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? WHY THE WEATHER ? Mailed September 3, 1932.

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MEASURING SUNSHINE

There are various ways of measuring the total amount of energy in the sunbeams and still others of measuring the distribution of energy through the different parts of the solar spectrum. The total energy of direct sunshine, measured in heat units called "calories," can be obtained by means of pyrheliometers, of which there are several patterns. Closely related to these are the instruments that measure the energy radiated by sun and sky together, or by the sky alone.

The amount of energy received in the various regions of the spectrum is most accurately measured by the use of the bolometer or the thermopile. These instruments record the energy corresponding to each wavelength of radiation, but they are elaborate and difficult to use. Instruments of a simple character measure the energy in a single spectral region as a whole. Some, for example, measure the intensity of ultraviolet radiation; others show how much red light or green light is received from the sun. Then there are instruments that measure the total brightness of sunlight or daylight in light units. There are also a number of devices for showing the rate at which sunlight produces certain chemical reactions.

Lastly, there are "sunshine-recorders," of many varieties, that register the duration of sunshine but not its intensity.

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