

No. 23.

1932.

## Geodætisk Institut

Proviantgaarden, Copenhagen, Denmark.

### Bulletin

of the seismological station

# KØBENHAVN

$\varphi = 55^{\circ}41' N.$   $\lambda = 12^{\circ}27' E.$   $h = 13$  m.

Lithologic foundation: chalk.

No. 23. July—Sept. 1932.

**Instruments:**

Galitzin pendulums with galvanometric registration.

Constants:

Component	$l$	$T_1$	$A_1$	$\mu^2$	$T$	$k$
	cm	sec	cm		sec	
<i>N</i>	12.5	12.62	100	0.0	12.3	105
<i>E</i>	12.5	12.62	100	0.1	12.0	101

Wiechert 1000 kg. horizontal seismograph.

Wiechert 1300 kg. vertical seismograph.

Constants:

Component	$T$	$\nu$	$\rho$	$V$
	sec		mm	
<i>N</i>	9.5	4.6	0.5	220
<i>E</i>	9.9	4.6	0.9	200
<i>Z</i>	6.0	4.6	0.1	160

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



No. 23.

— 2 —

1932.

København.

No.	Date	Hour	Forerunners				L	Un-defined	△	Remarks
			P	S						
			m s	m s	h m s	m s	h m	h m	°	
1	1932 July 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 <sup>m</sup> .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			Faint.
30	17	12						.0		
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 <sup>m</sup> 56 <sup>s</sup> ; $e_N$ 35 <sup>m</sup> .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			$e$ 40 <sup>m</sup> 31 <sup>s</sup> .
49	31	23					.8			



No. 23.

— 3 —

1932.

København.

No.	Date	Hour	Forerunners				L	Un-defined	△	Remarks					
			P		S										
			m	s	m	s	h	m	s	m	s	h	m	°	
	1932														
	Aug.														
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 <sup>m</sup> and 49 <sup>m</sup> .
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					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 <sub>z</sub> , 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				L	Un- defined	△	Remarks		
			P		S							
			<i>m</i>	<i>s</i>	<i>m</i>	<i>s</i>	<i>h</i>	<i>m</i>	<i>h</i>	<i>m</i>	°	
	1932 Sept.											
98	11	5						.0				
99	11	14	21	20	28	12*	23.0	.6			47	
100	14	8	<i>i</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>i</i> 41	38	34 3	<i>i</i> 42 24				Sea of Japan. Deep focus.
105	25	0						.3				Faint.
106	25	22						.9				
107*	26*	19	<i>i</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				



No. 23.

— 5 —

1932.

---

København.

---

NOTES

---

- No. 42. July 25. 9<sup>h</sup>. Mexico. Superposed on preceding shock, but phases clearly marked.  $PP$  29<sup>m</sup>.2.  $\overline{S_c P_c S}$  or  $S$  36<sup>m</sup>19<sup>s</sup>.
- No. 68. Aug. 14. 4<sup>h</sup>. According to *URSS* two shocks of different epicentres: Tibet and China. The first  $P$  small.  $iP$  50<sup>m</sup>33<sup>s</sup>, very large on  $Z$  and  $E$ .  $e_Z$  54<sup>m</sup>26<sup>s</sup>.  $iS_N$  58<sup>m</sup>41<sup>s</sup>, not very large. Second  $S$ (?) 59<sup>m</sup>27<sup>s</sup>, large and clearly marked on  $N$ , no simultaneous pulse on  $E$ .  $e_{N,E}$  59<sup>m</sup>56<sup>s</sup>, large;  $e_{N,E}$  60<sup>m</sup>45<sup>s</sup>, largest on  $N$ .
- No. 104. Sept. 23. 14<sup>h</sup>. 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<sup>h</sup>. Greece. Very strong record.  $P$  large;  $i$  25<sup>m</sup>9<sup>s</sup>, followed by very large oscillations. The beginning of  $S$  not quite certain:  $e$  27<sup>m</sup>57<sup>s</sup>;  $i$  28<sup>m</sup>16<sup>s</sup>, very large.  $L$  waves of long period immediately after  $S$ . Very large  $M$  begin about 30<sup>m</sup>.
- No. 119. Sept. 29. 4<sup>h</sup>. Turkey. Strong record. The beginning of  $P$  small, not quite certain.
-