

A Science Service Feature

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? WHY THE WEATHER ?

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By Charles Fitzhugh Talman,
Authority on Meteorology.

SEVERE WINTERS

When the long-range weather prophet tells us that we are going to have a severe winter, just what does he mean? It is quite safe to say that in ninety-nine cases out of a hundred he does not know himself. Many if not most of these autumnal announcements concerning the succeeding winter weather are indefinite as to the extent of territory to which they are meant to apply and quite ignore the fact that a hard winter in one part of a big country may coincide with a mild one in another part. Suppose, however, the prophet is talking about his own locality -- shall we be able to say, when the winter is over, that its severity measured up to his prediction?

It may surprise some of the amateur prognosticators to hear that several professional meteorologists have struggled hard with the problem of defining the term "severity" as employed in connection with weather. Many years ago a Swedish authority, Dr. Bodman, proposed a somewhat complex mathematical formula for measuring and comparing the severity of weather conditions encountered by a number of polar expeditions. The underlying criterion was the rate at which a body loses heat under the combined effects of temperature and wind.

A German meteorologist, Dr. Hellmann, undertook to compare different winters in a given locality by obtaining a "character number" for each winter. From the mean daily temperatures of the three winter months he selected those that were below zero on the centigrade scale (i.e., below freezing) and added these negative figures together to get the character number. The larger this number the more "severe" the winter, according to his conception. Dr. C. Easton, in Holland, adopted a rating of winters based partly on mean monthly temperatures and partly on other data, including the number of days with freezing weather, the number on which the temperature remains below freezing all day, and the number of very cold days. Prof. A.J. Henry, in the United States, rated the severity of winters in different parts of the country on the basis of the departures of the mean temperatures of the winter months from their normal values.

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