

istry is developed strongly and the presentation of this part is made very clear and attractive.

The part devoted to the detection and separation of the metals and acid radicles covers about the same ground that is included in most of the smaller works on this subject. The value of making comparisons between reactions brought about by the same reagent acting upon different solutions is left for the student to see for himself, it is not brought out here.

For training "future chemists" this book is inadequate, but for students taking the course in a general way it is remarkably well adapted as it points out plainly that there is something to qualitative analysis beside color and solubility of precipitates, and the separation of the "six groups," a point entirely missed in many courses and most books. O. L. SHINN.

A Manual of Qualitative Analysis. By J. F. MCGREGORY. 133 pp. Ginn & Company. 1909. Price, \$1.00.

This differs from most books on this subject in the arrangement. Groups and group reactions are not spoken of until all of the metals and the acid radicals have been studied separately. The groups are only discussed in the line of separations and the comparisons between the different metals are not made apparent. This method of treatment appears to multiply isolated facts and add confusion to the mind of the student. The term ion and the theory of dissociation are not used, and the old term radical is retained. The use of tables or schemes for group separations is condemned but one method of separating each group is described in the text.

The author states in the introduction that the book is not designed for those who intend to become chemists, but for those who can spend but a short time on this subject. For such students it would be a satisfactory book. O. L. SHINN.

An Introduction to Chemical Analysis for Students of Medicine, Pharmacy and Dentistry. By ELBERT W. ROCKWOOD, M.D., Ph.D. Third edition, illustrated, 247 pages. Philadelphia: P. Blakiston's Son & Co. Price, cloth, \$1.50 net.

The first edition of this excellent laboratory guide was reviewed in *THIS JOURNAL*, 24, 287. This third edition contains some new matter, and is especially characterized by the attention paid to the ionic interpretation of reactions. The preparation of a satisfactory book for a special class of students who have but a limited time to devote to chemistry is not an easy problem under any conditions; in the case of a work for medical students which must be full enough to prepare for physiological chemistry the difficulty is very great. Medical courses are already badly overcrowded.

The present book does not make any undue requirement on the time

of the medical student, or call for more work than he should be expected to cover in his preparation for medicine. It presents a good outline of qualitative analysis and the minimum of the theory and practice of volumetric methods which may be considered necessary to fit the student for practical applications in later years of the course. There are also sections on the analysis of water and on the detection of poisons, and a long section on the identity tests for a considerable number of organic substances. The mechanical work on the book is excellent.

J. H. LONG.

Quantitative Chemical Analysis: Adapted for Use in the Laboratories of Colleges and Schools. By FRANK CLOWES, D.Sc., Lond., and J. BERNARD COLEMAN, A.R.C.Sc., Dublin. 8th Ed., 565 pages. P. Blakiston's Son & Co., Philadelphia. 1909. Price, \$3.50 net.

The fact that this book has passed through eight editions (the first edition appeared in 1891) is a good indication of the favor with which it has been received. Indeed, the work is a standard in England, and here in America it has met with no small amount of success. Barring the translation of the Fresenius by Cohn, we know of no work on quantitative analysis in the English language which contains so much useful, reliable and varied information. The text of the recent edition has been thoroughly revised, the type has been reset, and many improvements and additions have been made. The subject matter is arranged in eight parts, which are subdivided into eighteen sections: Part I is devoted to preliminary and general operations, Part II to gravimetric analysis, Part III to volumetric analysis, Part IV to complex quantitative estimations, Part V to the analysis of organic substances and the methods for determining molecular weights, Part VI to gas analysis, Part VII contains the results of a number of typical analyses as well as a fine set of reference tables, and Part VIII treats of the preparation of gases, the use of compressed gases, the distillation of water, etc. It also embraces a list of books for reference.

Among the additions of new matter we note in particular a section on the analysis of oils, fats and waxes, a number of electrolytic methods for determining some of the metals, and a description of, and the directions for using, the bomb calorimeter for coal valuation.

The book has a pronounced English flavor. It is written along conservative lines, theoretical matters have been omitted, and only those methods have been described which the authors regard as truly useful and well established. From the standpoint of the reviewer there are, in certain cases, methods of separation and determination which are superior to those cited by the authors. As examples he would mention Neher's admirable method for separating arsenic from antimony, Classen's electrolytic method for separating antimony from tin, and Penfield's device