A NEW IRON METEORITE FROM CARBO, MEXICO

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In 1928 the Mineralogical Museum of Harvard University purchased from H. W. Kelsey of Nogales, Arizona, an iron meteorite concerning which Mr. Kelsey supplied the following data.

"The meteorite was found in 1923 by Mexican cowboys while riding the range on the Alamo Ranch about 40 miles west of Carbo, Sonora, Mexico. It was shipped to Nogales after its meteoritic character had been established by a mining engineer and there it remained until shipped to Cambridge in 1928."

The region in which the meteorite was found is sparsely settled with few towns. On a detailed map of the State of Sonora however, the Alamo Ranch is indicated lying in lat. 29° 40′ N. and long. 111° 30′ W., about 5 miles north of the tiny village Bacuache. The nearest place shown on most maps of Sonora is Carbo, a station on the Southern Pacific Railway of Mexico, Alamo Ranch being about 40 miles to the westward. Accordingly the iron will be designated as the Carbo meteorite.

The mass weighed about one thousand pounds but its exact weight was unfortunately not determined. It was intact, showing only a small fracture surface where a few ounces of iron had been removed with chisel and hammer. The fracture showed clearly the presence of a coarse octahedral cleavage. The mass is wholly covered with a smooth coating of rust. When received it was in many places encrusted with a limey coating, easily removed with dilute acid. It is roughly tetrahedral in shape the triangular base (plate 1) measuring about 37 cm. (15 inches) on a side, the broadest face from this base to the rounded wedge-shape opposite end (side view, plate 2) about 80×45 cm. (32×18 inches).

The surface is covered with rounded depressions of the kind commonly observed on meteoric irons, well shown in plate 2. There are in addition ten or more cylindrical holes clearly shown in plate 1 which are roughly parallel in direction. The largest is 7 cm. deep with a diameter of 1.5 cm. They are as regular in form as though produced by a drill. It is highly probable that these cylindrical holes were originally filled with troilite but none is now left in any of them.

In the hope of intersecting some of these cavities within the meteorite, the end of the mass was sawed off approximately paral-

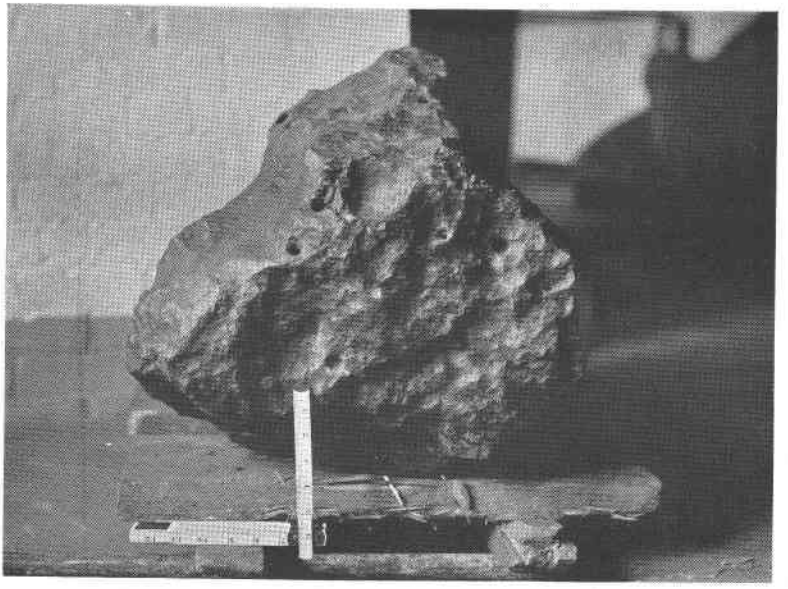

PLATE 1. Iron Meteorite from Carbo, Mexico.

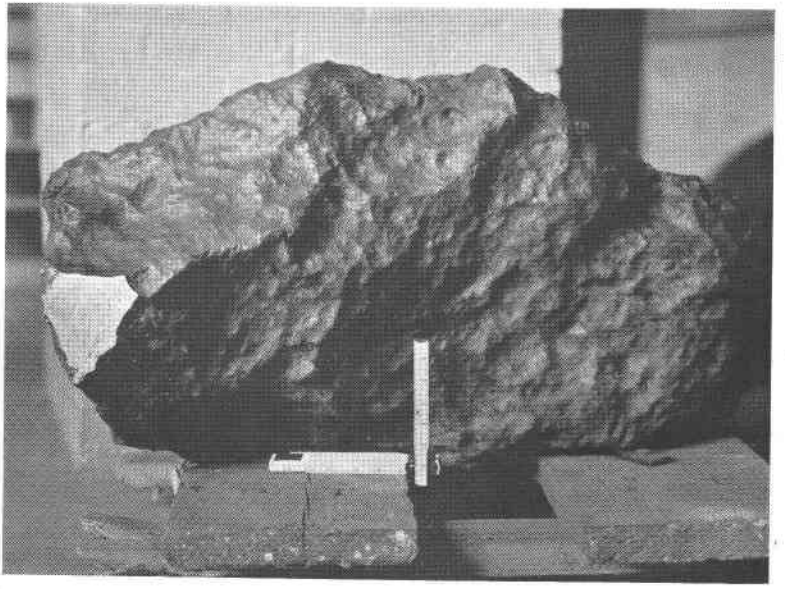

PLATE 2. Iron Meteorite from Carbo, Mexico.

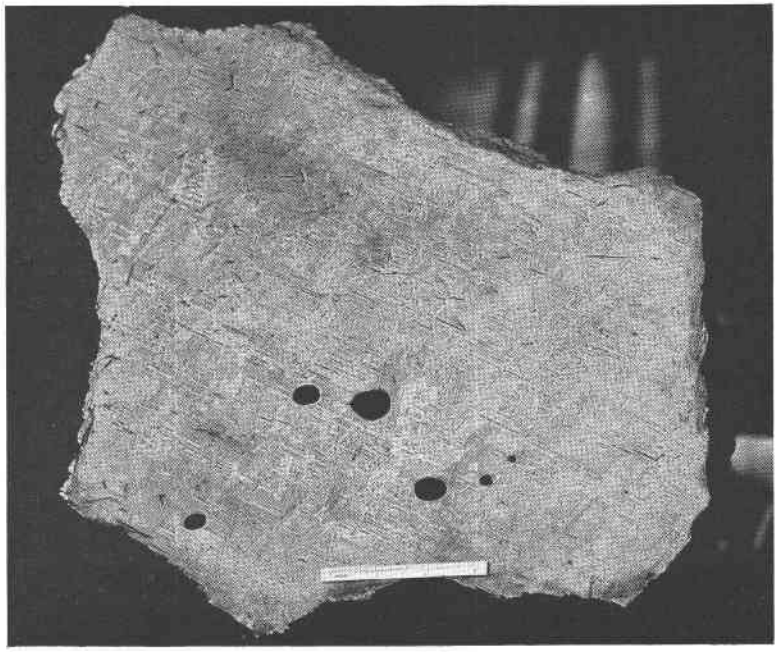

PLATE 3. Iron Meteorite from Carbo, Mexico.

lel to the triangular base and a slab about 2 inches thick was cut from this end piece. Numerous nodules of troilite were intersected on one of these cuts but none of them extended through the slab to the second cut. Their circular section is well shown on plate 3 but no proof was secured as to their pencil-like form. Their dimensions in cross-section are, however, in harmony with the idea that the holes are moulds of troilite masses.

The photograph of the etched section of the Carbo Meteorite (plate 3) exhibits clearly its well marked octahedral structure. The bands of kamacite are regular and have an average thickness of from .5 to 1 mm. It may therefore be classified as a medium octahedrite. The taenite bands are very narrow and fairly continuous.

The plessite filling the interspaces of the kamacite bands is for the most part finely banded giving to each grain in certain lights a satiny sheen.

Reichenbach lamellae of schreibersite up to 3 cm. in length cut across the structure as may be seen in the photograph. Each has on either side a band of kamacite. The troilite nodules are 2 cm. in diameter or less and do not disturb the octahedral structure. Each is bordered by a thin layer of schreibersite.

A sample of the iron free from visible troilite particles was analyzed by the junior author with the following result:

	PER CENT
Fe	90.64
Ni	8.68
Co	0.36
P	0.16
S	0.03
Insol.	0.04
Cu	trace
Mn	absent
	99.91

This analysis is in close agreement with that of the normal octahedral iron and shows no points of special interest.