Melanostibite $Mn^{2+}(Sb^{5+}, Fe^{3+})O_3$

Crystal Data: Hexagonal. *Point Group:* $\overline{3}$. Tiny rhombohedra, striated, in parallel growth, forming porous spongelike aggregates. *Twinning:* By rotation about [0001], common.

Physical Properties: *Cleavage:* {0001}, perfect, perhaps a parting. *Tenacity:* Brittle. Hardness = > 4 D(meas.) = 5.24, on porous fragments. D(calc.) = 5.63

Optical Properties: Opaque, transparent in thin fragments. *Color:* Coal-black; deep blood-red in transmitted light. *Streak:* Pale rouge-red to cherry-red. *Luster:* Brilliant.
Optical Class: Uniaxial. ω = n.d. ϵ = n.d.
R_1–R_2: n.d.

Cell Data: *Space Group:* $R\overline{3}$. $a = 5.226$ $c = 14.325$ Z = 6

X-ray Powder Pattern: Sjö mine, Sweden.
2.806 (10), 2.613 (8), 1.766 (8), 3.819 (6), 4.775 (5), 1.915 (5), 4.313 (4)

Chemistry:

	(1)	(2)	(3)
Sb_2O_5	42.81	41.0	42.18
Fe_2O_3	28.93	19.4	20.82
MnO	28.26	33.8	37.00
Total	[100.00]	94.2	100.00

(1) Sjö mine, Sweden; recalculated to 100% after deduction of CaO 1.97%, MgO 1.03%, H_2O 1.06% as impurities. (2) Do.; partial analysis by electron microprobe. (3) $Mn(Sb_{0.50}Fe_{0.50})_{\Sigma=1.00}O_3$.

Occurrence: A very rare mineral in fissures in banded dolomite, in a small Fe–Mn orebody in manganoan dolomite.

Association: Dolomite.

Distribution: In the Sjö mine, near Grythyttan, Örebro, Sweden.

Name: From the Greek for *black*, for its color, and antimony, STIBium, in its composition.

Type Material: Swedish Museum of Natural History, Stockholm, Sweden; The Natural History Museum, London, England, 83307; National Museum of Natural History, Washington, D.C., USA, R5766.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 1041 [melanostibian]. (2) Moore, P.B. (1967) Contributions to Swedish mineralogy. II. Melanostibite and manganostibite, two unusual antimony minerals. The identity of ferrostibian with långbanite. Arkiv Mineral. Geol., 4(23), 449–458. (3) (1968) Amer. Mineral., 53, 1779 (abs. ref. 2). (4) Moore, P.B. (1968) Substitutions of the type $(Sb^{5+}_{0.5}Fe^{3+}_{0.5}) \rightleftharpoons (Ti^{4+})$: the crystal structure of melanostibite. Amer. Mineral., 53, 1104–1109.