

A  
SYSTEM  
OF  
MINERALOGY.

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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.

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

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**Pyx.**, etc.—Yields water. B.B. fuses easily, coloring the flame reddish-yellow; moistened with sulphuric acid the flame is colored green.

**Obs.**—Found by Bechi as an incrustation at the baths of the boric acid lagoons of Tuscany.

**Artif.**—A hot-water solution of ulexite, after concentration and cooling, yielded Lecanu (J. Pharm., III. xxiv. 22) scales of a salt having the above ratio, as determined by him. Kraut obtained, under similar circumstances, the compound  $\text{Ca}^2\text{B}^2+6\text{H}$ , or  $8\text{H}$  after drying over sulphuric acid, and  $3\text{H}$  after heating to  $120^\circ\text{C}$ .

The *Hayesine* of D. Forbes (Phil. Mag., IV. xxv. 118), from the waters of the hot springs, Baños del Torc, in the Cordilleras of Coquimbo, may be of the above species. It occurs in the waters in the form of snow-white silky or feathery flakes, and also as a flaky sediment at the bottom.

Forbes suggests that the mineral is formed by the action of hot vapors, volcanic in source, on the lime of the waters through which they pass.

**601. HOWLITE.** Silicoborocalcite *H. How*, Phil. Mag., IV. xxxv. 1868. Howlite *Dana*.

In small rounded imbedded nodules. Texture compact, without cleavage; also chalk-like or earthy.

H.=3.5; often less. G.=2.55. Lustre subvitreous, glimmering. Color white. Subtranslucent, or translucent in thin splinters. Fracture nearly even and smooth.

**Comp.**—A hydrous borate of lime, similar to *bechélite*, combined with one-sixth of a silicate, analogous to *danburite*. O. ratio for B, Si, H=4:14:4:5; corresponding to  $[(\frac{1}{2}\text{Ca} + \frac{1}{2}\text{H})\text{B} + \frac{1}{6}\text{H}] + \frac{1}{6}[(\frac{1}{2}\text{Ca}^2 + \frac{1}{2}\text{B})^2\text{Si}^2]$ =Boric acid 43.0, silica 15.8, lime 29.4, water 11.8=100. How deduces the O. ratio 4:15:4:5; but as the boric acid was not directly determined, its preference to the preceding is not certain. How writes the formula  $2\text{CaSi} + 3(\text{CaB}^2 + \text{H}) + \text{H}^2\text{B}$ . Analyses: 1-3, How; 4, the mean after excluding the lime as gypsum:

	Si	B	S	Mg	Ca	H
1. Compact	15.19	[43.33]	1.08	tr.	28.90	11.55
2. "	15.44	[44.10]	0.80	tr.	28.04	11.62
3. Chalky	14.64	[43.45]	1.86	tr.	28.85	12.30
4. Mean, gypsum excl.	15.25	[44.22]	—	—	28.69	11.84

**Obs.**—Occurs in Nova Scotia, in nodules, of the size mostly of filberts, or  $\frac{1}{2}$  in. to  $\frac{1}{4}$  in., and rarely 1 to 2 in. through, imbedded in anhydrite or gypsum, at Brookville, about 3 m. S. of Windsor, and associated with ulexite. The harder kind (anal. 1, 2) occurs in anhydrite, and the softer (anal. 3) in gypsum.

**602. ULEXITE.** Boronatrocalcit *Ulex*, Ann. Ch. Pharm., lxx. 49, 1849. Natron-Kalk-Borat Ulexite *Dana*, Min., 695, 1850. Natronborocalcite. Tinkalzit (fr. Africa) *Kletzinsky*, Polyt. Centr., 1384, 1859.

In rounded masses, loose in texture, consisting of fine fibres, which are acicular or capillary crystals.

H.=1. G.=1.65, N. Scotia, How. Lustre silky within. Color white. Tasteless.

**Comp.**—O. ratio for Na, Ca, B, H=1:2:18:18, Ramm.,=( $\frac{1}{2}\text{R} + \frac{1}{2}\text{H}$ )B +  $\frac{1}{2}\text{H}$ =Boric acid 45.6, lime 12.3, soda 6.8, water 35.3=100. How deduces for the N. Scotia mineral the ratio 1:2:15:15=Boric acid 44.0, lime 14.1, soda 7.8, water 34.1=100. Analyses: 1, Ulex (l. c.); 2, A. Dick (Phil. Mag., IV. vi. 50); 3, Rammelsberg (Pogg., xcvi. 301); 4, Helbig (Dingler's Pol. J., cxlvii. 819); 5-8, Kraut (Arch. Pharm., II. cxli. 25, Jahresb., 1862, 759, Ann. Ch. Pharm., cxxxix. 262); 9, Lunge (ib., cxxxviii. 51); 10, Kletzinsky (Polyt. Centr., 1859, 1384, Ramm. Min. Ch., 988); 11, Phipson (C. R., lii. 407); 12, Salvétat (ib., 536); 13, H. How (Am. J. Sci., II. xxiv. 230); 14, id. (ib., xxxii. 9):

	B	Ca	Na	K	H	NaCl
1. Iquique	[49.5]	15.9	8.8	—	25.8	—=100 Ulex.
2. "	[48.46]	14.32	8.22	0.51	27.22	2.65, S 1.10, sand 0.82=100 Dick.