

A Science Service Feature

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? WHY THE WEATHER ?

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THE MICROBAROGRAPH AND THE STATOSCOPE

Instruments for recording minute variations in atmospheric pressure are called "microbarographs". The earliest of these was the differential microbarograph of Whitehouse, introduced in 1871. A greatly improved instrument was devised by Shaw and Dines in 1903. It consists of a closed metal cylinder containing air at approximately normal atmospheric pressure, provided with a mechanical arrangement by which the variations in the difference between the pressure inside and outside are recorded.

The various instruments known as "statoscopes" show small fluctuations in atmospheric pressure, usually without recording apparatus. They are designed chiefly for the benefit of aeronauts, who use them to observe changes of altitude during their flights. A common form of statoscope consists of a sensitive metal diaphragm exposed on the outside to the changes of atmospheric pressure, and connecting on the inside with a closed reservoir protected from changes of temperature by non-conducting walls. As the pressure of the enclosed air remains constant, the diaphragm responds to changes in the pressure of the air without, and its movements are communicated to an index needle moving around a dial. The statoscope is set to zero of the scale at the beginning of the observation by opening a stopcock which admits air to the reservoir, thus equalizing the pressure on the two sides of the diaphragm; after which the stopcock is closed.

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