A

SYSTEM

OF

MINERALOGY.

DESCRIPTIVE MINERALOGY,

COMPRISING THE

MOST RECENT DISCOVERIES.

BY

JAMES DWIGHT DANA,

SILLIMAN PROFESSOR OF GEOLOGY AND MINERALOGY IN YALE COLLEGE. AUTHOR OF A MANUAL OF GEOLOGY; OF REPORTS OF WILKES'S U. S. EXPLORING EXPEDITION ON GEOLOGY; ON ZOOPHYTES; AND ON CRUSTACEA, ETC.

AIDED BY

GEORGE JARVIS BRUSH,

PROFESSOR OF MINERALOGY AND METALLURGY IN THE SHEFFIELD SCIENTIFIC SCHOOL OF YALE COLLEGE.

"Hæc studia nobiscum peregrinantur....rusticantur."

FIFTH EDITION.

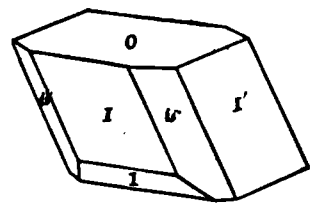
REWRITTEN AND ENLARGED, AND ILLUSTRATED WITH UPWARDS OF SIX HUNDRED WOODCUTS.

NEW YORK:
JOHN WILEY & SON, PUBLISHERS,
NO. 2 CLINTON PLACE.
1868.

C

H.=2·5. G.=2·213. Lustre vitreous. Color Berlin-blue to sky-blue, of different shades; sometimes a little greenish. Streak uncolored. Subtransparent—translucent. Taste metallic and nauseous. Somewhat brittle.

541



Comp.—$\dot{C}u\,\bar{S}+5\,\dot{H}$=Sulphuric acid 32·1, oxyd of copper 31·8, water 36·1=100. Often mixed with melanterite. Bluish crystals from mud at the Cronebane copper mine of Wicklow contain, according to Mr. Mallet, 34·2 of sulphate of iron to 65·7 of sulphate of copper.

Pyr., etc.—In the closed tube yields water, and at a higher temperature sulphuric acid. B.B. with soda on charcoal yields metallic copper. With the fluxes reacts for copper. Soluble in water; a drop of the solution placed on a surface of iron coats it with metallic copper.

Obs.—Blue vitriol is found in waters issuing from mines, and in connection with rocks containing chalcopyrite, by the alteration of which it is formed. Some of its foreign localities are the Rammelsberg mine near Goslar in the Harz; Fahlun in Sweden; at Parys mine, Anglesey; at various mines in Co. of Wicklow; formerly in crystals an inch long at Ting Tang mine in Gwennap; also Rio Tinto mine, Spain. The waters of the Rio Tinto mine have yielded annually 1,800 cwt. of copper, consuming 2,400 cwt. of iron. At Wicklow about 500 tons of iron were laid in the pits at one time, and in about 12 months the bars were dissolved, and each ton of iron yielded 1½ to 2 tons of a reddish mud which was *cement* copper, containing for every ton 16 cwt. of pure copper. It has been observed at Vesuvius among the products of the eruption of 1855.

Found at the Hiwassee copper mine, also in large quantities at the Isabella and other mines, in Polk Co., Tennessee, 30 m. from Cleveland; at the Canton mine, Georgia; at Copiapo, Chili, with stypticite.

When purified it is employed in dyeing operations, and in the printing of cotton and linen, and for various other purposes in the arts. It is manufactured mostly from old sheathing, copper trimmings, and refinery scales.

On the ancient *chalcanthum* see p. 645. Beudant's name *cyanose* (with *cyanosite* derived from it, from κυανος) is rejected like other names in which the terminal *s* of the Greek is retained. Moreover *chalcanthite*, meaning *flowers of copper*, is old and good.

670. CYANOCHROITE. Cianocroma *Scacchi*, Mem. Vesuv., 191, 1855.

Monoclinic. $C=75°\ 30'=O\wedge i\text{-}i$, $I\wedge I=108°\ 12'$, $O\wedge 1\text{-}\dot{i}=153°\ 56'$, $O\wedge 1\text{-}i=141°\ 47'$, $O\wedge 2\text{-}i=116°\ 49'$; also plane 2-$\dot{2}$. Occurs as a crust, and crystals obtained by solution and evaporation. Color clear blue.

Comp.—According to Scacchi, a hydrous sulphate of potash and copper; $(\frac{1}{2}\,\dot{C}u+\frac{1}{2}\,\dot{K})\,\bar{S}+3\,\dot{H}$.

Obs.—From the saline crusts formed on the lavas during the eruption of Vesuvius in 1855.

Named in allusion to the color from κυάνος, *blue*, and χρόα, *color*. Scacchi's name has been changed to the above, in order to secure the termination *ite* and avoid ambiguity (the mineral containing no chrome).

---

671. ALUNOGEN. Hydro-trisulfate d'alumine *Beud.*, Tr., 449, 1824. Davite (?) *Mill.*, Quart. J., 1828. Alunogene *Beud.*, Tr., ii. 488, 1832. Solfatarite pt. *Shep.*, Min., 188, 1835. Keramohalit *Glocker*, Grundr., 689, 1839. Saldanite *Huot*, Min., ii. 451, 1841. Stypterit *Glocker*, Syn., 297, 1847. Halotrichit pt. *Hausm.*, Handb., ii. 1174, 1847 (not Halotrichit *Glocker*). Schwefelsaure Thonerde. Sulphate of Alumina.

Monoclinic, Jurasky. In six-sided tables with two angles of 92° and four of 134°. Usually in delicate fibrous masses or crusts; also massive.

H.=1·5—2. G.=1·6—1·8. Lustre vitreous—silky. Color white, or tinged with yellow or red. Subtranslucent—subtransparent. Taste like that of common alum.