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ON THE RAIN/THUNDERSTORM ACTIVITY OVER CAR NICOBAR

Car Nicobar is a tiny island of Nicobar group in the Bay of Bengal. It is located 280 km south of Port Blair and 1445 km from Madras to its east-southeast. The island is almost flat and roughly circular in shape. Its elevation is 13 metre and area only 123 sq. km. The study is based on 10 years weather data of 1976 to 1985 recorded by the meteorological section of Air Force, Car Nicobar from dawn to dusk.

2. *Cyclonic storms/depressions*— Under favourable situations the remnants of some typhoons from the Gulf of Siam emerge into the south Andaman Sea. A few of these may re-intensify but cannot grow beyond depression stage while in Car Nicobar area. Those developing *in situ* also remain a depression in Car Nicobar area. In course of further westward or north-westward movement across the Bay these depressions intensify into cyclones. In the period 1891-1970 there is only one instance, *i.e.*, 19-23 April 1922, of a storm that moved from south-southeast to north-northwest through east and close of Car Nicobar. No cyclonic storm crossed Car Nicobar during the period of study.

3. *Weather in general*— Weather at Car Nicobar can broadly be divided into two seasons, namely, the dry season and the rainy season, if the rainfall alone is to be the criterion. It rains for 8 months a year from May to December when the rainfall is more than 200 mm in each month. This period, thus, can be treated as the rainy season. The dry season extends from January to April when the rainfall is very meagre (less than 80 mm in every month).

The mean daily maximum temperature ranges between 30° & 33°C throughout the year while the mean daily minimum temperature ranges between 24° & 26°C. The diurnal variation of temperature is of the order of 6°-7° C only. The highest temperature ever recorded during the 10 years period of study was 36.4°C on 30 May 1984. In spite of so comfortable temperature conditions, the human life is made uncomfortable by the presence of excessive moisture. The relative humidity is at no time less than 70%.

The significant weather phenomena are rain and thunderstorm. They are described in detail in the subsequent paragraphs.

4. *Rainfall*— Rainfall is mainly confined to the period May-Dec. The rainfall pattern during the year is as given below :

| Period | Rainfall in each month | Remarks |
|---------|------------------------|--|
| Jan-Mar | 40 mm or less | Dry season |
| Apr | 84 mm | Transition month |
| May-Dec | 200-300 mm | Rains due to monsoon (southwest & northeast) |

The following facts stand out —

(a) The average annual rainfall of the island is 2267 mm.

(b) The island witnesses a double maximum of rainfall during the year in the months of July and

TABLE I

| | Av. No. of days when Cb resulted | | | Av. period of | |
|-----|----------------------------------|------------------|---------------|---------------|--------------|
| | Developed | Thunderstorm (%) | Rain (%) | Cb | Thunderstorm |
| Jan | 03.6 | 0.5 (13.9) | 1.9 (52.8) | 04.2 | 00.7 |
| Feb | 04.1 | 0.6 (14.6) | 2.0 (48.8) | 04.5 | 00.6 |
| Mar | 04.7 | 2.1 (44.7) | 0.5 (10.6) | 05.3 | 02.3 |
| Apr | 14.1 | 4.9 (34.7) | 2.9 (20.6) | 18.6 | 06.0 |
| May | 17.7 | 7.8 (44.0) | 7.4 (41.8) | 22.8 | 10.1 |
| Jun | 15.4 | 4.6 (29.2) | 8.7 (56.5) | 20.0 | 05.2 |
| Jul | 14.3 | 2.5 (17.5) | 9.2 (64.3) | 19.0 | 02.7 |
| Aug | 11.1 | 1.9 (17.1) | 6.8 (61.2) | 14.2 | 02.0 |
| Sep | 10.4 | 1.5 (14.4) | 6.5 (62.5) | 13.9 | 01.8 |
| Oct | 12.6 | 1.8 (14.3) | 7.2 (57.1) | 17.2 | 01.9 |
| Nov | 13.6 | 3.4 (25.0) | 6.8 (50.0) | 18.0 | 04.1 |
| Dec | 08.7 | 0.8 (09.2) | 3.8 (43.7) | 10.5 | 00.9 |

September, average amount of rainfall being 302 and 301 mm respectively.

(c) The average number of rainy days is less than 5 during January to March while it increases sharply to 15 or more during May to November, the maximum number being in the month of July (20). In the months of April and December, the number of rainy days are 7 and 10 respectively.

(d) The average duration of precipitation every month is 7.5 hours or less during January to March. It lies between 45 & 60 hours in May to November. In April and December the average duration is 17 and 27 hours respectively.

5. *Convective activity*— Cumulonimbus forms very frequently over the island. No hailstorm or squall has ever been recorded in the 10-year period of study. Table I reveals the following facts about the convective activity over the island :

(a) Cumulonimbus activity is well marked from April to December.

(b) The month of May is most susceptible to convective development with as many as 23 Cb periods is 18 days (A day when cumulonimbus develops twice at separated intervals constitutes 2 Cb periods in a single day).

(c) The thunderstorm activity is prominent from April to June.

(d) The single largest number of thunderstorms occur in the time interval 1200-1500 IST in the months of April and May while in the time interval 0600-0900 IST in the month of June. It occurs between 0900 & 1200 IST in the month of November.

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