

# Simplotite



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**Crystal Data:** Monoclinic, pseudotetragonal. *Point Group:*  $2/m$ ,  $m$ , or  $2$ . Radiating books of pseudotetragonal plates, showing  $\{101\}$ , to 1 mm; in micaceous plates and hemispherical aggregates.

**Physical Properties:** *Cleavage:*  $\{010\}$ , perfect, micaceous. *Hardness* =  $\sim 1$   
D(meas.) = 2.64(2) D(calc.) = 2.65

**Optical Properties:** Semitransparent. *Color:* Black, greenish black; yellow-green in thin flakes. *Streak:* Brownish black. *Luster:* Vitreous.

*Optical Class:* Biaxial (-). *Pleochroism:*  $X$  = yellow;  $Y = Z$  = green. *Orientation:*  $X = b$ ;  $Z \wedge c \simeq -58^\circ$ . *Dispersion:*  $r > v$ , weak, crossed.  $\alpha = 1.705(2)$   $\beta = 1.767(2)$   $\gamma = 1.769(2)$   
 $2V(\text{meas.}) = \sim 25^\circ$ ; after several years dehydration  $\alpha = 1.730(5)$   $\beta = 1.781(3)$   $\gamma = 1.807(3)$   
 $2V(\text{meas.}) = 40^\circ$

**Cell Data:** *Space Group:*  $A2/m$ ,  $Am$ , or  $A2$ .  $a = 8.39(3)$   $b = 17.02(5)$   $c = 8.37(3)$   
 $\beta = 90^\circ 25(5)'$   $Z = 4$

**X-ray Powder Pattern:** Colorado Plateau, USA; strong preferred orientation.  
8.51 (100), 2.62 (25), 3.14 (18), 4.26 (9), 2.84 (9), 3.42 (6), 2.52 (5)

## Chemistry:

	(1)	(2)
$\text{V}_2\text{O}_4$	69.0	69.42
$\text{V}_2\text{O}_5$	0.5	
CaO	11.8	11.73
$\text{H}_2\text{O}^+$	4.0	
$\text{H}_2\text{O}^-$	14.7	
$\text{H}_2\text{O}$		18.85
Total	[100.0]	100.00

(1) Peanut mine, Colorado, USA; total V and  $\text{V}^{4+}$  determined directly,  $\text{V}^{5+}$  by difference, recalculated to 100% after deduction of insoluble 0.5%, mainly  $\text{SiO}_2$ . (2)  $\text{CaV}_4\text{O}_9 \cdot 5\text{H}_2\text{O}$ .

**Occurrence:** A secondary mineral on fracture surfaces and replacing fossil wood in Colorado Plateau-type U-V deposits.

**Association:** Montroseite, duttonite, melanovanadite, selenium, uraninite, coffinite, vanadiferous silicates.

**Distribution:** In the USA, in Colorado, from the Peanut mine, Bull Canyon, in the J.J. and Hummer mines, Paradox Valley, and at the Shattuck-Denn mine, Club Mesa, Uravan district, Montrose Co., and on the Sundown claim, Gypsum Valley, and the Burro mine, Slick Rock district, San Miguel Co.; from the Vanadium Queen mine, La Sal Creek, San Juan Co., Utah.

**Name:** For John Richard Simplot (1909– ), Boise, Idaho, of the J.R. Simplot Mining Co., which owned the Peanut mine.

**Type Material:** National Museum of Natural History, Washington, D.C., USA, 115881.

**References:** (1) Thompson, M.E., C.H. Roach, and R. Meyrowitz (1958) Simplotite, a new quadrivalent vanadium mineral from the Colorado Plateau. *Amer. Mineral.*, 43, 16–24.