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? WHY THE WEATHER ?

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By Charles Fitzhugh Talman,
Authority on Meteorology.

GAUGING A HOT SPELL

The recent hot weather in the middle western United States has brought forth the usual crop of figures representing the highest air temperatures recorded at various points. These figures, many of them running above 100, were ostensibly published for the purpose of indicating the degree of discomfort experienced by the inhabitants of the localities concerned; yet, for reasons well known to meteorologists, they convey no accurate information on that subject.

It is an old story that three atmospheric factors enter into a person's sensation of temperature -- air temperature, humidity and air movement. The sensation is further affected by clothing, occupation and a somewhat indefinite factor of acclimatization or adjustment to temperatures recently experienced; also by solar radiation, if one is out in the sunshine. It is a somewhat newer story that a numerical scale exists for expressing the combined effects of the three atmospheric factors mentioned. The scale of "effective temperatures" devised for this purpose by the American Society of Heating and Ventilating Engineers is not, perhaps, a highly accurate one, but its use in telling the story of a hot wave would be far less misleading than the present plan of reporting the dry-bulb air temperatures.

To illustrate: Last summer, on the afternoon of July 20, the local temperature record at Washington, D. C., was broken when the official thermometer registered 106. At the hour when this figure was reached the relative humidity was 23 per cent. and the wind was blowing nine miles an hour. According to the A.S.H. & V.E. tables, the corresponding effective temperature was 85. If the air temperature had been only 90 and the relative humidity had been 85 per cent., with the same breeze blowing, the effective temperature would likewise have been 85. These figures apply to a person normally clothed and slightly active. For one stripped to the waist and inactive the effective temperature would be a couple degrees lower.

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