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July 28, 1932

A Science Service Feature

? WHY THE WEATHER ?

Mailed July 21, 1932

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THE BEGINNINGS OF THE BAROMETER

One of the most memorable experiments in the history of science was performed in the year 1643, in Italy, by Evangelista Torricelli. Filling a glass tube, sealed at one end, with mercury, he inverted it and placed the open end below the surface of some mercury in a basin. The mercury in the tube fell a certain distance but came to rest with its upper surface nearly 30 inches above the level of that in the basin.

Torricelli thus made known to the world the principle embodied in the modern mercurial barometer, but he certainly did not foresee the important uses to which instruments constructed on this principle would eventually be put. He had merely demonstrated the existence of atmospheric pressure and obtained an approximate measure of its value at the time and place of the experiment. During the following year he noticed that the height of the mercurial column varied from time to time. He died, however, before the variation of barometric pressure with altitude was proved by Pascal, in 1648.

The discovery that the column rises and falls with changes of weather came still later. By the end of the seventeenth century this fact was so generally recognized that a number of rules for predicting weather from the barometer had been published, and the practice had also become common of attaching to barometer scales words indicating the kind of weather to be expected with different heights of the mercury. These words are now known to be quite misleading and are not found on modern barometers intended for strictly scientific use.

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