

BOOK REVIEWS

THE NATURAL HISTORY OF CRYSTALS. A. E. H. TUTTON. XII+287 pages. E. P. Dutton & Co., *New York*; Kegan Paul, Trench, Trubner & Co., Ltd., *London*, 1924.

This work represents a revised and somewhat enlarged edition of the author's former book "Crystals" which appeared in 1911. Some of the chapters are the same as in the earlier volume. The progress that has been made since the appearance of the earlier text, especially in the field of X-ray analysis and crystal structure, has necessitated the introduction of considerable new material. Chapters on "The Nature of Atoms" and "The Revelation of Crystal Structure by X-Rays" have been introduced in order to bring the book up-to-date, that is, to the date of publication, November 1923. The work as it now stands comprises 21 chapters and 166 illustrations as compared with 17 chapters and 120 illustrations of the former text. An excellent glossary describing over eighty technical terms has been added.

The book states that the text "is intended for the general reader more or less interested in natural science." It is extremely doubtful if this work could serve in that capacity as the treatment is often quite technical and the style, at times, involved. The book can serve to advantage as collateral reading for students pursuing more or less advanced work in crystallography. The numerous illustrations are excellent and well chosen.

The work in general is, without doubt, a contribution to crystallography, marred however by constant personal references throughout the text. As many as seven references to the "author" were found on a single page (p. 129) and no less than a total of ninety references to the "author's investigations," "exhibitions," "lectures," "apparatus," or "collections" were noted by the reviewer.

W. F. H.

GEMS AND GEM MATERIALS. Edward Henry Kraus and Edward Fuller Holden. 222 pages and 256 figures. McGraw-Hill Book Co., *New York*, 1925.

This text is based largely upon a regular course of lectures given for a number of years in the Department of Mineralogy at the University of Michigan. It was written in order to bring the content of these lectures to the attention of the general public and especially to those engaged in the sale of gems and gem materials.

The subject matter falls into two major divisions. Part I, comprising 104 pages, discusses those properties of gems which are necessary for an understanding of the descriptive portion that follows in Part II. In this division the crystallographic, physical and optical properties are described in a clear but non-technical manner. Also short chapters are introduced on the occurrence, cutting and polishing of gems, with sixteen pages devoted to "manufactured stones."

Part II is largely descriptive. Here are to be found descriptions of the precious stones, followed by those designated as semi-precious and these in turn by metallic gem minerals, ornamental stones and organic gem materials, such as pearl, coral, amber and jet. The second part closes with eleven conveniently arranged tables where gem materials are classified according to such properties as crystal form, hardness, specific gravity, color, optical character, index of refraction, dispersion, etc.

The book is up-to-date containing numerous cuts not generally found in a text of this type. The photographs are clearly recorded on the good quality of paper selected and very few typographical errors were noted. The clear style of presentation, the numerous illustrations and the popular interest in this phase of mineralogy should all combine to create a demand for this handy volume. W. F. H.

NOTES AND NEWS

Virgil W. Field, a charter member of the Mineralogical Society of America, died at his home in Salt Lake City, Utah, August 14, at the age of fifty years.

Mr. Field died leaving a collection of two thousand specimens which he had been gathering since 1888. His first interest in mineralogy was awakened when a mere lad by a descent into a cave in the famous Hot Pots region, Midway, Utah. From that time on he pursued his study of mineralogy diligently, striving against tremendous odds, as his knowledge of minerals was acquired through his own efforts after his daily carpentry work had been finished.

Shortly before his death Mr. Field had housed his collection in a special laboratory at his home and had finished a complete catalogue of his specimens. It was his desire to have his collection moved to a place of learning, there to be used for educational and display purposes.

NEW MINERALS: NEW SPECIES

CLASS: SILICATES.

Afwillite.

JOHN PARRY AND F. E. WRIGHT: Afwillite, a new hydrous calcium silicate, from Dutoitspan Mine, Kimberly, South Africa. *Mineralog. Mag.*, **20**, 277 (1925).

NAME: In honor of Alpheus F. Williams, General Manager of the De Beers Consolidated Mines, Kimberly, South Africa.

CHEMICAL PROPERTIES: A hydrous silicate of calcium. Formula: $3\text{CaO} \cdot 2\text{SiO}_2 \cdot 3\text{H}_2\text{O}$. Several analyses are given. One by H. S. Washington, as follows: SiO_2 35.10, Al_2O_3 , Fe_2O_3 0.05, MgO 0.02, CaO 49.00, BaO none, $\text{H}_2\text{O} + 110^\circ$ 15.81, $\text{H}_2\text{O} - 110^\circ$ 0.01; sum 99.99. Soluble in hydrochloric acid.

CRYSTALLOGRAPHIC PROPERTIES: Monoclinic. $a : b : c = 2.097 : 1 : 2.381$. $\beta = 98^\circ 26'$. $p_0 = 1.135$, $q_0 = 2.355$, $\mu = 81^\circ 34'$. Crystals prismatic elongated parallel to the b axis. Forms: (001), (100), (110), (310), (102), (101), ($\bar{1}02$) and a number of doubtful ones.

PHYSICAL AND OPTICAL PROPERTIES: Color white or colorless. Luster vitreous; cleavage basal, perfect; orthopinacoidal, imperfect. Fracture conchoidal. Biaxial positive, $2V_{Na} = 54^\circ 40'$. $\alpha = 1.6169$, $\beta = 1.6204$, $\gamma = 1.6336$. $b = Y$, $X \wedge c = 30.6^\circ$. Plane of the optic axes \perp to the elongation of the crystals. Dispersion inclined. $H = 4$. Sp. Gr. 2.630.

OCCURRENCE: Found in a large dolerite inclusion in the kimberlite at the Dutoitspan Mine, Kimberly, associated with apophyllite, calcite and natrolite in crystals up to 11 cm in length. W. F. FOSHAG.