No. 21. 1932.

Geodætisk Institut

Proviantgaarden, Copenhagen, Denmark.

Bulletin

of the seismological station

KØBENHAVN

$\varphi = 55°41'$ N. $\lambda = 12°27'$ E. $h = 13$ m.

Lithologic foundation: chalk.

No. 21. Jan.—March 1932.

Instruments:

Galitzin pendulums with galvanometric registration.

Constants:

Component	l	T_1	A_1	μ^2	T	k
	cm	sec	cm		sec	
N	12.5	12.62	100	0.0	12.4	105
E	12.5	12.62	100	0.0	11.9	102
Z	14.4	11.56	100	—0.1	10	95

Wiechert 1000 kg. horizontal seismograph.

Wiechert 1300 kg. vertical seismograph.

Constants:

Component	T	ν	ϱ	V
	sec		mm	
N	9.6	4.4	0.6	220
E	9.3	4.0	0.7	195
Z	5.3	4	0.2	170

Milne-Shaw seismographs, N and E components, with the approximate constants $T = 12^s$ $\nu = 20$ $V = 300$.

Wood-Anderson seismograph, E component, $T = 2^s.7$.

København.

No.	Date	Hour	Forerunners P	Forerunners S	L	Undefined	△	Remarks
	1932 Jan.		*m s*	*m s*	*h m*	*h m*	°	
1	2	23	40.8		46			Italy. *P* uncertain.
2	3	8			.4			
3	5	2		33.8	.9			Some preceding movement.
4*	9*	10		39 57				New Guinea.
5	13	16			.9			Masked by microseisms.
6	18	13			.4			" " "
7	24	4		3 46	.8			8^m27^s. $26^m.5$.
8	27	19		46 16	54			
9	29	14		.2	.5			Very strong microseisms.
10	29	15			.3			Same shock as above?
	Febr.							
11	3	6	27 30	36 51			72	Cuba.
12	3	7		56 12				Superposed on preceding shock.
13	3	10			.0			
14	3	13			.4			
15	4	21	*i* 26 39	33 28			47	Persia.
16	5	14			.3			Small preceding movement.
17*	11*	16						Sweden.
18	12	1	7 55	15 46	.5		57	Golf of Aden.
19	13	8			22			
20	16	14		.2				Fiji Islands.
21	23	0						*e* $49^m.4$. Atlantic Ocean.
22	23	20			1.3			Small preceding movement.
	March							
23	2	18			.4			
24	4	23	29 55	37.3	.8		52	
25	5	2				.3		
26	6	22			.3			
27	8	4	41 2	50 26	1.1			*P* quite small, uncertain.
28	8	18		.4	1.1			
29	9	3				.4		
30	9	10	21 6*	24 37	27		19	Greece.
31	10	5		.7	1.6			
32	14	4			.8			
33	14	22	55 6*					Panama.
34	15	4		57	1.4			
35	15	10					30	
36	16	2			.9			
37	17	1			33			
38	18	5		39 40	.9			
39	19	11	13.4	17.5	.8			Marianne Islands.
40	19	20			.6			
41	19	23		39	1.1			
42	23	13				.2		
43	24	16			.7			
44*	26*	0	8 50					Small preceding movement. Alaska.

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No.	Date	Hour	Forerunners P	Forerunners S	L	Undefined	△	Remarks
	1932 March		*m s*	*m s*	*h m*	*h m*	°	
45	26	10			11.0	17.4		Strong microseisms.
46	27	9				.3		Disturbed.
47	28	1			.0			
48	30	16			.1			

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NOTES

No. 4. Jan. 9. 10^h. New Guinea; Δ = ca. 120°. *P'*, 39^m57^s, on *Z* only. e_Z 41^m20^s; *PP* 41^m36^s. e_E $43^m.9$. *PS* $51^m.6$; e_Z 52^m16^s. *SS* $57^m.5$, large.

No. 17. Febr. 11. 16^h. Felt in Sweden. Recorded on Wood-Anderson seismograph only. *i* 33^m29^s, followed by movement of quite short period; preceded by a faint movement discernible from about 9 sec. earlier.

No. 44. March 26. 0^h. Alaska. The beginning of *P* small, *i* 8^m53^s. *PP* $11^m.0$, *PPP* $12^m.7$. *S* small, the beginning not certain, $17^m.4$ or somewhat earlier. *SS* $21^m.0$.

Seismometric readings: Notation

P — normal first preliminary tremors, longitudinal waves.
PP... — longitudinal waves reflected at the earth's surface.
S — normal second preliminary tremors, transverse waves.
SS... — transverse waves reflected at the earth's surface.
PS; *PPS*;... — waves reflected at the earth's surface which travel partly as longitudinal, partly as transverse waves.
$\overline{S_cP_cS}$ — waves which traverse the mantle as transverse waves but are refracted through the core with longitudinal oscillation.
$\overline{P_cP_cS}$ — waves which pass the mantle on one side of the core as longitudinal waves, on the other side as transverse waves and are refracted through the core with longitudinal oscillation.
$\overline{S_cP_c}\ \overline{P_cS}$ — waves which traverse the mantle as transverse waves, are refracted through the core with longitudinal vibration and are reflected on its inner boundary.
L — long, or surface, waves; main phase.
M — waves of greatest amplitude in the surface waves.
i — sharply defined beginning of a phase.
e — gradual beginning of a phase.
Δ — arcual distance from the station to the epicentre.
*) affixed to time of phase indicates that the beginning is in a time-mark.
*) affixed to number and date refers to Notes.

BIANCO LUNOS BOGTRYKKERI A/S
KØBENHAVN

No. 22. 1932.

Geodætisk Institut

Proviantgaarden, Copenhagen, Denmark.

Bulletin

of the seismological station

KØBENHAVN

φ = 55°41′ N. λ = 12°27′ E. h = 13 m.
Lithologic foundation: chalk.

No. 22. April—June 1932.

Instruments:

Galitzin pendulums with galvanometric registration.

Constants:

Component	*l*	T_1	A_1	μ^2	*T*	*k*
	cm	sec	cm		sec	
N	12.5	12.62	100	— 0.03	12.4	105
E	12.5	12.62	100	0.0	12.0	101
Z	14.4	11.56	100	— 0.1	10	95

Z was dismounted on June 24th.

Wiechert 1000 kg. horizontal seismograph.
Wiechert 1300 kg. vertical seismograph.

Constants:

Component		*T*	*v*	*ϱ*	*V*
		sec		mm	
N		9.6	4.5	0.5	220
E	$^1/_4$—$^{17}/_0$	9.4	4.2	0.7	195
	$^{17}/_0$—$^{30}/_0$	9.9	4.6	0.9	200
Z		5.5	4.5	0.2	170

Milne-Shaw seismographs, *N* and *E* components, with the approximate constants $T = 12^s$ $v = 20$ $V = 300$.
Wood-Anderson seismograph, *E* component, $T = 2^s.7$.

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No.	Date	Hour	Forerunners P	Forerunners S			L	Un-defined	△	Remarks
	1932 April		*m s*	*m s*	*h m s*	*m s*	*h m*	*h m*	°	
1	3	20			*i* 58 50	62.7	1.9			Pacific Ocean.
2	4	15			24.0	29.5	1.0			33m.8.
3	4	19	*i* 28 17	*i* 37 57	29 57	40.7				Japan. Deep focus.
4	6	0					.5			
5	6	9					49			Small preceding movement.
6	8	12			.9		1.3			[Wiechert records only.
7	12	7					14			
8	13	0			.2	18.4	.8			New Guinea.
9	14	1	*i* 43 38	48 1					25	
10	18	11	32 2*	39.0					48	Persia.
11	20	20					28			
12	22	5	10 24		22 15	22.6	.8			
13	23	10					8			Small preceding movement.
14	24	6			34.4		.9			
15	26	8			20.0	22.8	.8			Disturbed.
16	27	1			57.0		61			
17	28	5					.3			
18	29	17			.9		1.3			Faint.
19	29	18	29 55	39 18			.9		72	Aleutian Islands.
20	30	1	16 55	25 33			.6		64	
21	30	11	0 22	6 35	3 9	10.0			41	Afghanistan.
22	30	14					27			
	May									
23	1	2					50			
24	1	4			.6		1.5			
25	1	19					.9			
26	3	0					9			
27	3	10					48			
28	4	1					.7			
29	5	4			31 35					
30	5	10								
31	6	0								Disturbed.
32	6	5						51		
33	7	15					.1			
34	11	7					.2			Small preceding movement.
35	12	6			16.0		.6			
36	14	3			40.6		1.0			Small preceding movement.
37	14	3	50 13	53 59				.1		
38*	14*	13	24 58		35.6	38.2	56		21	Asia Minor. *P* quite small.
39	17	13								Celebes.
40	18	19						51		
41	20	4			.3		.9			
42	20	8						27		Small.
43	20	19	22 59	28 26			.3			Faint.
44*	21*	10	*i* 22 38		25 59	32 55	37 .8		34	Persia.
45	21	15			54	62.5				Central America.
46	21	22			3.1					
47	22	1					.9			
48*	22*	11			48 56					

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No.	Date	Hour	Forerunners P	Forerunners S			L	Un-defined	△	Remarks
	1932 May		*m s*	*m s*	*h m s*	*m s*	*h m*	*h m*	°	
49	22	17	5 55	9 22			11		19	Sicily.
50	22	22			63.0		1.3			Faint preceding movement.
51	23	6					13			" " "
52	24	23	37 56	42 55			.8		30	Persia.
53	26	5			31.9		.8			
54*	26*	16			28 15	30 39				New Hebrides region.
55	26	22			40 30	42 40				
56	27	1			48.4	50 55				
57	27	10					50			Some preceding movement; the beginning not certain, possibly 43m3s.
58	28	2	*i* 33 34	43 45	36.8	43 55	1.0		81	Pacific Ocean.
59	28	5					.8			
60	29	1					.9			
61	31	8					.1			Preceding movement disturbed.
62	31	11						.1		
63	31	14					.5			
64	31	15					.7			
	June									
65	2	20			10		14			
66	3	0	30.8	40.8			1.0			Japan. *P* quite small, uncertain.
67*	3*	10	49 47		60.4	61.9	1.2			Mexico.
68	3	17					.3			Faint.
69	3	17					57			
70	3	18			.4		.5			
71	3	21					.1			
72	4	2					.7			
73	4	19					.9			Faint.
74	4	22			2.9		.5			
75	5	9			28 8*		.9			The beginning disturbed.
76	5	13			28.1		.9			
77	6	8	56 18	66.1	56 31	66 28	82		77	
78	6	12	1 29	11 2			.4		74	*P* and *S* small.
79	8	2			53 28		2.2			Faint.
80	8	5					.5			"
81	8	6					.9			
82	8	8	3 1							Disturbed.
83	8	10					1.5			Faint preceding movement.
84	8	15			18.5		.8			" " "
85	9	4			59.1	60.5	1.4			" " "
86	9	7					.5			
87	10	6					50			Small.
88	10	20	34 55		38.9	45 31	1.2			46m22s; 47m.45s.
89	10	22					.3			
90	10	23			6.4		.5			
91	11	8	42 6	49 28					52	
92	11	11					.3			
93	11	17			24 16		.8			Faint preceding movement.
94	12	23		33.2			37			

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No.	Date	Hour	Forerunners P	Forerunners S			L	Undefined	△	Remarks
	1932 June		m s	m s	h m s	m s	h m	h m	°	
95	13	21	10 9	20 34			.7		84	Luzon region.
96	14	6	12 5*	22 24			.7		83	„ „
97	14	11			43.2		1.1			
98	16	1	*i* 31 15	41 36	*i* 31 34		1.0			Sumatra. Deep focus.
99	16	12						20		
100	18	0			38		1.1			
101	18	2					.2			
102	18	6					.5			Faint.
103*	18*	10	24 59	36 19	35.4	37 20	51			Pacific Ocean off Mexico.
104	18	18					.3			
105	18	21			46.1		1.2			
106	20	4			7 26		1.1			
107	20	6					.7			
108	20	9			25					Disturbed.
109	20	15					.0			
110	20	15			44		50			
111	20	19			28 19	37.8	1.1			
112	21	4			57		1.3			
113	21	7						.9		
114	21	9					.9			
115	21	23					.7			Small preceding movement.
116	22	0	48 3	57 55			1.3		78	Japan.
117*	22*	13	12 23	23 59	23 0	24 35	.7			Pacific Ocean off Mexico.
118	22	17					.7			Faint.
119	23	2			32.7		1.3			
120	23	7					.9			Faint.
121	23	23					0			
122	25	1						17		
123	25	9						.2		Disturbed.
124	26	19	30 40	40 6			55		73	Kurile Islands.
125	27	3					26			
126	27	5					35			
127	29	2	35 1	39 4			42		23	Mediterranean Sea.
128	29	10					.0			
129	29	10						.3		Seismic?
130	29	15						.4		
131	29	16					.6			
132	29	18			36 58*	42.5	.9			Two shocks; uncertain whether forerunners are connected with first or second *L*.
133	29	18					45			
134	30	6					.8			

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NOTES

No. 38. May 14. 13^h. Celebes; △ = ca. 105°. Very strong record. The beginning of *P* small; followed by large movement 25^m4^s. e_Z $28^m.4$; e_Z $28^m.9$. *PP* $29^m.4$ followed by increasing oscillations. PPP_E $32^m.1$. e_E $33^m.9$; e_N $34^m.9$; e_N $35^m.5$. $\overline{S_cP_cS}$ $35^m.6$, very large; $(\overline{S_cP_cP_cS})$ $36^m.7$, large; *PS* $38^m.2$, very large, followed by a group of large oscillations; *SS* 43^m, very large; *SSS* $47.^m9$, large. Surface waves large, but smaller than largest waves in forerunners.

No. 44. May 21. 10^h. Central America; △ = ca. 85°. *PP* 25^m59^s, larger than *P*, clearly marked on *Z* and *E*. *S* (or $\overline{S_cP_cS}$) 32^m55^s, clearly marked. (*PS*) 34^m22^s; *e* $35^m.0$. *SS* $38^m.7$. *M* regular.

No. 48. May 22. 11^h. New Caledonia region; △ = ca. 140°. *P′* 48^m56^s, clearly marked, especially on *Z*. Later forerunners distinct, but phases not clearly marked. The beginning of *L* not certain, about $12^h.7$.

No. 54. May 26. 16^h. New Hebrides region; △ = ca. 140°. Deep focus. The beginning quite small, e_Z 28^m15^s; *e* 28^m20^s larger; *i* 28^m29^s, followed by increasing oscillations, very large on *Z*. *i* 30^m40^s, very large on *Z*. Continued strong oscillatory movement. *e* $35^m.2$; *e* $45^m.1$. *L* small.

No. 67. June 3. 10^h. Mexico. Very strong record; continued strong oscillatory movement, beginning of phases not clearly marked. Beginning of *P* small, *iP* 50^m2^s. *PP* 53^m28^s; *e* 54^m6^s. e_N $58^m.6$. After $60^m.4$ increasing oscillations; *PS* $61^m.9$, very large, followed by large oscillations. *SS* about 67^m, not clearly marked. *M* very large.

No. 103. June 18. 10^h. Pacific Ocean off Mexico. Strong record. Beginning of *P* quite small; *iP* 25^m23^s followed by large oscillations. Later phases clearly marked. *PP* 28^m52^s; S_cP_cS $35^m.4$, on *E* only; S_n 36^m19^s, very clearly marked on *N*; *PS* 37^m20^s. *SS* 42^m. In first part of *L* large oscillations of long period on *N*. Later *M* large, regular.

No. 117. June 22. 13^h. Pacific Ocean off Mexico. Beginning of *P* small, uncertain, increase about $12^m.6$. *PP* 16^m9^s. $\overline{S_cP_cS}$ clearly marked on *N* and *E*; *S* small, on *N* only.

No. 23. 1932.

Geodætisk Institut

Proviantgaarden, Copenhagen, Denmark.

Bulletin

of the seismological station

KØBENHAVN

$\varphi = 55°41'$ N. $\lambda = 12°27'$ E. $h = 13$ m.

Lithologic foundation: chalk.

BIANCO LUNOS BOGTRYKKERI A/S
KØBENHAVN

Instruments:

Galitzin pendulums with galvanometric registration.

Constants:

Component	l	T_1	A_1	μ^2	T	k
	cm	sec	cm		sec	
N	12.5	12.62	100	0.0	12.3	105
E	12.5	12.62	100	0.1	12.0	101

Wiechert 1000 kg. horizontal seismograph.

Wiechert 1300 kg. vertical seismograph.

Constants:

Component	T	ν	ϱ	V
	sec		mm	
N	9.5	4.6	0.5	220
E	9.9	4.6	0.9	200
Z	6.0	4.6	0.1	160

Milne-Shaw seismographs, N and E components, with the approximate constants $T = 12^s$ $\nu = 20$ $V = 300$.

København.

No.	Date	Hour	Forerunners P	Forerunners S			L	Un-defined	△	Remarks
	1932 July		m s	m s	h m s	m s	h m	h m	°	
1	1	1			3.0					Crimea.
2	2	2			.7		1.1			
3	2	12			12.2		.5			
4	3	3			0					
5	3	18					.4			
6	4	4					5			
7	5	11			16.2		.8			
8	5	15					42			Small.
9	7	16	*i* 28 23	38 50	44.1		51			California. Phases well defined.
10	8	11					27			Small preceding movement.
11	9	11					38			
12	9	13			18.7	24 48	.9			
13	9	20			47.8		1.2			
14	10	0					1.3			Beginning uncertain, perhaps $54^m.0$.
15	10	7	57 6	66 55			83		77	Pacific Ocean E of Japan.
16	11	8					1.3			Beginning disturbed.
17	11	21					.4			
18	12	19	*i* 36 45		47 13		1.0			Gulf of California.
19	13	4			29.0		.8			
20	14	9			10.3		.9			
21	15	4					.2			
22	15	8			16.6		20			Faint preceding movement.
23	15	11					.9			
24	15	16			16.0		.6			
25	15	21			16.3					
26	16	0					.0			
27	16	21			15.0		.8			
28	17	5					.7			
29	17	6					.1			
30	17	12						.0		Faint.
31	17	17					.9			Faint.
32	18	5					.9			Disturbed.
33	20	5			.4					
34	20	20			*i* 25 24	26 2*	1.3			e_Z 28^m56^s; e_N $35^m.5$.
35	21	12			59.2	68.6	1.5			
36	21	16			47		1.5			
37	22	21					33			
38	23	1					34			
39	24	9					.6			
40	24	20					.4			
41	25	8	35 54	45 7	50.2					Beginning disturbed. Deep focus.
42*	25*	9	25 40		36 19	37 39	.9			Mexico.
43	27	21			38.7	44.5	1.3			
44	29	1							10	
45	29	2					.3			
46	29	21			17	22 35	50			
47	30	0						.9		
48	30	12			31.7	38 5*	1.2			
49	31	23					.8			*e* 40^m31^s.

København.

No.	Date	Hour	Forerunners P	Forerunners S			L	Un-defined	△	Remarks
	1932 Aug.		m s	m s	h m s	m s	h m	h m	°	
50	1	11			6.1		.3			
51	2	4	39.7		50.0		1.3			*P* quite small, uncertain.
52	3	11					50			
53	4	6		56 58	57 44					*P* quite small, between 48^m and 49^m.
54	4	13					.5			
55	5	1					.5			
56	5	12	10.1				16			
57	5	12	25 56				32			
58	5	13	55 27				62			
59	5	21					40			
60	5	22					.6			
61	8	21					40			Small.
62	10	17			11.1		.3			
63	11	10			13		.4			
64	12	3	35 23	44.8	45 0	45 34			73	Aleutian Islands.
65	12	23					.7			
66	13	21			17 8	20 55	1.2			New Zealand.
67	14	1			12		.7			
68*	14*	4	50 6*	*i* 58 41					64	
69	14	12	45 35	53 10			1.1		54	
70	15	4					42			e_Z, but no time-marks.
71	15	15			9.7		.6			
72	16	13					37			
73	16	22					17			
74	17	4					25			
75	17	9			9		.5			Disturbed.
76	18	21					.0			
77	19	4					.0			
78	19	18					27			
79	20	17						3		Faint.
80	21	4	27 47	37 58			.9		81	
81	22	11	23 56	33 7*			50		70	Yellow Sea.
82	24	4					.5			
83	24	12	23 18		33 50		.9			*P* quite small, uncertain.
84	24	15					.3			
85	25	8								Disturbed.
86	28	11			44 52		50			
	Sept.									
87	1	2					.9			Faint.
88	2	13						.8		"
89	3	12	10 33	20 7			.6		74	Japan.
90	5	3					.8			
91	6	17					.2			Faint.
92	8	1	54 3		64 43	66.1	1.9			Pacific Ocean.
93	8	7	33.2*	39.2	34 50					Persia.
94	9	7			11.2		.7			
95	9	13			58.0	64	1.5			Celebes.
96	9	23					.9			
97	10	23					2			

København.

No.	Date	Hour	Forerunners P	Forerunners S			L	Un-defined	△	Remarks
	1932 Sept.		m s	m s	h m s	m s	h m	h m	°	
98	11	5					.0			
99	11	14	21 20	28 12*	23.0		.6		47	
100	14	8	*i* 53 43	62 11*					63	Alaska.
101	15	11			47		1.0			Strong microseisms
102	15	14			15.7					" "
103	20	16			5		.5			
104*	23*	14	32 53	*i* 41 38	34 3	*i* 42 24				Sea of Japan. Deep focus.
105	25	0					.3			Faint.
106	25	22					.9			
107*	26*	19	*i* 24 43							Greece.
108	26	21	30 54	34 16					18	"
109	26	23					.9			
110	27	1					.6			
111	27	2					.2			
112	27	3					.6			
113	27	9					.6			
114	27	11					29			
115	27	16					.1			
116	28	15					.6			Faint.
117	28	16	56 9	59 16			61		17	Aegean Sea.
118	28	22					.1			
119*	29*	4	1.2	4 23			6		17	Turkey.
120	29	7					.0			
121	29	12					.3			Small.
122	29	14					.6			
123	29	17	58 5	67 30	62.5	68.2	1.4		73	Kurile Islands.
124	29	21					.9			
125	30	6	16 56	20 39					21	Asia Minor.
126	30	7					.7			
127	30	12					.1			

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NOTES

No. 42. July 25. 9^h. Mexico. Superposed on preceding shock, but phases clearly marked. *PP* $29^m.2$. $\overline{S_cP_cS}$ or *S* 36^m19^s.

No. 68. Aug. 14. 4^h. According to *URSS* two shocks of different epicentres: Tibet and China. The first *P* small. $iP\ 50^m33^s$, very large on *Z* and *E*. $e_Z\ 54^m26^s$. $iS_N\ 58^m41^s$, not very large. Second *S*(?) 59^m27^s, large and clearly marked on *N*, no simultaneous pulse on *E*. $e_{N,E}\ 59^m56^s$, large; $e_{N,E}\ 60^m45^s$, largest on *N*.

No. 104. Sept. 23. 14^h. Sea of Japan. Deep focus. *P* and *pP* clearly marked, large on *Z*. *S* very large on *N* and *E*; the following phase large. *L* small.

No. 107. Sept. 26. 19^h. Greece. Very strong record. *P* large; $i\ 25^m9^s$, followed by very large oscillations. The beginning of *S* not quite certain: $e\ 27^m57^s$; $i\ 28^m16^s$, very large. *L* waves of long period immediately after *S*. Very large *M* begin about 30^m.

No. 119. Sept. 29. 4^h. Turkey. Strong record. The beginning of *P* small, not quite certain.

No. 24. 1932.

Geodætisk Institut

Proviantgaarden, Copenhagen, Denmark.

Bulletin

of the seismological station

KØBENHAVN

$\varphi = 55°41'$ N. $\lambda = 12°27'$ E. $h = 13$ m.

Lithologic foundation: chalk.

Instruments:

Galitzin pendulums with galvanometric registration.

Constants:

Component	l	T_1	A_1	μ^2	T	k
	cm	sec	cm		sec	
N	12.5	12.62	100	0.07	12.2	105
E	12.5	12.62	100	0.17	12.0	101
Z	14.5	10.02	100		ca. 6	

The vertical component seismograph which formerly operated in Scoresby-Sund was erected in September and set working on October 29.

Wiechert 1000 kg. horizontal seismograph.

Wiechert 1300 kg. vertical seismograph.

Constants:

Component	T	ν	ϱ	V
	sec		mm	
N	9.4	4.5	0.5	220
E	9.9	4.6	0.8	195
Z	5.8	4.5	0.1	160

Milne-Shaw seismographs, N and E components, with the approximate constants $T = 12^s$ $\nu = 20$ $V = 300$

Wood-Anderson seismograph, E component, $T = 2^s.7$ (from $^{25}/_{11}$).

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No.	Date	Hour	Forerunners P	Forerunners S			L	Un-defined	△	Remarks
	1932 Oct.		m s	m s	h m s	m s	h m	h m	°	
1	1	8					17			
2	1	9					.6			Faint.
3	1	13					45			
4*	2*	3	11 51		22 43	23 36				Central America.
5*	2*	3	29 17	35 8			.7		38	Bokhara.
6	9	6					34			
7	9	13					.5			
8	11	19					.9			Small preceding movement.
9	12	3			6 43		8			Greece.
10	12	7					.2			
11	12	19	48 18	57 47			1.2		74	Kurile Islands.
12	15	15						55		Seismic?
13	15	22					.5			
14	16	12	*i*19 13	28 19			.6		69	Alaska.
15	17	14			2		.4			
16	18	4			33.8					2 shocks. L_1 ca. 56^m; L_2 ca. 68^m.
17	22	15					.0			Faint.
18	23	13		45 43	46 17		49			Asia Minor.
19	23	17					57			
20	23	21			50.3		68			
21	25	17					.5			
22	29	4			.0		.5			
23	29	10					.3			Disturbed.
24	29	11	16 44	23 6	18 23				42	*PP* large.
25	30	15						50		Quite small. Felt in Jutland.
26	30	20	58 6	67 16			1.3		70	Alaska. *S* small.
	Nov.									
27	1	16	23 26	26 37			28		17	Aegean Sea.
28	2	11			25 52	29.7	57			Some earlier movement on *Z*, but no time-marks. *e* $46^m.7$.
29	3	16					.0			Faint.
30	3	20			1.1		.5			
31	9	19					.1			
32*	13*	4	*i*57 39	*i*66 22	*i*58 52	*i*67 6*				Sea of Japan.
33	13	16					.8			
34	17	6			26.4		.8			Mexico. *P* about 16^m.
35	18	14			10 40					
36	20	23			39					Felt in Holland.
37	22	15					.8			
38	26	4	35 29	44 54	*i*35 46	45 17	1.0		73	Japan. *e* 46^m4^s.
39	29	8					.7			
40	29	11			36.8	37 23	1.1			39^m54^s; 46^m. Masked by strong microseisms.
	Dec.									
41	4	4			17 26					Strong microseisms.
42	4	8	24 49		29.0	35 32	20			36^m18^s. 37^m44^s. Mindanao. Strong microseisms.

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No.	Date	Hour	Forerunners P	Forerunners S			L	Un-defined	△	Remarks
	1932 Dec.		m s	m s	h m s	m s	h m	h m	°	
43	4	10			57 12	58 37	1.4			
44	5	23					.4			
45	7	8	0 29	*i*4 19					21	Asia Minor. *P* small.
46	7	16	35 5*	45 43	38 27	46 58				Mexico.
47	8	15					.9			Small preceding movement.
48	9	9					.4			Disturbed by change of sheets.
49	9	16					.2			
50	10	5					.0			
51	10	11					.5			
52	11	4					1.1			Small preceding movement.
53	11	21					53			
54	15	20					.3			Irregular microseisms.
55	21	6	22 2	31 54	33 6	37 34	.7		78	California.
56	24	4					40			
57	24	5					37			
58	24	7			0 9	6.5	.4			
59*	25*	2	14 3	21 54	16 17	25.8			57	China.
60	25	6					.7			Small.
61	25	8					.5			,,
62	25	11						52		
63	25	12						9		
64	26	19						16		Strong microseisms.
65	26	21	26 34		37 51					,, ,,
66	30	21						43		,, ,,
67	31	6	43.7		54 5					,, ,, . South Africa.

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NOTES

Nos. 4—5. Oct. 2. 3^h. Central America and Bokhara. *P* of first shock small, the reading not quite certain. Some increase of movement previous to 22^m43^s. *SS* $28^m.3$. *P* and *S* of second shock somewhat uncertain being superposed on oscillations of first shock.

No. 32. Nov. 13. 4^h. Sea of Japan. Deep focus. Forerunners large and clearly marked. Additional readings: 60^m13^s, 62^m0^s, 62^m59^s; i_Z 66^m43^s; $67^m.6$, $68^m.5$, $69^m.5$; $70^m.7$, 70^m58^s, 73^m3^s.

No. 59. Dec. 25. 2^h. China. Strong record. *PP* read on *E*, earlier on *Z*, but not clearly marked. *PPP* 17^m21^s larger than *PP*. Some increase of movement before *S*: e_E $21^m.2$, e_N $21^m.5$. *S* clearly marked on *E*. e_N 24^m19^s (S_cS). *SS* large on *E*. Very large *M*.

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