

## NEW MINERAL NAMES

### Belyankinite—a new mineral

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*Doklady Akad. Nauk. SSSR*, 71, No. 5, 925–927 (1950); from a translation kindly made by Mr. V. L. Skitsky.

CHEMICAL PROPERTIES: Two analyses gave (1. by T. A. Burova, 2. by M. E. Kazakova):

	SiO <sub>2</sub>	ZrO <sub>2</sub>	TiO <sub>2</sub>	(Nb, Ta) <sub>2</sub> O <sub>5</sub>	Al <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	MnO
1.	3.96	6.64	48.76	7.16	0.46	—	none
2.	2.80	6.56	48.19	7.51	0.24	1.85	0.04
	MgO	CaO	Na <sub>2</sub> O	K <sub>2</sub> O	H <sub>2</sub> O <sup>+</sup>	H <sub>2</sub> O <sup>-</sup>	Sum
1.	none	6.72	0.55	trace	8.35	17.21	99.81 <sup>a</sup>
2.	0.14	6.40	0.23	0.20	7.20	18.50	99.86 <sup>b</sup>

<sup>a</sup> Also reported SrO none, rare earths none.

<sup>b</sup> Also reported CO<sub>2</sub>, Cl, F none.

Spectrographic analysis showed the presence of small amounts of Hf and Pb and a trace of Cu, and showed that Nb predominates considerably over Ta.

This gives the empirical formula: 2CaO · 12TiO<sub>2</sub> · 0.5Nb<sub>2</sub>O<sub>5</sub> · ZrO<sub>2</sub> · SiO<sub>2</sub> · 28H<sub>2</sub>O. [Another form of calculation gives Ca(Ti, Zr, Si, Nb)<sub>6</sub>O<sub>13</sub> · 14H<sub>2</sub>O. M. F.]

The method of analysis is given in detail. The mineral is decomposed completely by hot HCl.

Infusible before the blowpipe. Thermal analysis gave two endothermic effects, at 150° and 400–450°, and an exothermic reaction at 750°.

PHYSICAL AND OPTICAL PROPERTIES: Occurs in masses up to 20×12×0.5 cm. Orthorhombic or monoclinic, from the optical data.

Color light yellow to brownish-yellow. Luster glassy to oily, pearly on the cleavage surface. Cleavage perfect, in one direction, fractures uneven. Hardness=2–3, G.=2.32 to 2.40.

Optically biaxial negative, with indices of refraction  $n_X=1.740$ ,  $n_Y=1.775$  to 1.780;  $n_Z-n_Y=0.002$  to 0.003. Pleochroism distinct; X=brown to dark brown, Y and Z=light brown to yellow brown.

X-ray powder photographs (Cu and Fe radiation) gave no lines, but the Laue diagram indicated some crystallinity.

OCCURRENCE: Belyankinite occurs in nepheline syenite pegmatite composed mainly of microcline, nepheline, and aegirite; the nepheline replaced in part by zeolites. Belyankinite occurs in aegirite and sometimes in microcline; it was formed simultaneously with fluorite, but prior to aegirite. The outer parts of the pegmatite contain eudialyte, ramsayite, and lamphrophyllite. The locality is not given (Kola Peninsula?).

NAME: For D. S. Belyankin, Russian mineralogist and petrographer. Not to be confused with the fluoride belyankite, see p. 785.

M. F.