A

SYSTEM

OF

MINERALOGY.

DESCRIPTIVE MINERALOGY,

COMPRISING THE

MOST RECENT DISCOVERIES.

BY

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

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C

	S	Sb	Fe	Zn
4. Bräunsdorf	31·32	54·70	11·43	0·74, Mn 2·54=100·73 Ramm.
5. Arany Idka	29·27	57·88	12·85	——=100 Pettko. G.=4·043.
6. Bräunsdorf	30·53	59·31	10·16	——=100·73 Hauer.
7. "	28·77	56·91	10·55	—— Mn 3·73=99·96 Sackur.
8. S. Antonio, Cal.	29·12	56·61	10·09	—— Mn 3·56=99·38 Ramm.

Anal. 3–8 correspond to the above formula.

No. 1=$3FeS+2Sb^2S^3$=Sulphur 30·5, antimony 51·7, iron 17·8=100.
No. 2=$3FeS+4Sb^2S^3$=Sulphur 29·6, antimony 60·0, iron 10·4=100.

Pyr., etc.—In the closed tube fuses, and gives a faint sublimate of sulphur; with a strong heat yields a black sublimate of sulphid of antimony, which on cooling becomes brownish-red. In the open tube gives off fumes of sulphur and antimony, reacting like stibnite. B.B. on charcoal gives off sulphur and antimony fumes, coats the coal white, and the antimony is expelled, leaving a black magnetic slag, which with the fluxes reacts for iron.

Dissolves readily in muriatic acid, giving out sulphuretted hydrogen.

Obs.—At Chazelles and Martouret in Auvergne, associated with quartz, calcite, and pyrite; in the Vosges, Commune of Lalaye, containing about 32 of Sb to 18 of Fe; at Anglar in La Creuse; also at Bräunsdorf in Saxony, and at Padstow in Cornwall; at Arany Idka in Hungary; at Real San Antonio, Lower California, massive; near Fredericton, N. Brunswick.

Yields antimony, but of inferior quality.

105. SARTORITE. Skleroklas + Arsenomelan *v. Waltershausen*, Pogg., xciv. 115, 1855, c. 537. Skleroklas *v. Rath*, ib., cxxii. 380. Binnit *C. Heusser*, Pogg. xciv. 335, 1855, xcvii. 120. Dufrenoysite, pt., *Duf.*, Tr., pl. 235, f. 66. *Descl.*, Ann. d. M., V. viii. 389, 1855. Arsenomelan *Petersen*, Offenb. Ver., vii. 13, 1866. Sartorite *Dana*.

Orthorhombic. $I \wedge I$=123° 21′, $O \wedge 1\text{-}\bar{i}$=131° 3′; $a:b:c$=1·1483 : 1 : 1·8553. Observed planes: O (broad); in zone $i\text{-}\bar{i}$ (all narrow, the crystals elongated and channelled in this direction) $\frac{1}{8}\text{-}\bar{i}$, $\frac{1}{4}\text{-}\bar{i}$, $\frac{5}{14}\text{-}\bar{i}$, $\frac{5}{11}\text{-}\bar{i}$, ? $\frac{1}{2}\text{-}\bar{i}$, $\frac{3}{5}\text{-}\bar{i}$, $\frac{2}{3}\text{-}\bar{i}$, $\frac{4}{5}\text{-}\bar{i}$, $1\text{-}\bar{i}$, $\frac{5}{4}\text{-}\bar{i}$, $\frac{4}{3}\text{-}\bar{i}$, ? $5\text{-}\bar{i}$, $10\text{-}\bar{i}$, $i\text{-}\bar{i}$; in zone $i\text{-}\breve{i}$, $1\text{-}\breve{i}$, $^4\text{-}\breve{i}$, $\frac{4}{3}\text{-}\breve{i}$, $2\text{-}\breve{i}$, $4\text{-}\breve{i}$, $i\text{-}\breve{i}$; 1 (large planes), v. Rath.

$O \wedge 1$=127° 28½′, calc.
$O \wedge 1$=126 40, meas.
$O \wedge 1\text{-}\bar{i}$=130 15, meas.
$O \wedge 2\text{-}\bar{i}$=128 56.
$1 \wedge 1$, brach.,=91 22
$1 \wedge 1$, macrod.,=135 46
$1 \wedge 1$, bas.,=105 3
$1 \wedge 1\text{-}\breve{i}$=135 41
$1 \wedge 1\text{-}\bar{i}$=157 53

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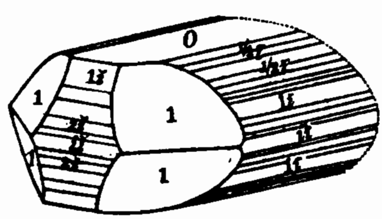

Crystals slender. Cleavage: O quite distinct.

H.=3. G.=5·393. Lustre metallic. Color dark lead-gray; streak reddish-brown. Opaque. Brittle.

Comp.—$PbS+As^2S^3$=Sulphur 26·39, arsenic 30·93, lead 42·68=100. Analyses: 1, Waltershausen (Pogg., xcvii. 124); 2, 3, Stockar-Escher (Kenng. Ueb., 56–57, 176):

	S	As	Pb	Ag	Fe
1. Binnen	25·91	28·56	44·56	0·42	0·45=99·90 Walt.
2.	25·30	26·33	46·83	1·62	——=100·08 S.-E.
3. "	25·77	26·82	47·39	——	——=99·98 S.-E.

Von Waltershausen states that his analysis (No. 1) was made on striated crystals, which proves it to pertain to this species as defined by v. Rath (l. c.). The other two analyses by Stockar-

Escher may have been made on material containing portions of the other prismatic species of locality; yet in the sulphur and arsenic they agree with the other analysis, and diverge but li in the lead.

Pyr., etc.—Nearly the same as for dufrenoysite, but differing in strong decrepitation.

Obs.—From the Binnin valley with dufrenoysite and binnite. As the name Scleroclı is inapplicable, and the mineral was first announced by Sartorius v. Waltershausen, the spec may be appropriately called *Sartorite*.

106. ZINKENITE. Zinkenit *G. Rose*, Pogg., vii. 91, 1826.

Orthorhombic. $I \wedge I = 120° 39'$, Rose; 120° 34′, Kenngott. Usual i twins, as hexagonal prisms, with a low hexagonal pyramid at summit; angl at pyramidal edge=165° 26′; I on face of pyramid=104° 42′. Latera faces longitudinally striated. Sometimes columnar, fibrous, or massive Cleavage not distinct.

H.=3–3·5. G.=5·30–5·35. Lustre metallic. Color and streak steel gray. Opaque. Fracture slightly uneven.

Comp.—$PbS + Sb^2S^3$=Sulphur 22·1, antimony 42·6, lead 35·3=100. Analyses: 1, 2, H. Rose Pogg., viii. 99); 3, Kerl (B. H. Ztg., 1853, No. 2):

1.	Wolfsberg	S 22·58	Sb 44·39	Pb 31·84	Cu 0·42=99·23	Rose.
2.	"	*undet.*	44·11	31·97	*undet.*	Rose.
3.	"	21·22	43·98	30·84	Ag 0·12, Fe 1·45=97·61	K.

Pyr., etc.—Decrepitates and fuses very easily; in the closed tube gives a faint sublimate of sulphur, and sulphid of antimony; in the open tube sulphurous fumes and a white sublimate of oxyd of antimony. B.B. on charcoal is almost entirely volatilized, giving a coating which on the outer edge is white, and near the assay dark yellow; with soda in R.F. yields globules of lead.

Soluble in hot muriatic acid with evolution of sulphuretted hydrogen and separation of chlorid of lead on cooling.

Obs.—Occurs in the antimony mine of Wolfsberg in the Harz; the groups of columnar crystals occur on a massive variety in quartz; the crystals sometimes over half an inch long, and two or three lines broad, frequently extremely thin and forming fibrous masses. Has been reported from St. Trudpert in the Schwarzwald. Named in honor of Mr. Zinken, the director of the Anhalt mines, by G. Rose.

Resembles stibnite and bournonite, but may be distinguished by its superior hardness and specific gravity.

Kenngott makes the crystallization monoclinic, and the pyramidal planes oblique basal planes; but such twins with pyramids so formed are not known among monoclinic species.

107. JORDANITE. Jordanit *v. Rath*, Verh. Nat. Ver. Bonn, March, 1864, Pogg., cxxii. 387, 1864.

Orthorhombic. $I \wedge I = 123° 29'$; $O \wedge 1\text{-}\bar{i} = 128° 27'$; $a : b : c = 1{\cdot}2595 : 1 : 1{\cdot}8604$. Observed planes: O; in zone $i\text{-}\bar{i}$, $\frac{3}{4}\text{-}\bar{i}$, $\frac{9}{8}\text{-}\bar{i}$, $\frac{6}{5}\text{-}\bar{i}$, $\frac{3}{2}\text{-}\bar{i}$, $\frac{12}{7}\text{-}\bar{i}$, $2\text{-}\bar{i}$, $3\text{-}\bar{i}$, $6\text{-}\bar{i}$; in zone 1, $\frac{1}{8}$, $\frac{1}{7}$, $\frac{1}{6}$, $\frac{1}{5}$, $\frac{1}{4}$, $\frac{4}{7}$, 1, $\frac{3}{2}$, I. Planes all narrow, except O; crystals hexagonal in general form.

$O \wedge 2\text{-}\bar{i} = 126° 27'$	$O \wedge \frac{12}{7}\text{-}\bar{i} = 130° 45'$	$O \wedge \frac{3}{2} = 115° 0'$
$O \wedge \frac{3}{2}\text{-}\bar{i} = 134\ 34$	$O \wedge 1\text{-}\bar{i} = 124\ 58$	$O \wedge \frac{1}{2} = 144\ 26\frac{1}{2}$

Twins: composition-face I; forms hexagonal, arragonite-like. Cleavage: $i\text{-}\bar{i}$ distinct. Streak pure black.

Comp.—Undetermined.

Pyr., etc.—Nearly as for sartorite.

Obs.—From the Binnen valley, with sartorite (q. v.). Approaches closely sartorite in its planes and angles, but differs in occurring in twin crystals, and in its black streak.

Named after Dr. Jordan of Saarbruck, who furnished vom Rath with his specimens.

108. MIARGYRITE. Hemiprismatische Rubin-Blende (fr. Bräunsdorf) *Mohs*, Grundr., 606, 1824. Miargyrit *H. Rose*, Pogg., xv. 469, 1829. Hypargyrite, Hypargyron-Blende (fr. Clausthal), *Breith.*, Char., 286, 333, 1832. Kenngottite (fr. Felsobanya) *Haid.*, Ber. Ak. Wien, xxii. 236 1856.

Monoclinic. $C = 48° 14'$, $I \wedge I = 106° 31'$, $O \wedge 1\text{-}\grave{i} = 136° 8'$; $a : b : c = 1{\cdot}2883 : 1 : 0{\cdot}9991$, Naumann. Observed planes: O; vertical, I, $i\text{-}\grave{i}$, $i\text{-}\grave{i}$, $i\text{-}2$,