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A Science Service Feature

? WHY THE WEATHER ?

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HOW HARD DOES LIGHTNING STRIKE?

The strength of current in lightning was measured in an indirect way by Dr. F. Pockels some years ago. Many substances are magnetized by the passage of an electric discharge in their vicinity. Pockels found that when basalt rock is magnetized in this way the amount of magnetism is a measure of the greatest strength of current to which it has been exposed. He examined specimens of basalt from the top of Monte Cimone, in the Apennines, where lightning strokes are common and found many of them more or less magnetized. He also exposed blocks of basalt close to a branch of a lightning rod in the same region. He thus obtained values for the strength of current in lightning discharges ranging from 11,000 to 20,000 amperes.

Dr. W. J. Humphreys, of the U. S. Weather Bureau, has made an estimate in another way. It was based on the effects of a stroke of lightning -- probably much stronger than the average -- upon a hollow copper lightning rod. The rod was crushed and partly melted by the discharge. The crushing was believed to be due to what is known as the "pinch phenomenon", a squeeze resulting from the magnetic field produced by the passage of an electric current. From the force involved in the collapse of the rod and also from the heat necessary to cause its fusion the strength of current was estimated at about 90,000 amperes.

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