

any kind, and occasionally in a place where the sun shone upon it during a portion of the day. Though the railroad agents have many and varied duties, they were required in addition to take readings of the thermometer at three specified times during the day, and to measure the water which accumulated from time to time in the rain gage. For many years worthless meteorological data have been accumulating in the headquarters of the Southern Pacific Company in San Francisco. The rain gage used is faulty in that it registers a deficient catch during precipitation, and, moreover, in the mountain regions, where 25 to 30 feet of snow sometimes accumulates on the ground, the small gage is of little more value than a toy.

Nothing smaller than an 8-inch standard rain gage should be recommended to prospective purchasers of a gage. Standard thermometers, though they cost more than ordinary thermometers, are the only kind worth purchasing. The coöperation of the instrument maker and the retail dealer will aid materially in securing the installation of standard equipment.—*A. H. Palmer.*

SUN KINKS IN THERMOGRAMS.

Sun kinks in barograms and thermograms are not so rare as to be a subject of especial comment. The record of a thermograph in a shelter not very fortunately situated on account of the reflection of sunlight at times during the winter months, shows a sun kink (2° F. upward hump) at 9.00 A.M. each day, due to the reflection of strong sunlight, on Monday (Mar. 8, 1920), Tuesday and Wednesday. On Thursday the sky was overcast with high clouds, but the sunshine recorder was registering at the time. On Friday and Saturday there was no sunshine registration, but the sun kink is noticeable on all three days. On Sunday there was strong sunshine, but the fact that a considerable snow had blown into the shelter, half burying the thermograph, may possibly account for the feeble sun kink.

The fact to be emphasized is the persistence of solar radiation through a thick cloud blanket. The occasional exposure of a black-bulb thermometer has shown that high temperatures may occur when the sky is overcast and the temperature of the air is below the freezing-point.—*J. W. Redway* (Meteorological Laboratory, Mount Vernon, N. Y.).

ADVERTISING THERMOMETERS.

In the advertising portions of several well-known magazines there appear each month calls for agents to sell advertising thermometers. The latter consist of glass thermometers, four to ten feet long, mounted in a groove of a board on which space is available for advertisements. The agent goes to a small town, sells the spaces to local merchants, paints the advertisements in the allotted spaces, nails up the thermometer in some conspicuous place, and passes to the next town, perhaps never to return. It is needless to add that these thermometers are often badly exposed, they are usually unreliable, and they receive little attention after once being installed.

The unfortunate fact in connection with this matter is the confidence which the public places in the temperatures indicated by these thermometers. With few exceptions, the instruments are found displayed in small towns only. The temperature data are sometimes published in the local newspapers. In traveling about California the writer has discovered a number of these thermometers in public places. Several were found so exposed that the sun shone directly upon them during a large portion of each clear day. In one case it was found that the