

weight of which the phosphorus is calculated. The authors do not refer to the use of the reductor with amalgamated zinc and give no details of the titration with caustic soda, the two methods most largely in use in this country.

The analysis of "Steel-making Alloys" is treated much more satisfactorily, and supplies a want which has existed ever since these alloys have come into general use.

The portion of the book treating of the "Micrographic Analysis of Steel" is clear and well written and is illustrated by well-chosen sections.

An appendix of 145 pages contains "A Bibliography of Steel Works Analysis" by Harry Brearley, which appeared in the *Chemical News*. The references are to English journals only. The other sections of the book call for no particular notice.

The text is occasionally marred by the use of such expressions as "weigh into", and of such words as "filtrable" and "combusted".

The book is clearly printed on excellent paper and is, among works on chemistry, the most creditable specimen of the book-makers' art that has been issued from the English press for some time.

It contains a full table of contents and an index.

A. A. BLAIR.

INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE. First annual issue. CHEMISTRY. Part I. London: Harrison and Sons, 45 St. Martin's Lane. Price, 21 shillings.

The Royal Society considered, about the year 1893, the advisability of printing a complete index of current scientific literature. It was hoped to do this by international cooperation; therefore, a large number of representative bodies and individuals abroad were consulted. After several meetings of accredited representatives it was concluded to proceed with the publication of such an index. Seventeen branches of science are included in this catalogue. Each complete annual issue will thus consist of seventeen volumes. The price of the set will be about \$90. Separate volumes will be sold. The first part of Volume D, devoted to chemistry, has just appeared. It will be followed shortly by a second part. This first volume consists of three sections: (1)

Schedules and indexes in English, French, German and Italian, (2) an author's catalogue, and (3) a subject catalogue. It is evident, from a careful examination of the present volume, that this international undertaking deserves the hearty support and cooperation of all scientific investigators, who will be kept fully and quickly informed of all new discoveries. The chemical volumes will be of real service to all chemists, and the entire catalogue should find a place in every library. S.

QUALITATIVE ANALYSIS, A MANUAL FOR THE USE OF STUDENTS OF CHEMISTRY IN SCHOOLS AND COLLEGES. BY L. M. DENNIS, Professor of Analytical and Inorganic Chemistry, and THEODORE WHITTELEV, Instructor in Analytical Chemistry, Cornell University. Ginn and Co. 1902. pp. 142.

The aim of the authors is to offer "a work in qualitative analysis that shall be both exact and compendious, avoiding on the one hand the diffuseness of the larger treatises and on the other the incompleteness of the smaller manuals." Their method of instruction is to have the student observe the behavior of known substances in solution toward the following reagents: Potassium hydroxide, ammonium hydroxide, sodium carbonate, hydrogen sulphide, ammonium sulphide, hydrochloric acid, and sulphuric acid. This gives the basis for grouping, separation and identification. The analytical methods are generally well chosen and the directions clearly expressed. Following the latter, under the heading "Discussion," are given with suitable fulness the reasons for the various steps and also some consideration of the special difficulties which may be met in practice. The authors have been successful in maintaining a wise balance in the fulness of detail whereby the student receives sufficient information to work intelligently but is still called upon to exercise judgment and discrimination in the application of facts to special conditions. One might wish that the preliminary descriptions were made to include something more than reactions in solution. For example, some statement concerning oxides and their relation to acids, bases, and salts would seem desirable in order that the phenomena of oxidation and reduction might be better understood. It may perhaps be assumed that such information has been secured in a preceding course of general chemistry.

"The Introduction," in the words of the preface, "discusses in