BOOK REVIEWS

LES MINÉRAUX DE BELGIQUE ET DU CONGO BELGE. H. BUTTGENBACH, Professeur émérite de l'Université de Liége, Membre de la Classe des Sciences de l'Académie Royale de Belgique et de l'Institut Royal Colonial Belge, Correspondant de l'Académie des Sciences coloniales de Paris. Paris, Dunod, éditeur, 92, rue Bonaparte (VI[e]). Liége, H. Vaillant-Carmanne, S. A., imprimeur, 4, place St.-Michel **(1947).** Printed in Belgium. xviii+574 pages, 16 by 24 cm., 17 plates, 1 folding map, 397 figs. Bound in half cloth. Price, 800 Belgian francs.

Data, most of them published and some unpublished, on the 309 mineral species known to occur in Belgium (76 species), in the Belgian Congo (134 species), or in both (99 species) have been gathered in this critical compilation; 16 minerals were first found in Belgium, 39 in the Belgian Congo. Only those characters are mentioned that were observed on material from these two countries; for rare species, however, a more complete characterization is given. Each species is described according to the following plan: name, chemical formula, crystal system or crystal class, accepted axial elements with their source, list of forms (observed on Belgian and Congolese crystals) symbolized in both Lévy and Miller notations, complete discussion under the headings "Belgium" and "Congo." As in his textbook[1] the author uses a different notation for rhombohedral and hexagonal crystals and he still treats the five trigonal classes as rhombohedral, regardless of lattice mode. The bibliography of each species is conveniently placed after its description. The 397 hand-lettered crystal drawings are uniformly very good, the forms being designated by the compact and descriptive Lévy symbols. Excellent photographs, for most of which the scale is unfortunately missing, are presented in 17 plates on glossy paper. The author has made a special effort to ascertain the geological occurrences of each mineral—a none-too-easy task, in which he occasionally concedes defeat!

This volume should prove quite serviceable as a reference book for it is very carefully indexed. In addition to the systematic tabulation of the species in the introduction, and their alphabetical listing at the end of the book, a geographical index gives the localities (separately for Belgium and the Belgian Congo) and, under each locality, the minerals found there. The Congolese index refers to a large and easily legible sketch map (scale: 1/5,000,000). The paper is good and the printing, with few typographical errors for a work of this sort, is up to Vaillant-Carmanne's usual excellence.

Professor Buttgenbach retired in 1945, after having taught at Liége for nearly a quarter of a century. The cruel blow he suffered in the 1944 destruction of his beautiful museum evidently did not subdue his energy, and his friends will rejoice at his continued activity. *Ad multos annos!*

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[1] Review in *Am. Mineral.*, **21,** 211–212 (1936).

GEMS AND GEM MATERIALS, by EDWARD H. KRAUS AND CHESTER B. SLAWSON. McGraw-Hill Book Company, Inc. Fifth Edition, **1947.** 332 pages and 403 illustrations.

The revised fifth edition of this text will be very welcome to amateurs and students of gem materials alike. Compared with the third edition (see this Journal, vol .24, p. 461, 1939) it has been somewhat expanded by addition of tables of absolute hardness, dispersion, and statistics of diamond production. The discussion of specific gravity has been made complete by illustrating and describing Krätschmar's balance. Other additions are paragraphs on distorted crystals, the property of parting, piezo-electricity, illustrations of the

"diamondscope" and "diamolite" and irradiation of gems. The dichroscope is explained more fully by the addition of a line drawing. The polariscope (a new model designed by Shipley) is described for the first time in the fifth edition. The chapters on cutting of gems including differential hardness in diamonds, and on synthetics are well balanced and up to date.

The chapter on Crystal Structure and *X*-ray Methods is well illustrated, but it is doubtful that anyone without further instruction could understand such a short treatment of a difficult subject. The 14 Bravais space lattices as illustrated should puzzle him especially.

This, as the earlier additions, contains among a multitude of good photographs a number which do not *show* the features which they are supposed to *convey*. It is very doubtful that any picture but a colored one could convey the appearance of a ruby in a piece of limestone or cassiterite with fluorite, to mention only two of the examples. The four colored plates of the third edition have been left out. The bibliography is well selected. The tables of physical properties are complete and should be very useful but are unfortunately printed in too small a type to appeal to the reviewers.

The publishers have used such a thin though good grade of paper that the book appears to be much less voluminous than previous editions in spite of its 332 pages. It has been possible by this means to hold the price to $4.00.

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