

Valency and Molecular Structure

By E. Cartmell and Dr. G. W. A. Fowles. Pp. xi+256. (London: Butterworths Scientific Publications; New York: Academic Press, Inc., 1956.) 32s. 6d.

THE authors say in the preface that inorganic chemistry is unpopular in Britain because it includes so many facts, a failing which it shares with organic chemistry, and that it can be made more attractive by discussing the facts in the light of crystal chemistry and valency theory. The results from both these fields are subject to periodical revision, and this has occurred in parts of the text of the book. On p. 169 the bond angle and interplanar angle in hydrogen peroxide are given as 97° and 94° but the figure on the next page shows them as 101.5° and 106° , and on pp. 107 and 168, the bond angle is given as $104\frac{1}{2}^\circ$. This makes the argument for a tetrahedral arrangement less convincing. The statement on p. 169 that steam is about 10 per cent associated is obviously wrong. There is a danger that a student taught too narrowly on such lines will memorize a fund of information which will very soon be obsolete.

The book opens with an account of Bohr's theory in which the quantizing relation is due not to Bohr as stated, but to W. Wilson, and it is an accelerated and not simply a moving charge which radiates energy. The introduction to the wave theory is good, but the solutions to the equations can only be stated. Students of chemistry need to know the main results before they can be expected to understand a detailed treatment, but some of the results are given very briefly; two pages suffice for the treatment of the hydrogen molecule by the valency-bond method. The sketch of the molecular orbital method is good and the chapter on directed valency and hybridization should convey some understanding of the principles. The diagrams are particularly clear and helpful.

The third part, dealing with some fields of application, is good, and if the reader does not understand parts of it the references given will enable him to look up the original literature, which in many cases he will find even less intelligible. The book on the whole gives a readable and useful summary of the subjects of which it treats and will be helpful and interesting to students of chemistry.

J. R. PARTINGTON

Quantitative Chemical Analysis

By Cumming and Kay. Eleventh edition revised by Dr. Robert Alexander Chalmers. Pp. xvi+540. (Edinburgh and London: Oliver and Boyd, Ltd., 1956.) 30s. net.

PHYSICO-CHEMICAL theories and methods of analysis have been widely extended over recent years, making analytical chemistry a complex subject comprising such individual topics as radioactivity, polarography, chromatography, emission spectroscopy and flame photometry. In order to cover each subject adequately, individual text-books would be necessary for each branch of analysis, but for the convenience of university students one book dealing with some aspects of all methods of analysis is useful. It is to such a class of text-book that this revised edition of "Quantitative Chemical Analysis" belongs.

The subject-matter of the book is divided into the usual sections—the use and care of apparatus,

volumetric, gravimetric and gas analyses. Each individual analysis is well described, both in its introductory note and in its practical application. Sections rewritten include a brief, but by no means complete, account of the underlying theories of precipitation, and the chapter relating to colorimetry. Considerable improvement on previous editions can be detected throughout this latter chapter, both in the general classification of the methods and in the inclusion of some of the more modern colorimetric methods of analysis at present in use. It is, however, disappointing to note that the precision of the methods described is not noted. The inclusion of the short section on ethylene diamine tetra-acetic acid, the new versatile reagent for volumetric and colorimetric analysis, is worthy of mention. The final chapter of the book summarizes some of the modern physico-chemical methods of analysis. Another innovation worthy of mention is the inclusion of additional specialized reading matter, appropriately placed at the ends of certain chapters. This is particularly useful to the student who wishes to extend his knowledge beyond the scope of this book. The revised edition of "Quantitative Chemical Analysis" still continues to be of use to the student, but is not sufficiently detailed for the research or advanced worker.

K. FIELD

The Principles of Therapeutics

By Prof. J. Harold Burn. Pp. ix+278. (Oxford: Blackwell Scientific Publications, 1957.) 27s. 6d. net.

THE Department of Pharmacology in Oxford is a very active one, and a great spate of publications comes from it. Prof. J. H. Burn's lectures to medical students in Oxford have now been published in a short and readable book. It starts with a quotation from Chaucer and a short section on the picturesque origins of *materia medica* leading to a discussion of the position of drugs to-day. This is followed by about ten chapters dealing with acetylcholine and adrenaline and noradrenaline and histamine and the substances which modify their actions. This is much the best part of the book. It gives a stimulating account of the striking way in which pharmacologists have been able to make fundamental contributions to physiological knowledge. Oxford has played a leading part in these advances and these chapters are richly illustrated with data obtained there.

The rest of the book contains a summary of those other parts of pharmacology which the medical student must learn, enlivened by accounts of how some recent discoveries have been made. For example, the story of ergot is well told; and the work which led to the introduction of thiouracil into medicine is described in detail. The effects of alcohol are discussed at some length and the problems of sterilization receive original treatment.

When Prof. Burn went to Oxford he undertook to give instruction in "Pharmacology and Principles of Therapeutics". He has taken the second part of this title for the name of his book, but this choice may be misleading. These must have been stimulating lectures, but they deal with pharmacology with little more than the usual references to the application of pharmacological knowledge in therapeutics. It has become well-nigh impossible for one man to be an authority on both pharmacology and therapeutics, and the subjects are best taught by two men working together. This book calls for a complementary volume written by a clinician. J. H. GADDUM