

## PROCEEDINGS OF SOCIETIES

## NEW YORK MINERALOGICAL CLUB

*Minutes of the February Meeting.*

A regular monthly meeting of the New York Mineralogical Club, attended by 42 persons, was held at the American Museum of Natural History on the evening of February 19, 1930, with President Herbert P. Whitlock in the chair.

A committee was elected to submit nominations for officers at the next meeting. A motion was carried providing that any nominations other than those made by this committee must be submitted prior to the opening of the annual meeting in April.

The speaker of the evening was Mr. O. Ivan Lee, a member of the Club, who discussed "*The Chemistry and Mineralogy of Vanadium.*" After reviewing the interesting history of this element, and its distribution in the mineral, vegetable, and animal kingdoms, he dwelt briefly upon its chemistry and the commercial applications of its alloys and salts.

Mr. Lee classified the vanadium minerals as sulphides (such as patronite), calcium vanadates (such as hewettite), and heavy metal vanadates (such as vanadinite and descloizite). The deposit of patronite at Minasragra, Peru, was described at some length. The gradual exhaustion of this deposit is stimulating the search for other sources of vanadium, and this, in the speaker's opinion, may result in the discovery of new vanadium minerals.

The lecture was illustrated by a large number of specimens of the rarer vanadium minerals, a specimen of the metal, and samples of some of its salts.

Before adjournment an interesting discussion arose, led by Captain Miller, as to whether willemite from any locality other than Franklin, N. J., and northern Rhodesia exhibits fluorescence under ultra-violet light.

HORACE R. BLANK, *Secretary.*

## PHILADELPHIA MINERALOGICAL SOCIETY

*Academy of Natural Sciences, February 6th, 1930.*

A stated meeting of the Philadelphia Mineralogical Society was held on the above date, Mr. Toothaker presiding. Forty-three members and thirteen visitors were present. Dr. Leopold Pessel was nominated for membership. Mr. L. H. Bauer addressed the Society on the "*Minerals of Franklin, New Jersey.*" The speaker presented a brief outline of various theories proposing an explanation of the mineralization of the Franklin district. He further stated that the total number of minerals found at Franklin is now placed at 143, 28 of which occur at no other place. The economic minerals are franklinite, willemite, zincite, calamine and chalcophanite. All the rare and less abundant species, of particular interest to the mineralogist, are included in the waste minerals, the most important of which is calcite which comprises 92% of the tailings. Andradite garnet, rhodonite, micas, feldspar, pyroxene, amphibole, tephroite, hematite, and sphalerite are also frequently found. The composition of the foregoing were described with particular stress on the analytical difficulties connected with their analyses. Among the outstanding difficulties were mentioned the two states of oxidization of iron in franklinite, the separa-

tion of water from fluorine and boron in fluoborite, and the separation of aluminum and beryllium in beryllium-vesuvianite.

Various interesting peculiarities and singular properties of many of the minerals were indicated by Mr. Bauer, the more important of which are: Willemite from Sterling Hill is brown while that from Franklin is characteristically green. Calcite which contains a large amount of manganese is white, whereas the brownish calcite has little or no manganese. Franklin actinolite contains 10% ZnO. Specimens of axinite fluoresce in red colors while fluorite shows blue.

An iron arc was used to show the diversity of colors produced by the ultra-violet rays on Franklin minerals. Many choice specimens were exhibited by the speaker supplemented by a number shown by Mr. Toothaker, including one of 98.7% pure zincite, brown, green and a new find of blue willemite. Coxcomb white calamine, blue, black, brown and white calcite, rhodonite, axinite, Be-vesuvianite, a perfect rhombohedral cleavage of hematite and many other choice specimens were placed on exhibition.

The meeting adjourned after giving the speaker a rising vote of thanks.

LESTER W. STROCK, *Secretary.*

## BOOK REVIEWS

INTRODUCTION TO CRYSTAL ANALYSIS. Sir William Bragg. VII+168 pages with 8 plates and 105 figures. D. Van Nostrand Co., Inc., *New York*, 1929. Price \$4.25.

Although this book covers much of the same subject matter included in a previous work "*X-rays and Crystal Structure*," the treatment is somewhat different. Originally presented as a series of lectures, there is a more technical approach to the subject. This means, perhaps, less appeal to the general reader, but a correspondingly greater usefulness to the student.

The first two chapters "Reflection by the crystal lattice" and "Methods of analysis" are developed in the usual way. The latter chapter contains a brief description of the rotating crystal method. The chapter on "Simple inorganic compounds" discusses diamond and graphite, fluorite, sphalerite, pyrite, calcite and quartz. In the case of quartz, the  $\alpha$  to  $\beta$  inversion and one type of twinning are correlated with the structure. Chapter IV, on "Space groups," contains several excellent diagrams illustrating some of the possible symmetrical arrangements of points in space. The crystallographer will look in vain, however, for any recognition of the contribution which his science has made in this field. One would never suspect that the 230 space groups had been completely defined before X-ray analysis had even been dreamed of.

The final chapters are entitled "Complex crystals" and "Metals." They consider very briefly the close-packing of oxygen atoms with reference to silicate structures; a few organic crystals; some common metals and alloys and the development of "fibre" structure through drawing and rolling.

The book is very condensed, and therefore limited in its explanations and examples. However, a sufficient number of typical structures have been included to make it a good summary of the types of problems that have been attacked, and to indicate, to some extent, the tremendous possibilities which lie in the future.

L. S. RAMSDELL