

## NEW BOOKS.

ON THE "BECKMANN REARRANGEMENT." BY JULIUS STIEGLITZ, Professor of Chemistry in the University of Chicago. Chicago: University of Chicago Press. Price, 25 cents.

This is a carefully prepared monograph on the probable cause and mechanism of the "Beckmann Rearrangement," which is so defined as to include a variety of reactions in which an alkyl or aliphyl group leaves a carbon atom to attach itself to a neighboring atom of nitrogen, as well as the corresponding rearrangement in the case of oximes. The author, after arriving at the conclusion that "The interpretations of the rearrangement given by Hoogewerff and van Dorp, Hantsch, Beckmann, Hesse, Freundler, and Nef do not agree with all the established facts," advances evidence in support of the view, that "All the most important results of the investigations of the reaction from the point of view of the constitution of the substances involved, agree best with an interpretation which postulates the intermediate formation of a univalent nitrogen derivative as the essential cause of the rearrangement".

S. P. MULLIKEN.

THE ANALYSIS OF OILS AND ALLIED SUBSTANCES. BY A. C. WRIGHT, M.A., B.Sc. New York: D. Van Nostrand Co.; London: Crosby, Lockwood and Son. 8vo. Cloth, 241 pp. Price, \$3.50 net.

This book describes very fully the various constituents of oils, waxes and resins and also the methods of the determination of the physical and chemical properties of these bodies. It discusses further the treatment of the non-fatty matters contained in oils and gives the means of their identification and estimation. This is followed by the description, properties and methods of investigation of the important oils, fats and waxes, some fifty in number. The work concludes with the examination of some commercial products, as turkey-red oils, lubricating oils and greases, and paint oils.

The treatise, which may be tersely described as an abridged Lewkowitsch, is most admirable, and will doubtless replace it in many cases. There are, however, some statements which are not in accord with the usual experience, particularly that the open flash test of oils is better than the closed. In some instances the

methods are not explained with sufficient clearness ; one is in doubt, for example, as to the procedure to be followed in the estimation of free acid.

In view of the fact that all references are so far as "possible to the *Journal of the Society of Chemical Industry*, to which practically all chemists and students have access," it would seem to be of doubtful expediency to introduce into this book processes there given, the results of which are open to question, such as Farnsteiner's method for the separation of oleic acid. While the writer cordially concurs in the exclusion of some tests—particularly color tests—yet he feels that it was a mistake not to have included McIlhiney's bromine test, one of the most valuable in the examination of these compounds. The omission of the satisfactory David's test for rape seed oil is also to be noted. No mention is made of corn or peanut oils, although maize and earthnut oils are carefully described ; the treatment of linseed oil is particularly satisfactory.

Mineral oils, except as adulterants, are not discussed, although a description of the flash and viscosity tests is given. The usefulness of the work would be increased were the index more complete. It is a valuable book and may be warmly recommended to those interested in the subject.

A. H. GILL.

A HISTORY OF HINDU CHEMISTRY FROM THE EARLIEST TIMES TO THE MIDDLE OF THE SIXTEENTH CENTURY A. D. With Sanskrit Texts, variants, translation and illustrations. BY PRAPHULLA CHANDRA RAY. Vol. I. London and Oxford : Williams and Norgate. 1902. pp. i-iii, a-d, i-lxxix, 1-176, 1-41. 7 plates. 8vo. Price, 12s. 6d.

The author, who occupies the chair of chemistry in Presidency College, Calcutta, has done for Hindu chemistry what Berthelot did a few years ago for Greek, Arabic and Syriac documents of the Middle Ages. His historical studies begin with the sacred books of very early, uncertain dates, and extend to about the year 1550 A. D. ; the second volume will probably bring the subject down to the present time. In the Atharva-veda, the Charaka and the Susruta, occur the earliest references to therapeutical and chemical knowledge, as well as to pharmaceutical preparations ; they date probably prior to the fifth century. In these and succeeding writings, alchemical ideas abound, mixed up with magic, sorcery, and religious rites of a debasing character. The chief of these were