49					
				F	20	51						
—	• 5	Mal.	I _v	P	9	59	54				60	
				iS	10	0	1					
				F	10	1						
181	• 5	Bat.	I	e	15	56	59					
				F	16	2						
		Med.	I _r	P	15	45	4				1210	
				i	15	45	58					
				S	15	47	11					
				F	16	4						

No.	Date 1950.	Station.	Character.	Phase.	Time (G. C. T.)			Amplitude (half).		Distance of epicentre. km.	Remarks.
					h	m	s	A _E	A _N		
182	Dec. 5	Bat.	I	e	16	49	58			5150	
				F	17	0					
				Med. I _r	eP	16	40	0			
185	" 5	Bat.	III _r	iS	16	44	42			5190	
				F	17	2					
				P	18	57	12				
		Mal.	II	iP	18	57	20			4570	
				iS	19	2	6				
				i	19	5	49				
		Amb.	II _r	F	20	52			5850	27	
				e	19	2,5					
				i	19	6	50				
		Med.	III _r	F	19	18			1670		
				P	18	59	6				
				iS	19	5	2				
Bat.	I	L	19	16			1500				
		F	20	5							
		eP	18	53	9						
Med.	II _r	iP	18	53	16			60			
		iS	18	58	56						
		F	19	56							
Bat.	I	i	6	53	54			2540			
		F	6	42							
		Med. II _r	eP _{NS}	6	23	22					
Med.	I _r	S	6	26	12			2560			
		i	6	52	15						
		F	6	49							
Med.	I _r	P _N	7	55	52			670	No time eclipses.		
		iS	7	57	8						
		F	7	47							
Amb.	I _v	iP	2	40	15			220			
		iS	2	40	22						
		F	2	46							
Med.	I	e	6	51				2340			
		i	6	40	59						
		F	6	36							
Med.	I	eP	8	7	21			2560	No time eclipses.		
		i	8	18	57						
		i	8	22	5						
		F	8	23	15						
Med.	I	i	8	25	15			220			
		F	8	47							
Med.	I	P	0	59	40			2560			
		F	0	52							
Bat.	I _v	P _N	20	54	48			2560	Benkoelen.		
		F	20	40							
Med.	I	e _{NS}	2	58	25			2560	No time eclipses.		
		i _{EW}	5	5	56						
		F	5	22							
Med.	I	e	14	17,5				2560	No time eclipses.		
		F	14	20,7							
Med.	I	i	14	57				2560			
		F	14	57							

N ^o .	Date 1950.	Stations.	Character.	Phase.	Time (G. C. T.)			Amplitude (half).		Distance of epicentre. km.	Remarks.
					h	m	s	A _E	A _N		
186	Dec. 13	Bat.	I	e	16	53,1			(1890)	No time eclipses.	
				F	16	55					
Med.	II _r	iP	16	54.4			320	Natal (Tapanoeli).			
		iS	16	57.6							
		F	17	18							
		I	16	17	26						
Med.	I _v	i	16	21	55			90			
		F	16	27							
		P	6	9	24						
Med.	I _v	S	6	10	0			350			
		F	6	15							
		P	7	41	22						
Mal.	I _v	iS	7	41	35			90			
		F	7	42							
		P	18	15	54						
Amb.	I _v	iS	18	16	52			350			
		i	18	16	59						
		F	18	26							
Bat.	I _r	i	7	26	29			640?	Soembawa (?).		
		F	7	35							
Amb.	I _r	eP	2	52	29			800	No time eclipses.		
		S?	2	53	58						
		F	5	1							
Med.	I _v	P	5	56.1			2340				
		S	5	57.6							
		F	4	6							
188	" 21	Bat.	I _r	iP _v	14	57	7			2560	
				P _N	14	57	9				
				S	15	0	56				
		Amb.	II _r	F	15	21			670	No time eclipses.	
				P	14	56	50				
				S	15	0	53				
		Med.	II _v	i	15	0	56			220	
				F	15	17					
				iP	15	0.5					
		Med.	II _v	iS	15	1,5			220		
				i	15	7.7					
				F	15	57					
Mal.	I _v	eP	15	15	37			220			
		iS	15	16	2						
		F	15	17							
Med.	II	e	23	0.7			220	No time eclipses.			
		i	23	24.5							
		F	23	59							
Med.	I	i	5	40.9			220				
		i	5	41.5							
		F	5	49							
Med.	I	i	4	40.0			220				
		i	4	47.8							
		i	4	49.5							
		i	4	50.5							
		F	5	8							