ON METEORIC IRONS FROM ALPINE, BREWSTER COUNTY, TEXAS, AND SIGNAL MOUNTAIN, LOWER CALIFORNIA, AND A PALLASITE FROM COLD BAY, ALASKA.

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ALPINE, BREWSTER COUNTY, TEXAS.
(Cat. No. 513, U.S.N.M.)

The iron described below was received in 1915 from a Mr. E. M. Flynn, of Alpine, Texas, who reported having found it in the Chico Mountains in the southwestern part of Brewster County. Correspondence held with the view of securing the entire mass resulted in failure, and I have not been able to learn of its ultimate disposition. The weight of the original mass was given as about two tons; the fragment received was in form of a solid triangular mass weighing 212 grams. One face showed a broken surface, since polished and etched (see fig. 2, pl. 1), the others the usual slightly oxidized surface. As shown in the illustration, this is a finely and evenly granular iron, the uniformity of texture of which is broken only by three irregularly double, wavy bands of dark spots a half millimeter or so in diameter, which, on a reflected surface seem each to be surrounded by a narrow border or halo of lustrous material. The spots do not, however, differ structurally from the surrounding iron, into which they merge gradually. Their color suggests that they may be due to finely disseminated carbon. They do not oxidize in the process of etching with nitric acid as would be the case if they were troilite. Except for the presence of these spots, the iron resembles the most granular portions of that of Forsyth County, North Carolina. I find no evidences of cleavage or Neuman lines, and except for the spots the mass is apparently homogeneous.

Analysis by Dr. J. E. Whitfield yielded:

	Per cent.
Silicon	0.015
Sulphur	0.012
Phosphorus	0.328
Manganese	none.
Nickel	5.620
Cobalt	0.430
Copper	0.016
Iron	93.600
Carbon	0.008
Total	100.029

It is questionable to just which of the groups in the commonly accepted classification the iron should be referred. Its granular structure would naturally place it with the hexahedrites, but that there is a total lack of evident cubic cleavage or Neuman lines. Its resemblance to the interior portion of the Bingara iron as figured by Brezina is very close, but it lacks the other characteristics of the hexahedrite group. On the other hand, it is practically indistinguishable from the granulated portions of the Forsyth County iron, which is commonly classed as an ataxite. The locality in which the iron is reported to have been found would naturally suggest its possible connection with the Coahuila fall with which it is chemically almost identical (see Cohen, Meteoreisen Studien III, p. 104), but its structural dissimilarity is very evident to one at all conversant with these matters. For the present, and until other portions are available for study, I am inclined to class it as an ataxite of the Saratik group, though the high per cent (0.328) of phosphorus might, in some minds, raise a doubt.

SIGNAL MOUNTAIN, LOWER CALIFORNIA.

(Cat. No. 611, U.S.N.M.)

A small piece of this iron was sent the Museum early in August, 1919, accompanied by a letter from which the following is an abstract:

Several years ago I was sitting in the shade of some willow trees at the foot of the levee on No. 5 Canal at the point where it crosses the border from Mexico to the United States. It was a hot day, about 3 p. m. and no wind, when suddenly there was a rumble and a "woosh" (no other word seems to fit it) and a series of muffled explosions, which I at first thought was an earthquake. Then the willow trees all bent toward the west, as though there was a strong east wind, though I did not notice any wind.

I ran up on the levee where I could see out. There was a long streak of yellowish-green smoke, that started in the northeast and ended against the side of the Sierra Madras just south of Signal Mountain—in other words the streak started just north of east, over in Arizona, and ended just south of west in Lower California. I realized that the muffled explosions came from the mountain and that the streak of smoke was the trail of a meteor, traveling not very high up, for the east end did not appear to be much higher than the west end. The thing made so much disturbance that it attracted the attention of almost everyone in the vicinity, and a great many prospectors have looked for it since, one of them, a Mexican friend of mine, finally found what I believe is the largest piece of it. It appears to be solid iron, though a Denver, Colorado, assay office gives it a small amount of nickel. The piece is the same general shape and size as the head of a yearling calf, and weighs about 140 pounds. It is so malleable that you can not break the thin edge with a hammer.

The meteoric nature of the iron was easily recognized and steps taken which it was expected would result in the acquisition of the entire mass by the United States National Museum. Unfortunately, through the intervention of a third party, these wishes were not

realized, and the description here given rests upon an examination of the fragment first received.

The fragment is beautifully pitted and coated with but a very thin brownish crust, little oxidized, testifying to the supposed recency of its fall. A polished surface shows it to be a medium octahedrite, but of more than ordinary interest from the fact that along one end is a curving border of a maximum thickness of 7 mm. of a distinct, finely granular structure into which the typical octahedrite figures pass gradually (fig. 1, pl. 1). It is plainly a case of natural heat granulation during flight—the metabolite structure of Berwerth—which, so far as I recall, has been exemplified only in the case of the iron of Charlotte, Dickson County, Tennessee. A natural inference is that this portion represents the *brustseite* of the iron during its flight. The small amount of the material at my disposal prevents as complete a chemical examination as might be desired. A 10-gram fragment containing no visible troilite, carbon, or schreibersite segregations yielded Doctor Whitfield:

	Per cent.
Silicon	0.004
Sulphur	0.002
Phosphorus	0.041
Nickel	7.860
Cobalt	0.600
Copper	0.015
Iron	91.470
Total	99.992

These figures present no features not common to octahedrites, or that in themselves alone would serve to distinguish this from numerous others that might be mentioned belonging to the same group.

COLD BAY, ALASKAN PENINSULA.

(Cat. Nos. 633, 636, U.S.N.M.)

The meteorite (pallasite) described below was brought to the writer's attention by Mr. S. R. Capps, of the United States Geological Survey, who reported:

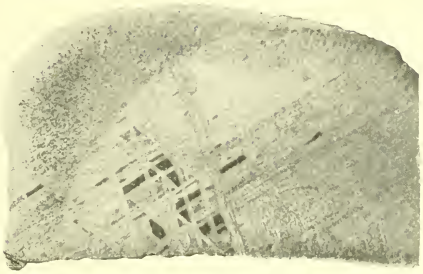
> This meteorite was found in June, 1921, on a mountain top about three miles west of the trading post at Cold Bay on the Alaskan Peninsula. When found it was perhaps as large as a man's two fists. It was broken into fragments and a large part of it, at least, was lost before I discovered it was a meteorite. It is possible that there are a few fragments in existence. I will try and reach the man who may have them and obtain them for the Museum.

The small fragment (weight 40 grams) which Mr. Capps had saved and brought to the Museum, although badly oxidized, was sufficient to show at once its meteoric nature. On learning of its desirability Mr. Capps wrote to one of the parties mentioned and suc-

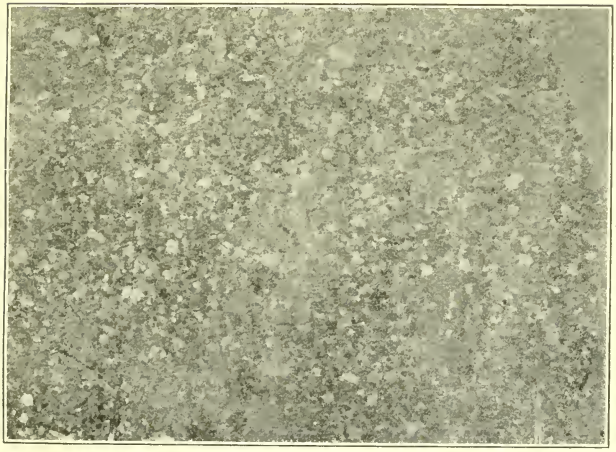
ceeded in securing the material here described in the form of a rough fragment of 280 grams weight.

Exteriorly the mass is so oxidized as to resemble an ordinary boulder of terrestrial limonite. A broken surface reveals an irregular sponge of metal with interstices of yellowish olivine of various sizes up to a maximum of 17 mm. in diameter. The metal bands are irregular, narrow, rarely over a few millimeters in width, and show in their maximum development the usual border of white iron (*wickelkamacit*) inclosing small areas of dull, plessitelike material, and the intervening plates of taenite. No Widmanstätten figures were developed by etching. The olivines are mostly angular in outline, and the structure, as shown in plate 2 is more that of a pallasite of the Brahin than the Krasnojarsk or Mount Vernon type, and so far as can be determined from the small scrap available, will be classed as of the Röckiky group, though the brecciation of the olivines is much less conspicuous than in the meteorites of Eagle Station or Admire.

The advanced condition of oxidation of the fragments renders a chemical analysis of doubtful value, and none has been attempted.

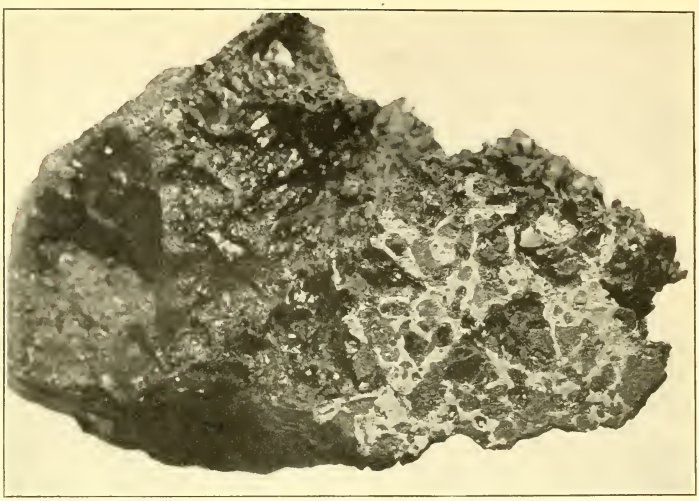


1. THE SIGNAL MOUNTAIN, LOWER CALIFORNIA, OCTAHEDRITE. MAGNIFIED 2½ DIAMETERS: SHOWING IN THE UPPER LEFT SECONDARY GRANULATION.

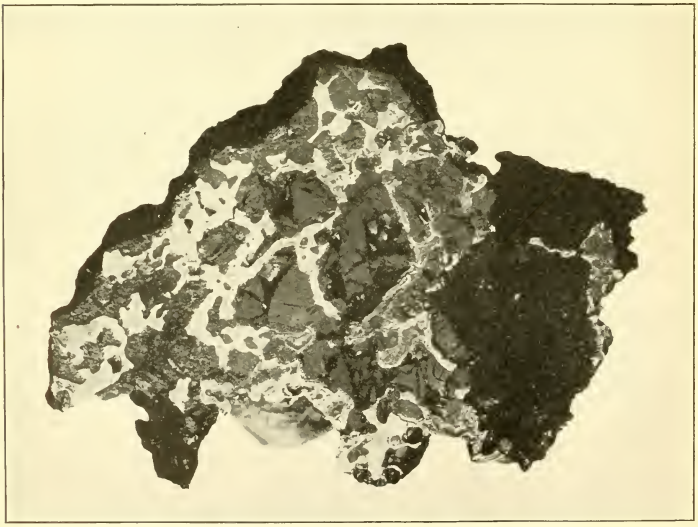


2. THE ALPINE, TEXAS, ATAXITE. POLISHED SURFACE MAGNIFIED ABOUT 4 DIAMETERS.

FOR EXPLANATION OF PLATES SEE PAGES 1 AND 2.



1. THE COLD BAY, ALASKA, PALLASITE. BROKEN AND POLISHED SURFACES. ENLARGED ABOUT ONE-FOURTH.



2. THE COLD BAY, ALASKA, PALLASITE. POLISHED SURFACE. ENLARGED 2½ DIAMETERS.

FOR EXPLANATION OF PLATE SEE PAGE 3.