

in organic chemistry, I have been unable to find any satisfactory directions for its preparation. After considerable experience with different mixtures, the following method has been found most satisfactory.

One hundred grams of chloracetic ester (which has been shaken with a solution of sodium carbonate to remove any free chloracetic acid), 54 grams of pure potassium cyanide and 70 cc. of methyl alcohol are put in a flask and boiled with an upright condenser for four hours. The solution is then cooled and sucked off from the potassium cyanide as far as possible, the methyl alcohol distilled away and used for rinsing the potassium cyanide. After distilling the methyl alcohol again from the washings and adding the residue to the main portion, some ether is added to the latter, causing the precipitation of some insoluble matters. The solution is then poured off and fractioned two or three times under diminished pressure. The yield of cyanacetic ester boiling within an interval of about 10° and sufficiently pure for most synthetical purposes is 45 to 55 grams. This is little more than 50 per cent. of the theory, but many other methods which have been tried give lower yields, and, in some cases, only about half as much.

W. A. NOYES.

JOHNS HOPKINS UNIVERSITY,
BALTIMORE, MD.

NEW BOOKS.

RUBBER, GUTTA-PERCHA, AND BALATA. BY FRANZ CLOUTH. First English translation, with additions and emendations, by the author. London: Maclaren and Sons; New York: D. Van Nostrand Company. 1903. Price, \$5.00 net.

This work is a somewhat enlarged translation of the German edition, and is, in some ways, a disappointing production. It is written by the head of one of the largest of German rubber factories. One would, therefore, naturally expect that, though the book might show deficiencies in its botanical, physical, or chemical sections, in which the author simply shows himself as compiler the technical part of the work would be distinguished from earlier books on the same subject by comprehensive treatment of the ways and means employed in the manufacture of rubber goods. Such a book would be a very acceptable addition to our technical

literature. But just in this respect the book fails entirely. To all those acquainted with the manufacture of rubber goods this will at once be evident from the fact that the manufacture of that enormous variety of articles, classified under the head of soft rubber goods, is disposed of on four pages; the vast amount of technical detail involved in the manufacture of rubber foot-wear is dismissed on one page, and the manufacture of electric cables in even less space. To the student of technology the book is, therefore, of very little use, while to the manufacturer and scientific worker it offers nothing which could not as well, and sometimes better, be found elsewhere. In its general sections Clouth's work follows closely the lines of Seeligmann's earlier work, and it also shows, therefore, some of the latter's shortcomings on the more scientific side of the subject. Thus there is no reason whatever to confine the chapter on the "Coagulation of the Rubber Latex" to the mere statement of the methods employed by the natives, and it can only be described as mischievous to designate the process of coagulation as "decomposition." Again do we find here asserted the solubility of rubber in ether, in which, as a matter of fact, all grades of rubber are entirely insoluble. The statement that "at a higher temperature the dissolving process is perfect, but does not take place without decomposition," is either enigmatical or untrue, possibly both. The way in which the author deals with the question of the nature of vulcanization is, perhaps, heroic, but it is bound to place him in opposition to all those competent to judge this important point.

Seeing that this book is of as little service to the scientific worker as to the student of technology, it might appear surprising that there should have been a demand for an English edition. That there was such a demand, according to the author's own statement in the preface, serves as a striking demonstration of the extraordinary dearth of literature on the subject of rubber and rubber manufacturing.

In defense of the author against part of the above criticism, it may certainly be urged that the writing of an exhaustive work upon India rubber, and the manufacture of rubber goods, would be a gigantic undertaking, if, indeed, it is not beyond the powers of any one man. But this really only goes to show that it is a mistake to write a book of a scope impossible of attainment. As far as the technical side of India rubber is concerned, there ex-

ists, therefore, still a long-felt want of a book dealing, in a comprehensive way, not so much with the manufacture of all imaginable varieties of rubber goods in full detail, but rather confining itself to an exhaustive presentation of the principal general working methods employed in rubber manufacture. Such a book would be of the greatest value to every student of technology, as well as to rubber manufacturers all the world over. C. O. WEBER.

A SYSTEMATIC HANDBOOK OF VOLUMETRIC ANALYSIS. BY FRANCIS C. SUTTON. Ninth edition, revised and enlarged. P. Elakiston's Son and Co. 1904. 8vo. xii + 617 pp. Price, \$5.00.

It is unnecessary to say anything of the merits of this new edition of an old and greatly valued book. The eighth edition is dated 1903, which shows that the book is still appreciated. The size of the page has been enlarged in the new edition, which shows signs of careful editing. A new section on the determination of potassium as cobaltrinitrite is given; the section on salt cake has been cut down; five new pages on the compounds in gas liquors have been added; a page is added on the extension of the iodometric system; White's method for determining aluminium sulphate is described; two pages have been added in describing methods for barium; the paragraph on the titration of iron by stannous chloride is replaced by one on the titration of iron by titanous chloride; three pages are added on the azo colors. These and many other deletions and additions make the new edition valuable even to those who have that of 1903. So much has been cut out that the number of pages is a little less than in the eighth edition. A brief bibliography might, with advantage, be added to each chapter. EDWARD HART.