

A Science Service Feature

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? WHY THE WEATHER ?

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BAROMETERS

The mercurial barometer is the most important weather instrument and is found at all meteorological observatories but it is not especially familiar to the general public. Probably there are a great many people who have never seen one. It consists of a glass tube, sealed at the upper end and having at its lower end a "cistern," which is open to the air. The tube is filled with mercury through its open end, and is then inverted over the cistern. The mercury descends until the weight of the portion standing above the level of the mercury in the cistern just balances the pressure of the air on an area equal to the cross section of the tube. The height of the mercurial column is read, with aid of a vernier, from a graduated scale attached to the tube. Certain corrections are applied to the reading, in order to eliminate variations due to temperature, etc., and, if to be entered on a weather map, the reading is reduced to its sea-level value.

The aneroid barometer, which is relatively small and portable, is much better known to the average citizen. In this instrument a thin-walled metal box, exhausted of air, undergoes changes of shape in response to changes of atmospheric pressure. The movements of the box are communicated by levers to a pointer moving around a dial.

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