Parsonite $Pb_2(UO_2)(PO_4)_2 \cdot 2H_2O$

Crystal Data: Monoclinic. *Point Group:* n.d. Crystals are lathlike, elongated along [001] and flattened on {010}, showing {001}, {101}, {100}. As radial-fibrous spherulites, to 3 mm; commonly as crusts and powdery aggregates.

Physical Properties: *Fracture:* Conchoidal. Hardness = 2.5–3 D(meas.) = 5.72–5.75 D(calc.) = 6.21–6.47 Radioactive.

Optical Properties: Transparent to translucent. *Color:* Pale citron-yellow, yellow, honey-brown, greenish brown, rarely pale rose; pale yellow in transmitted light. *Luster:* Subadamantine to slightly greasy.
Optical Class: Biaxial (–). *Orientation:* $Y = b$; $Z \wedge c = 6°$–$36°$ or $X \wedge c = 6°$–$23°$.
Dispersion: Strong. $\alpha = 1.795$–1.875 $\beta =$ n.d. $\gamma = 1.815$–1.890 2V(meas.) = n.d.

Cell Data: *Space Group:* $P\overline{1}$. $a = 6.862$ $b = 10.425$ $c = 6.684$ $\alpha = 101°26'$ $\beta = 98°15'$ $\gamma = 86°17'$ Z = 2

X-ray Powder Pattern: Ruggles mine, New Hampshire, USA.
4.25 (10), 3.28 (8), 2.13 (6), 1.661 (6), 1.852 (5), 3.97 (4), 3.44(4)

Chemistry:

	(1)	(2)
UO_3	34.68	31.42
P_2O_5	14.46	15.59
PbO	47.43	49.03
H_2O	3.43	3.96
Total	100.00	100.00

(1) Ruggles mine, New Hampshire, USA. (2) $Pb_2(UO_2)(PO_4)_2 \cdot 2H_2O$.

Occurrence: A secondary mineral in the oxidized zone of some hydrothermal uranium deposits.

Association: Torbernite, kasolite, dewindtite (Kasolo, Congo); autunite, phosphuranylite (Ruggles mine, New Hampshire, USA); pyromorphite, torbernite, autunite (Lachaux, France).

Distribution: From Shinkolobwe, Katanga Province, Congo (Shaba Province, Zaire). At Wölsendorf, Bavaria, Gemany. In France, at Gourniaud, Reliez, Rophin, and elsewhere around Lachaux, Puy-de-Dôme, the principal ore of uranium; at La Faye, near Grury, Saône-et-Loire. From Tragos, east of Mangualde, Portugal. At Arcu su Linnarbu, near Capoterra, Sardinia, Italy. In the Ranger mine, Jabiru, Northern Territory, Australia. In the USA, in the Ruggles mine, near Grafton, Grafton Co., New Hampshire; from the Eight Mile Park pegmatite district, Fremont Co., and on the Big Red No. 39 and 22 claims, Tomichi-Whitepine district, Gunnison Co., Colorado. A few additional localities are known.

Name: Honoring Arthur Leonard Parsons (1873–1957), Professor of Mineralogy, University of Toronto, Toronto, Canada.

Type Material: National School of Mines, Paris, France, 123.89.

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