

Chemical Computations and Errors

By Prof. Thomas B. Crumpler and Prof. John H. Yoe. Pp. xiv+247. (New York: John Wiley and Sons, Inc.; London: Chapman and Hall, Ltd., 1940.) 18s. net.

THE authors state that their aim in writing this book has been to provide a course on chemical computations and errors for university students specializing in chemistry, and this they appear to have done extremely well. The subject-matter is clear, concise and well arranged, and the reviewer considers that several chapters of the book are admirably suited to the use of sixth-form pupils.

The first five chapters of the book give a simple account of exponential numbers, logarithms, the slide rule, algebraic equations, including the solution of simultaneous equations by determinants, graphical interpolation and extrapolation. The inclusion of historical details in these chapters, and indeed throughout the book, is a very pleasing feature. The chapters on the "Theory of Measurement" and the "Classification of Errors" should be most helpful to the student who takes a serious interest in his quantitative practical work, and he will understand, perhaps for the first time, why there is a difference between a cubic centimetre and a millilitre. A very clear distinction is made between "corrigible errors", that is, those errors for which corrections can be made, and "random errors" for which it is impossible to do anything.

The remainder of the book is mainly concerned with that branch of statistics which deals with the interpretations of discordances in numerical values. Chemistry students will be particularly interested in the statistical treatment of Lord Rayleigh's measurements of the density of nitrogen (pp. 186-188), where it is shown that the actual difference between the mean values for chemical nitrogen and atmospheric nitrogen is 34 times the probable error. This figure, the test shows, provides conclusive statistical evidence for believing that the composition of the two specimens of nitrogen is different.

Suitable problems are set at the end of each chapter and the answers, together with logarithm tables and a useful bibliography, are given at the end of the book.

Elements of Botanical Microtechnique

By Prof. John E. Sass. (McGraw-Hill Publications in the Botanical Sciences.) Pp. ix+222. (New York and London: McGraw-Hill Book Co. Inc., 1940.) 17s. 6d.

THIS book is the latest addition to the McGraw-Hill series of texts in plant science, which is being steadily built up into an encyclopædia of specialist monographs such as botanists have never before had available. As it follows rather closely on the appearance in the same series of Johannsen's treatise on the same subject, one may first ask what, in the circumstances, is the justification for its publication.

It is neither so comprehensive nor so detailed as the previous work, yet there can be no doubt that it has

qualities which earn for it a just title to independence. In the first place it is more genuinely a students' book than Johannsen. It assumes very little preliminary knowledge, and it gets down to fundamentals with commendable practicality. Moreover, its outlook throughout is thoroughly modern and is indicative of that revolution which the commercial production of new organic solvents and plasticizers is rapidly bringing about in the field of microscopy. Old difficulties are vanishing as we begin to know how to build rationally on the empirical foundations laid by the pioneers. Not that we have got far, as yet, and one can foresee that future editions of this book will show many changes as new methods are developed.

One should note with satisfaction the passing away of the period of uncritical microtome worship and commend the sane advice given on when not to microtome. Smear methods, whole-mount methods, maceration (too long neglected), the critical comparison of fixatives: all these are welcome features, even if they are not exactly innovations. The emphasis and the clear illustration given to them in a book for students are certainly novel.

It is refreshing also to see not infrequent comments on expense in an American publication. Is this indicative of another break with tradition?

R. C. McL.

Dietetics Simplified: the Use of Foods in Health and Disease

By Prof. L. Jean Bogert. With Laboratory section by Mame T. Porter. Second edition. Pp. xi+742. (New York: The Macmillan Company, 1940.) 12s. 6d. net.

DIETETICS as a subject is peculiar in that its exact study requires elaborate detail and specialized knowledge whereas in practical application no such desiderata are necessary. This at once explains the difficulty of writing a book which should be of service to those who do not need over-much technical knowledge yet are at the same time expected to understand the principles and their employment in everyday life. Students of medicine and domestic science, hospital dietitians, nurses, etc., all need education and help.

Prof. Bogert has tried to plan "Dietetics Simplified" to meet this requirement. That she achieves her aim is shown by the appearance of a second edition three years after the first. She has not, however, felt called on to make extensive alterations but only to bring the data on special points, such as vitamins and food values, up to date.

The scope of the book is planned on generous lines. Elementary nutrition, diet in normal conditions, diet therapy and diet in disease states are supplemented by a series of chapters on cookery of every kind and by careful tables on nutrition figures. The sections on infant feeding and food for the elderly may be remarked on as illustrative of the standard set and attained.

The book is written in an easy attractive style, free from undue technicalities and well illustrated. It can certainly be commended.