MONTHLY WEATHER REVIEW.

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The Monthly Weather Review is based on data from about 3500 land stations and many ocean reports from vessels taking the international simultaneous observation at Greenwich noon.

Special acknowledgment is made of the data furnished by the kindness of cooperative observers, and by Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada; Señor Manuel E. Pastrana, Director of the Central Meteorological and Magnetic Observatory of Mexico; Camilo A. Gonzales, Director-General of Mexican Telegraphs; Capt I. S. Kimball, General Superintendent of the United States Life-Saving Service; Commandant Francisco S. Chaves, Director of the Meteorological Service of the Azores, Ponta Delgada, St. Michaels, Azores; W. N. Shaw, Esq., Secretary, Meteorological Office, London; H. H. Cousins, Chemist, in charge of the Jamaica Weather Office; Señor Anastasio Alfaro, Director of the National Observatory, San José, Costa Rica; Rev. L. Gangoiti, Director of the Meteorological Observatory of Belen College, Havana, Cuba.

As far as practicable the time of the seventy-fifth meridian, which is exactly five hours behind Greenwich time, is used in the text of the Monthly Weather Review.

Barometric pressures, both at land stations and on ocean vessels, whether station pressures or sea-level pressures, are reduced, or assumed to be reduced, to standard gravity, as well as corrected for all instrumental peculiarities, so that they express pressure in the standard international system of measures, namely, by the height of an equivalent column of mercury at 32° Fahrenheit, under the standard force, i. e., apparent gravity at sea level and latitude 45°.

SPECIAL ARTICLES, NOTES, AND EXTRACTS.

THE MOUNT ROSE WEATHER OBSERVATORY.

By Prof. J. E. Church, jr., University of Nevada. Dated Reno, Nev., May 10, 1906.

It is through the kind invitation of the Editor that I venture as an amateur to present our endeavors and experiences in conducting high mountain observations on Mount Rose.

The project was born on Mount Whitney in March, 1905, during my attempt to scale that peak in winter, personally for the pleasure of the venture, but ostensibly to test Professor McAdie's theory of the possibility of establishing a station on the summit from which one could retreat at any season of the year, in case a prolonged stay at such an altitude should become dangerous to health. The sight of a forlorn thermometer box, abandoned during an early storm the preceding September, aroused my combativeness to the point of offering to maintain a station on Mount Rose for a year to determine the monthly minimum temperature on high Sierran peaks, which seemed so far to have guarded their secrets well.

Mount Rose, Nev., is south of Reno and north-northeast of Lake Tahoe, and, as already noted in the Review,[1] forms the northern apex of the Carson Range of the Sierra Nevada; it has an altitude of 10,800 feet. More exactly, it is situated at latitude 39° 20′ north and longitude 119° 55′ west. Its value as a site for a mountain weather observatory lies in the fact that the mountain is so surrounded by the great depressions of the Lake Tahoe and Truckee River basins that its summit furnishes an ideal site for observing the condition of the weather in mid-air.[2] It also rises in the agricultural zone on the height of land between the California basin and the Nevada-Utah plateau, so that an observatory here would be of service in furnishing data as to the constant air movements from the Pacific coast and in reporting approaching weather conditions to the districts farther east. Particularly was its selection due to its nearness to Reno and faith in its approachableness throughout the winter.

The standard maximum and minimum thermometers and rain gage were soon furnished, but I was instructed to provide my own shelter after plans furnished by the Weather Bureau. To do this was obviously impossible, both on account of the size and expense of the standard shelter and the strong possibility of its filling with snow. The problem with its opportunity was presented to the Nevada Academy of Sciences. After much consultation, a small shelter was evolved, light and airy, yet compact and suited to stand any gale known to blow on the mountain.[3] The bottom was made of slats to permit the incoming snow to depart without gaining lodgment within. The cost of the woodwork and the setting up at the planing mill was $6; the paint and iron fixtures were extra. The instruments were securely fastened to cast-iron brackets

[1] October, 1905, Vol. XXXIII, pp. 444-445.

[2] Figs. 1 and 2 show the horizon as seen from the summit of the peak, looking westward and southward, respectively. To the west we look over the valley of the Truckee River, with Donner Lake in the distance; to the south we get a partial view of Lake Tahoe.—*C. A.*

[3] This thermometer shelter is made especially heavy in order to diminish the influence of its own oscillations, as tending to make the index of the minimum thermometer slide downward or upward to a reading other than that corresponding to the actual temperature. The construction is shown in fig. 4, and accords with the following specifications:

The shelter consists of two upright pieces of timber, 2 by 4 inches by 6 feet, for the front, and two pieces 2 by 4 inches by 5 feet 9 inches for the rear supports. These uprights are mortised into 4 by 4-inch horizontal supports, resting on the ground, and are braced with iron straps. The 4 by 4-inch pieces are held together by two 1-inch boards, about 12 inches wide. The construction is shown in the diagram. At the front and rear of the upper end of the upright supports are screwed two pieces, respectively, 1 inch by 5 by 24 inches and 1 inch by 2⅝ by 24 inches. The roof is made of 1 inch matched lumber, and is 26 inches wide by 28 inches long. The fastenings are screws. Underneath the roof supports is screwed one ceiling piece, 1 inch by 24 by 24 inches. The front and rear sides of the shelter are a framework consisting of seven louvers ½-inch by 4 by 19 inches, slanting at an angle of 60° and mortised into pieces 1 inch by 2 by 25 inches as shown in fig. 4. The rear side is screwed fast between the uprights. The front side is pivoted at the lower end of the frame on two ½-inch by 4-inch carriage bolts, forming the door for access to the instruments. When closed the door is held in place by a hasp and staples, as shown in fig. 4. The other two sides are of similar construction, but have louvers 15 inches long and both frames screwed between the uprights. The bottom consists of a framework of two pieces 1 inch by 4 by 20 inches, screwed across the front and rear uprights. Into these are mortised 13 slats, ½ inch by 2 inches, set to a depth of 1 inch and spaced 1 inch apart. The ends are cut to a 60° angle in order to fit snugly under the bottom louvers. Two pieces, 1 inch by 2 by 24 inches are screwed across the front and rear uprights, 8 inches below the bottom of the shelter. Upon this support is screwed a ½-inch board, 24 inches square. The whole structure is given three coats of white lead (except the upper surface of the shelf, which should be painted black), and so put together that by unscrewing the top, bottom, shelf below the bottom, the louver frames, and the cross supports at the base, the whole may be easily put upon pack animals (as shown in fig. 3), and transported to the mountain top, where it is designed for use.