

### CO-OPERATIVE OBSERVERS' EQUIPMENT.

Accurate records cannot be expected without accurate instrumental equipment, no matter how careful the observer.

A good observer always has his eye on his thermometers and rain-gage, to see that they are in good shape. Many, however, forget this important detail, and will continue reading a minimum thermometer with a separated alcohol column, with consequent errors of record of from one-half to five or more degrees. Any break in the column of alcohol should always call for the thermometer being overhauled at section headquarters. Sometimes a little alcohol from the minimum thermometer, or a bit of mercury from the maximum, will get stuck in the extreme top of the tube, and remain unnoticed for days at a time, unless one is carefully checking his instruments.

Recent inspection trips have shown such features as rain-gages cemented into a cement platform, making it impossible to measure snow, or to measure overflow from a heavy rain; rain-gages with the bottom rusted out, falling off entirely when the inspecting officer lifted the gage; broom handles used for measuring sticks; thermometer shelters with whole sides broken out, allowing sun and weather to beat upon the instruments; shelters opening to the south, allowing heating of the shelter when opened; shelters painted dark colors, thus absorbing an undue amount of heat; rain-gages set under large trees, or close to the side of buildings; and many such things whose effect is to render imperfect records. In one instance, the outer gage being broken, a pail was used to collect the water to be measured in the inner tube, the pail nearest at hand being used regardless of size.

The co-operative observer is performing a valuable service, the full value of which he often does not fully realize. The government, which pays no salary for this service, does endeavor to keep the instruments in perfect condition. The observers will render the most valuable service by reporting to the section center any suspicions of improper conditions, and let the section director remedy the condition.—*B. B. Whittier.*

Early in the summer, Section Director C. D. Reed, of Iowa, sent out circular letters and postal cards for reporting hailstorms, tornadoes and windstorms other than tornadoes. The card asks for the time, kind of storm, and damage done. In one corner is a township plat on which to indicate the path of the storm and damaged regions. These went to 2391 township and town assessors, 100 co-operative observers and about 100 crop correspondents.

Did that friend of yours join the Society?

### WEATHER NOTES.

Western and central Europe and the eastern United States and Canada are often treated with the same summer weather. In the summer of 1921 it was hot and dry. In that of 1922 it was cool and wet. "On [July] the 17th snow was falling on the Swiss Alps at a height of only 5,000 feet above sea level." (*Met. Mag.* 8 '22, p. 197.) Several mountain climbers died of exposure. On our side of the Atlantic on July 23, snow enough to whiten the top of Mt. Monadnock, New Hampshire, is reported by the forest fire watchman there. In mid-September, 1922, the recent snowfall on the Alps was reported as the heaviest for this month in many years.—*C. F. B.*

Algerian sheep are being shipped into France in great numbers on account of continuous drouth in northern Algeria which is rendering pasture lands insufficient to keep sheep alive.—*Sci. Serv.*

Italy is reported by the *N. Y. Herald* (Paris edit.) to have imported an American rain-maker and to be exposing sacred pictures in hopes of ending the drouth.

Among the well recognized effects of the unusually wet summer in the eastern United States, such as great corn, hay and honey crops, are others not anticipated. As reported in the *Boston Herald*, chicken farmers in Vermont are complaining of inroads by skunks in their yards, such unusual invasions being ascribed to the scarcity of grasshoppers and crickets, which constitute the main food of skunks at this time of the year. Owing to the long-continued rains, the insects have been slow in developing. Gypsy moths have been checked by the rainy weather. In eastern Massachusetts—"Following the killing of the eggs by the extreme cold, came the long rainy period drenching and killing millions of young caterpillars. . . . To a small extent only, the brown-tail caterpillars are susceptible to rainy weather."—*C. F. B.*

The heaviest rainfall that has occurred at Mount Wilson, California, elevation 5,740 feet, since rainfall observations were begun nearly 18 years ago, was recorded December 17 to 23, 1921. The records showed that 29.38 inches of rain fell. This is equivalent to 152.5 pounds of water to every square foot of surface, 33,214 tons per acre, and 21,257,280 tons per square mile.—*Science Service.*

Snow banks on Mauna Kea and ice on Mauna Loa were observed by L. H. Daingerfield and party during the last week in July, 1922, (Climat'l Data: Hawaii Sec., July, 1922). The snow banks on Mauna Kea, July 24-25, were near the summit (13,825 feet), and were about 200 yards long by 20 or 30 yards wide and about 6 or 8 feet deep. The ice on Mauna Loa (13,675 feet), July 28-29, was strong enough to bear a man's weight. On both mountains the wind was from the northeast, and the temperatures about sunrise, 35 and 33° F. respectively. The relative humidities on the two were low: 30 and 46 per cent.

A "Battle of the Clouds" on Mt. Hualalai was observed on the afternoon of July 20, where the southwest, or "Kona wind," clouds and the northeast or "Trade wind" clouds met and mingled tumultuously. The temperature at the summit (8,269 feet) at 12.30 p. m. was 62.5° F. and the relative humidity, 67 per cent.

#### BAROMETER INDICATIONS.

The Taylor Instrument Companies are just putting out an instrument named "Stormoguide." It is an aneroid barometer with weather-barometer indications on its front. The different portions of the dial are marked with letters, and on the face of the dial the weather indications for a change in pressure from one letter to another are shown. For example, if the hand points to between 29.9 and 29.6 and falling the indications are "unsettled, increasing winds and warmer." On the other hand, if the barometer is the same but is rising, the weather probabilities are "fair with fresh winds tonight and tomorrow." The use of such