est living miniaturist working in the technique of illuminated medieval manuscripts.

It is interesting to note that "De Revolutionibus Orbium Coelestium" is the rarest book in scientific literature to-day. The Union Catalogue of the Library of Congress records ten known copies of the first edition, Nürnberg, 1543, eleven known copies of the second edition, Basle, 1566, and six copies of the third edition, Amsterdam, 1617, in the United States and Canada.

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THE ELECTRON MICROSCOPE

The Electron Microscope. By E. F. BURTON and W. H. KOHL. 233 pages. New York: Reinhold Publishing Corporation. 1942. $3.85.

THIS book attempts the ambitious problem of taking a reader with infinitesimal knowledge of physics through the steps necessary to understand the electron microscope. There are, therefore, of necessity many inequalities of difficulty. However, the authors have succeeded as well as might be expected in this difficult task.

The first six chapters take the reader through some of the most elementary rudiments of optics, and the cartoon method of illustration is used freely with the objects and images depicted by cats, giraffes, etc., and where wave motion is explained by the picture of a child upsetting a pile of books. It is not to be expected that the reader who needs these devices will get a very clear comprehension of the "dual theory of light and of the electron" as propounded in Chapters 8 and 9; and the attempt to explain the motions of electrons in electromagnetic fields will probably be comprehensible to an appreciable degree only to those for whom the elementary parts are unnecessary. In this connection, the present reviewer feels that the statement on page 111 may lead the elementary student to believe that electrons starting with zero velocity continue to follow the lines of force. This they would strictly do only when moving with short mean free path as ions in a gas.

In spite of the foregoing unavoidable difficulties of presentation, the latter part of the book gives a very readable account of the potentialities of the electron microscope and of the essentials involved in its operation. The section dealing with the power of the microscope to reveal emission characteristics of thermionic emitters of various kinds will be of interest to many research physicists.

The book gives a clear picture of the orders of magnitude in relation to the various possibilities realizable with the electron microscope; and it will probably be of the greatest use to those who have no previous acquaintance with the microscope but are, nevertheless, beyond the stage for which the more elementary explanations would be necessary.

The implication on page 108 that a vessel containing millions of molecules represents a poor vacuum is probably a pure oversight, for, of course, a vacuum of 10^{-8} mm still contains about 3×10^8 molecules per cc.

RADIOACTIVITY

Kuenstliche Radioaktivitaet. By KURT DIEBNER and EBERHARD GRASSMAN. xi + 87. Leipzig: S. Hirzel. 1939.

THIS book seems to be a valuable compilation of data in the field to which it refers. It is of attractive form, and the material is well arranged. It will suffice to summarize its essential contents as follows, in which the reviewer has translated the titles from the original German:

Part 1: Induced Radioactivity by α-rays; Induced Radioactivity by Protons; Induced Radioactivity by Deuterons; Induced Radioactivity by Neutrons; Induced Radioactivity by Gamma-Rays.

Part 2: Tabular Presentation of all Stable, Natural and Induced Radioactive Isotopes with the most Important Data.

Part 3: Summary of all Stable, Natural and Induced Radioactive Isotopes, and the Transmutation Processes in Graphical Representation.

It is worth while calling special attention to the comprehensive chart contained in graph 3.

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NATURAL COLORING MATTERS

The Chemistry of Natural Coloring Matters. The Constitutions, Properties and Biological Relations of the Important Natural Pigments. By FRITZ MAYER, Ph.D. Translated and revised by A. H. COOK, Ph.D. American Chemical Society, Monograph Series, No. 89. 6¼ × 9¼ in. 354 pp. Bound in dark blue cloth. New York: Reinhold Publishing Corporation. $10.00. 1943.

THE book is divided into five chapters, each one of which has numerous references to the literature in the form of paginal footnotes. These chapters are: (1) Carotenoids (Polyene Pigments) (82 pp., 443 refs.); (2) Diaroylmethane Compounds (3 pp., 17 refs.); (3) Carbocyclic Compounds (59 pp., 240 refs.); (4) Compounds Containing Oxygen Heterocycles (108 pp., 512 refs.), and (5) Compounds containing Nitrogen Heterocycles (70 pp., 274 refs.). These chapters are followed by a brief General Bibliography, an Author Index and a Subject Index. The subject is presented compactly, access to further details being obtainable through the footnote references.

Paper, type, printing and binding are all excellent,