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A Science Service Feature

? WHY THE WEATHER ?

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SOME SENSITIVE WIND GAUGES

The ordinary "Robinson" anemometer, with its revolving cups, is not sensitive to small and rapid fluctuations in the strength of the wind, though, in its latest improved form, it gives a fairly accurate record of the total movement of the wind during considerable periods of time. The small fluctuations or gusts are, however, of much importance in their effects on aircraft as well as on structures built to withstand the pressure of the wind in storms.

About forty years ago an English meteorologist, W.H. Dines, devised the "pressure-tube anemometer," which is highly responsive to these small variations. It consists of a horizontal tube, the open end of which is kept facing the wind by means of a vane, and of a vertical tube perforated by many small holes. The wind blowing into the horizontal tube exerts a pressure, while in blowing across the openings in the vertical tube it causes suction. The pressure and suction combine to operate a distant recording device consisting of a float, which rises and falls in a closed vessel partly filled with water. The float actuates a recording pen.

The "anemobiograph,"*devised by Halliwell, works on the same principle as Dines' instrument, but differs in details of the recording apparatus. Apthorp's "wind-meter," used at some American airports, is a simpler form of pressure-tube anemometer, the suction portion of which consists of a large open cone at the tail of the wind-vane. It does not trace a permanent record, but is read by noting the movements of a liquid in a glass tube, graduated to show the wind velocity in miles per hour.

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*Note spelling:
bia, not bio.

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