

fastened to a steel plate 0.5 inch thick, and 8 inches in diameter. This plate rotates upon a plate of similar size (fastened on a pedestal), in which is a hole in which the axle rotates.

After reading the horizontal circle, a short turn of the table is sufficient to bring the vernier of the vertical circle beneath the eye.

---

A series of thirty lectures on X-rays and crystal structure was given by Professor W. L. Bragg at the Massachusetts Institute of Technology during February. An advanced course was also given covering the following subjects: The symmetry of space groups; The dynamics of the crystal lattice; The quantitative treatment of X-ray diffraction; The analysis of complex crystals; and Molecular and atomic structure.

Dr. L. J. Spencer has been appointed keeper of mineralogy in the British Museum of Natural History, succeeding Dr. G. T. Prior who retired on December 16.

The late Professor A. Liversidge has bequeathed to the department of minerals of the British Natural History Museum his mineral collection comprising 2000 specimens, mainly from Australia. The bequest includes about 40 specimens of meteorites; about 40 sections of gold nuggets showing internal structure and about 40 gem stones.

An impromptu dinner party was given by Professor Frank R. Van Horn at the Case Athletic Club on the evening of December 29 in honor of Dr. T. L. Walker's sixtieth birthday. Covers were laid for fourteen guests including the present officers of The Mineralogical Society and as many of the past-presidents as were in attendance at the eighth annual meeting of the Society.

At the last annual meeting the Council of The Mineralogical Society authorized the granting of 50 reprints (without covers) to contributors of *leading articles* that are published in The American Mineralogist. The new rule goes into effect with this issue. As this arrangement will increase the printing costs to the Society it is hoped that contributors will cooperate in an attempt to keep the costs from mounting too high by reducing as far as possible the number of cuts that are sent in accompanying the articles.

## PROCEEDINGS OF SOCIETIES

### PHILADELPHIA MINERALOGICAL SOCIETY

*Academy of Natural Sciences of Philadelphia, January 5, 1928.*

A stated meeting of the Philadelphia Mineralogical Society was held on the above date with an attendance of thirty-three members and twelve visitors. The president, Mr. Clay, presided.

Mr. Arnold Morris was elected a junior member. Mr. J. C. Boyle was elected vice-president and Mr. H. W. Arndt a councillor.

A resolution was passed to extend the felicitations of the Society to Dr. Victor Goldschmidt on the occasion of his 75th birthday anniversary.

The evening was devoted to short reports by various members of their activities in mineralogy during the past year. Among those who participated in this program were Messrs. Warford, Frankenfield, Dipple, Gage, Cajori, Cienkowski, Oldach and Hoadley. Visits to numerous localities and the minerals obtainable at these localities were described in detail.

F. A. CAJORI, *Secretary.*

#### NEW YORK MINERALOGICAL CLUB

*Regular Monthly Meeting of October 19, 1927*

The Secretary announced the death on May 21st last of Mr. Mengo L. Morganthau, and offered the following minute:—"By the death upon May 21, 1927 of Mr. Mengo L. Morganthau, a valued member of this Club, and an enthusiastic collector of beautiful and striking mineral specimens, our organization has suffered a severe loss. Mr. Morganthau labored for years in bringing together beautiful examples of minerals, and in spreading abroad the appreciation of these to a very large portion of the community in which he lived. We feel that in thus placing upon our records our deep regret for his death, we are expressing the sentiment of very many of our fellow citizens." This minute was unanimously adopted, and the Secretary was directed to forward a copy of it to Mrs. Morganthau.

It was moved by the Secretary that the Club arrange for an excursion on Election Day. After some discussion in which several objectives were canvassed, it was moved by Mr. Grenzig that the Club visit the Paterson quarries. The motion was carried. It was moved and carried that Mr. Morton act as guide upon this occasion. Mr. Morton then submitted a program for the day which was subsequently embodied in a notice sent out through the N. Y. Academy Bulletin.

The results of the collecting trips during the summer were then discussed by members of the Club. Mr. Manchester showed a series of specimens from Bedford, including a large crystal of ilmenite, hyalite, columbite, terminated black tourmaline, microcline crystals, golden beryl, pyrolusite, dendrites on feldspar, reticulated rutile, scepter quartz, citrine in cut stones and garnet. Mr. Walther submitted a group of Franklin minerals including mcgovernite, hodgkinsonite, lead, allanite, hedyphane, friedelite, pyrochroite, bustamite, leucophoenicite and clinohedrite. Mr. Maynard displayed specimens of thomsonite, datolite, pectolite, and prehnite on datolite from Paterson. Mr. Cooper showed a specimen of ardennite from Belgium, acquired during his visit to Europe. Mr. Broadwell showed among a large series of Franklin minerals, glaucochroite, mcgovernite, cahnite, hancockite and chlorophoenicite. Mr. F. I. Allen described some twinned labradorite crystals from an Adirondack locality. Mr. Grenzig exhibited terminated pectolite crystals from Paterson. Miss Schroeder spoke on some phases of mining engineering in the tropics, particularly in Panama. Dr. Kerr showed diatomaceous shale from the coast of California, near Santa Barbara, together with specimens of burned shale. The meeting adjourned at 9:15 P.M.

HERBERT P. WHITLOCK, *Secretary.*

*Regular Monthly Meeting of November 16, 1927*

The President announced the death of Mr. George Vaux, Jr., President of the Philadelphia Mineralogical Society, and of Mr. Henry Fair of Spokane, Washington. The Secretary read the following minute which was unanimously adopted:

"The members of the New York Mineralogical Club have learned with deep regret of the death of Mr. George Vaux, Jr., President of the Philadelphia Mineralogical Society.

Mr. Vaux during his lifetime ably carried on the tradition of his uncle and was an enthusiastic, well informed and conscientious collector of minerals, representing a generation of famous private mineral collectors of which he was one of the last surviving. His energy and interest in the field is commemorated in the names of the two mineral species Vauxite and Paravauxite.

To our sister Society and to the bereaved family of Mr. Vaux, the New York Mineralogical Club extends sincere sympathy, and has ordered a copy of these Resolutions to be inserted in the records."

Mr. Morton, reporting on the Election Day Field Excursion to Paterson, N.J., stated that the excursion was successful and that the following minerals were collected on that occasion: From West Paterson,—quartz, calcite, prehnite, datolite, analcite, pectolite, stilbite, natrolite, laumontite, diabantite, chlorite, (other than diabantite), chalcopyrite. From Prospect Park:—quartz, calcite, prehnite, datolite, barite, hematite, chalcopyrite, gypsum, chrysocola, covellite. He stated that there were in all seventeen species collected from the two localities, though not all by any one member of the party.

The President introduced the speaker for the evening, Dr. Oliver Bowles, of the Bureau of Mines Experiment Station at New Brunswick, N.J., who read a paper on "*Mica, Its properties and Uses.*" Dr. Bowles pointed out the significance of physical properties in determining the uses of the important group of non-metallic minerals with which his Experiment Station dealt. He enumerated these physical properties as possessed by the minerals of the mica group, and pointed out that muscovite and phlogopite were the commercially important micas. Discussing the relation of mica to the rocks he pointed out that the commercial micas occur in some form of pegmatite. The speaker then discussed the many imperfections of the commercial micas, and stated that only 5% of the mica mined was suitable for "sheet mica." He spoke at length of the commercial uses of both "sheet mica" and "scrap mica," giving some production figures. He mentioned "zonolite" and the variety of jefferisite which has lately come into use as a heat insulator, and pointed out how its remarkable change of volume under heat fitted it for this purpose.

Mr. Grenzig in the discussion spoke of some of the electrical uses of mica from the point of view of a practical electrician. A rising vote of thanks was extended to Dr. Bowles and to Mr. Grenzig.

HERBERT P. WHITLOCK, *Secretary.*

*Regular Monthly Meeting of December 21, 1927*

A regular monthly meeting of the New York Mineralogical Club was held in the East Assembly Room of the American Museum of Natural History on the evening of December 21, at 8.15 P.M. The President, Dr. Paul F. Kerr, presided, and there was an attendance of 24 members.

The President introduced the speaker of the evening, Dr. George I. Finlay of New York University who addressed the Club on "*The Minerals of Newry and other Western Maine Localities.*" Dr. Finlay called attention to some of the localities which have long been famous for Maine minerals. He spoke of the peculiar character of the pegmatites as showing evidence of the presence of steam and other gases and

cited this as being responsible for the presence of pockets in the pegmatite and for the presence in these pockets of such minerals as tourmaline, beryl, etc. He spoke of visiting Newry and mentioned the tourmaline material from this locality as not of first gem quality. The quartz of Newry he found rich in spodumene, lepidolite and purpurite. He also referred to indigo blue tourmaline, caesium beryl and supposedly scheelite. He read a long list of the occurring minerals and discussed in detail the chemical composition of a characteristic group of these including autunite, bertrandite, cookeite, eosphorite, herderite, pollucite, triphylite, triplite, reddingite, fairfieldite, dickinsonite, fillowite and triploite. The speaker made free use of a fine suite of specimens to illustrate his address.

Dr. Finlay's paper was discussed at some length by Dr. Kunz and Messrs. Blank and Hoadley. A vote of thanks was tendered to the speaker for his highly valuable address. The meeting was adjourned at 9:30 P.M.

HERBERT P. WHITLOCK, *Secretary*

## REVIEWS

PETROGRAPHISCHE UNTERSUCHUNG ÜBER DIE EIGNUNG VON GRANITEN ALS STRASSENBAUMATERIAL. (Petrographic investigation on the suitability of granite as paving material). ZELTER, W. 69 pages with tables and illustrations. Halle a/S., W. Knapp, 1927.

In Germany where stone is still extensively used for street-paving, granites have been found the most desirable for the purpose. But all granites are not equally suitable and this pamphlet discusses the various physical criteria with special reference to paving.

The first part treats of methods for determining specific gravity, crushing strength, wear-resistance, etc. Emphasis is placed on the importance of petrographic methods as applied to the quantitative determination of each mineral constituent, its form, and size.

The second part contains a discussion of the results obtained in the investigation of 42 samples of granites. Numerous measurements of the principal mineral constituents which were made by the author according to the Rosiwal method, yielded an average quartz content of 31%. This figure is only 0.69% less than the average of 31.69% which Tschirwinski, about 17 years ago, had computed for granites on the basis of chemical analyses. (*N. Jahrb. Min.*, 1913, 2, p. 241).

It may be suggested that the author would have saved himself a great deal of time and labor in his grain-measurements had he availed himself of the recording apparatus described by Hunt (*Am. Mineral.*, 9, p. 190) or Wentworth (*Jour. Geology*, 31, p. 228).

Another point worthy of note is his attempt to compute the actual size of the mineral particles from their linear measurements. Rosiwal (1898) had adopted the factor 1.620 by which the average diameter of the measured grains must be multiplied. Recent mathematical computations by Grengg and Mader (1925) have yielded a factor of 1.2337. As this discrepancy of 31.31% is too great for scientific purposes, the author has tried to determine the correct value experimentally. His procedure was briefly as follows: Lead shot of known diameter was imbedded in Wood's metal; constant shaking and rapid cooling prevented the shot from sinking to the bottom. Plates 1/2 cm. in thickness were then cut, ground and polished. The