

of Montreal, where, under the supervision of Dr. J. A. Gendreau, it will be at the service of the people of Quebec Province.

A letter recently received from Professor W. Vernadsky, the Russian mineralogist, states that he has been so fortunate as to make a trip to Paris and there become acquainted with the literature of mineralogy for the past six years. He will appreciate receiving reprints of articles issued during this period, and may be addressed care of the Museum d'Histoire Naturelle, Laboratoire de Mineralogie, Rue de Buffon 61, Paris, France.

We regret to note the death of O. Lehmann, the authority on molecular physics and liquid crystals.

A celebration in honor of the centenary of Louis Pasteur (1822-1895) is to be held at the American Museum of Natural History on December 27. At this meeting papers will be presented and crystals of tartrates and other compounds studied by Pasteur, exhibited.

At the Conference on World Metric Standardization which was held at the Carnegie Institute of Technology, simultaneously with the Pittsburgh meeting of the American Chemical Society, formal action was taken on four points, as follows: (1) *Voted*, that it is the sense of this meeting that we favor the gradual adoption of the metric system wherever practicable. (2) *Voted*, that this body take up with the United States Bureau of Education and other agencies, a plan for the better teaching of the metric system in the schools. (3) *Voted*, that the United States secretary of commerce be asked to secure information as to the extent to which the metric system is actually used at present in those countries which have made its use compulsory by law; and also in those countries where its use is not obligatory. (4) *Voted*, that the system of double-marking all goods be encouraged. (This vote was adopted by only a small majority.)

The Third Annual Meeting of the Mineralogical Society of America will be held on December 29, 1922, at Ann Arbor, Michigan. Fellows and members intending to present papers are urged to submit without delay the titles and brief abstracts to the Secretary, Herbert P. Whitlock, American Museum of Natural History, New York City.

NEW MINERALS: REDEFINITION OF SPECIES

FAMILY: OXIDES. DIVISION: COLLOIDAL XRO : YR₂O₃ : ZH₂O.

Heterogenite

A. SCHOEP: Sur la nature et la composition chimique d'un minéral de cobalt provenant du Katanga. (The nature and chemical composition of a cobalt mineral coming from Katanga). *Bull. soc. chim. Belgique*, 30, 207-212, 1921.

CHEMICAL PROPERTIES: Average of several partial analyses gave: CuO 25.76, CoO 6.48, Co₂O₃ 46.63, SiO₂ 2.42, CO₂ 4.27, H₂O 15.28, sum 100.84%. The SiO₂ is present as chrysocolla and the CO₂ as malachite, and after removing these constituents together with the corresponding amounts of CuO, the composition becomes: CuO 10.11, CoO 9.03, Co₂O₃ 64.93, H₂O 15.93, sum 100.00% which corresponds approximately to CuO.CoO.3Co₂O₃.7H₂O. The mineral dissolves

readily in HCl, with evolution of chlorine. The solution gives tests for Cu and Co, but no Mn.

PHYSICAL PROPERTIES: General aspect like anthracite and obviously colloidal in character. Color black; streak brownish black; Luster vitreous; fracture conchoidal; $H=3-4$; sp. gr. = 3.128; refractive index greater than 1.75.

OCCURRENCE: Found in the Etoile mine, Elizabethville, Katanga, Belgian Congo, filling cavities in malachite and chrysocolla.

DISCUSSION: Two other similar minerals have been described, heterogenite Frenzel, 1872) and schulzenite (Maertens, 1896). The compositions assigned to these are decidedly different from that of the present mineral, but as all three are colloidal, variation is to be expected. It is therefore recommended that the prior name heterogenite be applied to *all cobalto-cobaltic hydroxides*, of varying purity.

E. T. W.

FAMILY: SULFATES. DIVISION: $R':R'':(SO_4)=2:1:2$.

Palmierite

A. LACROIX, 1907; redefined by FERRUCCIO ZAMBONINI: Sur la palmiérite du Vésuve et les minéraux qui l'accompagnent. (The palmierite from Vesuvius and the accompanying minerals.) *Compt. rend.*, 172, (23), 1419-1422, 1921.

CHEMICAL PROPERTIES: *Formula*: $(K,Na)_2O.PbO.2SO_3$ or $(K, Na)_2Pb(SO_4)_2$. That originally given was more complex but was based on analysis of small quantities of altered material; new analysis on artificially formed crystals agreeing in every respect gave: K_2O 17.53, Na_2O 1.31, PbO 47.48, SO_3 33.62, sum 99.94%, corresponding to the formula above given. The mineral is rapidly decomposed by H_2O .

PHYSICAL PROPERTIES: Color white; luster somewhat pearly on the base, vitreous on other faces. Specific gravity 4.50.

CRYSTALLOGRAPHIC AND OPTICAL PROPERTIES: System rhombohedral, with $a:c=1:3.761$. Forms (0001), (10 $\bar{1}$ 0), (10 $\bar{1}$ 5), (10 $\bar{1}$ 3), (10 $\bar{1}$ 2), (10 $\bar{1}$ 1), and (01 $\bar{1}$ 2). $\rho_{1011}=77^\circ 2'$. Close to but quite distinct from apthitalite. Optically uniaxial, -, with $\omega=1.712$.

OCCURRENCE: Recently formed in the lava of a small cone in the bottom of the crater of Vesuvius. In various specimens it is associated with apthitalite, Cu-Pb-bearing apthitalite, ferronatrite, hematite, jarosite (new to Vesuvius) and "euchlorine."

DISCUSSION: The futility of basing highly complex formulas on analysis of minute amounts of a mineral of doubtful purity is again illustrated; union of oxides in other than very simple integral proportions should only be regarded as demonstrated when there is convergence of a considerable number of analytical results or other lines of evidence.

E. T. W.

FAMILY: SILICATES. DIVISION: $R''':R''''=1:1$.

Thortveitite

JAKOB SCHETELIG: Thortveitite, a new mineral. *Centr. Min. Geol.*, 1911, 721. Redefined by the same: Thortveitite, a silicate of scandium, $(Sc,Y)_2Si_2O_7$. *Norsk Geol. Tidsskr.*, 6, 233-244, 1922.

CHEMICAL PROPERTIES: *Formula*, essentially $(Sc,Y)_2O_3:2SiO_2$ or $(Sc, Y)_2Si_2O_7$. Somewhat approximate analyses gave as follows: I. by Schetelig, SiO_2 42.9, Sc_2O_3

37.6, (Y, Dy, Er)₂O₃ 17.7, Fe₂O₃ 2.1, FeO 0.8, loss on ign. 0.4 sum 100.9%. II. By J. Sterba-Böhm, SiO₂ 45.45, Sc₂O₃ 42.06, (Y, Dy, Er)₂O₃ 8.89, Fe₂O₃ 2.83, BeO 0.51, loss on ign. 0.54, sum 100.28%. The spectrum shows no B₆ lines, indicating impurity or misinterpretation of some precipitate obtained in the second analysis. The material analyzed had been carefully hand picked in both cases. An incomplete analysis by Tauchert confirmed the figures of analysis I. The powdered mineral is partially decomposed by concd. HCl without gelatinization. On ignition its gray-green color changes to reddish white.

CRYSTALLOGRAPHIC PROPERTIES: System monoclinic. $a:b:c=0.7674:1:0.5569$, $\beta=77^{\circ}28'$. Forms: $m(110)$, $p.(111)$, $o(\bar{1}11)$, $c(001)$, $u(\bar{1}31)$, and $v(\bar{1}41)$. Habit usually prismatic on m . Usually twinned with twinning axis normal to m , twinning and composition planes = m .

OPTICAL PROPERTIES: Biaxial, negative, with values for D: $a=1.756$, $\beta=1.793$, $\gamma=1.809$, $\gamma-a=0.053$. Plane of optic axes (010), $c:a=5^{\circ}$ in obtuse angle β . Axial angles $2V=65^{\circ}30'$ $2E=152^{\circ}$. Pleochroic with $\alpha>\beta=\gamma$, with α deep green, β and γ brownish yellow, shown only in thick grains.

PHYSICAL PROPERTIES: Color grayish green to black. Luster vitreous to subadamantine. Cleavage prismatic. Fracture uneven to conchoidal; very brittle. Hardness 6-7. Sp. gr. 3.57. No measurable radioactivity.

OCCURRENCE: Has now been found at 4 localities in Saetersdalen, Norway, all in small granite-pegmatite dikes. The paragenetic succession in these is euxenite, monazite, alvite, ilmenorutile, thortveitite, beryl, magnetite, biotite, muscovite, oligoclase, microcline, quartz. One crystal observed was 35 cm. long and 4 cm. thick.

DISCUSSION: Not closely related to any other known mineral. It is noteworthy that thortveitite seems always to be fresh, whereas many similar rare-earth minerals are usually altered into amorphous forms; this is suggested to be due to the lack of radioactive constituents.

E. T. W.

DOUBTFUL SPECIES

FAMILY: PHOSPHATES, ETC. DIVISION: $R'':R''''':R''''':H_2O=4:2:3:12(?)$.
"Stasite"

ALFRED SCHOEP: Sur las stasite, un minéral nouveau, dimorphe de la dewindtite. (Stasite, a new mineral dimorphous with dewindtite.) *Compt. rend.*, 174, 875-977, 1922.

NAME: In honor of the Belgian chemist, J. S. Stas.

CHEMICAL PROPERTIES: Appears to have the formula $4PbO:8UO_3:3P_2O_6:12H_2O$. The average of two fairly complete and several partial analyses made on material dried at 100° gave: PbO 25.86, CaO, MgO, traces, UO₃ 56.02, P₂O₆ 10.47, H₂O 5.60. Behavior similar to dewindtite.

CRYSTALLOGRAPHIC AND OPTICAL PROPERTIES: Crystal system undetermined. Form, minute prisms, with square terminations. Elongation+. Refractive index >1.74 .

PHYSICAL PROPERTIES: Color golden yellow. Cleavage perfect in one direction. Sp. gr. 5.03.

OCCURRENCE: Found admixed with the torbernite from Kasolo, Belgian Congo.

DISCUSSION: The author considers this a dimorphous form of the compound previously described as dewindtite. The data presented hardly seems conclusive