

University; Dr. Edwin H. Colbert, associate curator of vertebrate paleontology at the Academy and assistant curator of vertebrate paleontology at the American Museum of Natural History; Dr. Edgar B. Howard, acting curator of paleontology and geology at the Academy, and Dr. Hellmut deTerra, associate curator of Asiatic prehistory at the Academy and research associate of the Carnegie Institution in Washington.

Dr. Frederick Ehrenfeld, professor of geology and mineralogy at the University of Pennsylvania, will have general direction of the work of the four-year course.

PROCEEDINGS OF THE SOCIETIES

NEW YORK MINERALOGICAL CLUB

American Museum of Natural History, New York City, May, 19, 1937

The regular May meeting was called to order by the president with 85 members and guests present. The speaker of the evening was Prof. Arthur P. Honess, of Pennsylvania State College, who addressed the club upon "Etch Figures and their Significance in the Classification of Crystalline Structures." His recent work with optically active solvents, particularly with reference to their interesting effects in the etching of calcite was described with illustrative slides. Calcite was used because of its adaptability to work of this sort. X-ray work has shown calcite to possess a lower grade of symmetry than morphological studies would indicate, and the figures developed through the use of laevo-malic and dextro-malic acids have born out this low grade symmetry. Figures upon adjoining scalenohedral faces were entirely dissimilar. The symmetry derived by Dr. Honess would place calcite in the quartz class, with one axis of three-fold and three of two-fold symmetry. This difference may be explained by the difference in the direction of the C-O bonds in successive layers on the rhombohedral plane, developed by the differential, directional attack of the optically active solvent. Full symmetry is obtained in etching with inactive acids, and the asymmetry of the figures appears to be a function of the concentration of the optically active ions. Different solvents and different concentrations give different figures, but the same symmetry may be seen in all. A dextro-acid reverses the figures obtained from a laevo-acid.

Other minerals were studied with similar results. Smithsonite agrees with calcite. Dolomite, already lower morphologically, gives such different figures above and below that the mineral appears to be hemimorphic, when etched with laevo-malic acid in NaOH. Hemimorphite lacks even the vertical plane of symmetry obtained in etching with optically inactive solvents. Continued work with such solvents should make it possible to determine crystal structures from the symmetries on the different forms, but the work is still in its elementary stage.

F. H. POUGH, *Secretary*

NEW MINERAL NAMES

Ferri-sicklerite

PERCY QUENSEL: Minerals of the Varuträsk Pegmatite. I. The Lithium—Manganese Phosphates. *Geol. Fören. Förhandl.*, vol. 59, pp. 82-86, 1937.

NAME: From its relationship to sicklerite.

CHEMICAL PROPERTIES: A phosphate of manganese and iron: $12 \text{RO} \cdot 5\text{Fe}_2\text{O}_3 \cdot 9\text{P}_2\text{O}_5$ (where R = Mn" and Li). Analyses (by Miss Thelma Berggren).

	1. Zone surrounding triphyllite	2. Lövlunden farm
Insol.	1.66	2.42
H ₂ O-105°	0.51	0.79
H ₂ O+105°	0.51	0.44
Fe ₂ O ₃	27.20	29.08
Mn ₂ O ₃	0.00	—
Al ₂ O ₃	0.00	0.00
FeO	0.59	0.22
MnO	19.13	15.20
CaO	1.36	1.88
MgO	0.11	1.70
Li ₂ O	3.72	3.26
Na ₂ O	0.81	0.88
K ₂ O	0.00	0.00
P ₂ O ₅	44.80	44.64
	<u>100.40</u>	<u>100.51</u>

PHYSICAL AND OPTICAL PROPERTIES: Color, dark brown; streak, brown to reddish brown. Under the microscope, deep reddish brown and almost nonpleochroic. n higher than 1.78. $G = 3.271-3.391$.

OCCURRENCE: Found as an alteration rim about triphyllite. In the change ferrous iron becomes ferric, manganese remains unchanged, without altering the ratios. A further alteration in which the Mn^{II} becomes Mn^{III} yields the species heterosite. From Varuträsk, near Boliden, Sweden.

Mn-sicklerite is the term applied to the manganese sicklerite derived from lithiophilite.

W. F. FOSHAG

Varulite

PERCY QUENSEL: *Ibid.*, pp. 93-95.

NAME: From the locality Varuträsk (*Varu* marsh or lake).

CHEMICAL PROPERTIES: A phosphate of sodium, manganese and iron; Na₂O·5(Mn,Fe,-Ca)O·2P₂O₅. Analysis: Insol. 1.80, H₂O-105° 0.14, H₂O+105° 0.75, Fe₂O₃ 8.35, Al₂O₃ 0.36, FeO 7.52, MnO 25.30, CaO 4.86, MgO 0.00, Li₂O 0.88, Na₂O 7.12, K₂O 0.12, P₂O₅ 42.80, F₂ 0.06; total 100.06.

PHYSICAL AND OPTICAL PROPERTIES: Color, dull olive green; under the microscope, colorless. Biaxial, $2V = 70^\circ$. Dispersion distinct, $r > v$. Plane of the optic axes vertical to the best cleavage. $\alpha = 1.720$, $\gamma = 1.732$. Two well marked cleavages at right angles. $G = 3.581$.

OCCURRENCE: Found as fine granular masses associated with alluaudite, tourmaline and lepidolite at Varuträsk, near Boliden, Sweden. The material is slightly altered.

W. F. F.

Headdenite Na-heterosite Na-purpurite

PERCY QUENSEL: *Ibid.*, pp. 95-96.

The phosphate near triphyllite described by Headden (Dana, p. 758) is provisionally named headdenite.

Na-heterosite and Na-purpurite are theoretical heterosite and purpurite derived from headdenite and varulite instead of from triphyllite and lithiophilite. They would differ in no essential respect from the normal minerals except in origin.

W. F. F.