Dr. Charles F. Brooks, meteorologist U. S. Weather Bureau, and editor of the *Monthly Weather Review*, has resigned to accept an associate professorship in meteorology and climatology at Clark University, Worcester, Mass. He will give courses in the summer school, beginning July 5, 1921.

Professor A. J. HENRY has been appointed editor of the *Monthly Weather Review* to succeed Dr. Brooks. Mr. C. LEROY MEISINGER will continue as assistant editor and Mr. HERBERT LYMAN as editorial assistant.

The death of ROBERT SEYBOTH, former chief of the printing division, U. S. Weather Bureau, occurred recently. He had been in the weather service nearly 50 years when he retired last August. In the '70ties he was for a few months in charge of the Mt. Washington, N. H., station and for a year of that on the summit of Pike's Peak.

Captain HJALMAR B. HOVDE, Signal Corps, U. S. Army, died of pleurisy at Fort Sheridan, Illinois, April 26, 1921, after an illness of two weeks. Captain Hovde was connected with the U. S. Weather Bureau for about five years prior to the beginning of the war. He entered the first officers' training camp at Fort Snelling, Minn., and was commissioned a lieutenant of Infantry, August 15, 1917; he was later transferred to the Meteorological Section, Signal Corps, and served as Commanding Officer of the Signal Corps School of Meteorology at College Station, Texas, from the summer of 1918 until the close of the war.

RELATIONSHIP BETWEEN WEATHER AND CROPS.*

The most casual observer notes different crops as he travels from place to place. This difference is the result of differing environing conditions, the chief of which is climate. For example, cotton requires about 180 days free from frost, corn 80 to 140, and wheat about 90 frostless days. For successful cultivation rice needs a minimum of about 45 inches of water, corn 20, and wheat 9 inches. Generally speaking, the distribution of crops is in accord with their well-known climatic requirements.

The conditions of climate are relatively permanent, but weather is constantly changing. There are diurnal and seasonal changes in the weather which are anticipated, but there are also sudden and irregular changes which cannot be foretold far in advance. It is these which cause anxiety and financial loss to the tiller of the soil. For ages man has alternately scanned the sky and his crops, always hoping that Nature would deal kindly with him.

Whatever exerts a large influence upon crops, is of vital importance to people in every walk of life, because all human life depends directly or indirectly upon the products of the soil. One-half of the total population of the United States is classed as rural, and 20 percent of our land area is tilled. In 1918 the total value of our farm crops was $12,562,624,000.

If, in our corn belt, the total precipitation for the months of June, July, and August fall much below 8 inches, the loss, to corn growers alone, is millions of dollars. A killing frost occurring ten days later than the average date of that event may result in great loss to growers of deciduous fruits. A severe wind

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*Thesis presented to Dr. Ford A. Carpenter, Instructor in Meteorology, Southern Branch, University of California.

storm occurring during the harvest season, damages hay and grain. An unseasonable rain means loss to producers of raisins. These are illustrations of the influence of unfavorable weather conditions upon crops.

Studies now in progress show the probable frequency of early and late frost, as well as other weather conditions. The farmer can, by taking advantage of the results of these studies, know what his agricultural risk is on any crop in a given locality. The farmer who is guided by the daily weather forecasts saves much. In California and Florida the prediction of a killing frost is followed by the use of heaters in the citrus groves. The cranberry grower of the East floods his marshes under the same conditions. When, during the harvest season, rain is predicted, the wise farmer discontinues cutting grass and grain and places under shelter as much of the crop as he can. Shippers of perishable fruit avoid loss by utilizing the weather forecasts.

It is obvious that weather is a matter of vital concern to the farmer. Man cannot control the weather, but he can, through close observation and through application of knowledge acquired by the meteorologist, so order his work as to prevent loss which would otherwise occur.—*James F. Chamberlain.*

CLIMATIC CONTROLS IN CALIFORNIA.*

The general climatic conditions of the Pacific Coast, and particularly the climate of California, may be said to be controlled by four great factors:

First, the movement of the great continental and oceanic pressure areas—the so-called permanent "highs" and "lows" is an important climatic control. Under this head we include, also, the most active factor in climatic development, namely, the movements of individual pressure areas; since there is now good ground for believing that the paths of the individual disturbances—large-sized whirls and counter-whirls—are largely determined by the general relations of the permanent pressure areas. Over the northern Pacific Ocean in winter, there exists an area of low barometer covering the region between the latitudes of 40–60° North and longitude 130°–140° East. An area of high pressure overlies the greater part of North America, with extensions southwest to the Tropics and west to the 160th Meridian. The typical wet winters on the California Coast occur when this great North Pacific "low" extends well eastward outlying the continent west of a line drawn from San Francisco to Calgary. At the same time the great continental high area apparently recedes to the southeast. On the other hand, the pressure distribution characteristic of a dry winter on the California Coast is marked by the prevalence of the continental high over the entire country west of the Rocky Mountains.

Second, The prevailing easterly drift of the atmosphere in temperate latitudes, causing the well-known winds from the west, is one of the prime factors in modifying the climate of the coast of California. This coast line stretching for ten degrees of latitude is subjected to a steady indraft of air from the west. In this movement, together with the fact that to the west is the great Pacific Ocean, lies the secret of the difference in temperature between the Atlantic and the Pacific Coasts at places of like latitude.

Third, Proximity of the ocean, not ocean currents. For some years there has been an impression that the milder climate of the Pacific Coast was due to the

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