

condition. The drawbacks in the use of white paper for a background which may be easily wetted or stained are removed.

It has been found convenient to use a rack of ten or twelve holes, since with that the standards can be placed in every other hole, leaving the vacant spaces for the tubes to be compared.

NEW BOOKS.

LESSONS IN QUALITATIVE AND VOLUMETRIC CHEMICAL ANALYSIS FOR THE USE OF PHYSICIANS, PHARMACISTS, AND STUDENTS. BY DR. CHAS. O. CURTMAN; INCLUDING LESSONS IN QUALITATIVE CHEMICAL ANALYSIS, BY DR. F. BEILSTEIN. Fourth edition. St. Louis, Mo.: John L. Boland Book and Stationery Company. 1894. Price \$1.50.

This new edition of a work intended primarily for students of medicine and pharmacy, contains chapters on manipulations of chemical apparatus, qualitative analysis (inorganic), examples for practice in the analysis of organic substances (proximate), volumetric analysis, examination of drinking water, and urine analysis. The author says the section on volumetric analysis "contains numerous examples illustrating every important volumetric method and forms a complete commentary on the volumetric assays of the new U. S. Pharmacopeia." The book contains a number of cuts illustrating various forms of apparatus, urinary sediments, several pathologic micro-organisms, and two charts of spectra. Meyer and Seubert's atomic weights are used. "The orthography has been adapted to the rules of the Chemical Section of the A. A. A. S."

To cover so large a part of the domain of analytical chemistry within a space of 300 octavo pages has required the constant and severe abridgment of methods allowing no opportunity for a discussion of their merits. The author has accomplished his purpose with more than ordinary success. As a rule he has shown excellent discrimination in the choice of methods, and has in some cases introduced matter one would hardly expect to find in so small a work, *e. g.*, Gutzeit's, Fleitmann's, and Bettendorf's tests for arsenic. Physicians and pharmacists will doubtless find the work a useful one. In some cases brevity of treatment has led to dogmatic statements that are liable to be wrongly interpreted by those having little knowledge of the subject under

discussion. Examples of this kind may be found in the chapter on the examination of drinking water. One having had experience in the matter would hardly be willing to state that "albuminoid ammonia may be considered as *proof of sewage actually present*, etc.," p. 244,—the italics are the authors. Other examples of a similar kind might be quoted. Standards of organic impurity in drinking water—a dangerous subject even for experts—can not be arbitrarily established, and the wise analyst will express a positive opinion only as he knows the history of the sample of water under examination. W. W. DANIELLS.

LABORATORY MANUAL OF ELEMENTARY CHEMICAL PHYSIOLOGY AND URINE ANALYSIS. BY JOHN H. LONG, M.D., Sc.D., PROFESSOR OF CHEMISTRY AND DIRECTOR OF THE CHEMICAL LABORATORIES IN THE SCHOOL OF MEDICINE AND PHARMACY OF NORTHWESTERN UNIVERSITY. Small 8 vo., pp. 360 and index. Chicago: E. H. Colegrove & Co. Price, \$2.50.

This work is a decided departure from the methods of the laboratory text-books usually offered to medical students. It joins the exercises in physiologic chemistry with those of applied medical chemistry, a plan that will increase the interest and value of the course. All through the book we find evidence that it is written from practical experience and is an evolution of years of teaching.

In the preface Dr. Long discusses briefly the unsatisfactory state of teaching at medical schools. He expresses the feeling growing among those engaged in teaching chemistry at such schools, that the general principles of the science should be made an entrance requirement.

The first part of the book, one hundred and seventy pages, comprises the chemical physiology. Methods of investigation are presented in considerable detail. Especially noticeable is the essay on polarimetry. Reference occurs as frequently in organic chemistry and physiology to rotation of the polarized ray, and the phenomenon is now recognized as having so direct a relation to molecular structure, that it is wise to give it full explanation. Numerous illustrations of the form and action of polarizing apparatus are given.

Part II, on Urine Analysis, comprises over one hundred and