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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114. **FREIESLEBENITE.** Mine d'antimoine grise tenant argent (fr. Himmelsfürst) *de Lisle*, Descr. de Min., 35, 1773, Crist., iii. 54, 1783. Dunkles Weissgultigerz (id. loc., known since 1720) *Klapr.*, Beitr., i. 173, 1795. Schilf-Glaserz *Freiesleben*, Geogn. Arb., vi. 97, 1817. Antimonial Sulphuret of Silver, Sulphuret of Silver and Antimony. Argent sulfuré antimonifère et cuprifère *Levy*, Descr. Min. Heuland, 1838. Donacargyrite *Chapm.*, Min., 128, 1843. Freieslebenit *Haid.*, 569, 1845.

Monoclinic. $C=87°\ 46'$, $I \wedge I=119°\ 12'$, $O \wedge 1\text{-}\dot{1}=137°\ 10'$ (B. & M.); $a:b:c=1{\cdot}5802:1:1{\cdot}7032$. Observed planes: O; vertical, I, $i\text{-}i$, $i\text{-}\dot{1}$, $i\text{-}\frac{4}{3}$, $i\text{-}3$, $i\text{-}\frac{3}{2}$, $i\text{-}\frac{5}{3}$, $i\text{-}2$; domes, $1\text{-}i$, $\frac{1}{2}\text{-}\dot{1}$, $1\text{-}\dot{1}$, $\frac{3}{2}\text{-}\dot{1}$, $2\text{-}\dot{1}$; octahedral, $\frac{1}{2}$, 1, 1-4, 1-2, $\frac{3}{2}$-3.

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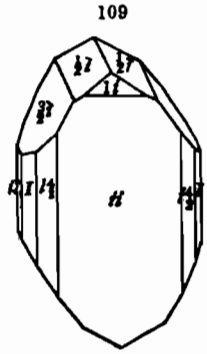


$O \wedge 1\text{-}i=123°\ 55'$	1-2 ∧ 1-2, front, $=152°\ 36'$
$O \wedge \frac{1}{2}\text{-}\dot{1}=156\ 8$	$i\text{-}\frac{4}{3} \wedge i\text{-}\frac{4}{3}$ " $=132\ 48$
$O \wedge 2\text{-}\dot{1}=118\ 21$	$i\text{-}3 \wedge i\text{-}3$ " $=157\ 54$
$1 \wedge 1$, front, $=128\ 2$	$1\text{-}\dot{1} \wedge 1\text{-}\dot{1}$, top, $=94\ 20$
$1\text{-}4 \wedge 1\text{-}4$ " $=166\ 6$	

Prisms longitudinally striated. Cleavage: I perfect. H.=2—2·5. G.=6—6·4; 6·194, Hausmann; 6·23, fr. Przibram, v. Payr. Lustre metallic. Color and streak light steel-gray, inclining to silver-white, also blackish lead-gray. Yields easily to the knife, and is rather brittle. Fracture subconchoidal—uneven.

Comp.—5 (Pb, Ag) S + 2 Sb^2 S^3 (fr. v. Payr's anal.)=, if Ag : Pb=3 : 4, Sulphur 18·6, antimony 25·9, lead 31·2, silver 24·3=100. Analyses: 1, 2, Wöhler (Pogg., xlvi. 146); 3, Escosura (Rev. Minera, vi. 358, Ann. d. M., V. viii. 495); 4, v. Payr (Jahrb. Min. 1860, 579):

	S	Sb	Pb	Ag	Fe	Cu
1.	18·77	27·72	30·00	22·18	0·11	1·62=100 W.
2.	18·72	27·05	30·08	23·78	——	=99·60 W.
3. Spain	17·60	26·83	31·90	22·45	——	=98·78 Escosura.
4. Przibram	18·41	27·11	30·77	23·08	0·63	=100 Payr.

Pisani refers here the massive dark *weissgültigerz* analyzed by Klaproth, who obtained (l. c.) S 22·00, Sb 21·50, Pb 41·00, Ag 9·25, Fe 1·75, Al 1·00, Si 0·75=97·25, considering part of the silver as here replaced by lead.

Pyr.—In the open tube gives sulphurous and antimonial fumes, the latter condensing as a white sublimate. B.B. on charcoal fuses easily, giving a coating, on the outer edge white, from antimonous acid, and near the assay yellow, from oxyd of lead; continued blowing leaves a globule of silver.

Obs.—With argentite, siderite, and galenite, in the Himmelsfürst mine, at Freiberg in Saxony, and Kapnik in Transylvania; at Ratieborzitz, the ore of which locality contains bismuth, according to Zincken; at Przibram in crystals, often twins, and 2 to 6 lines long; at Felsobanya; at Hiendelencina in Spain, with argentite, red silver, siderite, galenite, etc.

The crystals from Himmelsfürst are *triclinic*, according to Breithaupt (B. H. Ztg., xxv. 189). Chapman took his name *donacargyrite* from the British Museum, knowing nothing of its origin. Such a name ought not to displace *freieslebenite*.

115. **PYROSTILPNITE.** Feuerblende *Breith.*, Char., 285, 338, 1832. Fireblende *Dana*, Min., 543, 1850. Pyrostilpnite, *Dana*.

Monoclinic. In delicate crystals grouped like stilbite. Observed planes, I, $i\text{-}\dot{1}$, $1\text{-}\frac{1}{2}$, $1\text{-}\dot{1}$, $2\text{-}\dot{1}$, B. & M.

$I \wedge I = 139° 12'$. $2\text{-}\dot{2} \wedge 2\text{-}\dot{2}$, top, $= 74°$. $i\text{-}\dot{i} \wedge 1\text{-}\dot{i} = 123° 34'$.
$1\text{-}\dot{i} \wedge 1\text{-}\dot{i}$, top, $= 112\ 52$. $i\text{-}\dot{i} \wedge 2\text{-}\dot{i} = 148\ 42$. $1\text{-}\dot{2} \wedge 1\text{-}\dot{2}$, top, $= 62\ 36$.

Cleavage: $i\text{-}\dot{i}$, and crystals flattened in this direction. Faces $i\text{-}\dot{i}$ striated parallel to the clinodiagonal. Twins: plane of composition $i\text{-}i$ (orthodiagonal).

H. = 2. G. = 4·2—4·25. Lustre pearly-adamantine. Color hyacinth-red. Translucent. Sectile and somewhat flexible.

Comp.—Contains 62·3 per cent. of silver, along with sulphur and antimony (Plattner, l. c., 333).
Pyr.—Like pyrargyrite.
Obs.—From the Kurprinz mine near Freiberg; Andreasberg; Przibram.
Named from πῦρ, *fire*, and ἀργυρός, *shining*, in allusion to its fire-like color.

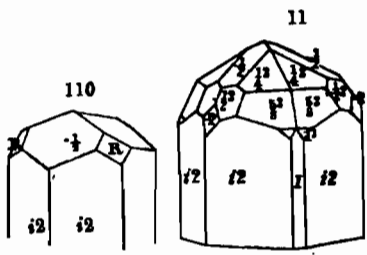
116. RITTINGERITE. Rittingerit *Zippe*, Ber. Ak. Wien, ix. 2, 345, 1852.

Monoclinic; $C = 88° 26'$. In small rhombic tables with replaced basal edges. Observed planes: O, $\frac{1}{2}$, I, ± 6, ± 1. Observed angles: $O \wedge I = 91° 24'$, $I \wedge I = 126° 18'$, $O \wedge 1 = 132° 24'$, $O \wedge -1 = 130° 50'$, $1 \wedge -1 = 96° 20'$, $O \wedge -6 = 98° 30'$, $O \wedge \frac{1}{2} = 150°$, $-1 \wedge -1 = 140° 1'$. Cleavage: O imperfect.

H. = 1·5—3. Lustre submetallic-adamantine. Plane O blackish-brown in the larger crystals, less dark in the more minute; other parts iron-black. Translucent and dull honey-yellow to hyacinth-red in the direction of the axis. Streak orange-yellow. Brittle.

Comp.—Probably a compound of sulphid of silver and antimony.
Pyr.—B.B. same as with pyrargyrite; fuses very easily, gives an arsenical odor, and finally a globule of pure silver.
Obs.—From Joachimsthal, in small crystals.

117. PYRARGYRITE. Argentum rude rubrum pt., *Germ.* Rothgolderz, *Agric.*, 362, Interpr., 462, 1546. Argentum rubri coloris pt., Gemein Rothguldenerz, *Gesner.*, Foss., 62, 1565. Rothgylden pt., Argentum arsenico pauco sulphure et ferro mineralisatum pt., Minera argenti rubra var. opaca, var. nigrescens, *Wall.*, 310, 1747. Mine d'argent rouge *Fr. Tri.* Wall., 1753. Ruby Silver Ore pt., Red Silver Ore pt., *Hill*, Foss., 1771. Dunkles Rothgültigerz, Lichtes id. pt., *Wern.*, 1789. Dark Red Silver Ore; Antimonial Red Silver. Argent antimonié sulfuré pt. *H.*, Tr., 1801. Argent rouge antimoniale *Proust*, J. de Phys., lix. 407, 1804. Ærosit *Selb*, Denks. Nat. Schwab., i. 311, Tasch. Min., 401, 1817. Rubinblende pt. *Mohs.* Antimonsilberblende. Pyrargrit *Glock.*, Handb., 388, 1831. Argyrythrose *Beud.*, Tr., ii. 430, 1832.



Rhombohedral. Opposite extremities of crystals often unlike. $R \wedge R = 108° 42'$, B. & M., $O \wedge R = 137\ 42'$; $a = 0·788$. Observed planes in this and the following species: basal and prismatic, O, I, $i\text{-}2$, $i\text{-}\frac{3}{2}$, $i\text{-}\frac{5}{4}$, $i\text{-}\frac{3}{2}\frac{0}{5}$; rhombohedral, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{7}{10}$, $\frac{5}{3}$, R (or 1), $\frac{5}{2}$, 4, -14, -5, $-\frac{7}{3}$, -2, $-\frac{5}{3}$, -1, $-\frac{1}{2}$, $-\frac{1}{3}$, $-\frac{1}{5}$; pyramidal, $\frac{3}{5}$-2, $\frac{1}{3}$-2,; scalenohedral, $\frac{1}{7}^6$, $\frac{1}{5}^5$, $\frac{1}{3}^{17}$, $\frac{1}{2}^3$, $\frac{1}{4}^4$, $\frac{1}{4}^7$, $\frac{5}{14}^3$, $\frac{1}{8}^3$, $\frac{1}{8}^{17}$, $\frac{4}{15}^5$, $\frac{2}{5}^2$, $\frac{2}{3}^3$, $\frac{2}{5}^4$, $\frac{1}{2}^3$, $\frac{1}{3}^{11}$, $\frac{5}{8}^3$, $\frac{5}{8}^{11}$, $\frac{5}{8}^2$, $\frac{2}{3}^2$, $\frac{2}{3}^5$, $1\frac{1}{3}$, $1\frac{1}{2}$, 1^3, $1\frac{1}{7}$, 1^4, 1^5, $1\frac{1}{7}$, 1^9, 1^7, $1\frac{11}{8}$, 2^9, $1\frac{11}{5}$, $\frac{5}{2}^3$, $\frac{5}{3}^2$, $10\frac{5}{3}$, $-8\frac{5}{2}$, $-5\frac{1}{3}$, $-5\frac{11}{10}$, $-5\frac{1}{3}$, $-5\frac{1}{3}$, $-4\frac{3}{5}$, $-\frac{7}{3}\frac{1}{7}$, $-\frac{2}{7}^4$, $-1\frac{1}{4}\frac{1}{7}$, $-\frac{5}{3}^2$, -2^3, -2^2, $-2\frac{1}{3}$, $-\frac{5}{4}\frac{1}{3}$, $-1\frac{1}{3}$, $-\frac{4}{5}^3$, $-\frac{3}{7}^2-\frac{1}{3}\frac{1}{2}$, $-\frac{1}{3}^3$, $-\frac{1}{3}^2$, $-\frac{1}{3}\frac{1}{2}$, $-\frac{1}{3}\frac{1}{3}$, $\frac{1}{3}^3$, $\frac{1}{5}^5$, $\frac{1}{10}^{15}$, Q. Sella.