

A  
SYSTEM  
OF  
MINERALOGY.

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DESCRIPTIVE MINERALOGY,

COMPRISING THE  
MOST RECENT DISCOVERIES.

BY

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

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**735. TESCHEMACHERITE.** Bicarbonate of Ammonia *E. F. Teschemacher*, Phil. Mag., xviii. 548, 1846. Teschemacherite *Dana*.

In crystals having two brilliant cleavages meeting at  $112^\circ$ .  $G.=1.45$ .  $H.=1.5$ . Yellowish to white.

**Comp.**— $(\frac{1}{2} N H^4 O + \frac{1}{4} H O) \bar{C}$  = Ammonia 32.9, carbonic acid 55.7, water 11.4 = 100. Analysis: Phipson (*J. Ch. Soc.*, II. i. 74):

$\bar{C}$     $NH_4O$     $H$     $Ca$

Chincha Islands 51.58   29.76   11.00   6.02,  $P$  0.60,  $Mg$ ,  $S$ ,  $Cl$  *tr.*, alk. and uric acid 1.09 = 100 Phipson.

The material analyzed by Phipson was white, compact, crystalline, and fragile, and had a strong odor of ammonia, from which he infers the presence either of free ammonia or of sesquicarbonate.

**Pyrr., etc.**—In the closed tube for the most part volatilized, giving the odor of ammonia, a white sublimate of carbonate of ammonia, while an abundance of water condenses on the tube. Soluble in water, and heated with a fixed alkali gives a strong odor of ammonia. Effervesces with acids. Reacts alkaline to test paper.

**Obs.**—From guano deposits on the coast of Africa and Patagonia, and the Chincha Islands. Forms a bed several inches thick in the lowest parts of the guano deposits of Patagonia, as announced by Teschemacher; and similarly at the Chincha Islands, according to Phipson.

*Bicarbonate of potash* has been announced by Pisani (*C. R.*, lx. 918, 1865) as found under a dead tree at Chypis in Valais, as a result of recent decomposition, and has been called by him Kalicine; he regarding it as a mineral as much as struvite. (Struvite has better claims, however, as it occurs in guano deposits, some of which date from the Post-tertiary at least.) He obtained for its composition Carbonic acid 42.20, potash 42.60, water 7.76,  $Ca \bar{C}$  2.50,  $Mg \bar{C}$  1.34, sand, etc. 8.60 = 100.

**736. NATRON.** *Νιτρον*, Nitrum, of the Ancients. Carbonate of Soda. Soude carbonatée.

Monoclinic:  $C=58^\circ 52'$ ,  $I \wedge I=76^\circ 28'$ ,  $O \wedge I-\bar{2}=140^\circ 9\frac{1}{2}'$ . Cleavage:  $O$  distinct;  $i-\bar{2}$  imperfect;  $I$  in traces.

$H.=1-1.5$ .  $G.=1.423$ . Vitreous to earthy. White, sometimes gray or yellow, owing to impurities. Taste alkaline.

**Comp.**— $\bar{Na} \bar{C} + 10 H$  = Carbonic acid 26.7, soda 18.8, water 54.5. Effervesces strongly with nitric acid.

**Obs.**—Occurs in nature only in solution, or mixed with the other carbonates of soda. See under *Trona* and *Thermonatrite*.

**737. THERMONATRITE.** *Νιτρον* and Nitrum *pt. Vet.* Natron, Alkali orientale impurum, terrestre, Jordblandadt Alkaliskt-salt, *Wall, Mfn.*, 174, 1747. Naturliches mineralisches Alkali *Wern.*; Thermonatrit *Haid.*, *Handb.*, 487, 1845. Thermonitrit *Hausm.*, *Handb.*, 1411, 1847. Soude carbonatée prismatique.

Orthorhombic. Observed planes:  $I$ ,  $i-\bar{2}$ ,  $i-\bar{1}$ ,  $1-\bar{1}$ ,  $\frac{1}{2}$ .  $I \wedge i-\bar{2}=138^\circ 5'$ ,  $i-\bar{2} \wedge i-\bar{1}$ , front,  $=58^\circ 14'$ , lat.,  $=121^\circ 46'$ ,  $1-\bar{1} \wedge 1-\bar{2}$ , top,  $=107^\circ 50'$ ,  $i-\bar{1} \wedge 1-\bar{2}=126^\circ 5'$ ,  $i-\bar{2} \wedge \frac{1}{2}=109^\circ 6'$ ,  $I \wedge \frac{1}{2}=116^\circ 5'$ ,  $I \wedge I=96^\circ 10'$ . In rectangular tables flattened parallel to  $i-\bar{2}$ , with sides bevelled by  $I$  and  $1-\bar{1}$ . Usual as an efflorescence.

$H.=1-1.5$ .  $G.=1.5-1.6$ . Lustre vitreous. White, grayish, yellowish.

**Comp.**— $\bar{Na} \bar{C} + H$  = Carbonic acid 35.5, soda 50.0, water 14.5 = 100. Analyses: 1, 2, *Beudant* (*Tr.*, ii. 310); 3, *Pfeiffer* (*Ann. Ch. Pharm.*, lxxxix. 219):