the Industrial Chemistry Experiment Station, University of Texas, is given below.

KNO_3	36.29
$NaNO_3$	36.35
NaCl	trace
$CaCl_2$	trace
Na_2SO_4	trace
$CaSO_4$	trace

An undetermined insoluble residue was left.

The material is seen to be a mixture of sodium and potassium nitrates. This is verified by microscopic study which shows two minerals, one orthorhombic and the other rhombohedral. Due to the difficulty of manipulating these highly soluble materials and the lack of a liquid sufficiently low in refractive index the optical constants were not completely determined.

The soda niter exhibited perfect rhombohedral cleavage, was optically negative and showed $\omega = 1.585 \pm .005$. The niter was negative, showed $\gamma = 1.500 \pm .005$ and was typically orthorhombic. Birefringence in both cases was extremely high. The values for ϵ and α, respectively, were not determined but the extremely high birefringence indicates values close to those quoted in Larsen's tables. It is believed that the data available are sufficient to establish the minerals as niter and soda niter.

The origin of these nitrates is not plain and no attempt is made here to explain their occurrence. The igneous rocks in which the nitrate veins are found were once covered by sedimentary rocks in which cave deposits might have occurred. At the present time there is no evidence of guano or similar deposits. There is some indication that hot solutions have travelled along the joints and crevices in the igneous rock but the relation of such solutions to the nitrates is not known. Somewhat similar deposits have been reported from Presidio County, Texas, and it is hoped that these along with the deposits of Agua Fria may be described in greater detail in a later paper.

BOOK REVIEWS

UEBER DIE SYSTEMATIK DER ERZLAGERSTÄTTEN. W. A. OBRUTSCHEW, *Abhandlungen zur praktischen Geologie und Bergwirtschaftslehre*, Vol. 4. *Berlin*, 21 pages (1926). Published by WILHELM KNAPP, HALLE (SAALE).

The question of classification is in every science almost as old as the science itself. As our knowledge increases new problems are encountered and the old schemes are no longer sufficient. The classification of ore deposits has always

been, more or less, a matter of personal judgment; the first ones were purely morphological, whereas the later classifications have a tendency to be based upon genetic principles.

The author discusses the important classifications which have been published in the past fifteen years; such as the Beyschlag-Krusch-Vogt, de Launay, Lindgren, Emmons, and others. Less important classifications are mentioned briefly if they have some bearing upon the better known schemes. All these classifications are discussed in a critical way. For example, several classifications do not present a scientific foundation upon which they are based, as they have been formed partly along morphological and partly along genetic lines. Others, as the ones of Lindgren and Niggli, are too elaborate for practical purposes and difficult to keep in mind; particularly the classification of Niggli which is more a working principle for genetic mineralogy than a practical classification of ore deposits.

It is the author's intention to indicate a new scheme, one based entirely upon the genesis of the deposits, thereby assuming that the formation of an ore deposit is merely a special form of general geological and mineralogical processes. A detailed discussion is presented for every one of the proposed classes, after which the new classification is proposed in the form of a table. Three main subdivisions, five general classes, and nineteen subclasses are given. The subdivisions, and general classes are as follows:

A. Endogenic Deposits:

I. Magmatic or magmatogenic deposits.
II. Deposits formed by exhalations, or ematogenic deposits.
III. Hydrothermal deposits.

B. Exogenic Deposits:

IV. Sedimentary deposits.
V. Deposits formed by weathering, or dialytic deposits.

C. Metamorphogenic Deposits:

In the opinion of the author, any deposit may be placed somewhere in this classification, although he admits that the place of the "intermediate" forms (Uebergangsglieder) will be in most cases a matter of personal opinion and judgment.

Tj. L. Reitsema

DER NORDALBANISCHE ERZBEZIRK. Ernst Nowack. *Abhandlungen zur praktischen Geologie und Bergwirtschaftslehre*, Vol. 5. *Berlin*, 1926, 32p. with 5 plates. Published by Wilhelm Knapp, Halle (Saale).

The article is a report on the possibilities for the commercial exploitation of ore deposits in northern Albania. The author has been in charge of a geological reconnaissance of this region for the Albanian Government, and investigations of the deposits in question have not yet reached beyond the stage of scattered observations.

Historically little is known about the mining possibilities of northern Albania. The development of the interior is greatly retarded by the absence of good roads; only a few caravan trails are present and travelling is exceedingly difficult.

At present, only the pyrite deposits around Kalivari (about 50 km. east of Scutari), and perhaps the sulphide copper deposits of Kabash, to the north, are of some commercial importance. Other deposits are too isolated, and practically nothing is known about their real magnitude.

The geology of the region is very complex, one of the principal features is the presence of two series of igneous rocks, one Triassic, forming principally sills and sheets, and one Jurassic, being composed of a great series of bosses and stocks.

As for the genesis of the ore deposits, the large pyrite mass, is generally considered of epigenetic origin. In the extreme northeast, near Kruma, syngenetic chromite is found, but this occurrence is not yet of economic importance. Other types of occurrences are veins and metasomatic iron ores in limestone or shale.

It is the author's opinion that the origin of the large pyritiferous deposits is connected with the Tertiary igneous intrusions. Outcrops of these igneous masses have not been found in the region, but are present in southern Albania and in Greece. Fourteen references are given at the end of the first chapter.

Tj. L. REITSEMA

VERSUCH EINER NATÜRLICHEN KLASSIFIKATION DER IM WEITEREN SINNE MAGMATISCHEN ERZLAGERSTÄTTEN. PAUL NIGGLI. 69 pages, 11 figs. *Abhandlungen zur praktischen Geologie und Bergwirtschaftslehre*, Vol. 1. *Berlin*, 1925. Published by WILHELM KNAPP, HALLE (SAALE).

The author first considers the general principles of physical chemistry of the magmas forming ore deposits. A curve showing the effect of temperature and pressure on a magmatic system is given. A discussion of the succession of paragenesis of elements and the minerals containing them is presented with a diagram summarizing the information.

The well known associations of metals with certain types of igneous rocks is considered in some detail. The paper should prove of interest to the general reader.

W. H. NEWHOUSE

PROCEEDINGS OF SOCIETIES

PHILADELPHIA MINERALOGICAL SOCIETY

Academy of Natural Sciences of Philadelphia, May 6, 1926.

A stated meeting of the Philadelphia Mineralogical Society was held on the above date, with the president, Mr. Vaux, in the chair. Twenty-nine members and three visitors were present.

Messrs. Biernbaum and Hoadley exhibited datolite and an unidentified crystalline mineral from Patterson, N. J., and reported that there were excellent prospects that these quarries would produce very good specimens in the near future.

Mr. Hoadley reported garnet, apatite, and beryl from the New York City subway excavations. Mr. Warford reported finding apatite crystals in a quarry near Dutton's Mills, Pa., on a trip with several other members of the society. A specimen of crystallized pyrite on stilbite from Moore Station, N. J., was exhibited by Mr. Trudell. Messrs. Vaux and Gordon exhibited a large calcite crystal, and a large specimen of apophyllite colored green by included byssolite. Both were obtained recently at the French Creek Mines, Pa.

The meeting then adjourned to the microscope room of the Academy, where Dr. L. C. Wills, assisted by several other members, had arranged a splendid exhibition of microscopic minerals. Twenty-one microscopes and a large and varied array of specimens assured a most interesting evening for all present.

HORACE R. BLANK, *Secretary*