

*THE FASCINATING
FULGURITES OF
IMPERIAL VALLEY*

by BILL MOLLER

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Keller Heuring, my neighbor, displayed the strangely-shaped rods. Contorted as a tree root, the rock-hard surfaces of the irregular cylinders resembled black obsidian. Their sheen reflected the waning light of the day, and Keller and his curious objects were invited into the house for better viewing.

Punctuating the glassy exteriors were irregular rock fragments, which on closer inspection, appeared to be fused into the obsidian-like mass. At the points of contact the granitic pieces flowed into the lavalike surfaces of the rods. Occasionally irregular patches of frothy, glassy bubbles frozen in stone separated the two.

Approximating a foot in length and an inch or two in diameter, the cylinders tapered toward a smaller dimension at the far end. Twisted and erratic, they appeared to be petrified roots from a long-dead tree. But who had ever heard of the soft fibers of wood being replaced by obsidian? And what curious quirk of nature could explain the apparent fusion of igneous rock into the simulated volcanic material, almost to the point of assimilation? These thoughts teased my mind for answers, but as I examined the curiosities my perplexion changed to astonishment. My inspection revealed a bright nodule of native copper frozen in the "obsidian"!

Baffled, I asked Keller for more details. He explained that a crony of his was prospecting "in the desert" when he dug out the curiosities. Some of them occurred as small tree trunks would, sticking a short distance above ground. With depth their sizes decreased, while the "roots" repeatedly branched downward. Numbers of the objects contained oval shaped chunks of copper. The prospector hoped he had found a deposit of the bright metal. Keller, trying to help him, had taken the samples to the California State Division of Mines, where he was assured they were the products of a copper smelter. What puzzled him were their strange shapes. A number of years before, fused tubes of sand had been found in the vicinity of the Salton Sea. These were created when "high tension" wires had fallen. The resulting man-made lightning produced when the conductors touched the ground had fused the loose sand grains into erratic-shaped, hollow conduits. The writer was impressed with the similarity in general appearance between these fulgurites, as they are known, and the "roots" discovered by the prospector. Conceivably the "obsidian" could have been formed by lightning striking loose granitic rock, but the presence of native copper defied explanation.

Several samples were sent to the Geology Department of the University of California at Santa Barbara, where Dr. Robert W. Webb and his associates concurred in the belief the objects were formed by lightning. However, reason for the presence of the copper remained an enigma.

Arrangements were made for Dr. Webb, Keller and his friend to investigate the source of the fulgurites. An astonishing explanation followed. Dr. Webb, who reported the source as being in the Imperial Valley, not too far from a power transmission line, postulated someone had accumulated a considerable amount of copper on a hillside, possibly in an effort to hide it. Such action could follow from theft of copper electrical transmission equipment. The Los Angeles Department of Water and Power is continuously plagued with such pilferage, for example. The localization of the metal had formed a focal point for repeated lightning strikes. The energy of the bolts had been dissipated downward, developing much heat. This, in turn, had fused the loose granitic soil rock into the strange shaped, obsidian-like fingers. The heat had also melted the copper, causing blobs of it to comingle with the melted rock.

Dr. Webb rendered a full report of the strange occurrence. It may be found in the November 1968 issue of "Mineral Information Service," volume 21, number 11. This periodical is published by the California Division of Mines and Geology.

THE EVENT

PETRIFIED LIGHTNING FROM CENTRAL FLORIDA

A PROJECT BY ALLAN MCCOLLUM

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