

## BOOK REVIEWS

*THE VITAMIN B COMPLEX*, by F. A. Robinson. Pp. xi + 629 and Index. Chapman and Hall, London. 1951. 60s.

The author has written a valuable and readable textbook on the vitamins of the B complex. Beginning with aneurine, he goes on to deal with riboflavine, nicotinic acid, pyridoxine, pantothenic acid, biotin, the folic acid group, vitamin B<sub>12</sub>, *p*-aminobenzoic acid, inositol and, finally, choline. Chapter XIII is concerned with miscellaneous water-soluble growth factors. The concluding chapter (XIV) makes an attempt to show the close biological relationship existing between the B-vitamins by indicating the different stages of metabolism in which each participates. The arrangement of each chapter follows the general plan: introduction, isolation, structure and synthesis of the vitamin, properties, stability, biological, microbiological and chemical assay, effects of deficiency and overdosage, metabolism, intestinal synthesis, animal and human requirements, pharmacological action, functions, nutritional requirements of micro-organisms, effects on higher plants, requirements of insects and synthetical analogues. Certain features of the book deserve special mention. Industrial methods of production are indicated, together with references to the patent literature. Due importance is attached to the role of intestinal bacteria in the endogenous production of the vitamins. Pharmaceutical interests are remembered in the sections dealing with stability, dosage and assay. It is, therefore, a pity that the author has not seen fit to include any drawings or photographs of the deficiency states, and it is hoped that a future edition may remedy this defect.

The sections dealing with the more established members of the B-complex are well documented and up to date, and give excellent reviews of current status and thought. Progress in the vitamin B<sub>12</sub> field, however, has been so rapid in the past year that this part is already in need of revision. The name erythrocin for vitamin B<sub>12</sub> has not received general acceptance, whilst the biological relationship between vitamin B<sub>12</sub> and folic acid has still to be established. Apoerythrin is spelt apoerythrin. It now appears that this component of gastric juice is not identical with Castle's intrinsic factor. *Citrovorum factor*, the newest addition to the folic acid group, is not mentioned, but will presumably be included in a later edition, together with the synthetical factor, folinic acid-SF (tetrahydroformyl pteroylglutamic acid) of like biological activity. Vitamin B<sub>12</sub> is now thought to be identical with vitamin B<sub>12</sub>. The latter is probably the active component of zoopherin. Few errors have crept into the book. Certain minor points, however, can with advantage be corrected. Thus the formula for activated pyruvic acid on p. 103 is wrong and is not reproduced from ref. 70 as stated. The phraseology on pp. 406-407 dealing with yields of biotin isolated from natural materials is ambiguous and should be revised. Such minor errors are, however, inseparable from the trials of authorship. In conclusion, the author may be congratulated on an excellent volume, which should prove of value to workers in diverse fields. V. PETROW.

*PAPIERCHROMATOGRAPHIE*, by Friedrich Cramer. Pp. 81 (including 47 illustrations). Verlag Chemie GMBH, Weinheim. 1952. Paper cover, DM.9.80.

Since its discovery seven years ago, paper chromatography has proved to be a tool of unprecedented power in microanalytical chemistry; the technique has been applied with success in many branches of chemistry but its greatest

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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  $\pm 0.02$ . 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.

M. W. PARTRIDGE.

## 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.