

## MINERALOGICAL SOCIETY (LONDON)

A meeting of the Society was held on Thursday, November 10, 1949, in the apartments of the Geological Society of London, Burlington House, Piccadilly, W.1 (by kind permission).

The following papers were presented:

(1) BASALUMINITE AND HYDROBASALUMINITE, TWO NEW MINERALS  
FROM NORTHAMPTONSHIRE.

By Professor S. E. Hollingworth and Dr. F. A. Bannister.

Fissures in the ironstone at Irchester, Northamptonshire, contain an assemblage of fine-grained minerals including two new hydrated aluminium sulphates, basaluminite  $\text{Al}_4\text{SO}_4(\text{OH})_{10} \cdot 5\text{H}_2\text{O}$  and hydrobasaluminite  $\text{Al}_4\text{SO}_4(\text{OH})_{10} \cdot 36\text{H}_2\text{O}$ , together with allophane and halloysite. It is suggested that the concentration and precipitation of these minerals from originally dilute groundwater solutions followed on pronounced cambering of the strata during the Pleistocene period and that freezing to a depth of 60 feet played an essential part.

(2) AN ACCOUNT OF THE ANTIMONY MINES OF GREAT BRITAIN AND  
IRELAND AND OF THE MINERALS FOUND THEREIN.

By Sir Arthur Russell.

(3) ON PARATACAMITE AND SOME RELATED COPPER CHLORIDES.

By Dr. C. Frondel.

X-ray, optical, thermal and chemical measurements confirm the dimorphism of rhombohedral paratacamite with orthorhombic atacamite. The unit cell of paratacamite  $a$  9.150 kX,  $\alpha$  96°28' contains  $8[\text{Cu}_2(\text{OH})_3\text{Cl}]$ . Both minerals have been identified in green patina and crusts of ancient copper and bronze objects, but paratacamite is the more common and is also formed by the action of warm sea-water on brass and copper. New measurements, including also X-ray powder data, are given for related minerals including tallingite, identified as paratacamite, and botallackite.

(4) CALC-SILICATE SKARN VEINS IN THE LIMESTONE OF LOUGH ANURE, CO. DONEGAL.

By Mr. W. S. Pitcher.

A series of calc-silicate skarn veins in a limestone mass surrounded by granite in the Dalradian of Western Donegal is described. The skarn bordering these veins exhibits a zonal arrangement of the constituent minerals idocrase, and garnet, wollastonite, diopside and tremolite enveloped by a zone of decolorized limestone; a central quartz-feldspar dykelet is present in some cases. The processes involved in the formation of the veins are discussed.

(5) THE CHEMICAL COMPOSITION AND PHYSICAL PROPERTIES OF THE RESIDUAL  
GLASS OF THE KAP DAUSSY THOLEIITE DYKE, EAST GREENLAND.

By Mr. E. A. Vincent.

The fresh, unaltered residual glassy mesostasis of a Tertiary tholeiite dyke from East Greenland has been separated from the rock and chemically analysed. It has a somewhat unusual composition, containing 64%  $\text{SiO}_2$  but being poorer in alkalis and richer in lime and iron oxides than is usual in igneous rocks with similar silica percentages. The relationships between refractive index, specific gravity and chemical composition are discussed, and comparisons made with the residual glass of the Kinkell tholeiite dyke (Walker, *Min. Mag.*, 24 (1935) pp. 131-159). The nature of this glassy residuum suggests that the dyke

magma considered has not followed at all closely any of the well recognised trends of differentiation of basaltic magmas.

(6) PISANITE FROM PARYS MOUNTAIN, ANGLESEY.

By Mr. Leslie Bor (communicated by Professor W. J. Pugh).

The paper describes pisanite  $((\text{Fe,Cu})\text{SO}_4 \cdot 7\text{H}_2\text{O})$  as found at Parys Mountain, Anglesey, and gives the chemical and optical data of this mineral. It is thought that this records the first occurrence of pisanite as a British mineral.

(7) A NOTE ON THE CRYSTALLOGRAPHY OF EPIDOTE.

By Mr. J. Hornstra and Prof. P. Terpstra (communicated by Dr. M. H. Hey).

In epidote, the zone axis [803] is almost perpendicular to the face (100), the departure being only  $1\frac{1}{2}'$ ; accordingly, all those pairs of forms that are connected by the transformation determinant  $\frac{403}{040/004}$  are goniometrically indistinguishable in twins on (100). Doubt is thrown on the occurrence of certain forms included in Matthes' list of established forms of epidote, and which might be well-known forms in twin position. The crystallography of a repeatedly-twinned epidote crystal from Sulzbachthal is described and figured.

(8) DICHROSCOPES FOR MICROSCOPE STAGE AND OCULAR.

By Dr. A. T. J. Dollar.

The dichroscopes described are adapted for use on the stage or in the ocular of either a polarizing or non-polarizing microscope. They consist of groups of small plates of Polaroid, suitably oriented and mounted, which provide images of the absorption tints of a pleochroic mineral so interdigitated that small differences of hue, intensity of hue, or both, can be appreciated by direct ocular comparison.

*(Titles and abstracts kindly submitted by G. F. Claringbull, General Secretary.)*

At a meeting of the Mineralogical Society held on January 26, 1950, the following papers were presented.

(1) THE OPTICAL PROPERTIES AND COMPOSITION OF THE ACMITIC PYROXENES.

By Mr. P. A. Sabine.

The chemical analysis and optical properties are presented of aegirine from a nepheline-syenite-pegmatite dyke forming part of the great post-Cambrian sill and dyke suit of Assynt, Sutherlandshire. The literature upon the acmitic pyroxenes has been reviewed and 20 of the published analyses recalculated to atomic proportions on the basis of  $\text{O} + \text{OH} = 6$ . When plotted on a triangular diagram having  $2(\text{Na} + \text{K})$ ,  $2(\text{Mg} + \text{Fe}^{+2} + \text{Zr} + \text{Mn} + \text{Co})$  and  $2(\text{Fe}^{+3} + \text{V} + \text{Ti} + \text{Al})$  as vertices these analyses fall on the altitude from the  $\text{Mg} + \text{Fe} + \text{Zr} + \text{Mn} + \text{Ca}$  vertex. Using this altitude as the abscissa of composition, curves are drawn for the refractive indices and optic axial angles. It is suggested that the definitions given previously for aegirine and aegirine-augite have been too rigid, and that a convenient division of the continuous series aegirine to aegirine-augite should be taken at  $\text{Na}_{.45}\text{Fe}_{.45}^{+3}$ , at or about which  $a \wedge c = 15^\circ$  and  $2V = 90^\circ$ . Negative minerals would thus continue to be denoted as aegirine and positive ones as aegirine-augite.

(2) Si/Al SUBSTITUTION IN SOME SILICATE LATTICES.

By Mr. W. T. Harry (communicated by Dr. J. E. Richey).

Si/Al substitution in igneous clinopyroxenes, hornblendes, and biotites, varies within values characterising each group, greatest in biotite and least in the pyroxenes. In calcifer-

ous amphiboles Si/Al substitution increases from specimens in the Green schist metamorphic facies to those of magmatic origin. The data are discussed.

(3) THE AEGIRINE-GRANULITES OF GLEN LUI, BRAEMAR, ABERDEENSHIRE.

By Mr. G. R. McLachlan (communicated by Dr. S. O. Agrell).

The aegirine-granulites of Glen Lui are described. They are regarded as the results of metasomatism of garnetiferous mica-schists, the necessary soda being derived from a soda-pegmatite intruded into the overlying schists. Aegirine-augite, crossite and andradite are developed in the granulites with persistent relicts of almandine. These four minerals, the soda-pegmatite and two granulites were analysed.

(4) FURTHER DATA OF THE SLAG MINERALS NAGELSCHEIDTITE AND STEADITE.

By Mr. E. R. Segnit.