551·577·3 : 551·509·31

SYNOPTIC ASPECTS OF THE MONSOON CIRCULATION AND RAINFALL OVER INDO-PAKISTAN

Rahmatullah (1952) has stated in the concluding paragraph of his paper on *Synoptic aspects of the monsoon circulation and rainfall over Indo-Pakistan* that he had attempted in the paper to demonstrate that the patterns of flow and precipitations over India and Pakistan during the monsoon months show large departures from steady conditions and that the conclusions drawn from his study are at variance with the conventional concept that monsoonal weather is characterized by steady conditions. May I point out in this connection that the Indian Meteorologists have long since recognized that the monsoon over India is pulsatory in character and not characterized by steady conditions ? It has also been recognized that the most important feature of the monsoon weather conditions is the trough of low pressure which normally extends northwest from Orissa to northwest India across the Gangetic plain, and that the pulsatory conditions of the Indian southwest monsoon are closely associated with the fluctuating movement of the axis of this trough. In this connection, the article on *The Weather of India* by C.W.B. Normand, former Director General of Observatories in India, published by the Indian Science Congress Association in November 1937 is very significant. After a general description of the monsoon conditions over India and of the location of the trough, Normand has stated—"Further, the trough is not stationary, but moves North or South of the normal position and affects the rainfall distribution as it moves. Consequently the monsoon period is not one of continuous rain in any part of India. Bursts of general rain alternate with breaks partially, or generally as the case may be".

Incidentally, the following remarks may be made regarding the different types of flow and precipitation given by Rahmatullah in his paper.

Type (*d*)—According to the Indian Daily Weather Charts during the period 1 to 7 August, 1949, there were a depression and two low pressure areas which while moving caused considerable precipitation along and near their tracks.

Types (*b*), (*c*) *and* (*d*) — In these, the western portion of the axis of this trough has shifted further northeastwards of its normal position ; type (*d*), in which axis of the trough is generally speaking in the submontane districts of the Himalayas, represents what the Indian Meteorologists call " break conditions ", and rainfall is practically confined to the districts at the foot of the Himalayas.

Type (*e*)—During the period between 25 August and the end of the month, as seen from the Indian weather charts, a trough moved west to northwestwards from the west Central Bay of Bengal and the neighbouring areas to Saurashtra, Kutch and the adjoining areas of the Arabian Sea and appreciable precipitation occurred near the axis of the trough in the peninsula and in Gujarat, Saurashtra and Kutch although no precipitation occurred except at a few stations in Pakistan and north India.

From what has been stated above, it will be observed that the patterns presented by Rahmatullah are explained within the framework of the concepts which have long since been recognised by Indian Meteorologists, and there appears to be no need to revise any " Conventional " concept regarding the monsoon.

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REFERENCE

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