Schneebergite $BiCo_2(AsO_4)_2[(H_2O)(OH)]$

Crystal Data: Monoclinic. *Point Group:* $2/m$ or 2. As crystals, to 0.1 mm, bladed to scaly, elongated ‖ [001] or tabular {010}, composed of {100}, {010}, {001}, {101}, {$\bar{1}$01}, in rosettes and microcrystalline coatings.

Physical Properties: *Cleavage:* On {010}, perfect. Hardness = ∼2 D(meas.) = 1.92(2) D(calc.) = 1.931 May dehydrate to metaschoderite in a dry atmosphere.

Optical Properties: Semitransparent. *Color:* Yellowish orange.
Optical Class: Biaxial (–). *Pleochroism:* X = pale yellow; Y = deep yellow; Z = yellow.
Orientation: $X = b$; $Y \wedge c = 26(5)°$. $\alpha = 1.560(1)$ $\beta = 1.563(1)$ $\gamma = 1.565(1)$
2V(meas.) = 42(3)°

Cell Data: *Space Group:* $P2_1/m$ or $P2_1$. $a = 16.26(1)$ $b = 30.60(4)$ $c = 12.55(1)$ $\beta = 91.77(8)°$ Z = 18

X-ray Powder Pattern: Wilson Springs mine, Arkansas, USA.
16.3 (100), 15.3 (70), 7.64 (35), 2.893 (35), 5.686 (25), 5.410 (25), 2.843 (25)

Chemistry:

	(1)	(2)	(3)
P_2O_5	17.4	21.08	17.40
V_2O_5	24.6	22.37	22.29
Al_2O_3	23.8	25.67	24.99
Fe_2O_3	0.27	0.47	
H_2O^+	7.5		
H_2O^-	26.6		
H_2O		[30.41]	35.32
Total	[100.17]	[100.00]	100.00

(1) Fish Creek Range, Nevada, USA; original total given as 100.27%, corresponds to $Al_{1.92}(PO_4)_{1.00}(VO_4)_{1.10}\bullet 7.94H_2O$. (2) Wilson Springs mine, Arkansas, USA; by electron microprobe, H_2O by difference. (3) $Al_2(PO_4)(VO_4)\bullet 8H_2O$.

Occurrence: A rare mineral formed from amorphous phosphatic gels or by crystallization from meteoric solution in fractures in phosphatic chert (Fish Creek Range, Nevada, USA).

Association: Vashegyite, wavellite (Fish Creek Range, Nevada, USA); metahewettite, metaschoderite, bokite, minyulite, leucophosphite (Cockalorum Wash, Nevada, USA); hewettite, duttonite, fervanite, metaschoderite, straczekite, apatite, quartz (Wilson Springs mine, Arkansas, USA).

Distribution: In the USA, from the Van-Nav-Sand claim group, Fish Creek Range, about 48 km south of Eureka, Eureka Co., and near Cockalorum Wash, Nye Co., Nevada; in the Wilson Springs (Potash Sulphur Springs) mine, Garland Co., Arkansas.

Name: To honor William Paul Schoder (1900–1977), research chemist, Union Carbide Corporation, for his work on the metallurgy of vanadium.

Type Material: National Museum of Natural History, Washington, D.C., USA, 145791, 144479.

References: (1) Hausen, D.M. (1962) Schoderite, a new phosphovanadate mineral from Nevada. Amer. Mineral., 47, 637–648. (2) Pabst, A. (1979) Schoderite, a new locality and a redescription. Amer. Mineral., 64, 713–720.