ART. VII.—*Mineralogical Notices*; by CHARLES UPHAM SHEPARD, Emeritus Professor of Natural History in Amherst College.

1. *A peculiar mineral of the Scapolite family.*

THE substance here described was sent to me by that zealous mineralogist, Mr. John G. Miller, of East Templeton, Ottawa County, Canada. It occurs in the bluish gray saccharine limestone of Galway, Ontario County, Canada. It had been referred with a query to chiasolite, which it certainly resembles in several respects. It presents itself in distinct and rather large crystals, thickly disseminated through the gangue, crossing each other in various directions. Their form is that of a right square prism, with truncated lateral edges. Their terminations are imperfect, and when well defined even, are still rough and drusy. They exhibit no combinations with the prismatic planes. The usual habit of the crystals is distinctly quadrangular, though in the larger individuals they are octangular, having their sides about equally produced. Their length is many times their thickness; and they are uniformly straight and sharply defined. The largest have a diameter of an inch, the smallest are rarely below one-eighth of this size. They preserve the same diameter throughout their length, with the exception of a single example, where one of the larger size, shows a tendency to a regular acumination. The length of this crystal is $3\frac{1}{2}$ inches, its diameter at the larger extremity

being half an inch, and at the smaller, but one-third. All the crystals have much evenness of surface and considerable smoothness, notwithstanding a slight degree of pitting or indentation, which almost requires a microscope for observation. They are without striation. The color is black, with a slight intermixture of gray and blue. In a few instances an area of cyanite-blue occupies a face of the larger crystals, but only to a slight depth from the surface. This part of the crystal is semi-transparent; while for the rest, the entire mineral is dark ash gray to bluish black, and only translucent on the edges. The vertical cleavages, parallel with the primary prism, are distinct, though effected with difficulty. They take place parallel with the narrower planes in the quadrangular prisms. Only traces of a transverse cleavage exist. A marked peculiarity of the larger crystals is the regular interlamination of thin films of white calcite, parallel with the eight sides of the prism. These layers, to the number of two or three, are equi-distant, thus imparting to the fractured ends of the crystals a checkered aspect, strongly suggesting the structure of chialtolite.* Luster, resinous to vitreous. Hardness = 7 . . . 7.5. Specific gravity, 2.608.

A very striking peculiarity of the mineral is the extremely fetid odor occasioned by its fracture; nor does this cease to be emitted until the fragments are reduced to an impalpable powder. The color of the powder is a bluish ash gray. It cannot be regarded as a hydrated mineral, as its content of water does not exceed 1.6 p. c. By exposure, however, to full ignition in a shallow platinum dish for several hours, it loses 4.6 p. c., this loss proceeding from the presence of organic matter, graphite, and carbonic acid from the decomposition of carbonate of lime. The powder still partially retains its grayish tint after long ignition; and it is only before the blowpipe that the portion most strongly heated loses its color. The thinnest part then undergoes fusion, attended by a feeble ebullition, into a colorless transparent glass.

Owing to the variable presence of graphite, calcite and quartz, the chemical examination is attended with uncertainty. The Si varied from 48.65 to 51.30; the Al from 13.45 to 19.62; the Ca from 17.43 to 21.6, and the Ti from 4.35 to 5.21. In a single trial, Na 4.35, and K 1.109, Mg 0.468 were obtained. The powder is very feebly acted upon by the strong acids.

From the foregoing it would appear that the mineral differs chemically from normal scapolite, and especially from the

* Prof. E. S. Dana has kindly made a section of one of the crystals, and examined it in polarized light. He finds "the black color to be due to foreign matter, present in the form of minute grains that may be metallic, making up no small part of the whole," and is of the opinion that "its analysis is not a guide to the real composition of the mineral."

vitreous couseranite of Saleix (Pyrenees) analyzed by Pisani; though it must be kept in mind that the example analyzed by him had been so much altered as to have its hardness reduced to 3. I am therefore led to regard the Galway crystals as the original, unaltered mineral, from which couseranite and dipyre have originated through hydration,* in the same manner as scapolite has given rise to wilsonite, huntite, algerite and terénite. Should it prove a new species, I propose to call it *Ontariolite*.

2. *Cassiterite at Coosa, Ala.*

Among the smaller fragments and grains of tantalite from this interesting locality, I find numerous crystals of cassiterite, the largest of which do not exceed the size of a pea. Some of them are well-formed octahedral crystals, showing, however, narrow faces of the primary prism, between the pyramids. When heated before the blowpipe on charcoal, along with soda, metallic tin is plentifully afforded. It is at present unknown whether this very desirable ore exists in workable quantity.

3. *Ytthro-tantalite.*

A single small crystal supposed to be ytthro-tantalite was detected along with the cassiterite. Its form is that of a right rhombic prism of about 122° , having its acute terminal angles replaced by two planes, inclining to one another across the obtuse lateral edge of the prism at an angle of very near 125° . Specific gravity = 6.001.

4. *Note upon the Paracolumbite.*

This ambiguous mineral, whose locality at Taunton, Mass., was lost sight of for many years, has been re-discovered; and still continues to be met with in collections under the above name. The analysis of Pisani proved that it had no chemical relation to columbite, but gave a result not altogether satisfactory for ilmenite, (menaccanite) to which he referred it. In view of its decidedly lower specific gravity than ilmenite, its fusibility before the blowpipe, and its large content of silicate of alumina, it remains undecided whether it properly belongs where Pisani has placed it; and I would therefore suggest that until farther information is obtained, the name paracolumbite be changed to para-ilmenite.

5. *Hemihedral forms of Staurolite.*

Among the large and perfect crystals of this mineral, found loose at Morganton, Ga., hemihedral forms are not unfrequent, both as single and compound crystals. The hemihedism relates to the alternate obtuse terminal angles, which are replaced by broad single planes.

* Possibly chiasolite may have been similarly produced, though the origin must have been attended with a more radical metamorphism.

6. *Fergusonite from Mitchell County, North Carolina, and identical with Rutherfordite.*

I have detected along with the samarskite of this locality a few very small crystals of fergusonite closely resembling those originally described by Haidinger as coming from Greenland, and nearly identical with those found in the sands from the gold washings of Rutherford, N. C., named by me as rutherfordite, and which I now consider as belonging to the species fergusonite.

7. *Green Pagodite in Georgia.*

A very handsome green variety of this mineral is found on Beaver-dam creek, nine miles west of Washington. It first attracted the notice of Mr. Ufford Jennings, of Charleston, S. C., as a material likely to be useful in ornamental stone-work. Its color, especially when polished, is between apple and emerald green. It has considerable translucency. Structure coarsely schistose, with a splintery fracture. Very tough. It is more or less interlaminated with coarse scales of muscovite; and is often freckled and blotched with a copper-red rutile; the latter impurity sometimes imparting after polishing, a resemblance to blood-stone. Hardness = 3. Gr. = 2.86. Before the blow-pipe in thin fragments, turns white and suffers slight fusion. Colors borax, apple-green. Uniformity of composition imperfect, owing to presence of muscovite and rutile. The trials gave

Si 48 to 52, Al 22.6 to 34, Fe 2.10, Na 5.12, K 4.43, H 3.5,
(Cr and Ti undetermined).

It probably forms a stratum of considerable dimensions in a mica-slate formation.

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