

how and by what methods one of the most important of modern sciences has grown from its earliest beginning, and how difficult it is to arrive at anything like correct views of nature without constant appeal to nature itself.

In conclusion, the reviewer wishes to express the pleasure he takes in the fact that we have at last a chemical treatise by a woman, which shows a high degree of scholarly attainment and originality and which is well worthy to rank with the best known and most used works on the history and philosophy of chemistry.

H. N. STOKES.

ECONOMIC GEOLOGY OF THE UNITED STATES. By HEINRICH RIES, A.M., PH.D., Assistant Professor of Geology at Cornell University. New York: The Macmillan Company. 1905. xxi+435 pp. Price, \$2.60 net.

The ground covered by this work is essentially that gone over in the elementary course in economic geology at Cornell University. The presentation of the subject differs from that in most text-books in that the consideration of the non-metallic minerals precedes that of the metallic minerals, this change having been made for the reasons that the production of the former is far in excess of the latter, and that the discussion leads up from the simpler to the more complex forms of mineral deposits. Geologic and physiographic principles are not presented. Brief statistical statements of production will be found of value by the student and lay reader, as also the bibliographical references at the end of each chapter.

W. F. HILLEBRAND.

A LABORATORY GUIDE TO THE STUDY OF QUALITATIVE ANALYSIS. Based upon the Application of the Theory of Electrolytic Dissociation and the Law of Mass Action. By E. H. S. BAILEY, PH.D., Professor of Chemistry, and HAMILTON P. CADY, PH.D., Assistant Professor of Chemistry in the University of Kansas. Fifth edition, thoroughly revised. Philadelphia: P. Blakiston's Son & Co. 1905. Price, \$1.25.

Although the entire book has been thoroughly revised, and certain portions of the text rewritten where greater clearness was desired, yet the principal change in the fifth edition of this book is one of arrangement. The entire scheme for the separation of the cations, accompanied by explanatory marginal headings, is placed at the end of the preliminary experiments upon the seven groups. This has the decided advantage of giving a definite, continuous procedure, which may be followed in making a complete separation of the cations, while the reactions dis-