

ists who have glue analyses to make, is the position the author takes that the physical tests must determine the value of the glues and there can be no question but that the author proves his thesis.

Much credit is given the standards of physical tests, known as "Cooper grades," which depend greatly on the viscosity and jelly strength—by the latter is meant the resistance to pressure of a given glue when compared with other glues of known character.

His book should be in the hands of all chemists who have glue work to do and comes nearer to being a hand-book of the subject than anything yet printed, giving as it does all the chemical and physical tests of value and entering also largely into the commercial side of the subject.

JOHN H. YOCUM.

"THE PEABODY ATLAS."—SHIPPING MINES AND COAL RAILROADS OF THE CENTRAL COMMERCIAL DISTRICT OF THE UNITED STATES. Accompanied by Chemical, Geological and Engineering Data. By A. BEAMENT. Price \$5.00. 149 pp., size 16 $\frac{3}{4}$  x 18 in. Peabody Coal Co., Chicago. 1906.

This is an exceedingly valuable compilation of coal information and represents a vast amount of labor as well as great expense. Three general maps of the United States are given with especial designations of coal fields. Twenty-five sectional maps 14"x16" give counties, railways, and mines in detail, the latter numbered for ready reference to the lists of coal, localities, coal operators and coal railroads arranged alphabetically under each head. The statistical and geological data are concise and well arranged. Not the least valuable feature is a well illustrated description of the author's theories concerning the combustion of coal under the heading of "Smokeless Furnaces and Smoke Suppression." Few writers are so well qualified to discuss this and related topics where fuel of the bituminous type is involved.

S. W. PARR.

WATER SOFTENING AND TREATMENT. WILLIAM H. BOOTH. 8vo., pp. XVI + 308. Price, \$2.50. D. VAN Nostrand & Co., New York, 1906.

The literature in English upon boiler waters is meagre. Real contributions, therefore, to our information on this topic are welcome. Thirty pages are devoted to a discussion of the mineral constituents and reactions of possible reagents. The author is evidently an engineer rather than a chemist, and most of the chemical data are "said to be" as given in the text. This second hand characteristic of the descriptive matter probably accounts for the lack of discrimination in the topics introduced. Magnesium hydrate, for example, may be interesting, but hardly practical, while no mention is made of phosphates as reagents. The discussion of analytical methods covers six pages and is devoted solely to a description of the use of soap solutions. A more pretentious discussion along these lines is contained in Appendix No. 1, covering sixteen pages. This