personal adornment, and the collection illustrating the occurrence and association of gems (miscellaneous series, South African diamond-bearing rocks, pegmatites of the Appalachian region and of Mesa Grande, Calif.).

Appendices include: the cutting of gem stones; gems mentioned in the Bible; mystical properties of gems; lists of gem and mineral names; industrial uses of precious stones; tables for the identification of gems by their physical and optical properties; statistics of production, 1913-1918; and a selected bibliography on gems. A number of plates show photographs of gem mines in this country. There are two colored plates of gems, as well as a number of text figures.

While primarily a catalogue, much of the information contained in this handbook is of general interest to mineralogists, as well as the laity. The remarks on cause of color and absorption spectra of gems, and the determinative tables for gems, may be mentioned in this connection. EDW. F. HOLDEN

ANNUAL TABLES OF CONSTANTS AND NUMERICAL DATA. Vol. IV, part I, XXXII+626 pages, *1921;* part II, XXXVII+751 pages (pp. 627-1377), *1922.* Gauthier-Villars et Cie (*Paris*); The Cambridge University Press (*Cambridge*); University of Chicago Press (*Chicago*). Net $13.25 each; postpaid $13.57.

The publication of the Annual Tables of Constants and Numerical Data, interrupted by the World's War, has again been resumed so that the two volumes recently published mark the first appearance of this exceedingly valuable reference work since 1914. The two volumes, comprising 1377 pages, contain practically all the numerical data published during the period 1913 to 1916 inclusive, as revealed by a digest of 341 periodicals. In a monumental undertaking of such proportions some omissions are inevitable, nevertheless, the accomplishment deserves the unstinted praise of all scientists. (The reviewer has looked in vain for any reference to THE AMERICAN MINERALOGIST in the list of periodicals reviewed, altho this Journal was established in 1916.)

While the treatment accorded Metallurgy and Engineering is unusually exhaustive, the mineralogist and crystallographer will be especially interested in the 65 pages of volume II, (pp. 1026-1901), devoted to the following subjects: optical constants and analyses of minerals (arranged alphabetically); new forms of minerals; crystallography of inorganic and organic substances; fusibility of minerals; variation of crystal angles with temperature and structure of crystals. W. F. H.

NOTES AND NEWS

APATITE CRYSTAL-CAVITIES. EDGAR T. WHERRY, *Washington, D. C.*—The District of Columbia and its immediate vicinity is such poor territory from the standpoint of the mineral collector that announcement of even a negative mineral occurrence may be worth while. In the vicinity of Chevy Chase, which lies along the northwest boundary, partly in the district and partly in Montgomery County, Maryland, several minerals can be found loose in the soil. Most abundant and conspicuous is vein quartz, in masses up to several meters in diameter. Irregular cavities in this occasionally contain quartz crystals, both colorless and somewhat smoky, up to 10 cm. in length; and the micaceous margins of the quartz veins often show 1 to 2 cm. cubes of limonite pseudomorphous after pyrite. Both quartz and pyrite crystals commonly weather out, and are to be picked up in road gutters and rain gullies in the fields.

Imbedded in the solid vein quartz occur tiny brownish-black tourmaline crystals, and plates of ilmenite as much as 10 cm. across. But perhaps the most interesting feature of the vein quartz is the presence in it of crystal-cavities. Some of these are cubical in shape, clearly representing pyrite which has dissolved away instead of becoming limonitized; but more often they are prismatic and hexagonal in outline, a few cm. in length and usually less than a cm. thick. It recently occurred to the writer that it would be interesting to determine the nature of the mineral represented by these cavities, so a series of them was collected, and modelling-clay impressions of their terminations made. The *rho* angle of the pyramid occasionally present was found to be 40°, suggesting that their parent mineral was apatite. Confirmation of this was obtained by examining vein quartz in the National Museum collection from the dumps of a water tunnel run under the western end of the District of Columbia some years ago. This showed plates of ilmenite and fresh green apatite crystals of the same general dimensions and habit as the Chevy Chase crystal-cavities.

F. N. Guild of the University of Arizona calls attention in *Science* (April 20, p. 471) to the possibility of mistaking war explosives, which have been exposed to atmospheric agencies, for minerals. T. N. T. (trinitrotoluene) when exposed to light turns yellow to brown and when broken may reveal a fibrous, radiating appearance not unlike some minerals. During the past year a number of specimens have been received at the Arizona Bureau of Mines resembling somewhat carnotite, but the bitter taste and the dyeing of a piece of filter paper was sufficient to identify the material.

Science News (*Science*, April 20, p. IX) reports an exceedingly interesting experiment by Dr. Paul R. Heyl of the Bureau of Standards. A large topaz crystal, borrowed from the United States National Museum, is being weighed in various positions to test the validity of the Einstein theory of gravitation. A balance is employed that is so delicate that it will weigh three pounds with an error of not more than one part in a billion. The results, altho only one-fifth completed, confirm the views of Einstein.

Professor Charles Palache has been appointed curator of the mineralogical museum at Harvard to take office next September, in place of Professor John E. Wolff, whose plan to retire from active teaching next summer was recently announced.

It has been announced that Dr. Esper S. Larsen of the United States Geological Survey has accepted the Professorship of Petrography at Harvard University, succeeding Professor J. E. Wolff, who retires this year.

Reprints of Professor A. F. Rogers' article, "The Use of Plans and Elevations in the Study of Geometrical Crystallography," which appeared in the February issue of THE AMERICAN MINERALOGIST, may be obtained from the Stanford Bookstore, Stanford University, California, for 25 cents each postpaid, 10 or more for 20 cents postpaid.

A plant for the quarrying and finishing of garnet for use in the automobile manufacturing industry will be erected near Danbury, New Hampshire by the Ford Motor Company.

Attention is called to the change of address of George S. Scott, dealer in high grade mineral specimens and rare ores, from 20 Nassau St., to *342 Madison Ave., New York City.*

Dr. Fred Wright, petrologist at the Geophysical Laboratory, has been elected to the National Academy of Sciences.

Dr. Karl Mieleitner of Munich, Curator of the State Mineralogical Collection of Bavaria, died on March 15th. He was associated with Professor Groth in compiling the recently reviewed Tabellarische Uebersicht der Mineralien.

Remarkable photographs of high speed collisions of the nuclei of atoms obtained by the use of a moving picture machine were shown by Dr. William Draper Harkins, of Chicago University, in a series of lectures at Carnegie Institute of Technology, Pittsburgh. A new discovery by use of the photos was that the helium nucleus, used as a projectile, rebounds in a backward direction while the nucleus of the nitrogen atom which is struck is projected forward; both at speeds of several thousand miles per second.

NEW MINERALS: NEW SPECIES

CLASS: SULFIDES. DIVISION: R′ : R″ : R‴ : R⁗ = 5 : 6 : 1 : 1. (?)

"Germanite"

O. PUFAHL: Germanite, a new germanium mineral and ore from Tsumeb, S. W. Africa. *Metall und Erz*, **19**, 324, 1922; through *Chem. Abstr.*, **16**, 3608, 1922. (Original not seen.)

NAME: From the presence of the element *germanium.*

CHEMICAL PROPERTIES: *Formula*, approximately $5Cu_2S.12(Cu,Fe)S.As_2S_3$.—$2GeS_2$ or $Cu_5(Cu,Fe)_6AsGeS_{12}$, the theory for which is (for all copper): Cu 56.8, As 6.1, Ge 5.9, S 31.2, sum 100.0%. Analysis gave Cu 45.4, Fe 7.2, As 5.0, Ge 6.2, S 31.3, sum 95.1%.

PHYSICAL PROPERTIES: Color dark reddish gray; luster metallic; structure massive. Sp. gr. = 4.46.

OCCURRENCE: Found intergrown with tetrahedrite at Tsumeb, Africa.

DISCUSSION: While a new species is probably represented here, its composition can not be regarded as established, for the material analyzed may not have been homogeneous, and the analysis is rather incomplete. A relationship to ultrabasite (abstracted in *Am. Min.*, **6**, (3), 63–64, 1921), suggests itself, although that mineral appears to be somewhat more basic: (R′ : R″ : R‴ : R⁗ = 6 : 8 : 1 : 1).

E. T. W.

CLASS: PHOSPHATES, ETC. DIVISION: R″ : R⁗⁗ : P : H_2O = 1 : 2 : 2 : X.

Meta-torbernite I

HALLIMOND, A. R.: The crystallography and dehydration of torbernite. *Min. Mag.*, **17**, 326–339, 1916: *Am. Min.*, **1**, 52, 1916. Meta-torbernite I, its physical properties and relation to torbernite.. *Min. Mag.*, **19**, 43–47, 1920. BOWEN, N. L.: Abnormal birefringence of torbernite. *Am. J. Sci.*, [4], **48**, 195–198, 1919; *Am. Min.*, **5**, 20, 1920.