

"Fire years" are the result of long dry spells, rather than of deficient total rainfall. No approach to regular periodicity appears in the summer rainfall. In the matter of fire-weather forecasting Professor Nichols finds that the practical and ideal aspects do not coincide. Ideally, the forecasting should be done from a central office close to the forests and to the central weather bureau, by a full-time forecaster cognizant of the topography, forest types, and meteorological eccentricities of his district and of the idiosyncrasies of the receiving personnel, and without regard to the ordinary published weather forecasts. The forecast should include the general trend of the weather for as long a period as possible and a special type of forecast concerning the minimum humidities to be expected for the next two days whenever a hazard is expected. Detailed indications of local winds and of unequal distribution of rainfall in the district should be included.

Ignorance of meteorology, lack of understanding of "hazard," lack of funds for extension of Meteorological Bureau and the opposition of that bureau to the establishment of local forecast offices, absence of competent forecasters for the work, and the youth of the problem leave three alternatives:

(1) Have a man from the Meteorological Service at Toronto spend the next summer in becoming thoroughly familiar with forest-protection work, and in continuing Professor Nichols' experiments.

(2) Employ a physicist temporarily for the summer of 1929 to conduct the "hazard" work only, with assistance.

(3) Leave existing arrangements in force to be tested in next fire season.

Three methods of forecasting minimum humidity are appended:

First method.—Multiply the change in relative humidity, which corresponds to a change of 1° of temperature, say at 7 a. m., by the difference in temperature of the average daily maximum and the average daily 7 a. m. temperature for a given week in any month and subtract this product from the average recorded relative humidity at 7 a. m.

Second method.—Divide the mean 7 p. m. or 6 p. m. vapor pressure by the saturation pressure corresponding to the expected maximum next day.

Third method.—By receiving a special 7 a. m. wire of the dew point, and consequently the vapor pressure, and dividing this by the saturation vapor pressure corresponding to the expected maximum temperature.

NOTES, ABSTRACTS, AND REVIEWS

Weather and the airplane.—Under the above title, a study of the model weather-reporting service over the California airway, by Edward H. Bowie, meteorologist in charge, United States Weather Bureau, San Francisco, has just been published by the Daniel Guggenheim Fund for the Promotion of Aeronautics (Inc.), 598 Madison Avenue, New York. It is a well-illustrated booklet of 28 pages that shows what service meteorology can give to aviation. A record of no accidents in a year owing to weather conditions is an enviable one, which can be ascribed only to the day and night watch over the weather, the excellence of the forecasts, the prompt communication of the weather information to the pilots and the willingness of the pilots to be guided by the weather conditions. How coastal routes are used when the interior is shrouded in fog, how the aviators are shown the levels of most helpful winds, how the height of the ceiling is observed hourly with searchlight by night and balloons by day; these are striking features of Major Bowie's report. On January 26, 1929, the pilot balloons showed a north-northwest wind of 96 miles per hour at 9,200 feet. The airplane pilot of the Western Air Express taking advantage of this wind established a new record of 1 hour and 59 minutes from Oakland airport to Vail Field, Los Angeles. On another date, the winds were southeasterly at low levels and northwesterly at high; northbound planes flew low and southbound ones high, both making good time.

The use of the airways weather service for automobile traffic, for drying fruit, rain forecasts, and for controlling forest fires is also indicated by the author.—*C. F. B.*

Chinese Institute of Meteorology.—A letter from Dr. Coching Chu, director, tells of the successful establishment of the Institute of Meteorology, a department of the National Research Institute of China formed by the Nationalist Government about a year ago. The purpose of the Institute of Meteorology is to collect climatological data, pursue meteorological researches, and fulfill the place and function of the national meteorological service of other countries.

For the 1928 data a quarterly meteorological bulletin is being published, and the first annual report is promised shortly. Beginning with 1929, the bulletin will be issued monthly and will contain the data for 20 or more stations. The bulletin for 1928 contains data only for Nanking, but this is in great detail, including tables and monthly graphs of the daily progress of temperature pressure and humidity and wind roses. Occasional monographs will be published, the first being a paper, Climatic Provinces of China, by Coching Chu, April, 1929, 11 pages, with 8 maps to follow later.

The institute is preparing weather charts for 6 a. m. daily, and broadcasting the weather conditions in Nanking at 11:30 a. m. and 6:30 p. m. through station XNK on wave-length 920 meters.—*C. F. B.*

Meteorological summary for Chile, June, 1929 (by J. Bustos Navarrete; Observatorio del Salto, Santiago, Chile).—In the central region of Chile the weather was not very rainy in this month. The most important periods of unsettled conditions and rain occurred in the first and last decades; the second decade was characterized by fine weather.

The depressions causing the most marked conditions of unsettled weather, rains, and storms were charted as follows: 4th to 6th, crossing the extreme south and manifesting its influence over a considerable extent of the country, with general rains and strong winds in the southern region; 19th to 20th, progressively affecting the southern, central, and northern zones, with general rains from Chiloe to Antofagasta, at which point there occurred a heavy storm; 22d to 25th, crossing the extreme south accompanied by rain and wind storms in the southern region; and, lastly, 26th to 30th, remaining stationary off Isla Mocha and prolonging until the end of the month the strong winds and rains in the south caused by the preceding depression.

In the region of Santiago the total precipitation was around 2.65 inches, in the region of Concepcion around 10.80 inches, while at Valdivia the amount exceeded 15.75 inches.—*Translated by W. W. R.*