BOOK REVIEW

BEITRÄGE ZUR KENNTNIS DER MANGANERZLAGERSTÄTTE VON TSCHIATURI IM KAUKASUS. (Contributions toward the knowledge of the manganese-ore deposit of Tschiaturi in the Caucasus). W. DE LA SAUCE. 90 pages, 7 text figures, 4 sketch-maps and numerous tables. Halle a/S., W. Knapp, **1926**.

This pamphlet is essentially a summary report on the geology and petrography of the most important manganese deposit of Europe, one that has played such an important rôle before and during the war as a source of supply for German and British steel industries. It is now largely controlled by the Georgian Manganese Co., Ltd.

The district is located in the new Republic of Georgia, on the Perewissi plateau at an elevation of 700–1000 meters above the level of the Black Sea. The deposits occur in Eocene sediments and cover an area of about 130 sq. kilometers with an estimated supply of over 245 million tons of ore, according to Nikitin.

The ore-bearing strata, 5 to 12 in number, vary in thickness from a few centimeters to 80 centimeters. Interlaminated are layers of sand, sandstone and clay of varying thickness and generally free from lime, so that the total thickness ranges from a few decimeters to about 3.5 meters. These interlaminations are impregnated with the oxides of manganese and iron, so that they exhibit a variety of colors.

The ore itself is considered to be mainly a gel-mineral, *viz.* a polianite-gel (MnO_2); and in contrast with almost all other known manganese deposits, its characteristic structure is dominantly oölitic, although stromatolitic and concretionary structures also occur to a small extent. Chemically it is composed of MnO_2—as high as 91.3%—containing also MnO, Mn_2O_3, Mn_3O_4, and traces of many other elements. According to their physical properties the ores are classified as earthy, soft and hard, or as black ores and red ores.

Mineralogically the ores are composed of the gel-minerals wad, pyrolusite, and psilomelane—varieties of a polianite gel. Braunite (Mn_2O_3) also occurs in small amounts, resembling psilomelane in its physical properties. Finally, manganite ($Mn_2O_3 \cdot H_2O$) is found as the only distinctly crystalline manganese-mineral filling interstices between the oölites.

The deposits are undoubtedly syngenetic sedimentary accumulations, concentrated from manganese-bearing solutions, derived from the surrounding acidic igneous rocks.

Numerous tables are given showing the results of mechanical and chemical analyses, statistics of production and destination of the exports. A summary is also recorded of the historical and political events leading up to the present control of this manganese-producing region by the Harrimans.

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NEW MINERAL NAMES

Titanoelpidite

A. LABUNCOV: Titaniferous elpidite from Mount Chibina, Russian Lapland, and its paragenesis. *Compt. Rend. Acad. Sci. I' U. R. S. S.*, (**1926**), 39–42 (In Russian); also A. E. Fersman: *Neues Jahr. Min.*, **55**, 36–46 (1926); also *Am. Mineralogist*, **11**, 289–299 (1926).

NAME: In allusion to its composition: *a titaniferous elpidite.* Given as titaniferous elpidite by Labuncov but as titanoelpidite by Fersman.

CHEMICAL PROPERTIES: An elpidite in which titanium is believed to exceed the zirconium. $H_2O = 9.1$.

CRYSTALLOGRAPHIC PROPERTIES: Orthorhombic, in crystals elongated parallel to *b*. Forms: (110), (100), (010), (120), (111), (011), (102), (001). $m:m$ 54°6′.

PHYSICAL AND OPTICAL PROPERTIES: Color brown or rose yellow, pleochroic. X = colorless; Y = yellow; streak light brown or rose yellow. Biaxial, positive. $\alpha = 1.681$, $\beta = 1.686$, $\gamma = 1.698$; birefringence 0.017. $Z = a$, $Y = c$, $X = b$. Dispersion $\rho > v$.

OCCURRENCE: Associated with albite and manganese oxide in the contact area of the nephelite syenites at Mount Chibina, Russian Lapland.

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Schultenite

L. J. SPENCER: Schultenite, a new mineral from Southwest Africa. *Mineral. Mag.*, **21**, No. 115, pp. 149–155 (1926).

NAME: In honor of Baron A. de *Schulten*, who prepared this mineral synthetically.

CHEMICAL PROPERTIES: A hydrous arsenate of lead. Formula, $2PbO \cdot As_2O_5 \cdot H_2O$. Analysis: PbO 63.97, As_2O_5 32.18, H_2O 2.88. Sum 99.03.

CRYSTALLOGRAPHIC PROPERTIES: Monoclinic, holohedral. $a:b:c = 0.8643:1:0.7181$. $\beta = 84°36'$. Habit, thin plates tabular to *b* (010), sixteen forms noted of which the most prominent ones are *p* (111), *l* (130), *b* (010), *c* (001). Cleavage *b* (010) good.

PHYSICAL AND OPTICAL PROPERTIES: Colorless, luster brilliant vitreous to adamantine. Biaxial positive. $2E = 136°38'$. $2V = 58°14'$. Plane of the optic axes normal to the plane of symmetry and lying in the obtuse angle β; $X = b$, $Y \wedge c = 24°$, $Z \wedge c = 66°$. $\alpha = 1.8903$ (calculated), $\beta = 1.9097$, $\gamma = 1.9765$. H = 2.5. Sp. Gr. 5.943.

OCCURRENCE: Found on a specimen from Tsumeb, Otavi, Southwest Africa, on a matrix of bayldonite pseudomorphous after anglesite, azurite and mimetite.

W. F. F.