A Science Service Feature

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? WHY THE WEATHER ?

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ST. ELMO'S FIRE

St. Elmo's fire, the luminous discharge of electricity sometimes seen at the tips of masts and spars of ships at sea and of lightning-rods and various other pointed objects on land (especially on mountains), is easy to reproduce experimentally. The same phenomemon is seen when a powerful frictional electrical machine is being worked in a darkened room. Projecting sharp points near the machine become tipped with light.

The discharges are of two distinct kinds--brush-like and star-like--and a test with an electroscope shows the former to be due to positive electricity and the latter to negative. The glow of violet light that is sometimes seen along high-voltage transmission lines at night--known as a "corona"--is due to a similar leakage of electricity into the surrounding air.

On mountains St. Elmo's fire is especially common during snowstorms, and it has been observed that the discharges generally assume the brush-like form, characteristic of positive electricity, when dry, powdery snow is falling, while damp, flaky snow is attended by the smaller star-like glow of the negative discharge. The brush is a broad fan-shaped sheaf of rays, tipped with violet and radiating from a distinct stalk, while the negative discharge forms a narrower angle at the base and has no stalk.

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