A Science Service Feature

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? WHY THE WEATHER ? Mailed November 12, 1929.

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Authority on Meteorology.

RUSTING IN POLLUTED ATMOSPHERES

Air, whether dry or damp, causes very slow rusting of iron and steel in the absence of polluting agents. Iron crosses erected on Alpine peaks are surprisingly immune from rust, though exposed to snow, rain and fog. This, says U.R. Evans, in his well-known work "The Corrosion of Metals," may be due in part to low temperature, but is to be attributed mainly to the purity of the atmosphere. The same author has examined a large amount of metalwork that was placed for military purposes during the world war on the mountainous frontier between Italy and Austria and found that, after a lapse of some years, it showed hardly any signs of corrosion.

Mr. Evans says further; "In the atmospheric corrosion of metals in coal-burning countries, the influence of acid gases in the atmosphere is very important. The corrosion of iron and steel has become a very much more serious problem since the widespread use of coal as a fuel has filled our atmosphere with sulphur dioxide. Iron and steel rust more quickly in urban districts than in rural districts, other things being equal. The presence of chlorides also tends to accelerate atmospheric corrosion. The comparatively rapid rusting of steelwork near the seashore, due to salt spray, deserves mention, but even in inland districts rain-water contains an appreciable amount of sodium chloride, which probably aids corrosion, under some conditions, to a considerable extent. Recent investigations at the British Museum have indicated that the spontaneous rusting of iron articles indoors is generally connected with the presence of salt on the metallic surface."

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