Scrutinyite  \(\alpha\text{PbO}_2\)

Crystal Data:  Orthorhombic.  Point Group:  \(2/m 2/m 2/m\).  As crystals, to 30 \(\mu\)m.

Physical Properties:  Cleavage:  \([100]\), perfect; \([010]\), imperfect (forms by analogy to columbite).  Hardness = n.d.  \(D(\text{meas.}) = \text{n.d.}\).  \(D(\text{calc.}) = 9.867\).


Cell Data:  Space Group: \(Pbcn\).  \(a = 4.971(2)\) \(b = 5.956(2)\) \(c = 5.438(2)\)  \(Z = 4\).

X-ray Powder Pattern:  Sunshine #1 mine, New Mexico, USA.  3.117 (100), 1.840 (80), 2.722 (50), 1.527 (50), 3.816 (40), 1.635 (40), 3.497 (30).

Chemistry:  (1) Sunshine #1 mine, New Mexico, USA; by electron microprobe, average of ten analyses gave PbO 98.2%; the remainder is probably \((\text{OH})^1\) to balance Pb\(^{2+}\) replacing Pb\(^{4+}\) in the structure.

Polymorphism & Series:  Dimorphous with plattnerite.

Occurrence:  In the oxidized zone of hydrothermal lead-bearing ore deposits.

Association:  Murdochite, plattnerite, fluorite, quartz (Sunshine #1 mine, New Mexico, USA); plattnerite, rosasite, “limonite” (Mapimi, Mexico).

Distribution:  In the Sunshine #1 and Mex-Tex mines, near Bingham, Hansonburg district, Socorro Co., New Mexico, and at the Grand Deposit mine, Muncy Creek district, White Pine Co., Nevada, USA. From the Ojuela mine, Mapimi, Durango, Mexico.

Name:  From scrutiny, in allusion to the close examination necessary to recognize and characterize the species.
