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Weather

HOT WEATHER SEASON (MARCH—MAY 1972)

CHIEF FEATURES

Western Disturbances

Twenty western disturbances moved across northwest India in this season; 8 in March, 7 in April and 5 in May. They were active in April causing excess of rainfall for that month in the Western Himalayas and the adjoining plains.

Cyclonic storms/Depressions

A severe cyclonic storm of narrow core developed in southeast and adjoining east central Bay and moving practically northwards, dissipated over east central and adjoining north Bay during the second week of April, causing widespread rain in the Bay Islands. The track of the storm is shown in Fig. 1.

Arrival of the monsoon

The southwest monsoon advanced temporarily into south Peninsula towards the end of the second week of May and retreated towards the end of the third week, causing heavy rain in south Peninsula and floods in Kerala.

Rainfall

The rainfall for the season was normal to excess in the south Peninsula, Assam and adjacent States and the Western Himalayas and deficient or scanty over the rest of the country. Many parts of north India had little or no rain during most part of May. The total rainfall for the period from 1 March to 31 May 1972, in terms of percentage departures from the normal, is shown in Figs. 2(a) and 2(b).

Temperature

A prolonged spell of appreciably above normal day temperatures prevailed in Uttar Pradesh, Bihar and Gangetic West Bengal in May with moderate to severe heat wave conditions in Bihar and Gangetic West Bengal on many days. Moderate to severe heat wave conditions also prevailed in Orissa and coastal Andhra Pradesh on a few days in May. This hot spell is reported to have taken a toll of about 500 human lives, mainly in Bihar and Uttar Pradesh.

The main weather features for each month were as follows :

MARCH

Eight western disturbances moved across northwest India during the month, three in the first fortnight and five in the second half. Most of these disturbances induced low pressure areas over southwest Pakistan and adjoining Rajasthan, which moved northeastwards to Punjab, Haryana and adjoining Himachal Pradesh and dissipated. These systems caused generally widespread rain and snow in the Western Himalayas in the first half of the month and scattered rain or snow in the second half. Isolated rain or thundershowers occurred in the adjoining plains between the 5th and 8th and again on the 31st. Rainfall was, however, fairly widespread in Punjab and Haryana on the 5th. The rainfall for the month was normal in Jammu & Kashmir and deficient or scanty over the rest of northwest India. Simla experienced gales on the 4th, which uprooted trees and blew away the roofs of houses and dislocated telecommunications. Delhi was hit by a hailstorm on the same night. The amounts of rather heavy rainfall associated with the western disturbances were :

Date	Station	Rainfall (cm)
5	Dharmsala, Bilaspur, Joshimath, Manna	5 each
	Rohtak, Quazigund, Hoshiarpur	4 each
8	Banihal	4
13	Quazigund	5
	Banihal	4
20	Gulmarg	4
30	Gulmarg, Quazigund	4 each

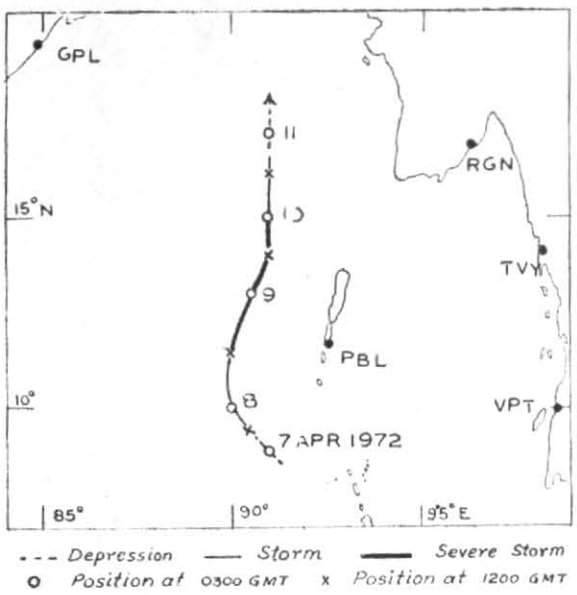

Fig. 1. Track of storm/depression during April 1972

One or two low pressure areas moved eastwards across northeast India from east Madhya Pradesh and neighbourhood during the first fortnight. A trough extending to 900 m a.s.l. passed from Bihar Plains to Assam and adjoining States on most days during the second fortnight. In association with these systems, there was scattered to fairly widespread rain or thundershowers in Assam and adjacent States on many days in the second fortnight and on a few days in the first fortnight. Isolated rain or thundersihowers also occurred in the rest of northeast India on a few days in the month. Calcutta reported hail on the 10th. Cachar district in Assam was reported to have been hit by a severe Nor'wester on the 14th, killing 2 persons and damaging many houses. The following stations recorded rather heavy rain in northeast India :

Date	Station	Rainfall (cm)
6	Passighat	5
15	Silchar	4
18	Silchar	7
	Digboi	5
22	Tezu	4
30	Agartala	4
31	Dhubri	13
	Shillong	4

Weather remained mainly dry in the Peninsula and Madhya Pradesh except for isolated light rain or thundershowers in Madhya Pradesh, Interior Mysore and Kerala on a day or two.

Day temperatures were appreciably to markedly above normal in many parts of northwest India, west Uttar Pradesh, Madhya Pradesh and Gujarat State during the last week and appreciably to markedly below normal in northwest India and Uttar Pradesh during the first week.

Night temperatures were appreciably below normal in Tamil Nadu on many days and in north India during the first week, being markedly so in Kutch on the 2nd and 3rd. They were appreciably above normal in Rajasthan, Punjab and Western Himalayas during the last week.

APRIL

Seven western disturbances affected northwest India during the month. Nearly all of them induced low pressure areas over Rajasthan and adjoining south Pakistan which moved northeastwards across the plains of northwest India. These systems generally caused fairly widespread rain or snow in the Western Himalayas and scattered rain or thundershowers in the adjoining plains. Widespread rain or snow with scattered moderate to heavy falls occurred in the Western Himalayas from 17th to 19th. Scattered duststorms were also reported from Rajasthan, Uttar Pradesh and north Gujarat State on the 9th and 22nd. The rainfall for the month, in association with the western disturbances was normal to excess in the Western Himalayas and the adjoining plains of northwest India. The principal amounts of rainfall associated with the above western disturbances were :

Date	Station	Rainfall (cm)
5	Banihal	5
10	Garbyang	4
16	Gulmarg	4
17	Quazigund	6
	Bhuntar, Gulmarg	4 each
18	Quazigund	9
	Manali	8
	Joshimath	6
	Banihal, Dalhousie	5 each
19	Dharamsala	4

A low pressure area developed over south Andaman Sea and adjoining southeast Bay on the 6th. It concentrated into a depression on the 7th, about 350 km southwest of Port Blair. Moving practically in a northerly direction, it intensified

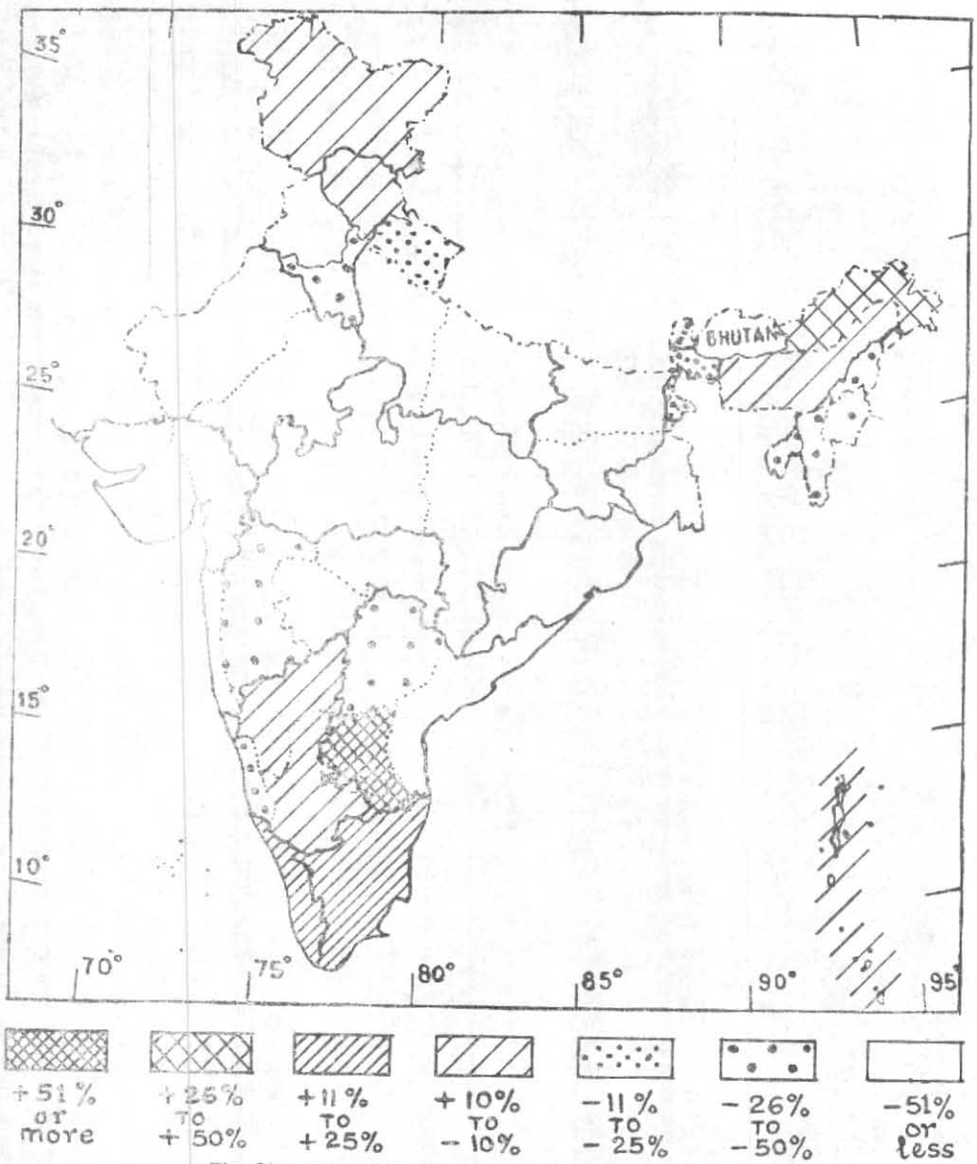

Fig. 2(a). Rainfall for the period 1 March to 31 May 1972
(Percentage departure from normal)

into a severe cyclonic storm by the 9th. Continuing to move northwards, it rapidly weakened into a low pressure area over east central and adjoining north Bay by the 11th. This system was detected and tracked mainly with the help of satellite pictures and aircraft reconnaissance flights. The maximum wind speed reported by reconnaissance aircraft on the 9th was about 80 kt. This system caused widespread rain in the Bay Islands from 7th to 10th, with scattered heavy falls on the 8th and 9th. Car Nicobar reported 10 cm on the 8th, while on the 9th Maya Bandar reported 9 cm, Long Islands 8 and Port Blair 7 cm.

A wind discontinuity at 900 m a.s.l. passed from Bihar Plains to Assam and adjacent States on most of the days of the month, causing good thundershower activity in Assam and adjacent States, particularly in the first fortnight and again during the last 5 days. The rainfall was normal to excess in Assam and adjacent States while it was generally deficient over the rest of northeast India. Another wind discontinuity at 900 m a.s.l. passed from the interior parts of south Peninsula to east Madhya Pradesh and adjoining Orissa on most days of the month. It caused scattered or isolated thundershowers in many parts of the Peninsula and Madhya Pradesh, particularly in the second and third weeks.

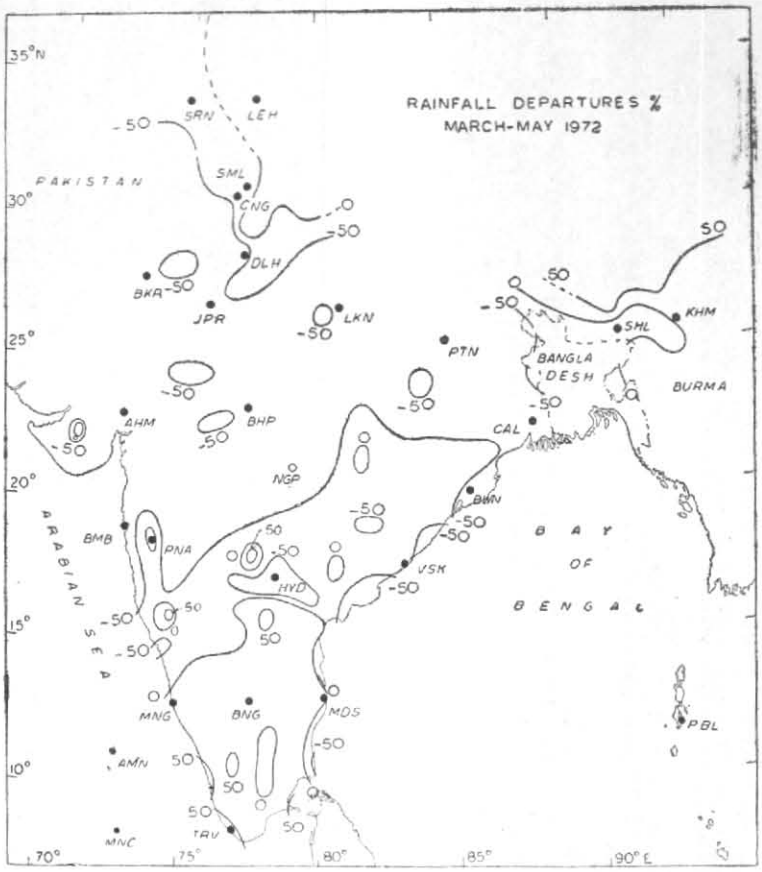

Fig. 2(b). Percentage departure from normal of rainfall occurred during 1 March to 31 May 1972

The heavy rainfall amounts in the Peninsula, central and northeast India during the month were :

Date	Station	Rainfall (cm)
3	North Lakhimpur	8
	Mohanbari, Pasighat	7 each
10	Cherrapunji	8
	Tura, Bidar	7 each
12	Muvattapuzha (Kerala)	8
14	Gobichettipalayam (Tamil Nadu)	7
19	Khonsa	9
	Pasighat	7
26	Cherrapunji	12
	Tezu	9
27	Silchar	9
28	Kailashahar	9
29	Tangla	11
	Gauhati	8
30	Tangla	8
	Gohpur	7

A tornado was reported to have hit some parts of Mymensingh district in Bangla Desh on the evening of 2nd, killing about 200 persons and rendering many homeless. A nor'wester hit the eastern parts of Dibrugarh district on the 9th, killing 2 persons and damaging many houses. Two persons were reported killed and many to have been injured as a result of a severe nor'-wester that ripped through Gauhati and neighbourhood on the 18th. A hailstorm hit Bidar town and surrounding areas in the second week killing about 10 persons. A thundersquall swept through Trivandrum on the 15th, uprooting trees, damaging some houses and disrupting power supply.

Day temperatures were appreciably below normal in many parts of northwest India and Assam and adjacent States on many days in the month and in Uttar Pradesh and Madhya Pradesh on some days. They were markedly below normal in northwest India in the third week. Day temperatures were appreciably above normal in Jammu & Kashmir on the 14th and 15th.

MAY

Five western disturbances moved eastwards across the Western Himalayas during this month, three as upper air systems during the first half of the month and two as surface lows in the second half. The first western disturbance induced a low over south Pakistan on the 1st, which moved to Rajasthan by the 3rd and filled up there on the next day. The third western disturbance induced a low over central Pakistan on the 13th, which moved eastnortheastwards across Himachal Pradesh by the 15th. These systems caused normal rainfall in Jammu & Kashmir and scanty rainfall over the rest of northwest India during this month. Isolated duststorms were also reported from the plains of northwest India on some days in the first and last weeks. The principal amounts of rainfall were : Dharchula 5 cm on the 23rd; Gulmarg and Quazigund 7 cm each and Banihal 4 cm on the 24th. Considerable damage to fruit crops was reported from Jammu & Kashmir due to heavy rain on the 23rd and 24th.

A cyclonic circulation extending to the middle troposphere developed over southwest Bay off Ceylon-Tamil Nadu coasts on the 9th. It moved slowly northwestwards to coastal Mysore across Tamil Nadu by the 16th. This system was seen as a surface low between the 12th and 15th. Subsequently it weakened into a trough off Mysore-south Maharashtra coasts by the 18th, moved west and became unimportant. A trough of low pressure also persisted off Kerala—Mysore coasts from the 11th to 16th. In association with these systems, the southwest monsoon advanced temporarily into southeast Arabian Sea, Laccadive-Maldive area and Kerala on the 12th and into coastal Mysore on the 16th. The monsoon retreated from these areas by the 23rd and did not revive thereafter during the month. Widespread rain, with scattered heavy to very heavy falls occurred in Kerala, Mysore State and Tamil Nadu between 11th and 16th. Considerable damage to paddy crops was reported from many parts of Kerala due to heavy rain and floods. About 10,000 houses were damaged. Quilon and Kottayam were the worst affected districts. There were also reports of heavy damage to private property, irrigation and communication works in some parts of Tumkur district in Mysore State.

The southwest monsoon also advanced into Andaman Sea and adjoining southeast Bay on the 14th and covered the southwest Bay and east central Bay by the 21st. It advanced into northeast Bay by the 26th. The northern limit of the monsoon on 31 May, passed from Jaffna to Chittagong. The monsoon was weak over the Bay Islands during the last week of May.

The principal amounts of heavy rainfall associated with the monsoon were :

Date	Station	Rainfall (cm)
11	Trivandrum AP	12
12	Kodungallur (Kerala)	25
	Parur, Fort Cochin	18 each
	Alwaye	14
13	Fort Cochin, Ootacamund	13 each
	Trivandrum Airport	12
14	Punalur	29
	Denkanikotta	18
	Tumkur	17
	Calicut, Alattur	13 each
15	Kankanhalli	15
	Calicut	13
	Long Island	10
16	Agumbe, Kuttiyadi	14 each
	Androth, Karkala	11 each
	Mangalore AP	10
17	Port Blair	11
18	Maya Bandar	23
	Long Island	14

The seasonal east-west trough extending to 900 m a.s.l. over northeast India was well marked from 1st to 3rd and again in the third week. A low pressure area lay over north Orissa and neighbourhood during the last week. In association with these systems, there was widespread thundershower activity in Assam and adjacent States and in sub-Himalayan West Bengal in the second half of the month particularly between the 18th and 21st. The seasonal north-south oriented trough extending to 900 m a.s.l. over the Peninsula caused scattered or isolated thundershowers in many parts of the Peninsula during the first and last week. The principal amounts of heavy rainfall associated with the above systems were :

Date	Station	Rainfall (cm)
1	Tezu, Madurai	8 each
2	Pasighat	14
4	Alattur (Kerala)	8
	Coimbatore AP	7
6	Palghat, Vedakancherry	9 each
17	Cooch Behar	8
18	Pasighat	7
19	Silchar	7
20	Silchar	9
	Tezpur	7
26	Baghdogra, Bapatta, Kunnakulam	9 each
	Shimoga	8
	Ongole	7
28	Khonsa	7

According to press reports, a tornado passed over Agartala on the 18th, killing 2 persons. Many

birds were killed and paddy crops were damaged over many acres on account of a hailstorm in Harihar-Davangere region in Mysore State on the 25th.

Day temperatures were appreciably above normal in Gangetic West Bengal, Bihar State, Orissa and east Uttar Pradesh on many days and in west Uttar Pradesh, Gujarat State, many parts of northwest India and north Andhra Pradesh for some days. Moderate heat wave conditions prevailed in Gangetic West Bengal and Bihar State for many days during the period 11th to 21st and 28th to 31st, the heat wave being severe on the 18th and 19th. Moderate to severe heat wave conditions also prevailed in coastal Andhra Pradesh from 20th to 23rd and from 29th to 31st, in Orrisa from 20th to 22nd and in Gujarat State on the 17th. According to press reports, the death toll due to sun-stroke was about 500, Bihar accounting for 290 and Uttar Pradesh about 120.