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 is 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,

one page to the sulphate process, and nearly 200 pages to the sulphite process. Next comes Bleaching, twenty-six pages; Sizing and Loading, nineteen pages; Coloring, nine pages; Water, nineteen pages; Chemical Analysis, seventy-two pages; Paper-Testing, thirty-two pages; Electrolytic processes, eleven pages, and an appendix and index. Among other things, the appendix contains an account of the interesting thiocarbonates of cellulose discovered by Cross and Bevan, and a list of United States patents relating to the sulphite process. In brief, the book is an excellent one: well written, well printed, and well illustrated, and worthy of a place on the book-shelf of the chemist.

E. H.

A SHORT HISTORY OF CHEMISTRY. By F. P. VENABLE, PH.D. 12 mo. pp. viii; 163. Boston: D. C. Heath & Co. 1894. Price, $1.00.

The author, who is Professor of Chemistry in the University of North Carolina, has, for several years, given lectures to his students on the history of chemistry, and this little volume is an outgrowth of those lectures. The subject is divided into six Parts: I the Genesis of Chemistry; II. The Alchemists; III. Qualitative Chemistry; IV. Quantitative Chemistry; V. Structural Chemistry; VI. Special Branches of Chemistry. Each Part is subdivided into unnumbered sections and paragraphs, with headings in bold-faced type, making the book convenient for study.

Considering the limited space in the book, the author has certainly arranged an accurate compendium for chemical students, covering the entire field. He shows knowledge of the standard works on historical chemistry in three languages, but he appears not to have access to the earlier original works, except in a few instances. Viewed in the light of the original writings of the zealous alchemists, the iatro-chemists, and the learned philosophers of the last century, the history of chemistry becomes as fascinating as a romance, and a work based on them acquires an individuality which is only partly reflected in a compilation at second-hand.

We notice that high honor is paid to the erudition of the Arabian chemist, Geber, notwithstanding Berthelot has shown that the writings usually ascribed to Geber can not be traced