

BOOK REVIEWS

efficacy has been demonstrated in the chemistry of natural products. With appropriate attention to the effects of controllable variables, the R_F value may now be recorded as a simple analytical character of many substances, such as carbohydrates and amino-acids, for which certain of the usual physical constants may be of little analytical significance. Dr. Cramer's monograph provides a concise, well-documented survey of the experimental techniques and applications of paper chromatography, together with a valuable series of tables of R_F values published up to early 1951. Most of the important procedures for qualitative and quantitative work are described and brief mention is made of retention analysis. The necessary information is given for the laboratory operation of the chromatopile in preparative paper chromatography and of paper electrophoresis. The illustrations are excellent. More attention could well have been given to the extremely valuable extension of the range of paper chromatography achieved by the use of paper impregnated with buffers and surface-active adsorbents.

The chapters on applications include information on developing solvents, spraying reagents and other methods of location for amino-acids, carbohydrates, phosphoric esters, purines, nucleic acid derivatives, pterins, phenols, organic acids and bases, vitamins, antibiotics, porphyrins, steroids, dyestuffs and inorganic compounds. Although the R_F values of simple substances are recorded, the utility of certain tables of R_F values is reduced by the lack of information on the exact composition of mixed developing solvents. It is not normally advisable to correct the R_F value of an unknown substance for the departure of the value of a known substance from its standard R_F value by more than ± 0.02 . It cannot be said that this section is free from errors; for example, a publication ascribed to the reviewer and a colleague was not in fact concerned with paper chromatography; the R_F values of phenols tabulated on p. 59 as being determined in cresol were observed with a mixture of *m*-cresol and acetic acid; incorrect figures are given for the R_F values of the cyanidin glucosides and 1-epicatechin. This monograph is nevertheless a very useful compilation of a mass of widely scattered information and with its 283 references will be welcomed by experimental workers in many branches of chemistry.

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BOOKS RECEIVED

Clark's APPLIED PHARMACOLOGY (8th Ed.). Revised by Andrew Wilson and H. O. Schild. Pp. x + 670 including 120 illustrations and Index. J. and A. Churchill, London, 1952. 37s. 6d.

HISTORY OF PHARMACY (2nd Ed.) by Edward Kremers and George Urdang. Pp. xiv + 622 including 30 illustrations. J. B. Lippincott Company, London, 1951. 60s.

ORGANIC CHEMISTRY by A. F. Holleman, revised by J. P. Wibaut, translated from the 16th Dutch Edition by Samuel Coffey. Pp. xiv + 626 and Index. Cleaver-Hume Press, London, 1951. 55s.

THE PLANT GLYCOSIDES by H. J. McIlroy. Pp. 125 and Index. Edward Arnold, London, 1951. 18s.