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ART. XXV.—*Microlite, a New Mineral Species*; by CHARLES U. SHEPARD, Lecturer on Natural History in Yale College.

Primary form. Regular octahedron.

Secondary forms. 1. The primary with its edges truncated.—
2. The primary with its edges truncated, and its angles replaced by four planes resting on the primary planes.

Cleavage. Imperfect, parallel with the primary faces. In other directions, there is conchoidal fracture passing to uneven. Surface of the primary faces generally dull; those of the trapezohedron, also; dodecahedral planes too minute for observation.

Lustre resinous. Color straw-yellow to reddish brown. Transparent to translucent. Streak white, except when the color of the mineral is brown; it then resembles the color.

Brittle. Hardness=5.5. Sp. gr.=4.75...5.00.

Observations.

1. Alone, before the blow-pipe, it remains unaltered. It is slowly dissolved in glass of borax, to which it communicates a yellow color, which grows paler on cooling, but remains transparent unless subjected to flaming, when it instantly becomes nebulous, and presents on cooling, a pale yellow enamel. It is not readily acted upon by carbonate of soda, at least in the mass.

2. This mineral, named in allusion to the diminutive size of its crystals, from *μικρός* *small*, attracted my attention many years since; and a specimen of Albite from Chesterfield, (Mass.) has been preserved in my cabinet on account of its presenting a portion of the pyramid of this substance, which, however, I had suspected, principally on account of its color, to be Zircon. Having lately been called to examine it anew, I perceived that the inclination of the faces indicated a regular octahedron, instead of an octahedron with a square base, as its system of crystallization. The crystal was accordingly freed from its gahgue, when I instantly recognized it to have the figure of modification 2, in the above description. The size of the crystal was about $\frac{1}{8}$ of an inch in diameter, and it weighed 0.4 of a grain. I immediately examined other specimens of the Chesterfield rock in my possession, and had no difficulty in discovering a number of crystals, all of which were smaller, disseminated through the Albite, and rarely imbedded in the Tourma-

line. From among them, I selected an exceedingly minute, transparent, yellow crystal, whose faces were sufficiently brilliant to afford me its angles with the reflecting goniometer. It uniformly gave the inclination of faces united by edges = $109^{\circ} 30'$.

3. The specific gravity was determined by means of two of the largest crystals I could obtain, one of which was that first observed, and the other, smaller, by 0.1 of a grain. The water was at 60° F., and the balances so delicate as to oscillate on the addition of 0.01 of a grain. The largest crystal gave the Sp. Gr. = 5.00; the smallest = 4.75.

4. Its place in the natural system, if the specific gravity can be relied on, is within the genus Tungstic-Baryte, whose limits of hardness are 4.0...5.5, and those of specific gravity are 4.5...6.1; and its specific designation will therefore be, *Octahedral Tungstic-Baryte*.

5. The only substance with which the Microlite can be brought into comparison, of which we have any mineralogical account is the *Phosphate of Yttria*, of BERZELIUS,* the *Xenotime* of BEUDANT,† which according to the observations of HAIDINGER, belongs to the pyramidal system of MOHS, and moreover possesses hardness = 4.5...5.0, and Sp. gr. = 4.557. It is therefore sufficiently excluded from coalescence with this species.

6. I have additional pleasure in bringing forward the present mineral, from the persuasion that every mineralogist has but to examine his specimens from Chesterfield, to find it already in his cabinet. I would apprise such as search for it, however, that the naked eye is not always sufficient for its discovery; the microscope will generally have to be employed; and the most likely part of the specimen to meet with it, will be the line of junction between the vein of smoky Quartz, (which contains the Tourmaline,) and the Albite.

7. My next visit to the locality will, I trust, supply me with specimens sufficient to attempt a more detailed chemical examination of it than is contained in the present notice, and which is barely adequate to furnish the conjecture, that its principal ingredient is *oxide of cerium*.

* Kongl. Vetenskaps Acad. Handlingar for 1824, p. 334, and Poggendorff's *Annalen der Physik*, 1825. II. p. 203.

† *Traité élémentaire de Mineralogie*, II. p. 552.