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? WHY THE WEATHER ? Mailed Feb. 2, 1935

SUNSPOTS AND WEATHER

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Once it was believed that the presence of many spots on the sun reduces the amount of heat given off by that luminary, but we now know the reverse to be true. Spottedness denotes an increase in solar activity and in solar radiation.

Marked outbreaks of sunspots generally awaken a prompt sympathetic response on the part of the earth's magnetism, often manifested in brilliant displays of the aurora, but an increased output of solar heat has no similarly direct effect upon our thermometers. What happens, principally, when more heat than usual comes to us from the sun is that the circulation of the atmosphere becomes more active, for the same reason that, when the fire in a stove grows hotter, the draft in the chimney grows stronger. This means more evaporation from the oceans, more clouds and rainfall, more storms, and a variety of other effects that prevent any direct general warming of the air near the earth's surface.

In fact, the paradox seems to be pretty well established that a hot sun coincides with a cool earth, and vice versa; but one must hasten to add that this is only the broadest of generalizations, and that the variations in atmospheric temperature to which it refers are extremely small. As to the traces of varying solar effects supposed to be found in the curves of rainfall, storminess and other phenomena of weather, there is no consensus of meteorological opinion. The doctors disagree, though many of them hold very pronounced views.

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