Paulmooreite $Pb_2As_2^{3+}O_5$

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 {$\bar{2}$01}, {110}, {111}.

Physical Properties: *Cleavage:* {100}, good. *Tenacity:* Very brittle. Hardness = ∼3
D(meas.) = 6.95(5) D(calc.) = 6.86

Optical Properties: Semitransparent. *Color:* Colorless to light orange. *Streak:* White. *Luster:* Adamantine.
Optical Class: Biaxial (+); birefringence ∼0.110. *Orientation:* $Y = b$; $Z \wedge a = 10(1)°$. *Dispersion:* $r > v$, very strong. α = n.d. β = 1.9–2.0 γ = n.d. 2V(meas.) = 65(5)°

Cell Data: *Space Group:* $P2_1$; structure refined in $P2_1/a$. $a = 13.584(4)$ $b = 5.650(2)$ $c = 8.551(3)$ $\beta = 108.78(2)°$ Z = 4

X-ray Powder Pattern: Långban, Sweden.
3.30 (100), 2.905 (80), 2.761 (80), 3.02 (70), 1.768 (70), 2.024 (60), 1.726 (60)

Chemistry:

	(1)	(2)
As_2O_3	30.07	30.71
PbO	69.23	69.29
Total	99.30	100.00

(1) Långban, Sweden; by electron microprobe. (2) $Pb_2As_2O_5$.

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.

Type Material: Swedish Museum of Natural History, Stockholm, Sweden, 252356; Harvard University, Cambridge, Massachusetts; National Museum of Natural History, Washington, D.C., USA, 134973, 142974.

References: (1) Dunn, P.J., D.R. Peacor, and B.D. Sturman (1979) Paulmooreite, a new lead arsenite mineral from Långban, Sweden. Amer. Mineral., 64, 352–354. (2) Araki, T., P.B. Moore, and G.D. Brunton (1980) The crystal structure of paulmooreite, $Pb_2[As_2O_5]$: dimeric arsenite groups. Amer. Mineral., 65, 340–345.