Paulmooreite \( \text{Pb}_2\text{As}_2\text{O}_5 \)

Crystal Data: Monoclinic. Point Group: 2 or 2/m. Crystals are tabular on \{100\} or \{001\}, to 0.5 mm, showing \{100\}, \{001\}, \{011\}, less commonly \{201\}, \{110\}, \{111\}.

Physical Properties: Cleavage: \{100\}, good. Tenacity: Very brittle. Hardness = \sim 3
\begin{align*}
D(\text{meas.}) &= 6.95(5) \\
D(\text{calc.}) &= 6.86
\end{align*}


Optical Class: Biaxial (+); birefringence \sim 0.110. Orientation: \( Y = b, Z \wedge a = 10(1)\circ. \)

Dispersion: \( r > v, \) very strong. \( \alpha = \text{n.d.} \quad \beta = 1.9 - 2.0 \quad \gamma = \text{n.d.} \quad 2V(\text{meas.}) = 65(5)\circ \)

Cell Data: Space Group: \( P2_1_1 \); structure refined in \( P2_1/a. \)
\begin{align*}
a &= 13.584(4) \\
b &= 5.650(2) \\
c &= 8.551(3) \\
\beta &= 108.78(2)\circ \\
Z &= 4
\end{align*}

\begin{align*}
3.30 (100), 2.905 (80), 2.761 (80), 3.02 (70), 1.768 (70), 2.024 (60), 1.726 (60)
\end{align*}

Chemistry:
\begin{align*}
\begin{array}{ccc}
\text{As}_2\text{O}_3 & 30.07 & 30.71 \\
\text{PbO} & 69.23 & 69.29 \\
\text{Total} & 99.30 & 100.00
\end{array}
\end{align*}

(1) Långban, Sweden; by electron microprobe. (2) \text{Pb}_2\text{As}_2\text{O}_5.

Occurrence: A very rare secondary mineral in a metamorphosed Fe–Mn orebody (Långban, Sweden).

Association: Hematite, magnetite, andradite, mimetite, calcite (Långban, Sweden).

Distribution: From Långban, Värmland, Sweden. At Laurium, Greece, in slag.

Name: To honor Professor Paul Brian Moore (1940– ), American mineralogist and structural crystallographer, University of Chicago, Chicago, Illinois, USA, for his many contributions to mineralogy.
