Metavanuralite  \( \text{Al(UO}_2\text{)}_2(\text{V}_2\text{O}_8)(\text{OH})\cdot8\text{H}_2\text{O} \)

Crystal Data:  Triclinic.  \( \text{Point Group: } T \text{ or } 1 \).  As multiply terminated prismatic crystals, dominated by \{001\} and \{100\}, pseudomorphous after vanuralite.  Twinning:  On \{001\}.

Physical Properties:  Cleavage:  Perfect on \{001\}.  Hardness = n.d.  \( \text{D(meas.)} = \text{n.d.} \).  \( \text{D(calc.)} = \text{n.d.} \).  Radioactive.

Optical Properties:  Semitransparent.  \textit{Color:}  Yellow to greenish yellow.  \textit{Optical Class:}  Biaxial.  \( \alpha = \text{n.d.} \).  \( \beta = \text{n.d.} \).  \( \gamma = \text{n.d.} \).  \( 2\text{V(meas.)} = \text{n.d.} \).

Cell Data:  Space Group:  \( P\overline{1} \text{ or } P1 \).  \( a = 10.46(3) \),  \( b = 8.44(3) \),  \( c = 10.43(3) \).  \( \alpha = 75^\circ53'(20)' \),  \( \beta = 102^\circ50'(20)' \),  \( \gamma = 90^\circ0'(20)' \).  \( Z = 2 \).

X-ray Powder Pattern:  Mounana mine, Gabon.  9.92 (FFF), 4.174 (FF), 3.153 (FF), 4.086 (F), 3.240 (F), 3.073 (F), 5.10 (mF).

Chemistry:  

\[
\begin{array}{ccc}
\text{UO}_3 & 59.63 & 59.71 \\
\text{V}_2\text{O}_5 & 18.61 & 18.99 \\
\text{Al}_2\text{O}_3 & 5.30 & 5.32 \\
\text{H}_2\text{O} & 16.20 & 15.98 \\
\hline
\text{Total} & 99.74 & 100.00
\end{array}
\]

(1) Mounana mine, Gabon; by colorimetric analysis, \( \text{H}_2\text{O} \) by the Penfield method.

(2) \( \text{Al(UO}_2\text{)}_2(\text{V}_2\text{O}_8)(\text{OH})\cdot8\text{H}_2\text{O} \).

Occurrence:  In the oxidized zone of a lead-bearing U–V deposit, formed as a reversible dehydration product of vanuralite.

Association:  Vanuralite.

Distribution:  From the Mounana uranium mine, Franceville, Gabon.

Name:  The prefix \textit{meta} indicates the dehydration product of \textit{vanuralite}.
