Shakhdaraite-(Y) $ScYNb_2O_8$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. As tabular crystals; as grains to 150 μm.

Physical Properties: *Cleavage*: None. *Tenacity*: Brittle. *Fracture*: Conchoidal.
Hardness = 5 VHN= 436 (100 g load). D(meas.) = > 4.24 D(calc.) = 5.602

Optical Properties: *Color*: Black to dark brown; light gray in reflected light with red-brown internal reflections. *Streak*: Brown. *Luster*: Vitreous semi-metallic.
Optical Class: n.d. *Anisotropy*: Distinct, without color effects. *Pleochroism*: None.
R_1-R_2: (470) 14.6-13.9, (546) 14.0-13.4, (589) 13.9-13.3, (650) 13.8-13.1

Cell Data: *Space Group: P*2/*c*. a = 9.930(2) b = 5.6625(11) c = 5.2108(10) β = 92.38(3)° Z = 2

X-Ray Diffraction Pattern: Leskhozovskiy granitic pegmatite, South-Western Pamir, Roshtkala District, Gorno-Badakhshan Autonomous Region, Tajikistan.
3.073 (100), 2.990 (85), 3.72 (35), 2.484 (33), 2.603 (24), 1.916 (23), 1.867 (21)

Chemistry:

	(1)	(2)		(1)	(2)
WO_3	0.79		Tb_2O_3	0.22	
Ta_2O_5	4.52		Dy_2O_3	2.07	
Nb_2O_5	50.70	59.38	Ho_2O_3	0.29	
UO_2	3.30		Er_2O_3	1.33	
ThO_2	1.90		Tm_2O_3	0.35	
SnO_2	1.54		Yb_2O_3	2.80	
TiO_2	0.08		Lu_2O_3	0.32	
La_2O_3	0.00		Y_2O_3	12.00	25.22
Ce_2O_3	0.21		Sc_2O_3	11.35	15.40
Pr_2O_3	0.04		PbO	0.24	
Nd_2O_3	0.27		FeO	0.01	
Sm_2O_3	0.32		MnO	1.38	
Eu_2O_3	0.07		CaO	1.01	
Gd_2O_3	0.86		Total	97.97	100.00

(1) Leskhozovskiy granitic pegmatite, South-Western Pamir, Roshtkala District, Gorno-Badakhshan Autonomous Region, Tajikistan; average electron microprobe analysis; $(Nb_{1.91}Sc_{0.83}Y_{0.53}Ta_{0.10}Mn_{0.10}Ca_{0.09}Yb_{0.07}U^{4+}_{0.06}Dy_{0.06}Sn_{0.05}Th_{0.04}Er_{0.03}Gd_{0.02}W^{6+}_{0.02}Pb_{0.01}Ce_{0.01}Nd_{0.01}Sm_{0.01}Tb_{0.01}Ho_{0.01}Tm_{0.01}Lu_{0.01}Ti_{0.01})_{\Sigma=4.00}O_8$. (2) $ScYNb_2O_8$.

Occurrence: In weakly zoned, miarolitic granitic pegmatite that cuts garnet-biotite gneiss.

Association: Quartz, albite, pyrochlore-microlite, fersmite, bertrandite, jarosite.

Distribution: From the Leskhozovskiy granitic pegmatite, right side of the Shakhdara river, a left tributary of the Gunt river, South-Western Pamir, Roshtkala District, Gorno-Badakhshan Autonomous Region, Tajikistan.

Name: For the *Shakhdara* River valley where the studied material was collected. Suffix indicates the dominant *REE*.

Type Material: A.E. Fersman Mineralogical Museum, RAS, Moscow, Russia (5569/1).

References: (1) Pautov, L.A., M.A. Mirakov, E. Sokolova, M.C. Day, F.C. Hawthorne, M.A. Schodibekov, V.Y. Karpenko, S. Makhmadshari, and A.R. Faiziev (2022) Shakhdaraite-(Y), $ScYNb_2O_8$, from the Leskhozovskaya granitic pegmatite, the valley of the Shakhdara River, Southwestern Pamir, Gorno-Badakhshanskii Autonomous Region, Tajikistan: new mineral description and crystal structure. Can. Mineral., 60, 369-382.