

dance, as well as of silica and the principal metallic oxides, with their respective contributions to the rock-forming minerals. By means of a table the speaker showed why these rock-forming minerals are common, on the basis of the proportions of the eleven commonest elements in the earth's crust.

In closing, the speaker discussed the formation of several types of minerals from magmas containing a maximum and a minimum proportion of silica.

A rising vote of thanks was extended to the speaker.

JAMES F. MORTON, *Secretary*

#### *Minutes of the May Meeting.*

A regular monthly meeting of the New York Mineralogical Club was held at the American Museum of Natural History on the evening of May 21, 1930, with President Frederick I. Allen in the chair. There were 36 members present.

Mr. E. B. Chapin of Tenafly, N. J., Mr. George B. Wilmott of Brooklyn, N. Y., and Mr. Wm. H. McClelland of New York, N. Y., were elected to membership. Sir William Henry Bragg was unanimously elected an honorary member of the Club. It was voted to present him with a diploma on behalf of the Club.

Professor Paul F. Kerr of Columbia University was the speaker of the evening, his subject being "*A Modern Mineralogical Study of Clay.*" He dwelt on the application of X-rays and microscopic methods to the study of clay, and illustrated the methods in a practical way by descriptions of several types of clay, emphasizing the following points:

The clay minerals have long provided one of the most difficult fields of mineralogical endeavor, due largely to the extremely finely divided nature of the material. In recent years, however, methods have been developed, which give promise of solving problems that have long existed concerning the nature of the clay minerals. The two most promising lines of study are a direct outgrowth of X-ray methods and petrographic research. These developments are now proving most valuable auxiliaries to the time-honored method of chemical analysis.

One of the most interesting results of this study is a reduction in the large number of mineral species generally attributed to the clay group.

An interesting discussion followed the address, and a rising vote of thanks expressed the appreciation of the members.

JAMES F. MORTON, *Secretary*

## NEW MINERAL NAMES

### **Arandisite**

F. C. PARTRIDGE: A new tin mineral from South-west Africa. *Trans. Geol. Soc., S. Africa*, **32**, 171-176, 1930.

NAME: From the locality, Arandis.

CHEMICAL PROPERTIES: A silicate of tin. Analysis (by H. G. Weall): Moisture 5.0, Ign. loss 3.5, SiO<sub>2</sub> 16.2, Al<sub>2</sub>O<sub>3</sub> 2.7, Fe<sub>2</sub>O<sub>3</sub> 1.3, Cu 0.9, SnO<sub>2</sub> 70.9; total 100.5. Decomposed by sulphuric acid. Does not reduce with zinc and HCl. B. B. infusible but turns brown or black. In closed tube yields water which is faintly alkaline to litmus. The mineral does not darken. With fluxes yields dispersed beads of tin. With cobalt nitrate gives a blue crust.

PHYSICAL AND OPTICAL PROPERTIES: Color, varies from pale green through bright green to deep grayish green, with bright apple green as the predominant shade. Luster, waxy to resinous. Streak, nearly white with tinge of yellowish green. Fracture, subconchoidal to uneven.  $H=5$ . Sp. Gr. 4.12. Mainly isotropic. Made up of two components, a pale green to colorless one ( $n=1.706$ ) and green to green yellow fibers of varying size ( $n=1.82$ ). Apparently a colloid showing incipient crystallization.

OCCURRENCE: Found in a tin mine 23 miles north of Arandis, Southwest Africa, with cassiterite, quartz and iron and copper sulfides in limestone. (T. W. Gevers; a hydrothermal Deposit of Cassiterite near Arandis, Southwest Africa. *Trans. Geol. Soc. S. Africa*, 32, 65-170, 1930).

W. F. FOSHAG

#### Maufite

F. E. KEEP: Notes on Nickel Occurrences in the Great Dyke of Southern Rhodesia. *Trans. Geol. Soc., S. Africa*, 32, 103, 1930.

NAME: In honor of H. B. Maufe, Director of the Southern Rhodesia Geological Survey.

CHEMICAL PROPERTIES: A silicate of nickel, aluminum and other bases;  $(Mg, Ni, Fe)O \cdot 2Al_2O_3 \cdot 3SiO_2 \cdot 4H_2O$ . Analysis (by E. Golding):  $SiO_2$  33.26,  $Al_2O_3$  36.81,  $Fe_2O_3$  0.79,  $FeO$  0.68  $CaO$  tr.,  $NiO$  4.28,  $H_2O+$  13.67,  $H_2O-$  5.71. Total 99.98. No  $Co_2$ ,  $TiO_2$ ,  $SO_3$ ,  $Cl$ ,  $F$ ,  $Zr_2O_3$ ,  $Cr_2O_3$ ,  $BaO$ ,  $MnO$ , or  $CuO$ .

PHYSICAL AND OPTICAL PROPERTIES: Color emerald green, slightly dichroic. Made up of fibrous sheaves at acute angles with one another. Optical elongation negative.  $H-3$ . Sp. Gr. 2.27.

OCCURRENCE: Found as a quarter-inch seam in dark red speckled serpentine rock adjacent to a small dolerite dyke, one and one half miles northeast from the Umvukwe Geodetic Station, Umvukwe Mts., Southern Rhodesia.

W. F. F.

#### Zamboninite

F. STELLA STARRABBA: Zamboninite-una nuova specie minerale. *Boll. Soc. Geol. Ital.*, 48, pp. 259-263, 1930.

CHEMICAL PROPERTIES: Calcium magnesium fluoride; formula:  $CaF_2 \cdot 2MgF_2$ . Analysis:  $Mg$  24.26,  $Ca$  17.94,  $Mn$  not determined,  $Al$  0.41,  $Fe$  trace,  $Na$  0.31,  $K$  0.05,  $F$  55.57,  $H_2O$  1.63; Sum 100.17. No  $Si$ ,  $Cl$ ,  $S$ . Easily fusible before the blowpipe with intumescence, forming finally an infusible mass. Partly soluble in conc.  $HCl$  and  $HNO_3$ ; soluble in  $H_2SO_4$ , with evolution of  $HF$ .

CRYSTALLOGRAPHIC PROPERTIES: Not determined, probably orthorhombic.

PHYSICAL AND OPTICAL PROPERTIES: Finely radiating fibrous structure, color white. Sp. Gr. 2.98-3.00. Birefringence weak, biaxial positive, parallel extinction.  $n$  maximum=1.411, minimum=1.405.

OCCURRENCE: Forms small masses on crevices of lava of 1669, at Monti Rossi, Etna, from fumarole deposits.

H. S. WASHINGTON

## ADDITIONAL DATA

**Kramerite**

W. T. SCHALLER: Borate minerals from the Kramer District Mohave Desert, California. *U. S. Geol. Surv. Prof. Paper*, **158**, 139-146, 1930.

NAME: From the locality: Kramer, California.

CHEMICAL PROPERTIES: A hydrous borate of soda and lime.  $\text{Na}_2\text{O} \cdot 2\text{CaO} \cdot 5\text{B}_2\text{O}_3 \cdot 10\text{H}_2\text{O}$ . Analysis:  $\text{Na}_2\text{O}$  8.34,  $\text{CaO}$  15.11,  $\text{B}_2\text{O}_3$  49.30,  $\text{H}_2\text{O}$  25.40,  $\text{SiO}_2$  0.57,  $\text{Al}_2\text{O}_3$  0.42, Insol. 1.55. Sum 100.93 (average of 3 analyses). Soluble in hydrochloric acid.

Heated in closed tube, decrepitates, gives off water, turns opaque white, swells slightly and fuses imperfectly to clinkerlike masses. Before the blowpipe fuses readily to a clear bubbly glass, giving a yellow flame.

CRYSTALLOGRAPHICAL PROPERTIES: Monoclinic, prismatic.  $a:b:c=1.1051:1:0.5237$ .  $\beta=72^\circ 16'$   $p_0'=0.4976$ ,  $q_0'=c=0.5237$ ,  $e'=0.3197$ . Forms  $a(100)$ ,  $b(010)$ ,  $m(110)$ ,  $e(011)$ ,  $t(101)$ ,  $d(101)$ ,  $p(111)$ ,  $o(111)$ .

PHYSICAL AND OPTICAL PROPERTIES: Colorless, transparent. Cleavage  $m(110)$  perfect. Luster vitreous and shining. Hd.  $4\frac{1}{2}$ . Sp. Gr. 2.141.

Biaxial, positive.  $2V=73^\circ$ ,  $2E=126^\circ$ . Dispersion  $\rho>\nu$ . Elongation positive.  $\alpha=1.515$ ,  $\beta=1.525$ ,  $\gamma=1.544$ . Plane of the optic axes is parallel to  $b(010)$ .  $Y=b$ ,  $Z \wedge c=12^\circ$ .

OCCURRENCE: Found as radiating prismatic needles in clay, massive borax or kernite at the Kramer District, Kern Co., Calif.

DISCUSSION: [This mineral has been described under the name probertite by A. S. Eakle, *Am. Mineralogist*, **14**, 427, 1929. The analysis given there differs greatly from those given by Schaller. W. F. F.]

W. F. F.

**Kernite**

WALDEMAR T. SCHALLER: Borate Minerals from the Kramer District, Mohave Desert, California. *U. S. Geol. Surv. Prof. Paper*, **158**, pp. 137-170, 1930.

Original Description: This Journal, **12**, p. 24-25, 1927.

CRYSTALLOGRAPHICAL PROPERTIES: Monoclinic, habit domatic.  $a:b:c=1.5230:1:1.6989$ .  $\beta=71^\circ 08'$ ,  $p_0'=1.1788$ ,  $q_0'=1.6989$ ,  $e'=0.3417$ . 32 forms of which  $c$ ,  $(001)$ ,  $a$ ,  $(100)$ ,  $e(011)$  and  $D(101)$  are the common ones. Cleavages  $c$  and  $a$  perfect,  $D$  distinct; perhaps  $e$  and  $b$  also.

OPTICAL PROPERTIES: Biaxial negative.  $2V=80^\circ$ ,  $2E=142^\circ$ . Dispersion distinct  $\rho>\nu$ .  $\alpha=1.454$ ,  $\beta=1.472$ ,  $\gamma=1.488$ . Plane of the optic axes is normal to  $b(010)$ ;  $X$  and  $Y$  lying in the plane of symmetry, and  $Z=b$ .  $X \wedge C=70\frac{1}{2}^\circ$ .

W. F. F.