PROCEEDINGS OF SOCIETIES

PHILADELPHIA MINERALOGICAL SOCIETY

The Academy of Natural Sciences of Philadelphia, May 4, 1933

A stated meeting of the society was held with President Trudell in the chair and 44 members and 32 visitors present. The following names were proposed: for full membership, Nicola C. D'Ascenzo, Jr.; for junior membership, David Walker and William Hutchinson.

Dr. Alfred K. Snelgrove of Princeton University spoke on "Geological and Mineralogical Explorations in Newfoundland," which was illustrated with charts, maps, and lantern slides. The island has an area of 42,000 square miles, and is an extension of the Appalachian mountain province. It has been glaciated during the Jersey and Wisconsin periods, excepting a small area in the western part. The Wabana iron ore deposits of Bell Island consist of oolitic hematite, with chamoisite and siderite. The three beds, of sedimentary origin as shown by the fossils they contain, vary from 10 to 25 feet in thickness, with workings extending two miles under the sea. Other ore deposits described were the Ordovician copper deposits of Notre Dame Bay, the deposit of lead, zinc, and copper at Tilt Cove; the pyrite deposit at Betz Cove, and the chromite deposit in serpentine at Bay of Islands. Mr. R. G. Stafford then showed motion pictures taken on a trip across Newfoundland.

Trips to Franklin, and Paterson, New Jersey, were described by Messrs. Toothaker, Oldach, Gordon, and Cienkowski. Mr. Toothaker exhibited triboluminescent willemite from Franklin and Mr. Varni displayed specimens of boulder opal from Queenland. Mr. Petersen reported finding moonstone, and amazonstone at Mineral Hill in Delaware County.

W. H. FLACK, *Secretary*

MINERALOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND

MINERALOGICAL SOCIETY, 15th June, 1933, SIR JOHN S. FLETT, President, in the chair.

DR. L. J. SPENCER: *Minute spheres of nickel-iron in the silica-glass from the meteorite craters at Wabar, Arabia.* Micro-sections of the silica-glass show, in addition to many vesicles, vast numbers of minute black spots. From the crushed material these can be picked out with a magnetic needle in long strings and clusters. They are perfect spheres with a highly polished surface and consist of metallic iron with 8.8% of nickel. In size they range from 0.14 to 0.003 mm. in diameter, and an estimate of their number gives two million per cubic centimeter.

PROF. G. E. TILLEY: *Portlandite, a new mineral from Scawt Hill, Co. Antrim.* A brucite-like mineral occurring in isolated patches in a spurrite-larnite assemblage in the chalk-dolerite contact of Scawt Hill. This proves on analysis to be $Ca(OH)_2$. This is new as a mineral, and the name Portlandite is proposed for it. Optical properties agree with the artificially prepared material studied in connection with Portland Cement.

MR. S. I. TOMKEIEFF: *Clay minerals and bauxite minerals.* A review and classification based on a statistical method. Clay minerals and bauxitic minerals which

occur usually in a state of fine-grained aggregates are difficult to classify. The majority of the existing analyses apparently refer to mixtures of minerals and not to pure compounds. The present paper represents an attempt to classify the existing chemical data by plotting on triangular diagrams. The number of analyses used is as follows: For the system $H_2O-Al_2O_3-SiO_2$, 689, and 320 for the system $H_2O-Al_2O_3-Fe_2O_3$. This method indicates the definite existence of the following crystalline minerals, pyrophyllite, $H_2O \cdot Al_2O_3 4SiO_2$, kaolinite and its polymers, $2H_2O \cdot Al_2O_3 \cdot 2SiO_2$, diaspore and boehmite, $H_2O \cdot Al_2O_3$, gibbsite, $3H_2O \cdot Al_2O_3$, goethite, $H_2O \cdot Fe_2O_3$. Newtonite and bauxite ($2H_2O \cdot Al_2O_3$) prove to be non-existing as minerals. A group of minerals including beidellite and montmorillonite, containing a certain amount of basic oxides are separated from the pure clay minerals under the name of bentonite group. The genetic relation between the various mineral groups studied and certain rock-forming minerals such as the micas and the feldspars is briefly outlined.

MR. M. H. HEY: *Studies on the Zeolites.* Part VI. Edingtonite (with *x*-ray measurements by Mr. F. A. Bannister.) A chemical, optical, and *x*-ray examination has been made of edingtonite from Böhlet, Sweden. The unit-cell formula is $Ba_2Al_4Si_6O_{20} \cdot 8H_2O$, and the mineral is not isostructural with thomsonite or with the mesotype group, a result which is confirmed by base-exchange experiments. The vapor-pressure surface of edingtonite has been studied by the methods used for other zeolites; there is no evidence of any other distinct hydrate or modification.

MR. M. H. HEY: *On the accuracy of mineralogical measurements.* A review of the probable accuracies to be expected in measurements of a variety of physical constants of minerals by the usual methods. It is shown that published results are often calculated to far more places of decimals than the measurements can possibly warrant.

DR. S. R. NOCKOLDS and MR. E. G. ZIES: *On a new barium plagioclase feldspar.* A barium 'anemousite' feldspar has been found to occur in certain aplitic dikes in the Broken Hill district, New South Wales. This feldspar shows several kinds of plagioclase twinning with $(-)2V$ varying from 74°–82° and an average value of 78°. Indices of refraction: $\alpha=1.571$, $\beta=1.580$, $\gamma=1.585$, $\gamma-\alpha=.014$. Dispersion weak. The position of the optic plane and the optic axes corresponds quite closely with the position of these elements for plagioclases towards the basic end of the series. The feldspar has been analyzed and corresponds in composition to $Or_4Ne_4Ab_9Ce_{14}An_{69}$. Sp. gr. 2. 872 at 17°C.