Reviews and Notices.

SPHÆROSIDERITE.—(T. Von. Schroeckinger, *Imp. Geol. Instit., Vienna, April* 17, 1877.)

FOUR specimens (*a*, *b*, *c*,) from Felsöbanya, and (*d*) from Kapnik gave the following results, viz:—

	a	*b*	*c*	*d*
Carbonate of Iron	53·07	46·64	62·12	56·84
,, Manganese	44·36	38·07	27·76	39·84
,, Lime	1·15	9·96	7·05	1·29
Water	·76	4·52	2·52	0·67
Alumina	traces	..	traces	..
Silica	traces	..	traces	..
	99·34	99·19	99·45	98·64

The chemical formula is 5 Fe CO_3 + Mn CO_3.

The proportion of manganese thus exceeds, notably, that of Prof. Breithaupt's "oligone spar." The variety *b* appears in very small sphærules (not above one millimeter in diameter), whitish, diaphanous, of concentric texture, densely accumulated on and between distinctly crystallized acicular sulphuret of antimony. The sphærules of variety *c* are rather yellowish brown, are associated with sulphate of baryta, crystallized in the common form ∞ P ∞. Variety *d* appears in botryoidal stalactitic forms, with distinct, partially concentric, grey and yellowish layers, somewhat resembling agate.

T.R.J.

LAZULITE.—(G. Gamper, *Imp. Geol. Instit., Vienna, April 17th*, 1877). This mineral, first made known by Widteman (1791), occurs in the Fresnik Ravine near Koieglach, (Upper Styria), both in blocks of quartzite, and as a vein, several inches broad, and

striking N.E. to S.W. through a bed of quartzite, subordinate to clay-slate, which passes locally into talcose slate. The matrix of the lazulite is a greyish white quartz, full of small plates of mica, and soft reddish-brown fragments of slate; the lazulite vein following the line of contact between the slate and quartz. Decomposed portions of lazulite are locally dark-blue, of corroded cellular texture, with cubical impressions, and minute crystals of pyrites, the latter are octohedro-cubical combinations, with the octohedron predominating, or of the cube with the pyritohedron (pentagonal dodecahedron). A rather large and perfect crystal of lazulite shows distinctly the surfaces.—2P.

T.R.J.

A NEW SULPHATE OF MANGANESE.—(T. Von Schroeckinger, *Imp. Geol. Instit., Vienna, April 17th,* 1877.) This sulphate, for which the name "szmikite," in honour of Mr. Szmik, Counsellor of Mines, is proposed, occurs at Felsöbanya (Transylvania), in an amorphous stalactitic form, with botryoidal surface and splintery earthy fracture. The colour of the nodules is whitish; the fracture is reddish-white, passing into a delicate rosy tint in the inner botryoidal portions. This mineral scratches talc and is scratched by gypsum (hardness equals 1·5 of Mohs' scale), average density = 3·15

A comparative analysis gave as result.

	a	*b*
Sulphuric Acid	47·43	47·11
Oxide of Manganese	41·78	41·61
Water	10·92	11·19
	100·13	99·91

This corresponds with the chemical formula $Mn\,SO_4 + H_2O$.

Small fragments, of 1 to 2 centimeters, left for some days in a damp place, get a slight increase in weight; and the rosy tint on the recent surfaces of fracture becomes somewhat more intense The artificial crystals obtained from a solution are very indistinct and triclinal, and lose, when roasted, about 3 per cent. of water. The mine in which szmikite occurred, in rather notable quantities, has been abandoned for many years.

T.R.J.

Zeitschrift für Krystallographie, &c., Fünftes Heft.

THOUGH quantitatively less than in the preceding numbers, the mineralogical matter in the present one is none the less valuable, being represented by two able chemico-mineralogical papers.

In the first, on aphtonite and tedrahedrite, from Gärdsjön, in Wermland, by L. F. Nilson, the author, after referring to the rarity of the sulphantimonites, arsenites, and bismuthites, in Sweden, discusses the constitution of aphtonite. Svanberg gave to it the formula

$$7\,RS,\ Sb_2S_3$$

in which the Cu appeared as CuS, while in other sulphides the generally accepted state is Cu_2S. But the analysis of Svanberg agrees, as the author shows, very exactly with a formula corresponding with that of tetrahedrite, with the exception that the antimony appears as pentasulphide thus:

$$4\,RS,\ Sb_2S_5$$

or more defined

$$2\,(4Cu_2S,\ Sb_2S_5) + \left.\begin{matrix}3\ Zn\ S\\ Fe\ S\end{matrix}\right\} Sb_2S_5$$

The five careful analyses of the author lead him, however, to a different result, he finds that the mineral in question is a true tetrahedrite, corresponding to the formula,

$$2\,(4\,R_2S,\ Sb_2S_3) + 4\,RS,\ Sb_2S_3$$

differing from Svanberg's therefore, only in the quantity of sulphur.

$$R{=}Cu,\ Ag,\ Zn,\ Fe;\ G{=}4{\cdot}89.$$

The second paper: On the occurrence of astrophyllite, arfvedsonite, and zircon, in El Paso Co., Colorado, has been published, contemporaneously, in the Proc. Acad. Nat. Soc., Philadelphia, 1877, p. 9.

These minerals occur, and are associated, in what appears to be a syenite, in a very similar manner as at Brevig, in Norway.

The analysis shows the astrophyllite to be chemically equivalent with that of Brevig, whilst the optical properties, as described in a supplement by Dr. Bücking, are identical in both and prove the mineral to be clinorhombic. The author describes an interesting colorimetric method of estimating, by means of blowpipe beads, the relative quantities of titanic acid and zirconia (or alumina) in a mixture of the two. 2 milligrams of the mixture to be analysed are dissolved in a bead of microcosmic salt weighing 0·065 grams., and treated in the reducing flame. The colour of this bead is compared with a series of 10 beads of the same weight, enclosed in a sealed tube, each of which contains 2 milligrams of a mixture of TiO_2 and ZrO_2 (or Al_2O_3) in proportions varying by 10 per cent.; by the aid of further intermediate beads, the relative proportions of the two substances can be determined to within $2\frac{1}{2}$ per cent., a result far more accurate than any obtainable by wet methods.

The arfvedsonite shows a somewhat unusual composition, whilst the zircon is remarkable for the rare basal plane, each crystal showing the combination, 111· 110· 001·

Among the correspondence, &c., we find a note by A. v. Lasaulx, on iodobromite from Dernbach, in Nassau. This mineral occurs in small yellow regular octahedrons of the composition, 2 Ag (Cl, Br) + AgI; and abstracts, among others, of the following memoirs:—T. Sterry Hunt, venerite, a new copper ore, it probably belongs to the chlorites; V. Fernandez and S. Navia, silaonite, a new mineral, composition, Bi_3Se; P. Groth, pseudophite, from Markirch in the Vosges. This mineral is a compact variety of penninite. J. Bachmann, on a new mineral locality in Valais: In the Lötschenthal, in the zone of the green slates, are found quartz, calcite, chlorite, orthoclase, desmine, stilbite, and axinite. A. Streng, on chabasite: An elaborate memoir on the chemical, crystallographical, and optical properties of this mineral, and the varieties phakolite, seebachite, herschelite, gmelinite, and levynite, which, according to the author, can no longer be regarded as separate species. He further shows that the supposed skalenohedron $^{13}/_{16}$ R $^{5}/_{4}$ of Phillips and Haidinger is no true crystallographic form, and that the pinnate striations are not due to repeated twinning, but that both appearances are produced by the irregular action of the internal forces during

the growth of the penetration twin, thus resulting in the formation of "vicinal" planes; I. v. Schröckinger, sphaerosiderites from Hungary, rich in manganese. They contain up to 44 per cent. of $Mn\ Co^3$; the same szmikite, a new manganese sulphate. Stalactitic, with the composition $Mn\ SO^4 + H^2O$, from Felsöbanya. Lastly, we find two abstracts of papers on barium felspar by different authors, and several on the publications of our Mineralogical Society.

The four plates appended to this number refer solely to O. Lehmann's memoir on the growth of crystals.

C. O. T.

GARNETS (Ed. S. DANA, *Am. Journ. Science*, Sept. 1877). The trap rocks of Newhaven, Conn, have been carefully examined by Mr. G. Hawes (*Am. Journ.*, March, 1875), and recently discovered at two distinct localities situated a few miles apart.

The rock consists of labradorite, pyroxene, and magnetite, with a little chrysolite, apatite, and calcite.

The garnets at East Rock are *melanite*, at Mill Rock, *topazolite*. The following analyses are given—the first by G. Hawes, the second by E. S. Dana. The crystals of topazolite are rare but very highly modified.

	ROCK.	MELANITE.
Silica	51·78	35·09
Alumina	14·20	trace
Ferric Oxide	3·59	29·15
Ferrous Oxide	8·25	2·49
Manganous Oxide ..	0·44	0·36
Lime	10·70	32·80
Magnesia	7·63	0·24
Soda	2·14	
Potash	0·39	
Phosphoric Anhydride	0·14	
Ignition	0·63	0·35
	99·89	100·48
Sp. Gr.	3·03	3·74

J. H. C.

METEORIC STONES.—By J. Lawrence Smith (*Am. Journ. of Science*, Sept. 1877). This is a description of the meteoric stones which fell at Rochester, Indiana, (Dec. 21, 1876), Warrenton, Missouri (Jan. 3, 1877), and Cynthiana, Kentucky (Jan. 23, 1877), with remarks on previous falls in the same region. Full analyses are given, and the author gives the following as the mineral constitution of the stones, partly from the chemical and partly from a microscopic examination.

	ROCHESTER.	WARRINGTON.	CYNTHIANA.
Olivine Minerals	41·00	76·00	50·00
Bronzite and Pyroxene ..	46·00	18·00	30·00
Nickeliferous Iron	10·00	2·00	6·00
Troilite	3·00	3·50	5.50
Chrome Iron	·15	·50	·50

J. H. C.

FELSPARS.—Prof. J. Szabo. On a new method of determining the species of felspars contained in rocks (Budapest, 1876). This method is based upon an accurate determination of the degree of fusibility, and, secondly, upon the degree of flame-colouration observed under certain conditions.

J. H. C.

VENERITE (*Am. Journ. Science*, Sept., 1877), occurs as a greenish earthy scaly mass with magnetite, at Jones' Mine, Springfield, Mass., its composition according to Mr. G. W. Hawes, after deducting insoluble matter, is

Silica	30·73
Alumina	14·67
Ferric Oxide	5·35
Ferrous Oxide	0·29
Oxide of Copper	17·58
Magnesia	18·55
Water	12·83
	100·00

It appears to belong to the chlorite group

J. H. C.

SPHÆROCOBALTITE (Dr. A. Weisbach, *Jarhbuch für das Berg., &c.*, 1877) occurs in spheroidal forms with roselite at Schneeberg, Saxony. The spheroids are coarsely radiated and the surfaces are made up of minute rhombohedral crystals, colour peach red, H=4, G=4·02—4·13. BB in matrass blackens; sol. with eff. in warm HCl. Winkler's analysis gave

Cobaltous Oxide	58·86
Lime	1·80
Ferric Oxide	3·41
Carbonic Anhydride	34·65
Water	1·22
	99·94

This corresponds pretty well to the formula Co CO_3, if the lime and hydrated oxide of iron be regarded as impurities.

J. H. C.

COLORADOITE.—(F. A. Genth, *Am. Journ. of Science*, Nov. 1877). This mineral occurs at several mines in Colorado. H about 3, G about 8·627, iron-black to gray or purplish; lustre metallic, massive, granular or imperfectly columnar. Comp. Hg Te= tellurium 39·02, mercury 60·98=100.

J. H. C.

MAGNOLITE.—*(ibid.)*. Found at the Keystone mine, Colorado, in fine needles or radiating tufts, white silky. Comp. Hg_2TeO_4, produced by the decomposition of coloradorite.

J. H. C.

FERROTELLURITE.—*(ibid.)*. Occurs at the Keystone mine, as a crystalline coating on quartz in very delicate tufts or minute prismatic crystals, yellow to greenish yellow. Comp. probably $FeTeO_4$.

J. H. C.

SIPYLITE.—(J. W. Mallet, *Am. Journ. Science*, Nov. 1877). This occurs in small quantities with the allanite of Amherst County, Virginia, accompanied by magnetite and zircon. A few imperfect crystalline faces indicate a form not far from yttro-tantalite, samars-

kite, and euxenite. The Sipylite is red-brown to brownish black, occasionally even yellow, streak light cinnamon brown to pale grey; lustre resinous and pseudo-metallic; translucent in thin splinters; H=6; G=4·89. B.B. decrepitates, glows brilliantly, becomes pale greenish yellow and opaque, in very hot flame melts; in closed tube the same reactions, and gives off water containing fluorine; with borax OF, a yellow glass, pale on cooling; in RF a green tint; with micro. a yellowish-green glass, partly soluble in boiling H Cl; the solution when diluted and boiled with tin becomes a fine sapphire blue, boiling concentrated H_2SO_4 decomposes it slowly but completely.

Mr. W. G. Brown obtained the following results on analysis.

Nb_2O_5 .. .. *Ta_2O_5	48·66
WO_3	·16
SnO_2	·08
ZrO_2	2·09
Eb_2O_3 .. .. †Y_2O_3	27·94
Ce_2O_3	1·37
‡La_2O_3	3·92
§Di_2O_3	4·06
UO	3·47
MnO	trace.
FeO	2·04
BeO	·62
MgO	·05
CaO	2·61
Li_2O	trace.
Na_2O	·16
K_2O	·06
F	trace.
H_2O	3·19
	100·48

J. H. C.

* About 2 p.c.
† About 1 p.c.
‡ With a trace of Didymium.
§ With a trace of Ce^2O^3.