

**Crystal Data:** Hexagonal. *Point Group:* 6mm. As minute hemimorphic pyramidal crystals to 0.5 mm and as crusts of fine acicular crystals (Japan); granular.

**Physical Properties:** *Cleavage:* None. *Fracture:* Uneven. *Tenacity:* Brittle.  
Hardness = 4      D(meas.) = n.d.      D(calc.) = n.d.

**Optical Properties:** Transparent. *Color:* Dark brown to black (Fe), pale orange (Japan).  
*Streak:* Brown. *Luster:* Vitreous to resinous.  
*Optical Class:* Uniaxial.

**Cell Data:** Space Group:  $P6_3mc$ .       $a = 3.975(5)$        $c = 6.433(6)$        $Z = 2$

**X-ray Powder Pattern:** Hirogawara mine, Urayama, Chichibu City, Saitama Prefecture, Japan.  
3.03 (100), 3.21 (95), 3.44 (90), 1.817 (80), 1.986 (65), 1.689 (47), 2.36 (45)

<b>Chemistry:</b>	(1)	(2)
Mn		63.44
Fe		
S		36.29
Total		99.73

(1) Garpenberg Norra, Dalarna, Sweden; no analysis given; corresponds to  $(Mn_{0.950}Fe_{0.030}Sb_{0.004}Zn_{0.002}Ag_{0.002})_{\Sigma=0.988}S_{1.000}$ . (2) Hirogawara mine, Urayama, Chichibu City, Saitama Prefecture, Japan.; average electron microprobe analysis, corresponds to  $Mn_{1.01}S_{0.99}$ .

**Polymorphism & Series:** Polymorphous with alabandite and browneite.

**Mineral Group:** Sphalerite group.

**Occurrence:** From tremolite skarn, likely a later stage hydrothermal mineral under low temperature conditions (Sweden). In metasedimentary manganese deposits (Japan). In anoxic laminated marine sediments (Gotland Deep, Baltic Sea). Reported from Ronneburg, Thuringia, Germany.

**Association:** n.d.

**Distribution:** From Garpenberg Norra, Dalarna, Sweden. From the Hirogawara mine, Urayama, Chichibu City, Saitama Prefecture, Japan. In sediment of the central Gotland Deep, Baltic Sea.

**Name:** Honors Norwegian-Swedish geologist Hans Ramberg (1917-1998), former professor of mineralogy and petrology, Uppsala University, Sweden.

**Type Material:** n.d.

**References:** (1) Kalinowski, M.P. (1996) Rambergite, a new polymorph of MnS with hexagonal structure. *Geologiska Föreningens i Stockholm Förhandlingar*, 118, A53-A54. (2) Nishikubo, K., T. Yamada, A. Harada, M. Takizawa, K. Tange, Y. Kosuge, R. Miyawaki and S. Matsubara (2009) Rambergite from the Hirogawara mine, Urayama, Chichibu City, Saitama Prefecture, Japan. *Bull. Natl. Mus. Nat. Sci., Ser. C*, 35, 7-10. (3) Eriksson, L. and M.P. Kalinowski. (2001)  $Mn_{1-x}Fe_xS$ ,  $x=0.05$ , an example of an anti-wurtzite structure. *Acta Crystallographica*, E57, i92-i93.