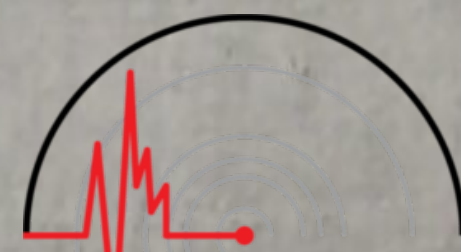


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THE  
SEISMOLOGICAL  
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OF

The Central Meteorological Observatory

OF

JAPAN

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Contents.

1. Introduction.
2. List of shocks observed at the Central Meteorological Observatory.
3. List of Remarkable earthquakes.
4. List of moderate earthquakes.
5. List of the principal earthquakes in the year 1925.
6. List of volcanic activities in the year 1925.
7. Position of the epicentre of remarkable and moderate shocks.
8. Position of the meteorological stations of Japan.
9. Seismograms of selected remarkable shocks.

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## Introduction.

The present publication contains the result of the seismometrical observations made at the Central Meteorological Observatory, Tokyo for the year 1925.

Position of Observatory :

Longitude :	139° 45'E
Latitude :	35° 41'N
Height from mean sea level :	21 <sup>m</sup>
Geological nature :	diluvium.

During the year 1925, 510 earthquakes were recorded. They are tabulated as follows :—

Intensity	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
0	46	64	29	61	35	48	28	29	23	43	17	21	444
1	10	2	3	7	9	6	2	5	4	3	3	2	56
2	0	2	1	2	3	0	0	0	0	0	0	1	9
3	0	0	0	0	0	0	0	0	0	0	0	1	1
Sum	56	68	33	70	47	54	30	34	27	46	20	25	510

*Instrument* :—The instruments in use of this observatory are as follows :—

Wiechert's 200 kg horizontal seismograph		EW comp.	NS comp.	
Constants	Magnification	V	67	67
	Damping coeff.	$\nu$	5.3	3.8
	Coeff. of friction	$\epsilon$	0.004	0.005
	Proper Period (sec)	$T_0$	3. <sup>s</sup> 7	4. <sup>s</sup> 1

Wiechert's 80 kg vertical seismograph		EW comp.	
Constants	Magnification	V	70
	Damping coeff.	$\nu$	3.0
	Coeff. of friction	$\epsilon$	0.004
	Proper period	$T_0$	4. <sup>s</sup> 4

Fürst Galitzin's seismograph with photographic registration

		EW comp.	NS comp.	
Constants	Max. magnification	V	375	690
	Damping coeff.	$\nu$	7.0	7.0
	Proper period	$T_0$	17. <sup>s</sup> 41	17. <sup>s</sup> 44
	Proper period of galvanometer	$T_g$	15. <sup>n</sup> 14	12. <sup>s</sup> 24



Mainka's 450 km Horizontal seismograph		EW component		NS component		
		I	II	I	II	
Constants	Magnification	V	88	125	78	102
	Damping coeff.	$\nu$	2.6	2.6	3.0	2.2
	Coeff. of friction	$\epsilon$	0.016	0.025	0.019	0.024
	Proper period	$T_0$	9. <sup>s</sup> 8	7. <sup>s</sup> 5	11. <sup>s</sup> 4	11. <sup>s</sup> 5

Fürst Galitzin's Vertical seismograph with photographic registration.

Constants	Max. Magnification	V	500
	Damping coeff.	$\nu$	7.0
	Proper period	$T_0$	10. <sup>s</sup> 0
	Proper period of galvanometer	$T_g$	12. <sup>s</sup> 0

Omori's Horizontal seismograph (improved at our observatory) with magnetic damper.

		EW comp	NS comp	
Constants	Magnification	V	20	20
	Damping coeff.	$\nu$	3.5	3.5
	Coeff. of friction			
	Proper period	$T_0$	16 <sup>s</sup>	16 <sup>s</sup>

Omori's Potable seismometer		EW comp	NS comp	
Constants	Magnification	V	50	50
	Coeff. of friction	$\epsilon$	0.0027	0.0030
	Proper period	$T_0$	4.0 <sup>s</sup>	4.0 <sup>s</sup>

In the present report, for the record of teleseismic disturbances and distant earthquakes, we use the seismogram of Galitzin, Mainka and Omori seismograph and for that of near earthquakes, the seismogram of Wiechert seismograph and Omori seismometer are used.

Scales of the intensity of earthquake for the classification of the intensity of earthquake, seven degrees are chosen as their scale and their comparison with Cancani scale are as follows ;

Cancani scale	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII
Our scale	0		1		2		3		4	5	6	
Name	No feeling		Slight		Moderate		Rather strong		Strong	Very strong	Disastrous	
Acceleration	<2.5	2.5	5	10	25	50	100	250	500	1000	2500	>5000
mm/sec <sup>2</sup>		5.0	10	25	50	100	250	500	1000	2500	5000	

*Method of determining the epicentre* :—There are four methods which are used to determine a epicentre of any earthquake from the observations taken at the meteorological stations in this country.







PS=Waves changed from longitudinal to transverse oscillation, or vice versa, through reflection at the earth's surface.

L (undae longæ)=Long waves at the beginning of the surface phase.

Q (undae quartæ)=Shorter and more regular waves in the surface phase.

M (undae maximæ)=Greatest motion in the surface phase, usually in the group here defined as Q.

C (Coda)=Tail or end portion.

F (Finis)=End of discernible movements.

2. Nature of the motion.

*i* (impetus)=Sudden beginning of the motion.

*e* (emersis)=Gradual beginning of the motion.

T (Period)=Time of one complete oscillation.

A=Amplitude of the earth motion in microns.

$A_E$ =E-W component of A.

$A_N$ =N-S component of A.

$A_Z$ =Vertical component of A.

3. Character of the Earthquake.

*d* (terræ motus domesticus)=Local shock.

*v* (terræ motus vicinus)=Near shock.

*r* (terræ motus remotus)=Distant shock (Origin from 1000 km to 5000 km distant)

*u* (terræ motus ultimus)=Very distant shock or teleseism (Origin more than 5000 km. distant)

*Copies of Seismograms :—*

Copies of a few seismograms of the earthquakes which occurred in the year 1925 are inserted in the annexed plates.

*Data of the earthquakes :—*

In the case of remarkable earthquake, the seismometrical data which are reported from the meteorological stations of this country are inserted in the present report. The positions of these stations are found also in the annexed plates.



**TABLE I.**

Table of Shocks observed at The Central Meteorological Observatory, Tokyo in the Year 1924.

**January.**

No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$\Lambda_N$ $\mu$	$\Lambda_E$ $\mu$	$\Lambda_Z$ $\mu$				
1	1	iP	19	30	54.5						92	Felt slightly, Coast of Kudyûkuri. 140°6E 35°7N Local shock. <i>d.</i>
		iS		31	06.9							
		MN		31	07.2	±16			0.4			
		ME		31	07.1		±14		0.4			
		MZ		31	07.8			±7	—			
		eF		32	15.0							
2	2	iP	20	58	53.9					1.6 E	84	Felt slightly, Neighbourhood of northern branch of Lake-Kasumigaura. 140°5E 36°1N Local shock. <i>d.</i>
		iS		59	05.3					1.3 N		
		MN		59	34.0	+35			1.6	9.1 Down		
		ME		59	38.0		±35		0.5			
		MZ		—	—							
		eF	21	03	—							
3	3	iP	12	17	15.8						24	Felt slightly at Tokyo and its neighbouring locality only. Bay of Tokyo. Local shock. <i>d.</i>
		iS		17	19.0							
		eF		17	43.0							
4	4	iP	21	07	43.0						35	Felt slightly at Tokyo and its neighbouring locality only. Bay of Tokyo. Local shock. <i>d.</i>
		iS		07	47.7							
		eF		20	50.0							
5	5	iP	15	03	00.3						190	Off the coast of Iwaki. 141°3E 37°5N Felt area 69100 sq. km. <i>v.</i>
		iS		03	26.0							
		MN		03	41.0	-49			0.6			
		ME		03	44.1		+85		0.3			
		MZ		03	36.0			-24	0.4			
		eF		06	—							
6	7	iP	16	01	31.0						38	Felt slightly at Tokyo and its neighbouring locality only. Bay of Tokyo. Local shock. <i>d.</i>
		iS		01	37.5							
		eF		02	03.0							



No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	AN $\mu$	AE $\mu$	AZ $\mu$				
7	8	iP	20	52	08.9					26.6 N	65	Felt rather strong, Neighbourhood of Inbanuma. 140°3E 35°8N Felt area 80000 sq. km. v.
		iS		52	17.6					13.3 E		
		MN		52	28.6	+500			0.2			
		ME		52	20.8		+430		0.4			
		MZ		52	28.6			$\pm 124$	0.2			
		eF	21	02	—							
8	9	iP	04	35	27.2					37 S	50	Felt rather strong, Valley of River Arakawa. 139°5E 36°0N Felt area 53400 sq. km.
		iS		35	33.9					66 E		
		MN		35	37.2	-494			—	367 Up		
		ME		35	38.1		-278		—			
		F		40	—							
9	9	iP	07	01	37.9						69	Sea-shore of Kisarazu. 139°9E 35°4N Felt area 94200 sq. km. v.
		iS		01	47.2							
		MN		—	—							
		ME		01	50.7		+570		—			
		MZ		01	51.0			$\pm 200$	—			
		eF		11	40							
10	9	iP	10	16	48.7						59	Felt slightly at Tokyo and its neighbouring locality only. Bay of Tokyo. Local shock. d.
		iS		16	56.7							
		MN		16	56.8	-20			0.3			
		ME		16	56.9		-20		0.4			
		eF		18	20.0							
11	10	e	12	23	12						e2520	Off the coast of Iwaki. 141°4E 37°4N Felt area 62800 sq. km.
		eS		23	41							
		eF		26	15							
12	18	P	12	09	37.5						e2520	South-East to the Island of Etorô 150°4E 44°8N r.
		eS		12	33.0							
		eL		14	58.0							
		eMN		15	14.6	e $\pm 54$			2.8			
		eME		15	14.9		e+38		3.4			
		eC		24	16.0							
		eF	14	50	—							
13	19	iP	11	49	13.4						37	Felt at Tokyo and its neighbouring locality only, Coast of Sagami. 139°2E 35°4N Local shock. d.
		iS		49	21.5							
		iN		49	41.9							
		iE		49	41.9							
		MN		49	42.2	$\pm 50$			1.6			
		ME		49	42.2		$\pm 30$		1.6			
		eF		52	—							



No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	A <sub>N</sub> $\mu$	A <sub>E</sub> $\mu$	A <sub>Z</sub> $\mu$				
14	22	iP	10	17	55.0					6.6 N	115	Felt rather strong, Neighbourhood of Hinuma (Mito) 151°0E 45°0N Local shock. <i>d.</i>
		iS		18	10.2					4.0 E		
		MN		18	11.4	+372				246 Down		
		ME		18	11.4		-640					
		MZ		18	11.4			±95				
		eF		28	—							
15	24	iP	8	26	56.7					1.3 S	46	Felt rather strong, Neighbourhood of Mizukaido, upper valley of River Kinu. 140°3E 36°2N Felt area 107000 sq. km.
		iS		27	03.2					9.3 W		
		MN		27	12.9	-385			0.3	397 Up		
		ME		27	08.0		-485		0.3			
		MZ		27	20.0			±27	0.3			
		eF		36	—							
16	24	iP	11	50	23.0						59	Felt at Tokyo and its neighbouring locality only. Local shock. <i>d.</i>
		iS		50	31.0							
		eF		51	10							
17	24	iP	12	23	02						67	Do. Local shock. <i>d.</i>
		iS		23	11							
		eF		23	—							
18	28	P	4	07	54.7						1570	South-East to the coast of Kusiro. 146°2E 42°0N Felt area 190000 sq. km. <i>r.</i>
		iS		09	32.8							
		L		10	09.4							
		MN		13	34.4	±150			2.3			
		ME		13	43.4		-220		2.9			
		eF		5	—	—						
19	30	iP	1	02	47.0						59	Felt at Tokyo and its neighbouring locality only. Local shock. <i>d.</i>
		iS		02	55.0							
		eF		03	22.0							

## February.

No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	A <sub>N</sub> $\mu$	A <sub>E</sub> $\mu$	A <sub>Z</sub> $\mu$				
20	1	eP	5	26	19.8						300 km. SE to the coast of Kusiro. 147°1E 41°2N <i>r.</i>	
		iS		28	02.0							
		eL?		29	32.6							
		MN		30	38.5	±68			4.2			
		ME		31	33.1		+78		4.2			
		eF		6	20	—						



No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	A <sub>N</sub> $\mu$	A <sub>E</sub> $\mu$	A <sub>Z</sub> $\mu$				
21	2	P	13	31	48.2					1000	250 km. SE to the coast of Kusiro. 146°3E 41°2N v.	
		S		33	20.7							
		L		35	51.2							
		MN		35	59.8	+61			4.3			
		ME		35	26.1		+64		4.4			
		F		—	—							
22	2	eP	19	49	15.9						320 km. to the coast of Kusiro. 146°5E 40°8N v.	
		eS?		50	54.3							
		e		51	24.5							
		eL		52	14.3							
		MN		52	32.8	+124			4.2			
		ME		52	29.3		-107		4.7			
		MN		52	44.8	+129			4.8			
		MN		53	00.3	+126			4.8			
		MN		53	19.3	±144			4.5			
		MN		53	53.3	-158			4.9			
		MN		54	16.3	±109			4.7			
		MN		54	31.3							
		eF	20	05	09.6							
23	6	iP	17	11	41.3					157	Felt moderately, Kasimanada. 141°1E 35°6N Felt area 75400 sq. km. v. In the coda portion of this earthquake, the next one occurs.	
		iL		12	02.5							
		ME		12	07.1	+729						
		ME		12	14.6	+858						
		MN		12	12.7		-955					
		MN		12	13.7		650					
		MN		12	49.5		+900		1.8			
		MN		13	20.8		+650		2.5			
		MN		13	44.3		+650		2.5			
		MN		13	48.0		+943		2.5			
		MN		13	50.8		-893		2.5			
24	10	P	07	04	29.9				S?	135	Felt slightly Bay of Sagami. 139°4E 35°2N Local shock.	
		L		04	48				E?			
		MN		04	48.2	+100			Down			
		ME		04	48.2		+201					
		F		11	—							
25	13	iP	07	13	11.0				0.8 S	64	Felt slightly Upper Valley of River Kinu. 139°9E 35°9N Felt area 47700 sq. km.	
		iL		13	19.9				0.5 W			
		MN		13	22.3	+161			2.24 Up			
		MN		13	34.4	-286						
		ME		13	28.3		-158					
		eF		23	—							



No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$A_N$ $\mu$	$A_E$ $\mu$	$A_Z$ $\mu$				
26	14	iP	00	42	21.8					2.0 Up	67	Felt moderately
		iL		42	30.0					0.7 S		Upper Valley of River
		MN		42	31.4	+365			0.9	0.3 W		Kinu.
		MN		42	35.6	$\pm 322$			0.9			139°9E 35°9N
		ME		42	34.4		+394		0.9			Felt area 69100 sq. km.
		ME		42	29.9		+194		0.9			
		eF		54	—							
27	15	eP	07	49	14.7						420	Upper Valley of River
		L		50	11.2							Yodo.
		eF		54	—							135°9E 35°1N Felt area 28600 sq. km.

### March.

No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$A_N$ $\mu$	$A_E$ $\mu$	$A_Z$ $\mu$				
28	8	iP	02	59	59.9						90	Felt slightly
		iL	03	00	12.0							Upper Valley of River
		MN		00	12.7	$\pm 40$			0.2			Arakawa.
		ME		00	12.6		$\pm 37$		0.3			139°9E 35°9N
		F		02	45.0							Local shock. <i>d.</i>
29	9	iP	19	51	19.8					5.2 N	176	Felt moderately
		iL		51	43.5					7.1 W		Upper Valley of River
		MN		51	45.8	+363			0.6	4.0 D		Arakawa.
		ME		51	45.1		+350		0.5			139°1E 36°2N
		MZ		51	45.7			$\pm 40$	0.5			Felt area 40800 sq. km.
		F	20	02	00							
30	16	e	04	30	58.5							Hyûganada. 132°0E 32°2N Felt area 17000 sq. km.
31	31	iP	01	06	47.0					1.4 S	83	Felt slightly
		iL		06	58.2					1.1 W		Upper Valley of River
		MN		07	00.5	+26			0.5	6.0 U		Arakawa.
		ME		07	00.5		-700		0.5			139°8E 36°1N Felt area 56500 sq. km.

### April.

No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$A_N$ $\mu$	$A_E$ $\mu$	$A_Z$ $\mu$				
32	7	P	10	37	30.8						42	Felt slightly
		iL		37	36.4							Neighbourhood of



No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	△ Km	Intensity, Epicentre and Remarks
			h	m	s	AN μ	AE μ	Az μ				
		MN		37	36.5	±39					Tokyo.	
		F	10	40	—						Local shock.	
33	7	eP	18	13	00.1						Distant earthquake.	
		S		18	45.2						China?	
		L		22	28.3						r.	
		eF	19	07	—							
34	9	P	09	43	12.0					57	Felt moderately	
		L		43	20.3						Bay of Tokyo.	
		MN		43	22.0	-160					139°8E 35°4N	
		ME		43	22.0		+86					
35	9	P	09	59	24.8					46	Felt slightly	
		L		59	31.0						Bay of Tokyo.	
		MN		59	31.0	-39					140°0E 35°5N	
		ME		59	31.0		+33				Local shock.	
36	9	P	10	00	44.3					37	Felt moderately,	
		L		00	49.5						Upper Valley of River	
		MN		00	49.5	-100					Arakawa.	
		eF		03	—						139°6E 35°9N	
											Local shock. d.	
37	11	e	10	56	34.3						Distant earthquake	
		eF		12							Pulsation covers the	
											whole course of the	
											disturbance. r.	
38	11	P	22	27	34.0						Kasimanada.	
		eS		28	05.3						142°2E 36°2N	
		eL		29	02.3							
		MN		31	56.8	±57		4.8				
		MN		33	35.8	±64		6.0				
		eF		57	—							
39	16	P	19	57	30.0						70 km. SW to the coast	
		eL	20	01	43.0						of Kōsyun, Formosa.	
		MN		02	11.0	+230		6.3			120°2E 20°4N	
		ME		02	11.0		±158				Felt area 410000 sq. km.	
		eF		57	—							
40	16	P	22	27	12				0.15 S	98	Felt slightly	
		L		27	25.2				0.09 W		Lake Kasumiga-ura.	
		MN		27	27.3	±64			0.93 U		140°3E 36°1N	
		ME		27	25.9		±83				Felt area 17600 sq. km.	
		eF		36	—							
41	18	P	10	54	20.3						Kitan channel.	
		eL		55	12.5						134°9E 34°1N	



No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	△ Km	Intensity, Epicentre and Remarks
			h	m	s	AN μ	AE μ	AZ μ				
41	18	F		09	30.0						Felt area 35000 sq. km.	
42	19	P	15	47	38.0				0.7 S	319	Felt slightly	
		L		48	21.0				0.25 W		Foot of Mt. Fuji.	
		ME		44	23.0		-542		D		138°3E 35°3N	
		ME		44	41.0		+514				Felt area 314000 sq. km.	
		ME		44	57.0		+415					
		MN		44	20.4		+780					
		MN		44	—							
43	19	F	16	13	—							
		iP	20	42	49.0				0.1 N	313	Off Kinkwazan.	
		L		43	31.2				E		142°2E 38°1N	
		ME		43	46.6		+257		D		Felt area 314000 sq. km.	
		ME		44	56.0		+400					
		MN		43	45.1		+450					
		MN		44	38.9		+420		2.3			
MN		45	04.9		+420		2.6					
44	20	F	21	05	—							
		P	02	01	24.6					385	Off Kinkwazan.	
		S		02	08.1						142°2E 38°0N	
		L		02	15.9						Felt area 314000 sq. km.	
		MN		02	14.1		+122				Continuation of the	
		MN		02	45.8		-107		1.9		preceding earthquake.	
		ME		02	23.5		±115					
ME		02	35.9		+157		1.9					
45	24	F		20	—							
		P	22	12	07.4					68	Felt slightly	
		L		12	16.6						Neighbourhood of Tiba.	
		MN		12	17.0		-38				140°0E 35°5N	
		ME		12	17.0		-60				Local shock.	
eF		18	—									
46	27	P	19	30	20.2					104	Felt slightly	
		L		30	34.3						Bay of Sagami.	
		MN		30	34.3		±31				139°4E 35°0N	
		F		33	—						Local shock.	

May.

No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	△ Km	Intensity, Epicentre and Remarks
			h	m	s	AN μ	AE μ	AZ μ				
47	3	eP	17	28	52.6					1630	Distant earthquake. Neighbourhood of	
		L		32	32.0							



No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$\Delta_N$ $\mu$	$\Delta_E$ $\mu$	$\Delta_Z$ $\mu$				
47	3	MN	32	49.0		$\pm 64$			4.7		Philippin ?	
		ME	32	55.0			+27		5.1		r.	
		eF	18	05	—							
48	5	iP	10	12	28.0						Distant earthquake.	
		L	19	12.0							Neighbourhood of	
		F	11	26	—						Philippin ? r.	
49	7	iP	00	50	57.7					35	Felt slightly	
		iMN	51	02.4		-9					Southern part of Bay	
		iME	51	02.4			+8				of Tokyo.	
		eF	52	31.0							139°09E 35°04N Local shock. d.	
50	7	eP	14	39	44.6						Distant earthquake.	
		eS	42	59.0							r.	
		eL	48	32.0								
		eF	15	03	00							
51	10	iP	22	05	39.6					68	Felt slightly	
		L	05	48.8							Northern part of Lake	
		MN	05	49.1		-40					Kasumiga-Ura,	
		ME	05	49.2			-30				140°1E 36°1N	
		F	07	51.0								
52	11	eP	08	51	34.0						Felt slightly	
		eL	51	59.1							Kasima-Nada.	
		iMN	52	11.9		-67					141°04E 36°02N.	
		iME	52	16.4			+86					
		iMz	52	58.3				+33				
53	13	iP	12	33	56.5					76	Felt slightly	
		iL	34	06.7							Neighbourhood of	
		MN	34	06.8		$\pm 43$					Kisarazu, Bay of Tokyo.	
		ME	34	06.8			$\pm 42$				139°08E 35°04N	
		F	35	26.0							Local shock. d.	
54	14	iP	05	38	20.7					95	Felt slightly	
		iL	38	33.5							Upper Valley of River	
		MN	28	34.2		$\pm 94$					Kinu,	
		ME	38	34.0			$\pm 98$				139°09E 36°05N	
		F	41	41							Local shock.	
55	15	iP	18	27	14.5					510	Felt slightly	
		S	28	23.7							200 km. SW to the	
		MN	28	28.2		+170			0.6		Island Hatidyô.	
		ME	28	29.1			-230		0.6		138°07E 31°06N.	
		F	35	—								



No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$A_N$ $\mu$	$A_E$ $\mu$	$A_Z$ $\mu$				
56	18	iP	16	04	00.6				0.002 E	63	Uraga channel, Bay of Tokyo. 139°7E 35°3N Felt area 50200 sq. km. Local shock. <i>d.</i>	
		iL		04	09.1				0.001 N			
		MN		04	09.8	+550			0.013 D			
		ME		04	09.8		-1900					
		F		09	—							
57	23	P	02	10	45.4				0.00145 N	485	Felt moderately Off the Harbour of Tuiyama, North Tazima, 134°7E 35°7N Felt area 550000 sq. km. Destructive earthquakes, many persons were injured and there were great damages on houses.	
		$\bar{P}$		11	00.0				0.00127 W			
		L		11	50.8				0.0073 D			
		MN		12	29.7	+6706			3.5			
		ME		11	57.4		$\pm 200$		3.0			
		eF		49	50							
58	23	P	03	03	37.2					223	Off the harbour of Tuiyama, 134°7E 35°7N Felt area 124500 sq. km. After shock of the preceding earthquake.	
		L		04	07.2							
		MN		04	15.0	$\pm 47$			2.4			
		ME		04	12.0		$\pm 57$		2.1			
		F		10	15							
59	23	iP	14	44	30				2.0 E	55	Felt moderately Neighbourhood of Kisarazu, 139°7E 35°3N Felt area 55200 sq. km.	
		L		44	37.5				7.5 S			
		MN		44	37.6	$\pm 1000$			0.4			
		ME		44	37.6		$\pm 2500$		0.4			
		F		48	10							
60	24	iP	11	16	36.7					55	Felt slightly Kasumiga-Ura, 140°4E 36°2N Local shock. <i>d.</i>	
		L		16	44.2							
		MN		16	44.8	$\pm 44$						
		ME		16	44.5		-58					
		F		18	15							
61	25	e	03	47	51.0						Distant earthquake <i>r.</i>	
		eL		54	44							
		eF		04	26 59							
62	25	eP	16	23	26.3					430	Off the harbour of Tuiyama, 134°7E 35°7N Felt area 376000 sq. km. After shock of the destructive earthquake occured on the 23rd of May.	
		L		24	24.3							
		MN		24	31.0	$\pm 260$			1.7			
		ME		24	26		$\pm 210$		1.7			
		F		46	—							



No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$\Delta_N$ $\mu$	$\Delta_E$ $\mu$	$\Delta_Z$ $\mu$				
63	26	iP	16	56	01.0						Felt slightly Neighbourhood of Tokyo. Local shock. <i>d.</i>	
		S		56	05.0							
		F		56	18							
64	27	P	02	31	12.5					495	Felt moderately 150 km. N to the coast of Tango district. 135°1E 37°0N Felt area 1380000 sq. km.	
		L		32	19.1							
		F	03	13	—							
65	30	P	21	32	55.6					41	Felt slightly Neighbourhood of Yokohama. Local shock. <i>d.</i>	
		L		33	01.1							
		F		33	50.8							

### June.

No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$\Delta_N$ $\mu$	$\Delta_E$ $\mu$	$\Delta_Z$ $\mu$				
66	2	P	03	45	18.3						Felt slightly Southern off to the cape Erimo, Hokkaidô. 143°0E 41°2N Felt area 157000 sq. km.	
		S		46	20.5							
		eL		47	04.8							
		MN		48	21.0							
		eF	04	00	34.5							
67	2	P	05	19	37.5						East to the Tugaru canal 142°4E 41°3N Felt area 207000 sq. km.	
		S		20	13.3							
		eL		20	57.3							
		MN		21	14.8	±120			3.4			
		MN		21	34.3	-200			3.2			
		MN		22	16.7	-240			3.0			
		MN		22	34.3	±230			3.2			
		ME		21	33.2	+185			3.0			
F		43	35.0									
68	3	P	04	40	52.2						Distant earthquake <i>r.</i>	
		S		48	24.8							
		L		45	31.6							
		F	05	06	30							
69	5	P	12	34	00.0						Distant earthquake. <i>r.</i>	
		SR?		37	45.7							
		S		46	10.8							
		L		52	01.4							
eF	13	37	30									



No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$\Delta_N$ $\mu$	$\Delta_E$ $\mu$	$\Delta_Z$ $\mu$				
70	9	P	13	48	15.8						Distant earthquake. <i>r.</i>	
		(PR)		48	29.9							
		S		58	49.4							
		L		59	08.1							
		MN	14	11	—	$\pm 30$			17.5			
		eF		34	10							
71	9	iP	22	04	30.2					65	Felt slightly Upper Valley of River Tone. 140°2E 35°8N Local shock.	
		iL		04	39.0							
		iMN		04	39.3	-314			0.5			
		iME		04	39.3		-195		0.5			
		iF		08	50							
72	11	iP	23	02	37.1					67	Felt slightly Upper Valley of River Kinu. Local shock. <i>d.</i>	
		iL		02	46.1							
		MN		02	50.8	+56						
		ME		02	47.8		+37					
		eF		06	—							
73	16	iP	17	09	32.2					184	Kasima-Nada. 141°4E 36°3N Felt area 47000 sq. km.	
		L		09	56.9							
		MN		10	00.3	-160			0.6			
		MN		10	05.7	+140			0.6			
		ME		09	57.0		$\pm 12$		9.5			
		F		19	40							
74	23	P	03	59	11.0					390	Off the harbour of Tuiyama. 134°8E 35°7N Felt area 131000 sq. km.	
		L		04	00	03.5						
		MN		00	30.5							
		ME		00	05.0							
		F		13	20							
75	25	iP	20	06	35.8					67	Felt slightly Neighbourhood of Mt. Tanzawa. 139°3E 35°5N Local shock. <i>d.</i>	
		iL		06	44.8							
		MN		06	45.2	+240						
		ME		06	44.9		-190					
		F		08	35							
76	25	P	21	25	06.0						S.E to the Cape Sioya. 141°6E 36°6N Felt area 85200 sq. km.	
		c		26	05.0							
		MN		26	10.4	+110			1.8			
		ME		26	14.7		-64		2.1			
		eF		37	—							
77	25	iP	21	46	59.0					35	Felt slightly Neighbourhood of Tokyo. Local shock. <i>d.</i>	
		iL		47	03.7							
		F		48	—							

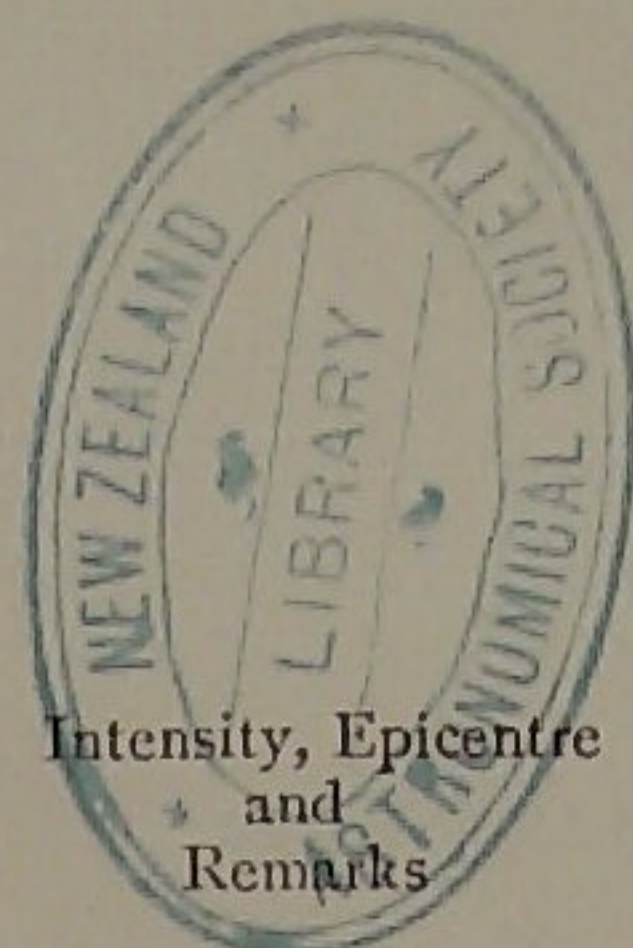


No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$A_N$ $\mu$	$A_E$ $\mu$	$A_Z$ $\mu$				
78	25	iP	22	16	51.6					63	Felt slightly Upper Valley of River Tone. 139°6E 35°8N Local shock. <i>d</i> .	
		L		17	00.1							
		MN		17	00.6	-93		1.2				
		ME		17	01.1		-57	0.8				
		F		19	11							

### July.

No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$A_N$ $\mu$	$A_E$ $\mu$	$A_Z$ $\mu$				
79	3	P	19	22	29.0					513	Bay of Miho. 133°3E 35°5N Felt area 157500 sq. km.	
		L		23	88.0							
		MN		24	36.2	$\pm 100$		3.5				
		F		25	—							
80	6	P	16	47	33.7					260	Neighbourhood of Gihu. 136°9E 35°6N Felt area 200000 sq. km.	
		L		48	08.7							
		MN		49	07.5	$\pm 186$		3.6				
		ME		49	12.2		+573	3.3				
		F		55	57							
81	12	P	02	41	02.3					54	Felt slightly Upper Valley of River Sagami. 139°3E 35°6N Local shock. <i>d</i>	
		L		41	09.6							
		M <sub>1</sub>		41	19.0	+700	+945	0.6				
		M <sub>2</sub>		41	50.6	+840	+735	3.0				
		M <sub>3</sub>		42	11.0	-630	+490	3.9				
		M <sub>4</sub>		42	59.4	—	+420	4.5				
		F		45	—							
82	15	P	03	59	19.9					64	Felt slightly Mouth of River Sagami. 139°5E 35°2N Local shock. <i>d</i> .	
		L		59	28.6							
		M <sub>1</sub>		59	42.7	-60	-30					
		M <sub>2</sub>	04	00	05.0	-43	+63					
		M <sub>3</sub>		00	35.6	-21	-40					
		P <sub>2</sub>		01	42.0							
		F	05	03	40.0							
83	17	P	22	36	07.3						Teleseism. Neighbourhood of San Francisco? <i>u.</i>	
		S		40	13.7							
		L		43	51.8							
		F	23	36	—							
84	18	P	13	18	56.3					33	Upper Valley of River Sagami. 139°5E 35°6N Local shock. <i>d</i> .	
		L		19	00.3							
		F		23	56.0							





No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	Δ Km	Intensity, Epicentre and Remarks
			h	m	s	ΔN μ	ΔE μ	ΔZ μ				
85	26	P	12	46	23.6					3.0 N	180	Felt slightly
		P̄		46	24.9					3.0 E		Neighbourhood of Cape
		L		46	47.7					8.4 D		Sioya.
		MN		46	53.0	-400						141°0E 36°9N
		ME		46	53.0		+210					Felt area 127000 sq. km.
		MZ		46	58.6			+600				v.
		F	13	01	—							
86	28	P	20	49	20.0						322	Off the coast of
		L		50	03.6							Kinkwazan.
		F		55	10							141°7E 38°4N
												Felt area 104000 sq. km.
87	30	P	17	53	58.8						651	Far off the coast of
		S		54	50.3							Isinomaki.
		L		55	26.5							144°4E 37°7N
		F	18	04	—							v.

August.

No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	Δ Km	Intensity, Epicentre and Remarks
			h	m	s	ΔN μ	ΔE μ	ΔZ μ				
88	3	iP	22	30	45.7						53	Felt slightly
		L		30	52.9							Coast of Kudyukuri-
		M <sub>1</sub>		30	53.1	+34						Ihama.
		M <sub>2</sub>		30	54.6		+36					140°5E 35°6N
		M <sub>3</sub>		30	57.6		±39					Local shock. d.
		M <sub>4</sub>		39	57.8	-60						
		M <sub>5</sub>		31	00.4	+33						
		M <sub>6</sub>		31	06.9		+27					
		M <sub>7</sub>		31	11.3							
		F		33	16							
89	7	iP	02	52	55.7						62	Felt slightly
		L		53	03.1							Upper valley of River
		M <sub>1</sub>		53	05.9	-157	-208	±29	0.7			Yedo.
		M <sub>2</sub>		53	07.9		+217					139°7E 36°1N
		M <sub>3</sub>		53	11.0	+174						Felt area 50200 sq. km.
		M <sub>4</sub>		55	08.6	+46						d.
		M <sub>5</sub>		55	33.0		-30					
F		58	00.0									
90	10	iP	20	40	53.9						180	Felt slightly
		L		41	18.2							20 km. NE to the Cape
		M <sub>1</sub>		41	38.7	+43			1.0			Sioya. d.



No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$\Lambda_N$ $\mu$	$\Lambda_E$ $\mu$	$\Lambda_Z$ $\mu$				
90	10	M <sub>2</sub>	20	41	43.1		+36		1.0		141°1E 37°2N	
		F		45	58.2						Felt area 118000 sq. km.	
91	19	P	12	00	00.0					SSW	59 Felt slightly	
		L		00	08.0					Up	Upper valley of River	
		MN		00	08.3	-32			0.2		Sagami.	
		ME		00	09.4		-33				139°6E 35°6N	
		F		02	30.0						Local shock.	
92	19	P	12	13	17.4						Northern Part of Tisima	
		S		18	25.9						Islands. <i>v.</i>	
		L		26	19.9							
		F	13	44	—							
93	19	P	12	52	01.5						290 Upper valley of River	
		L		52	39.6						Suzuka.	
		MN		53	25.1	+100			1.8		136°4E 34°9N	
		ME		53	06.0		-93		2.6		Felt area 132000 sq. km.	
		F	13	00	50.0						<i>d.</i>	
94	27	eP	12	23	27.6						62 Felt slightly	
		iL		23	36.0						Mouth of River Yedo.	
		MN		23	38.0	+50			0.1		140°1E 35°7N	
		ME		23	38.0		-69		0.1		Local shock. <i>d.</i>	
		F		24	40.0							
95	31	P	19	47	23.1					48 N	325 Off the Cape Sioya.	
		L		48	06.9					37 E	142°9E 37°0N	
		MN		50	08.5	+890			3.1	17 U	<i>d.</i>	
		ME		50	39.2		-186					
		F	20	16	—							

**September.**

No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$\Lambda_N$ $\mu$	$\Lambda_E$ $\mu$	$\Lambda_Z$ $\mu$				
96	4	P	18	37	56.0						72 Felt slightly	
		L		38	05.7						Middle part of Boso	
		MN		38	05.7	-86					Peninsula.	
		ME		38	05.7		+164				140°1E 35°3N	
		MZ		38	05.7			+17			Local shock. <i>d.</i>	
		F		41	06.0							
97	17	P	11	12	58.9					N	76 Felt slightly	
		L		13	09.1					20 E	Middle part of Boso	
		F		15	28.9						Peninsula.	
											140°2E 35°3N	
											Local shock. <i>d.</i>	



No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$\Delta_N$ $\mu$	$\Delta_E$ $\mu$	$\Delta_Z$ $\mu$				
98	19	P	05	58	20.0					63	Felt slightly Neighbourhood of Mt. Tukuba. 140°2E 36°0N Local shock. <i>d.</i>	
		L		58	28.5							
		F	06	00	00							
99	21	P	01	55	15.5					183	Off Cape Sioya. 141°3E 36°6N Felt area 470000 sq. km. <i>d.</i>	
		L		55	40.1							
		ME	—	—	—	+57		1.0				
		F		59	45.5							
100	23	P	01	29	31.1					40	Felt slightly Neighbourhood of Uruga Canal. 139°8E 35°3N Local shock. <i>d.</i>	
		L		29	36.5							
		MN		29	36.7	+78						
		ME		29	36.7		+64					
		F		32	31.1							

### October.

No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$\Delta_N$ $\mu$	$\Delta_E$ $\mu$	$\Delta_Z$ $\mu$				
101	5	P	11	11	17.2						50 km. SSW to the Cape Erimo. 142°6E 41°7N Felt area 472000 sq. km. <i>v.</i>	
		S		12	37.0							
		MN		12	39.9	$\pm 26$		0.5	D			
		ME		12	47.0		+29					
		F		25	—							
102	13	e	18	03	—						Distant earthquake. <i>r.</i>	
103	15	P	12	55	—						Distant earthquake. <i>r.</i>	
104	16	P	16	30	03.0						Felt slightly Southern of Mt. Tukuba. 140°1E 36°1N Local shock. <i>d.</i>	
		S		30	10.9							
		MN		30	11.0	$\pm 36$						
		ME		30	13.2		-45					
		F		34	—							
105	19	P	18	33	01.4						Felt slightly Southern part of Kudyu- kuri hama, 140°4E 35°2N Local shock. <i>d.</i>	
		S		33	13.1							
		MN		33	13.9	$\pm 17$						
		ME		33	13.9		$\pm 17$					
		F		—	—							



No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$A_N$ $\mu$	$A_E$ $\mu$	$A_Z$ $\mu$				
106	20	P	09	43	58.7						200 km. South to Iiatidyo Island. 140°0E 29°5N v.	
		S?		44	59.6							
		L		45	19.5							
		MN		45	22.9	-68			1.3			
		MN		45	24.8	72						
		ME		45	22.9		-93		1.5			
		eF	10	00	—							
107	20	eP	23	34	21.3						Felt slightly 60 km. South to the Coast of Mera. 139°9E 34°6N Local shock. d. Distant earthquake. r.	
		S		34	37.5							
		F		37	—							
108	30	eP	14	49	46.2						r.	
		i		51	32.4							
		eF		56	—							

## November.

No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$A_N$ $\mu$	$A_E$ $\mu$	$A_Z$ $\mu$				
109	5	$\bar{P}$	01	56	11.0					9 S	40	Felt slightly Bay of Tokyo. 139°8E 35°5N Local shock. r.
		$\bar{S}$		56	16.4					29 W		
		MN		56	16.8	+130						
		ME		56	17.8		-70					
		F		57	30.0							
110	5	$\bar{iP}$	18	42	57.8					SSW	65	Felt slightly Northern branch of Lake Kasumiga-ura. d. 140°2E 36°1N Felt area 18800 sq. km.
		$\bar{iS}$		43	06.5							
		MN		44	10.3	-190						
		ME		44	08.0		-16					
		F		48	—							
111	6	P	15	13	33.5					2.5 S	164	Felt slightly Kasimanada, 141°5E 36°1N Felt area 22000 sq. km. d.
		$\bar{P}$		13	36.4					3.4 E		
		L		13	55.6							
		MN		14	04.7	+690						
		ME		14	04.7		+720					
		F		22	30							
112	10	eP	13	58	04.0						Distant earthquake Near Phillipin Islands. r.	
		eL	14	06	19.0							
		eF		45	33.0							



No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$\Delta_N$ $\mu$	$\Delta_E$ $\mu$	$\Delta_Z$ $\mu$				
113	10	P	14	44	33.4					510	150 km, E to Miyako. 143°7E 39°6N Felt area 41500 sq. km. <i>v.</i>	
		$\bar{P}$		45	51.0							
		S		46	35.5							
		$i\bar{S}$		46	42.5							
		MN		48	04.4	+150			2.5			
		ME		47	36.0		+60		1.9			
		F	15	05	30.0							
114	11	eP	23	29	35.0						Neighbourhood of Syonai. <i>d.</i> 139°3E 38°6N Felt area 11300 sq. km.	
		eS		30	17.0							
		F		33	55.0							
115	13	e	12	20	—						Distant earthquake. <i>r.</i>	
116	26	P	17	01	08.6					386	Off Cape Kyogasaki. 135°2E 35°9N Felt area 94200 sq. km. <i>v.</i>	
		L		02	03.6							
		MN		03	01.0	$\pm 60$			2.5			
		ME		02	17.0		$\pm 33$		1.4			
		F		12	49.0							

### December.

No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$\Delta_N$ $\mu$	$\Delta_E$ $\mu$	$\Delta_Z$ $\mu$				
117	4	eP	15	32	59.0					623	Off Cape Erimo. 144°6E 41°5N Felt area 143000 sq. km. <i>v.</i>	
		eS		33	57.2							
		eL		34	23.0							
		MN		35	07.0	$\pm 130$			3.0			
		ME		34	59.8		$\pm 20$		2.4			
		F		42	44.0							
118	7	eP	09	02	26.0						Distant earthquake. Pulsation covers the whole course. <i>r.</i>	
		S		05	56.0							
119	7	e	13	21	52						Distant earthquake Pulsation covers the whole course. <i>r.</i>	



No.	Date	Phase	G.M.T.			Amplitude			Period s	First motion	$\Delta$ Km	Intensity, Epicentre and Remarks
			h	m	s	$\Delta_N$ $\mu$	$\Delta_E$ $\mu$	$\Delta_Z$ $\mu$				
120	9	$\bar{P}$ V	23	36	08.4					21 U		Felt moderately.
		$\bar{P}$		36	09.7							Upper valley of River
		L		36	16.9							Rokugo.
		MV		36	17.0							139°4E 35°7N
		MN		36	18.3							Felt area 34600 sq. km.
		ME		35	17.9							
		F		41	—							
121	10	ccP	14	33	15.0							Distant earthquake
		S		43	33.0							Pulsation covers the whole course. <i>r.</i>
122	11	$\bar{P}$	07	19	40.8					220 S	62	Felt rather strongly.
		L		19	49.2					250 W		Upper valley of River
		MN		19	50.0	+620			0.1	14 U		Yedo. <i>d.</i>
		ME		19	50.3		-1620		0.1			139°9E 35°8N
		F		—	—							Felt area 21980 sq. km.
123	17	$\bar{iP}$	03	38	10.9						40	Felt slightly
		iL		38	16.3							Upper valley of River
		MN		38	16.3	-60						Yedo.
		ME		38	16.3		-133					139°9E 35°8N
		F		40	06.0							Local shock. <i>d.</i>
124	24	P	14	02	22.2						160	Upper valley of River
		$\bar{P}$		02	39.3							Kinu.
		L		02	43.2							140°1E 36°4N
		MN <sub>1</sub>		02	51.7	-39			0.1			Felt area 5500 sq. km.
		MN <sub>2</sub>		03	00.0	+36			0.2			<i>d.</i>
		ME		03	06.2		±37		0.2			
		F		06	22							
125	26	P	18	31	00.0							Distant earthquake.
		S(L?)		36	44.0							<i>r.</i>
126	27	P	10	38	02.0							Distant earthquake.
		S		42	40.0							<i>r.</i>
		L		44	35.0?							
129	29	$\bar{P}$	02	20	52.6						59	Felt slightly
		L		21	00.6							Upper valley of River
		MN		21	01.7	±107			0.1			Toné. <i>d.</i>
		ME		21	02.1		-157		0.1			140°2E 35°8N
		F		23	00							Local shock. <i>d.</i>
123	29	cP	15	45	14							Distant earthquake. <i>r.</i>
129	31	S?	07	31	16							Distant earthquake. <i>r.</i>



**TABLE II.**

TABLE OF REMARKABLE EARTHQUAKES.

No.	Time of Occurrence				Epicenter	Note
			h	m		
1	Jan.	13	12	07	S-E to the Island of Etrô, $\left\{ \begin{array}{l} \lambda = 150^{\circ}4E \\ \varphi = 44^{\circ}8N \end{array} \right.$	Felt slightly in the Tisima Islands and at Nemuro only, but recorded by seismographs at all the stations in this country.
2		28	04	06	S-E to the coast of Kusiro, $\left\{ \begin{array}{l} \lambda = 146^{\circ}2E \\ \varphi = 42^{\circ}0N \end{array} \right.$	Felt slightly in a part of Hokkaidô, but instrumentally recorded at all the stations.
3	Feb.	2	19	48	320-km. S-E to the coast of Kusiro. $\left\{ \begin{array}{l} \lambda = 146^{\circ}5E \\ \varphi = 42^{\circ}8N \end{array} \right.$	Felt in Hokkaidô, and north-eastern part of the Honshû (Main Island of Japan.) As the epicenter was at the bottom of the sea, no damage was done.
4	Mar.	16	08	54	Far off the coast of Ensyûnada, $\left\{ \begin{array}{l} \lambda = 137^{\circ}3E \\ \varphi = 33^{\circ}5N \end{array} \right.$	Belongs to the outer earthquake zone of Japan.
5	Apr.	16	19	52	70-km. S-W to the coast of Kôsyun, For- mosa, $\left\{ \begin{array}{l} \lambda = 120^{\circ}2E \\ \varphi = 20^{\circ}4N \end{array} \right.$	Felt in the whole of Formosa Island. No damage was done.
6		19	15	46	Foot of Mt. Huzi. $\left\{ \begin{array}{l} \lambda = 138^{\circ}3E \\ \varphi = 35^{\circ}3N \end{array} \right.$	Felt in the most part of Hon- syû. Though felt in large area, no damage was done.
7		19	20	42	Off the coast of Isi- nomaki, $\left\{ \begin{array}{l} \lambda = 142^{\circ}2E \\ \varphi = 38^{\circ}1N \end{array} \right.$	Felt in the districts of Tôhoku, Kwantô, and Hokuriku. Strongly felt at Kanayama, but no damage was experienced.
8		20	02	01	Ditto,	After shock of the preceding one.



No.	Time of Occurrence				Epicenter	Note
9	May	23	h 02	m 09	Off the gulf of Tuiyama. North Tazi- ma. $\left\{ \begin{array}{l} \lambda = 134^{\circ}7E \\ \varphi = 35^{\circ}7N \end{array} \right.$	Destructive earthquake. A great damage was done though its area was not so wide as Kwanto-Earthquakes of Sept. 1st 1923. Devastated region was limited in the valley of river Maruyama. Many towns, Toyooka, Kinosaki, Tuiyama, Tayui, etc. were burnt down by a fire followed the quake.
10		25	16	22	Ditto.	After shock of the preceding one.
11		27	02	30	150-km. N to the coast of Tango district. $\left\{ \begin{array}{l} \lambda = 135^{\circ}1E \\ \varphi = 37^{\circ}0N \end{array} \right.$	Epicenter was found in the central part of the Japan sea. Observed at all stations of Honsyû and Hokkaidô. Felt in a large area but no damage was experienced.
12	Jun.	14	05	38	Coast of Tainan, Formosa. $\left\{ \begin{array}{l} \lambda = 121^{\circ}6E \\ \varphi = 24^{\circ}0N \end{array} \right.$	Violent local shock. Occurred near Karen-kô where many houses were destroyed.
13		23	04	44	Off the coast of Erimo-saki, Hokkaidô. $\left\{ \begin{array}{l} \lambda = 143^{\circ}0E \\ \varphi = 41^{\circ}3N \end{array} \right.$	Felt in Hokkaidô, Tôhoku, and Kwantô districts. Strongly felt at Obihiro, but no damage was done.
14	July	3	19	21	The Miho-bay. $\left\{ \begin{array}{l} \lambda = 133^{\circ}3E \\ \varphi = 35^{\circ}5N \end{array} \right.$	Felt in the western part of Honsyû and in Sikoku Island. Strongly, felt at Sakai where a slight damage was done.
15		6	16	46	Neighbourhood of Gihu. $\left\{ \begin{array}{l} \lambda = 136^{\circ}9E \\ \varphi = 35^{\circ}3N \end{array} \right.$	Same place as the former Nôbi great earthquakes of 1891. Felt in middle part of Honsyû. Slight damages were done near the epicenter.
16	Aug.	19	12	50	Upper valley of river, Suzuka near Kameyama. $\left\{ \begin{array}{l} \lambda = 136^{\circ}4E \\ \varphi = 34^{\circ}9N \end{array} \right.$	Felt in whole Kwansai district.
17	Oct.	20	09	42	Southern sea of the Hatizyô-Islands. $\left\{ \begin{array}{l} \lambda = 140^{\circ}0E \\ \varphi = 29^{\circ}5N \end{array} \right.$	Felt along the coast of Kwantô and Tohoku district.
18	Nov.	26	17	00	Off the coast of Kyôgasaki, Tango district. $\left\{ \begin{array}{l} \lambda = 135^{\circ}2E \\ \varphi = 35^{\circ}9N \end{array} \right.$	Felt in the western part of Honsyû and Sikoku Island. No damage was done.



**TABLE III.**

## TABLE OF MODERATE EARTHQUAKES.

No.	Time of Occurrence	Epicenter			
		th	h	m	
1	Jan.	6	00	02	Off the coast of Iwaki. $\lambda = 141^{\circ}.3E$ $\varphi = 37^{\circ}.5N$
2		9	05	52	Neighbourhood of Inba-numa. $\lambda = 140^{\circ}.3E$ $\varphi = 35^{\circ}.8N$
3		9	13	35	Valley of river Arakawa. Neighbour- hood of Okegawa. $\lambda = 139^{\circ}.5E$ $\varphi = 36^{\circ}.0N$
4		9	16	01	Neighbourhood of Kisarazu. $\lambda = 139^{\circ}.9E$ $\varphi = 35^{\circ}.4N$
5		10	21	22	Eastern off of Iwaki. $\lambda = 141^{\circ}.4E$ $\varphi = 37^{\circ}.4N$
6		22	19	17	Western part of Hinuma, Mito. $\lambda = 140^{\circ}.5E$ $\varphi = 36^{\circ}.3N$
7		24	17	16	Neighbourhood of Mizukaido, Mito. $\lambda = 140^{\circ}.1E$ $\varphi = 36^{\circ}.3N$
8	Feb.	1	14	25	300-km. S-E to Kusiro. $\lambda = 147^{\circ}.1E$ $\varphi = 41^{\circ}.2N$
9		2	22	30	250-km. S-E to Kusiro. $\lambda = 146^{\circ}.3E$ $\varphi = 41^{\circ}.2N$
10		3	04	19	320-km. S-E to Kusiro. $\lambda = 146^{\circ}.5E$ $\varphi = 40^{\circ}.8N$
11		7	02	11	Kasima-nada. $\lambda = 141^{\circ}.1E$ $\varphi = 36^{\circ}.5N$
12		13	16	13	Valley of river Kinu. $\lambda = 139^{\circ}.9E$ $\varphi = 35^{\circ}.9N$
13		14	09	42	Ditto.
14		15	16	48	Neighbourhood of Kyoto. $\lambda = 135^{\circ}.7E$ $\varphi = 34^{\circ}.9N$
15		20	10	04	Off the coast of Sioya-saki. $\lambda = 145^{\circ}.0E$ $\varphi = 37^{\circ}.0N$
16	Mar.	1	21	25	N-E off the coast of Taito. $\lambda = 122^{\circ}.1E$ $\varphi = 23^{\circ}.8N$
17		10	04	51	Valley of river Arakawa, neighbour- hood of Honzyô. $\lambda = 139^{\circ}.1E$ $\varphi = 36^{\circ}.2N$
18		10	10	34	Valley of river Toné. $\lambda = 140^{\circ}.3E$ $\varphi = 35^{\circ}.8N$



No.	Time of Occurrence	Epicenter			
		th	h	m	
19	Mar.	16	13	29	Hyuga-nada. $\lambda = 132^{\circ}.0E$ $\varphi = 32^{\circ}.2N$
20		20	02	55	Valley or Suzuka-gawa, neighbourhood of Kameyama. $\lambda = 136^{\circ}.2E$ $\varphi = 34^{\circ}.8N$
21		31	10	06	Neighbourhood of Mizukaido, Mito. $\lambda = 139^{\circ}.8E$ $\varphi = 36^{\circ}.1N$
22	Apr.	12	17	27	Eastern part of Kasima-nada. $\lambda = 142^{\circ}.2E$ $\varphi = 36^{\circ}.2N$
23		17	07	26	Neighbourhood of Kasumigaura. $\lambda = 140^{\circ}.3E$ $\varphi = 36^{\circ}.1N$
24		18	19	52	The Kitan-straits. $\lambda = 134^{\circ}.9E$ $\varphi = 34^{\circ}.1N$
25	May	1	17	16	Northern part of Bungo-straits. $\lambda = 132^{\circ}.2E$ $\varphi = 32^{\circ}.6N$
26		16	03	26	200-km. S-W to the Hatizyo-Islands. $\lambda = 138^{\circ}.7E$ $\varphi = 31^{\circ}.6N$
27		19	01	04	The Uraga-channel. $\lambda = 139^{\circ}.7E$ $\varphi = 35^{\circ}.3N$
28		23	11	14	Off the harbour of Tuiyama. $\lambda = 134^{\circ}.7E$ $\varphi = 35^{\circ}.7N$
29		23	12	01	Ditto.
30		23	23	44	Neighbourhood of Kisarazu. $\lambda = 139^{\circ}.7E$ $\varphi = 35^{\circ}.3N$
31		24	10	24	S-W to Karen-ko. $\lambda = 121^{\circ}.4E$ $\varphi = 23^{\circ}.7N$
32		24	12	52	The Bungo-straits. $\lambda = 132^{\circ}.1E$ $\varphi = 33^{\circ}.4N$
33		24	19	55	Off the harbour of Tuiyama. $\lambda = 134^{\circ}.7E$ $\varphi = 35^{\circ}.7N$
34		26	08	42	Ditto.
35		29	07	39	Ditto.
36	Jun.	2	12	43	Off the coast of Erimo-zaki. $\lambda = 143^{\circ}.0E$ $\varphi = 41^{\circ}.2N$
37		2	14	48	Eastern off the coast of Mutu. $\lambda = 142^{\circ}.4E$ $\varphi = 41^{\circ}.3N$
38		14	09	18	North-eastern off the coast of Karen- ko. $\lambda = 121^{\circ}.8E$ $\varphi = 24^{\circ}.2N$
39		14	14	55	Neighbourhood of the preceding place. $\lambda = 121^{\circ}.8E$ $\varphi = 24^{\circ}.3N$



No.	Time of Occurrence	Epicenter		
		th	h	m
40	Jun. 17 02 09	Kasimanada, $\lambda = 141^{\circ}.4E$ $\varphi = 36^{\circ}.3N$		
41	19 13 03	Off the harbour of Tuiyama, $\lambda = 134^{\circ}.9E$ $\varphi = 35^{\circ}.7N$		
42	22 03 04	Ditto, $\lambda = 134^{\circ}.8E$ $\varphi = 35^{\circ}.7N$		
43	23 12 58	Ditto,		
44	26 06 25	S-E off the coast of Sioyasaki, $\lambda = 141^{\circ}.6E$ $\varphi = 36^{\circ}.6N$		
45	July 26 21 45	Neighbourhood of Onahama, $\lambda = 141^{\circ}.0E$ $\varphi = 36^{\circ}.9N$		
46	29 05 49	Off the coast of Kinkwa-zan, $\lambda = 141^{\circ}.7E$ $\varphi = 38^{\circ}.4N$		
47	Aug. 11 05 40	Off the coast of Sioya-saki, $\lambda = 141^{\circ}.1E$ $\varphi = 37^{\circ}.2N$		
48	7 11 53	Upper valley of river-Edo, $\lambda = 139^{\circ}.7E$ $\varphi = 36^{\circ}.1N$		
49	Sep. 1 04 45	Far eastern off the coast of Iwaki, $\lambda = 142^{\circ}.9E$ $\varphi = 37^{\circ}.0N$		
50	11 07 57	Off the coast of Kinkwa-zan, $\lambda = 142^{\circ}.2E$ $\varphi = 38^{\circ}.1N$		
51	21 10 56	Off the coast of Sioya-saki, $\lambda = 141^{\circ}.3E$ $\varphi = 36^{\circ}.6N$		
52	Oct. 5 20 08	South-eastern off the coast of Erimo-saki, $\lambda = 142^{\circ}.6E$ $\varphi = 41^{\circ}.7N$		
53	Nov. 6 03 42	Neighbourhood of Tutiura, $\lambda = 140^{\circ}.2E$ $\varphi = 36^{\circ}.1N$		
54	7 00 13	ENE off the coast of Tyôsi, $\lambda = 141^{\circ}.6E$ $\varphi = 36^{\circ}.0N$		
55	10 23 44	150-km. Eastern off the coast of Miyako, $\lambda = 143^{\circ}.7E$ $\varphi = 39^{\circ}.6N$		
56	Dec. 5 00 29	Off the coast of Erimo-saki, $\lambda = 144^{\circ}.6E$ $\varphi = 41^{\circ}.5N$		
57	10 08 35	Upper valley of river-Rokugô, $\lambda = 139^{\circ}.4E$ $\varphi = 35^{\circ}.7N$		
58	11 16 19	Upper valley of the Edo-gawa, $\lambda = 139^{\circ}.9E$ $\varphi = 35^{\circ}.8N$		
59	22 16 06	Neighbourhood of Takatuki, Upper valley of river-Yodo, $\lambda = 135^{\circ}.8E$ $\varphi = 34^{\circ}.9N$		
60	24 23 02	Neighbourhood of Simodate, valley of river-Kinu,		



## I.

## The principal Earthquakes in the Year 1925.

 1. Earthquake occurred at about 12<sup>h</sup> 07<sup>m</sup> on January 18th, 1925.

The area extending from the south-eastern part of the Tisima Islands (Kurile Is.) to the eastern part of Hokkaido was shaken slightly. The position of the epicentre of this earthquake was located at a distance of about 230 km. east to Syana, Itrup Island.

Some seismometrical data reported from our meteorological stations are as follows:—

Station	Time of occurrence			Duration of PL		First motion	Max. Amp. μ
	h	m	s	m	s		
Nemuro	12	07	28.0	1	19.0		306
Kusiro			43.0	1	30.0		60
Syana			50.0	1	30.0		
Ootomari			51.0	1	29.0	NE	1750
Obihiro			59.0	1	23.0		
Tyôsi		08	20.2	3	10.0		646
Niigata			30.2	4	10.6		1000
Nagano		09	38.0	4	43.0	NW	
Kumagaya			25.0	3	56.1	SES	75
Numadu			39.9	3	22.7		
Kôbe			53.3	5	12.7	NE	620
Wakayama		10	24.0	3	34.0	WSS	120

 2. Earthquake occurred at about 4<sup>h</sup> 06<sup>m</sup>, on January 18th, 1925.

This disturbance originated at a distance of about 150 km. to SE of Nemuro, Hokkaido and the coastal area between Hakodate and nemuro was slightly shaken. Some seismometrical data reported from the meteorological stations are as follows:—

Station	Time of occurrence			Duration of PL		First motion	Max. Amp. μ
	h	m	s	m	s		
Kusiro	04	06	03.0		28.0		
Obihiro			20.0		42.0		
Ootomari			47.0		52.0		3900
Hakodate				01	00.0		5400



Station	Time of occurrence			Duration of PL		First motion	Max. Amp.
	h	m	s	m	s		
Miyako	04 <sup>1</sup>	07	23.0	01	04.0	N 59°E	398
Numadu			44.0	02	14.5		
Tyôsi			47.6	02	14.2		959
Kumagaya			53.2	02	31.4	NEN	920
Tôkyô			54.5	02	35.9	NE	220
Oosaka		08	46.0	02	45.0		1975
Taihoku		11	45.0	08	10.0		18

### 3. Earthquake occurred at about 19<sup>h</sup> 47<sup>m</sup>, on February 2nd, 1925.

From 26th Jan. to Feb. 23, we experienced twenty three earthquakes at south-eastern off to the coast of Kusiro, Hokkaido, which is a part of the great outer earthquake zone of Japan. This disturbance is one of the greatest shocks of them, and was felt at many places along our Pacific coast from Hokkaido to Kwanto district. But as its hypocentrum lies in the far distant ocean bed (about 330 km. SE of Kusiro), no damage was done in this country.

Some seismometrical data reported from the meteorological stations are as follows :—

Station	Time of occurrence			Duration of PL		First motion	Max. Amp.
	h	m	s	m	s		
Kusiro	19	47	37.0		35.0		μ
Sapporo		48	04.0	01	00.0	NEE	
Hakodate			40.0	01	15.0		390
Tyôsi		49	01.7	02	10.0		90
Kumagaya			12.3	01	39.1		64
Tôkyô			15.9	02	58.4		149
Yokohama			31.0	02	15.0		514
Numadu			33.3	01	58.3		
Nagoya			49.0	03	00.0		40
Mera	19	49	56.0	01	25.0		
Kobe		50	07.0	02	26.0		15
Oosaka			28.0	02	46.8		1250
Hukuoka			32.0	04	27.0		
Nagasaki			57.0	06	29.0		
Taihoku			50.0	07	18.0		483



#### 4. Earthquake occurred at about 19<sup>h</sup> 52<sup>m</sup>, on April 16th, 1925.

This quake shook the whole of Taiwan (Formosa) and Isigaki I. and the seismic intensity estimated at various places is as follows:—

Seismic Intensity	{	Rather strong	Kôsyun, Tainan
		Moderate	Taito, Taityû, Isigaki I.
		Slight	Taihoku, Kwarenko.

This earthquake originated at a distance of about 80 km. SW of Kôsyun and some seismometrical data reported from the meteorological stations are as follows:—

Station	Time of occurrence			Duration of PL		First motion	Max. Amp. μ
	h	m	s	m	s		
Kosyun	19	52	10.0			WE	
Taitô			56.0		12.0		
Tainan			57.0		09.0		16300
Taihoku		53	34.0		59.5	S 6° W	
Isigaki I.		54	29.0	02	39.0		
Kagosima		55	43.0	02	57.0		
Hukuoka			59.0	03	50.0	to W	1610
Tokusima		56	10.0	02	36.0	N 45° E	
Sumoto			34.7	08	37.0		25
Oosaka			52.7	03	29.5		
Numadu		57	08.4	03	48.6	ENE	
Nagano			21.5	03	55.0		833
Mera			18.0	04	06.0		230
Tôkyô			30.0	04	13.0		
Kumagaya			30.4	03	57.0	WS	
Tyôsi			37.8	04	22.0	NWN	

#### 5. Earthquake occurred at about 15<sup>h</sup> 46<sup>m</sup>, on April 19th, 1925.

This disturbance originated in the valley of river Huzi, and at a distance of about 50 km. to SSW of Kohu. It was felt in the greater part of our country from Hokkaido to the North till Oosaka to the west. The duration of preliminary tremor observed even at the stations near the epicentre are comparatively long and the differences of the time of occurrences at any neighbouring stations are very small. From these facts and the hodograph of this earthquake it may be considered that the origin lies in a greater depth compared to any other earthquake occurred in the neighbourhood of this country.

Seismic intensity observed at the various meteorological stations are as follows:—



Seismic intensity	}	Strong	Kanayama.
		Rather strong	Yokosuka, Yokohama, Utunomiya.
		Slight	Hatizyô I., Mera, Mt. Tukuba, Hukui,
			Iida, Oosaka, Tokusima, Kumagaya, Tyôsi, Isinomaki, Kôhu, Kusiro.

Some seismometrical data reported from the meteorological stations are as follows :—

Station	Time of occurrence			Duration of PL		First motion	Max. Amp. μ
	h	m	s	m	s		
Nagoya	15	46	48.0		42.0		
Kure			50.8	1	00.0		
Gihu		47	17.6		43.4		490
Mera			32.0		42.2		710
Iida			35.0		37.8	NNW	1326
Oosaka			35.3		10.0	WNW	663
Yokohama			36.7		48.5		2133
Tôkyô			38.0		43.0	SSW	780
Kumagaya			44.7		45.8	SE	231
Tyôsi			46.1		49.8	SW	960
Miyako		48	18.0	1	16.0		135
Kusiro			57.0	1	55.0		
Sapporo		49	05.0	1	13.0		

### 6. The earthquake occurred at about 20<sup>h</sup> 41<sup>m</sup>, on April 19th, 1925.

This earthquake shook the Pacific coast of our main Island from Numadu to Miyako and several part of the coastal region of Japan Sea. Seismic intensity observed at several stations are as follows :—

Seismic intensity	}	Strong	Kanayama
		Rather strong	Miyako
		Moderate	Isinomaki, Akita, Mito, Yamagata
		Slight	Mt. Tukuba, Niigata, Tyôsi, Kumagaya, Maebasi, Kôhu, Numadu, Utunomiya, Hukui.

The Epicentre of this disturbance lies at a distance of about 60 km. to the east-south-east of cape Kinkwazan. Some seismometrical data reported from the meteorological stations are as follows :—



Station	Time of occurrence			Duration of PL		First motion	Max. Amp. $\mu$
	h	m	s	m	s		
Miyako	20	41	58.0	0	10.0	N 87. <sup>o</sup> 7E	1020
Isinomaki		42	09.0		10.0		
Yamagata			17.3		18.4	NE	700
Mito			40.0		32.0		380
Tyôsi			44.0		38.8	NE	466
Tôkyô			49.0		42.2		450
Kumagaya			50.0		37.8		202
Yokohama		43	00.4		48.0		1367
Gihu			15.0		66.9		536
Hikone			26.3		70.2		272
Nagoya			27.0		74.0		250
Oosaka			45.6		94.0		
Hirosima		44	03.9	1	33.6		50

### 7. Earthquake occurred at about 2<sup>h</sup> 0<sup>m</sup>, on April 20th, 1925.

This disturbance shook the area containing between the central and north eastern parts of our main Island. Seismic intensities observed at several stations are as follows:—

Seismic intensity	Rather strong	Miyako, Kanayama
	Moderate	Isinomaki, Midusawa
	Slight	Mito, Kumagaya, Mt. Tukuba, Numadu, Mera, Kôhu, Iida.

The epicentre of this earthquake lies at a distance of about 90 km. to ESE of Isinomaki. Some seismometrical data reported from the meteorological stations are as follows:—

Station	Time of occurrence			Duration of PL		First motion	Max. Amp. $\mu$
	h	m	s	m	s		
Miyako	02	00	37.0		13.0	NW	376
Isinomaki		00	44.0		9.0	N 67. <sup>o</sup> 7E	140
Midusawa		00	56.0		14.0		66
Kanayama		01	07.5		19.0		
Mito		01	12.0		34.0		100
Tyôsi		01	17.9		35.3	NEN	83
Tôkyô		01	24.6		43.5		157
Kumagaya		01	25.1		42.9		59
Nagoya		01	28.8		57.5		39



Station	Time of occurrence			Duration of PL		First motion	Max. Amp. $\mu$
	h	m	s	m	s		
Numadu		01	32.7		53.1		
Nagoya		02	03.0	01	66.0		40

### 8. Earthquake occurred at about 2<sup>h</sup> 09<sup>m</sup>, on May 23th, 1925.

On this day the Northern part of Tadima district experienced one of the most severe shakings which ever occurred in this vicinity during our historical age. Nearly all the buildings in the valley of River Maruyama and on the coast of the gulf of Tuiyama are suffered more or less degree. Three towns Toyooka, Kinasaki and Tuiyama were reduced to ashes by a big fire followed the great shock. 2545 houses were completely destroyed in this vicinity and 440 persons lost their lives. The felt area covers 550000 sq. km.

Seismic intensity observed at several stations are as follows:—

Seismic Intensity	Disastorous	Toyooka
	Strong	Tokusima, Kyôto, Tadotu, Yagi, Sumoto, Wakayama, Oosaka, Kobe
	Rather strong	Tu, Okayama, Hikone, Hukui, Hamada, Turuga, Kure, Matuyama, Iida, Kôhu
	Moderate	Niihama, Husiki, Gihu, Sisaka I., Kanazawa, Kôti, Takayama, Tôkyô
	Slight	Numadu, Saga, Yokohama, Siomisaki, Niigata.

The epicentre of this disturbance lies at a distance of about 10 km. to the north of the mouth of River Maruyama. Some seismometrical data reported from the meteorological stations are as follows:—

Station	Time of occurrence			Duration of PL		First motion	Max. Amp. $\mu$
	h	m	s	m	s		
Kyôto	02	09	44.0		16.1	NW	4400
Toyooka			57.0				
Okayama		10	07.4		17.0		3870
Hukui			12.0		16.5		1195
Wakayama			14.0		19.8	S 10° W	1700
Husiki			15.8		25.5	ENE	
Siomisaki			18.6		32.2		
Matumoto			28.0		41.0		51
Nagano			30.0		43.5		35
Numadu			39.1		49.0		2925



Station	Time of occurrence			Duration of PL		First motion	Max. Amp. $\mu$
	h	m	s	m	s		
Simonoseki		10	42.0		45.0		3333
Tôkyô			45.4	1	05.4		6700
Kumagaya			45.8		52.5		
Mito			57.0	1	07.0		5000
Hukuoka			59.7		57.6		2725
Saga		11	00.0	1	21.1		4380
Kagosima			13.0	1	32.4		1780
Miyako			36.0	1	27.0		372

**9. Earthquake occurred at about 16<sup>h</sup> 22<sup>m</sup>, on May 25th, 1925.**

The big shock of North Tazima district described in No. 8 was followed by a number of after shocks, and the present disturbance is the most severe one of them. The following table contains some seismometrical data reported from the meteorological stations.

Station	Time of occurrence			Duration of PL		First motion	Max. Amp. $\mu$
	h	m	s	m	s		
Sakai	16	22	22.0		16.0		
Hikone			29.3		17.0	WNW	1134
Kyôto			32.7		13.9	NW	2040
Sumoto			34.8		18.8	S 65°W	
Oosaka			40.4		17.9		35000
Okayama			42.8		17.4	SE	2240
Tokusima			44.0		16.7		790
Nagano		23	03.2		51.5		29
Numadu			08.1		48.7		613
Mera			20.0	1	01.0		83
Tôkyô			26.3		58.0		260
Hukuoka			30.0		59.0		1000
Kagosima			57.0	1	43.0		520

**10. Earthquake occurred at about 02<sup>h</sup> 30<sup>m</sup> on May 27th, 1925.**

This earthquake originated far off the coast of North Tazima, and at a distance of about 160 km to the north of Toyooka. Felt area of this disturbance is quite abnormal, and includes not only Simane, Tottori, Kyôto and Hukui prefectures in the coastal region of Japan sea, but Pacific coastal region from Sikoku to Hokkaido, having an unfelt zone between them which runs the middle part of our main



Island along the central mountain ranges from west to north east. Seismic intensity observed at some stations are as follows :—

Seismic intensity	{	Moderate	Matuyama, Hukui
		Slight	Kôhu, Asio, Kyôto, Hikone, Miyadu, Numadu, Isinomaki, Yokohama, Maebasi, Obihiro, Turuga, Miyako, Kusiro, Yagi, Sakai.

Some seismometrical data reported from the meteorological stations are as follows :—

Station	Time of occurrence			Duration of PL		First motion	Max. Amp.
	h	m	s	m	s		
Kyôtô	02	30	37.2		34.8	NE	668 <sup>μ</sup>
Hikone			52.3		44.2		1246
Sumoto			52.5		56.9	S 21°E	456
Nagano			59.5		54.0		100
Numadu		31	02.9	01	03.2		1575
Okayama			03.5		41.2		1575
Hukuoka			09.4	01	08.5		925
Kumagaya			12.1		56.7		255
Isinomaki			13.5	01	07.0		242
Simonoseki			19.0	01	06.0		290
Maebasi			21.9	01	08.9		398
Miyazaki			20.4	01	10.8	SW	1332

### 11. Earthquake occurred at about 05<sup>h</sup> 38<sup>m</sup>, on June 14th, 1925.

Kwarenko on the east coast of Formosa experienced 372 shocks from 10th to 16th of this month. This disturbance was one of the most severe ones among them. Several houses and many stone-walls were destroyed, but this disturbance was local one and damage done was limited to a small area around Kwarenko.

Some seismometrical data reported from the meteorological stations are as follows :—

Station	Time of occurrence			Duration of PL		First motion	Max. Amp.
	h	m	s	m	s		
Kwarenko	05	37	35.0				
Taityû		38	33.6		13.0		141
Kosyun			35.0		28.2		
Taihoku			38.0		13.0		683
Taitô			40.0		17.0		2750



Station	Time of occurrence			Duration of PL		First motion	Max. Amp. μ
	h	m	s	m	s		
Hōko			53.0		23.0		500
Tainan	39	00.0			20.0		

### 12. Earthquake occurred at about 04<sup>h</sup> 44<sup>m</sup>, on June 13th, 1925.

By this disturbance was shaken the area including the Pacific coast of Hokkaido and that of north eastern part of our main Island. The epicentre situated at a distance of about 60 km to WSW of Cape Erimo. Some seismometrical data reported from meteorological stations are as follows:—

Station	Time of occurrence			Duration of PL		First motion	Max. Amp. μ
	h	m	s	m	s		
Obihiro	04	44	15.0		03.0	NW	
Supporo			25.0		12.6	WNW	1740
Miyako			40.0			SES	616
Isinomaki			51.5		44.0		150
Ootomari		45	01.0			NEN	
Tyosi			27.6	01	14.0	NE	77
Kumagaya			31.4	01	09.7		58
Tōkyō			37.1	01	13.7		10
Oosaka		46	10.8	02	13.1		100

### 13. Earthquake occurred at about 19<sup>h</sup> 21<sup>m</sup>, on July 3rd, 1925.

This disturbance was felt strongly at Sakai, west of Tottori prefecture. In the neighbourhood of the epicentre, roof tiles of several houses were dislodged, tomb stones were upset or rotated. Many cracks were produced on the walls of several houses.

The epicentre of this earthquake is situated in Bay of Miho, Tottori prefecture and following table contains some seismometrical data reported from the meteorological stations.

Seismic intensity	{	Strong	Sakai
		Rather strong	Kure
		Moderate	Matuyama, Miyadu, Hiroshima
		Slight	Okayama, Toyooka, Sumoto, Hamada, Kyōto, Hukui, Oosaka, Tokusima.



Station	Time of occurrence			Duration of PL		First motion	Max. Amp.
	h	m	s	m	s		
Toyooka	19	21	10.0		15.4	E 16°S	16
Miyadu			11.0				700
Tadotu			11.0		15.0		360
Hirosima			17.2		16.2		1090
Kyôto			19.4		29.7	NNW	160
Wakayama			20.0		25.0		
Oosaka			24.5		24.0	N 57°W	700
Simonoseki			33.0		32.0		778
Hukuoka			35.7		40.4		133
Miyazaki			37.2		55.3		68
Iida			48.0		40.9		184
Nagasaki			57.0				40
Kumagaya		22	05.7				16
Maebasi		22	15.9	1	04.1		12
Numadu			20.0		58.4		
Yokohama			26.4	1	09.6		157
Tôkyô			29.0	1	09.0		100
Tyôsi			33.1	1	28.5		
Husan			41.0				

**14. Earthquake occurred at about 16<sup>h</sup> 46<sup>m</sup>, on July 6th, 1925.**

On this day the Mino-Owari prefecture experienced one of the most severe quakes which have occurred in this vicinity since the great famous earthquake of Oct. 27, 1891 which caused one of the great fault at Midori.

The felt area of this disturbance includes tolerably greater part of the main Island from Okayama to the west to Maebasi to the East and slight damages was inflicted on some houses and grave atones. The epicentre lies in the former fault, caused by the earthquake mentioned above and situated at a distance of about 10km of Gihu city.

The following tables contain the seismic intensity and some seismometrical data reported from the meteorological stations.

Seismic intensity	{	Strong	Gihu
		Rather Strong	Nagoya, Hikone, Hamamatu
		Moderate	Tu, Kyôto, Toyooka, Yagi, Hukui, Kôhu
		Slight	Iida, Oosaka, Wakayama, Tokusima, Sumoto, Miyadu, Kanazawa, Numadu.



Station	Time of occurrence			Duration of PL		First motion	Max. Amp. μ
	h	m	s	m	s		
Tu	16	46	54.6		9.4	NNE	
Hikone			59.5		6.9	N 73°E	1640
Kyôto		47	05.6		14.4	NNE	800
Hamamatu			08.0		10.0	NNW	260
Matumoto			14.0		10.0	SSW	
Gihu			15.8		5.3	E	224
Tokusima			18.0		16.0	NE	
Hukui			21.1		9.7		
Numadu			21.3		26.3		675
Maebasi			29.4		29.1		383
Kumagaya			30.0		36.0	ENE	191
Tôkyô			33.7		35.0		40
Mito			41.0		46.0		
Morioka		48	15.9	01	09.6		
Hukuoka			22.7		19.5		17
Nagasaki			57.0		23.0		15

**15. Earthquake occurred at about 12<sup>h</sup> 50<sup>m</sup>, on August 19th, 1925.**

On this day a strong local shock was experienced in Mie prefecture and it was felt in the area extending from Kôbe to Kôhu. The epicentre lies in the upper valley of River Suzuka at a distance of about 26 km to NNW of Tu City. Some seismometrical data observed at the meteorological stations are as follows:—

Station	Time of occurrence			Duration of PL		First motion	Max. Amp. μ
	h	m	s	m	s		
Tu	12	50	17.3			WSW	11000
Gihu		51	31.9		8.4	SW	590
Yagi			32.8		10.2	SW	1167
Hikone			34.5		11.4	N 10°W	1930
Wakayama			38.0		12.9		224
Oosaka			38.1		13.6	S 52°W	750
Sumoto			45.3		15.8		113
Numadu			47.6		21.6	WNW	200
Toyooka			49.2		20.8		
Nagano		52	01.5				100
Kumagaya			07.7		40.5		



Station	Time of occurrence			Duration of PL		First motion	Max. Amp. $\mu$
	h	m	s	m	s		
Mito	12	52	11.0		36.5		50
Miyazaki			38.4	1	21.3		
Isinomaki			50.0	1	24.0		

**16. Earthquake occurred at about 09<sup>h</sup> 42<sup>m</sup>, on October 20th, 1925.**

This disturbance originated at a distance of about 350 km south of Hatizyo I. It is interesting to observe that while it was not felt at all in the island, but Mito, Utunomiya, Onahama and Titizima on the Pacific coast of our main Island were slightly shaken. Such an abnormality of felt area was experienced sometimes by the earthquakes which occurred in this region.

Some seismometrical data reported from the meteorological stations are as follows :—

Station	Time of occurrence			Duration of PL		First motion	Max. Amp. $\mu$
	h	m	s	m	s		
Maebasi	09	42	47.6	1	34.9		43
Kohu		43	21.0	1	07.0		
Oosaka			30.5	1	50.0		675
Numadu			34.7	1	24.3		
Nagoya			35.0	1	41.0		40
Mera			43.0	1	18.0		37
Tu			43.2	1	26.7		
Wakayama			45.4	1	32.5		100
Sumoto			50.0	1	31.9		54
Hikone			51.3	1	35.3	NE	
Kyôto			55.0	1	34.1		130
Miyazaki			55.5	1	39.2		180
Kumagaya			56.0	1	34.0		39
Tôkyô			58.7	1	30.8		93
Kagosima	44	00.0		1	44.0		130
Nagasaki			12.5	1	53.0		90
Hirosima			15.4	1	38.4		
Hukuoka			21.0	1	42.0		
Morioka			36.2	2	08.7		
Obihiro	45	44.0		2	35.0		



**17. Earthquake occurred at about 17<sup>h</sup> 00<sup>m</sup>, on November 26th 1925.**

From western part to the middle part of our Main Island and the northern part of Sikoku are shaken by this quake. The epicentre is situated at a distance of about 10 km N of cape Kyogasaki, Tango District.

Seismic intensity and some seismometrical data reported from the meteorological stations are as follows:—

Seismic intensity	Strong	Toyooka
	Moderate	Hukui, Turuga, Kyôto
	Slight	Hirosima, Hikone, Oosaka, Miyadu, Yagi, Sumoto, Gihu, Tu, Tadotu, Sakai, Takayama.

Station	Time of occurrence			Duration of PL		First motion	Max. Amp.
	h	m	s	m	s		
Toyooka	16	59	57.1		2.2		525 <sup>0</sup>
Tyôsi	17	00	3.8		13.5	NE	27 <sup>0</sup>
Hikone			11.5		15.8	S 64° 5W	384
Oosaka			14.1		15.0	NNW	800
Kôbe			18.0		15.0		41 <sup>0</sup>
Yagi			20.5		17.4		70 <sup>0</sup>
Sumoto			21.7		16.8		136
Nagoya			25.0		20.0		204
Matumoto			35.0		34.0		
Numadu			41.8		43.3		
Tôkyô		01	08.6		52.0		25
Miyazaki			22.9	1	03.3		4 <sup>0</sup>



List of Volcanic activities in the Year 1925.

Name of Volcano	Date		Time		Remarks
	Day		h	m	
Yake-Dake $\lambda = 137^{\circ}36'$ $\varphi = 36^{\circ}14'$ $h = 2053\text{m}$	Jan.	13	4	30	Emitted smoke protruding five times as high as usual height. A tremendous sound was heard.
	Feb.	10	2	—	A short sound heard and smoke was emitted more than in an ordinary day.
	Mar.	28	1	05	Tremendous Sound was heard and much smoke was emitted.
	April	27	12	45	Small eruption. Earthquake was felt at Matumoto.
	May	2	6	17	Small eruption. Earthquake was felt in the environs.
	May	13	7	35	Small eruption. Earthquake was felt in the environs.
	May	14	16	30	Rumbling sounds heard for about 24 minutes.
	May	17	18	—	Rumbling sounds heard like a distant thunder. No smoke is emitted.
	May	19	10	40	Sounds like a distant thunders were heard for two minutes. Smoke emitted greatly.
	May	21	13	—	Minor tremor felt.
	June	26	19	45	Great eruption of smoke. Small sound was heard. Ashes fell over a large area.
	Aug.	2	18	30	Great eruption of smoke and vapour. No sound was heard.
	Sept.	21	23	30	Great eruption of smoke.
	Oct.	4	6	30	Tremendous sound was heard and earthquake was felt in the neighbourhood.



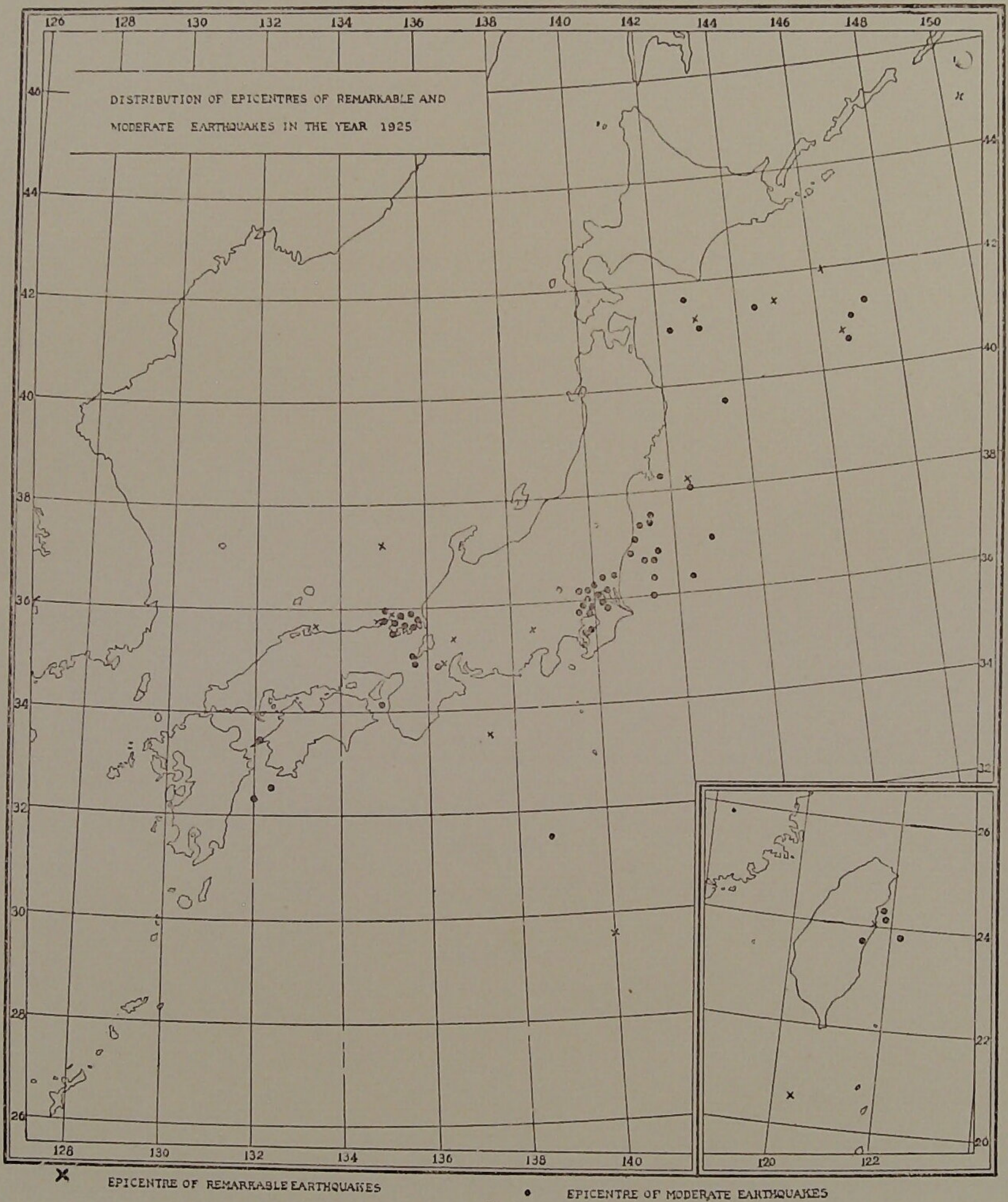
Name of Volcano	Date		Time		Remarks
	Day		h	m	
Yake-Dake $\lambda = 137^{\circ}36'$ $\varphi = 36^{\circ}14'$ $h = 2053\text{m}$	Oct.	12	6	10	Tremendous sound was heard and earthquake was felt in the neighbourhood. Great volume of smoke and vapour was emitted.
	Oct.	13	3	30	Smoke was emitted.
	Oct.	22	20	20	Small eruption.
	Oct.	24	12	50	Great eruption. Fire like lightning spark was seen. Smoke was emitted as high above 1200 km.
	Oct.	24	14	—	Earthquake was felt in the neighbourhood. Smoke was emitted.
	Oct.	26	8	55	Greater volume of smoke and vapour was emitted with tremendous sound. Fire column like lightning flash was seen.
	Oct.	31	20	—	Eruption. A few new small craters were made at the half way up the mountain. Greater volume of smoke and vapour was emitted. Faint sound was heard.
	Nov.	11	22	50	Eruption. Greater volume of smoke and vapour was emitted with tremendous sound. Earthquake was felt in the neighbourhood.
	Nov.	12	21	53	Earthquake was felt with tremendous sound.
	Nov.	13	6	—	Sound like thunder was heard.
	Dec.	3	12	30	A single sound like cannon was heard. Small volume of ashes was seen.
	Dec.	10	12	10	Tremendous sound was heard. Mountain top was covered with ashes.
	Dec.	11	8	43	Small eruption in the old crater.
Dec.	14	1	28	Minor tremor was felt in the neighbourhood.	



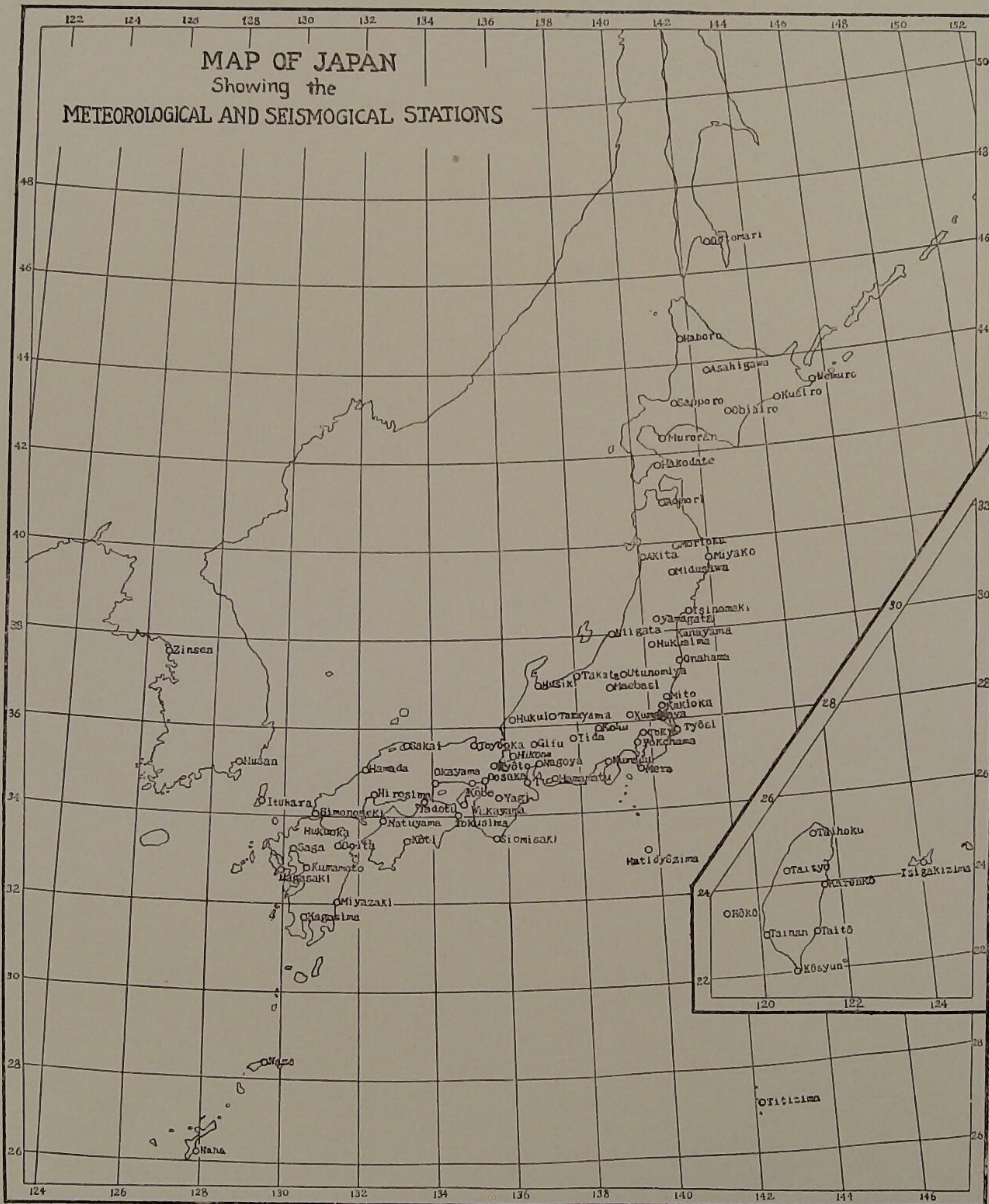
Name of Volcano	Date		Remarks
	Day	Time	
Yake-Dake $\lambda = 137^{\circ}36'$ $\varphi = 36^{\circ}14'$ $h = 2053\text{m}$	Dec. 22	6 16	Earthquake was felt in the neighbourhood with tremendous sound.
	Dec. 24	12 14	Tremendous sound was heard and minor tremor was felt.
	Dec. 24	23 —	Sound was heard and minor tremor was felt.
	Dec. 26	15 40	Lava was emitted with tremendous sound.

Name of Volcano	Date		Remarks
	Day	Time	
Suwanose-Zima $\lambda = 129^{\circ}43'$ $\varphi = 29^{\circ}32'$	May 13	2 30	Eruption. Earthquake was felt with tremendous sound. Lava was spouted high above the sky and fallen ashes covered the whole island.

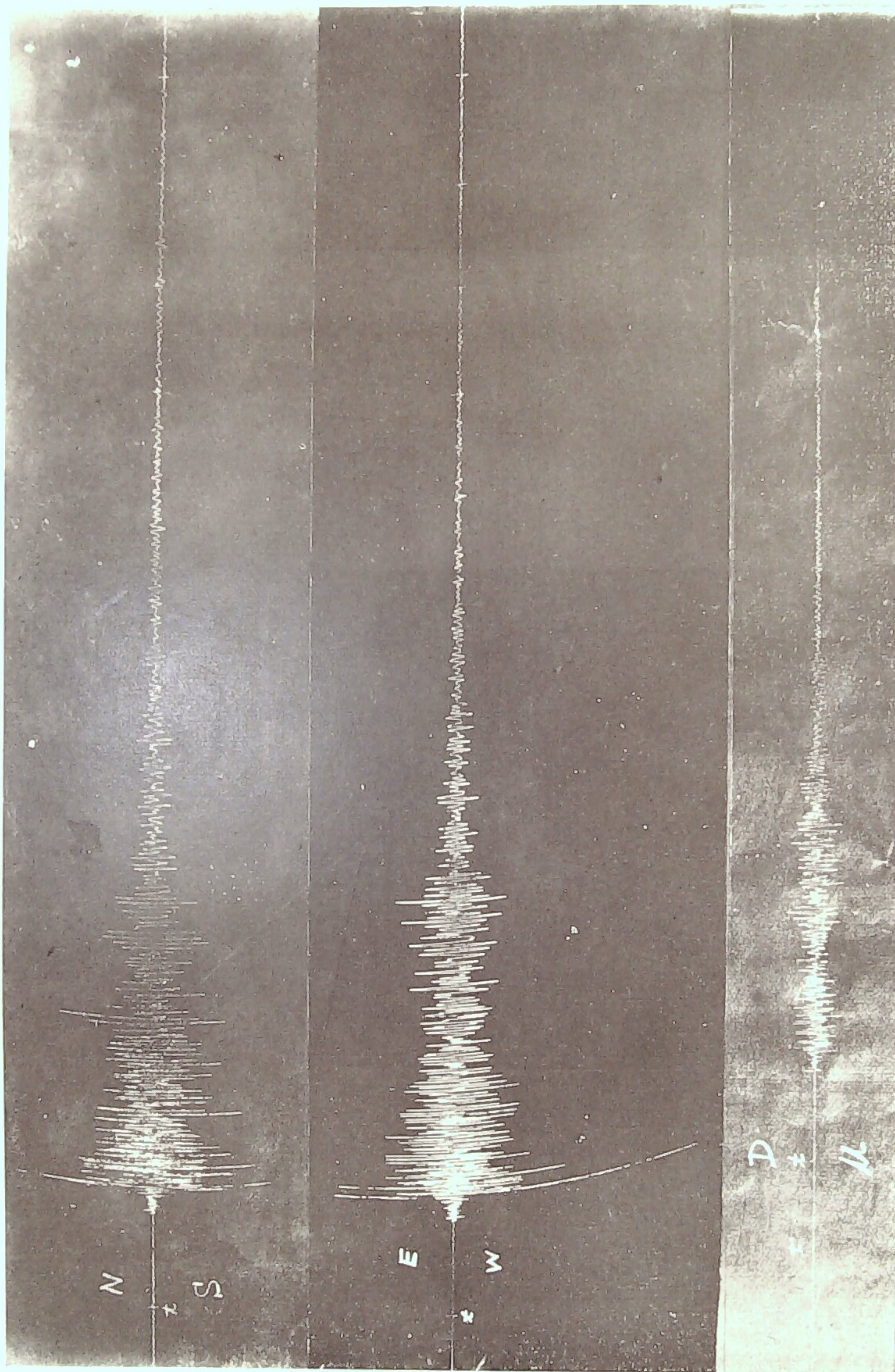












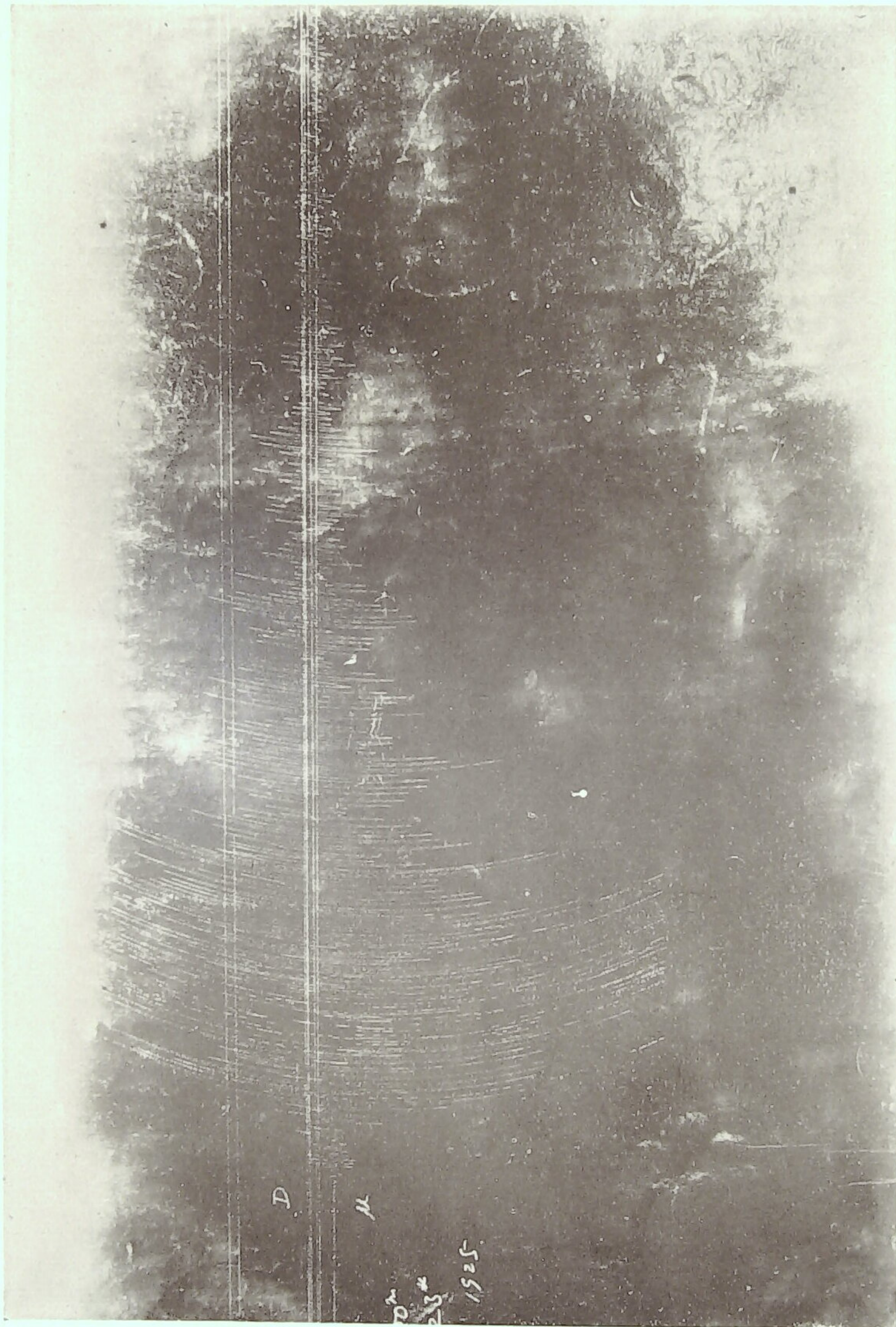
Record of Wiechert's Seismograph, Mito Earthquake occurred on Jan. 22nd, 1625.





Tokyo Record of Wiechert's Horizontal Seismograph, North Tazima Earthquake occurred on May 23rd, 1925.





Tokyo Record of Wiechert's Vertical Seismograph, North Tazima Earthquake occurred on May 23rd, 1925.



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