

BOOK REVIEW

DANA'S MANUAL OF MINERALOGY, revised by CORNELIUS S. HURLBUT, JR. Fifteenth edition. x+480 pages, 20 plates, 436 figures. John Wiley and Sons, Inc., New York; Chapman and Hall, Limited, London. 1941. Price \$4.00.

The fifteenth edition of the well known *Dana's Manual* has been in large part rewritten. The scope of the book remains the same, and some changes have been made by the author designed to make the book better suited as a textbook in elementary mineralogy. The page size has been increased to 6×9 inches, and the old flexible cover has been replaced by stiff cloth binding.

The contents are grouped into five major divisions: crystallography, physical mineralogy, chemical mineralogy, descriptive mineralogy, and determinative mineralogy. The subject of crystallography is simply presented. The symmetry elements explained and used are axis, plane, axis of rotary reflection, and center. The symmetry notations A_n , P , AP_n , and C are used. The crystal class names are those now in most general use, based on the names of the general forms (Groth-Rogers). A table lists all 32 crystal classes but only the 15 most important of these are discussed in the text. There are short discussions on twinning and crystal structure. No mention is made of the stereographic or gnomonic projections.

Part II, Physical Mineralogy, deals briefly with the physical properties of minerals. The book is not designed to be used as a text in optical crystallography.

Part III, Chemical Mineralogy, includes an excellent discussion of the relation of chemistry to crystallography. The confusion which has centered around the proper usage of the term "isomorphism" has been avoided by using the two terms isostructural and isomorphous. Directions for making blowpipe and chemical tests, and descriptions of tests for the elements constitute the bulk of Part III.

Part IV includes the description of 200 minerals. The mineral classification used is that which is being used in the new edition of Dana's *System of Mineralogy*, now in the process of preparation. Occurrence and uses of each mineral hold a prominent place in the descriptions. The mineral descriptions are followed by a general discussion of the occurrence and association of minerals, and this in turn by a section on mineral uses.

Part V consists of tables for the determination of minerals by their physical properties. Only common or economically important species have been included. Three different styles of type indicate the relative importance and frequency of occurrence of each mineral.

Two indexes are given, a subject index and a mineral index. The latter is an innovation and an extremely useful one. In the index, in tabular form after each mineral name is given composition, crystal system, specific gravity and hardness. Thus, to obtain any one of these facts about a particular mineral one need go no further than the index.

There are twenty plates (one a color plate) of unusually good photographs of mineral specimens. The crystal drawings are numerous and good.

The book is clearly and concisely written. It should serve excellently for the principal purpose for which it is designed, that of a text for an elementary course in mineralogy.

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