551.5 (54)

WAVE PATTERNS ON SOME ANEMOGRAMS OF MADRAS

Wave patterns on anemograms and barograms have been known to be possible and have also been observed by Goldie and others.[1] Not many such instances in Indian autographic records have so far been prominently brought out, the only published instances known to the author being some of Agra and of Karachi by Barkat Ali.[2,3] Working with the Dine's anemograms of the Madras Observatory at Nungumbakam, I came across a few instances of wave patterns, and wish to draw the attention of readers to them. Photographs of relevant portions of the anemograms for two days, *viz.* 13th March and 2nd May, 1949 are reproduced below as Figs. 1 and 2.

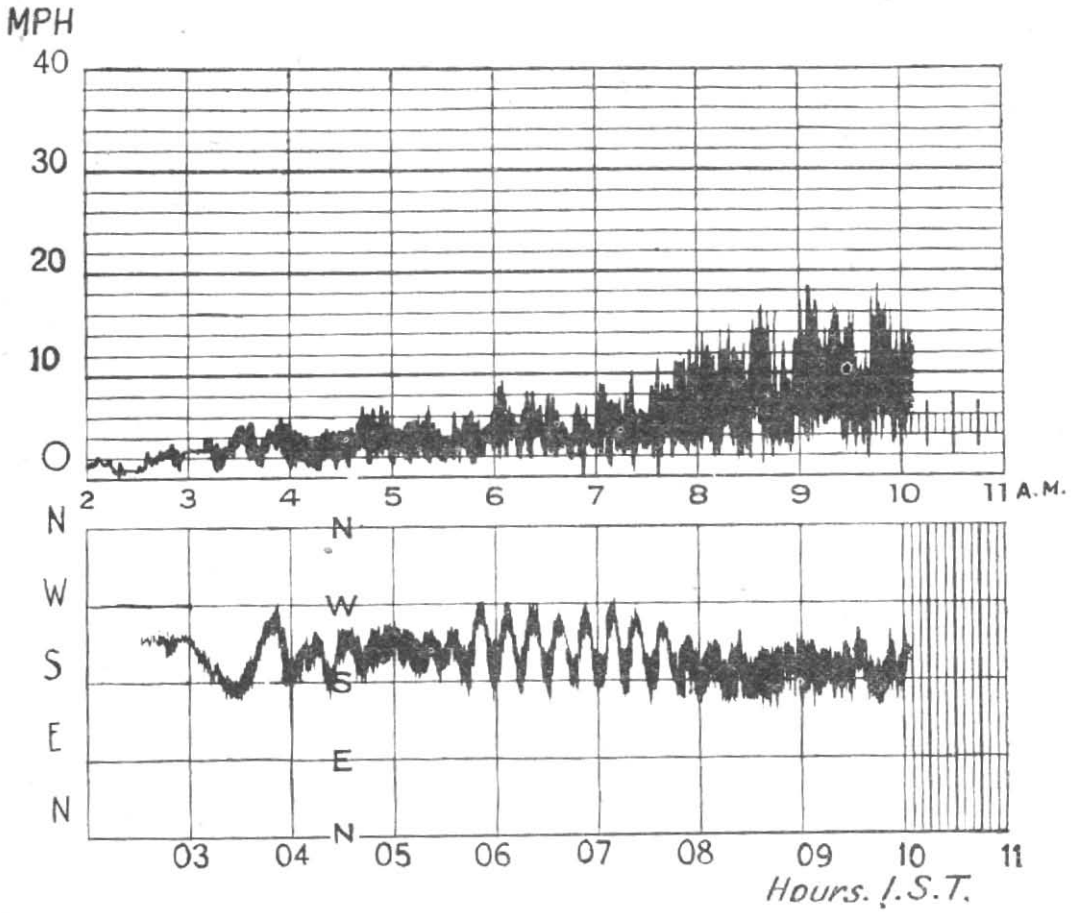

Fig. 1. ANEMOGRAM OF MADRAS (NUNGUMBAKAM), 13th MARCH 1949.

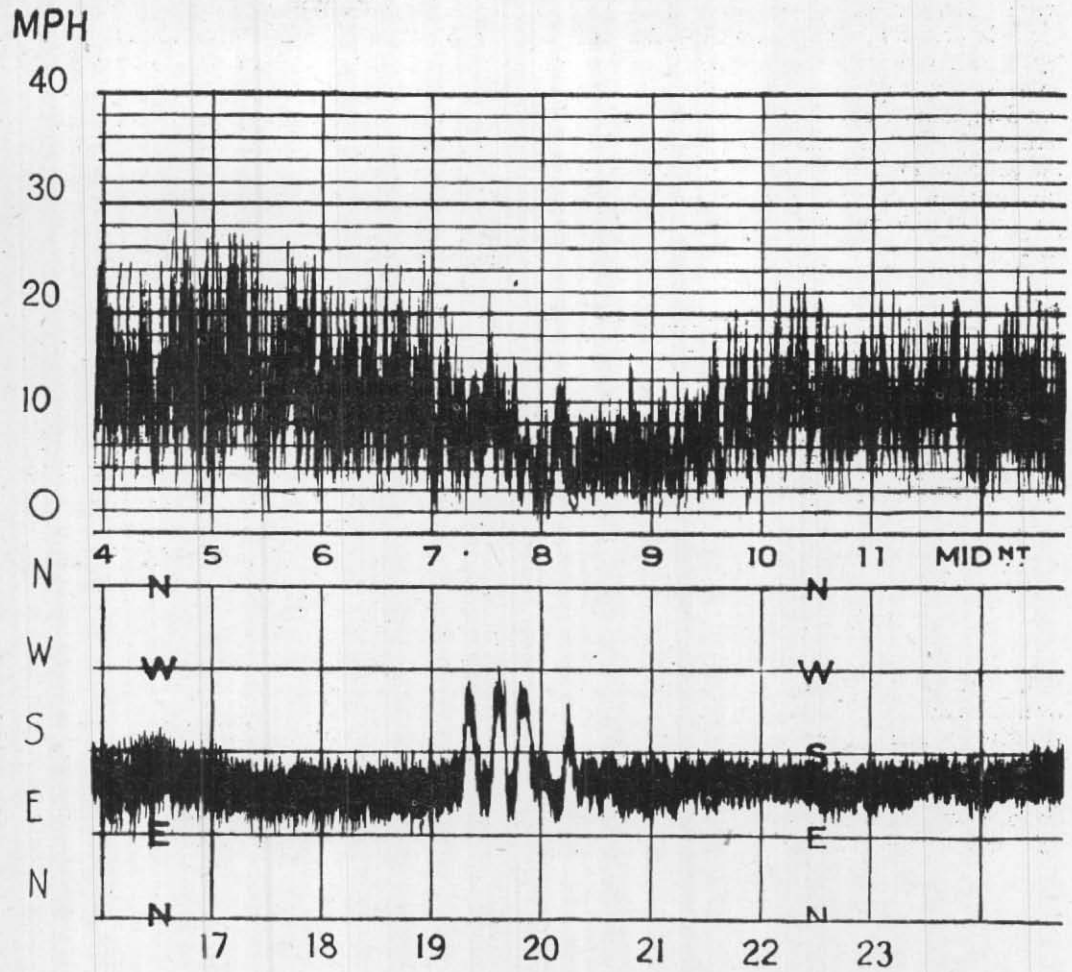

Fig. 2. ANEMOGRAM OF MADRAS (NUNGUMBAKAM) 2nd MAY 1950.

2. On the 13th March, 1949, 8 crests can be easily distinguished between about 0540 and 0740 hours I.S.T., thus giving a period of 15 minutes. The wind was light with speed varying from 3 to 5 m.p.h. After 0740 hrs., the speed increased and the pattern got masked, though about 3 more crests can be identified on close scrutiny. Though the velocity record, at first sight, does not appear to show a corresponding feature, closer examination does enable one to spot crests corresponding to each one on the direction pen. The uniformity of the period is quite striking. On the micro-barogram of this day, undulations in this period are not very prominent.

3. On this day, weather was fine over the whole Peninsula with very weak pressure gradients at the surface. Winds in the free air from 5000 to 10000 feet were governed by an anticyclone with centre over the North Arabian Sea and adjoining North Konkan. Thus at Madras the winds at these levels were from NE with a speed of 15 to 25 m.p.h. Below 5000 feet, winds were light southerly. This wind distribution is quite usual for the season.

4. The second instance occurred on the 2nd May, 1949. The waves on this occasion were 4 in number and occurred between 1920 and 2020 hours again giving a period of 15 minutes. This was a period of comparatively lighter wind between two spells of distinctly higher wind speed. The second spell of stronger wind began about one hour after the last

wave. It is interesting to note that on this second occasion, the microbarogram of a barograph run at Meenambakam (the aerodrome Meteorological Station, some six miles to the SW), almost exactly repeats this wave pattern, with the same number of crests and even the times of each crest almost coinciding with the portion of the anemogram. Relevant portion of the microbarogram is reproduced in Fig.3.

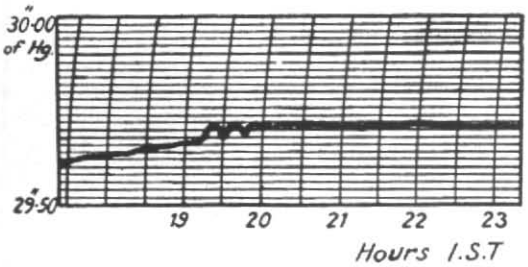

Fig. 3. Madras (Meenambakam) 2-5-1949.

5. On this occasion, the seasonal heat low over North West India was just getting established. The upper anticyclone was still over the North Arabian Sea and North Konkan at 10000 feet, but at lower levels, the anticyclone was weak and winds over the Peninsula were mainly westerly and consequently of marine origin. Thunderstorms, either dry or with light rain occurred at several stations to the immediate west of Madras, but not at Madras. Here, winds were between south and west upto 5000 feet and NNW to NNE above, the speed being generally 4 to 6 m.p.h.

6. The entire series of anemograms of Madras (Nungumbakam) which date back till 1938 have been examined, specifically for such patterns, by the author and about 30 other instances have been identified. They are being studied in greater detail and a fuller account will be included in a paper the author is preparing based on a study of this extensive series of anemograms from various possible angles. It may, however, be mentioned here that 18 out of these 30 instances occur in the months February-March. This may not be mere coincidence.

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May 31, 1950.

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1. Goldie, A.H.R., *Q.J.R.M.S.*, 51, 239 (1925).
2. Barkat Ali, *Ind. Met. Memoirs*, XXV, 234 (1930).
3. Barkat Ali, *Q.J.R.M.S.*, 57, 301 (1931).