Metavanmeersscheite $U(UO_2)_3(PO_4)_2(OH)_6 \cdot 2H_2O$

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. As tabular crystals, flattened on {010} and elongated along [001], modified by {101}, {$\bar{1}$01}, {100}, to 0.4 mm; usually in divergent groups.

Physical Properties: *Cleavage:* Good on {010}; fair on {100}. Hardness = n.d. D(meas.) = n.d. D(calc.) = 4.49 Fluoresces bright green in SW and LW UV. Radioactive.

Optical Properties: Semitransparent. *Color:* Canary-yellow. *Optical Class:* Biaxial (–). *Pleochroism:* Weak; yellow to pale yellow. $\alpha = \sim 1.67$ $\beta = \sim 1.68$ $\gamma = \sim 1.69$ 2V(meas.) = $\sim 83°$

Cell Data: *Space Group: Fddd.* $a = 34.18$ $b = 33.88$ $c = 14.074$ Z = 32

X-ray Powder Pattern: Kobokobo pegmatite, Congo.
8.49 (100), 6.01 (90), 3.073 (70), 2.886 (60), 5.38 (50), 4.23 (50), 3.516 (50)

Chemistry:

	(1)	(2)
UO_3	83.24	83.14
P_2O_5	10.20	10.31
H_2O	[6.56]	6.55
Total	[100.00]	100.00

(1) Kobokobo pegmatite, Congo; by electron microprobe, average of five analyses, H_2O by difference; corresponds to $U(UO_2)_{3.01}(PO_4)_{1.98}(OH)_6 \cdot 2.02H_2O$. (2) $U(UO_2)_3(PO_4)_2(OH)_6 \cdot 2H_2O$.

Occurrence: A rare secondary mineral in the uraniferous zone of an altered granite pegmatite, formed by dehydration of vanmeersscheite.

Association: Vanmeersscheite, studtite.

Distribution: From the Kobokobo pegmatite, Lusungu River district, Kivu Province, Congo (Zaire).

Name: The prefix *meta* indicates the dehydration product of *vanmeersscheite*.

Type Material: University of Liège, Liège, F360; Royal Museum of Central Africa, Tervuren, Belgium, RMG13749.

References: (1) Piret, P. and M. Deliens (1982) La vanmeersscheite $U(UO_2)_3(PO_4)_2(OH)_6 \cdot 4H_2O$, et la méta-vanmeersscheite $U(UO_2)_3(PO_4)_2(OH)_6 \cdot 2H_2O$, nouveaux minéraux. Bull. Minéral., 105, 125–128 (in French with English abs.). (2) (1982) Amer. Mineral., 67, 1077 (abs. ref. 1).