

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."

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	S	Al	NH ⁴ O	H	Mg
1. Tschermig	38.00	12.14	6.58	45.00	0.28=100 Pfaff.
2. "	38.58	12.34	4.12	44.96	—=100 Lampadius.
3. "	38.065	11.602	3.721	48.390	0.115=99.893 Stromeyer.

Pyr., etc.—In the closed tube yields water and sulphate of ammonia; B.R. sublimes; on char coal gives a coating of sulphate of ammonia, and leaves a residue which gives a fine blue with cobalt solution; with soda gives ammonia fumes, and the reaction for sulphuric acid.

Obs.—From Tschermig, Bohemia. This salt is manufactured from the waste of gas works, and used extensively in place of potash alum.

674. KALINITE. Potash Alum. Native Alum. Kalialum, Kalinischer Alum, Kalinischer Alumsulphat, *Germ.* Kalinite Dana.

Isometric. Usually fibrous or massive, or in mealy or solid crusts.

H.=2-2.5. G.=1.75. Lustre vitreous. Color white. Transparent to translucent.

Comp.— $K\bar{S} + Al\bar{S} + 24\bar{H} = (\frac{1}{2}K + \frac{1}{2}Al)\bar{S} + 18\bar{H}$ —Sulphate of potash 18.4, sulphate of alumina 36.2, water 45.5=100.

Pyr., etc.—B.R. fuses in its water of crystallization, and froths, forming a spongy mass; with cobalt solution an intense blue; on charcoal gives a hepatic mass. Soluble in from 16 to 20 times its weight of cold water, and in little more than its weight of boiling water.

Obs.—Effloresces on argillaceous minerals, and more particularly alum slate. Whitby in Yorkshire is a noted locality, also Hurlet and Campsie near Glasgow. Also obtained at the volcanoes of the Lipari isles and Sicily. Cape Sable, Maryland, affords large quantities of alum annually. In the caves of the Unaka Mts., Eastern Tennessee, especially at Sevier, masses a cubic foot in size may be obtained; also in the "Black Slate" of Middle Tennessee; and in caves along the valleys and gorges of the streams in De Kalb, Coffee, and Franklin Cos., Tenn. (Safford).

675. VOLTAITE. Voltaite A. Scacchi, *Ac. Sci. Nap.*, 1840.

Isometric. In octahedrons, cubes, dodecahedrons, and combinations of these forms.

Lustre resinous. Color dull oil-green, greenish-black, brown, or black. Streak grayish-green. Opaque.

Comp.— $Fe\bar{S} + Fe\bar{S} + 24\bar{H}$, Scacchi, = $Fe\bar{S}$ 15.4, $Fe\bar{S}$ 40.6, $\bar{H}$ 44.0=100; but not from a complete analysis. Dufrenoy's analysis (*Ann. d. M.*, III. ix. 165) is not correct according to Scacchi (*Mem. G. Camp. Napoli*, 89, 1849).

Abich has obtained an artificial salt of similar characters, which has the formula $(\frac{1}{2}(Fe, K)^2 + \frac{1}{2}Fe)\bar{S} + 4\bar{H}$, and the composition:

S 48.32	Al 2.20	Fe 17.65	Fe 11.60	Na 6.25	K 0.4	H 15.94
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a little of the iron being replaced by aluminum. It is supposed that voltaite corresponds to it essentially in composition.

Paulinyi has found crystals of a similar compound at Kremnitz. They afford the formula (Tschermak, *Anz. Ak. Wien*, 1867, 218) $(\frac{1}{2}(Fe, K)^2 + \frac{1}{2}Fe)\bar{S} + 4\frac{1}{2}\bar{H}$, with Fe : K=4 : 1, and a little aluminum replacing iron.

Pyr., etc.—Soluble in water with difficulty, and at the same time decomposes.

Obs.—This species was first observed at the Solfatara near Naples, by Breislak (1792). It has been found by F. Ulrich at the Rammelsberg mine near Goslar. The last contains protoxyd of manganese, as well as of iron.

676. BLAKEITE Dana, *Min.*, 1850. J. H. Blake has described an iron-sulphate from Ocozimbo, which he refers to coquimbite; but it occurs in regular octahedrons, and assumed the same form on solution and recrystallization. He obtained in an analysis S 41.37, Fe 26.79, Al 1.05, Mg 0.30, Si 0.82, H 29.40=99.68. Requires further investigation.