

ANALYSIS AND RATIOS OF TETRADYMITÉ

| | Original | Recalculated | | Ratios | |
|-------------------|--------------|---------------|------|--------|--------|
| Quartz | 1.90 | | | | |
| CaCO ₃ | 3.04 | | | | |
| MgCO ₃ | 1.63 | | | | |
| Pb | 1.37 | 1.48 | .007 | .278 | .97x2 |
| Bi | 51.98 | 56.35 | .271 | | |
| Se | 2.00 | 2.17 | .027 | .306 | 1.06x2 |
| Te | 32.86 | 35.62 | .279 | | |
| S | 4.04 | 4.38 | .137 | .137 | .95x1 |
| | <u>98.82</u> | <u>100.00</u> | | | |

The ratios indicate with satisfactory exactness the formula Bi₂Te₂S or 2Bi₂Te₃. Bi₂S₃. The agreement would doubtless be still closer were it not for the selenium which may replace both tellurium and sulfur, being of intermediate atomic volume, although these elements may not replace each other.

The qualitative reactions of the mineral are very obscure and did not lead to its recognition. With sulfuric acid it gives only a faint and fugitive red color which does not suggest abundant tellurium. In the closed tube a faint upper ring of whitish oxide is obtained, succeeded downward by a ring of sulfur tinged reddish by selenium. With long heating a lower black ring of tellurium is obtained but this is faint. The mineral fuses to globules. Heated in the flame it volatilizes coloring the flame bluish-green with the production of white fumes which give odors of sulfur dioxide mixed with a faint odor of selenium which suggests arsenic.

BOOK REVIEWS

DIE MINERALIEN DER NIEDERRHEINISCHEN VULKANGEBIETE, MIT BESONDERER BERÜCKSICHTIGUNG IHRER BILDUNG UND UMBILDUNG. Reinhard Brauns. E. Schweizerbart'sche Verlagsbuchhandlung, Stuttgart, 1922. Quarto, 225 pages, 3 portraits, 32 figures, 40 plates, each with 4 photomicrographs in photogravure.

This excellent treatise deals with the geological history as revealed by the microscopic characters of the minerals of the lower Rhenish volcanic province. The specimens examined were selections from the collections at the University of Bonn, which contain 4210 specimens of the Laacher See region, 1100 from Eifel, 3120 from the Siebengebirge and 1870 from Finkenberg. Several thousand thin sections were studied of which 160 are reproduced in photogravure. About 300 minerals are described with reference to their physical and optical properties, occurrence, formation and alteration products. Many new chemical analyses are likewise given.

This work is undoubtedly one of the best examples of regional mineralogy and petrography that has appeared in recent years.

W. F. H.

GESTEINS—UND MINERALPROVINZEN. Band 1: Einführung. Paul Niggli and P. J. Beger. *Chemismus der Eruptivgesteine insbesondere der Lamprophyre*. Gebrüder Borntraeger, Berlin, 1923. 602+XVI pages, 202 figures.

While this work is of especial interest to petrographers, a brief note calling attention to its appearance seems desirable even in a mineralogical journal.

This volume, which is the first of a series, compares mineral and rock associations of different regions in order to determine, if possible, the fundamental underlying chemical and physical laws. The book may be divided into six parts. The first five were written by Niggli and discuss petrographic provinces, magmatic differentiation, and the mineral and chemical composition of the chief types of magmas. In Chapter IV Niggli introduces his new system for the calculation of rock magmas, while in Chapter V magmas are classified and discussed under three main types, lime-alkaline series, soda series and potash series.

Part six, contributed by Beger, is devoted to the chemistry of the lamprophyres. This section comprises 360 pages, more than half of the book, and deals exclusively with the basic dike rocks. 382 chemical analyses are recalculated and recorded and the conclusion reached that this study seems to confirm Bowen's theory of differentiation.

This book is another very important contribution in the field of petrography and should be on every reference shelf for frequent consultation. W. F. H.

PROCEEDINGS OF SOCIETIES

PHILADELPHIA MINERALOGICAL SOCIETY

Academy of Natural Sciences, June 11, 1925

A stated meeting of the Philadelphia Mineralogical Society was held on the above date with an attendance of thirty-three. In the absence of the president and vice-president the secretary, Mr. Blank, presided.

An amendment to the by-laws, creating offices of recording secretary and corresponding secretary, was laid on the table after considerable discussion. Mr. John Vanartsdalen addressed the Society on "*The Minerals of Finney's Quarry, Pa.*" This quarry is located in the Baltimore gneiss between Somerton and Newton, Bucks County. The quarry contains three different types of pegmatite veins, in and near which the interesting minerals are found. The specimens exhibited included chalcocite, bornite, chalcopyrite, pyrrhotite, hypersthene, barite and crystals of garnet and zircon. The quarry has not been operated for about ten years.

A large number of trips taken by various members during April and May were reported on and specimens exhibited. Among the notable finds were: graphite from Trevoise, Pa., calcite and prehnite from Moore, N. J., andalusite from the Avondale quarries near Swarthmore, Pa., brown tourmaline from near Avondale, Chester Co., Pa., autunite and torbernite from Leiperville, Pa., rutile from Parkesburg, Pa., erythrite, crystallized pyrrhotite and pyrite from the French Creek Mines. Mr. Cienkowski exhibited a very fine group (about 40 kg.) of calcite crystals (7-9 cm long) which he found at Howellville, Pa., and presented to the Academy.

J. C. BOYLE, *Secretary-protem.*