

MAGNETIC NOTES

MAGNETIC STORMS AND DISTURBED DAYS AT ALIBAG 1938

THE Records of the Alibag Magnetic Observatory for 1938 show a larger activity than those of the year 1937. The activity during any year is determined by the character of days during that year. At Bombay, days are classified as *quiet* days, days of *slight* disturbance or of *large* disturbance corresponding to the international¹ characters 0, 1 and 2. Days of large disturbance are reclassified into those of *moderate*, *great* or *very great* disturbance on the basis of the oscillations in the magnetograms. During the year there were 132 quiet days, 185 days of slight disturbance and 48 of large disturbance as against 158, 167 and 40 during the previous year. In 1938, the days of large disturbances consisted of 4 days of very great, 8 of great and 36 of moderate disturbance as against 1, 9 and 30 during 1937. In 1938 January was the most disturbed and June the least disturbed month, corresponding to October and August in the preceding year. The monthly characters during 1938 are shown in Table I.

TABLE I

		Mean character figure	
		Bombay	International ²
1938			
January	..	1.07	1.08
February	..	0.75	0.79
March	..	0.58	0.65
April	..	0.57	0.80
May	..	0.55	0.76
June	..	0.40	0.59
July	..	0.52	0.73
August	..	0.81	0.73
September	..	1.03	0.83
October	..	0.94	0.81
November	..	1.03	0.67
December	..	0.97	0.66

The mean character for 1938 is 0.77 according to Bombay classification and 0.76 according to the international classification done at De Bilt on the basis of data from 68 observatories of the world. The number of days of different characters in individual months is shown in Table II.

TABLE II

		Number of days (Bombay classification)		
		0 character	1 character	2 character
1938				
January	..	5	19	7
February	..	10	15	3
March	..	16	12	3
April	..	15	12	3
May	..	16	13	2
June	..	18	12	0
July	..	18	10	3
August	..	12	13	6
September	..	5	19	6
October	..	9	15	7
November	..	4	21	5
December	..	4	24	3
Total	..	132	185	48

Magnetic Storms.—During the year 1938 there were 4 storms of very great intensity the severest of them being the one of 16th April. This also happens to be the severest storm since 1922. This storm, though of a short duration, was rather violent, and the Indian Telegraph Department observed "foreign incoming currents of varying intensity" in several important circuits. Similar disturbance to telegraph traffic was also noticed by observers in southern Norway where "the earth-currents on the lines between 7^h 30^m and 9^h mid. Eur. Time, were so great that they could not be measured (the measurable maximum being 150 milliamperes) and all telegraphic transmission was impossible,

On the telephone lines the tension potential increased to about 1,000 volts³. The magnetograms showed prominent "sudden commencements". H reached 37,956 gammas which is the highest recorded by the Alibag H magnetograph since its installation in 1904. The observers at Huancayo also report this as the most intense storm recorded by them since the establishment of their observatory in 1922.⁴

The storm next in intensity was that of January 22. The H-range in this case was 613 gammas and is the highest in the last ten years. H went off the recording limit and was brought within the field by means of a controlling magnet. The minimum in H was 37,219 gammas and is the lowest since the last five years. Two more storms of very great intensity were recorded on January 16 and January 25. In the former case, the sudden commencements were unusually large, that in H measuring 167 gammas. The latter storm was associated with a gorgeous aurora which was visible over a large part of the Globe.⁵ There were eight storms of great intensity during the year. The times of commencement and cessation of the more important storms during the year are

TABLE III

		G.M.T. of				Range in gammas	Intensity G=great V.G.=very great
		Beg.		End.			
		H.	M.	D.	H.		
1938							
Jan.	16	22	32	18	22.5	388	V.G.
	22	2	42	23	0	613	"
	25	11	50	26	20	>477	"
Feb.	8	10	38	10	14	196	G.
March	5	3	15	5	20	238	"
	22	4	32	22	19.5	236	"
April	16	5	45	16	23	532	V.G.
May	11	15	31	12	16	293	G.
July	15	3	14	16	20.5	256	"
August	11	3	20	13	9	245	"
Sept.	27	22	1	29	15.5	202	"
Oct.	7	6	13	8	22	326	"

given in Table III. The number of moderate storms during the year was 21.

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¹ Method as recommended by the Int. Comm. of Terr. Mag. and Atm. Elec., in their Circular Letter of March 1924.

² From *Caractère Magnétique de l'année*, 1938, Table II.

³ C. Stormer, *Terr. Mag.*, 1939, 44, 240.

⁴ Berkner, Wells and Seaton, *Ibid.*, 1939, 44, 301.

⁵ C. Stormer, *Ibid.*, 1939, 44, 236.

MAGNETIC NOTES FOR JANUARY 1940

MAGNETIC conditions during January 1940 were more disturbed than those in the previous month. There were 2 days of *great*, 4 of *moderate* and 21 of *slight* disturbance as against 21 days of slight disturbance in January of last year. The quiet days numbered 4 as against 9 during January 1939.

The most disturbed day during the month was the 18th and the least the 26th. The daily characters are shown below in tabular form.

Dates of the month	Quiet	Disturbed days		
		Slight	Moderate	Great
January 1940..	13, 21, 26, 28	1, 2, 4-9, 11, 12, 14, 15, 16, 19, 20, 22-25, 27, 29.	10, 17, 30, 31.	3, 18.

Four storms, 2 of moderate intensity and 2 of great intensity were recorded during the month as against none in January of last year. The mean character figure for the month is 1.06 while that for January 1939 was 0.71.

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