

Notes and News

SECOND SESSION OF THE COMMISSION FOR AGRICULTURAL METEOROLOGY OF THE WORLD METEOROLOGICAL ORGANIZATION

The Second Session of the Commission for Agricultural Meteorology of the World Meteorological Organization, was held at Warsaw (Poland) from 29 September to 17 October 1958. Shri A. K. Mallik, Director of Agricultural Meteorology and Member of the Commission, attended the Session as the delegate from India. The Commission for Agricultural Meteorology is one of eight Technical Commissions of the World Meteorological Organization and deals with all aspects of the applications of meteorology to agriculture and allied subjects.

The Warsaw Session was presided over by Mr. Juan J. Burgos of Argentina, who was the Commission's elected President for the second term. Over 50 delegates and observers representing 33 countries and 3 International Organizations participated in the Session.

The discussions covered a wide ground in the field of agricultural meteorology and a number of resolutions were adopted, recommendations made and Working Groups set up during the Session. A few scientific sessions were also held where papers were presented by delegates from the different countries. The delegates were shown round the Hydro-meteorological Institute at Warsaw. Sight seeing excursions in and around Warsaw and a film show were also specially arranged for the delegates.

At the Plenary Session on 14 October 1958, Mr. Austin Bourke of Ireland and Mr. M. S. Kulik of U.S.S.R. were elected as the President and Vice-President of the Commission respectively for its next term.

INTERNATIONAL GEOPHYSICAL CO-OPERATION, 1959

The Fifth Assembly of the CSAGI (Comité Special pour l'Année Géophysique Inter-

nationale) held at Moscow from 30 July 1958 to 9 August 1958, decided that observational and data collecting activities in the geophysical and related sciences may be continued during 1959 on the same general plan as in 1957-58 during the IGY. The title "International Geophysical Co-operation, 1959" has been chosen for this form of prolongation of the IGY. Each participating Committee will decide how much and in what fields the co-operation can be continued in 1959. The participating countries have been requested to keep their IGY National Committees functioning.

The ICSU will appoint an IGY Completion Committee called the CURAGI (Comité pour l'utilisation du Resultats de l'Année Géophysique Internationale). This Committee and the Board of IGY Reporters (BR) with the assistance of World Data Centres will continue the task of IGY data collection, their analysis, discussion and publication of results.

CENTRAL BOARD OF GEOPHYSICS

A meeting of the Central Board of Geophysics was held at New Delhi on 29 October 1958. The meeting considered among other things the state of implementation of the previous resolutions of the Board, the question of procurement of geophysical exploration data, the possible programme of oceanographic research and the assessment of the standard of geophysical education at the Institutions in India teaching Geophysics.

COMMITTEE FOR OCEANOGRAPHY

A committee for Oceanography under the Central Board of Geophysics has been set up by the Government of India to advise the Board on matters pertaining to Oceanography and in formulating a programme of work for the Oceanographic Research Wing of the Board. The Committee consists of the following members—(1) The Principal Scientific Officer (Navy), Ministry of Defence,

(2) The Chief Hydrographer, Naval Hydrographic Office, Dehra Dun; (3) The Chief Research Officer, Central Marine Fisheries Research Station, Mandapam; (4) The Head of the Geophysics Department, Andhra University; (5) Dr. K. S. Krishnan, Director, National Physical Laboratory; (6) The Director General of Observatories; and (7) The Secretary, Central Board of Geophysics (Convener).

SYMPOSIUM ON GEOPHYSICAL EXPLORATION

A symposium on "Geophysical Exploration" is being organised by the Central Board of Geophysics and is expected to be held in the latter half of February 1959. The Symposium will cover all aspects of geophysical prospecting as applied to exploration for metallic ore deposits, non-metallic minerals, petroleum, ground water, studies of geological structure, problems connected with civil engineering projects as well as theoretical studies, mathematical methods of interpretations and geophysical instrumentation.

STANDING ADVISORY BOARD FOR ASTRONOMY

A meeting of the Ephemeris and Nautical Almanac Sub-Committee of the Standing Advisory Board for Astronomy was held at New Delhi on 13 October 1958. A number of proposals relating to additional data for incorporation in the future issues of the Indian Ephemeris and Nautical Almanac was considered by the meeting.

BIRTHDAY CENTENARY OF ACHARYA J. C. BOSE

The birthday centenary of Acharya Jagadish Chandra Bose, the famous Indian Scientist, was celebrated at several places in India on 30 November 1958 including Delhi where the celebration meeting held at the University was addressed by Dr. Rajendra Prasad, President of India. The main celebration was held at Calcutta in the Bose Research Institute and was inaugurated by the Prime Minister, Shri Jawaharlal Nehru. The centenary memorial lecture was delivered at the Institute by Dr. S. Radhakrishnan,

Vice-President of India. The week-long celebrations included a programme of symposia, lectures and popular lectures on different branches of science. One of the symposia, particularly significant, was that on "Microwaves". An exhibition was also organised on this occasion, and among the many exhibits were included the instruments devised by Acharya Bose and used by him for some of his experiments.

GOLDEN JUBILEE CELEBRATIONS OF THE INDIAN INSTITUTE OF SCIENCE, BANGALORE

The Indian Institute of Science, Bangalore, will be celebrating its Golden Jubilee in February 1959.

It may be recalled that as far back as 1889 Shri Jamshedji Nusserwanji Tata realised the vital need and role that science could play in the progress of his motherland and conceived the idea of founding a research university with the object of promoting material and industrial advancement of India. Thus the Indian Institute of Science came into existence in 1909 and the first batch of students was admitted in July 1911. As fate would have it, Jamshedji Nusserwanji Tata, the Founder, did not live to see the fruition of his dream.

The Institute, the first of its kind to be established in India, has been one of the earliest institution to impart advance instruction and organise research in pure and applied sciences. It has also contributed substantially towards the promotion of the national economy of the country. Many eminent scientists were at the helm of the research and teaching activities of this institution.

The past Directors of the Institute from its beginning were Dr. Morris W. Travers, the distinguished Chemist, Sir C. V. Raman (1933-37), the distinguished Nobel Laureate in Physics, Sir A. G. Bourne (1915-21), Sir M. O. Forster (1922-33), Sir J. C. Ghosh (1939-48) and Prof. M. S. Thacker (1949-55). The present Director of the Institute is Dr. S. Bhagavantam.

The Institute has been publishing a quarterly journal entitled 'Journal of the Indian Institute of Science' which is now in its fortieth year of publication.

We wish the Golden Jubilee Celebrations of the Institute an all round success.

AURORA AUSTRALIS

Vessel : S. S. Subadar
Captain : C. H. Norecliffe
Voyage : Fremantle to Thevenard
 (South Australia)
Observer : D. S. Bhalla, 3rd Officer

8 July 1958, Ship in position—Lat. $34^{\circ}05'S$, Long. $126^{\circ}45'E$ from 1130 till 2000 GMT.

Aurora Australis (red in colour) observed in patches towards south, later becoming continuous band covering from southeast to southwest. Sky was blue up to about 5° in altitude from horizon and from 5° to about 20° in altitude, there was a continuous layer of Aurora Australis. White rays similar in effect to the sun rays shining through clouds was observed. The phenomena lasted for 10 to 30 minutes on each occasion, with a break of not more than 15 minutes between each observation until the final observation at 2000 GMT.

HEAVY RAINFALL AT CUDDAPAH

Cuddapah Observatory in Andhra Pradesh recorded an unprecedented heavy rainfall of 27.0 cm during the 24 hours ending 0830 IST of 8 October 1958, which far excels the previous rainfall maximum of 17.6 cm on 25 August 1910. It is twice the heaviest fall for the month of October of 13.5 cm which was recorded on 8 October 1921. 20 cm out of the 27 cm of this spell of rain were registered during the period 0830 to 1730 IST of 7 October. The normal rainfall of Cuddapah for the month of October is 12.3 cm.

This concentrated spell of heavy rain resulted in high floods in the rivers and rivulets

in this area, the flood water having over-flowed the railway track at many places on the Guntakal-Renigunta line. One railway bridge situated about 35 miles southeast of Cuddapah was completely washed away and another about 4 miles to the north, seriously damaged, two piers of this bridge having collapsed. The restoration of normal rail communications on this line took about a fortnight.

The above rainfall occurred in association with a Bay depression, which was centred about 100 km southeast of Madras on the morning of 7 October. Moving northwestwards, it crossed coast near Madras and lay centred between Cuddapah and Anantapur by the evening of this day. Moving in a westnorthwesterly direction across the Peninsula, it subsequently emerged into the east central Arabian Sea on the morning of 9 October 1958. A study of the relevant upper air flow-patterns shows evidence for the existence of a well-marked field of divergence above 6 km over the Cuddapah area prior to the commencement of the heavy rain.

WEATHER, MONSOON SEASON (JUNE—SEPTEMBER 1958)

Chief features—There was an abnormal delay in the onset of the monsoon over the country this year and consequently the rainfall during the month of June was appreciably in defect over most parts. After the advance, however, the activity of the monsoon was maintained at an even pace till the end of the season. The rainfall during the months of August and September was in excess generally over the country and the shortfall that occurred earlier in the season was well made up. Floods were reported from several parts in the States of the Punjab(I), Uttar Pradesh, Bombay and Andhra Pradesh, the worst ones being those that affected west Uttar Pradesh towards the end of September. The total rainfall during the season was normal or in excess over most parts of the country as would be seen from Fig. 1. The monsoon withdrew from northwest India during the first week of October.

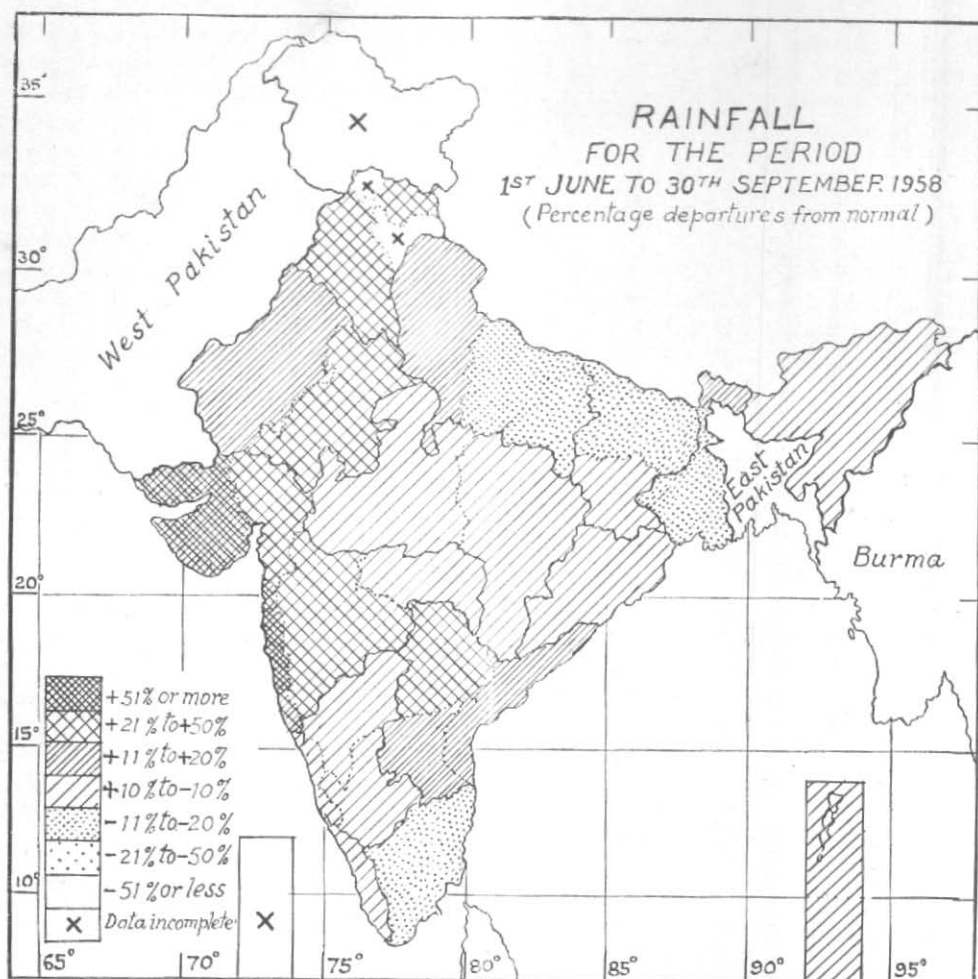


Fig. 1

The special features of weather during the various months are described below.

June—Abnormal delay in the onset of the monsoon over the country was the main feature of the weather in June.

The southwest monsoon which had advanced as a feeble current into the southern parts of the Bay of Bengal and the Arabian Sea by the middle of May, did not make further progress northwards until the first week of June. In association with a trough of low pressure that formed in the east Arabian Sea on the 13th, the monsoon advanced into Kerala and south coastal Mysore on the 14th,

about two weeks later than the normal time. With the gradual northward movement of the trough, the monsoon also advanced northwards and extended into the remaining parts of Mysore State and into Telangana and the Bombay State during the third week of the month. The monsoon also extended into Vidarbha and south Madhya Pradesh on the 24th. The West Coast experienced a spell of active to vigorous monsoon between the 20th and 30th, the rainfall being particularly heavy in the Konkan from the 25th to 28th and in coastal Mysore from the 28th to 30th. According to newspaper reports, the heavy rains and gales caused dislocation of rail,

road and air traffic, disruption of telegraphic and telephonic communications and collapse of houses in Bombay and several other places on the West Coast.

The Bay branch of the monsoon which advanced as a feeble current into Assam and Sub-Himalayan West Bengal on the 16th did not make further progress for about a week. In association with a low pressure wave which moved westwards across the north Bay, the monsoon advanced as a feeble current into Gangetic West Bengal, Chota Nagpur and Orissa on the 24th. Further with the movement of an upper air 'low' across the central parts of the country, the Bay branch of the monsoon advanced progressively into Bihar, north Madhya Pradesh, Uttar Pradesh and east Rajasthan between the 26th and 29th.

As a result of the delayed onset of the monsoon, the rainfall during the month of June was in moderate to large defect over most parts of the country. Averaged over the plains of the country, it was 32 per cent in defect.

July—Good activity of the monsoon leading to well distributed rainfall over large areas of the country was the chief feature of weather in July. The monsoon was strong in the Bombay State and Madhya Pradesh during the first half of the month and in the northern parts of the country during the latter half.

The monsoon extended into the remaining parts of northwest India during the period 4th to 7th, in association with two westerly waves which moved in succession across the northern parts of West Pakistan and Kashmir. Both the branches of the monsoon were active during the first half of the month in association with the formation and movement of three depressions, one from the Arabian Sea and two from the north Bay. Widespread and locally heavy to very heavy rain occurred in the Konkan and coastal Mysore almost throughout this period and in Gujarat, Saurashtra, Maharashtra and

Madhya Pradesh on some of the days. According to press reports, the heavy rains and the accompanying squally weather caused dislocation of road, rail traffic and disruption of communications at a number of places in the Bombay State. In association with an upper level trough which extended from the north Konkan to west Madhya Pradesh, the monsoon became vigorous in and near the north Konkan on the 19th, when Khandala recorded 52 cm of rain and Lonavala and Mahabaleshwar 43 cm and 38 cm respectively.

By the middle of the month, the axis of the monsoon trough which normally runs from the north Bay of Bengal to Sind began to shift northwards and remained well to the north of the normal position thereafter. Consequently, the activity of the monsoon became confined to the Punjab (I), Uttar Pradesh and northeast India. The rainfall in the Punjab (I) and west Uttar Pradesh was particularly heavy on some days, as a result of the passage of westerly waves across the extreme north of the country. A record rainfall of 27 cm in 24 hours occurred between 20 and 21 July at Delhi. The heavy rains in and near Delhi paralysed civic life in the Capital and caused serious dislocation to railway, telephonic and telegraphic communications.

Averaged over the plains of the country, the rainfall in July was 4 per cent in excess.

The combined rainfall of June and July was still in moderate to large defect over many parts of the country.

August—Active monsoon conditions prevailed throughout the month leading to good rainfall over most parts of the country. While the northern parts of the country received an excess of rainfall in the first fortnight of the month, the rest of the country had an excess later in the month.

The axis of the monsoon trough which had shifted to the north of its normal position in the latter half of July, continued to remain so till about the middle of August. As a consequence of this situation, the monsoon remained active over the region extending

from the Punjab (I) to Gangetic West Bengal and north Orissa. In association with the passage of a few westerly waves, the monsoon was strong in the Punjab (I), Himachal Pradesh and northwest Uttar Pradesh on some days when heavy to very heavy rainfall occurred. Heavy to very heavy rain also occurred in Sub-Himalayan West Bengal, Bihar and Assam on some days. According to newspaper reports, the heavy rains caused floods in the river Jumna and its tributaries as well as in the rivers in Bihar submerging scores of villages. Dislocation of railway traffic was also reported from a few places in west Uttar Pradesh, Bihar and West Bengal. In association with the passage of two upper air troughs westwards across the southwest and adjoining west central Bay, there was a pronounced spell of thunderstorm rains in the southern parts of the Peninsula from the 3rd to 11th.

By the middle of August, the axis of the monsoon trough began to shift southwards back to its normal position. Two low pressure waves which moved successively from the north Bay into the interior of the country served to maintain active monsoon conditions over Madhya Pradesh, the Bombay State and the northern parts of the Peninsula during the third and fourth weeks of the month. Widespread and locally heavy rain occurred in the Konkan on most days during the month and consequently the total rainfall there was markedly in excess. Bombay (Colaba) recorded rainfall amounts of the order of 10 to 20 cm on several days; the total rainfall for August being 126 cm—the highest ever recorded in this month.

Averaged over the plains of India, the rainfall during the month of August was 18 per cent in excess.

September—The monsoon remained active over the greater part of the country during the first three weeks of the month in association with the formation and movement of three depressions from the Bay of Bengal. There was a spell of very heavy rains in Saurashtra and Kutch in the second week

and another in the Punjab (I) and west Uttar Pradesh towards the end of the month.

A depression which formed in the north-west Bay on 29 August crossed the Orissa coast near Puri next day. Moving initially westwards and later westnorthwestwards, it lay over southeast Rajasthan on 2 September with its centre near Kotah. Thereafter, it moved northwards weakening into a low pressure area at the same time and became unimportant over the Punjab (I) by the 5th. Widespread and locally heavy to very heavy rain occurred along and near the track of the depression, the rainfall being particularly heavy in north Gujarat on the 2nd and in Rajasthan on the 3rd and 4th. The second depression which also formed in the north-west Bay on the 8th crossed Orissa coast near Chandbali on the next day. Moving westnorthwest to northwest across the central parts of the country, it lay over southeast Rajasthan on the 11th with its centre near Jhalawar. Continuing to move westnorthwest and weakening at the same time, it lay as a low pressure area over Sind on the 14th and became unimportant by the 16th. Under the influence of this depression, the monsoon was strong in Madhya Pradesh and the Punjab (I) on the 11th and in Gujarat, Saurashtra and Kutch and Rajasthan from the 11th to 13th. Dislocation of railway traffic due to heavy rains in some parts of Saurashtra was reported in the press.

The third depression that affected weather during the month also formed in the north-west Bay on the morning of 13th. Moving in a northwesterly direction, it crossed the West Bengal coast near Contai the same night and lay over coastal West Bengal on the 14th with its centre between Contai and Calcutta. After moving into southeast Bihar on the 15th, it slowly recurred weakening at the same time. Taking a northeasterly course, it filled up over upper Assam on the 18th. The depression was responsible for a spell of heavy rains in northeast India between the 14th and 17th. According to press reports, several houses were destroyed in the Kakdwip area and some country boats sunk

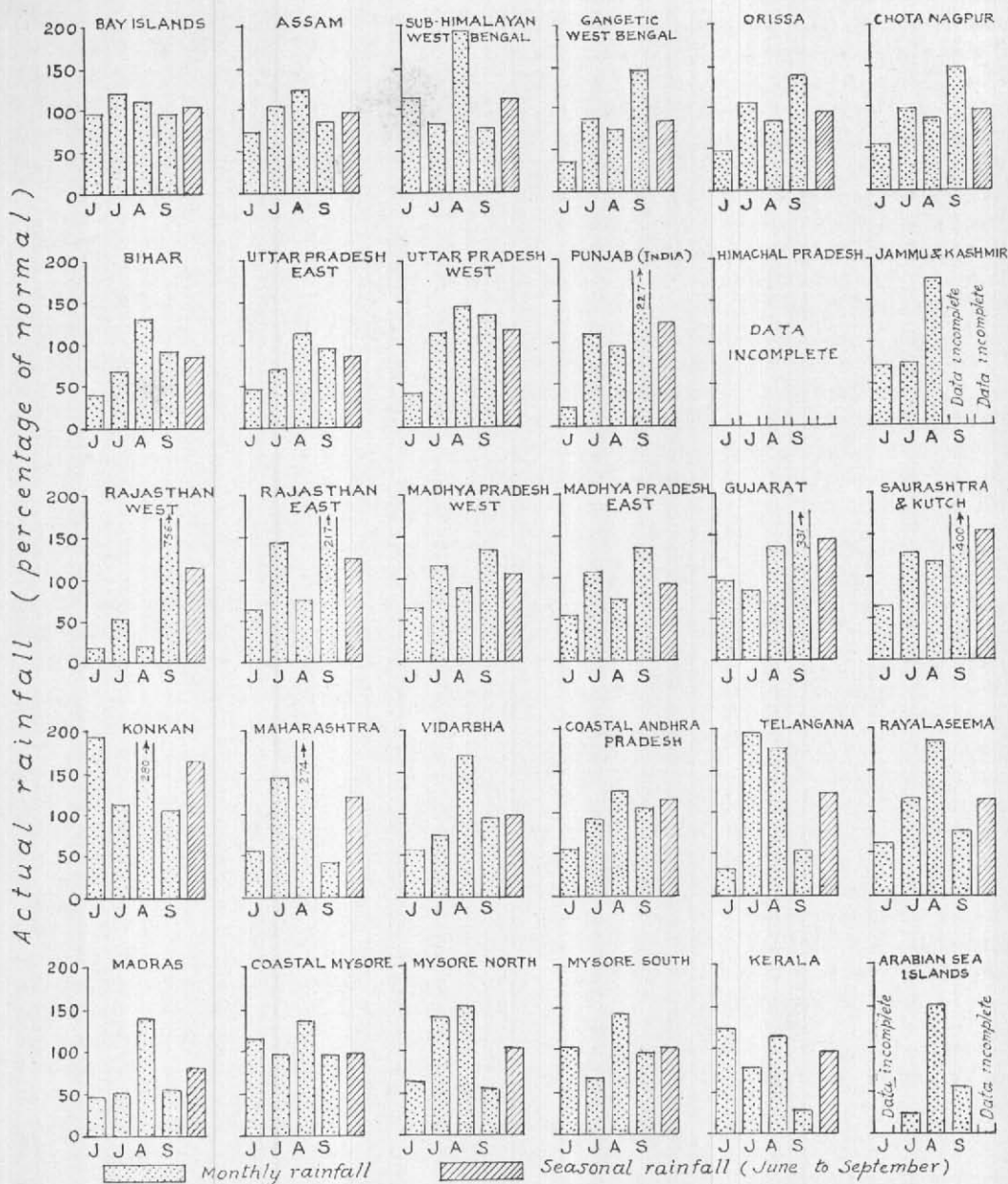


Fig. 2. Progress of the monsoon month by month—1958

at Diamond Harbour due to heavy rains and squally weather. Dislocation of railway traffic on some sections of the Southeastern Railway was also reported.

A temporary withdrawal of the monsoon from the northwest India and northwest Uttar Pradesh took place on the 18th. A well marked trough of low pressure formed in the north and adjoining central Bay of Bengal on the 21st. Moving in a westerly direction, it lay as a low pressure area over Orissa and the adjoining areas of east Madhya Pradesh on the 23rd. The low pressure area slowly moved westnorthwestwards and lay over west Rajasthan and adjoining areas of Sind on the 26th. Thereafter, it moved northeastwards and filled up over the Punjab (I) on the 28th. In association with the movement of the low pressure area, the monsoon strengthened in Orissa and Madhya Pradesh from the 22nd to 25th and revived in northwest India and northwest Uttar Pradesh during the last five days of the month. Locally heavy to very heavy rain occurred in west Madhya Pradesh, north Gujarat, the Punjab(I), Himachal Pradesh and northwest Uttar Pradesh on some days during this period. According to press reports, fortythree persons in all lost their lives in the western districts of Uttar Pradesh as a result of floods,

most of the deaths being due to house collapses. The heavy rains were also reported to have caused heavy damage to property and standing crops in the Punjab (I) and the western districts of Uttar Pradesh. After the spell of heavy rains, dry continental air swept over the northern parts of the country and the monsoon commenced withdrawing from the northwest India by the first week of October.

Averaged over the plains of India, the rainfall in September was 27 per cent in excess.

The total rainfall during the period June to September was in large excess in Saurashtra and Kutch and the Konkan, in moderate excess in the Punjab (I) and Gujarat and in slight excess in Sub-Himalayan West Bengal, west Uttar Pradesh, Rajasthan, Maharashtra and Andhra Pradesh. It was in slight defect in Gangetic West Bengal, Bihar, east Uttar Pradesh and the Madras State and normal over the rest of the country. The data from Himachal Pradesh, Jammu and Kashmir and the Arabian Sea Islands are incomplete.

Averaged over the plains of India, the season's rainfall was 6 per cent in excess. The progress of the monsoon over the various sub-divisions of India month by month, is shown in Fig. 2.
