

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

sixty pages, and includes all that is required for the medical course.

We must express a regret that the spelling is old-fashioned. A teacher in a medical school may be excused from going to the full length of using "sulfate," "sulfid," etc., since the new pharmacopeia has refused to adopt these forms, but the useless final "e" might be dropped in many cases, and general usage permits the abandonment of the diphthong "æ" in all English words. We should prefer, therefore, "hemin" to "hæmin." It is pleasing to note that the approved term "glycerol" is used.

Several useful tables are included in appendix.

There are numerous illustrations of apparatus and of microscopic appearances of important structures. The work will be of great service in the field to which it is devoted. H. L.

THE CHEMISTRY OF PAPER-MAKING. TOGETHER WITH THE PRINCIPLES OF GENERAL CHEMISTRY. A HANDBOOK FOR THE STUDENT AND MANUFACTURER. BY R. B. GRIFFIN AND A. D. LITTLE. 8 vo. pp. 517. 99 illustrations. New York: Howard Lockwood & Co. 1894. Price, \$5.00.

The scope of this book is sufficiently indicated in the title. One hundred of the opening pages are devoted to elementary chemistry, evidently intended for the manufacturer who knows little chemistry or has forgotten it; perhaps this was necessary; for chemists who buy the book it is certainly superfluous. Regarding the remaining pages it may be said that the authors display practical as well as theoretical knowledge of the subject, and the result is an entirely satisfactory treatment. They seem to be investigators as well and have embodied in nearly every section some valuable matter derived from their own experience. This will be especially true of those sections of the book treating of the chemical analysis and of paper-testing, which, to most chemists, prove its most valuable features. The treatment of these sections is thoroughly common sense and shows both knowledge and good judgment. Fourteen pages are given to an account of cellulose and its derivatives and their properties; then we have thirty-four pages on the various fibers. Following this, seven pages are devoted to an account of the processes for isolating cellulose. Seventeen pages are given to the soda process,