

rise. The correspondence or opposition of departures at widely separated stations simultaneously or after an interval of months, as well as the high correlation coefficients, are strongly indicative of successful long-range weather forecasting.—*C. F. B.*

*Cool northeastern high ends hot spell.*—The excessive hot spell in the northeastern United States the first days of September, 1929, was brought to an early close in New England by the typical development of a high pressure over the St. Lawrence estuary, New Brunswick, Me., and the Gulf of Maine. Over this cool water and near-land, the pressure rose nearly 0.2 inch from the morning of September 3 to September 4. Half of this rise might have been expected from the movement of the northern tip of the southeastern high eastward, the other half of the pressure rise seems to have been due to the differential temperature of the cool region and the exceedingly hot one close by to the southwest and west. The temperature at Father Point, Quebec, on the south shore of the St. Lawrence estuary, ranged from 46° to 56° F. September 3, while that at Northfield, Vt., ran from 72° to 92° F.

As the northeastern high developed, the cool air ran out from its center westward under the hot southwesterly wind, bringing a welcome relief to most of New England by the morning of September 4. In New Hampshire and southern Maine the cool sea wind running under the hot wind produced a dense, mammillated stratus cloud moving from the SSE. at a (mountain measured) height of about 2,000 feet that lasted throughout the 4th. At night scattered warm-front thunderstorms, probably formed in northern New York and southwestern Quebec, drifted by.

The following day saw the atmospheric structure still more complex, for a slightly cooler north wind set under the now warmer (?) easterly wind from farther (?) out to sea, producing a still lower (1,500 feet) raggedly festooned stratus moving from the east. A light drizzle, increasing toward evening, fell all day in central New Hampshire. Presumably there was a fourfold layer structure to the atmosphere—the cool north wind at the ground, the cool, damp east to southeast wind next above, and the warm southwest and the cooler west to northwest winds at higher altitudes. With clouds at probably four levels, the day was the darkest one in a long time.

September 6 saw the beginning of showery weather, with southerly wind and very low clouds but more changeable sky brightness as the warm front of the oncoming low approached.

One of the unfinished minor projects of the late Dr. C. LeRoy Meisinger was a study of these northeastern highs that ended hot spells in New England so much sooner than in the Middle Atlantic States. An aerological investigation that would show whether, and, if so, how the heated expanded air from the eastern United States drifted northeastward and collected over the cool regions, thereby producing such highs should not only be full of interest but also very helpful in forecasting the termination of the excessive heat.—*Charles F. Brooks.*

*Probable origin of the cold wave in India, February, 1929.*—During the period January 28–February 3, 1929, an intense cold wave overran the whole of northwest and Central India, where surface temperature went down to about 12° C. below normal, several stations recording the lowest temperature in the last four or five decades. The results of a few soundings over Agra, which reached the stratosphere during and after the passage of the cold wave, appear to throw some light on the origin of the cold air. During winter the normal

height of the tropopause over Agra (latitude 27°) is about 14.5 geodynamic kilometers and its temperature is 206° A. (see Doctor Ramanathan's Figure 1, *Nature*, June 1, p. 834, reproduced on p. 382), while with the invasion of the cold wave the base of the Agra stratosphere came down so low as 11.5 geodynamic kilometers and its temperature rose to 213° A. The conditions in the troposphere and the stratosphere over Agra during the cold wave were similar to those normally found at about latitude 40°. The trajectories of pilot-balloon flights up to 6 kilometers indicate that the cold air came from the northwest. It would thus appear that the cold wave had its origin somewhere to the east of the Caspian Sea.—*S. C. Roy and G. Chatterji.*

*Droughts in September.*—Press reports bring an unusually large number of accounts of drought in various parts of the world. Not since 1893 has Great Britain experienced a more prolonged drought nor has Greenwich recorded a rainless month—as this is likely to be—in 90 years. Farmers are finding the absence of rain very serious. (*Daily Telegraph*, September 26, 1929.)

The *Times*, London, of September 18, 1929, reports the long drought at Paris, France, as ended on the 17th. This drought was the second longest since 1873. In 1895, 38 days passed without rain—August 24 to October 2.

From the Fort Dodge, Iowa, *Messenger* of October 10 it is learned that nearly 6,000 families in Saskatchewan, Canada, will need government aid through the winter. While all of the western Canadian provinces have suffered from lack of rain, Saskatchewan seems to have been the center of the afflicted area.

The *Sioux City, Iowa, Journal* of October 9, 1929, prints an account from its correspondent in the Argentine, dated Cordoba. In the State of that name little or no rain has fallen in the last six months, the wheat crop is a failure, and unless rain comes within 10 days the corn crop will be in danger. (Subsequent reports, however, show that the rains came on October 22.)

*The French daily weather report.*<sup>1</sup>—The French Meteorological Service has for some time issued its daily weather report in two parts, the *Bulletin Quotidien de Renseignements* and the *Bulletin Quotidien d'Etudes*. The idea of separating the report into two parts, one for general use and one for students of meteorology seems a good one, but the separate purpose of the parts as indicated by their titles has not been fulfilled very clearly in the past. Each part has consisted of four single pages and has contained both tabular matter and charts; the station reports have been divided into two groups, those from French stations being published in the *Bulletin Quotidien de Renseignements* and those from "foreign" stations in the *Bulletin Quotidien d'Etudes*.

From July 1, 1929, the form of the report has been altered and it is interesting to note the manner in which General Delcambre, the head of the Office National Météorologique, has endeavored to meet the requirements of the French public, both those seriously interested in meteorology and those whose interest is more superficial. The *Bulletin Quotidien de Renseignements* has been reduced to a single sheet providing two pages of the same size as those of our own *Daily Weather Report*, while the *Bulletin Quotidien d'Etudes* has been expanded to a publication of four sheets, that is, eight single pages. The annual subscription for the latter is 320 francs as against 140 francs for the more modest single sheet of the former.

<sup>1</sup> Reprinted from *Meteorological Magazine*, August, 1929.