Parkinsonite \( \text{(Pb, Mo)}_4\text{O}_4\text{Cl} \)

Crystal Data: Tetragonal. Point Group: \( 4/m \{2\}/m \{2\}/m \), \( \text{T}2\text{m}, \text{4}\text{mm}, \) or \( 422 \). As bladed crystals, to 0.3 mm, and crystalline aggregates, embedded in other lead minerals.

Physical Properties: Cleavage: \{001\}, perfect; \{100\}, possible, fair. Tenacity: Sectile. Hardness = 2–2.5 VHN = 113–133, 122 average (50 g load). D(meas.) = 7.32 (synthetic). D(calc.) = 7.39


Cell Data: Space Group: \( \text{I}4/\text{mmm}, \text{I} \text{4}2\text{m}, \text{I}4\text{m}2, \text{I}4\text{mm}, \) or \( \text{I}422 \). \( a = 3.9922(3) \) \( c = 22.514(3) \) \( Z = 2 \)

X-ray Powder Pattern: Merehead quarry, England. 2.983 (100), 2.816 (78), 1.989 (75), 1.658 (51), 1.586 (33), 3.507 (32), 1.263 (24)

Chemistry:

\[
\begin{array}{c|c}
\text{Component} & \text{Abundance} \\
\hline
\text{MoO}_3 & 8.0 \\
\text{PbO} & 88.4 \\
\text{Cl} & 4.4 \\
\text{O} = \text{Cl} & 1.0 \\
\hline
\text{Total} & [99.8] \\
\end{array}
\]

(1) Merehead quarry, England; by electron microprobe, average of six analyses, original total given as 100.8%; corresponds to \( (\text{Pb}_{3.17}\text{Mo}_{0.44})_{\Sigma=3.61}\text{O}_{4.01}\text{Cl}_{0.99} \).

Occurrence: A very rare mineral in nodules in manganese oxide ores in veins, fissures, and pockets in limestone.

Association: Mendipite, chloroxiphite, diaboleite, cerussite, paralaurionite, wulfenite, calcite, manganese oxides (Merehead quarry, England).

Distribution: In the Merehead quarry, Cranmore, and from the Wesley mine, Didsbury, near Bristol, Somerset, England.

Name: For Reginald F.D. Parkinson (1928– ), British mineral collector and dealer, Shepton Mallet, Somerset, England, who first found the mineral.
