Oboyerite $H_6(Pb,Ca)_6(Te^{4+}O_3)_3(Te^{6+}O_6)_2 \cdot 2H_2O$

Crystal Data: Triclinic. *Point Group:* $\overline{1}$ or 1. In tiny spherules, composed of fibers to 60 μm.

Physical Properties: *Cleavage:* One perfect. Hardness = 1.5 D(meas.) = 6.4(6) D(calc.) = 6.66

Optical Properties: Semitransparent. *Color:* Milk-white.
Optical Class: Biaxial. *Orientation:* Maximum extinction at 37° to elongation. $\alpha = 2.24$ β = n.d. $\gamma = 2.26$ 2V(meas.) = n.d.

Cell Data: *Space Group:* $P\overline{1}$ or $P1$. $a = 12.249(8)$ $b = 15.113(6)$ $c = 6.868(3)$ $\alpha = 116.45(4)°$ $\beta = 98.58(4)°$ $\gamma = 85.82(4)°$ Z = 2

X-ray Powder Pattern: Grand Central mine, Arizona, USA.
3.040 (10), 3.180 (7), 2.976 (5), 2.927 (5), 2.862 (5), 1.804 (4b), 9.038 (3)

Chemistry:

	(1)	(2)
TeO_3	16.2	15.54
TeO_2	22.1	21.19
PbO	58.0	59.28
CaO	0.3	
H_2O	4.2	3.99
Total	100.8	100.00

(1) Grand Central mine, Arizona, USA; by microanalysis, H_2O by the Penfield method, after deduction of insoluble as quartz and chlorargyrite. (2) $H_6Pb_6(Te^{4+}O_3)_3(Te^{6+}O_6)_2 \cdot 2H_2O$.

Occurrence: A rare mineral found in specimens on a mine dump, an alteration product of rich gold-bearing telluride ore.

Association: Jarosite, fairbankite, rodalquilarite, mroseite, cerussite, orthoclase, "opal".

Distribution: In the Grand Central mine and the Tombstone Exploration open pit mine, Tombstone, Cochise Co., Arizona, USA.

Name: For Oliver Boyer, an original staker of the Grand Central claim.

Type Material: Natural History Museum, Paris, France; The Natural History Museum, London, England, 1980,540; National Museum of Natural History, Washington, D.C., USA, 162210.

References: (1) Williams, S.A. (1979) Girdite, oboyerite, fairbankite, and winstanleyite, four new tellurium minerals from Tombstone, Arizona. Mineral. Mag., 43, 453–457. (2) (1980) Amer. Mineral., 65, 809 (abs. ref. 1). (3) Roberts, A.C. (1980) A triclinic cell for oboyerite. Geol. Surv. Canada Paper 80-113, 295.