

BOOK REVIEWS

PROBIT ANALYSIS, by D. J. Finney. Second Edition. Pp. xiv + 318 (including Index). Cambridge University Press, London. 1952. 35s.

This book gives a systematic account of the theory and practice of probit analysis used in conjunction with the biological assay of insecticides, fungicides, drugs and vitamins. While it presents the theoretical background for the mathematical statistician the application of the methods to the analysis of quantal response data can be readily applied by biologists having only a limited knowledge of mathematical procedures. The new edition has been enlarged and brought up to date, largely by the addition of a new chapter on recent developments, occupying some 52 pages. Included in this chapter are an alternative to the maximum likelihood estimation; Wadley's problem—where in the counting of survivors in a bacterial suspension the actual numbers exposed to treatment are unknown; factorial experiments and the estimation of an extreme percentage point, e.g., ED 99. Finally there is a warning on the uncritical acceptance of measures of precision obtained in one experiment as though they applied to repeated experiments. A valuable part of the book, which has been retained in the second edition, is Appendix I which describes the methods of computing probit analyses in a number of clearly defined steps. This book is an extremely valuable contribution to biometrics and the Cambridge University Press is to be congratulated on the excellent manner in which it is printed.

G. F. SOMERS.

Kingzett's CHEMICAL ENCYCLOPÆDIA. Eighth Edition. Editor Ralph K. Strong. Pp. xii + 1186. Baillière, Tindall and Cox, London. 1952. 70s.

The aim of the first author and founder of "Kingzett" was to provide "an epitomized digest of chemistry and its industrial applications in a form which should be useful as a work of reference by all classes of the community." The difficulty of presenting sufficient information and yet retaining the wide field of entries in a chemical encyclopædia of one volume grows apace with every extension of chemical knowledge. Because of the wide range of subjects covered by the encyclopædia, the necessity for specialists to present accurately and concisely the information which falls within their particular sphere became apparent, and the editor of the eighth edition of "Kingzett" has made use of the services of a team of nine contributors, 4 British and 5 American.

In a foreword to the present edition, Sir Robert Robinson writes concerning the entries that "these admirable brevities are not all concerned with substances or materials; they deal also with topics." The reviewer wishes to stress this point because the short articles upon topics, amongst which are included chemical bonds, economic aspects, emulsions, energy, explosives, infra-red spectroscopy, nuclear chemistry and radioactivity, etc., in addition to the interesting and useful information included in the entries of substances and materials, ensures that the encyclopædia makes interesting reading instead of being just a catalogue of the properties of the various compounds. Every effort seems to have been taken to see that the information and the references are up to date. Many substances of pharmaceutical importance are described, including aureomycin, bacitracin, chloromycetin, gramicidin, insulin, neomycin, penicillin, riboflavine, streptomycin, thiamine and the sulpha drugs.

There are a few points which leave the volume open to minor criticisms. There is a definite weakness in the presentation of chemical formulæ, especially

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of ring structures. Sometimes the atoms of the ring are printed external to the ring itself, e.g., p. 194 benzene, p. 161 coumarone. Furthermore, there is a lack of consistency in presentation, e.g., benzyl acetate is printed as $C_6H_5 \cdot CH_2 \cdot C_2H_3O_2$ (p. 109) whereas ethyl acetate is presented more correctly as $CH_3 \cdot COOC_2H_5$ on p. 385. The section on stereoisomerism (p. 596) is particularly weak and somewhat misleading because of attempts at simplification and compression of material. However, these are only minor blemishes. Possibly the presence or absence of certain entries might be questioned. Nevertheless, when it is considered that the editor was faced with the great difficulty of keeping entries and information within the bounds of one volume, and yet giving adequate coverage and detail to keep the book valuable as a reference work, he and his collaborators must be congratulated on the overall result.

This new edition of "Kingzett" certainly fulfils the aims of its first author and founder in being a reliable reference work and a source of interesting and valuable information to layman and expert alike. Its quality will ensure that the book retains its international reputation and its place on the shelves and desks of all those who wish to be acquainted with any aspect of applied chemistry.

A. H. BECKETT.

(ABSTRACTS continued from p. 404).

Quaternary Ammonium Compounds with Bactericidal Properties. H. Sturm, E. Konermann, R. Aeschbacher and R. Gradmann. (*Industr. Engng Chem. (Anal.)*, 1953, **45**, 186.) A number of quaternary ammonium compounds derived from such triethanolamine monoalkyl ethers as octyl, dodecyl, hexadecyl and octadecenyl are described. These quaternary ammonium salts dissolve readily in water, forming clear solutions with excellent foaming qualities. The benzyl bromide derivatives crystallise well and are not hygroscopic. They were tested for antibacterial power and the benzyl bromide salt of the triethanolamine monododecyl ether produced the best results. The results of bacteriostasis tests, incompatibility with soap tests and toxicity tests are also given. A. H. B.

Sodium Propionate, Inhibition of Growth of *Streptococcus faecalis* by. C. H. Hill. (*J. biol. Chem.*, 1952, **199**, 329.) Inclusion of acetate as well as propionate ions in cultures of *Str. faecalis* causes a complete reversal of the inhibition due to propionate, and it is therefore suggested that the effect of the latter may be to block the synthesis of acetate via the oxidative decarboxylation of pyruvate. It is further suggested that this blocking of acetate production may be brought about by combination of propionate with coenzyme A, which is essential for acetate production from pyruvate, as reported for *Clostridium kluyveri* by Stadtman. Pantothenic acid, a constituent of coenzyme A, when added to the medium increases the resistance of the organism to propionate, and the absence of pantothenate did not influence growth in the basal medium, indicating that *Str. faecalis* must be capable of synthesising pantothenate and coenzyme A. The synthesis of pantothenic acid by *Str. faecalis* was confirmed by assaying cultures with the medium of Skeggs and Wright (*J. biol. Chem.*, 1944, **156**, 21) with *Lactobacillus arabinosus*.

J. B. S.