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August 14, 1931

A Science Service Feature

? WHY THE WEATHER ?

Mailed August 7, 1931

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VOLCANIC LIGHTNING

The vivid flashes of lightning seen in the smoke cloud over a volcano in active eruption have been familiar to mankind for ages. They usually occur exclusively within the cloud, rather than between the cloud and the earth; hence the tradition in Italy that the thunderbolts of Vesuvius are harmless.

F. A. Perret, in his account of the Vesuvius eruption of 1906, which he witnessed at close range, tells of the short, straight flashes, producing sharp, staccato snapping sounds, observed in the earlier stages of the eruption, and of the longer curved, sinuous and sometimes apparently forked flashes seen later. When the outbreak was at its height, a general and powerful electrical disturbance was indicated by the transmission of electricity along the overhead wires of the Vesuvian railway to the vicinity of the volcano observatory, where flashes and arcs were formed over insulators and across lightning-arresters and the wires appeared to be incandescent. A brush discharge (St. Elmo's fire), invisible on account of daylight, was, he says, "developed on every pointed object upon our persons, this being first noticed by a hissing sound from the metal stars upon the caps of the carabinieri; a stick held aloft, or even a finger, was sufficient to produce an 'electrical wind,' strongly audible."

The spectacular displays of lightning seen during the eruption of Mount Pelée, in 1902, have been described by George Kennan. In this case, as in some other volcanic outbreaks, the streaks of lightning terminated in star-like outbursts, accompanied by a booming sound. "The general effect," says Kennan, "was that of a short, thin electric discharge striking and igniting a pocket of inflammable gas in the cloud of volcanic vapor."

Probably the real explanation of these stellar outbursts is that the lightning discharges pass through and volatilize some of the chunks of rock spouted up from the crater.

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