Ozar is having high land on its west sloping towards it. Clouds from the Arabian Sea drift eastwards towards the station with westerly winds, blowing at a mean speed of 20 to 25kt. over this part of Peninsula (Philip et al. 1973). West coast stations (nearer to Ozar), as seen from the hourly rainfall of Bombay (Jagannathan 1968 and Prasad 1970), show an increase in the early morning at about 0600 IST due to the interaction of land breeze with westerlies from Arabian Sea (Prasad 1970). According to Ramage (1964) as quoted by Prasad (1970) land and sea breezes play an important role on rainfall of coastal stations. At Ozar morning maximum occurred at 0900 IST, about 3 hours after the early morning maximum occurred on the west coast roughly accounting for the distance of the station from the west coast. The decrease afterwards and the second maximum at 1300 IST is due to local convection. This maximum, however, does not predominate as the local convection is suppressed by the subsidence from the convective clouds grown on the high land on the west of the station. Continuation of subsidence till late evening and also decreased activity over sea till 1800 IST as seen from hourly rainfall of Bombay are responsible for the primary minimum at 2100 IST. Drifting clouds from the Arabian Sea and local convection keep incidence of rain more during day than during night. After crossing the high land, clouds dissolve due to the lee effect giving passing drizzle type of precipitation.

Pune is situated somewhat in a valley with more hilly terrain around. Probably, convergence due to the valley effect, which persists during night and is maximum about the time of sunrise, is the cause for the early morning maximum. The afternoon maximum occurs at the time of peak convection. This argument also explains the occurrence of main minimum during the day at 1300 IST. The small valley effect which minimises lee effect causes showery type of precipitation at the station.

5. Though, the incidence of low cloud and rain is uniformly spread throughout the day, advantage of decreasing tendency of these phenomena around noon and late afternoon may be taken for local flying at Ozar.

6. The authors are thankful to Dr. A. K. Mukherjee, Director, R.M.C., Bombay for the encouragement given throughout the work. They are also thankful to Shri. G. K. Bhalerao, S.O. for typing the manuscript.

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CYCLONIC SYSTEMS IN THE SOUTHWEST MONSOON PERIOD MOVING TOWARDS LOWER LATITUDES

Monsoon depressions originating in the Bay of Bengal or developing over land in northern India in the mid-monsoon months July and August, normally move westnorthwestward across the country before they fill up. In the months June and September, they have occasionally a more northerly component of movement than in July and August. These well-known facts are consistent with Rossby’s fundamental postulate based on theoretical considerations (Rossby 1949) that “cyclonic vortices (warm or cold) are subjected to a resultant force which drives them poleward.”

There have, however, been a small number of monsoon depressions which had initially moved at sea-level, westnorthwestwards or northwestwards across the country but later moved southward over land itself without subsequently taking a northerly course. These had developed especially over and near Rajasthan, vide Fig. 1. It is interesting to note that, of the 4 cases shown in Fig. 1 (India met. Dep. 1964, 1972), three occurred in the month of September when the cyc-
In the above paragraphs, we have discussed about cyclonic systems which initially moved in a northwestward direction and later moved towards lower latitudes. However, in regions east of 80°E, there were instances in which the reverse of what has been mentioned above, had taken place. In these cases, there was initially well-defined movement of the cyclonic systems towards lower latitudes, followed by the usual movement in a northwestward direction. In northeast India, in particular, there were instances in which the developments were at times more complex. For instance, in August 1926, a land-depression formed over West Bengal with centre near Berhampore (24°08’N, 88°16’E) on 13th August, moved south-southeastwards, intensified into a cyclonic storm with centre near Calcutta on 14th and after following a W-shaped track almost entirely over land as a cyclonic storm up to 17th, moved in the usual westnorthwesterly direction and disappeared over east Rajasthan on 21 August.

As far as the present writers are aware, no explanations are available in meteorological literature, for the abnormal movement of the cyclonic systems over land pointed out above. This aspect, therefore, deserves intensive study by synopticians and theoreticians who will be engaged in the Monex-1979 programme.

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