

Weather

POST MONSOON SEASON (OCTOBER-DECEMBER 1974)

CHIEF FEATURES

Unusual features

The post monsoon season was characterised by the following three unusual features:

(i) The activity of the southwest monsoon continued over the Peninsula, central parts of the country and northeast India till the end of October. The delayed withdrawal of the monsoon resulted in excess of rainfall over many parts of north Peninsula and central parts of the country. Many parts of northeast India had normal rainfall for the season.

(ii) Only one cyclonic storm developed in the Bay of Bengal, recurved northeastwards and hit Bangla Desh in the last week of November. Two depressions, however, developed in the Bay and one in the Arabian Sea during October. The Bay depressions crossed Andhra coast while that of Arabian Sea weakened over the sea itself.

(iii) The northeast monsoon was a failure over the extreme south Peninsula. Only scanty rainfall occurred in Tamil Nadu and consequently drought conditions were reported from many parts of that State.

Western disturbances

Twentytwo western disturbances moved across northwest India during the season: four in Octo-

ber, eight in November and ten in December. These systems were relatively more active in the month of December and caused excess rainfall in NW India and heavy snowfall in Kashmir and Himachal Pradesh. The rainfall in northwest India for the season was generally deficient.

Temperature

Night temperatures were appreciably to markedly below normal in many parts of Maharashtra, Andhra Pradesh and Karnataka on many days from 1st to 19th November, with moderate cold wave conditions over some parts of these States on a few days during the above period. Night temperatures were also appreciably below normal in many parts of north India and north Peninsula on some days during the second half of December.

The tracks of depressions and cyclonic storm are shown in Fig. 1. The total rainfall over the country for the period 1 October to 31 December 1974 in terms of percentage departure from normal is shown in Figs. 2(a) and 2(b).

The important features of each month are detailed below.

OCTOBER

The southwest monsoon withdrew from Haryana, Delhi, Uttar Pradesh, Gujarat State, most parts of Madhya Pradesh and north Maharashtra State by 6th October but its activity continued over the central parts of the country, northeast India and north Maharashtra during subsequent three weeks. The southwest monsoon was active to vigorous in Andhra Pradesh, Karnataka and Maharashtra State for about a week to 10 days in October and in northeast India on a few days. Scattered to fairly widespread rain or thundershowers occurred in Madhya Pradesh on many days and in Rajasthan and Gujarat Region on a few days. The monsoon was generally weak in Tamil Nadu and Kerala. The monsoon withdrew from the entire country during the last

three days of October. The monsoon withdrew from the entire country during the last three days of October. The withdrawal from north Peninsula and northeast India was delayed by 10 to 15 days.

The rainfall during the month, outside northwest India was associated mainly with the following systems:

(i) The cyclonic storm which crossed Orissa coast on 28 September, recurved northeastwards and weakened into a depression over sub-Himalayan West Bengal on 30th and into a low on 1 October and merged with the seasonal trough which lay close to the foot of the Himalayas on 1st and 2nd.

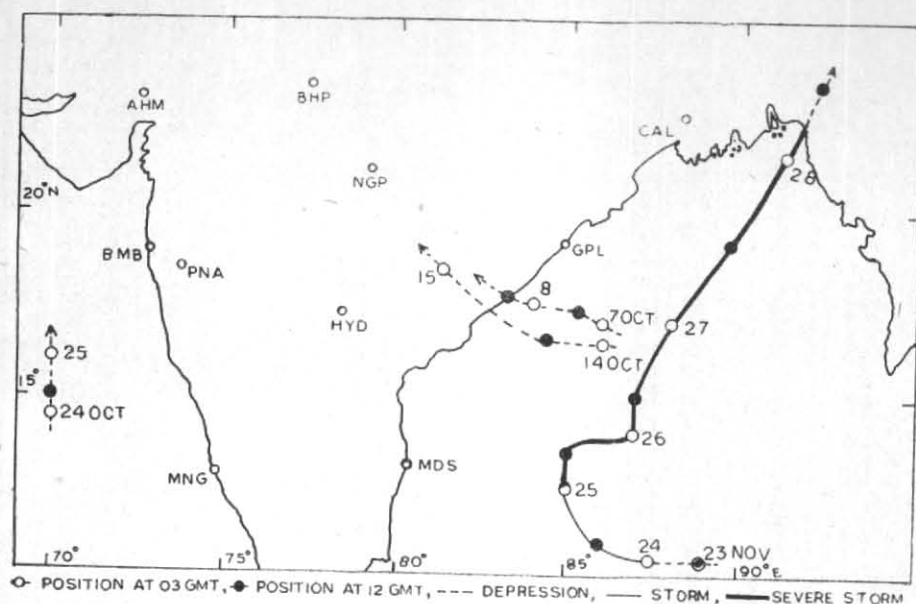


Fig. 1. Tracks of storms/depressions (October-December 1974)

(ii) A low which lay over west central Bay from 4th to 6th, concentrated into a depression on the 7th with its centre near 17°N , 86°E . It crossed Andhra Pradesh coast close to Visakhapatnam by 8th evening and weakened into a low over north Telangana on 9th. This low subsequently moved to north Gujarat and adjoining Rajasthan by 12th and recurved northeastwards as an upper air cyclonic circulation to northwest Madhya Pradesh and adjoining Uttar Pradesh and dissipated by 15th.

(iii) A low over north Andaman Sea on 10th moved westwards and concentrated into a depression with its centre near 16.5°N , 86°E on 14th. It crossed Andhra coast between Vizag and Kakinada that night and weakened into a low over northwest Telangana on 15th evening. The low emerged into east central Arabian Sea off Maharashtra coast on 17th, moved northwest and later northwards to south Pakistan and became unimportant by 21st.

(iv) In the trough of low that lay off the west coast of India on many days during the month, a depression formed with its centre near 14.5°N , 70°E on 24th. It moved northwards and dissipated off Maharashtra coast by 26th.

(v) A low moved westwards from Andaman Sea to south Andhra Pradesh from 16th to 20th and later recurved northeastwards to northeast India by 28th across Marathwada and Madhya Pradesh.

The principal amounts of heavy rainfall (15 cm or more) during the month were :

Shillong 18 and Dhubri 16 on 1st; Jalpaiguri 15 on 2nd; Cherrapunji 18 and Nandyal 17 on 3rd; Kottayam 15 on 14th; Jeur 17 on 20th; and Cherrapunji 28 on 27th.

The western disturbance which lay over north Pakistan and adjoining Jammu & Kashmir on 30 September moved away eastwards across the Western Himalayas by the evening of 1 October causing widespread rain in Jammu & Kashmir on 1st. Four more western disturbances moved eastwards across the Western Himalayas between 10th and 24th as upper air troughs/circulations. The rainfall in the Western Himalayas and the adjoining plains was deficient or scanty for the month.

Day temperatures were appreciably above normal in some parts of Gujarat State between 1st and 12th, in east Uttar Pradesh and Assam and adjacent States on many days between 12th and 23rd and in Bihar State and northeast Madhya Pradesh in the third week. Night temperatures were appreciably to markedly below normal in many parts of northwest India on many days upto 9th. They were appreciably below normal in Uttar Pradesh and west Madhya Pradesh in the first week and in Jammu & Kashmir and Punjab on many days in the last week.

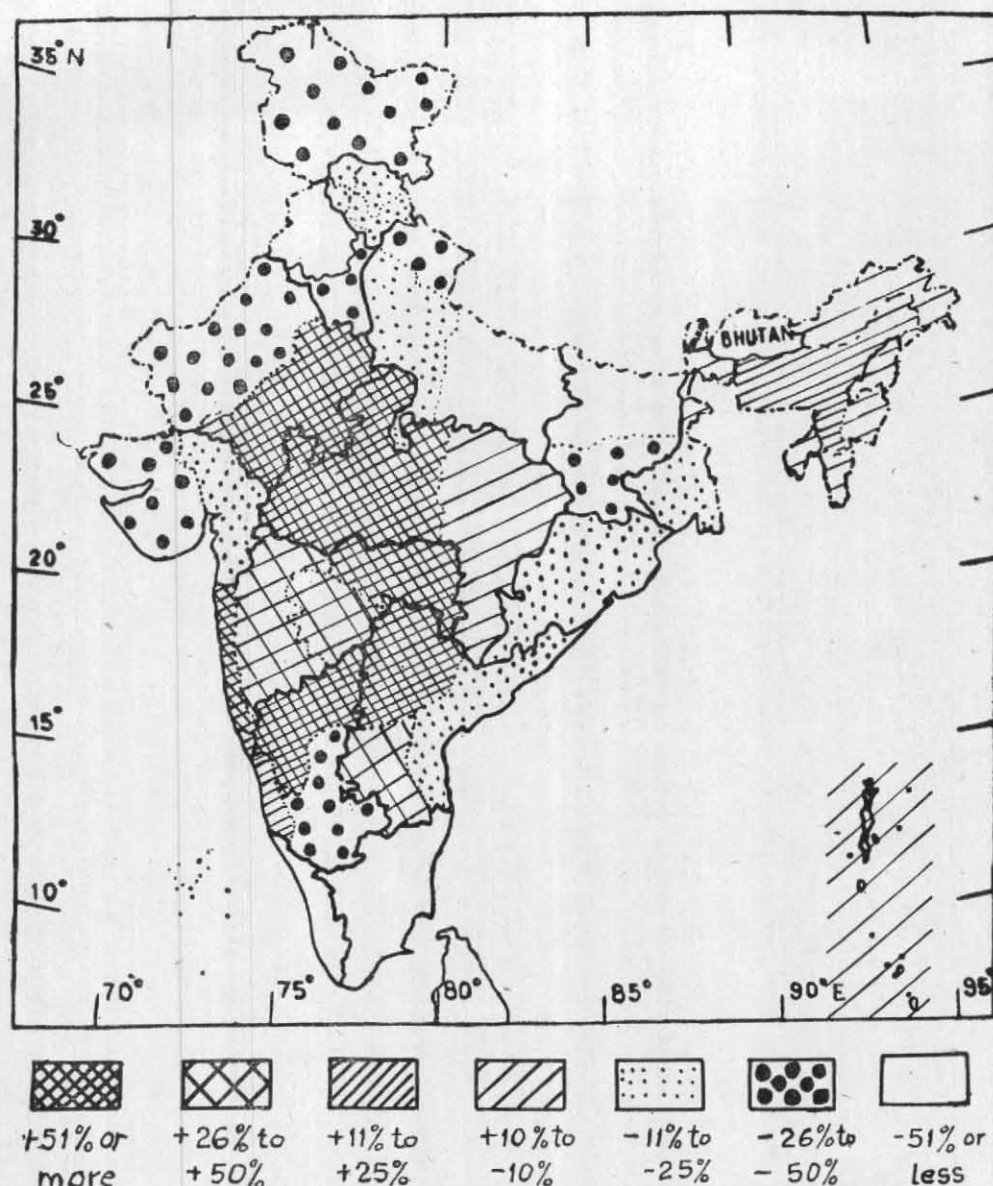


Fig 2 (a). Rainfall for the period 1 October to 31 December 1974 (Percentage departure from normal)

NOVEMBER

Eight western disturbances moved eastwards across northwest India, as an upper air troughs/circulations in the lower and middle troposphere. Four of them did not cause any precipitation in northwest India. The other four cause isolated light rain or snow in Himachal Pradesh and the hills of west Uttar Pradesh on a few days in the second fortnight. An induced cyclonic circulation moved eastwards across Uttar Pradesh on 20th and 21st causing isolated light rain in east Uttar Pradesh on 21st and 22nd and in Bihar State on 22nd. The rainfall over the Western Himalayas was generally scanty and the plains of northwest India had practically no rain.

A low which lay over south Andaman Sea and adjoining southeast Bay on 21st, concentrated into a depression on 23rd with its centre near 10.5°N , 89°E . Moving westward initially and later northwestward, it intensified into a severe cyclonic storm by the morning of 25th with its centre near 12.5°N , 85°E . Later it recurved northeastwards, crossed Bangal Dosh coast near Chittagong on 28th afternoon and weakened into a low over east Bangla Dosh on 29th. The low moved away northeastwards across Assam and adjacent States by 30th. This system caused generally widespread rain in the Bay Islands from 21st to 26th with scattered or isolated heavy falls on

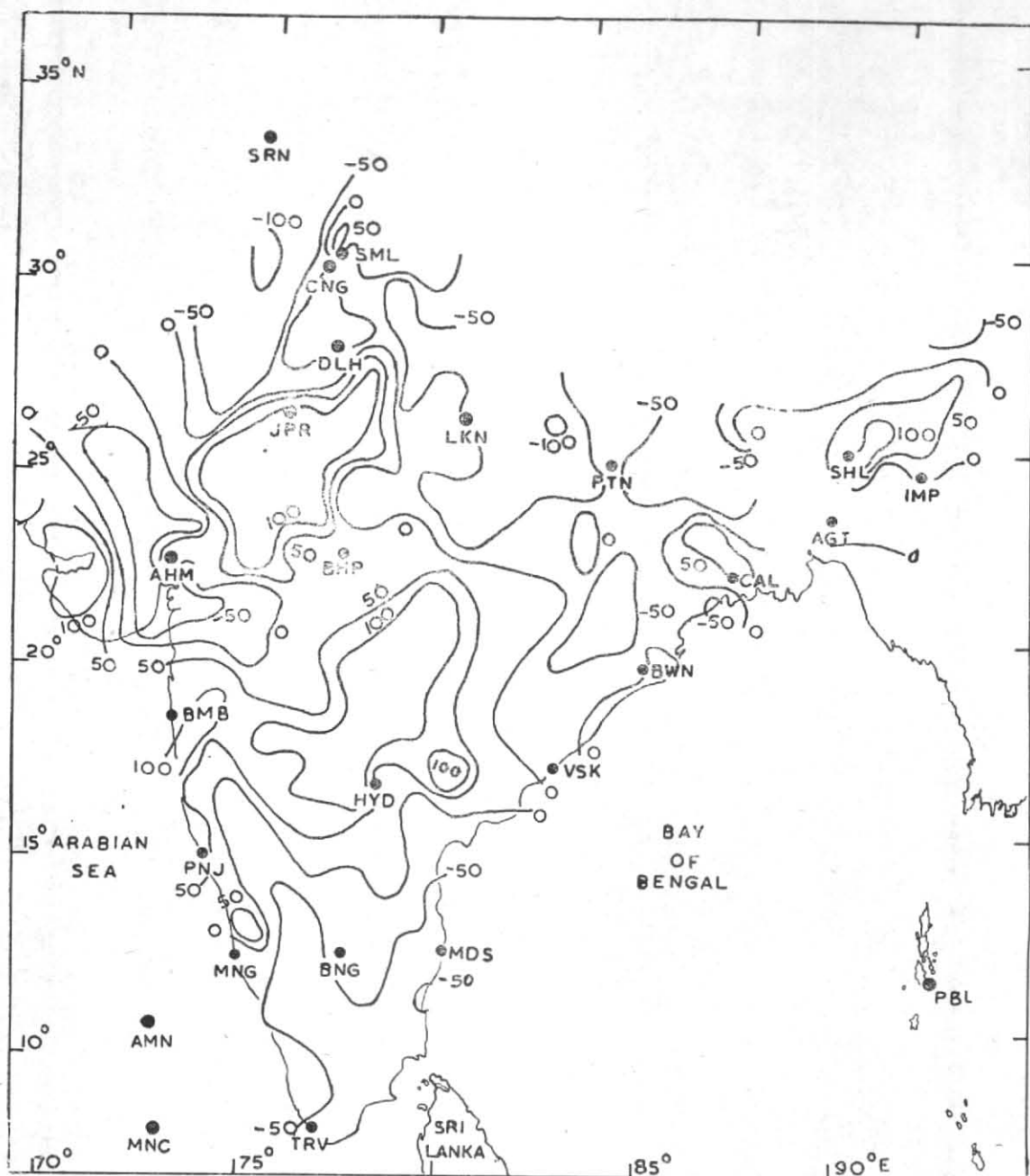


Fig. 2 (b). Percentage departure from normal of rainfall during 1 October to 31 December 1974

some days during this period. Fairly widespread rain occurred in Assam and adjacent States from 28th to 30th and isolated rain in Orissa and Gangetic West Bengal between 27th and 29th. This cyclone did not cause any damage in India but according to press reports some damage to life and property occurred in the coastal areas and off-shore islands of Bangla Desh, associated with tidal waves of about 3 to 4 m high.

In association with troughs of low that lay off Tamil Nadu-Sri Lanka coasts and over Lakshadweep and adjoining Kerala coast on most days in the first fortnight, isolated rain or thundershowers occurred in Tamil Nadu and Kerala on many days and in Andhra Pradesh, Karnataka and Lakshadweep on a few days in the first half of the month.

A well marked low developed over central Bay on 15th and persisted there upto 17th with a trough extending to north Bay. It moved westwards to south Andhra-north Tamil Nadu coasts by 19th and weakened on 20th. However, the associated trough in the low level easterlies moved westwards across the Peninsula on 20th and 21st and became less marked on 22nd. Another low moved from southeast Bay to southwest Bay off Tamil Nadu coast from 21st to 23rd and became less marked on 24th. Under the influence of these systems rain or thundershowers were fairly widespread in coastal Andhra Pradesh from 20th to 22nd, in east Madhya Pradesh and Vidarbha on 21st, in Rayalaseema from 20th to 24th and in Tamil Nadu on 23rd and 24th and scattered or isolated over the rest of the Peninsula generally between 21st and 23rd and in Orissa between 18th and 23rd.

A low which lay over Lakshadweep and adjoining Kerala coast from 23rd to 26th caused fairly widespread rain in Kerala on 23rd and 24th and isolated rain in Kerala and Lakshadweep on 25th and 26th.

Bay Islands had scattered or fairly widespread rainfall on most days of the month leading to excess of rainfall for the month. Gujarat State,

Konkan and Marathwada had no rain during the month.

The principal amounts of heavy rainfall (in cm) during the month were :

Car Nicobar 10 on 5th; Cochin (NAS) 10 on 11th; Srivilliputtur (Tamil Nadu) 13 on 15th; Venkatagiri (Andhra Pradesh) 8 and Gopalpur 7 on 20th; Nancowrie 14, Car Nicobar and Kondul 11 each and Ongole, Addanki and Woolapalam (A.P.) 8 each on 21st; Car Nicobar and Nancowrie 11 each on 22nd; Alleppey 10, Khammam 9 and Pondicherry 7 on 23rd; Hut Bay 8 on 24th and 25th.

Night temperatures were appreciably to markedly below normal in many parts of Maharashtra State, Karnataka and Andhra Pradesh on many days from 1st to 19th with moderate cold wave conditions in these areas on a few days from 6th to 11th and 16th to 19th. Night temperatures were appreciably below normal in some parts of Madhya Pradesh from 1st to 9th and in some parts of Gujarat State from 19th to 24th and in north-west India on a few days in the first and last week. Night temperatures were appreciably above normal in many parts of northeast India on most days between 20th and 30th.

DECEMBER

Ten western disturbances moved eastwards across the Western Himalayas during the month. Of these, one became a depression as it moved eastwards across Punjab on 14th and 15th. The rest were mostly troughs or cyclonic circulations in the lower and middle troposphere. Three induced lows moved from Rajasthan to northwest Madhya Pradesh and adjoining south Uttar Pradesh, the first from 2nd to 3rd and the other two from 14th to 18th. A trough extended from the induced lows to Gujarat during the above periods. In association with the above systems, rain or snow was fairly widespread in the Western Himalayas on 3rd, 8th and from 15th to 18th and scattered or isolated on 4th, 7th, 9th and on many days between 20th and 31st. Rain or thundershowers were scattered to fairly widespread in Punjab, Haryana and the plains of Uttar Pradesh from 15th to 18th and isolated in Rajasthan, Madhya Pradesh, Bihar plains and Gujarat State on some days during the same period. Isolated rainfall also occurred in the plains of northwest India on 3rd and in west Madhya Pradesh on 4th. The rainfall was in excess over many parts of northwest India and Uttar Pradesh for the month. Heavy snowfall in Kashmir

valley and Himachal Pradesh was reported to have disrupted road and air traffic in those areas in the third week.

The principal amounts of rainfall (in cm) associated with the above mentioned systems were :

Banihal 4 on 3rd ; Manna 3 on 4th; Manali and Banihal 4 each and Gulmarg 3 on 15th ; Banihal, Quazigund and Dharampur 5 each and Dharchula 3 on 16th; Mandi 13, Bilaspur 6 and Banihal, Dharmsala, Dharampur, Dholpur, Patiala, Dehra Dun, Mukteswar and Meerut 3 each on 17th; Azamgarh 3 on 18th.

The low which moved away northeastwards across Arunachal Pradesh on 30 November, caused fairly widespread rainfall in that area on 1 December. Tezu recorded 3 cm of rainfall on 1st, Orissa and Gangetic West Bengal had no rain during the month. The rest of northeast India had generally scanty rainfall.

Four troughs in the easterlies moved westwards from Andaman Sea to Lakshadweep-Maldives area across south Peninsula during the period 4th

to 12th, 20th to 25th, 26th to 29th and 28th to 31st. A trough of low also lay over Andaman Sea on many days from 5th to 18th. In association with these systems, rain or thundershowers were fairly widespread in Bay Islands on 8th and 16th and scattered or isolated in that area on many days from 4th to 18th and from 26th to 31st. Rain or thundershowers were also fairly widespread in Tamil Nadu from 24th to 26th and isolated on a few days during the periods 1st to 12th and 27th to 31st. Isolated rainfall also occurred in Kerala and Lakshadweep on a few days in the first and last week. The rainfall for the month was deficient in Bay Islands and scanty in Tamil Nadu, Kerala and Lakshadweep. There was practically no rain in Andhra Pradesh, Karnataka and Maharashtra State.

The principal amounts of rainfall (in cm) over south Peninsula and Bay Islands during the month

were:

Hut Bay 4 and Alleppey 3 on 6th; Kondul 8 and Long Island 4 on 8th; Pamban 6 on 10th; Vedaranniyam 10 on 11th; Kondul 3 on 18th; Vedaranniyam 7, Mannargudi 4 and Atirampattinam, Pamban and Tondi 3 each on 24th; Mayuram 6, Vedaranniyam 5, Kumbhakonam 4 and Cuddalore and Kodaikanal 3 each on 25th; Kumbhakonam and Thanjavur 5 each, Mannargudi 4, and Dindigul, Vedaranniyam and Kodaikanal 3 each on 26th; Kondul 6, Nancowrie 3 on 27th; Kondul 7, Tuticorin 5 and Palayankottai 4 on 29th.

Night temperatures were markedly below normal in Rajasthan on 19th and 20th and in Jammu & Kashmir on 23rd. They were appreciably below normal in many parts of north India and north Peninsula on some days during the second fortnight.