
 NEW BOOKS

Optical Crystallography. By ERNEST E. WAHLSTROM, Department of Geology and Mineralogy, University of Colorado, Boulder. John Wiley and Sons, Inc., 440 Fourth Avenue, New York, N. Y., 1943. v + 206 pp. 209 figs. 14.5 × 22 cm. Price, \$3.00.

This book is a welcome addition to the rather small number of optical crystallographic texts accessible to chemists. The simple, concise presentation of the theory of crystal optics in a form already familiar to mineralogists and petrographers accents the sound physical foundation underlying this subject in a way not as readily achieved in the typical laboratory treatments. Both in the more advanced petrographic manuals and in experimental texts on chemical microscopy the details of microscopic technique tend to obscure the well integrated treatment of the propagation light in crystalline solids upon which the individual methods depend.

After brief chapters on geometric crystallography, physical properties, elementary optics, and the polarizing microscope, the author begins a systematic development of the behavior of light in non-opaque crystals. Isotropic materials are discussed first and after a timely digression to describe fundamental methods of refractive index measurement, the treatment goes on to cover uniaxial and finally biaxial crystals. Extensive use is made of the indicatrix and the related ellipsoidal diagrams in correlating optical phenomena. This treatment is essential to a clear understanding of the relationships of the individual optical constants both among themselves and to the crystal lattice. A commendable feature is the large amount of space (including illustrations) given to the description of interference figures and their use in discovering the principal ellipsoidal axes and in determining optical sign. Much attention is given to off-center interference figures which in practice greatly predominate.

The author confines his treatment to those optical properties of unquestioned value in mineralogical studies and leaves to the chemist the problem of discovering and developing for himself other optical criteria which may assume importance because of the greater variety of chemical compounds at his disposal. It is believed that insufficient emphasis has been placed upon the value of interference figures in locating the principal refractive indices, greater attention having been given the less exact statistical methods based on the selection of high and low interference colors in an aggregate of crystalline particles. While there is evident some tendency toward over-simplification, the simple, direct treatment employed gives this book unquestioned pedagogical value.

W. M. D. BRYANT

The Biochemistry of Malignant Tumors. By KURT STERN, M.D., Formerly Research Associate of University of Vienna, New York, N. Y., and ROBERT WILHELM, M.D., Professor, University of Philippines, Manila. Reference Press, Brooklyn, N. Y. (The Chemical Publishing Co., Inc., 234 King Street, Brooklyn, N. Y.), 1943. xiv + 951 pp. 14.5 × 22.5 cm. Price, \$12.00.

The etiology of cancer has commanded the attention of specialists in widely different fields of scientific research, and valuable contributions have already been made by investigators whose background experiences lie outside the boundaries of morphological pathology and clinical medicine. There has been a tendency, unfortunate but probably unavoidable, for investigators of the cancer problem to become segregated into small specialist groups of biochemists, organic chemists, geneticists, endocrinologists, and the like, each following its own highly specialized line of attack. Under these conditions it is not easy to obtain an integrated picture of the progress of cancer research as a

whole, or to gain an insight into possible inter-relationships between the findings of the various specialist groups.

The book has yet to be written in which such a complete coordination is attempted, and must probably await further advances in our understanding of the nature of the disease. In "The Biochemistry of Malignant Tumors" Dr. Stern and Dr. Willheim have achieved the lesser, but still formidable, task of coordinating the contributions of the chemist and bio-chemist to this subject, and the range of the material actually covered is much broader than the title suggests. The text was developed from an earlier German monograph, published by the authors in Vienna in 1936. Cooperation between Dr. Stern and Dr. Willheim was unfortunately interrupted in December, 1941, when Dr. Willheim was in Manila, and the greater share of the responsibility for the later stages of the preparation of the book was borne by Dr. Stern.

The book is divided into ten chapters. The first three are concerned with the contributions of inorganic, organic and physical chemistry, and are followed by chapters on enzymes, nutrition and vitamins, metabolism, endocrine glands and their hormones, immunology, biochemical aspects of tumor origin and tumor growth, and, finally, chemical and biological tumor diagnostics. The literature has been covered systematically to the end of 1941; yet, in spite of the considerable amount of detail included, the authors have succeeded in avoiding the tedious style common to many specialist monographs in which a more or less complete literature coverage is attempted. This can be attributed mainly to their plan of omitting authors' names from the text, where possible, but providing extensive references to original publications as footnotes to each page.

Drs. Stern and Willheim make no attempt to advance any particular "cancer theory" of their own. They draw attention to discrepancies between the observations of different workers, where they occur, try to reconcile these, or to suggest factors which may account for the differences. It is somewhat discouraging to observe how frequently some line of attack has yielded promising results in the hands of one group of workers while other investigators obtained contradictory results under apparently comparable circumstances. It would seem there must still be many uncontrolled factors which influence the initiation, growth and degeneration of malignant tumor tissue.

As a result of the war, the number of investigators active in the field of cancer research has been very materially reduced, but it is to be expected that a search for the cause and cure of cancer will become one of the foremost objectives of post-war science. In summarizing the present state of our knowledge of the bio-chemistry of cancer, Dr. Stern and Dr. Willheim have made a real contribution to that post-war objective; their book should be read both by those at present engaged in the study of cancer and by those contemplating taking up such work in the future.

R. NORMAN JONES

 BOOKS RECEIVED

February 10, 1944–March 10, 1944

C. H. BAILEY. "The Constituents of Wheat and Wheat Products." (A. C. S. Monograph Series.) Reinhold Publishing Corporation, 330 West Forty-second Street, New York, N. Y. 332 pp. \$6.50.

HERBERT S. HARNED and BENTON B. OWEN. "The Physical Chemistry of Electrolytic Solutions." (A. C. S. Monograph Series.) Reinhold Publishing Corporation, 330 West 42nd Street, New York, N. Y. 611 pp. \$10.00.