

dealing with the underlying theories. The aim has been to provide a course of instruction in practical organic chemistry up to pass degree standard, consisting of preparations of compounds, arranged to illustrate the main groupings of the subjects and of typical reactions of many of the prepared compounds. Two short chapters at the end deal respectively with the application of dyestuffs and the identification of unknown compounds. Quantitative analysis has been omitted. A very useful feature of the book is the inclusion at the beginning of some of the chapters of tables showing the chemical relationships of the products described.

It is rather surprising to find the old-fashioned method of drying glassware with alcohol and ether mentioned. In Fig. 16 the positions of the manometer and the safety-flask might have been interchanged and the use of rubber stoppers avoided entirely. In testing for the elements, Lassaigne's reaction with sodium often fails; Middleton's reagents (sodium carbonate and zinc dust for nitrogen and pure sugar and sodium carbonate for sulphur and the halogens) are both safer and more satisfactory. The book covers a fairly wide field and the instructions are very clear and concise.

Engineering

Aerodynamics

By Dr. N. A. V. Piercy. Pp. xvi+423. (London: English Universities Press, Ltd., 1937.) 30s. net.

DR. PIERCY has, to use a hackneyed phrase, "fulfilled a long felt want" in producing this book. Although there are several excellent English books on aerodynamics, the exceptional rate at which the applied outlook of the subject has developed recently has left a distinct gap in text-book literature, although such information is available in a more scattered form in periodicals, Government publications, etc. Students and professional technicians will certainly find this volume an indispensable companion.

In keeping with the breadth of his title, the author attempts to survey the whole field of his subject, and merely because of lack of space fails to do some parts of it justice. This is a pity, in a book from so able an author and unquestionable an authority as Dr. Piercy, but on the other hand the treatment is logical. Discussions start *ab initio*, and treat the subject properly up to a certain point. This makes a book that appeals to the student rather more than to the professional aerodynamicist. Is it too much to hope that this will be followed by a second volume with a more practical aspect?

Such matters as the rotating wing, interference, movements of the transmission point and the measurement of profile drag, the empirical treatment of the subject of skin friction and the boundary layer, are a few of the questions that aircraft designers need to see treated from their applied point of view. The last chapter, dealing with the analysis of performance, is exactly what is required by the practical reader, and provokes one to hope for more of this sort of treatment in either an extra volume or a second edition.

Engineering Properties of Soil

By C. A. Hogentogler, with the collaboration of Henry Aaron, Richard C. Thoreen, Edward A. Willis, and Adolph M. Wintermyer. Arranged and edited by C. A. Hogentogler. Pp. xiii+434. (New York and London: McGraw-Hill Book Co., Inc., 1937.) 30s.

SOILS are a subject of interest to a large circle of investigators, since they play an essential part in most human activities. Not least are they of importance to the engineer, who has to deal with them as foundations and as materials for his structures. A text-book on these aspects of their utility is therefore not only justifiable but also eminently desirable, and the authors of this joint compilation have produced one on clear and comprehensive lines. Part 1 of the volume deals with the origin and composition of soils; Part 2 with the characteristics of soil; Part 3 with the structural properties of soil; and Part 4 with practical design and construction. The chief author and his collaborators are highway engineers in the service of the United States Bureau of Public Roads: their point of view, therefore, as well as the sources of their data, is naturally mainly American, as is evidenced throughout the volume in nomenclature and classification and in the fairly extensive bibliography at the end. The book is well illustrated with diagrams, and there is a glossary of geological terms as well as a serviceable index.

B. C.

An Introduction to Fluid Mechanics

By Alex. H. Jameson. Pp. x+239. (London, New York and Toronto: Longmans, Green and Co., Ltd., 1937.) 7s. 6d. net.

RECENT developments in aeronautics, the turbine and the use of liquid and gaseous fuels have produced a great change in the science of fluid mechanics. As a consequence, an elementary knowledge of the modern advances in the subject is now required by engineering students. This book has therefore been written for the use, primarily, of second year students preparing for the London engineering degree. The author has made a special feature of keeping the course as free as possible from empirical formulæ and tables of coefficients. The text is well illustrated by clearly drawn diagrams and fully worked-out examples. Both the calculus and the method of dimensions have been used wherever necessary, and although the book is designed to cover adequately a specific syllabus, it should be very useful to all engineering students.

Storage Reservoirs

By George Bransby Williams. Pp. ix+293+24 plates. (London: Chapman and Hall, Ltd., 1937.) 25s. net.

WITHIN the modest compass of 300 pages, Mr. Bransby Williams has succeeded in compressing a very comprehensive and up-to-date survey of a subject the full development of which would require a number of volumes. The survey is necessarily