

A Science Service Feature

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? WHY THE WEATHER ?

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MEASURING VIOLENT WINDS

No measurement has ever been made of the winds of a tornado. Neither is there any instrumental record of the strongest gusts of a tropical hurricane. A hopeful though rather rough way of measuring such powerful blasts was suggested a few years ago by Prof. W.H. Pickering, the astronomer. The apparatus, an example of which he has installed in Jamaica, in the hope that sooner or later a hurricane will put it to a test, is thus described in a communication that he addresses to the American Meteorological Society:

"It consists of a set of hollow metallic cylinders either of lead or iron, all of exactly the same size, but with walls of different thickness. Small cylinders could consist merely of tin boxes laden with different materials ranging in specific gravity from feathers to alternate layers of wood and lead. At present I am merely partly filling the boxes with bird shot. The cylinders are arranged on a base which will trip them if they are blown over by the wind, and are tied by cords to prevent their rolling away. The pressure of the overturn is measured later by a horizontal spring balance.

"My idea for tornado measurements would be to use hollow iron cylinders 12 inches high and 5 inches in diameter. In case a dozen such sets could be set up in some of our middle western states I have no doubt but that in a few years we might really get some idea of the actual velocity of the wind in an active tornado. It would certainly be of interest."

The Scientific American comments on this interesting suggestion:

"It is probable that such small boxes would show a systematic error when compared with larger ones. The same would be true of any small flat surface, where the pressure per square foot depends not alone on the linear dimensions, but also on the thickness, since there is always a partial vacuum formed behind any wind-break. It therefore becomes the duty of the engineer to determine by what coefficient the weight of the cylinder should be multiplied in order to give the exact pressure on surfaces of different characters, such as the side of a house or the truss of a bridge."

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