

COLD WAVE AND EXTENSIVE DUST HAZE OF FEBRUARY, 1950.

During the second week of February, 1950, a severe cold wave swept over north and central India. Many plain stations over Rajasthan recorded temperatures as low

as 5°F below the freezing point. Associated with the arrival and spread of this cold wave extensive dust haze also spread over practically the whole of India; Tamilnad being the only area unaffected.

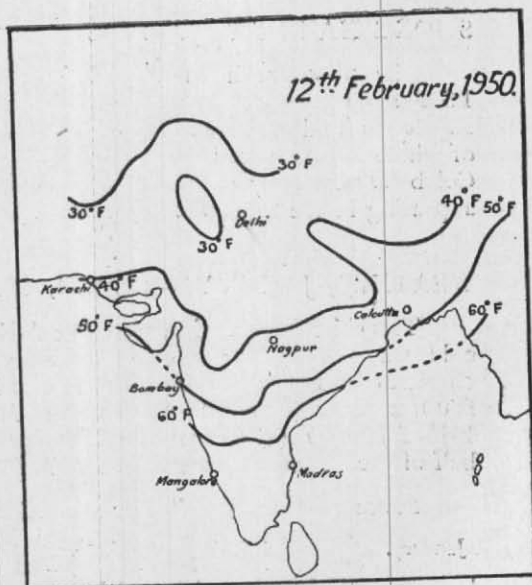
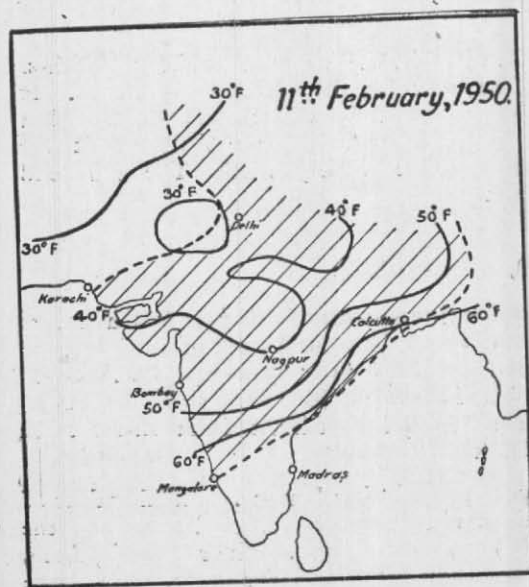
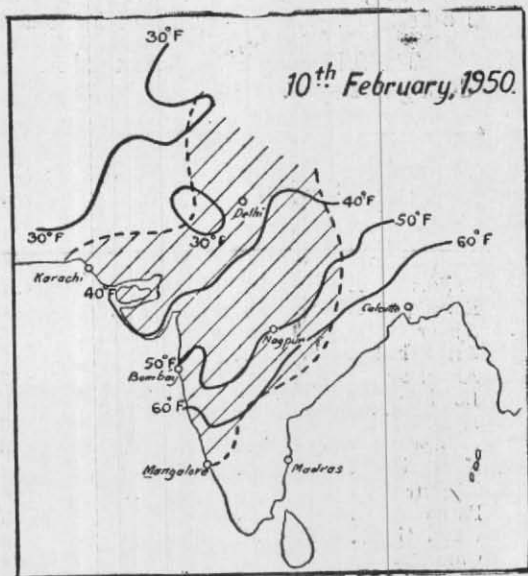
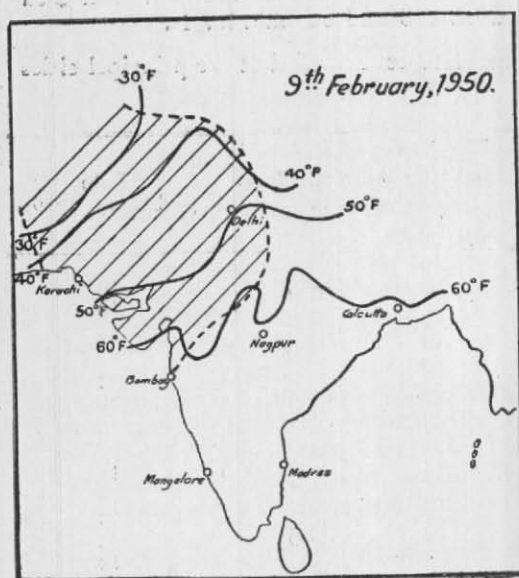
On the 7th February a deep western disturbance was over Baluchistan with an equally deep one over Russian Turkestan. The pressures reduced to sea level over Nokkundi and Tashkent were of the order of 1004 mbs. while the corresponding value for Bahrein was of the order of 1020 mbs. The temperature at Nokkundi was 62°F while at Bahrein it was 59°F. By the 8th morning the western disturbance over the Russian Turkestan had passed away while the one over Baluchistan had moved and intensified over the Punjab (P) where the sea level pressures fell to the order of 1000 mbs; widespread rain was occurring over a belt of the country extending from Muktesar and Patiala to Russian Turkestan. The sea level pressures over Tashkent area had risen to the order of 1025 mbs. and over Nokkundi to 1015 mbs. Nokkundi recorded temperature of 33°F i.e. a fall of nearly 30°F in 24 hours while Bahrein recorded a fall of 21°F. Associated with the steep pressure gradient in the rear of the western disturbance, dust picked up from Baluchistan area had extended to parts of Rajasthan where the surface winds also strengthened. However, the minimum temperatures continued to be 5 to 10°F above normal over northwest India and plains of Pakistan; the cold wave had reached only the western frontiers of Baluchistan. On the evening of 8th the pressure gradient over Baluchistan, Sind and Rajasthan had steepened and widespread thick dust haze and strong winds had extended over the whole of Sind and Rajasthan, but the cold wave had not extended to this area.

The cold wave had arrived over west Pakistan, Punjab (I), Rajasthan, Madhya Bharat and Bhopal although the minimum temperatures in the Indian area and on the plains of Pakistan were above 40°F. The relative humidities over central Rajasthan and Delhi fell to the order of 20%. The thick dust haze had extended to west Uttar Pradesh, Saurashtra and Cutch and the north Konkan.

By the evening of the 9th, the dust haze had spread to the whole of Konkan and north Bombay Deccan, the west Madhya Pradesh and parts of east Uttar Pradesh. On the 10th morning, the dust haze over these regions had settled partially over Rajasthan, but had extended to the Kanara Coast, south Bombay-Deccan, Hyderabad, the Mysore plateau and Andhra Desa. The cold wave intensified over Rajasthan where many places recorded temperatures of 30°F, nearly 20° below normal. Sub-normal minimum temperatures were recorded over the country to the northwest of a line extending from Mangalore to Gorakhpur. The day temperatures on the 10th over this area were 10 to 20°F below normal.

On the 11th, the dust haze and the cold wave gradually extended to Orissa, Bengal and Assam; a few stations over Rajasthan recorded temperatures below 30°F, Sikar and Sriganganagar reported 27°F. Thereafter, the cold wave and the dust haze began to abate although reports of haze from the ports along the west coast as far south as Trivandrum indicated that the dust haze had spread along the coast down to the extreme south of the peninsula. Day temperatures continued to be below normal over the country till the 14th while the night temperatures continued below normal till about the 18th. The previous occasion when there was a similar extensive dust haze over India was in the second week of May, 1945.

Fig. 1 gives the isotherms of minimum temperature on the four mornings from 9th to 12th. The hatched area represents the area of dust haze on the respective mornings.



Areas of prevailing dust haze are hatched.
 FIG. 1. ISOTHERMS OF MINIMUM TEMPERATURES.

An analysis of the upper air temperatures during the period reveals that the cold air was confined to a shallow layer from ground up to about 800 mbs. and above this layer, there was no well marked fall of temperature up to 400 mbs. The subsiding character of the cold air was also evident from the formation of marked isothermal layers of varying thickness as between 800 and 600 mb. levels.

The following table gives the lowest temperatures recorded at the principal cities during this spell.

Station.	Min. Temp. °F.	Departure from normal.	Date (February, 1950).
Rajkot	29	-13	10
Baroda	35	..	10
Ajmer	34	-15	11
Allahabad	38	-12	11
Amritsar	31	..	11
Bombay	58	-9	11
New Delhi	35	-14	11
Indore	31	-19	11
Karachi	48	-12	11
Nagpur	41	-19	12
Patna	43	-11	12
Gauhati	44	-9	12
Calcutta	45	-14	12
Cuttack	53	-12	13