

Weather

WINTER SEASON (JANUARY AND FEBRUARY 1976)

CHIEF FEATURES

Western disturbances

Seventeen western disturbances, nine in January and eight in February, moved across the Western Himalayas. Nine induced lows, three in January and six in February, moved across the plains of north India. The activity of the western disturbances was pronounced in the second half of January and most of February.

Rainfall

The winter rainfall was normal or excess in the Western Himalayas and in the plains of north-west India but generally scanty in the plains of Uttar Pradesh, Madhya Pradesh and Bihar State. Assam, Meghalaya, West Bengal and Sikkim had normal rainfall and the rest of the country had scanty rainfall except Konkan, Goa, Marathwada,

coastal and north Interior Karnataka where the weather was dry during the season. The total rainfall for the period from 1 January to 29 February 1976 is shown in Figs. 1(a) and 1(b) in terms of percentage departure from normal.

Temperature

Moderate to severe cold wave conditions prevailed in Jammu & Kashmir from 27 to 29 February and moderate cold wave conditions in Punjab, Himachal Pradesh and some parts of Rajasthan during the same period. Moderate cold wave conditions also prevailed in Telangana on 22 and 23 January and on 7 and 8 February.

The important features of each month were as follows.

SIGNIFICANT MONTHLY FEATURES

JANUARY

Nine western disturbances moved eastward across the Western Himalayas during the month generally as upper air systems—four in the first fortnight and five in the second. Three induced lows/cyclonic circulations in the low levels also moved across the plains of north India—the first from southwest Rajasthan to Haryana between 11th and 13th, the second from southwest Rajasthan and adjoining Gujarat to east Madhya Pradesh and adjoining Bihar between 15th and 18th and the third one from Gujarat State to northwest Madhya Pradesh on 30th and 31st.

No precipitation was reported in association with four of the western disturbances. In association with the other five western disturbances and the three induced lows, rain or snow was fairly widespread in the Western Himalayas on five or six days and scattered or isolated over the same area for about a week during the periods from 13th to 19th and 24th to 31st. Rain or thundershowers

were also fairly widespread in Punjab, east Rajasthan, east Uttar Pradesh, east Madhya Pradesh, Bihar plains, Sub-Himalayan West Bengal and Sikkim on one or two days and scattered or isolated in the plains of northwest India on 7 or 8 days, in Uttar Pradesh and Madhya Pradesh on 4 or 5 days and in Assam & adjacent States on two or three days during the above periods and in Gujarat State on 30th and 31st. According to press reports, heavy snowfall occurred in the Western Himalayas in the last week and Jammu city and neighbourhood had hailstorm on 27th. Hailstorm was also reported from Ahmedabad on 30th.

The principal amounts of rainfall (cm) associated with the western disturbances were:

Bhuntar & Amritsar 2 each on 13th; Manali & Kalpa 3 each, Bhuntar, Quazigund & Khurja 2 each on 14th; Allahabad, Gorakhpur & Sheopur 3 each, Sagar, Raissen, Tikamgarh, Khajuraho & Panna 2 each, Chapra, Raxaul, Darbhanga, Jaunpur, Varanasi, Nautanwa, Kota AP, Vidhisha, Bhopal, Narasinghpur, Satna, Umaria, Jabalpur, Mandla Chandrapur & Adilabad 1 each on 18th; Kalimpong 3, Darjeeling, Gangtok,

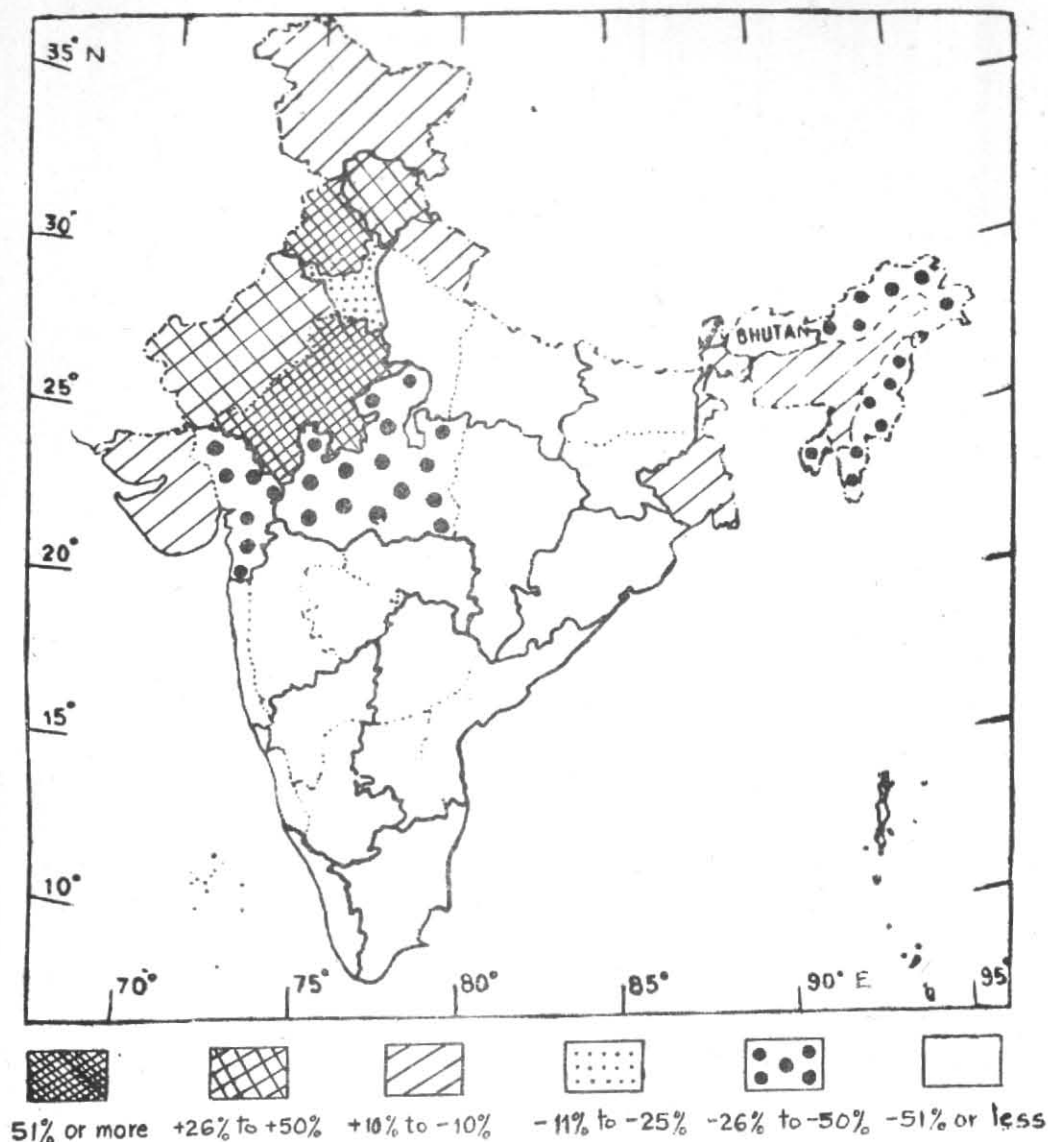


Fig. 1 (a). Rainfall for the period 1 January to 29 February 1976 (Percentage departure from normal)

Rangiya, & Tura 2 each on 19th; Manna & Bhuntar 2 each on 25th; Banihal 11, Bhuntar 5, Mandi, Quazi Gund & Dharampur 4 each, Dharamsala, Udhampur IAF & Chandigarh 3 each, Jammu AP, Simla, Manna, Munsyari & Joshimath 2 each on 27th; Srinagar 7, Kalpa 5, Quazi Gund, Mandi, Dalhausie, Dharampur & Joshimath 4 each, Manna, Munsyari, Jammu & Udhampur IAF 3 each, Bilaspur, Tehri, Mussoorie, Bhuntar, Pathankot & Gharshankar 2 each on 28th; Ludhiana 4, Bhatinda, Kapurthala, Bhilwara & Udaipur 3 each, Amritsar, Ferozepur, Nakodar, Halwara, Chittoor, Dungarpur, Guna, Nimach & Mandasaur 2 each on 31st.

A low level east-west trough with embedded cyclonic circulations lay over Sub-Himalayan West Bengal & Sikkim and adjoining parts of Assam on most days in the first week. It caused isolated very light or light rain in Sub-Himalayan West Bengal & Sikkim on many days in the week and in Assam & Meghalaya on 1st and 3rd. Iso-

lated rainfall also occurred in Assam & adjacent States on a few days in the last week in association with a cyclonic circulation in the lower troposphere which lay over Assam & adjacent States from 22nd to 26th and moved away eastwards by 27th. Shillong recorded 2 cm of rainfall on 26th.

A trough of low lay over southwest Bay off Tamil Nadu-Sri Lanka coasts on many days in the first week and again from 22nd to 25th. It caused isolated very light or light rainfall in Tamil Nadu on many days during the above periods and in south coastal Andhra Pradesh and Rayalaseema on 1st and 2nd. Woolapalam recorded 1 cm of rain on 1st; Tirupati and Vellore 1 cm each on 2nd; Mayuram 1 cm on 23rd.

The trough of low over Lakshadweep became well marked on 4th and 5th. It caused fairly widespread rainfall on 5th and isolated very light rain on 6th over Lakshadweep. Amini recorded 2 cm on 5th.

In association with a trough of low over Andaman Sea, Bay Islands had isolated rain or thundershowers on a few days in the second and last week. Hut Bay recorded 5 cm on 9th and Mayabandar 1 cm on 23rd.

Moderate cold wave conditions prevailed in Telangana on 22nd and 23rd. Night temperatures were appreciably below normal in Bay Islands on many days in the first and third week, in Orissa on many days between 1st and 18th; in Gangetic

West Bengal, Bihar State and east Madhya Pradesh on many days and in Punjab, Haryana and Uttar Pradesh on a few days in the second week; in Jammu & Kashmir and interior Tamil Nadu on a few days in the first week; in Interior Karnataka on a few days in the first fortnight and in Madhya Pradesh and interior Maharashtra between 18th and 24th, being markedly so in some parts of Madhya Pradesh, Orissa, Gangetic West Bengal and Bay Islands on a few days. Night temperatures were appreciably above normal in Rajasthan, Punjab and Haryana between 12th and 16th and appreciably above normal over these areas from 1st to 3rd, in Rajasthan from 24th to 31st and in Punjab from 24th to 27th.

FEBRUARY

The western disturbance which lay over Punjab as a low on 31 January moved away across the Western Himalayas by 2 February. It caused fairly widespread rainfall in Western Himalayas and Punjab and scattered rainfall in Haryana and the plains of west Uttar Pradesh on 1 February.

Eight more western disturbances moved across northwest India during the month, five in the first half and three in the second half. Of these the one which moved during the period 14th to 16th lay as a depression over Jammu & Kashmir and neighbourhood on 15th. Six induced lows also moved across the plains of north India—the first two from Rajasthan to Assam & adjacent States between 2nd and 12th, the next three from Rajasthan to west Uttar Pradesh between 12th and 20th and the last one from Rajasthan to Himachal Pradesh between 24th and 27th. In association with these systems, rain or snow was generally widespread in the Western Himalayas for 10 to 12 days and scattered or isolated on a few other days in the month with isolated heavy falls on 19th and 26th. Rain or thundershowers were fairly widespread in Punjab on 6 days and in Haryana, east Madhya Pradesh, Bihar State, West Bengal & Sikkim and Assam & adjacent States on 1 or 2 days in the month and scattered or isolated in the plains of northwest India and west Uttar Pradesh on 4 to 7 days and in Madhya Pradesh, east Uttar Pradesh and Orissa on 1 or 2 days. Heavy to very heavy rain was reported from a few places in Punjab on 18th. According to press and radio reports, heavy snowfall and landslides occurred in Kashmir valley in the third week dislocating road communications and air services to Srinagar. Hailstorms were also reported from some parts of Haryana during this time. Kashmir valley

also remained cut off from the rest of the country on 26th due to heavy snowfall.

The principal amounts of rainfall (cm) associated with the western disturbances were :

Una 7, Nawashahr 5, Dharamsala & Hoshiarpur 4 each, Mukerian 3, Ambala, New Delhi (Palam), Panipat, Dasuya, Ludhiana, Dalhousie, Bilaspur, Udhampur IAF, Quazigund & Jammu AP 2 each on 1st; Calcutta 6, Krishnanagar, Midnapore, Balasore & Dhanbad 4 each, Ulberia, & Jamshedpur 3 each, Darjeeling, Bharatpur, Pendra & Champa 2 each on 5th; Sandhead 7, Bagati 4, Chandbali, Puri, Darbhanga, Deoria, Kalimpong, Jalpaiguri & Gangtok 3 each, Tura, Darjeeling, Balurghat, Midnapore, Sagar Island, Baripada, Paradeep, Sambalpur, Muzzafarpur & Jaunpur 2 each on 6th; Manali 3, Bhuntar 2 on 13th; Manna & Bhuntar 4 each, Joshimath & Quazigund 3 each on 15th; Joshimath 6, Manna 5, Munsyari 4, Mukteshwar, Nainital & Jagraon 3 each on 16th; Nainital, Landsdowne & Una 3 each, Mawana, Mussoorie & Quazigund, 2 each on 17th; Gharshankar 14, Samrala 9, Nawashahr 7, Jagraon & Bilaspur 6 each, Una, Keylong & Dalhousie 5 each, Phillaur, Rupar, Narnaul, Bhuntar, Mandi, Dharampur & Kalpa 4 each, Munsyari, Chandigarh, Ferozepur, Kapurthala, Ballabhgarh & Simla 3 each on 18; Landsdowne 8, Jind 6, Bhatinda 4, Quazigund, Kuruks'etra & Karnal 3 each, Meerut, Sardhana, Joshimath, Munsyari, Hissar, Chandigarh, Simla & Pili- ni 2 each on 19th; Quazigund 4, Hoshiarpur & Dalhousie 3 each, Adampur, Dharamsala & Bhuntar 2 each on 20th; Munsyari & Patti 3 each, Joshimath & Manna 2 each on 25th; Mandi 7, Dharamsala 6, Dalhousie 5, Manali & Munsyari 3 each, Srinagar, Joshimath, Tehri, Dharchula, Askote, Gurdaspur & Mukerian 2 each on 26th.

A cyclonic circulation in the lower troposphere moved eastwards across Sub-Himalayan West Bengal and Assam & adjacent States between 1st and 4th. Under its influence rain or thundershowers were fairly widespread in Assam & adjacent States on 2nd and 3rd and isolated in Sub-Himalayan West Bengal & Sikkim on 1st and 2nd.

An east-west low level trough with embedded vortices lay over Assam & adjacent States, Sub-Himalayan West Bengal & Sikkim on a number of days in the second half of the month. It caused

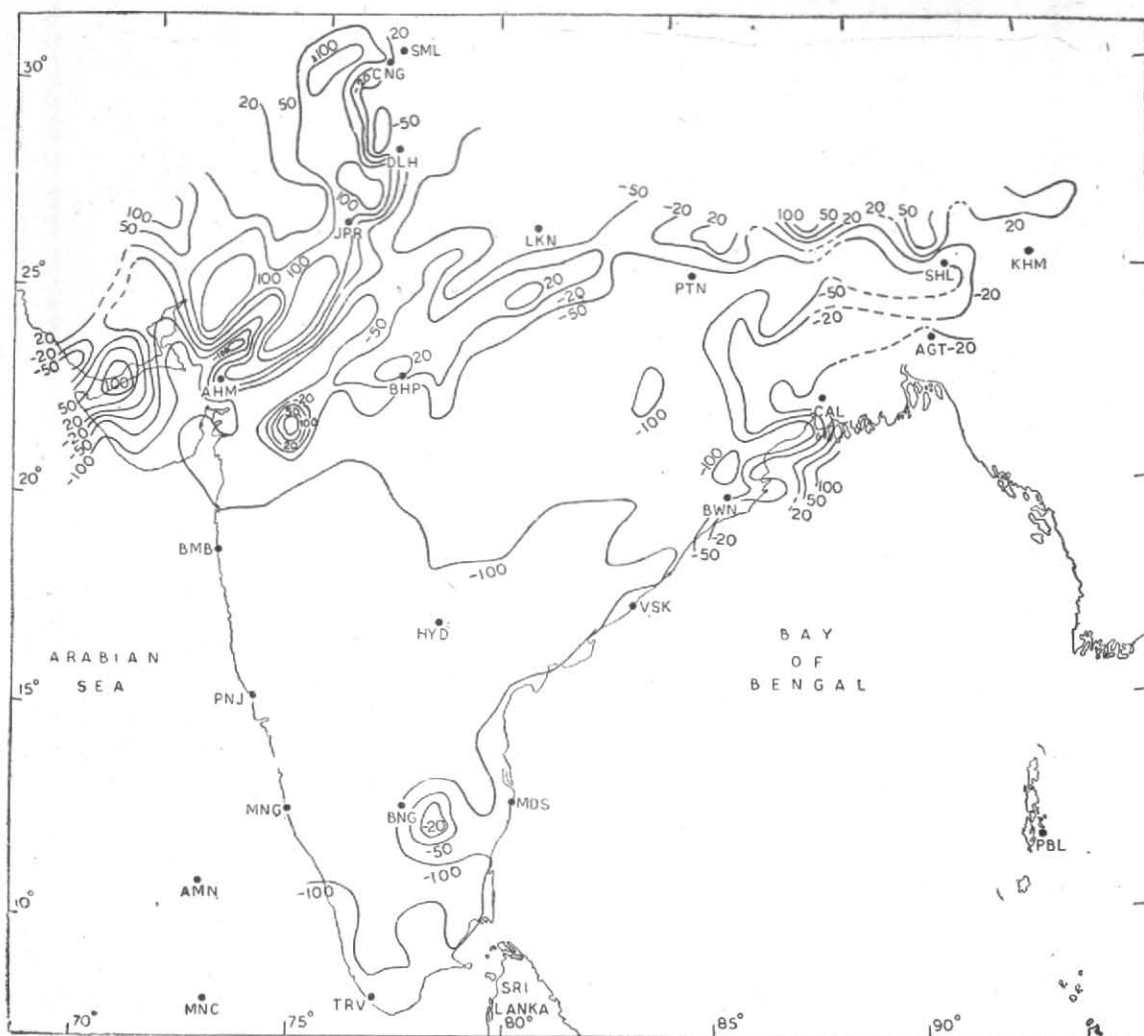


Fig. 1 (b). Percentage departure from normal rainfall during 1 January to 29 February 1976

generally scattered or isolated rain or thundershowers in Assam & adjacent States on many days and in Sub-Himalayan West Bengal & Sikkim on a few days in the second fortnight. Thundershowers were fairly widespread in Arunachal Pradesh on 20th, 21st, 24th and 26th.

The principal amounts of rainfall (cm) associated with the above systems during the month were :

Dibrugarh AP 5, North Lakhmipur 3, Tezu & Along 2 each, Imphal, Tuensang, Gangtok, Bomdila, Majbat, Tanjla, Tezpur, Digboi & Chaparmukh 1 each on 2nd; Along 2 on 3rd; Chaparmukh 2 on 14th; Chaparmukh 3 on 16th; Chaparmukh 4, North Lakhmipur & Tuensang 2 each on 18th; Gangtok & Daporijo 3 each, Tezu 2 on 20th; Daporijo 2 on 21st; Along 3 on 24th; Daporijo 2 on 26th.

Weather was mainly dry in the Peninsula.

Moderate to severe cold wave conditions prevailed over Jammu & Kashmir from 27th to 29th and moderate cold wave conditions in Punjab, Himachal Pradesh and southwest Rajasthan during the same period and in Telangana on 7th and 8th. Night temperatures were appreciably below normal in Interior Karnataka from 7th to 12th and again from 17th to 19th, in interior Andhra Pradesh from 9th to 13th and again from 17th to 23rd, in Tamil Nadu on many days between 21st and 29th, in some parts of interior Maharashtra between 4th and 9th and in some parts of Madhya Pradesh from 6th to 9th and again on 28th and 29th. They were appreciably above normal in the plains of northwest India and Uttar Pradesh from 13th to 19th and in some parts of Madhya Pradesh from 16th to 20th.