

ART. XXXIX.—*Brief Notices of several localities of Meteoric Iron;*
by CHARLES UPHAM SHEPARD.

1. *Savisavik*,¹ *North Greenland*.

THIS meteoric iron has been in my possession upward of two years; and I had hoped, before describing its locality, to have obtained a supply of material fully adequate to its description and analysis; but not succeeding in this I deem it best to delay my notice of it no longer.

My specimens, consisting merely of a few scales, scarcely larger than one's finger nail, were the gift of John C. Trautwine, Esq., Civil Engineer, of Philadelphia, to whom they had been presented by Dr. Hays, the well-known arctic voyager, accompanied by the following note:

"* * I send you the fragment of iron (supposed to be meteoric) which I promised. It was obtained from an Esquimaux at my winter station of Port Foul, in 1861, who had obtained it at a place called Savisavik, and had carefully preserved it with a few other fragments, to make (with an ivory blade) the edge of a knife. The name of the place is derived from "savik," *knife*, and means the place where knife-material is found, i. e., iron place. The Esquimaux told me that there is a large mass of this material, and that the natives go there frequently to obtain it. The locality is about twenty miles south and east of Cape York, North Greenland, near latitude 76°. The Esquimaux scale off fragments with flint stone.

Yours, etc.,

I. I. HAYS."

Philadelphia, April 17, 1864.

This iron is perfectly malleable and remarkably homogeneous, without being much prone to oxydation. Its specific gravity is just below 8; which is rather high, but doubtless occasioned by the condensation it has suffered in being detached from the parent mass. For a time it was supposed that these fragments had been brought from the Niakornak locality in North Greenland; but a comparison of specimens fully disproves the idea. Some collectors have expressed doubts moreover, whether the last mentioned locality was a genuine meteorite. On this point, however, I have entertained no doubt, and am happy in being supported in this opinion by so high an authority as that of the late Prof. Forchhammer, who, in a letter to me dated Copenhagen, March 8, 1865, observes, "the Greenland (Niakornak) meteoric iron is certainly no artificial product, although it contains but little nickel and cobalt, and so much carbon, that it is hard and brittle like cast-iron.

¹ It is not plain from Dr. Hays's letter whether this word begins with S or G.

2. Botetourt County, Virginia.

This iron was discovered more than fifteen years ago in a mass so ponderous that the finder, having attempted to transport it on horseback a number of miles to his house, was obliged to abandon the undertaking. He left it upon a stone wall by the road-side, after having (with the assistance of a negro who happened at the time to be passing with a hammer,) detached two or three small angular fragments. These were afterward given to Mr. N. S. Manross, who took them with him to Göttingen, where in the laboratory of Prof. Wöhler he analyzed one of them so far as to determine the presence of nickel in the very unusually high proportion of more than 20 per cent. In the year 1860, while Mr. Manross was delivering lectures in this college on chemistry, he presented me a little fragment of this iron along with the foregoing information; and after his melancholy death at the battle of Antietam, his widow gave me the only remaining specimen of it that is known.

The quantity is too small to justify a further analysis; and I content myself with a brief description of its physical properties. It is whiter than most irons, extremely close and homogeneous, with exception of a few minute pyritic grains. Specific gravity = 7.64. Fracture fine granular like cast-steel. It does not give the Widmannstätten figures. In composition and structure it resembles the Green county (Tenn.) iron. As it is a variety not prone to decomposition, it is to be hoped that the original mass may yet be rediscovered, although it is scarcely probable that either of the persons who were once acquainted with its position are still alive.

3. Colorado.

If neither of the two preceding irons are likely to be represented in our collections, there is certainly a prospect that it will be quite otherwise with the mass just discovered upon the eastern slope of the Sierre Madre Range of the Rocky Mountains.

For my acquaintance with this discovery I am indebted to the kindness of Mr. J. Alden Smith, a practical mineralogist, at present residing in Colorado. This gentleman has transmitted to me by mail a very interesting cleavage lamina, $1\frac{1}{2}$ inches long by $\frac{3}{8}$ ths of an inch wide and $\frac{1}{8}$ th thick, and which shows on one edge a portion of the natural coating of the meteorite. His letter, dated June 21st is very brief, though it contains important particulars which I cannot withhold from the scientific public until his return to the east in the coming autumn. By means of the promised specimens he expects to bring with him on his return, I hope to be able to give a more circumstantial account of the discovery.

The detection of the mass, and which has occurred only within

a few weeks, is due to Messrs. Wilson and Morrison, by whom Mr. Smith was shown to the locality. It is situated within a very deep ravine, at the elevation of 8000 feet above the ocean and surrounded with high mountains on all sides. The exact dimensions of the mass are not given; but its weight is supposed to be several hundred pounds. "It seems to have struck a crevice in the solid ledge, and thereby to have been much shattered at one extremity,—a circumstance that enabled the finders to detach several small pieces." They inferred the fall to have taken place at a very remote period, as the mass exhibited a coating of oxyds half an inch thick. "Its composition is principally the native metals, iron, nickel, cobalt, a little manganese and a trace of copper. In some parts, iron forms the chief ingredient, while in others nickel and cobalt are largely in excess."

The specimen in my possession exceeds every iron I have seen in the perfection of its crystallization. It is as coarsely crystalline as that of Arva (Hungary) or Cocke county (Tenn.), but much more intimately laminated with Schreibersite than either. The laminæ of this substance are unusually thick, and possess a light color together with a bright luster. As they are disposed in accordance with the octahedral cleavage of the iron, they render the Widmannstätten figures strikingly apparent without polishing or the use of acids. No pyrites or graphite is visible in my specimen. Specific gravity = 7.43.

4. *Supposed new locality in Tennessee.*

Through the kindness of a scientific friend in Mississippi, Dr. W. Spillman, I am able to announce the very recent discovery of a considerable mass of meteoric iron upon a mountain in Tennessee. It was accidentally met with by a mining explorer, and is described as being "as large as a man can lift." The finder hammered off only a fragment of very small size which was forwarded to me by letter. Its original structure had been destroyed by the process of detaching the fragment. It was nevertheless highly malleable with the usual luster and color of meteoric iron. It was rapidly dissolved by chlorhydric acid without the odor of sulphuretted hydrogen. After being treated by nitric acid and ammonia, the characteristic purplish blue of the ammoniacal solution of Ni was exhibited. Measures have been taken to secure the mass, when a full description of it will be given.

Amherst College, July 9, 1866.