

Reviews and Notices.

Axinite from Bethlehem, Northampton County, Pennsylvania.

By B. W. FRAZIER. (*Am. Journ. of Science*, December, 1882.)

THE author in this paper shows that a close relationship exists between the crystallographic characters of axinite and those of dattholite. The axial lengths closely correspond, and a comparison of angles between similar planes shows a remarkable agreement. These two species are found, moreover, to correspond in habit as well as in angles. Both minerals are silicates of lime and contain boracic acid, and it is very probable that the morphological resemblance is consequent upon a resemblance in chemical composition.

T. J. G.

Silver Amalgam from the Sala Mines.

(T. NORDSTRÖM, *Jahrb. f. Min.* 1882, 2 *Ref.*, 361-362.)

THIS mineral was found at Sala, in dolomite with quartz and blende. With this exception amalgam has never been found in Sweden.

Composition—

Ag.	Hg.	Fe.	Zu.	Pb.	CaCO ₃ .	Insol. gaugue.
46.80	51.12		~~~~~		0.21	1.01
		0.81	trace			
Total						
99.45.						

T. J. G.

Alaskaite, a New Bismuth Mineral.

(By G. A. KÖNIG, *Jahrb. f. Min.*, 1888, 1 *Ref.*, 25-26.)

THIS mineral was found with tetrahedrite and copper pyrites in Colorado. Colour lead-grey to white; lustre metallic. S.G. = 6.878.

Decrepitates on being heated, and melts without the formation of a sublimate. Decomposes in hot hydrochloric acid, leaving a residue of silver chloride with copper pyrites and barytes.

Composition—

	Sb.	Bi.	Rb.	Ag.	Cu.	Zu.	S.
1	—	51.49	12.02	8.08	8.00	0.26	15.72
2	0.51	46.87	9.70	7.10	2.85	0.64	15.07
3	—	51.85	17.51	8.00	8.74	0.20	16.21

T. J. G.

Analysis of Fergusonite from Burke County, N.C.
(By Prof. MALLET, *Am. Journ. Science*, Nov. 1882.)

THIS mineral was found to exist quite abundantly in placers of the Brindletown gold district. The occurring form is a very acute octahedron, with basal and hemihedral planes. Colour, brown-black, and crystals mostly covered with a gray crust, the faces hardly smooth. S.G. = 5.87. (Smith.)

	Mallet.		Smith.
Nb ₂ O ₅	48.78	... ..	48.12
Ta ₂ O ₅	4.08		
SnO ₂ + WO ₃ ... ..	.76		
Y ₂ O ₃ &c.	87.21	... ..	40.20
Ce ₂ O ₃ ... ..	.66		
Di ₂ O ₃ + La ₂ O ₃	3.49		
U ₂ O ₃	5.81	... ..	5.81
FeO	1.81	... ..	2.75
CaO ... ..	.65		
H ₂ O	1.62	... ..	1.50
	99.87		98.38

The Burke county Fergusonite is thought to be identical with Shepard's Rutherfordite, described from the same locality many years ago on a very small amount of material.

Notes on the Geology of Hong Kong.
(F. W. EASTLAKE, *Nature*, Vol. XXVII., 177.)

IN 1848, Dr. Abel determined the main structure of the island to be of basaltic trap, granite, siliceous and schistose rock. Mr. Kingsmill, in 1865, in his papers on the Geology of the Kwangtung Province, was the first to notice the trachytic porphyry of Victoria Peak (1823), the summit of which overlooks the town. This trachytic rock has been apparently forced upwards through the granite after the overflowing and partial hardening of the trap on the west side of the island. It was Mr. Kingsmill also who explained the nature and formation of the pseudo-boulders, with which the island is so plentifully covered. Towards the extreme south-east, near Cape d'Aguilar, these pseudo-boulders assume very large dimensions, and their weather-beaten aspect proves that the chemical action of the water and plants, which forced them from the parent rock, occurred a long time ago. Indeed the island must have undergone great changes in course of time; the hills beyond Shekko, for instance, must

have been originally nearly or quite as high as Victoria Peak, whereas its present elevation is not more than 500 feet. The rapid action of the heavy rains and rich vegetation is nowhere more apparent than in the high hill (directly back of the peak from which the colony takes its name) known as the Hog's Back or High West. Its eastern slope is literally covered with pseudo-boulders, rendering the ascent from that side not a little dangerous, and in the rainy season large masses of rock are borne down into the valley beneath. Now that the population has increased, amateur geologists and mineralogists have found silver in small quantities, also galena, lead, and iron pyrites; slate near Aberdeen, syenite and dolerite on a cliff overlooking the one-time piratical rendezvous, Saiwan, feldspar and grey mica abundant.

One of the most interesting finds is that of Molybdenite, near the village of Saw-ki-van. Molybdenite was not known hitherto to be among the mineral products of China. Germany, Sweden, and Cornwall are the chief localities for this rare mineral, and it has been found in several parts of the United States. The South China specimens show all the well-known characteristics of European molybdenite—colour lead-grey, streak the same; thin foliated hexagonal plates, closely resembling graphite; flexible, non-elastic laminae $H = 1.2$, $G = 4.5$. A local chemist corroborated the determination by analysis, and found the composition to be—

Sulphur	...	...	=	40.0
Molybdenum	...	...	=	60.0
				—
Molybdenum Sulphide				100.0

The mineral was found in small lumps embedded in the granite.

T. J. G.

Two new Aluminous Mineral Species, Evigtokite and Liskeardite.

(W. FLIGHT, *Journ. Chem. Soc.*, March 1888.)

EVIGTOKITE.—This mineral, described as “fluoride of aluminium,” and obtained from the cryolite bed of Greenland; it came with eudialyte, Arfvedsonite, columbite, black cryolite, Fergusonite, sapphire, garnet, Allanite, &c., all from that locality. The whole mass consists of the same mineral, unaccompanied by any associated minerals; it is made up of congeries of minute white transparent crystals, mostly broken up, and lying entangled amongst each other, which gives the mass an appearance of opacity much resembling that of kaolin or chalk. The hardness is very low.

Heated in a glass tube gives off water, and then hydrofluoric acid, with a strong acid reaction; the mineral does not melt. It was pounded, and dried over sulphuric acid, and was found to have the following composition, when the loss in weight is taken to be water :—

	Equivalents.
Aluminium... 16.23 ; with fluorine... 88.64 = 49.87..	0.59
Calcium ... 22.39 ,, ,, ... 21.27 = 48.66..	1.12
Sodium ... 0.48 ,, ,, ... 0.88 = 0.76	
	94.29..
Water	5.71
	100.00

These numbers, it will be seen, correspond closely with the formula—
 $Al_2 F_8, 2 Ca F_2 + 2H_2O.$

The question suggests itself, may this body have been produced by the action of water containing lime sulphate on cryolite ?

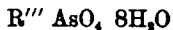
The author observes that no mineral described in Dana, or in the recent Paper of Josef Brandt (Annalen, Band 218) on the composition of minerals of the cryolite groups, corresponds with this mineral in composition; therefore the author proposes to give to it the name *Evigtokite*.

LISKEARDITE.—A white crystalline mineral with a slight tint of blue or greenish-blue; it occurs as a layer, sometimes a quarter of an inch thick, generally of a uniform fibrous structure, lining hollows or encasing quartz and other minerals. Found associated with earthy chlorite and quartz, iron pyrites, some copper pyrites and mispickel being disseminated in the lode material. Scorodite, in boss-like aggregations, also occurs with it; and at least in one instance the interior of the bosses of scorodite is filled with the mineral in question.

Analysis gave—

Ferric Oxide	7.640	
Alumina	28.229	
Arsenic Oxide	26.962	
Sulphuric Oxide	1.111	
Copper Oxide	1.027	
Lime	0.719	
Water at ordinary temp....	4.851	
,, 100°	10.972	(six equivalents)
,, 120°	5.551	(three ,,)
,, 140°—190°	8.220	} 34.053
,, with Lead Oxide ...	4.969		(seven ,, )

These numbers corresponds with the formula—



When R represents aluminium, with a notable quantity of iron. The tint of the mineral seems to be due to the presence of about 1 per cent. of copper oxide; and a small amount of a sulphate is also present. The presence of the sulphate and the general character of the composition would lead one to place it with pitticite, or "eisensinter," but the formula is so nearly that of an arsenical, instead of a phosphatic Evansite, that the true place of the mineral seems to be near the Evansite of the late Dr. Forbes. The author has determined the amount of water which left the mineral at several temperatures with great care.

It lost in a vacuum, over sulphuric acid, at ordinary temperatures, 4.722 per cent. or four atoms of water.

It lost, at 100°, altogether 11.266 per cent., which is about eight atoms of water.

It lost, between 100° and 120°, altogether 4.892 per cent., or four atoms of water.

It lost, between 120° and 144°, altogether 3.435 per cent., or three atoms of water.

It lost, between 145° and 160°, altogether 2.448 per cent., or two atoms of water.

It lost, between 160° and 190°, altogether 2.851 per cent., or two atoms of water.

The mineral was then heated with an excess of pure lead oxide in a current of dry air, and the water collected in a calcium chloride tube. The number obtained was a further loss of 4.896 per cent., or four more atoms of water.

THE SO-CALLED ERSBYITE FROM PARGAS. (By F. J. WÜX, *Jahrb. f. Min.*, 1888, 1 *Ref.*, 189; *Journ. Chem. Soc.*, May 1889.)—The author contradicts his former statements with regard to ersbyite (*Naumann's Mineralogie*, 1881, p. 672), and he now, after exhaustive investigation, determines the genuine ersbyite to be microcline.

Composition:—

SiO ₂ .	Al ₂ O.	CaO.	K ₂ O.	NaO.
66.18	19.52	0.36	13.03	0.91 = 100

S. G. = 2.57.

The colourless felspar formerly mistaken for ersbyite is a variety of andesine, the analytical results being as follows:—

SiO_2 .	Al_2O_3 .	CaO .	NaO .	Loss in Ignition.
59.59	26.44	6.28	7.12	0.61 = 99.99
S. G. = 2.67.				(T. J. G.)

ANALYSIS OF EMERALD FROM PAAVO IN FINLAND. (By F. J. WÜK, *Jahrb. f. Min.*, 1888, 1 Ref. 189.)—This specimen was surrounded by a zone of radiated red albite, this again by a thin layer of muscovite.

	SiO_2 .	Al_2O_3 .	H_2O .
I.	66.87	19.29	14.0 = 99.67
II.	66.10	18.59	14.18 = 99.87 (T. J. G.)

ANALYSIS OF THE DIORITES OF MONTREAL. (B. J. HARRINGTON, *Jahrb. f. Min.*, 1888, 1 Ref. 247-248.)

SiO_2 .	AlO_3 .	FeO_3 .	MnO .	TiO_2 .	CaO .
40.95	16.45	18.47	0.88	8.89	10.58
MgO .	K_2O .	Na_2O .	P_2O_5 .	Loss on Ignition.	
6.10	1.28	4.00	0.29	8.84 = 100.68	(T.J.G.)