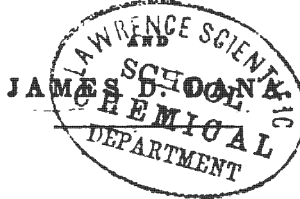


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times mucronate and about the length of the fruit; plant light green; bracts much wider than the leaves and lanceolate.

Drummond Island in Lake Huron, Dr. Torrey; Macomb Co., Michigan, Dr. Cooley. A distinct species.

No. 205. *C. Woodii*, Dew.

*Spica staminifera unica, triquetra, oblongo-cylindræa, squamo-bracteata, cum squamis oblongis obtusis densis; pistillifera tristigmatica, unica, interdum binæ, ovato-oblonga, laxiflora, superiore exserte pedunculata, erecta, inferiore remota, perlongo-pedunculata, recurva laxa; fructibus obovatis, obtusis subtriquetris, ore strictis erostratis, inferne teretibus, squama ovata subacuta duplo-longioribus; culmo tereti laxo, foliis angustis linearibus striatis; foliis et culmis exigue pubescentibus.*

Culm a foot or more high, slender, triquetrous, lax, striate; leaves of the culms short, striate and subradical, but of the roots very long, slender, flat; staminate spike single, triquetro-cylindric, oblong, an inch long, with oblong and obtuse tawny scales, the lowest subbracteate; pistillate spike, 1-2, ovate, short, loose-flowered, upper one sheathed and exsertly pedunculate, the lower very long pedunculate and lax; fruit obovate, obtuse, triquetrous, orifice closed, tapering below, with its scale ovate acutish and half as long as the fruit, and white with a green keel; plant light green, and very slightly pubescent.

Found by Drs. Crawe and Wood on Perch Lake and Peck River, Jefferson Co., N. Y., and named after one of its discoverers, Dr. Wm. A. Wood. It appears to be very distinct.

Rochester, N. Y., March, 1846.

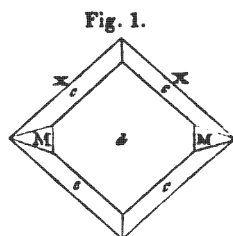
ART. XXVII.—*On three new Mineral Species from Arkansas, and the Discovery of the Diamond in North Carolina*; by CHARLES UPHAM SHEPARD, M. D., Prof. of Chemistry in the Medical College of South Carolina, and in Amherst College, Massachusetts.

FOR the minerals here described from Arkansas, I am indebted to my friend, the Rev. E. R. Beadle, formerly missionary to Palestine, but at present, a resident in New Orleans. I believe them to have been collected by himself, during a late journey through the region of the Hot Springs.

1. *Arkansite*.\*

Primary form. Right rhombic prism. M on M,  $101^\circ$ .

Secondary form. M on c,  $133^\circ 45'$ .  
 c on c over }  $135\ 15\ \dagger$   
 the edge x }  
 edge x inclines to edge  
 x at about  $94^\circ$ .



Cleavage indistinct. Surface, M brilliant, c less so, d brilliant, though drusy, and channelled vertically. Fracture sub-conchoidal, to uneven. Lustre metallic. Color dark steel-gray to iron-black. Faces c tarnished blue, like specular iron. Streak dark ash-gray. The powder (until it becomes perfectly fine) shows points with a metallic lustre.

Brittle. Hardness = 7.0—7.5.

When heated in a glass tube, the mineral affords no traces of moisture, or of hydro-fluoric acid. Alone, before the blowpipe, on charcoal, it is unalterable. With borax, it enters slowly into fusion, and gives a transparent, deep yellow glass. †

\* Named from the State in which it is found.

† None of these angles were obtained from perfect reflections.

‡ A crystal weighing 0.68 gr. in the state of powder, was boiled for an hour in sulphuric acid, during which it underwent decomposition. The yellowish green insoluble matter separated, was thrown upon the filter and subsequently ignited. Its color became pale straw-yellow. Its weight was 0.32 gr. It afforded the reactions of titanitic acid. The sulphuric solution (having been found to afford a precipitate with sulphate of potassa, which was soluble by addition of more of the saturated solution of sulphate of potassa) was precipitated, ignited and weighed. It amounted to 0.28 gr., and had the properties of yttria, though it is possible there might have been some intermixture of zirconia and thorina.

In a second trial, 1.68 grs. were fused with 12 grs. bisulphate potassa. The resulting mass had a faint tinge of yellow. It was boiled in excess of water, from which a fine, white, heavy powder was precipitated. Mingled with this powder was another, rather heavy, flocculent, grayish white matter, in small quantity, which remained behind in the basin as the other was removed to the filter by a stream from the wash-bottle. Sulphuric acid was boiled upon it without producing any change; but it afterwards slowly disappeared on being digested with hydrochloric acid. From a portion of this solution, ammonia threw down a precipitate, resembling yttria. The titanitic acid, separated from the original sulphuric solution, weighed after ignition, 1.14 gr., or 67 p. c.

So far as my examination went, (which was restricted for want of material to examine, and the circumstance that my means for such inquiries were at the time, in Amherst,) I am led to regard the substance in question as a titanate of yttria, in which neither lime, oxide of cerium, iron or manganese are present.

The crystals are about one-fifth of an inch in diameter; and are implanted upon quartz crystals, which last are attached to a surface of a brownish green coccolite. The quartz crystals are dark brown within, but coated by a thin layer of milky quartz; and are about one inch in length, by one-fifth of an inch in diameter.

The ticket to the specimen is marked thus: "Magnet Cove. T 35. R 17 W. S 21. Hot Springs Co., Arkansas."

### 2. *Ozarkite*.\*

Massive. Composition, laminæ (confused) nearly impalpable. Fracture uneven.

Lustre feeble, vitreous to resinous. Color white (rarely bluish) to flesh-red. Streak white. Translucent.

Brittle. Hardness 4.5. Specific gravity, 2.746.

Heated in a glass tube before the blowpipe, it emits water very freely. (Ignited in the state of powder, it loses 15.1 p. c., and the powder is left slightly cohering.) Alone before the blowpipe, it melts almost with the facility of cryolite, into a transparent colorless glass. With borax, it dissolves into a transparent glass.

† It dissolves freely without effervescence, in nitric and in hydrochloric acid, with deposition of silicic acid; and appears to be a siliceous hydrate of lime and yttria, possibly also having traces of thorina.

It occurs diffused in irregular veins and ovoidal masses (about one-fourth of an inch diameter) through a flesh-colored elæolite, from which mineral however, it is constantly separated by a thin layer of a red jasper-like substance, which is obviously distinct from the two minerals it tends to separate; and may itself be an undescribed species. Its locality, like that of the Arkansite, is Magnet Cove, Hot Springs Co., Arkansas.

### 3. *Schorlomite*.†

Primary form. Rhomboid. Dimensions unknown.

The species standing in the nearest relation to it, would seem to be the *Æschynite*, which however is a titanate of zirconia and cerium; but the properties of the two minerals when contrasted, will at once show the impossibility of their being included within the same species.

\* Named from the Ozark Mountains, in which extensive range its locality is situated.

† From *Schorl*, a familiar variety of tourmaline, and *oids, like*, from its resemblance in color, fracture and crystallization to that mineral.

Secondary form. Hexagonal prism, with lateral edges truncated by narrow and brilliant planes.

Cleavage indistinct. Fracture conchoidal. Surface of the broader planes rather dull, of the narrow ones smooth and brilliant.

Lustre vitreous. Color black. Streak grayish black, with a tinge of lavender-blue. Tarnished with blue and pavonine tints, thus causing it to resemble specular iron, (for which substance it had been mistaken.) It also strikingly resembles some varieties of bluish black, massive, or imperfectly crystallized, tourmaline.

Hardness = 7.0—7.5. Specific gravity = 3.862.

Heated in a glass tube, it emits a little moisture, and glows with redness, immediately as the tube on which the fragment rests, becomes red. Its powder loses 3 p. c. on being ignited. Alone on charcoal, it fuses readily (and with scarcely any perceptible effervescence,) into a shining obsidian-like globule, which is not affected by the magnet. With borax, it gives a transparent glass, slightly tinged green by iron.

It is easily decomposed by the acids,—gelatinous silica being separated. It consists essentially of silicic acid, yttria, thorina,(?) oxide of iron and water. I could not detect in it, either oxide of cerium or lanthanum.

It approaches in some of its properties the species allanite and gadolinite; from both of which it is sufficiently distinct however to entitle it to a specific rank.

The specimen affording it, is the same with that last referred to, as embracing the ozarkite. The crystals are very minute; but a large mass of the mineral occurs in elæolite, more than two inches in diameter, and which appears to belong to a single individual, which (like the indicolite crystals of Goshen) has been much interpenetrated by the gangue, so as on the whole to have less perhaps than one-half of the outline of the crystal occupied by the pure mineral. Fragments of pure schorlomite an inch in diameter, however, may be detached from this skeleton-crystal.\*

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\* The elæolite with which this and the foregoing species are found, and which had been called a compact red feldspar, is a remarkably well characterized variety; is perfectly fresh and unaltered, forming a grayish flesh-red, oily, translucent mineral. Its sp. gr. = 2.60. H. = 6.0. It is fusible into a colorless glass, and in a state of a powder, at once forms with warm nitric acid, a flesh-colored jelly.

The same rock contains (and particularly the ozarkite and schorlomite portions of it) a yellowish-brown, semi-transparent, resinous mineral, which unless it should prove to be xenotime, may constitute a new species. It is highly crystalline; but the crystals are too small and incomplete to permit their determination. In hardness, it does not exceed 6.0.

4. *Diamond in North Carolina.*

At the 6th annual meeting of the Association of American Geologists and Naturalists, held in April, 1845, in this city, I made known the existence of the true, diamond-bearing rock (the Itacolumite) at several places within the gold region of the United States; and predicted that we should soon have other discoveries of the diamond within the range of this formation, in addition to the well authenticated one then already made, in Hall Co., Georgia. This opinion was circulated to some extent, by means of the newspapers in North Carolina; and as one of the first fruits of the inquiry set on foot, I had the pleasure of receiving last spring while in Charleston, from my friend the Hon. Mr. Clingman, of Asheville, Buncombe Co., the diamond here figured and described.\* It was found in the gold washings of Mr.

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It may not be without interest to annex here also, notices of several other specimens forwarded by Mr. Beadle from the same region.

a. Gray granite (without quartz) with black mica in small scales, imparting to the rock the aspect of a sienite. It contains everywhere diffused through its mass, minute, hyacinth-red crystals, having the hardness of monazite. From Fourche Cove, Pulaski Co. T 1 N. R 12 W. S 34.

b. From same place, (T 1 N. R 12 W. S 33.) a coarse amygdaloidal basalt, containing thickly implanted crystals of grayish black pyroxene, above an inch in length, and much resembling those found at Aussig, in Bohemia.

c. From little Missouri, Pike Co., (T 8 S. R 25 W. S 30.) Granular and fibrous snowy gypsum.

d. From do., (T 8 S. R 25 W. S 27.) Coarse granular and crystallized celestine, in large masses.

e. From do., (T 8 S. R 25 W. S 30.) Grayish white, granular celestine. Also in confusedly aggregated crystals, with rough, drusy faces.

f. From do., (T 8 S. R 26 W. S 16.) Celestine in large masses, crystallized and granular.

g. From do., (T 8 S. R 25 W. S 27.) Heavy spar in grayish white, tabular crystals and laminated masses, diffused through a steatitic clay.

h. From do., (T 8 S. R 25 W. S 27.) A yellowish white steatite, analogous to that found in Cornwall, England.

i. From same region, (T 8 S. R 25 W. S 27.) A trachytic porphyry. It has the dry, harsh feel, and emits the peculiar odor (when moistened) of the European trachytes. It is said by Mr. Beadle to be as recent as the tertiary.

j. From Saline Co., (T 2 S. R 16 W. S 14.) Compact reddish dolomite (had been supposed to be spathic iron) in quartz.

k. From Spring, (T 3 S. R 18 W. S 17.) Hot Springs Co. Light greenish grey trap-porphry. A trachytic rock, with large, flat and perfect crystals of feldspar, slightly reddish. They resemble the ryakolite of Bohemia.

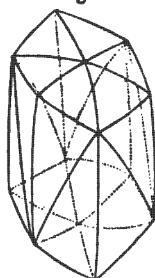
l. From Magnet Cove. (T 3 S. R 17 W. S 19.) A ryakolite-porphry with a dark green basis. The rock contains little specks of a rich, azure blue mineral, which I am unable at present to determine.

\* It is the crystal to which allusion was made in the last number of this Journal, p. 119.

Twitty's mine in Rutherford Co.; which mine is situated in the Itacolumite region I had designated in the communication above referred to. Mr. Clingman thus refers to it in a letter dated Feb. 17th, 1846. "By the desire of Mr. Twitty, I have enclosed to Dr. Dickson, (with the request that he would present it for examination to you,) a small crystal which seemed to me to possess the adamantine lustre, and was hard enough to scratch every thing to which I applied it, it cutting limpid quartz easily. Should you find it to be a diamond, would you regard the picking up of a single one among the gravel from a gold-rocker, as affording a sufficient inducement for instituting a search for diamonds at that place?"

Although there could be no mistake about the hardness and lustre possessed by this crystal, *i. e.*, that they could only belong to the diamond, still there was something in its singularly elongated shape, which at first sight was calculated to remind one of an hexagonal prism with trihedral summits, such as occurs in calcite, or tourmaline: but then the faces were each diagonally divided by a slightly raised edge; and besides, they all equally had the peculiar sphericity so frequent in the diamond. The crystal however, which is bounded by twenty-four isosceles triangles, is plainly enough a common secondary of the cube, through the bevelment of its edges; and its unusual figure arises from the disproportionate extension of the twelve planes situated about its vertical axis. See the figure in the margin.

Fig. 2.



Its weight is 4.12 grains, and its specific gravity = 3.534. It is transparent, possessing only a faintly pale yellowish tinge of color; and it is nearly without flaw.

It is to be hoped that the proprietors of gold washings throughout the district, will immediately set on foot a systematic search for this precious gem, which, in the ordinary operations of gold mining, might be overlooked to almost any extent.

Henceforth there can scarcely remain a doubt, but that the diamond is to form a part of the available mineral wealth of the country.

• New Haven, July 21, 1846.