

GOVERNMENT OF INDIA
METEOROLOGICAL DEPARTMENT
SEISMOLOGICAL BULLETIN

JANUARY-MARCH, 1944.

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Director General of Observatories

SEISMOLOGICAL BULLETIN

January—March, 1944.

INTRODUCTION

Till the end of 1937, the seismic data from the observatories of the India Meteorological Department were being published annually as Part D of the Annual Summary of the India Weather Review. Since 1938, the data are being published in the present series of the Quarterly Seismological Bulletin. With the kind co-operation of the Surveyor-General of India, the Director of the Nizamiah Observatory, Hyderabad, and of the Superintendent, Colombo Observatory, it has been possible to incorporate in the bulletin, the data of their respective observatories, *viz.*, Dehra Dun, Hyderabad and Colombo. The instrumental seismological data and the non-instrumental voluntary observations are collected and edited at the Meteorological Office, Poona.

TABLE 1.
List of Seismograph Stations.

Station	Latitude	Longitude	Height above M. S. L.	Lithologic foundation	Officer-in-charge of Observatory
New Delhi	28° 35' N.	77° 12' E.	207 meters	Massive Quartzites	Superintending Meteorologist.
Bombay	18° 54' N.	72° 49' E.	6 meters	Deccan Trap	Director.
Calcutta	22° 32' N.	88° 20' E.	(1) 7 meters. (2) 6 meters.	Alluvium	Metrologist
Colombo	6° 54' N.	79° 52' E.	7 meters	Beach-Sand resting on gneiss probably decomposed.	Superintendent.
Dehra Dun	30° 19' N.	78° 03' E.	682 meters	Gravel	Director, War Research, Survey of India.
Hyderabad	17° 26' N.	78° 27' E.	528 meters	Granite	Director.
Kodalkanal	10° 14' N.	77° 28' E.	2,343 meters	Rock	Director.

(1) Milne-Shaw.

(2) Omori-Ewing.

TABLE 2.
The instruments and their constants.

Stations.	Component.	Type of Instruments	Mass.	Period	Static magnification	Damping Ratio.	Remarks
			Kg.	Secs.			
New Delhi	E	Omori-Ewing	45	32	30	...	...
	N	Milne-Shaw	0.47	12	250	20 : 1	..
Bombay	N	Milne-Shaw	0.45	12	250	18 : 1	...
	E	Milne-Shaw	0.45	12	350	12 : 1	...
Calcutta	N	Milne-Shaw	0.45	12	250	20 : 1	...
	E	Omori-Ewing	50	16	30	...	...
	N	Omori-Ewing	50	15	32	...	...
Colombo	E	Milne-Shaw	0.45	12	250	20 : 1	...
Dehra Dun	N	Omori	50	30	12	...	...
Hyderabad	N	Milne-Shaw	0.45	12	250	20 : 1	...
	E	Milne-Shaw	0.45	12	250	20 : 1	...
Kodalkanal	E	Milne-Shaw	0.45	10	250	20 : 1	...

UPPER AIR OFFICE, NEW DELHI

Table for January 1944 with columns: Date, Compt., Phase, G.M.T., Per. Amp., Remarks. Includes sub-table for 1944 Contd. Jan. 10-28.

UPPER AIR OFFICE, NEW DELHI

Table for February 1944 with columns: Date, Compt., Phase, G.M.T., Per. Amp., Remarks. Includes sub-table for 1944 Feb. 1-5.

UPPER AIR OFFICE, NEW DELHI.

Date	Compt.	Phase	G. M. T.	Per. Amp	Δ	Remarks	Date	Compt.	Phase	G. M. T.	Per. Amp	Δ	Remarks
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February, 1944.

February, 1944.						February, 1944.					
Date	Compt.	Phase	G. M. T.	Per. Amp	Δ	Date	Compt.	Phase	G. M. T.	Per. Amp	Δ
Feb 29	N	PPP	34 58	...	...	Feb.	E	L	41 42	...	...
		PcP	37 22	...	...			L	41 44	...	...
		IS	38 48	...	...		N	M	43 32	...	...
	E	IS	38 58	...	...		E	Mn	43 50	14	1897
	N	1	39 37	...	...		N	Mn	44 33	16	607
		SS	39 5	...	...			Y	21	...	...

March, 1944.

March, 1944.						March, 1944.							
Date	Compt.	Phase	G. M. T.	Per. Amp	Δ	Date	Compt.	Phase	G. M. T.	Per. Amp	Δ		
Mar. 2	N	eP	11 22 16	...	3170	Slight.	Mar. 10	N	eP	06 49 17	...	6,080	Slight.
		eS	27 00	...	...			eS	56 57	...	...
		M	31 31	...	...			PS	57 14	...	...
		Mn	34 12	12	9			SS	07 00 31	...	...
		F	12 17	...	...			SSS	01 29	...	...
.. 5	N	1	13 03 49	...	...	Slight. Very distant.		M	11 57	...	...
		1	13 45	...	...			F	08 10	...	...
		1	15 26	...	...		.. 11	N	e	06 24 06	...	...	Slight. Distant.
		1	23 35	...	...			F	54	...	...
		F	14 24	...	...		.. 15	N	eP	05 06 36	...	1,350	Moderate.
.. 5	N	eP	17 24 48	...	5,590	Slight.		PP	06 41	...	...
		PP	26 45	...	...		N. E	IS	08 51	...	...
		eS	31 43	...	...		N	SS	08 57	...	...
		1	34 28	...	...		E	SS	08 58	...	...
		1	36 13	...	...		N	L	09 39	...	...
		M	45 10	...	...		E	M	10 21	...	...
		F	18 10	...	...		E	M	10 23	...	...
.. 7	N	eP	20 40 26	...	5,885	Slight.	N	Mn	11 31	11	72		
		IS	47 48	...	...			F	Lost in the following shock.				
		SS	50 16	...	...		.. 15	N	eP	05 52 51	...	1320	Slight.
		M	59 33	...	...		E	eS	55 00	...	...
		F	21 28	...	...		N	IS	55 03	...	...
.. 8	N	e	05 49 36	...	...	Feeble.	E	SS	55 07	...	...
		F	06 20	...	...		N	SS	55 09	...	...
.. 9	E	eP	22 07 20	...	1,750	Moderate.	E	M	56 33	...	...
		PP	07 30	...	...		N	M	56 35	...	...
		IS	10 13	...	...			F	Lost in the following shock.				
		SS	10 35	...	...		.. 15	N	P	06 20 10	...	1,320	Slight.
		M	12 37	...	...		E	eS	22 22	...	...
		Mn	13 46	22	290		N	eS	22 25	...	...
		F	Lost in the following shock.				E	M	23 53	...	...
.. 9	E	eP	22 16 41	...	1640	Moderate.	N	Mn	25 01	10	29		
		IS	19 23	...	...			F	07 00	...	...
		SS	19 49	...	...		.. 15	N	IP	09 10 29	...	2,970	Slight. Direction of first motion South
		M	21 54	...	...			PP	11 06	...	...
		nM	23 39	12	1400			PcP	13 33	...	...
		F	39	...	...						

UPPER AIR OFFICE, NEW DELHI.

Date	Compt.	Phase	G. M. T.	Per. AMP	Δ	Remarks	Date	Compt.	Phase	G. M. T.	Per. AMP	Δ	Remarks
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March, 1944.

1944 March 15						1944 March 22							
Date	Compt.	Phase	G. M. T.	Per. AMP	Δ	Date	Compt.	Phase	G. M. T.	Per. AMP	Δ		
15		IS	15 03	...	...	22		1	06 58	...	...
		M	19 52	...	...			M	18 59	...	...
		F	43	...	...			F	02 57	...	...
.. 21	N	P	22 19 14	...	5,990	Slight.	.. 25	N	P	17 15 29	...	370	Slight.
		IS	26 49	...	...			eS	15 54	...	...
		F	23 18	...	...			S*	16 05	...	...
.. 22	N	IP	00 52 48	...	6,380	Slight. Direction of first motion South.		S	16 13	...	...
	E	IP	52 50	...	...			F	21	...	...
	N	pP	53 23	...	...		.. 30	N	e	15 42 50	...	...	Slight. Distant.
	E	PcP	53 44	...	...			1	44 35	...	...
		PP	55 04	...	...			M	48 23	...	...
	N	IS	01 00 29	...	...			F	16 04	...	...
	E	IS	00 31	...	...		.. 31	N	IP	03 01 59	...	6,740	Slight. Probably deep.
	N	PS	01 11	...	...			PcP	02 39	...	...
	E	PS	01 18	...	...			IS	10 16	...	...
	N, E	eS	01 38	...	...			PS	10 25	...	...
	N	ScS	02 17	...	...			ScS	11 51	...	...
	E	ScS	02 19	...	...			1	13 02	...	...
	N	SS	03 24	...	...			SS	14 11	...	...
	E	SS	04 31	...	...			SSS	15 52	...	...
	N	eSS	05 36	...	...			L	22 15	...	...
		SSS	06 24	...	...			F	04 33	...	...

UPPER AIR OFFICE,
NEW DELHI.

S. K. PRAMANIK,
Superintending Meteorologist.

COLABA OBSERVATORY, BOMBAY.

COLABA OBSERVATORY, BOMBAY.

Table header for page 6: Date, Compt., Phase, G.M.T., Per. Amp, Δ, Remarks

January, 1944.

Main data table for page 6, containing earthquake records for January 1944 with columns for Date, Compt., Phase, G.M.T., Per. Amp, Δ, and Remarks.

Table header for page 7: Date, Compt., Phase, G.M.T., Per. Amp, Δ, Remarks

January, 1944.

Main data table for page 7, containing earthquake records for January 1944 with columns for Date, Compt., Phase, G.M.T., Per. Amp, Δ, and Remarks.

COLABA OBSERVATORY, BOMBAY

COLABA OBSERVATORY, BOMBAY.

Date	Compt.	Phase	G. M. T.	Per. Amp	△	Remarks	Date	Compt.	Phase	G. M. T.	Per. Amp	△	Remarks
March, 1944.													
1944			h. m. s.	Sec.	μ	Km.	March 12			h. m. s.	Sec.	μ	Km.
March 7	E	e	20 40 45	...	...	5,990		N	ScS	07 11	...	...
	N	IS	40 08	...	...			N,E	Mn	10 00	...	...
	E	IS	48 12	...	...			N,E	F	25 00	...	...
	N,E	F	21 15 00	...	...		March 15	N	eP	05 08 41	...	...	2500
	N	i	05 43 33	...	...			E	eP	08 44	...	...
	E	i	43 34	...	...			N	i	08 46	...	...
	N	i	46 47	...	...			N	PP	09 06	...	...
	E	e	46 50	...	...			E	PeP	12 25	...	...
	N	eL	47 08	...	...			N	PeP	12 27	...	...
	E	L	48 00	...	...			E	S	12 37	...	...
	N,E	F	06 25	...	...			N	S	12 41	...	...
	N,E	IP	22 09 18	...	...	3,135		N	S	13 13	...	...
	N	PPP	10 20	...	...			E	Mn	15	...	...
	N	IS	14 02	...	...			N	Mn	17 07	8	18	
	N	SS	15 25	...	...			N,E	F	50	...	...
	N	L	17 19	...	...		.. 15	N	eP	05 54 47	...	...	2500
	E	L	17 26	...	...			N	i	54 51	...	...
	N,E	F	Lost in shock.	the following				E	(PeP)	58 41	...	...
.. 9-10	N	IP	22 18 33	...	...	3,135		N	S	58 50	...	...
	E	i	18 41	...	...			N	SS	59 24	...	...
	N	i	18 48	...	...			E	Mn	06 01	...	...
	N	i	19 07	...	...			N	Mn	03 10	9	5	
	N	PP	19 22	...	...			N,E	F	20 00	...	...
	E	IS	23 19	...	...		.. 15	N	eP	06 22 08	...	...	2500
	E	Mn	29	16	275			N	i	22 12	...	...
	N	Mn	30 07	14	614			E	S	26 06	...	...
	N,E	F	00 30	...	...			N	S	26 07	...	...
March 10	N,E	eP	06 50 23	...	...	6890		N	SS	26 39	...	...
	N,E	IP	50 25	...	...			E	Mn	29 00	...	...
	N	PeP	51 06	...	...			N	Mn	30 33	9	7	
	N	PP	52 41	...	...			N,E	F	40 00	...	...
	E	PP	52 45	...	...		.. 15	E	(P)	09 07 29	...	...	2935
	N	PS	59 11	...	...			N,E	(S)	11 58	...	...
	E	PS	59 16	...	...			E	Mn	16	...	...
	N	i }	07 02 15	...	...			N,E	F	40	...	...
	N	SS	02 45	...	...						...	...
	N	Mn	19 00	...	...		.. 21	E	P	22 20 16	...	...	6945
	E	Mn	19 33	16	4			N	P	20 17	...	...
	N,E	F	55	...	...			N	i	20 27	...	...
	N	eP	05 03 05	...	...	2,355		E	i	20 30	...	...
	N	PP	03 10	...	...			N,E	S	23 43	...	...
	N	eS	03 28	...	...			E	PS	23 58	...	...
	N		06 54	...	...			N	PS	29 00	...	...
				...	...				PPS	29 08	...	...
				...	...			E	SS	32 58	...	...
				...	...			N	Mn	48 00	...	...
				...	...			E	Mn	50 00	...	...
				...	...			N,E	F	23 02 00	...	...

Date	Compt.	Phase	G. M. T.	Per. Amp	△	Remarks	Date	Compt.	Phase	G. M. T.	Per. Amp	△	Remarks
March, 1944.													
44			h. m. s.	Sec.	μ	Km.	March 22	N, E	IP	00 52 42	...	...	6,270
								N, P	PP	53 22	...	...
								E	PeP	53 32	...	...
								E	PP	54 46	...	...
								N	PPP	56 16	...	...
								N	IS	01 00 17	...	...
								E	IS	00 19	...	...
								N	SP	00 26	...	...
								E	SPP	00 39	...	...
								N	sS	01 26	...	...
								E	sS	01 28	...	...
								N	i	03 27	...	...
								E	i	03 30	...	...
								N, E	F	02 15	...	...
							March 26	E	e	16 19 59	...	...	Feeble.
								N	e	20 02	...	...
								N, E	e	20 15	...	...
								E	e	22 (24)	...	...
								E	e	28 02	...	...
								N	e	28 03	...	...
								N, E	F	40 00	...	...
							.. 32	N	eP	03 02 02	...	...	6,880
								E	IP	02 03	...	...	Slight 1/2 S., 3 1/2 E. Papua. 0=08h. 51m. 4 1/2.
								E	PP	04 11	...	...
								E	IS	10 21	
								N	IS	10 22	
								E	Mn	26	
								N, E	MF	04 00	

COLABA OBSERVATORY
BOMBAY.

S R. SAVUR,
Director

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ALIPORE, OBSERVATORY, CALCUTTA.

Date	Compt.	Phase	G.M.T.	Per. Amp	Δ	Remarks	Date	Compt.	Phase	G.M.T.	Per. Amp	Δ	Remarks
January, 1944.													
1944			h. m. s.	Sec.	μ	Km.				h. m. s.	Sec.	μ	Km.
Jan. 1	N	e	10 00 18	...	...	Slight.	Jan. 10	N	ePKP	20 29 29	...	...	13,890
		is	03 04	...	...				PP	32 30	...	...
		F	30	...	...				IPKS	33 05	...	...
.. 3	N	eP	09 53 16	...	2,200	Slight.			ISKKS	39 18	...	...
		eS	56 52	...	...				F	Lost in the following shock.			
		F	10 37	...	...		.. 10	N	IPKS	20 56 30	...	...
.. 4	N	eP	16 01 44	...	2,500	Slight.	.. 12	N	IS	18 12 56	...	...	Sght. li
		IS	05 44	...	...				ISS	13 22	...	...
		F	17 00	...	...				L	16 06	...	...
.. 5	N	IP	21 18 36	...	3,020	Moderate, Direction of first movement North	.. 16	N	eP	00 09 32	...	...	17,500 Moderate
		IPP	19 16	...	...				PP	13 42	...	...
		IPPP	19 31	...	...				SKKS	20 25	...	...
		IS	23 21	...	...				SKSP	24 20	...	...
		ISS	24 36	...	...				IPPS	27 02	...	...
		M	23 36	...	...				ISS	33 24	...	...
		Mn	33 21	20	293				eL	59 12	...	...
		F	23 33	...	...				M	01 09 42	...	...
		epP	02 59 57	...	...	Slight.			F	03 14	...	...
.. 7	N	is	03 07 37	...	...	h—125 km.	.. 18	N	e	23 11 01	...	...	Feeble.
		isS	08 25	...	...				I	14 51	...	...
		ISS	11 55	...	...				F	Lost in microseisms.			
		F	04 19	...	...		.. 20	N	eSS	12 43 15	...	...	Slight.
.. 7	N	eS	09 12 03	...	...	Slight.			i	53 03	...	...
		e	17 12	...	...				Mn	58 23	...	...
		F	19 43	...	...		.. 25	N	e	07 41 34	...	...	Slight.
		PP	14 27 33	...	...	Slight.	.. 28	N	e(S)	23 17 55	...	...	Slight, near.
		IS	31 48	...	...				e	21 57	...	...
		F	15 31	...	...				F	36	...	...
February, 1944.													
Feb. 1	N	ep	03 31 27	...	5,800	Great. Epic : Near Gerede in Turkey.	Feb. 2	N	eS	03 49 25	...	...	Feeble.
		IPP	33 27	...	...				F	04 22	...	...
		IPPP	34 24	...	...		.. 3	N	SKS	12 38 04	...	...	Slight distant
		IS	38 57	...	...				Mn	13 11 42	...	...
		ISS	42 34	...	...				F	42	...	...
		IL	47 27	...	...		.. 5	N	eP	17 26 21	...	...	2,16 Moderate.
		M	51 37	...	...				IS	30 00	...	...
		Mu	57 27	20	747				ISS	30 41	...	...
		F	Lost in microseisms.						IL	31 31	...	...
.. 1	N	e	21 40 56	...	...	Slight, distant.			M	33 16	...	...
		F	22 17				Mn	43 06	10	143	
			Lost in the following shock.						F	Lost in the following shock.			

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ALIPORE OBSERVATORY, CALCUTTA.

Date	Compt.	Phase	G.M.T.	Per. Amp	Δ	Remarks	Date	Compt.	Phase	G.M.T.	Per. Amp	Δ	Remarks
February, 1944.													
1944			h. m. s.	Sec.	μ	Km.				h. m. s.	Sec.	μ	Km.
Feb. 5	N	e	19 30 23	...	...	Slight, distant.	Feb. 28	N	Mn	01 28 55	...	...	Slight. Beginning lost while changing chart.
		Mn	39 46	...	...				F	Lost in the following shock.			
		F	Lost in microseisms.				.. 6	N	e	20 19 15	...	...	Feeble.
.. 6	N	e	20 19 15	...	...		.. 23	N	e	02 10 31	...	...	Slight.
		e	26 15	...	...				Mn	16 38	...	...
		F	Lost in microseisms.						F	03 46	...	...
.. 7	N	e	13 38 55	...	...	Slight, distant.	.. 23	N	e	21 12 50	...	...
		e	42 20	...	...				Mn	23	...	...
		Mn	53 47	...	...				F	50	...	...
		F	14 20	...	...		.. 26	N	i	23 23 31	...	...	Slight, near.
.. 9	N	e	14 11 54	...	...	Feeble, near.	.. 26	N	F	34	...	...
		Mn	18 04	...	...				ePKP	04 01 37	...	...	Slight, distant.
		F	39	...	...		.. 29	N	ISKKS	12 23	...	...
.. 13	N	e	20 09 33	...	...	Tremop.			F	06 14	...	...
		Mn	19 03	...	...					Lost in microseisms.			
		F	Lost in microseisms.				.. 18	N	eP	03 59 13	...	745	Slight. Felt at Patna in Bihar.
.. 18	N	eP	03 59 13	...	...				is	04 00 28	...	...
		is	04 00 28	...	...				F	05 22	...	...
		F	05 22	...	...		.. 21	N	e	09 20 27	...	...	Feeble.
.. 21	N	e	09 20 27	...	...				Mn	24 40	...	...
		Mn	24 40	...	...				F	35	...	...
		F	35	...	...					Lost in microseisms.			
March, 1944.													
March 2	N	eP	11 21 41	...	2,845	Slight.	March 10	N	IP	06 49 01	...	5,335	Slight. Direction of first movement—North.
		IS	26 06	...	...				IS	56 08	...	...
		ISS	27 12	...	...				ISS	59 20	...	...
		Mn	33 32	...	...				ISSS	07 00 28	...	...
		F	Lost in microseisms.						eL	04 08	...	...
.. 5	N	eP	17 23 22	...	...	Slight.			M	07 08	...	...
		i	29 44	...	...		.. 11	N	e	06 24 26	...	...	Feeble.
		F	18 21	...	...				Mn	32 31	...	...
.. 7	N	e	20 41 08	...	...	Slight.			F	Lost in microseisms.			
		is	45 08	...	...		.. 12	N	eP	04 59 47	...	700	Slight. Felt at Tazpur.
		F	21 29	...	...				i	00 34	...	...
.. 8	N	e	05 55 37	...	...	Tremor.			is	00 51	...	...
		F	Lost in microseisms.						M	02 36	...	...
.. 9	N	eP	22 08 30	...	...	Great.	.. 15	N	IP	08 08 50	...	2,365	Moderate. Direction of first movement—South.
		i	12 31	...	...				is	12 45	...	...
		is	16 18	...	...				ISS	13 27	...	...
		Mn	28 46	12	317				L	14 33	...	...
		F	Lost while changing chart.						M	16 23	...	...
			Lost in the following shock.						F	Lost in the following shock.			

COLOMBO OBSERVATORY, CEYLON.

Date	Compt.	Phase	G. M. T.	Per	Amp	△	Remarks	Date	Compt.	Phase	G. M. T.	Per	Amp	△	Remarks
March, 1944.															
1944			h. m. s.	Sec.	mm.	Km.		1944			h. m. s.	Sec.	mm.	Km.	
March 2	E	P	11 18 15	...	...	...		Mar. 9-10	E	SR	28 10	...	31.6	...	
		S	19 42	...	...	...				L	31 10	...	...	...
		Mn	20 06	...	3.5	...				Mn	35 00	...	...	...
		F	50	...	...	...				F	01 30	...	...	1.1	
" 5	E	P	17 24 07	...	...	...	Amplitude small.	" 15	E	eP	05 07 10	...	...	...
		F	18 10	...	...	...				Mn	22 05	...	...	...
" 7	E	P	20 39 34	...	...	...		" 15	B	e	06 03	...	...	...	Slight.
		S	46 14	...	...	...				F	07 00	...	...	...
		Mn	46 28	...	0.7	...		" 22	E	P	00 51 20	...	...	...	L and M not pronounced
		F	21 11	...	...	...				PPP	54 05	...	...	...
" 9	E	eP	22 11	...	...	...		" 31	E	P	03 09 35	...	...	...
		S	16 44	...	...	...				S	08 19	...	...	...
		F	Lost in the following shock.							F	04 08	...	...	...
" 1-10	E	P	22 20 25	...	...	...						
		S	22 25 59	...	...	...						

COLOMBO OBSERVATORY,
CEYLON.

D. T. E. DASSANAYAKE,
Superintendent.

HAIG OBSERVATORY, SURVEY OF INDIA, DEHRA DUN.

Date	Compt.	Phase	G. M. T.	Per	Amp	△	Remarks	Date	Compt.	Phase	G. M. T.	Per	Amp	△	Remarks
January, 1944.															
1944			h. m. s.	Sec.	On trac in in ch.	Km.		1944			h. m. s.	Sec.	On trac in in ch.	Km.	
Jan. 5	N	eP	21 19 35	...	...	4.335		Jan. 16	N	e	00 10	...	...	...	Slight.
		IS	25 42 11	0.05	...	...				e	01 10 49	...	...	...
		e	29 00	18	0.02	...				M ₁	21 56	24	0.01	...	
		eL	33 30	28	0.08	...				M ₂	29 39	25	0.02	...	
		M ₁	35 52	24	0.13	...				F	02 05	...	...	...
		M ₂	37 39	19	0.11	...									
		M ₃	38 39	...	...	...						
		F	22 22	...	...	...						
February 1944.															
Feb. 1	N	eP	03 20 20?	...	...	4.110	Great. Destructive in Turkey.	Feb. 29	N	IP	16 34 13	...	...	3.380	Great. Direction on first movement of P—South. Felt in Ceylon.
		S	25 05	...	...	...				IS	30 10	29	0.57	...	
		L	40 13	...	...	...				IL	43 35	...	...	...
		M ₁	43 44	32	0.78	...				M ₁	44 40	25	1.08	...	
		M ₂	46 45	24	1.10	...				F	18 47	...	...	...
		F	05 15	...	...	...						
" 5	N	eP	17 27 52?	...	...	4.410									
		S	33 55	...	...	...						
		L	39 50	...	...	...						
		M ₁	42 40	16	0.04	...									
		M ₂	45 49	15	0.04	...									
		F	18 20	...	...	...						
March, 1944.															
Mar. 2	N	M ₁ ?	10 34	...	24	0.01	...	Mar. 20	N	e	08 14 33	...	...	...
		F	42	...	...	...				e	20 51	...	...	...
" 9	N	e	22 07 45	...	...	1.890				M ₂ ?	22 39	...	...	...
		e	11 25	...	...	...				F	37	...	...	...
		e	13 17	20	0.14	...									
		F	Lost in the following shock.												
" 9	N	IS	22 19 41	...	...	1.890	Great. P lost in the coda of the preceding shock.	Mar. 22	N	eP	00 52 47	...	...	6.445	Slight.
		L	21 16	...	...	...				oS	01 00 39	10?	0.05	...	
		M	22 48	...	...	...				IL ₁	07 24	...	...	...
		=	23 31	...	...	...				M ₂	08 51	20	0.03	...	
										F	52	...	...	...

DEHRA DUN,

J. de. GRAAFF HUNTER,
C. I. E., Sc. D., F. R. S.
Director, War Research
Survey of India.

NIZAMIAH, OBSERVATORY HYDERABAD, DECCAN.

Date	Compt.	Phase	G. M. T.	Per.	Amp	Remarks	Date	Compt.	Phase	G. M. T.	Per.	Amp	Δ	Remarks
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January, 1944

1944	Jan. 3	N	eP	h. m. s.	Sec.	On	Km.	h. m. s.	Sec.	On	Km.
			S	09 53 59	2670
			M	10 04 25	9	5

February, 1944

Feb. 18	E	(S)	04 01 24	...	...	...
			01 59	...	...	...
			02 32	6	3	...
			01 21 42	15	4	...

March, 1944

Mar. 15	N	P	05 09 01	...	...	2670
			13 12	...	...	...
			15 55	...	...	...
			17 47	9	30	...
			17 54	7	10	...
			05 59 18	...	...	...
			06 02 18	...	...	...
			03 46	8	5	...
			03 9	3	9	...
			06 26 47	...	...	...
			29 34	...	...	...
			31 18	9	6	...
			09 10 52	...	...	...
			23 15	9	2	...
			00 52 33	...	...	5410
			53 48	...	...	...
			54 34	...	...	...
			59 35	...	...	...
			01 02 07	...	...	...
			03 18	...	...	...
			16 14	15	11	...
			03 01 21	...	...	6240
			02 23	...	...	...
			03 15	...	...	...
			09 11	...	...	...
			09 18	...	...	...
			11 11	...	...	...
			19 04	...	...	...
			25 18	16	8	...

NIZAMIAH OBSERVATORY,
HYDRABAD, DECCAN.

T. P. BHASKARA SASTRI,

Director.

KODAIKANAL OBSERVATORY, KODAIKANAL.

Date	Compt.	Phase	G. M. T.	Per.	Amp	Δ	Remarks	Date	Compt.	Phase	G. M. T.	Per.	Amp	Δ	Remarks
------	--------	-------	----------	------	-----	---	---------	------	--------	-------	----------	------	-----	---	---------

January, 1944.

1944	Jan. 5	E	IP	h. m. s.	sec.	μ	Km.	h. m. s.	sec.	μ	Km.
			IS	21 18 30	...	...	5155	...	...	...	...
			M	23 16	...	...	...	...	...	...	...
			F	29 00	15	57	...	...	...	...	...
			F	23 21	...	...	...	...	...	...	...
			e PKP	20 29 58	...	...	...	...	...	...	...
			F	22 35	...	...	...	...	...	...	...
			e	18 14 00	...	...	...	...	...	...	...
			F	34	...	...	...	...	...	...	...

February, 1944.

Feb. 1	E	eP	03 31 04	...	...	5800	Feb. 28	E	eP	00 53 10	...	...	...
			38 29	...	...	...				55 20	...	...	...
			56	...	16	406				01 01 10	...	...	...
			07 27	...	...	...				05 22	...	...	...
			03 59 00	...	...	...				18 47	12	7	...
			04 26	...	...	...				Lost in the following shock.	...	...	...
			17 27 50	...	...	...				02 02 40	...	...	...
			49	...	17	12				06 59	11	12	...
			19 51	...	...	...				03 48	...	...	...
			03 03 18	...	...	...				...	...	...	...
			12	...	...	...				...	...	...	...
			23 00 25	...	...	...				...	...	...	...
			00 30	...	...	...				...	...	...	...

March, 1944.

Mar. 2	E	IP	11 18 15	...	...	1100	Mar. 15	E	e	06 24 00	...	...	...
			20 04	...	...	...				07 06	...	...	...
			21 45	10	20	...				19 44 04	...	...	...
			12 20	...	...	...				20 05	...	...	...
			17 24 30	...	...	...				22 20 34	...	...	...
			26 30	...	...	...				23 10	...	...	...
			18 03	...	...	...				00 51 40	...	...	3935
			18 42 54	...	...	...				57 15	...	...	...
			50	...	...	...				01 04	...	...	...
			05 44 15	...	...	...				23 46 40	...	...	...
			06 28	...	...	...				00 12	...	...	...
			22 10 10	...	...	5200				03 01 23	...	...	6165
			17 00	...	...	...				09 08	...	...	...
			00 19	...	...	...				17 38	...	...	...
			06 50 28	...	...	7385				23 13 30	28	...	...
			59 16	...	...	...				04 36	...	...	...
			07 25 20	20	25	...				09 44 03	...	...	...
			08 01	...	...	...				10 04	...	...	...
			05 11 30	...	...	...				22 04 53	...	...	...
			06 07 40	...	...	...				28	...	...	...

SOLAR PHYSICS OBSERVATORY,
KODAIKANAL.

A. L. NARAYAN,
Director.

The following table contains a list of earthquakes reported by voluntary observers from various stations.

Place at which felt	Date	G.M.T. of earthquake	Duration	Intensity Rossi-Forel Scale	Number of shocks	Remarks
	1944	H. M.	Secs.			
Dhubri	Jan. 17	04 23	4	3	1	
Gauthati	Mar. 12	05 05	1	4	1	
Silchar	12	05 02	7	5	2	

J. M. SIL,
Meteorologist, Poona.

Page No.	Date	Time	Column	For	Read
2	3.1.44	09 51 98	G.M.T.	09 51 98	09 51 38
2	4.1.44	16 08 18	Phase	IP	iP
2	4.1.44	16 08 18	G.M.T.	16 08 18	16 03 18
2	4.1.44	59	Phase	blank	F
2	4.1.44	59	G.M.T.	59	39
2	6.1.44	07 52 00	Date	6	5
2	6.1.44	8 8	Phase	blank	F
2	6.1.44	8 8	G.M.T.	8 8	08 30
2	Nil	20 09	Date	blank	5
2	Nil	20 09	G.M.T.	20 09	21 20 09
2	Nil	20 09	Remarks	of first motion and East in E-W chart	of first motion South in N-S chart and East in E-W chart.
2	Nil	20	G.M.T.	20	20 12
2	Nil	21 30 20	G.M.T.	30 20	30 26
2	Nil	86 88	G.M.T.	86 88	36 38
2	7.1.44	08 00 36	G.M.T.	08 00 36	03 00 36
2	7.1.44	09 13 24	G.M.T.	13 24	24 13
2	10.1.44	20 31 41	Phase	IPP	iPP
2	10.1.44	32 42	Phase	IPKS	iPKS
2	10.1.44	20 55 18	Phase	IPP	iPP
2	10.1.44	20 55 18	G.M.T.	20 55 18	20 55 13
2	10.1.44	56 16	Phase	IPKS	iPKS
2	10.1.44	20 55 18	Km.	14190	14890
2	12.1.44	07 42	Phase	P	F
2	16.1.44	23 23	Phase	ISKSP	iSKSP
2	16.1.44	24 54	Phase	-I	i
2	16.1.44	50 30	G.M.T.	50 30	55 30
2	16.1.44	02 09	G.M.T.	02 09	03 09
2	18.1.44	24 13 50	G.M.T.	24 13 50	23 13 50
2	18.1.44	12 27	G.M.T.	12 27	19 27
2	25.1.44	07 12 33	G.M.T.	07 12 33	07 42 33
2	25.1.44	-do-	Km.	5905	5965
2	28.1.44	16 27	G.M.T.	16 27	16 17
2	28.1.44	23 12 02	Km.	blank	2180
3	1.2.44	46 45	Amp.	1330	>1330
3	1.2.44	51 40	Amp.	1257	>1257
3	3.2.44	13 11 41	Phase	Blank	M
3	5.2.44	17 27 41	Remarks	Diriti on	Direction
3	16.2.44	11 16 43	Remarks	Mo o n	Motion
3	29.2.44	39 5	Remarks	Very distant	Very distant.
4	Feb.44	41 42	G.M.T.	39 5	39 58
4	Feb.	21	Date	Feb.	Feb. 29
4	9.3.44	23 39	G.M.T.	21	20 41
4	9.3.44	23 39	Phase	nM	Mn
4	22.3.44	03 24	Amp.	1400	>1400
5	4.1.44	16 02 52	G.M.T.	03 24	04 24
6	5.1.44	03 06 16	Remarks	2° 0 N....	2° 0 N., 99° 0 E.
6	5.1.44	06 38	Phase	blank	e
6	1.44	03 00 48	Phase	blank	i
6	10.1.44	30 0	Date	blank	7
7	10.1.44	04 15 00	G.M.T.	30 0	30 --
7	12.1.44	35 0	G.M.T.	04 15 00	04 15 --
7	12.1.44	35 0	Phase	blank	F
7	5-26-1-44	02 45 --	G.M.T.	35 0	35 --
8	5-26-1-44	02 45 -	Date	5- 26	25- 26
8	23.2.44	13000	Compt.	blank	N
9	23.2.44	13000	G.M.T.	13000	13 00 --
9			Remarks	in both N ad in both N and E	

GOVERNMENT OF INDIA

METEOROLOGICAL DEPARTMENT
SEISMOLOGICAL BULLETIN
APRIL—JUNE 1944

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PUBLISHED UNDER THE DIRECTION OF

S. BASU, M.Sc. F.N.I.

Director General of Observatories

INTRODUCTION

Till the end of 1937, the seismic data from the observatories of the India Meteorological Department were being published annually as Part D of the Annual Summary of the India Weather Review. Since 1938, the data are being published in the present series of the Quarterly Seismological Bulletin. With the kind co-operation of the Surveyor-General of India, the Director of the Nizamiah Observatory, Hyderabad and of the Superintendent, Colombo Observatory, it has been possible to incorporate in the bulletin, the data of their respective observatories, *viz.*, Dehra Dun, Hyderabad and Colombo. The instrumental seismological data and the non-instrumental voluntary observations are collected and edited at the Meteorological Office, Poona.

TABLE I
List of Seismograph Stations.

Station	Latitude.	Longitude.	Height above M.S.L.	Lithologic foundations.	Officer-in-charge of Observatory
New Delhi	28°35'N	77°12'E	207 Meters	Massive Quartzites	Superintending Meteorologist.
Bombay	18°54'N	72°49'E	6 Meters	Deccan Trap	Director.
Calcutta	22°32'N	88°20'E	(1) 7 Meters (2) 6 Meters	Alluvium	Meteorologist.
Colombo	6°54'N	79°52'E	7 Meters	Beach sand resting on gneiss probably decomposed.	Superintendent.
Dehra Dun	30°19'N	78°03'E	682 Meters	Gravel	Director, War Research, Survey of India.
Hyderabad	17°26'N	78°27'E	528 Meters	Granite	Director.
Kodaikanal	10°14'N	77°28'E	2343 Meters	Rock	Director.

(1) Milne-Shaw. (2) Omori-Ewing.

TABLE 2
The instruments and their constants

Station	Component	Type of instrument	Mass	Period	Static magnification	Damping Ratio	Remarks
New Delhi	N	Milne-Shaw	Kg. 0.47	Sec. 12	250	20:1	
	E	Omori-Ewing	45	32	30	...	
Bombay	N	Milne-Shaw	0.45	12	250	{ 18:1 8:1* 15:1†	*April †May and June. -
	E	Milne-Shaw	0.45	12	350		
Calcutta	N	Milne-Shaw	0.45	12	250	20:1	
	N	Omori-Ewing	50	15	32	...	
	E	Omori-Ewing	50	21	30	...	
Colombo	E	Milne-Shaw	0.45	12	250	20:1	
Dehra Dun	N	Omori	50	30	12	..	
Hyderabad	N	Milne-Shaw	0.45	12	250	20:1	
	E	Milne-Shaw	0.45	12	250	20:1	
Kodaikanal	E	Milne-Shaw	0.45	10	250	20:1	

UPPER AIR OFFICE, NEW DELHI.

COLABA OBSERVATORY, BOMBAY.

Date	Compt.	Phase	G.M.T.	Per.	Amp	Δ	Remarks
May, 1944.							
1944 May 30	N	iS SS F	10 04 47 05 25 39				
June, 1944.							
June 3	N	e i i F	04 21 14 28 35 32 06 05 10				Slight. Distant.
" 3	N	e F	12 12 17 36				Slight. Distant. Surface waves
" 3	N	e i F	20 11 48 25 18 32				Slight Distant.
" 4	N	e F	14 00 56 15 51				Slight. Surface waves
" 4	N	e F	19 55 36 20 11 41 21 16				Slight.
" 6	N	e F	04 07 17 45				Slight. Distant.
" 7	N	e i F	10 30 06 30 41 33 07 57				Slight. Distant.
" 9	N	eP iS PS SS M F	20 46 05 55 30 56 02 21 00 05 13 32 22 45		8050		Slight.
" 10	N	e F	11 19 56 44				Slight. Distant.
" 10	N	e	15 12 27				Slight. Distant.
" 16	N	ePP iSKP PPP SKS SKKS PPS F	22 13 15 14 15 16 15 18 06 19 54 25 09 23 48		14890		Slight.

Date	Compt.	Phase	G.M.T.	Per.	Amp	Δ	Remarks
April, 1944.							
1944 April 10	N	e F	06 50 07 10				Feeble. Presumably after-shock of the preceding earthquake.
" 10	N	e F	10 18 40				Feeble Probjy after shock of the earthquake at 03h.
" 14	N	i E	09 36 30 36 32				Local. Explosion of ammunition in Bombay Docks.
" 14	N,E	F	10 11 53 12 17				Local. Explosion of ammunition in Bombay Docks.
" 10	N	eP E E N N	09 55 12 10 03 18 03 20 03 50 04 30		6,600		Feeble. Deep?
" 17	N,E	i 3P N	17 45 35 46 31				Slight. 31, 78, 107 5E., near Java. O.—17h. 37 m. 37s.
" 19	N	e F	22 57 49 23 10				Slight.
" 19-20	N	M F	23 54 10 10				Surface waves.
" 26	N	eP PPP E N N N N	02 04 41 07 00 08 33 08 22 13 09 13 23		7,035		Moderate. 01s, 135] 5E. near Papua. O-0rh. 54m. 13s. The times of phases recorded on the E-W chart are subject to uncertain errors on account of inon-uniform drive of the recording clock and consequently the doubtful times are omitted. Epd 1S., 131E. oih. 53. 9m. (IU. S. C. G.S.) Epc 1S., 135E. o-0rh. 54 m. 159. (Pasadena).
" 10	N	eP N,E E N N N N N N	03 36 59 37 13 38 45 38 48 39 06 39 27 47 11 47 50 04 20		1,070		Slight. 28. 5N Sind 70]. 5E. 0-03h. 34m. 43s. Felt at Ja-cobabad and Shikarpur(Sind) No. damage is reported (Associated Press of India).
" 10	N	eP N,E E N N N N N	18 34 53 39 24 59 01 07 15 18 24 02 24 03 25 42 26 23 30 40 34 12 42 45 19 00		2,970		Feeble. Probably originating near the preceding shock. Feeble. Feeble.
" 20	N	e F	16 54 35 59 21 17 00 14 18				Slight. Distant. Slight. Distant.
" 21	N	i F	11 22 53 23 53 13 59				Slight. Very dista
" 24	N	e F	16 54 35 59 21 17 00 14 18				Slight. Distant.
" 25	N	iP iS SSS M F	04 24 03 30 31 33 21 39 41 05 28		4520		Slight.
" 25	N	i i F	14 41 59 42 59 16 07				Slight. Very dista
" 25	N	e F	15 59 45 19 34				Slight. Very distan
" 25	N	e F	19 46 54 20 20				Slight. Distant.
" 28	N	iPKA PP SKP SS PPS L M F	08 18 19 20 53 21 46 34 02 35 06 09 03 58 16 11 10 41		15130		Slight

COLABA OBSERVATORY, BOMBAY.

April, 1944.

Date	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks
944 April 27	E	eP(1)	14 48 30	...	...	6,980	Great, 0°S., 135° E., near Papua, Multiple shocks, o (1) = 15h. 28m. 05s o (2) = 14h. 38m. 15s o (3) = 14h. 38m. 20s Epc: 1°S., 131°E. o = 14h. 37'9 m. (U.S.C.G.S.) Epc: 1°S, 134.5°E o = 14h. 38m. 14s. h = 50 km (Pasadena).
	N.	eP(2)	48 40	...	...
	H	IP (2)	48 41	...	...
	N	IP(3)	48 45	...	...
	N	PP(1)	50 56	...	...
	H	S(1)	56 55	...	...
	N	IS(2)	57 05	...	...
	N	IS(3)	57 10	...	...
	H	PS(3)	57 36	...	...
	N	PS(3)	57 37	...	...
	N	ScS(2)	58 28	...	...
	H	ScS(3)	58 32	...	...
	N	SS(3)	15 01 33	...	...
	N	SSS(3)	04 05	...	...
	N	I	05 43	...	...
	N	L	06 22	...	...
	H	Mn	15 02	25	52		
	N	Mn	15 31	23	143		
	N.E.	F	18 00	...	...
27	H	eP	19 15 29	...	...	7,020	Feeble, 0°S., 135°E near Papua. o = 19h. 5m. 02s.
	N	I	18 03	...	...
	H	I	18 12	...	...
	N.E.	S	23 56	...	...
	N	e	24 03	...	...
	H	I	24 05	...	...
	N	ScS	25 20	...	...

May, 1944.

Date	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks
May 3	N	e	12 32 59	...	...		Slight, near.
	N	e	33 21	...	...
	H	e	36 01	...	...
	N	I	36 02	...	...
	N	I	36 29	...	...
	N	I	36 47	...	...
	H	I	36 51	...	...
	H	I	37 13	...	...
	N	I	37 17	...	...
	N	M	39 02	...	...
	N.E.	F	55	...	...
3	N	e	17 57 41	...	...		Feeble, near.
	N.E.	Mn	18 02	...	...
	N.E.	F	10	...	...
4	N	e	11 17 15	...	...		Feeble, near.
	N	F	25	...	...
5	H	eP	05 57 16	...	...	6135	Feeble, 44°N., 128½° E., near the Gilool muolcca Islands. o = 0.5 h. 47m., 50s.
	N	eP	57 18	...	...

COLABA OBSERVATORY, BOMBAY.

May, 1944.

Date	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks
May 25	N	e	17 48 58	...	...		Feeble.
	N	e	52 49	...	...
	N.E.	Mn	57	...	...
	N.E.	F	18 10	...	...
12	N	Record lost from to eP	04 44 00 10 20 00 19 31 02	...	...
15	N	eP	31 03	...	...	9100	Feeble 6° S 153° E., Solomon islands. o = 19h. 18m. 44s.
	E	iP	41 13	...	...
	N	eS	41 16	...	...
	N.E.	i	41 31	...	...
	N.E.	F	55	...	...
	E	iP	04 55 34	...	...	8960	Slight. 2° 7'S 153° 2E., near New Ire- land, Solomon Is- lands. o = 4h. 43m. 23s.
	N	eP	55 36	...	...
	N.E.	iS	05 05 42	...	...
	N	ePPS	06 39	...	...
	N	e	09 24	...	...
	N.E.	F	50	...	...
9	N	eP	00 31 36	...	...	8910	Slight. 21°S., 152½° E., near New Bri- tain. o = 0oh. 19m. 28s.
	E	IP	31 38	...	...
	E	eS	41 39	...	...
	E	eS	41 40	...	...
	E	IS	41 44	...	...
	N	IS	41 46	...	...
	E	PS	42 29	...	...
	N	PS	42 35	...	...
	N	SS	46 59	...	...
	E	SS	47 04	...	...
	N, E	F	01 50	...	...
6	N	Record lost from to	01 18 .. 17 10 ..	...	...
5	E	iPP	01 24 56	...	...	12340	Moderate. N. S. re- cord lost while changing photo- graphic paper. Epc: 21°S., 179°W. h = 01h. 06m. 39s h = 600 km. (U.S.C.G.S.)
	E	i	27 12	...	...
	E	iPPP	27 12	...	...
	E	SKS	29 49	...	...
4	N	No Record from to	00 00 .. 08 07 ..	...	...
	N	e	00 11 08	...	...		Feeble. Surface waves.
	E	Mn	13	...	...
	E	F	20	...	...
2	H	Record lost from to	11 41 .. 05 08 ..	...	...
	E	L	14 05 11	...	...		Feeble. Surface waves.
	N	L	06	...	...
	E	Mn	12 09	16	3		
	N	Mn	12 37	15	3		
	N, E	F	20	...	...
" 4	N, E	L	20 16	...	...		Feeble. Surface waves.
	N	Mn	23 20	15	7		
	E	Mn	28 56	15	5		
	N, E	F	50	...	...

June, 1944.

COLABA OBSERVATORY, BOMBAY.

ALIPORE OBSERVATORY, CALCUTTA.

Date.	Compt.	Phase.	G.M.T.	per.	Amp.	Δ	Remarks.
June, 1944.							
1944			h. m. s.	Sec.	μ	Km.	
June 9	E	eP	20 46 18	...	...	8250	Slight. 2° S., 146° E Near Admiralty Islands, 0=20h. 34m. 43s.
	N	eP	46 19	...	...	...
	E	iS	55 48	...	...	...
	N	eS	55 54	...	...	...
	N	PS	56 27	...	...	...
	N	SS	21 00 27	...	...	...
	E	Mn	19	...	...	...
	N	F	22 00	...	...	...
	E	F	Lost.	...	...	...
.. 9-10	E	Record lost from	21 25	...	...	...
		to	01 53	...	...	...
.. 13-14	E	Record lost from	08 33	...	...	...
		to	05 17	...	...	...
.. 16	E	L	23 07	...	...	...	Slight. Surface waves of a distant shock.
	N,E	Mn	18	...	...	...
	N,E	F	40	...	...	...
.. 19	E	I	19 42 28	...	...	...	Feeble.
	E	i	44 53	...	...	...
	E	L	49	...	...	...
	E	Mn	59	...	...	...
	E	F	20 10	...	...	...
.. 20	E	i?	11 42 25	...	...	...	Slight.
	N,E	e	45 50	...	...	...
	E	i	46 14	...	...	...
	E	i	47 34	...	...	...
	N	Mn	51	...	...	...
	E	Mn	52	...	...	...
	N,E	F	12 10	...	...	...
.. 20	E	Mn	12 59	...	...	...	Feeble. Surface waves.
	N	Mn	13 02	...	...	...
	N,E	F	10	...	...	...
.. 21	E	PP	11 16 41	...	...	11560	Slight. Epc: 21° S., 169° E. 0=10h. 58' 3m. (U.S.C.G.S.) Epc: 21° S., 169° E. 0=15h. 58m. 20s. (J.S.A.)
	N	SKS	22 59	...	...	...
	E	SKS	23 03	...	...	...
	E	PS	25 52	...	...	...
	E	SS	30 45	...	...	...

S. R. SAVU
Director.

COLABA OBSERVATORY,
BOMBAY.

Date.	Compt.	Phase.	G.M.T.	Per.	Amp.	Δ	Remarks.
April, 1944.							
1944			h. m. s.	Sec.	μ	Km.	
April, 1944	N	e	01 32 52	...	...	...	Feeble.
		e	37 42	...	...	...
		F	02 31	...	...	...
" 26	N	IP	02 03 02	...	...	5,780	Moderate. Direction of first movement North. Focal depth about 200 km. ?
		PP	05 22	...	...	...
		iS	10 09	...	...	...
		i (SS)	11 28	...	...	...
		iSS	14 27	...	...	...
		F	Lost	...	...	...
" 27	N	eP	14 46 53	...	...	5,645	Great.
		ePP	48 49	...	...	...
		iPPP	49 46	...	...	...
		iS	54 14	...	...	...
		PS	54 53	...	...	...
		iSS	57 21	...	...	...
		iSSS	58 51	...	...	...
		Mn	15 08 41	12	148	...	
		F	18 34	...	...	...
" 27	N	eP	19 13 54	...	...	5,390	Slight. An after shock of preceding one.
		iS	21 00	...	...	...
		F	Lost in microseisms.	...	...	...
" 29	N	eP	21 45 45	...	...	...	Slight. near.
		iS	49 18	...	...	...
		F	Lost in microseisms.	...	...	...
May, 1944.							
May 11	N	e	05 14 07	...	...	...	Slight, near.
		F	24	...	...	...
" 19	N	e	00 31 40	...	...	...	Slight, distant.
		i	40 18	...	...	...
		F	Lost in microseisms.	...	...	...
" 25	N	iPP	01 23 34	...	...	11,000	Slight, Direction of first movement South. Focal depth about 600 km.
		iSKS	28 59	...	...	...
		iSKKS	29 38	...	...	...
		i	31 14	...	...	...
		F	Lost in microseisms.	...	...	...
" 25	N	iP	13 09 36	...	...	7,110	Moderate. Direction of first movement South. Focal depth about 75 km.
		iS	18 06	...	...	...
		iSS	18 38	...	...	...
		F	Lost in microseisms.	...	...	...
May 2	N	e	12 38 17	...	...	...	Slight, near.
		i	40 47	...	...	...
		F	13 03	...	...	...
" 3	N	e	17 53 53	...	...	...	Slight, near.
		i	55 08	...	...	...
		F	18 09	...	...	...
" 8	N	i	10 01 38	...	...	...	Slight, near.
		i	04 24	...	...	...
		F	Lost in microseisms.	...	...	...
" 2	N	e	12 18 02	...	...	...	Slight, near.
		i	20 22	...	...	...
		F	Lost in microseisms.	...	...	...
" 3	N	eS	13 24 49	...	...	...	Slight, near.
		e	26 08	...	...	...
		F	38	...	...	...

COLABA OBSERVATORY,
BOMBAY.

NIZAMIAH OBSERVATORY, HYDERABAD DECCAN.

Table with columns: Date, Compt., Phase, G.M.T., Per., Amp., Δ, Remarks. Includes sub-table for April 1944 with columns: Date, Compt., Phase, G.M.T., Per., Amp., Δ, Remarks.

Table with columns: Date, Compt., Phase, G.M.T., Per., Amp., Δ, Remarks. Includes sub-table for May 1944 with columns: Date, Compt., Phase, G.M.T., Per., Amp., Δ, Remarks.

NIZAMIAH OBSERVATORY, HYDERABAD, DECCAN.

Table with columns: Date, Compt., Phase, G.M.T., per., Amp., Δ, Remarks. Includes sub-tables for May 1944 and June 1944 with columns: Date, Compt., Phase, G.M.T., Per., Amp., Δ, Remarks.

NIZAMIAH OBSERVATORY, HYDERABAD, DECCAN.

T. P. BHASKARA SASTRI, Director.

KODAIKANAL OBSERVATORY, KODAIKANAL.

Date	Compt.	Phase.	G.M.T.	Per. Amp.	Δ	Remarks	Date	Compt.	Phase.	G.M.T.	per. Amp.	Δ	Remarks.
April, 1944.													
1944 April 4	E	e	23 09 54	...	...	Feeble.	1944 April 26	E	P	02 04 20	...	...	6435
		S	15 13	...	...				iS	12 20	...	...
		F	45	...	...				Mn	26 30	15	22	...
5	E	e	05 03 52	...	...	Feeble.			iF	05 11	...	...
		F	06 04	...	...						
20	E	eP	03 39 06	...	...						
		i(S)	42 51	...	...		" 27	E	iP	14 48 58	...	...	Record faint Phases following P can not be deciphered
		Mn	04 16 50	8	19				F	Lost			
		F	51	...	...		" 27	E	e	19 15 38	...	...	Feeble, distant.
" 17	E	eP	17 44 30	...	...	3690	" 28	E	e	06 23 51	...	...	Feeble.
		iS	49 50	...	...				F	20 37	...	...
		Mn	58 00	15	16				F	07 27	...	...
	F	F	21 22	...	...						
May, 1944.													
May 5	E	e	05 55 25	...	...	Feeble.	May 25	M		46 24	...	...
		F	06 45	...	...			F		03 57	...	...
" 18	E	i	04 55 16	...	...		" 25	E	iP	12 08 55	...	...	8765
		F	06 10	...	...				iS	18 55	...	...
" 19	E	e	00 32 56	...	...				Mn	39 05	...	...
		F	Lost						F	17 13	...	...
" 25	E	e	01 13 19	...	...		" 30	E	eP	09 59 41	...	...	Feeble.
		i	23 54	...	...				L	10 03 44	...	...
									Mn	07 44	...	...
									F	40	...	...
June, 1944.													
June 3	E	eP	11 30 56	...	...	3380	June 25	iS		33 02	...	...
		eS	35	...	...			Mn		45 52	24	22	
		L	39 26	...	...			F		05 25	...	...
		M	42 06	...	10	3	" 25	E	i	14 41 17	...	...	Feeble.
		F	12 08	...	...				e	43 07	...	...
" 3	E	e	13 11 00	...	...	Feeble, Times uncertain.			e	49 52	...	...
		F	50	...	...				e	53 27	...	...
" 3	E	e	16 58	...	...	Feeble, distant.			M	15 03 22	...	...
		F	7 34	...	...				F	16 02	...	...
" 9	E	eP	20 45 45	...	...	7755	" 25	E	e	18 00 27	...	...	Feeble, distant.
		iS	54 55	...	...				F	19 11	...	...
		SS	59 10	...	...		" 28	E	(PKP)	08 17 58	...	...	Moderate.
		Mn	21 12 55	15	10				PP	20 58	...	...
		F	22 38	...	...				i	25 58	...	...
" 21	E	Distant shock of moderate intensity. Times or phases cannot be read from the chart due to congestion of lines.											
"	E	eP	04 25 32	...	...	5910			SKKS	28 35	...	...
		PP	27 29	...	...				e	30 28	...	...
									M	09 14	...	24	80
									F	10 58	...	...

SEISMOLOGICAL BULLETIN.

ERRATA FOR APRIL to JUNE 1944.

Page.	Date.	For incorrect.	Read correct.
2	Apr 29	F 212202	F 21 22 02
5	April	/u under phase at the start	/u to be deleted.
5	Apr. 5	N left blank against iP 044834	N to be inserted.
5	Apr.10-26	Printing in right half not uniform	Should be read carefully.
5	Apr.10	N blank 100318	N 1S 100318
5	Apr.26	N blank 020444	N 1P 020444
6	Year	944 & 1948	1944
6	April 29	Kabu	Kabul
7	May 18&19	NE-F-0550..	To be read with eighteenth's data.
7	June 2-3	to 0508..	09-08-..
9	May 8	Blank date at 121802	8 to be inserted.
9	May 9	Blank date at 132449	9 to be inserted.
12	June 25	June 15	June 25
14	Apr 27	L Blank 150614	Blank L 150614
14	May 25	SKKS 012025	SKKS 013025
16	Apr 10	Date 20	10
16	June 3	F 734-	F 1734-

Dhar./

The following table contains an earthquake which was reported by voluntary observers from various stations.

Place at which felt	Date	G.M.T. of earthquake	Duration	Intensity Rossi-Forel scale	No. of shocks	Remarks
		h. m.	Secs.			
	1944					
Srinagar . .	Apr.29	21 40	3	8	2	
Kabul . .	" 29	21 38	20	6	2	

J. M. SIL,
 Meteorologist, Poona.

GOVERNMENT OF INDIA
METEOROLOGICAL DEPARTMENT
SEISMOLOGICAL BULLETIN
JULY-SEPTEMBER 1944

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PUBLISHED UNDER THE DIRECTION OF
S. BASU., M. Sc. F. N. I.
Director General of Observatories.

SEISMOLOGICAL BULLETIN

July-September, 1944.

INTRODUCTION

Till the end of 1937, the seismic data from the observatories of the India Meteorological Department were being published annually as Part D of the Annual Summary of the India Weather Review. Since 1938, the data are being published in the present series of the Quarterly Seismological Bulletin. With the kind co-operation of the Surveyor-General of India, the Director of the Nizamiah Observatory, Hyderabad, and of the Superintendent, Colombo Observatory, it has been possible to incorporate in the bulletin, the data of their respective observatories, *viz.*, Dehra Dun, Hyderabad and Colombo. The instrumental seismological data and the non-instrumental voluntary observations are collected and edited at the Meteorological Office, Poona.

TABLE I

List of Seismograph Stations.

Station	Latitude	Longitude	Height above M. S. L.	Lithologic foundation	Officer-in-charge of Observatory
New Delhi	28°35' N.	77°12' E.	207 meters.	Massive Quartzites	Superintending Meteorologist.
Bombay	18°54' N.	72°49' E.	6 meters.	Deccan Trap	Director.
Calcutta	22°32' N.	88°20' E.	(1) 7 meters. (2) 6 meters.	Alluvium	Meteorologist.
Colombo	6°54' N.	79°52' E.	7 meters.	Beach-Sand resting on gneiss probably decomposed.	Superintendent.
Dehra Dun	30°19' N.	78°03' E.	682 meters.	Gravel.	Director, War Research Survey of India.
Hyderabad	17°26' N.	78°27' E.,	528 meters.	Granite	Director.
Kodaikanal	10°14' N.	77°28' E.	2343 meters.	Rock	Director.

(1) Milne-Shaw. (2) Omori-Ewing

TABLE 2

The instruments and their constants

Station	Component	Type of instrument	Mass	Period	Static magnification	Damping Ratio	Remarks
			kg.	secs.			
New Delhi	E	Omori-Ewing	45	32	30	...	
	N	Milne-Shaw	0.47	12	250	20:1	
Bombay	N	Milne-Shaw	0.45	12	250	20:1	
	E	Milne-Shaw	0.45	12	350	15:1	
Calcutta	N	Milne-Shaw	0.45	12	250	20:1	
	N	Omori Ewing	50	15	32	...	
	E	Omori-Ewing	50	21	30	...	
Colombo	E	Milne-Shaw	0.45	12	250	20:1	
Dehra Dun	N	Omori	50	30	12	...	
Hyderabad	N	Milne-Shaw	0.45	12	250	20:1	
	E	Milne-Shaw	0.45	12	250	20:1	
Kodaikanal	E	Milne-Shaw	0.45	10	250	20:1	

UPPER AIR OFFICE, NEW DELHI

Date	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks	Date	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks	
September, 1944.																
1944			h. m. s.	sec.	μ	Km.		1944			h. m. s.	sec.	μ	Km.		
Sept. 23	E	M	46 02	..	..	..		Sept. 27	E	L	58 11	..	..	..
	N	M	46 29	..	..	..			E	M	58 39	..	..	..
		Mn	48 31	21	96	..			N	M	58 55	..	..	..
	E	Mn	48 34	25	300	..			E	Mn	59 14	24	637	..		
	N	F	15 56	..	..	..			N	Mn	59 22	10	79	..	
" 25	N	e	16 35	08	..	..	Slight. Distant.	" 28	N	F	19 32	..	..	..	Slight. Distant.
		F	17 25	..	..	..			i	i	17 53	14	..	..
" 27	N	iP	16 27	36	..	1250	Great. Direction of first motion South.		M	M	54 09	..	..	..
	E	iP	27 39	..	..	..		" 30	N	e	04 35	20	..	..	Slight. Distant. Surface waves.
	N	PPP	27 42	..	..	..		" 30	N	i	05 14	42	..	..	Slight. Distant.
	N, E	iS	29 41	..	..	..			F	F	30	..	..	..
	N	SS	29 45	..	..	..		" 30	N	iP	07 53	37	..	1030	Slight.
	E	L	16 30	05	..	..			iS	iS	45 21	..	..	..
	E	M	30 49	..	..	..			E	i	45 40	..	..	..
	N	M	30 57	..	..	..			M	M	46 50	..	..	..
	E	Mn	31 10	21	1471	..			N	M	47 02	..	..	..
	N	Mn	32 01	9	369	..			F	F	08 18	..	..	..
	F	Lost in the following shocks.							" 30	N	e	10 42	32	Surface waves.
" 27	N	iP	16 55	35	..	1250	Moderate.	" 30	N	i	20 39	15	..	..	Slight. Distant. Surface waves.
		PPP	55 41	..	..	..			F	F	51	..	..	..
	N, E	iS	57 40	..	..	..							
	N	SS	57 48	..	..	..							

UPPER AIR OFFICE,
NEW DELHI

S. K. PRAMANIK,
Superintending Meteorologist.

COLABA OBSERVATORY, BOMBAY

Date	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks	Date	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks	
July, 1944.																
			h. m. s.	sec.	μ	Km.					h.m.s.	sec.	μ	Km.		
1944 July 1-3	N	Record lost from to	22 16	..	..	..		July 21	Mn		19 33	..	..	..	Slight. Surface wave.
			09 30	..	..	..			F	F	.. 50	..	..	..
" 5	N, E	Mn	10 13	..	..	..	Slight. Surface waves.	" 23	N	IP	12 02	03	..	3000	Slight. 33eN. 59°E, Iran.
									N	PP	.. 02	12	..	..	0 = 11h. 57m. 44s.
" 6-7	N	Record lost from to	16 26	..	..	..			E	IS	.. 05	29	..	..
			01 18	..	..	..			N	eS	.. 05	30	..	..
" 7-8	N	Record lost from to	21 28	..	..	..			E	L	.. 08	..	..	..
			05 00	..	..	..			N	L	.. 09	..	..	..
" 7-8	E	Record lost from to	21 44	..	..	..			N, E	F	13 30	..	..	..
			02 00	..	..	..		" 27	N	P	00 17	29	..	10110	Slight. 54° N. 166° W. Fox Islands. 0 = 100h. 04m. 24s.
" 9-10	N	Record lost from to	18 18	..	..	..			N	PP	.. 21	02	..	..
			08 53	..	..	..			E	PP	.. 21	07	..	..
" 13	E	MN	25	..	..	..	Feeble, Surface waves.		N	PPP	.. 22	59	..	..
									N	i	.. 23	32	..	..
	E	F	Lost in microscisms.							E	e	.. 25	14	
" 16-17	N	Record lost from to	01 23	..	..	..			E	SKS	.. 27	51	..	..
			01 04	..	..	..			N	SKS	.. 27	52	..	..
" 17	N	IP	11 00	13	..	3470	Slight. 36°N 43°E near Mosul, Asia Minor.		N, E	IS	.. 28	20	..	..
		eS	.. 05	17	..	..	0 = 10 h. 53m. 54s.		N	SP	.. 29	33	..	..
	E	IS	.. 05	18	..	..			E	Mn	.. 56	28	29	16	
	E	e	.. 06	14	..	..			N, E	F	Lost in microscisms.				
	N	e	.. 06	17	..	..			E	Mn	02 12	..	..	..
	E	SS	.. 07	18	..	..		" 27	E	F	Lost in microscisms.				
	N	SS	.. 07	20	..	..			N	eP } IP }	08 23	22	..	2380	Slight. 11° 4N., 7
	N	ScS	.. 10	34	..	..			N, E	IPP	.. 23	35	..	..
	E	Mn	.. 13	23	..	10			N, E	peP	.. 23	48	..	..	95°OE., Near Andaman Island 0 = 08h. 18m. 46s. h = 160km.
	N	Mn	.. 15	25	16	8			N	eS	.. 27	04	..	..
" 17-18	E	Record lost from to	19 40	..	..	..			N, E	IS	.. 27	12	..	..
			09 10	..	..	..			N	PeP	.. 27	23	..	..
" 19	E	eP	10 31	42	..	6960	Moderate, 30° N.		E	SS	.. 27	43	..	..
		eP	.. 31	44	..	..	142°E Near Japan 0 = 10h. 21m. 16s.		N	SS	.. 27	46	..	..
	N	PeP	.. 32	32	..	..			E	L	.. 28	23	..	..
		eS	.. 40	06	..	..			E	Mn	.. 31	27	19	34	
	E	eS	.. 40	08	..	..			N, E	F	09 30	..	..	..
	E	PS	.. 40	19	..	..		" 30	N	P	04 09	18	..	5380	Slight. 36° N., 21° E near Greece. 0 = 04h. 00m. 37s.
	E	PPS	.. 40	29	..	..			N	PP	.. 11	09	..	..
	N	PPS	.. 40	36	..	..			E	PP	.. 11	11	..	..
	N	ScS	.. 41	34	..	..			E	S	.. 16	13	..	..
	N	Mn	11 01	18	14	5			N	S	.. 16	15	..	..
	E	Mn	.. 01	40	16	3			E	SS	.. 19	28	..	..
	N, E	F	13 30	..	..	..			N	SSS	.. 21	00	..	..
									F	Mn	.. 30	..	..	..
" 19-20	E	Mn	23 41	..	..	..	Slight Surface waves.		N, E	F	.. 50	..	..	..
	E	F	00 20	..	..	..		" 30	E	Mm	15 44	..	..	..
" 20	E	Mn	20 47	..	..	..	Slight Surface waves.		N	Mn	.. 46	..	..	..
	E	F	21 15	..	..	..			N, E	F	16 00	..	..	..

COLABA OBSERVATORY, BOMBAY

Date	Compt.	Phase	G.M.T.	Per. Amp.	Δ	Remarks
August, 1944.						
1944 July 30—Aug. 1	N	Record lost from to	h. m. s.	sec	μ	km.
21 26	...	...	...	...	...	...
03 57	...	...	...	...	...	...
July Aug. 2	N, E	iP	22 59 22	...	...	2270
	E	PP	59 41	...	...
	E	i	23 03 20	...	...
	N	i	03 22	...	...
	E	SS	03 30	...	...
	N	SSS	03 40	...	...
	N	i	05 22	...	...
	E	M	08	...	...
	N	Mn	08 08	...	7 8	
	N, E	F	50	...	...
3-4	N	Record lost from to	04 33	...	...	...
04 35	...	...	...	...	...	...
6	N	Mn	05 44	...	...	Feeble.
	N	F	Lost in microseisms.	...	...	...
	N	c	07 38 00	...	...	Feeble.
	N, E	Mn	42	...	...	...
	N	F	Lost in microseism	...	...	...
6	E	eP	18 23 30	...	...	6770
	E	eS	31 54	...	...	Sight. Near 2 1/2° S 132 1/2° E., Papua. o=18h. 13.4m.
	N	eS	31 57	...	...
	N	e	32 10	...	...
	E	e	33 01	...	...
	N	e	34 11	...	...
	E	eSS	35 56	...	...
	N	Mn	50	...	...
	E	Mn	53	...	...
	N, E	F	19 45	...	...
7	E	PKP	03 45 09	...	...	16330
	N	PKP	45 10	...	...	Moderate. Epc: 16° 9' S, 71° 5' W. Peru. o=03h. 25.3m. (U.S.C.G.S.)
	N, E	i	45 26	...	...
	E	i	45 55	...	...
	N	i	45 59	...	...
	E	PP	48 34	...	...
	E	SKKS	53 28	...	...
	N	SKKS	53 29	...	...
	E	SKSP	58 46	1	1	
	N	SKSP	58 46	...	...
	E	Mn	04 51 07	21	13	
	N	Mn	56 18	19	2	
	N, E	F	06 00	...	...
8	E	eP	08 44 28	...	...	7960
	E	PP	47 95	...	...	Slight. 30.3S., 140° 7' E. in Papua o=08 h. 33m. 23S.
	E	iS	53 30	...	...
	N	eS	53 31	...	...

COLABA OBSERVATORY, BOMBAY.

Compt.	Phase	G.M.T.	Per. Amp.	Δ	Remarks	Date	Compt.	Phase	G.M.T.	Per. Amp.	Δ	Remarks
August, 1944.												
			h. m. s.	sec	μ	Km				h. m. s.	sec	μ
15	N	i	38 55	...	...	...	1944 Aug. 21	N, E	Record lost from to	10 09	...	...
	E	Mn	47	...	...	...			Mn	13 32	...	...
	N	Mn	49	...	...	...	" 21	E	F	21 19	...	...
	N, E	F	02 05	...	...	...		E	F	30	...	...
15	N, E	iP	11 58 27	...	...	7470	" 23-24	N	Record lost from to	21 23	...	...
	N	pP	59 01	...	...	...		E	Record lost from to	03 18	...	...
	N	PP	12 00 59	...	...	...				01 34	...	...
	N	iS	07 10	...	...	...	" 28	E	Mn	10 57	...	...
	N	sS	08 11	...	...	...		E	F	11 20	...	...
	E	Mn	22	...	...	...	" 30	N	i	01 39 19	...	...
	N, E	F	13 10	...	...	...		E	i	47 17	...	...
								E	Mn	02 13	...	...
8	N	eP	10 43 23	...	...	5380	" 31	N, E	F	50	...	...
	E	eP	43 24	...	...	...		N	e	42 15	...	...
	N, E	iP	43 52	...	...	...		E	e	42 28	...	...
	E	sP	44 19	...	...	...		N, E	iS	42 34	...	...
	E	iS	51 30	...	...	...		N	SS	43 06	...	...
	N	iS	51 32	...	...	...		E	SS	43 09	...	...
	E	sS	52 35	...	...	...		N	L	45 00	...	...
	E	SS	55 33	...	...	...		N	M	40 36	...	...
	N, E	F	Lost in microseisms.	...	...	...		N, E	F	01 10	...	...
1	E	Mn	20 43	...	...	...	31-1 Sept.	E	Record lost from to	01 51	...	...
	E	F	21 10	...	...	...				01 25	...	...
	E	Record lost from to	01 52	...	...	...				01 25	...	...
			12 04	...	...	...					...	...
September, 1944.												
	N	PP	19 33 45	...	...	15900	1944 Sept; 6	E	SP	20 12	...	...
	N	i	35 35	...	...	...		N, E	F	07 00	...	...
	E	e	35 37	...	...	...	" 6	E	eP	13 34 55	...	4035
	N, E	i	37 19	...	...	...		N	eS	40 39	...	...
	N	i	41 28	...	...	...		E	iS	40 42	...	...
	N	SKSP	44 10	...	...	...		E	SSS	43 29	...	...
	E	SKSP	44 12	...	...	...		N	L	44	...	...
	E	SS	52 20	...	...	...		E	Mn	49 05	19	7
	E	e	20 10 28	...	...	...		N, E	F	14 50	...	...
	N	e	17 32	...	...	...	" 11	E	eP	09 55 01	...	6090
	E	Mn	32 37	16	5	...		N	i	55 07	...	...
	N, E	F	21 50	...	...	...		E	i	55 09	...	...
	N, E	e	01 00	...	...	...		E	PcP	56 11	...	...
	E	F	06	...	...	...		E	PP	57 08	...	...
	N	F	Lost while changing chart.	...	...	...		E	iS	10 02 33	...	...
	E	PP	06 10 50	...	...	...		N	iS	02 35	...	...
	E	SKS	16 56	...	...	...		E	PPS	03 09	...	...
	N	SKS	17 00		N	ScS	04 34

COLABA OBSERVATORY, BOMBAY.

Date	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks
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September, 1944.

1944	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks	
Sept. 11	E	ScS	04 43		
	E	i	07 19		
	E	SSS	07 53	...	...	...
	E	Mn	18 19	22	38	...		
	N	Mn	18 28	28	28	...		
	N, E	F	Lost in the following shock.					
" 11	E	Mn	12 27	...	...	...
	E	F	13 00	...	...	...
" 14	N, E	eP	06 47 08	...	...	5020	Moderate. 8.5°N., 108° 5E., near Java. o=06h. 38m. 52s.
	N	PcP	08 19	...	...	...
	E	PcP	08 22	...	...	...
	N, E	PP	08 59	...	...	...
	N, E	iS	09 45	...	...	...
	N	PS	09 02	...	...	...
	N	i	09 59	...	...	...
	N, E	SS	09 52	...	...	...
	E	SSS	09 14	...	...	...
	E	SSS	07 07 36	13	13	...		
	N	Mn	09 14	11	5	...		
	N, E	F	09 30	...	...	...
" 17-18	N	Record lost from	01 19	...	...	...
		to	02 33	...	...	...
" 19	E	e	13 27 05	...	...	...	Slight. Distant.
	N	e	27 36	...	...	...
	E	e	32 07	...	...	...
	E	e	38 27	...	...	...
	E	Mn	47 39	18	2	...		
	N	Mn	48	...	...	...
	N, E	F	14 40	...	...	...
" 23	N	eP	12 24 50	...	...	7770	
	E	eP	24 51	...	...	...	Great. 55° 5N., 155° E., Kamchatka. o=12h. 13m. 40s.
	E	eS	33 56	...	...	...
	N	i	34 10	...	...	...
	E	PS	34 25	...	...	...
	N	PS	34 29	...	...	...
	E	SS	38 28	...	...	...
	E	L	49	...	...	...
	E	Mn	55 16	21	125	...		
	N	Mn	55 56	19	233	...		
	N, E	F	16 00	...	...	...
" 23	E	e	16 26 59	...	...	...
	N	e	27 22	...	...	...	Slight. Distant.
	E	e	30 48	...	...	...
	N	e	32 10		

COLABA OBSERVATORY, BOMBAY.

Date	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks
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September, 1944.

1944	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks	
Sept 28	N	eP	17 52 12	2410	Feeble. o=17h. 47m. 22s	
	E	eS	56 05	...	...	...
	N	eS	56 06	...	...	...
	N	L	58 11	...	...	...
	E	Mn	59 02	...	...	...
	N	Mn	18 00 13	7	1	...		
" 30	N	iP	05 13 45	...	...	2245	Slight.
	E	eP	13 46	...	...	...
30	E	e	04 26	...	...	...	Slight. Distant.
	E	Mn	39	...	...	...
	E	F	Lost in the following shock.					
" 30	N, E	iS	05 17 25	...	...	...
	N		17 34	...	...	...
	E	Mn	20 34	12	3	...		
	N	Mn	27 44	...	7	2		
	N, E	F	45	...	...	...

COLABA OBSERVATORY, BOMBAY.

S. R. SAVUR, Director.

ALIPORE OBSERVATORY, CALCUTTA.

Date	Compt.	Phase	G. M. T.	Per.	Amp.	Δ	Remarks
July, 1944.							
1944			h. m. s.	sec.	μ	km.	
July 5	N	e	10 08 49	...	...	...	Slight. Distant.
		F	11 00 06	...	...	...
" 17	N	(SSS),	11 11 15	...	...	...	Slight.
		i	... 13 33	...	...	...
		Mn	... 19 03	...	...	...
		F	Lost in Microseisms.				
" 19	N	P	10 30 09	...	...	5680	Slight. Phases confused by microseisms.
		eS	37 24	...	...	...
August, 1944.							
August 2	N	eS	22 56 58	...	...	...	Slight.
		i	... 57 41	...	...	...
		F	Lost due to congestion of lines.				
" 6	N	e	05 35 33	...	...	...	Slight.
		L	... 39 41	...	...	...
		F	Lost in microseisms.				
" 6	N	e	07 31 41	...	...	...	Slight.
		i	... 33 31	...	...	...
		F	Lost in microseisms.				
" 6	N	iS	18 29 17	...	...	...	Slight.
		F	Lost in microseisms.				
" 7	N	ePP	03 50 02	...	...	...	Slight, distant.
		e	04 03 04	...	...	...
		Mn	05 05 32	...	...	...
		F	06 04...	...	...	...
" 10	N	e	02 17 22	...	...	...	Slight, distant.
		Mn	... 54 10	...	...	...
		F	03 24	...	...	...
September, 1944.							
Sept 3	N	e	19 34 29	...	...	...	Slight. very distant.
		e	... 52 24	...	...	...
		Mn	20 34 24	...	...	...
		F	21 45	...	...	...
" 6	N	c(S)	13 44 24	...	...	...	Slight, distant.
		Mn	... 54 34	...	...	...
		F	14 44	...	...	...
" 11	N	eP	09 53 31	...	...	4400	Slight.
		iS	... 59 43	...	...	...
		iSS	10 02 11	...	...	...
		iSSS	... 02 49	...	...	...
		F	... 11 57	...	...	...

ALIPORE OBSERVATORY, CALCUTTA.

Date	Compt.	Phase	G. M. T.	Per.	Amp.	Δ	Remarks
September 1944							
1944			h. m. s.	Sec.	μ	km.	
Sept. 23		L	... 44 00	...	...	...
		Mn	... 51 40	20	454	...	
		F	Lost in microseisms.				
" 24	N	e	11 23 37	...	...	...	Slight, distant.
		Mn	... 33 32	...	...	...
		F	12 02	...	...	...
" 24	N	eS	12 19 05	...	...	...	Slight, near. Felt as slight shock at 1840 I.S.T. at Tegpur.
		i	... 20 10	...	...	...
		F	... 39	...	...	...
September 1944							
1944			h. m. s.	Sec.	μ	km.	
Sept. 27	N	iP	16 28 57	...	...	2145	Great. Direction of first movement North. The shock was followed by another shock of moderate intensity.
		iPP	... 29 09	...	...	...
		iS	... 32 34	...	...	...
		L	... 34 02	...	...	...
		M	... 35 44	...	...	...
		Mn	... 37 14	20	989	...	
		F	Lost in microseisms.				
" 30	N	e	07 48 28	...	...	...	Slight. The phases are merged in microseisms.
		i	... 51 38	...	...	...
		F	Lost in microseisms.				

ALIPORE OBSERVATORY,
CALCUTTA.

N. K. SUR,
Meteorologist.

COLOMBO OBSERVATORY, CEYLON.

Date	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks
------	--------	-------	--------	------	------	---	---------

July, 1944.

1944	Date	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks
July	5	E	P	10 03 43	...	...	...
			L	08 33	...	...	...
			Mn	11 03	...	0.5	...	
			F	40	...	...	...
" 17	E	P	P	11 02 06	...	...	...
			L	20 01	...	...	...
			Mn	22 41	...	0.8	...	
			F	45	...	...	...
" 19	E	P	P	10 31	...	...	...	Times uncertain.
			S	39	...	...	...
			L	11 01	...	...	...
			Mn	08	...	0.5	...	
			F	50	...	...	...

August, 1944.

1944	Date	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks
Aug. 2-3	E	Record lost	from	...	...	...	...	About 10 hours lost
			to	...	...	...	...
			
" 3-4	E	Record lost	from	...	...	...	...	About 16 hours lost.
			to	04 48	...	...	...
			
" 6	E	S	18 30 03	...	...	...
		F	59 16	...	...	...
" 7-8	E	Record lost	from	00 36	...	...	...
			to	00 24	...	...	...
			
" 8	E	P	08 43 35	...	...	...
		S	51 48	...	...	...
		F	09 20	...	...	...
" 9-10	E	Record lost	from	19 50	...	...	...
			to	00 32	...	...	...
			
" 10	E	E	02 57	...	...	...	Slight.	
		F	03 14	...	...	...
		PS	11 08 57	...	...	...
" 10	E	Record lost	from	...	...	...	...
			to	00 24	...	...	...
			

September, 1944.

Sept. 8	E	e	20 08	...	...	...	Slight.
		F	45	...	...	...
Sept. 3-4		Record lost	from	22 12	...	...	...
		to	00 53	...	...	...

COLOMBO OBSERVATORY, CEYLON.

Date	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks
------	--------	-------	--------	------	------	---	---------

September, 1944.

1944	Date	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks
6	E	PP	PP	13 37 24	...	...	...
			(S)	42 25	...	...	...
			L	49 23	...	...	...
			Mn	50 10	...	< 0.5	...	
			F	15 20	...	...	...
11	E	P	P	09 53 55	...	...	...	Times uncertain.
			S	10 00 30	...	...	...
			SS	03 50	...	...	...
			L	09 52	...	...	...
			Mn	44 34	...	1.1	...	
15-16	E	Record lost	from	22 10	...	...	...
			to	00 42	...	...	...
			
17-18	E	Record lost	from	05 54	...	...	...
			to	04 00	...	...	...
			

COLOMBO OBSERVATORY,
CEYLON.

D. T. E. DASSANAYAKE,
Superintendent.

HAIG OBSERVATORY, SURVEY OF INDIA, DEHRA DUN.

Date	Compt.	Phase	G. M. T.	Per.	Amp.	Δ	Remarks	Date	Compt.	Phase	G. M. T.	Per.	Amp.	Δ	Remarks
July, 1944.															
1944 July 17	N	e	11 08 33?	...	...	...		1944 Jul. 23	N	M ₁	13 00	12	0'02	...	Slight.
		M ₁ ?	14 37	22	0'01	...		" 27		F	20 ...	...	...	...
		F	34 ...	...	...	...				eP	08 24 21?	...	...	2755	
" 19	N	e	10 41 36	...	...	...				eS	28 39	...	...	...
		M ₁ ?	51 00 20	...	...	...				eL	33 18	...	...	...
		F	11 40 ...	...	...	...				M ₁	34 48	25	...	...
" 28	N	e	12 07 16?	...	...	...	Slight.			F	57 ...	...	...	...
		e	10 02	...	...	...						
		e	12 41	...	...	...						
August, 1944.															
Aug. 2	N	eS	23 03 16	...	...	...						
		eL	05 48	...	...	...						
		M ₁	06 17	15	0'01	...									
		F	33 ...	...	...	...						
September, 1944.															
Sept. 11	N	eS	10 02 40	...	...	...		Sept. 23	N	e	44 26	...	...	...
		eSSS	07 18	...	...	...				M	47 ...	...	...	...
		e	15 48	...	...	...		" 27	N	F	13 52	...	...	...
		M	25 58	...	...	...				P	16 27 08	...	...	...
		F	40 ...	...	...	...				Pg	27 48	...	...	...
" 14	N	PP	06 46 54	...	...	...				S	28 48	...	...	...
		SS	53 48	...	...	...				S*	29 38	...	...	...
		M	07 08	...	...	...				Sg	30 13	...	...	...
		F	30 ...	...	...	...				F	Lost in the following shock.				
" 23	N	e	12 28 12	...	...	...		" 27	N	1(S)	16 56 48	...	...	...
		c	29 45	...	...	...				S*	57 58	...	...	...
		S	32 11	...	...	...				F	17 34	...	...	...
		SSS	38 49	...	...	...						
		e	39 30	...	...	...						
		L	41 42	...	...	...						

J. de GRAAFF HUNTER,
C.I.E., Sc. D., F.R.S.
Director, War Research,
Survey of India.

DEHRA DUN.

NIZAMIAH OBSERVATORY, HYDERABAD, DECCAN.

Date	Compt.	Phase	G. M. T.	Per.	Amp.	Δ	Remarks	Date	Compt.	Phase	G. M. T.	Per.	Amp.	Δ	Remarks
July, 1944.															
1944 July 17	N	eP	10 04 49	...	...	...	2890	1944 July 23	N	P	12 02 58	...	...	...	2670
		S	09 17	...	...	...				I	04 26	...	...	...
		SS	10 10	...	...	...				S	07 10	...	...	...
		L	12 14	...	...	...				L	11 15	...	...	...
		M	14 31	16	4	...				M	14 12	8	6	...	
" 18	N	M	11 24 58	15	4	...		" 27	M	eP	00 17 23	...	...	...	12220
" 17	N	S	11 06 32	...	...	...				SKS	27 42	...	...	...
		L	23 21	...	...	...				S	28 07	...	...	...
		M	25 22	11	4	...				L	32 17	...	...	...
" 19	N	S	10 30 13	...	...	...		" 27	M	P	08 22 07	...	...	...	1600
		PS	39 19	...	...	...				S	24 45	...	...	...
		ScS	41 09	...	...	...				M	26 50	8	22	...	
		L	51 11	...	...	...				M	15 44 24	9	2	...	
" 19	N	M	55 44	15	12	...		" 30	M						
" 19	N	M	23 41 07	18	3	...									
" 20	N	M	20 45 29	14	3	...									
August, 1944.															
" 2	N	P	22 58 32	...	...	...	9150	1944 Aug. 21		B	23 51	...	...	...
		PP	58 47	...	...	...				L	29 50	...	...	...
		S	28 01 58	...	...	...		" 24	M	33 26	10	3	...		
		SS	02 17	...	...	...				eP	14 29 33	...	...	...	4290
		L	04 01	...	...	...				S	35 29	...	...	...
		M	05 05	10	12	...				ScS	39 21	...	...	...
" 6	N	M	07 40 45	9	3	...		" 15	L	42 29	...	...	...
" 7	N	PKP	05 45 29	...	...	...	16660	" 15	M	46 01	15	6	...		
		PP	49 32	...	...	...				M	01 47 07	11	3	...	
		SKSP	59 03	...	...	...		" 15	N	eP	11 57 55	...	...	...	6690
		M	04 49 15	16	8	...				S	12 06 09	...	...	...
" 8	N	M	09 00 05	12	5	...				ScS	07 26	...	...	...
" 10	N	S	11 09 38	...	...	...				SS	10 04	...	...	...
		M	16 49	9	2	...				M	21 53	12	2	...	
" 2	N	B	09 2 55	...	...	...		" 18	N	eP	10 42 53	...	...	...	6810
		SJ	23 2	...	...	...				S	50 47	...	...	...
										SS	54 22	...	...	...
										L	11 00 08	...	...	...
										M	05 51	19	4	...	
September, 1944.															
" 3	N	B	19 32 40	...	...	...		1944 Sept. 3	N	e	44 23	...	...	...
		P	33 03	...	...	...				M	20 5 34	16	7	...	

Times approximate

NIZAMIAH OBSERVATORY, HYDERABAD, DECCAN.

Date	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks	Date	Compt.	Phase	G. M. T.	Per.	Amp.	Δ	Remarks
September, 1944.															
1944			h. m. s.	Sec.	μ	Km.		1944			h. m. s.	Sec.	μ	Km.	
Sept. 6	N	S	13 47 54					Sept. 24	N	M	11 33 13	21	8		
		M	46 49	15	9			.. 27	N	P	16 29 44			2570	
.. 11	N	P	09 54 21			5370				PP	30 47				
		PP	56 16							PcP	33 33				
		S	10 01 20							S	33 48				
		ScS	04 04							M	38 06	9	88		
		L	09 34					.. 27	N	P	16 57 43			2580	
		M	13 35	16	4					S	17 01 48				
.. 14	N	P	06 46 29			4270		.. 30	N	P	05 18 02			1640	
		PP	48 02							S	20 45				
		S	52 24					.. 30	N	M	22 13	11	3		
		ScS	56 33							P	07 45 55			2620	
		L	58 00							eS	50 03				
.. 23	N	P	07 02 48	14	4					L	52 47				
		S	33 49							M	54 17	10	4		
		PS	34 09												
		ScS	34 52												
		L	45 52												
		M	50 54	20	28										

NIZAMIAH OBSERVATORY, HYDERABAD, DECCAN.

AKBAR ALI, Director.

KODAIKANAL OBSERVATORY, KODAIKANAL.

Date	Compt.	Phase	G.M.T.	Per.	Amp.	Δ	Remarks	Date	Compt.	Phase	G. M. T.	Per.	Amp.	Δ	Remarks
July, 1944															
1944			h. m. s.	sec.	μ	Km.		1944			h. m. s.	sec.	μ	Km.	
July 5	E	i	10 04 45				Distant.	July 23		e	11 30				
		F	11 20 00							M	19 40	12	4		
July 10	E	e	16 33 00				Times uncertain due to microseisms.			F	Lost in microseisms.				
		F	56 00					July 27	E	SKKS	00 28 37				Feeble, distant.
July 17	E	e	11 05 10							e	32 37				
		F	12 21 00							e	42 27				
July 19	E	eP	10 29 60			6620	Times uncertain.			L	54 07				
		iS	37 40							M	01 02 17	24	2		
		SS	42 00							F	Lost in microseisms.				
		L	50 00					July 27	E	iP	08 22 27			1620	
		Mn	55 20	15	7					iS	25 07				
		F	13 18 00							L	26 02				
July 23	E	e	10 37 40				Feeble.			M	27 17	14	100		
		F	55 00							F	09 25 00				
July 23	E	e	11 08 00				Feeble, distant.	July 29	E	e	01 29 24				
		F	48 00							F	53 00				
July 23	E	e	12 05 40												
August, 1944															
1944			h. m. s.	sec.	μ	Km.		1944			h. m. s.	sec.	μ	Km.	
August 2	E	ep	22 59 32			2920		August 8		L	09 04 22				
		PP	23 00 27							M	09 42	15	10		
		iS	04 02							F	51 00				
		L	06 47					August 12	E	i	09 22 00				
		M	09 12	17	6					e	23 10				
		F	36 00							e	25 35				
August 6	E	ep	18 30 50							e	26 40				
		PP	32 20							e	33 45				
		iS	36 50							e	37 25				
		L	38 00	20	10	4355				e	48 00				
		F	19 37 00							F	Lost in microseisms.				
August 7	E	i	03 51 18					August 14	E	e	14 28 17				Times uncertain.?
		e	54 08							i	33 07				
		e	04 01 23							L	39 07				
		M	05 09 08	17	15					M	42 47	17	12		
		F	53 00							F	15 14				
August 8	E	iP	08 45 22			6980	Time uncertain.	August 15	E	e	01 42 45				Tremor.
		PP	46 12							F	57 00				
		iS	53 52					August 31	E	e	00 37 16				
										F	44 00				
September, 1944															
1944			h. m. s.	sec.	μ	Km.		1944			h. m. s.	sec.	μ	Km.	
Sept. 6	E	eP	13 33 24			4445	Time uncertain.?	Sept. 5	E	L	46 09				
		PP	34 54							M	49 59	15	10		
		eS	39 29							F	14 30 00				
		SS	42 39												

KODAIKANAL OBSERVATORY, KODAIKANAL.

Date	Compt.	Phase	G. M. T.	Per. Amp.	Δ	Remarks	Date	Compt.	Phase	G. M. T.	Per. Amp.	Δ	Remarks
September, 1944.													
1944			h. m. s.	Sec.	μ	Km.	1944			h. m. s.	Sec.	μ	Km.
Sept. 14	E	iP	06 35 27	...	...	...	Sept. 30	B	eP	10 46 00	..	..	2165
		PP	36 27	...	...	...			eS	49 30	..	..	...
		S	40 57	...	...	...			L	51 10	..	..	...
		L	45 33	...	...	...			M	52 42	10	4	...
		M	48 23	17	9	3855			F	11 04	...	..	...
		F	08 54 00	...	...	...				

A. L. NARAYAN,

Director.

SOLAR PHYSICS OBSERVATORY,
KODAIKANAL.

SEISMOLOGICAL BULLETIN

ERRATA FOR JULY to SEPT 1944.

Page.	Date	For incorrect.	Read correct.
2	July 17	Distance 13280	3280
2	July 30	F-lost in Micros.	Microseisms.
2	Aug. 3	1 13 0	1 13 00
3	Aug. 13	3 114983	3 114933
3	Sept 3	Date blank	Insert 3
4	Sept 27	F blank etc.	Blank F etc.
5	Sept 27	Blank N eP 082322	figure 27 to come d
5	Sept 27	7 after L at Remarks col.	Delete.
6	Aug. 2	July/Aug	July to be deleted
6	Aug. 2	E SS 08575	E SS 08 57 51
6	Aug. 10	S blank 1907	S 021907
6	Aug. 10	Remarks against 11890	To come in line with 11890
6	Aug. 10	Epc-Lat 5°14 N	Lat 51° 4 N
7	Aug. 31	Origin time 00h 33m 49	00 h 33 m 49 s
7	Sept. 3	SKSP 19....	SKSP 194410
8	Sept 27	Mn163748 blank 8/200	Mn163748/8/200/...
9	Sept 30	Mn052144/blank/7/2	Mn 052144/7/21P
12	July 25-26	to 000..	to 0006...
15	July 19	NM 234107/18/8...	NM 234107/18/3/..
15	Aug. 10	M 36 ^s /49/9/2	M 1549/9/2/..
15	Aug. 12	2 NE 09155	12 NE 091755
15	Aug. 12	S 09232	S 092302
15	Sept 3	P 193303	PP 193303
15	Sept 3	M 20534	M 201534
17	Aug	At start-gu 44 Aust 2	1944 August 2
19	-	Head of first col-'fel'	Felt.

The following table contains a list of earthquakes reported by voluntary observers from various stations.

Place at which felt	Date	G.M.T. of earthquake		Duration	Intensity Rossi Forei scale	No. of shocks	Remarks
		h.	m.				
¹⁹⁴⁴ Mettur Dam . . .	July 6	03	50	I	4	I	
Mettur Dam . . .	July 6	09	57	I	4	I	
Kabul	July 24	08	26	I	5	I	
Kabul	July 27	09	17	I	4	I	
Yatung	Aug. 14	17	39	3	5	3	
Muzaffarabad . . .	Sept. 1	23	45	2	7	I	
Yatung	Sept. 26	06	41	2	4	2	

J. M. SIL,

Meteorologist, Poona.

GOVERNMENT OF INDIA
METEOROLOGICAL DEPARTMENT
SEISMOLOGICAL BULLETIN
OCTOBER—DECEMBER 1944

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INTRODUCTION

Till the end of 1937, the seismic data from the observatories of the India Meteorological Department were being published annually as part D of the Annual Summary of the India Weather Review. Since 1938, the data are being published in the present series of the Quarterly, Seismological Bulletin. With the kind co-operation of the Surveyor-General of India, the Director of the Nizamiah Observatory, Hyderabad, and of the Superintendent, Colombo Observatory, it has been possible to incorporate in the bulletin, the data of their respective observatories *viz.*, Dehra Dun, Hyderabad and Colombo. The instrumental seismological data and the non-instrumental voluntary observations are collected and edited at the Meteorological Office, Poona.

TABLE I

List of Seismograph Stations

Station	Latitude.	Longitude.	Height above M. S. L.	Lithologic foundation.	Officer-in-charge of Observatory.
New Delhi	28°35'N.	77°12'E	207 meters	Massive Quartzites	Superintending Meteorologist.
Bombay	18°54'N.	72°49'E.	6 meters	Deccan Trap	Director.
Calcutta	22°32'N.	88°20'E.	(1) 7 meters (2) 6 meters	Alluvium	Meteorologist.
Colombo	6°54'N.	79°52'E.	7 meters	Beach-Sand resting on gneiss probably decomposed.	Superintendent.
Dehra Dun	30°19'N.	78°03'E.	682 meters	Gravel	Director, War Research, Survey of India.
Hyderabad	17°26'N.	78°27'E.	528 meters	Granite	Director.
Kodaikanal	10°14'N.	77°23'E.	2343 meters]	Rock	Director.

(1) Milne shaw. (2) Omori-Ewing.

TABLE 2.

The instruments and their constants.

Station	Component	Type of Instrument	Mass.	Period	Static magnification.	Damping ratio	Remarks
New Delhi	E	Omori-Ewing	kg.	Secs.			
	N	Milne-Shaw	45	32	30	...	
Bombay	N	Milne-Shaw	0.45	12	250	20:1	
	E	Milne-Shaw	0.45	12	350	15:1*	*For October and November.
Calcutta	N	Milne-Shaw	0.45	12	250	20:1	
	N	Omori-Ewing	50	15	32	...	
	E	Omori-Ewing	50	21	30	...	
Colombo	E	Milne-Shaw	0.45	12	250	20:1	
Dehra Dun	N	Omori	50	30	12	...	
Hyderabad	N	Milne-Shaw	0.45	12	250	20:1	
	E	Milne-Shaw	0.45	12	250	20:1	
Kodaikanal	E	Milne-Shaw	0.45	10	250	20:1	

*For October and November.
†For December.

UPPER AIR OFFICE, NEW DELHI

UPPER AIR OFFICE, NEW DELHI

Table header for page 4: Date, Compt., Phase, G.M.T., Per, Amp, Δ, Remarks

Table header for page 5: Date, Compt., Phase, G.M.T., Per, Amp, Δ, Remarks

November, 1944

December, 1944

Table for November 1944 (left side), columns: Date, Compt., Phase, G.M.T., Per, Amp, Δ, Remarks

Table for November 1944 (right side), columns: Date, Compt., Phase, G.M.T., Per, Amp, Δ, Remarks

Table for December 1944 (left side), columns: Date, Compt., Phase, G.M.T., Per, Amp, Δ, Remarks

Table for December 1944 (right side), columns: Date, Compt., Phase, G.M.T., Per, Amp, Δ, Remarks

December, 1944

Table for December 1944 (left side), columns: Date, Compt., Phase, G.M.T., Per, Amp, Δ, Remarks

Table for December 1944 (right side), columns: Date, Compt., Phase, G.M.T., Per, Amp, Δ, Remarks

UPPER AIR OFFICE, NEW DELHI

Table with columns: Date, Compt., Phase, G.M.T., Per., Amp., Δ, Remarks. Includes data for December 1944 with sub-columns for h. m. s., Sec., μ, Km.

UPPER AIR OFFICE, NEW DELHI.

S. C. ROY, Superintending Meteorologist.

COLABA OBSERVATORY, BOMBAY

Table with columns: Date, Compt., Phase, G.M.T., Per., Amp., Δ, Remarks. Includes data for October 1944 with sub-columns for h. m. s., Sec., μ, Km.

COLABA OBSERVATORY, BOMBAY.

GOLABA OBSERVATORY, BOMBAY.

Table header for Colaba Observatory, Bombay, listing columns: Date, Compt., Phase, G.M.T., per. Amp, Δ, Remarks.

Table header for Golaba Observatory, Bombay, listing columns: Date, Compt., Phase, G.M.T., Per. Amp, Δ, Remarks.

December, 1944.

December, 1944.

Main data table for Colaba Observatory, Bombay, December 1944. Includes columns for date, phase (N, E, N,E), amplitude, and remarks (e.g., 'Very great. Epc 33° N., 137° E.').

Main data table for Golaba Observatory, Bombay, December 1944. Includes columns for date, phase (N, E, N,E), amplitude, and remarks (e.g., 'Feeble. 29° N., 81° 5' E., Nepal').

COLABA OBSERVATORY, BOMBAY.

S. R. SAVUR, Director.

ALIPORE OBSERVATORY, CALCUTTA.

Date.	Comp.	Phase	G.M.T.	Per. Amp	Δ	Remarks	Date	Comp.	Phase	G.M.T.	Per. Amp	Δ	Remarks
October, 1944.													
1944 Oct. 2	N	eP	20 38 22	...	...	Slight. Deep focus.	1944 Oct. 17	N	e	21 49 53	...	...	Feeble.
		iS	45 25	...	...	Lost in microseisms.			F	Lost.	...	...
		F	...	...	...				F	Lost.	...	...
" 3	N	ePP	16 15 00	...	...	Slight. Phases confused by strong microseisms.	" 17	N	e	22 12 13	...	...	Feeble.
		iS	19 17	...	...	Lost in microseisms.	" 18		e	13 15 50	...	...	Feeble.
		F	...	...	...				e	51	...	...
" 5	N	e	28 09 15	...	...	Slight, near.	" 19	N	e	12 14 21	...	...	Slight, near.
		F	30	...	...		" 22	N	e	18 56 49	...	...	Slight, distant.
" 5	N	e	17 09 28	...	...	Slight, distant.	" 23	N	e	19 31	...	...	Feeble.
		e	17 23	...	...	Lost in the following shock.	" 24	N	e	06 14 17	...	...	Feeble.
		F	...	...	...				e	00 00 24	...	...	Slight, very distant.
" 5	N	eP	17 41 47	...	100.45	Slight.	" 24	N	e	02 30	...	...	Slight, near.
		ePP	45 21	...	...				e	05 48 15	...	...	Slight, near.
		ePPP	47 25	...	...				e	49 21	...	...
		iSKS	52 06	...	...		" 28	N	i	20 32 11	...	...	Slight, near.
		iS	52 43	...	...				Mn	34 30	...	...
		iPPS	54 13	...	...		" 28-29	N	e	23 50 15	...	...
		iSSS	18 02 33	...	...				i	50 53	...	...
		F	19 51	...	...		" 29		iP	00 14 05	...	1011	Great. First movement South.
" 5	N	eP	02 44 30	...	...	Slight.	" 29	N	e	00 59 36	...	...	Phases masked by the coda of the preceding shock.
		i	51 57	...	...				i	01 00 14	...	...
		iS	55 07	...	...		" 29	N	F	02 40	...	...	Feeble.
		iSS	56 19	...	...		" 29	N	e	03 44 32	...	...	Feeble.
		cL	59 17	...	...		" 29	N	eP	04 37 55	...	678	Slight.
		M	03 03 07	...	...				ep	38 24	...	...
		F	Lost in microseisms.	...	...				iS	39 05	...	...
" 14	N	e	02 35 48	...	...	Feeble.	" 29	N	iS	39 42	...	...
		F	03 50	...	...				F	Lost in microseisms.	...	...
" 14	N	e	11 26 59	...	...	Feeble.	" 29	N	e	06 47 52	...	...	Feeble.
		Mn	32 38	...	...		" 29	N	e	08 31 29	...	...	Feeble.
		F	12 01	...	...				F	41	...	1501	Slight.
" 14	N	iS	20 30 55	...	...	Slight.	" 29	N	e	16 19 57	...	1510	Slight.
		i	31 21	...	...				eP	...	...	...
		SSS	34 28	...	...					...	...	...
		F	Lost in microseisms.	...	...					...	...	...
" 17	N	i	01 49 59	...	...	Feeble.				...	...	...
		F	Lost in microseisms.	...	...					...	...	...
" 17	N	iP	18 39 20	...	1210	Great. Direction of first motion—North.				...	...	...
		F	Lost	...	...					...	...	...
" 17	N	F	41 26 7	...	...	Feeble.				...	...	...
		F	Lost.	...	...					...	...	...

ALIPORE OBSERVATORY, CALCUTTA

Date.	Comp.	Phase	G.M.T.	Per. Amp	Δ	Remarks	Date.	Comp.	Phase	G.M.T.	Per. Amp	Δ	Remarks
October, 1944.													
1944 Oct. 29	N	e	20 28	...	...		1944 Oct. 29		iS	54 39	...	...
		iS	21 38	...	...				F	05 44	...	...
		iSS	22 03	...	...		" 31	N	e	06 19 04	...	...	Feeble.
		F	16 01	...	...				F	Lost in microseisms.	...	...
" 29	N	iP	04 53 35	...	478	Slight.	" 31	N	e	11 52 44	...	...	Feeble.
		iS	54 26	...	...				F	12 05	...	...
November, 1944.													
1944 Nov.	N	ePP	0 08 33	...	...	Sight.	1944 Nov.		i	25 47	...	...
		iS	12 36	...	...				i	26 07	...	...
		i	13 27	...	...		" 14	N	e	13 29 59	...	...	Feeble.
		M	14 39	...	...				F	40	...	...
		F	Lost in microseisms.	...	...		" 14	N	e	23 22 41	...	...	Slight, deep focus.
" 4	N	e	02 13 37	...	...	Feeble.	" 15	N	e	03 47 12	...	...
		F	Lost in microseisms.	...	...				F	Lost in microseisms.	...	...
" 5	N	eP	19 58 07	...	955	Slight.	" 15	N	eP	20 54 49	...	5000	Moderate. Deep focus local depth about 200 Km.
		iS	59 44	...	...				PP	56 49	...	...
		iS*	20 00 18	...	...		" 16	N	cP	12 23 30	...	9835	Moderate. Deep focus—local depth about 100 Km.
		iS	00 42	...	...				eP	23 57	...	...
		F	26	...	...				PP	26 59	...	...
" 6	N	e	05 47 44	...	...	Feeble.	" 20	N	e	17 19 38	...	...	Slight, Near.
		F	Lost in the following shock.	...	...				F	Lost in the following shock.	...	...
" 6	N	iP	05 51 37	...	1078	Moderate.	" 20	N	i	17 34 41	...	...	Slight, near.
		iP*	52 05	...	...				F	56	...	...
		iP	52 35	...	...		" 20	N	e	22 04 29	...	...	Slight, near.
		iS	53 23	...	...				i	04 33	...	...
		iS*	53 54	...	...		" 21	N	e	10 24 47	...	...	Slight, very distant.
		iS	54 27	...	...				Mn	11 27 57	...	...
		PcP	57 57	...	...				F	Lost.	...	...
		ScS	06 05 07	...	...					...	...	...
" 6	N	e	10 32 49	...	...	Feeble.				...	...	...
		F	Lost in microseisms.	...	...					...	...	...
" 6	N	e	13 32 57	...	...	Slight near.				...	...	...
		i	34 06	...	...					...	...	...
		F	55	...	...					...	...	...
" 6	N	e	23 38 22	...	...	Slight, near.				...	...	...
		F	45	...	...					...	...	...
" 8	N	e	11 49 02	...	...	Feeble.				...	...	...
		F	12 00	...	...					...	...	...
" 10	N	e	13 39 51	...	...	Slight, distant.				...	...	...
		Mn	14 11 36	...	...					...	...	...
		F	Lost in microseisms.	...	...					...	...	...
" 11	N	i	03 24 41	...	...	Slight.				...	...	...
		i	24 53	...	...					...	...	...

ALIPORE OBSERVATORY, CALCUTTA.

Table header for November 1944 with columns: Date, Compt., Phase, G.M.T., Per. Amp, Δ, Remarks.

November, 1944.

Table of seismic observations for November 1944, including dates like Nov. 23 and 24, and details on phases and amplitudes.

December, 1944.

Main table of seismic observations for December 1944, covering dates from Dec. 1 to Dec. 14, with detailed phase and amplitude data.

ALIPORE OBSERVATORY, CALCUTTA.

Table header for December 1944 with columns: Date, Compt., Phase, G.M.T., Per. Amp, Δ, Remarks.

December, 1944.

Main table of seismic observations for December 1944, covering dates from Dec. 17 to Dec. 30, with detailed phase and amplitude data.

METEOROLOGICAL OFFICE, ALIPORE; CALCUTTA.

N. K. SUR, Meteorologist.

COLOMBO OBSERVATORY, CEYLON.

Date.	Compt.	Phase.	G.M.T.	Per.	Amp	Δ	Remarks
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October, 1944.

Date	Compt.	Phase.	G.M.T.	Per.	Amp	Δ	Remarks	
1944 Oct. 2	E	P	20 40	Time marks uncertain.	
		S	49 ...	...	...	...
		Mn	21 10 ...	0.5	...	...
		F	30 ...	...	...	...
" 3	E	P?	15 14 14	...	...	...
		S	20 59	...	...	...
		F	30	...	...	...
" 5	E	P	17 08 38	...	...	...
		S	18 07	...	...	...
		L	33 54	...	...	...
		Mn	36 57	0.5	...	...
		F	Last in the following shock.					
" 5	E	P	17 41 41	...	...	...
		SKS	52 04	...	...	...
		Mn	18 16 01	0.5	...	...
		F	51	...	...	...
	E	P	02 44 36	...	...	...
		S	52 35	...	...	...
		L	03 10	...	...	...
		Mn	14 37	1.0	...	...
		F	04 10	...	...	...
" 12-13	E	Record lost from 20 32 ... to 00 49 ... 1.0						

November, 1944.

No	Date	Compt.	Phase.	G.M.T.	Per.	Amp	Δ	Remarks
	Nov. 10-12	E	Record lost from 19 25 ... to 00 43 ... Intermittent loss of record.					
	" 13-14	E	Record lost from 00 35 ... to 09 00 ... Intermittent loss record.					
" 4-5	E	P	20 33	...	...	...	Initial S waves big amplitude. (9.9 m.m.)
		F	43	...	...	...
" 5-6	Record lost for about 16 hours.							
" 6	E	P	05 54 36	...	...	...
		F	06 25	...	...	...
	E	e	13 36 30	...	...	...
		F	59 30	...	...	...
" 6-7	E	Record lost from 23 12 ... to 00 39 ...						
	Nov. 10-12	E	Record lost from 19 25 ... to 00 43 ... Intermittent loss of record.					
	" 13-14	E	Record lost from 00 35 ... to 09 00 ... Intermittent loss record.					
" 15	E	P	20 55 34	...	...	...	Initial S waves big amplitude. (9.9 m.m.)
		IS	21 02 24	...	...	...
		L	15 59	...	...	...
		Mn	16 54	5.3	...	...
" 16		P	12 23 47	...	...	...
		PP	27 37	...	...	...
		S	34 19	...	...	...
		SS	40 19	...	...	...
		L	13 04 04	...	...	...
		Mn	10 32	4.3	...	...
		F	16 05	...	...	...
" 21	E	e	10 50	...	...	...
		F	11 50		

COLOMBO OBSERVATORY, CEYLON.

Date	Compt.	Phase.	G.M.T.	per	Amp	Δ	Remarks
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November, 1944.

Date	Compt.	Phase.	G.M.T.	per	Amp	Δ	Remarks
1944 Nov. 22-23	E	Record lost from 21 07 ... to 00 26 ...					
" 24	E	P	05 12 30	...	...	...	Times uncertain. Considerable overlapping.
		F	07 10	...	...	...
" 26	E	e	00 21	...	...	...	Record lost from 01 02 ... to 00 27 ...
" 28-29	E						
" 29	E	i	19 14 33	...	...	...	Record lost from 20 10 ... to ...
		F	20 10	...	...	...

December, 1944.

Date	Compt.	Phase.	G.M.T.	per	Amp	Δ	Remarks
Dec. 2	E	e	11 30	...	...	...	Record lost from 12 03 ... to ...
		F	12 03	...	...	...
" 5-6	E	Record lost for several hours					
" 7	E	P	04 45	...	...	...	Times uncertain owing to considerable overlapping.
		S	53 30	...	...	...
		L	05 05	...	...	...	Several hours trace unreadable owing to overlapping.
		Mn	14 30	60	...	...
		F	09 30	...	...	...
" 8	E	e	06 56 20	...	...	...	Times uncertain owing to overlapping trace.
		F	07 25	...	...	...
" 8	E	Record lost from 08 60 ... to 12 50 ...					
" 8	E	eP	13 10	...	...	...	Record lost from 06 26 ... to 00 46 ...
		Mn	59 30	0.5	...	...
		F	15 03	...	...	...
" 8	E	S	18 39 32	...	...	...	Record lost from 06 26 ... to 00 46 ...
		L	55 30	...	...	...
		Mn	19 01 30	0.5	...	...
		F	30	...	...	...
" 10	E	P]	05 18 12	...	...	...	Record lost from 06 26 ... to 00 46 ...
		(SSS)	22 42	...	...	...
		L	30 35	...	...	...
		Mn]	38 23	...	...	...
		F	07 30	1.7	...	...
" 10	E	P]	16 37 56	...	...	...	Record lost from 06 26 ... to 00 46 ...
		S]	48 26	...	...	...
		i]	48 38	...	...	...
		L	17 15	...	...	...
		Mn	20 45	0.9	...	...
		F	19 10	...	...	...
Dec. 10	E	P	19 28 18	...	...	...	Record lost from 06 26 ... to 00 46 ...
		S*	33 57	...	...	...
		F	21 00	...	...	...
" 12	E	eP	04 29	...	...	...	Record lost from 06 26 ... to 00 46 ...
		S	41 01	...	...	...
" 12	E	L	05 13 51	...	...	...	Record lost from 06 26 ... to 00 46 ...
		M1	14 36	0.5	...	...
		M2	19 31	0.5	...	...
		F	06 10	...	...	...
" 12	E	eP	10 38	...	...	...	Record lost from 06 26 ... to 00 46 ...
		F	11 50	...	...	...
" 17-18	E	Record lost from 06 26 ... to 00 46 ...					
" 18	E	SS	03 11 50	...	...	...	Record lost from 06 26 ... to 00 46 ...
		L*	22 38	...	...	...
		F	35	...	...	...
" 19-20	E	Record lost from 12 ... to 00 15 ...					
" 21	E	e	20 43	...	...	...	Record lost from 06 26 ... to 00 46 ...
		F	21 48	...	...	...
" 22-23	E	e	23 35	...	...	...	Record lost from 06 26 ... to 00 46 ...
		F	00 11	...	...	...
" 24	E	P]	14 51 31	...	...	...	Record lost from 06 26 ... to 00 46 ...
" 24	E	S]	14 55 24	...	...	...
		F.	15 36	...	...	...
" 27	E	P]	15 37 09	...	...	...	Record lost from 06 26 ... to 00 46 ...
		S,	40 35	...	...	...
		F	10 54	...	...	...

NIZAMIAH OBSERVATORY, HYDERABAD, DECCAN.

Date.	Compt.	Phase.	G.M.T.	Per. Amp	Δ	Remarks.	Date.	Compt.	Phase.	G.M.T.	Per. Amp	Δ	Remarks.
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October, 1944.

1944	Date.	Compt.	Phase.	G.M.T.	Per. Amp	Δ	Remarks.
Oct.	5	N	ePP	17 46 00	
			SKS	52 30	
			L	59 04	...	...
"	6	N	P	02 43 39	...	...	5480
			S	50 54	...	...
			M	03 07 59	11	2	
"	17	N	P	18 40 17	...	...	1590 Tibet.
			eS	42 54	...	...

November, 1944.

1944	Date.	Compt.	Phase.	G.M.T.	Per. Amp	Δ	Remarks.
Nov.	10	N	M	08 16 16	10	1	...
"	10	N	M	14 16 25	15	4	...
"	11	N	c	03 28 05	...	...	...
			M	31 11	6	2	...
"	14	N	S	23 26 03	...	...	...
"	15	N	eP	20 55 51	...	...	5460
			iP	56 02	...	...	...
			PcP	56 45	...	...	...
			PP	58 15	...	...	...
			eS	21 03 00	...	...	...
			iS	03 07	...	...	...
			ScS	05 15	...	...	...
			SS	06 58	...	...	...
			L	12 04	...	...	...
			M	21 15 55	15	19	...
			F	23 45	...	...	...
"	16	N	P	12 24 05	...	...	10290
			PP	27 49	...	...	...
			SKS	34 57	...	...	...
			S	35 13	...	...	...
			SS	41 05	...	...	...
			L	54 07	...	...	...
			M	13 01 59	15	19	...
			F	16 10	...	...	...
"	18	N	M	09 24 29	16	3	...

December, 1944.

1944	Date.	Compt.	Phase.	G.M.T.	Per. Amp	Δ	Remarks.
Dec.	4	N	M	20 54 39	8	2	...
"	7	N	eP	04 45 04	...	...	...
			i	45 12	...	...	...
			PP	47 15	...	...	...
			(PS)	52 56	...	...	...

NIZAMIAH OBSERVATORY, HYDERABAD, DECCAN.

Date.	Compt.	Phase.	G. M. T.	Per Amp	Δ	Remarks.	Date.	Compt.	Phase.	G. M. T.	Pre. Amp	Δ	Remarks.
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December, 1944.

1944	Date.	Compt.	Phase.	G. M. T.	Per Amp	Δ	Remarks.
Dec.	8	N	P	06 48 41	2180
			S	52 13	...	...	...
"	8	N	M	18 54 02	15	2	...
"	10	N	P	05 19 32	...	...	4760
			PP	21 17	...	...	...
			S	25 56	...	...	...
			ScS	20 32	...	...	...
			L	32 15	...	...	...
			M	33 13	15	4	...
"	10	N	M	17 23 00	15	2	...
"	12	N	P	04 29 42	...	...	9150
			SKS	40 02	...	...	...
			S	40 15	...	...	...
			PS	40 38	...	...	...
			SS	46 08	...	...	...
			M	05 04 32	15	9	...
"	12	N	eP	10 34 47	...	...	5960
			S	42 20	...	...	...
			M	56 01	12	3	...
"	18	N	P	03 05 01	...	...	...
			i	08 43	...	...	...
			M	13 03	5	2	...
"	18	N	e	03 18 41	...	...	...
			i |	19 42	...	...	...
			M	21 00	8	2	...
"	19	N	P	14 17 17	...	...	4920
			S	23 51	...	...	...
			ScS	27 25	...	...	...
			M	37 03	9	4	...
"	20	N	M	21 51 51	15	4	...

 Δ from SKS-P.NIZAMIAH OBSERVATORY,
HYDERABAD, DECCAN.AKBAR ALI,
Director.

KODAIKANAL OBSERVATORY, KODAIKANAL.

Date	Compt.	Phase.	G. M. T.	Per.	Amp.	Δ	Remarks	Date.	Compt.	Phase.	G.M.T.	Per.	Amp	Δ	Remarks
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October, 1944.

1944	Date	Compt.	Phase.	G. M. T.	Per.	Amp.	Δ	Remarks
Oct. 3	E	IP	16 15 05	5000	Slight.	
		PP	16 49			
		iS	21 42			
		ScS	25 04			
		L	29			
" 5	E	F	17 15			
		i	08 34 15	...	...	Slight.
		i	38 15	...	...	
		L	40 20	...	...	
		M	41 35	10	6			
" 6	E	F	09 15			
		IP	02 45 50	6110	Moderate.	
		PP	47 55	...	...	
		iS	53 32	...	...	
		L	03 02 37	...	...	
" 13	E	M	06 37	17	53			
		F	04 35			
		e	11 42 40	...	...	Slight.
		e	43 30	...	...	
		e	48 45	...	...	
" 13	E	L	50 50			
		M	53 45	8	2			
		F	12 50			
		e	20 53 47	...	...	
		e	54 07	...	...	
" 13	E	e	57 52			
		L	59 57	...	...	
		M	21 01 57	5	12			
		F	26			

November, 1944.

1944	Date	Compt.	Phase.	G. M. T.	Per.	Amp.	Δ	Remarks
Nov. 1	E	eP	12 10 30	3365		
		eS	15 30	...	...	
		SS	17 00	...	...	
		L	19 10	...	...	
		Mn	21 40	20	9			
" 5	E	F	13 09			
		eP	19 54 33	2200	Feeble.	
		S	58 08	...	...	
		M	59 13	6	4			
		F	20 10			
" 6	E	IP	05 49 30	2510	Moder	
		iS	53 30	...	...	

*Absoluteti mesun

1944	Date	Compt.	Phase.	G. M. T.	Per.	Amp	Δ	Remarks
Oct. 14	E	e	02 29 50			
		F	46			
		e	04 41 56	...	...	
		F	05 31	...	...	
		IP	20 35 24	5900	Slight.	
" 14	E	PP	37 14			
		iS	42 54	...	...	
		SS	45 44	...	...	
		L	49 50	...	...	
		Mn	54 44	6	25			
" 17	E	F	21 28			
		IP	18 50 10	2255	Moderate.	
		eS	53 50	...	...	
		L	55 46	...	...	
		Mn	57 20	12	34			
" 24	E	IP	21 46 40	3210	Slight.	
		iS	51 30	...	...	
		L	54 16	...	...	
		M	56 40	10	17			
		F	Lost	...	...	
" 24	E	ePKP	00 04 53		Moderate.	
		i	12 13	...	...	
		SKKS	15 53	...	...	
Oct. 24	E	M	01 18	32	15	19		
		F	02 15			
29	E	Three slight shocks recorded at about 4½, 15½ and 17½ hours G. M. T.						
		A slight shock recorded at about 5 hours G.M.T.						
30	E	A slight shock recorded at about 5 hours G.M.T.						

1944	Date	Compt.	Phase.	G. M. T.	Per.	Amp	Δ	Remarks
Nov. 6	E	L	55 20			
		Mn.	57 00	20	145			
" 16	E	F	06 47			
		IP	12 23 40		Moderate.	
		iSKS	34 20	...	...	
		L	51 10	...	...	
		M	57 50	30	90			
" 23	E	P	15 51			
		IP	11 08 50		Feeble.	
		S	12 20	...	...	
		Mn	13 20	10	3			
			40 ..	...	...	

SEISMOLOGICAL BULLETIN.

ERRATA FOR OCT to DEC 1944.

Page.	Date.	For Incorrect.	Read Correct.
1	Oct. 2	Blank 2203..	F 2203..
2	Oct. 17	N in 183826	N 1Ph 183826
3	Nov. 9	N 11 194954	N 1 194954
5	Dec. 18	NE blank 030326	NE e 030326
7	Oct. 3	Blank NE 1083340	" 3 NE 1 083340
7	Oct. 6	E 00(2)024506 PPPP	Whole line to be deteted.
7	Oct. 11	N e 10112	Ne 101312
8	Oct. 17	1846..blank 7 321	1846..7 321 blank
8	Oct. 17	1846..blank 7 199	1846..7 199 blank
8	Oct. 20	EF 055022	EP 055022
9	Oct. 28-29	Date against 235309 given as 28-30	Apparently 28-29
9	Oct. 29	eP 050061	eP 001502
9	Oct. 29	NE F blank 0200	NEF 010200
10	Nov. 11	Remarks 0=03h 20m 346	0=03h 20m 34s.
12	Dec. 10	Blank N 1P192939	"10 N 1P 192939
13	-	Golaba	Colaba
13	Jan. 27	0=15h 25m 49s	0= 15 h 25 m 49. s.
14	Oct. 17	N blank 2126..	Ne 2126..
14	Oct. 18	Blank e 131550	Ne 131550
14	Oct. 18	Blank 1351..	F 1351..
14	Oct. 29	N blank 034432	Ne 034432
14	Oct. 29	Blank 0404..	F 0404..
14	Oct. 29	eP 043824	eP 043824
14	Oct. 29	iS 043942	iS 043942
14	Oct. 29	F 41/1501	1501 to be deteted
15	Nov. 6	N*054744	Ne 054744

KODAIKANAL OBSERVATORY, KODAIKANAL.

:2:

Page.	Date.	For Incorrect.	Correct.
16	Nov.23	Nov.(illegible)	Nov.23
18	Oct.&.Nov.	Amp in /u	Amp. in mm
18	Oct.29	P lost while the etc.	P lost while etc.
20	Dec.28	M 46/0.5 mms	M 46/0.5' mms.
21	-	Subheads 'Km'(below AmP) and 'on trace in inch (below delta)	These should be interchanged.
21	-	Subhead 'Km' under 'Period'	Sec.
21	Oct.29	N Sg 001422	NS? 001422
21	Dec.7	NM1 50556	NM1 050556
24	Nov.23	E blank 1140	EF 1140
25	Dec.25	EF 1555	Doubtful.

Dhar. ✓

Date	Compt.	Phase.	G.M.T.	Per.	Amp.	Δ	Remarks	Date	Compt.	Phase.	G.M.T.	Per.	Amp.	Δ	Remarks.
November, 1944.															
24	E	1P 1SKS L	05 04 03	...	...	...	Moderate	1944 Nov. 24		Mn F	34 15	15	19	...	
December, 1944.															
10	E	1P 1S SS L Mn F	05 18 56	...	...	4045	Moderate.	Dec. 12	E	1P S SS L Mn	10 42 11	...	...	6890	Slight.
10	E	1P 1S SS L Mn F	16 44 58	...	...	9080	Slight Lines overlapping.	" 18	E	1P S F	08 09 51	...	...	...	Slight.
10	E	1P 1S	19 31 16	...	...	8145	Slight.	24	E	eP eS L Mn F	14 53 40	...	...	2255	Slight.
10	E	SS L Mn F	19 37 26	...	...	...		24	E	1P S F	22 25 52	...	...	...	Feeble.
12	E	1P PP SKS S SS L Mn F	04 29 01	...	...	1071	Slight.	27	E	eP PP eS SS Mn F	15 43 05	...	...	8145	Slight.

*Absolute times uncertain.

LAR PHYSICS OBSERVATORY,
KODAIKANAL.

A. L. NARAYAN,
Director.

The following table contains a list of earthquakes reported by voluntary observers from various stations.

Place at which felt.	Date.	G.M.T. of earth quake.	Duration	Intensity Rose-Foré scale	Number of shocks	Remarks
	1944	h. m.	Secs.			
Drosh	Oct. 6	07 33	2	7	1	
Ajmer	" 29	15 05	5	5	1	
Peshawar } R.A.F. } Cherat }	Nov. 14	23 20	21	5	1	
Cherat	" 14	23 20	70	5	1	
Kabul	" 14	23 35	20	6	1	
Srinagar	Dec. 8	06 50	5	6	2	
Peshawar	" 8	06 47	5	5	1	
Cherat	" 8	06 47	10	5	1	
Muzaffarabad	" 8	07 30	5	5	1	
Kabul	" 8	22 25	20	4	1	
Silchar	" 9	05 52	6	6	2	
Kabul	" 20	08 36	15	6	1	
Gauhati	" 24	14 52	1	5	1	
Silchar	" 24	02 44	64	8	5	
Silchar	" 26	04 15	2	5	1	
Silchar	" 26	17 38	2	5	1	
Silchar	" 27	06 35	2	5	1	
Srinagar	" 28	19 50	1½	8	1	
Silchar	" 31	01 01	7	6	2	

J. M. SIL,
Meteorologist, Poona.