Reviews and Notices.

MONETITE AND MONITE FROM THE ISLANDS MONETA AND MONA, W. I. (By C. A. SHEPARD, *Am. Journ. of Science*, May, 1882.)—*I. Monetite.*—The mineral from Moneta, which the author names monetite, occurs in a guano-formation, lining the walls of cavities, sometimes in isolated patches, half the size of one's hand. More rarely occurring in botryoidal shapes, with rough crystalline surfaces. Colour, pale yellowish-white. H = 3·5, S.G = 2·75, which is a little below the actual, from the impossibility of clearing the crystals of the nearly white monite and gypsite, by which they are coated.

Primary form, right oblique angled prisms M on T about 143°. Secondary forms, terminal and acute lateral edges, replaced by single planes, the former generally very narrow. The surfaces of the crystals are without striæ or curvatures. The cleavage indeterminate. Fracture, uneven. Lustre, vitreous. Semi-transparent.

In a glass tube before the blowpipe turns white, and evolves a mixture. In the platinum forceps turns white, and melts into a globule with crystalline facets.

Composition :—

	I.	II.	mean.
Lime	39·92	40·59	40·255
Phosphoric acid	44·41	49·79	47·100
Sulphuric acid	7·20	1·90	4·550
Water	8·47	7·88	8·175
	100·00	100·16	100·088

2.—*Monite.*—Found intimately associated with monetite, is a hydrated tricalcic phosphate, resembling in colour and density the more friable varieties of kaolinite.

Characters: massive, slightly coherent, impalpable, and wholly uncrystalline; colour: snow-white, fracture earthy, dull; hardness below 2, S.G = 2·1 (approximately). B.B. melts with difficulty to an opaque, white enamel of feeble lustre. In closed tube emits much moisture.

Analyses :—

				mean.
P_2O_5	40·39	39·44	39·75	39·86
CaO	50·04	50·89	49·51	50·15
SO_3	—	2·57	1·75	2·16
H_2O	—	—	7·56	7·56
				99·73
Deducting 2·16 SO_3 = 1·51 CaO = 0·97 H_2O = gypsite ..				4·64
				95·09

The monetite is the most abundant species, occupying areas several inches long. The interspaces between the crystals occupy as much room as the crystals themselves; and are more or less filled up with the monite.

The associated gypsite is white, in small shining crystals, coarse fibrous individuals, small globules, fine granular and pulverulent.

The presence of silica, or some insoluble silicates, is detected in the analyses of the aggregates only, where it varies from 0·5 to 2· per cent.

Note on Crystals of Monetite.—The crystals of monetite placed in my hands may, with tolerable certainty, be referred to the triclinic system. The general form is that of a rather thin rhomboid. The longer lateral edge is replaced by the plane 100 (*a*), and the shorter by the hemi-prism, $1\bar{1}0$ (I); there are also present in this zone the brachy pinacoid 010 (*b*), and two other hemi-prisms $h\bar{k}o$ (m and n) between 100 and $1\bar{1}0$, and a third hko (*l*), on the other side of 100. The top of the tabular crystals is formed by the basal plane 001 (*c*) which is rough and uneven, and the edge behind, between *a* and *c*, is replaced by a dome $\bar{1}01$ (*e*). The angles measured with the reflecting goniometer are, only roughly approximate, and would not justify an attempt to calculate the axial ratios and inclinations. The supplement angles are: a I $(100\text{-}1\bar{1}0)=42°$, *ab* $(100\ 010)=81°$, $am=17°$, $a\,n=21°$, $a\,l=18°$, $a\,c=76°$, $a\,e\ (100\ \bar{1}01)=138°$. There appears to be a distinct cleavage parallel to *a*. The crystals often interpenetrate each other, forming complex groups, but there is no uniform law of composition.—E. S. DANA.

T.J.G.

PHILADELPHITE—A NEW MINERAL.—(H. C. LEWIS, *Jahrb. f. Min.* 1881. 2 Ref. 339; *Journ. Chim. Soc.*, Feb. 1882).—Pearly lustre; brown or yellow colour; the thin lamellæ are flexible; monosymmetrical. Cleavage basal; also in two directions parallel and perpendicular to the plane of the optical axes. On heating increases in volume tenfold. Comp:—

SiO_2.	TiO_2.	Al_2O_3.	Fe_2O_3.	V_2O_3.	FeO.	MnO.
35·73	1·03	15·77	19·46	0·37	2·18	0·50
NiO,CaO.	CaO.	MgO.	CuO.	Na_2O.	Li_2O.	K_2O.
0·06	0·08	11·56	1·46	0·90	Trace	6·18
P_2O_5.	Cl.	H_2SO_4.	H_2O.			
0·11	Trace	Trace	4·34			

Formula $R^{II}_4\ R^{VI}_2\ Si_5\ O_{20}\ 2\ H_2O$.

T.J.G.

CYPRUSITE.—(P. F. REINSCH, *Proc. Roy. Soc.*, XXXIII., 119, 1881.)—A supposed new mineral, composed chiefly of ferric sulphate, from the island of Cyprus.

Colour, yellowish. H=2. G=1·7. Partially soluble in water, soluble in boiling H.Cl., leaving a siliceous residue. This mineral contains a large percentage of well-preserved shells of microscopic Radiolaria.

Approximate analysis :—

Ferric oxide with alumina	51·5
Sulphuric acid	21·5
Residue insoluble in HCl (silicate, &c.) ..	25·0
Water	2·

T.J.G.

COSSYRITE.—H. FORSTNER, *Jahrb. f. Min.*, 1881, 2 Ref. 332—334; *Chem. Soc. Journ.*, February, 1882.)—A new mineral from Lipartite Lavas, of the island Pantellaria. The crystals are generally twins, 1·5 m.m. long; colour black, with vitreous lustre on the prismatic faces, the others dull. Cleavage parallel to 2 prismatic faces, which make an angle of 114°9′. Crystalline system, symmetrical with the axial relations, a : b : c = 0·6469 : 1 : 0·6635.

Composition :—

SiO_2.	Fe_2O_3.	Al_2O_3.	FeO.	MnO.	CuO.	CaO.	MgO.	Na_2O.
43·55	7·97	4·96	32·87	1·98	0·39	2·01	0·86	5·29

K_2O 0·33 =100·21.

S.Gr. = 3·74—3·75. T.J.G.

ANALYSIS OF THORITE FROM HITTERÖ, (G. LINDSTRÖM, *Jahrb. f. Min.*, 1881, 1 Ref. 29; *Chem. Soc. Journ.*, March, 1882.

Silica	17·47	Manganous oxide	0·43
Phosphoric oxide ..	0·93	Alumina	0·12
Lead oxide	1·26	Lime	1·39
Thorium	48·66	Magnesia	0·05
Yttrium earth	1·58	Lime	0·18
Cerium	1·54	Soda	0·12
Ferric Oxide	6·59	Loss by ignition	10·88
Uranous oxide	9·00		100·20

This agrees with the analysis by Nordenskjöld of the thorite from Arendal.

BERGERITE.—(KONIG, G. A., *Am. Chem. Journ.*, ii., 379, 1881).—A new mineral, found in small crystals associated with quartz, on the Baltic lode of the Geneva Mining Company, at Grant Port office, Park Co., Colorado.

The crystals are regular combinations of the cube and octohedron, elongated in the direction of an octohedral edge. Very distinct cleavage. S. Gr. = 7·273. Colour light to dark grey. Lustre brilliant metallic. Heated in a matrass, it decrepitates and melts at a read heat without subliming, in the open tube gives off sulphur dioxide, and at a strong heat traces of a white sublimate (antimony). On charcoal gives the reactions for lead and bismuth. The residue gives, with borax, a slight copper reaction. Dissolves in warm HCl.

S.	Bi.	Pb.	Cu.	
14·97	20·59	64·23	1·70	= 101·49.

ANNERÖDITE.—W. C. BRÖGGER, *Geol. För. Förh.*, v., 345, 1881.)—A new mineral found in the pegmatite vein at Anneröd, near Moss, Norway, associated with monazite, apatite, beryl, topaz, magnetite, &c. Colour black, streak blackish-brown or greenish-grey, opaque, except in very thin splinters. Fracture sub-conchoidal, H = 6. S.Gr. = 5·7. Found crystallized in groups of parallel fibres or radiated. Fuses on the edge with difficulty to a black glass.

Niobic oxide	48·13	Ferrous oxide	3·38
Stannic oxide	0·16	Manganous oxide	0·20
Silica	2·51	Lime	3·35
Zirconia	1·97	Magnesia	0·15
Uranous oxide	16·28	Potash	0·16
Thorina	2·37	Soda	0·32
Cerium oxides	2·56	Alumina	0·28
Yttrium	7·10	Water	8·19
Lead oxide	2·40		99·51

Orthorhombic axes—$\dot{c} : \bar{b} : \breve{a} = 0{\cdot}36103 : 1 : 0{\cdot}40369$.

SCHNEEBERGITE, A NEW MINERAL.—(A. BREZINA, *Jahrb. f. Min.*, 1881. *Ref.* 321—332; *Journ. Chem. Soc.*, Feb. 1882.)—Occurring in gypsum and anhydrite; locality Schneeberg in Tyrol. Found crystallized in transparent honey-yellow octahedrons, imbedded, with glassy to adamantine lustre. H = 6·5; S. Gr. = 4·1. Decompose with great difficulty by fused sodium potassium carbonate, was found by qualitative analysis to consist essentially of antimony, lime and iron, with traces of copper, bismuth, zinc, magnesium, and sulphuric acid. The crystals when containing enclosures of magnetic iron exhibit in polarised light a black cross, which is sometimes surrounded by concentric rings.

DIOPTASE from Arizona. (*Am. Journ. Science, April*, 1882.)—Brilliant crystals of this mineral have been recently found lining cavities in what is called locally the "mahogany ore," a dark-brown compact mixture, consisting principally of limonite and oxide of copper in varying proportions, occurring at the Bon Ton group of mines, near the head of Chase Creek, about nine miles from Clifton Arizona.

SMALTITE from Colorado, (By M. N. ILES. *Am. Journ. Science, May*, 1882.) A sample from the surface croppings, recently discovered near Gothic, Gunnison County, Colorado, yielded :—

CO	11·59
Fe	11·99
As	63·82
SiO_2	2·60
Pb	2·05
S	1·55
Bi	1·13
Cu	0.16
Ni	Trace
Ag	,,
	(94·89 ?)

A purer sample yielded 15 per cent. cobalt.

T.J.G.

ON THE BERYL FROM CRAVEGGIA, PIEDMONT, (By Prof. G. SPEZIA. *Atti della R. Accademia delle Scienze di Torino*, Vol. XVII, 1882.) The beryls occur with tourmalines and manganese garnets in loose blocks of gneiss near Craveggia in the Val Vigezzo. Prof. Spezia gives an analysis of the mineral, which contains 11·49 per cent. of glucina. C. L. N. F.

GEOLOGICAL and MINERALOGICAL NOTES on the GNEISS of BEURA, (By Prof. G. Spezia. *Atti della R. Accademia delle Scienze di Torino*, Vol. XVII, 1882.) The quarries near Beura in the Ossola Valley, which have been worked for many centuries, furnish slabs of gneiss for making balconies, steps, and pavements, and as they are situated the banks of the river Toce, the stone can be put upon barges at once and sent by water to Milan.

The Beura gneiss is so fissile, that slabs may easily be obtained 20ft. long by 5ft. or more wide. At the Durodossola Museum there is a slab 9ft. long by 10ins. wide, of a uniform thickness of only $\frac{1}{6}$ inch.

There are two principal varieties of the rock, one contains a considerable quantity of schorl, and may best be described as a tourmaliniferous gneiss; the other is dislinguished by the felspar appearing in the form of nodules when seen in a section at right angles to the plane of stratification. Prof. Spezia gives a long list of minerals which occur either in cavities or joints in the gneiss or disseminated through it, and he points out many interesting details concerning them. The memoir is a valuable contribution to the geology of the Ossala Valley, and affords ample proof that the author is a worthy successor of the late Prof. Gastaldi. C. L. N. F.