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Weather

WINTER SEASON (JANUARY & FEBRUARY 1971)

CHIEF FEATURES

Western disturbances

Thirteen western disturbances moved across northwest India during this season. As most of them were feeble systems, the rainfall in northwest India and Uttar Pradesh, was generally below normal.

Rainfall

Northeast India and some parts of the Peninsula had good rainfall during the last week of January and the last week of February. There was an excess of rainfall in Orissa, Gangetic West Bengal, Bihar Plateau, Telangana, coastal Andhra Pradesh and Kerala. But practically no rain was recorded in Gujarat and Maharashtra States and in north Interior Mysore during this season. The total rainfall for the period from 1st January to 28th February 1971 in terms of percentage departure from normal is shown in Figs. 1(a) and 1(b).

Temperature

It was a cold winter over many parts of north India and north Peninsula, particularly during the first fortnight of January and the first fortnight of February, with the daily minimum temperature remaining appreciably below normal for a prolonged spell. Moderate cold wave affected some parts of Madhya Pradesh, Telangana, Orissa, Bihar State, West Bengal and Saurashtra on some days in January and in February. The prolonged cold spell of January was reported to have caused loss of many lives in Uttar Pradesh and Bihar State.

The important weather features for each month are as follows.

JANUARY

Six western disturbances moved across Western Himalayas during this month—two in the first fortnight and four in the second fortnight. The two western disturbances which moved across the Western Himalayas in the first fortnight, did not cause any precipitation. The weather remained mainly dry in north India and north Peninsular India during this period :

During the second fortnight, four western disturbances moved across the western Himalayas as troughs extending upto the middle troposphere from (*i*) 14th to 17th, (*ii*) 18th to 21st, (*iii*) 21st to 23rd and (*iv*) 25th to 29th. In association with these systems, rain and snow were isolated in the Western Himalayas from the 15th to 18th and fairly widespread during the periods 20th to 23rd and 25th to 28th. These western disturbances induced a few cyclonic circulations extending to about 1·5 km. a. s. l. over Rajasthan, which moved eastwards across the plains of north India during the second fortnight. They gave scattered rain or thundershowers in many parts of north India from 18th to 22nd and from 25th to 29th. The principal amounts of rainfall associated with these systems were: on the 20th, 3 cm at Jabalpur and Narsinghpur; on the 21st, 7 cm at Chandigarh, 5 cm at Sidhi, 3 cm at Garbyang and Satna; on the 22nd 4 cm at Sidhi and Rewa, 3 cm at Bhuntar and Hazaribagh; on the 25th, 3 cm at Manali; on the 26th, 5 cm at Dharamsala, Millam and Garbyang, 4 cm at Joshimath, 3 cm at Asansol, Nainital and Sidhi; on the 27th, 6 cm at Balasore, 5 cm at Calcutta, 4 cm at Angul and Ranchi, 3 cm at Contai and Purulia. Heavy snowfall in some parts of Himachal Pradesh and the hills of west Uttar

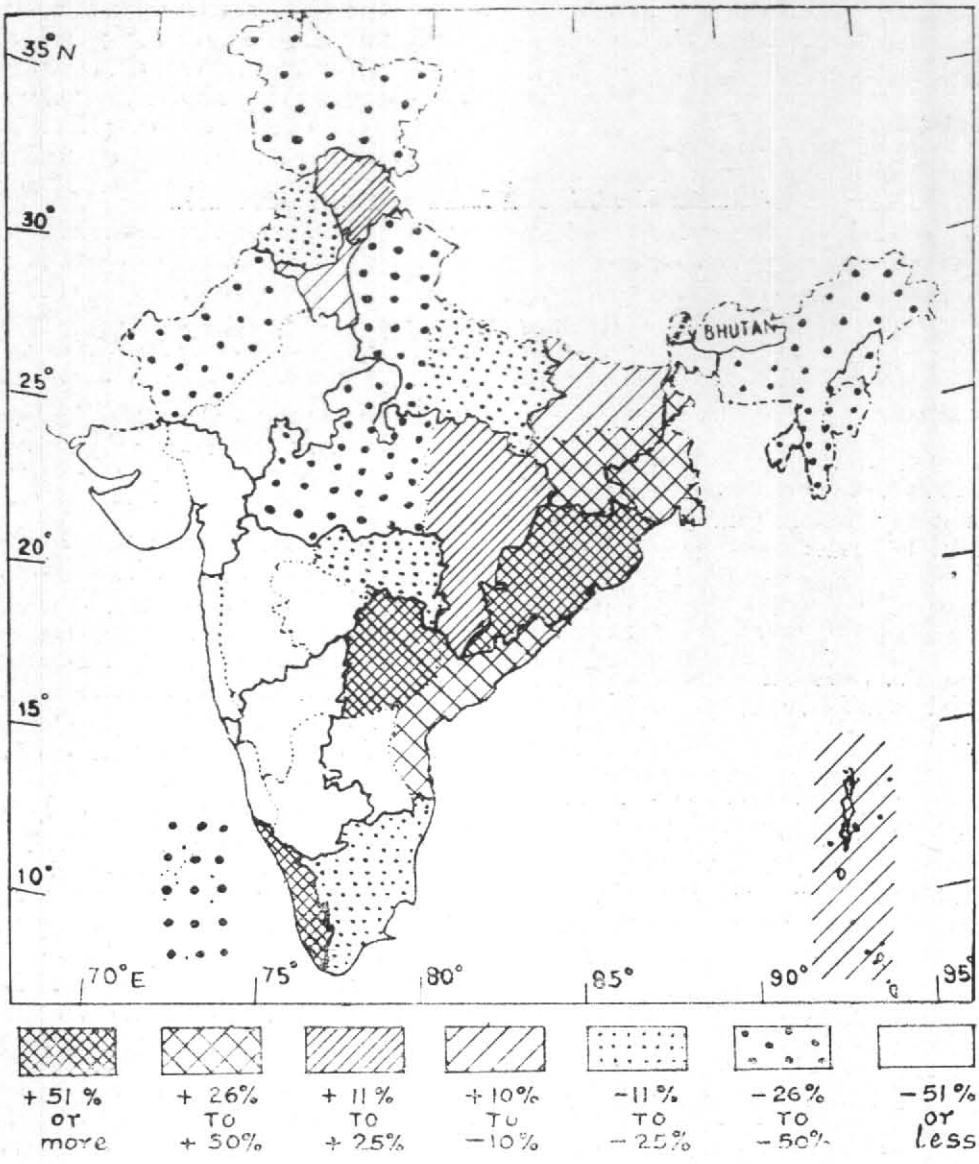

Fig. 1(a). Rainfall for the period 1 January to 28 February 1971
(Percentage departure from normal)

Pradesh was reported to have disrupted road traffic and telecommunications in these areas during the last week of this month.

A wind discontinuity at 900 m. a.s.l. passed from Telangana to Gangetic West Bengal across southeast Madhya Pradesh and Orissa from the 27th to 31st. A low pressure area lay over Assam on the 28th and 29th and became less marked on the 30th. There was scattered rain or thundershowers in northeast India during this period.

South Peninsular India had isolated rain or thundershowers during the periods 5th to 12th and 23rd to 31st. The rainfall between 5th to 12th and 23rd to 26th was in association with feeble troughs in the easterlies moving westwards across the Peninsula or lying close to the Tamil Nadu coast. The rainfall from the 27th to 31st was caused by a north-south oriented wind discontinuity at 900 m a.s.l. passing across the interior parts of the Peninsula. The Bay Islands had good rainfall during the first 10 days of the month. The principal amounts of rainfall in the Peninsula and the Bay Islands during the month were: Kondul 6 cm on the 4th, 12 cm on the 5th, 6 cm on the 7th, 9 cm on the 10th; Alleppey 6 cm on

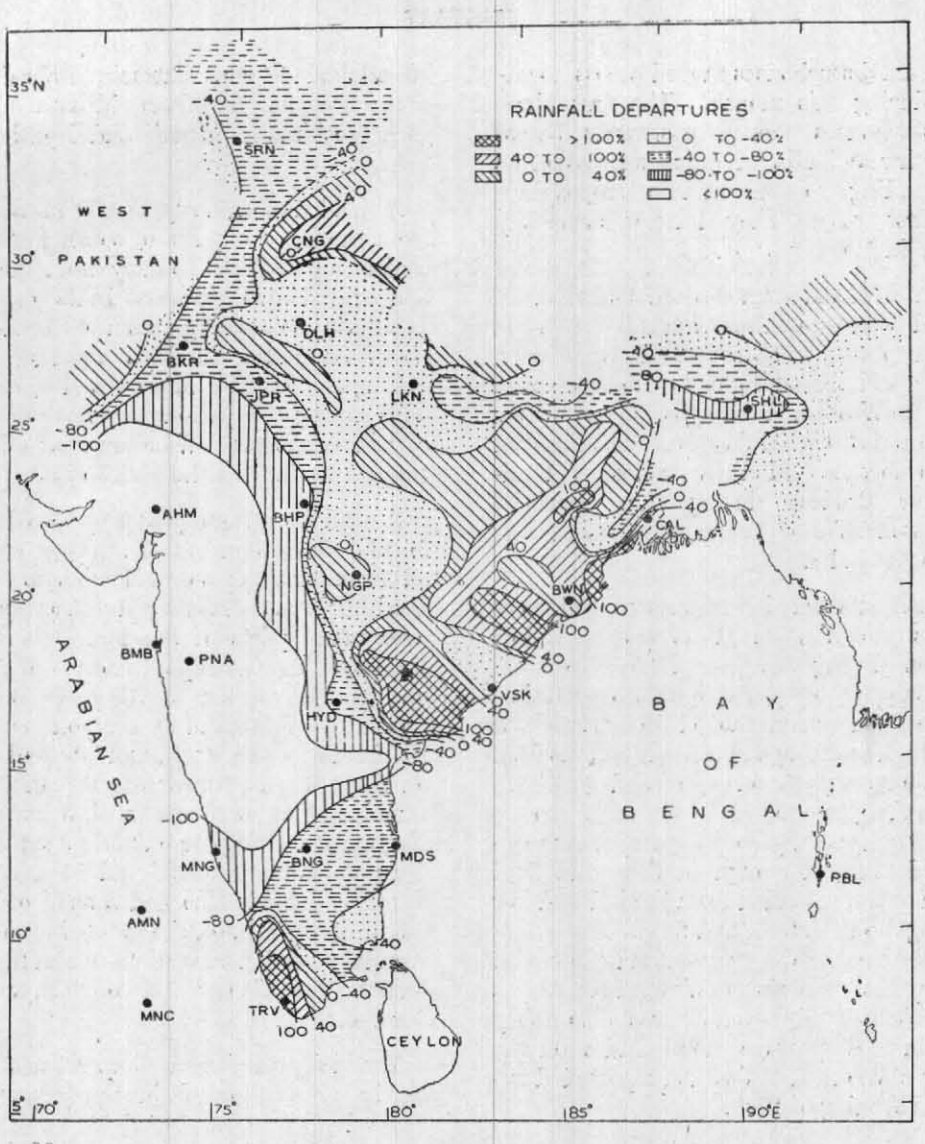

Fig. 1(b). Percentage departure from normal of rainfall occurred during 1 January to 28 February 1971

24th and 3 cm on 30th; Trivandrum City 4 cm on 24th, 8 cm on 28th and 7 cm on 31st; Punalur 5 cm on 27th, 3 cm on 28th and 31st; Palayankottai 4 cm on 25th; Kallakkurichchi 3 cm on 25th.

Daily minimum temperatures were appreciably below normal in many parts of north India on many days in the first fortnight and in north Peninsula during the first 3 or 4 days. They were also appreciably below normal in many parts of north India and in Maharashtra State during the last 3 or 4 days. Moderate cold wave conditions prevailed in some parts of Madhya Pradesh, Telangana, north Orissa and adjoining Bihar Plateau for a few days in the beginning of the month and in some parts of Saurashtra, Bihar Plains and sub-Himalayan West Bengal during the last few days of the month. The cold spell was reported to have caused some deaths in Bihar State and Uttar Pradesh.

FEBRUARY

Seven western disturbances moved across northwest India during this month. The first three western disturbances moved eastwards across extreme northwest India in quick succession as troughs extending to the middle troposphere during the first week. They did not cause any precipitation in northwest India.

The fourth, fifth and sixth western disturbances, which moved across northwest India between 9th to 11th, 18th to 20th and 21st to 23rd respectively, caused fairly widespread light to moderate rain and snow in the Western Himalayas. They induced low pressure areas over Rajasthan, which moved eastwards to northeast Madhya Pradesh and adjoining Uttar Pradesh during these periods, causing isolated rain or thundershowers in the plains of north India.

The seventh western disturbance moved eastwards across the Western Himalayas as a low pressure area during the period 25th to 28th. It induced another low pressure area over Rajasthan on the 26th which moved to west Uttar Pradesh by 28th morning and became less marked. But the cyclonic circulation associated with this low and extending to about 1·5 km. a.s. l. moved further eastwards rapidly to Assam by the morning of 1st March. A trough in the wind field upto 1·5 km. a.s. l. extended from the induced low to West Bengal on the 27th and 28th. There was widespread moderate to heavy rain and snow with scattered very heavy falls in the Western Himalayas on the 27th and 28th. Rainfall was also fairly widespread in most parts of north India on the 28th. Many stations in Rajasthan reported duststorms on the evening of 27th.

The principal amounts of rainfall in north India associated with western disturbances and induced low pressure areas were : Banihal 3 cm on 10th, Manali 6 cm, Dharamsala 4 cm, Bhuntar and Millam 3 cm on 11th; Silchar 3 cm on 12th; Balasore 3 cm on 23rd; Gulmarg 3 cm on 26th; Banihal 16 cm, Quazigund 9 cm, Gulmarg 7 cm, Dalhousie 4 cm and Manali and Millam 3 cm on 27th; Quazigund 17 cm, Jammu 9 cm, Dharmsala and Moradabad 8 cm, Cuttack, Bahraich, Banihal 6 cm, Patiala, Ludhiana, Millam 5 cm, Chandigarh, Joshimath, Manali and Rourkela 4 cm on 28th.

A wind discontinuity at 900 m. a. s. l. passed from the interior parts of south Peninsula to the central parts of the country from the 1st to 10th and extended to northeast India on a few days. It caused isolated light rain or thundershowers in northeast India, Madhya Pradesh, Vidharbha, Telangana, Interior Mysore and Kerala on a few days during this period. Gopalpur recorded 6 cm of rain on the 1st. Weather was mainly dry over the Peninsula from the 11th to 21st.

A wind discontinuity at 900 m.a.s. l. again developed over the Peninsula in the last week and passed from extreme south Peninsula to Madhya Pradesh. It caused scattered rain or thundershowers over many parts of the Peninsula and Madhya Pradesh. The principal amounts of rainfall were: on the 24th, 4 cm at Alleppey, 3 cm at Fort Cochin, Punalur and Amini; on 25th, 4 cm at Kakinada, 3 cm at Chandbali and Khammam; on 26th, 3 cm at Brahmapuri; on 27th, 6 cm. at Punalur, 5 cm at Kodaikanal; 3 cm at Alleppey, Nagpur and Titlagarh; on 28th, 9 cm at Kakinada, 5 cm at Kallakkurichchi and 3 cm at Nidadavole. The Bay Islands also had a spell of moderate to rather heavy rain on the last 4 days of the month; Kondul recorded 3 cm on 26th and 27th and 6 cm on 28th; Car Nicobar 4 cm on 27th and Nancowry 3 cm on 28th.

The daily minimum temperatures were appreciably below normal in many parts of north India during the first fortnight, with moderate cold wave conditions in some parts of Madhya Pradesh, Bihar State and adjoining West Bengal from the 1st to 3rd and again from 13th to 16th. They were also appreciably below normal in northwest India, Gujarat and Maharashtra States and adjoining west Madhya Pradesh on 28th, with moderate cold wave conditions in some parts of Gujarat State and adjoining Rajasthan and north Madhya Maharashtra.