

will undoubtedly restrict its circulation in Great Britain.

One final word—Is the magnetic potentiometer really such an unimportant instrument in the eyes of our more technical colleagues that it should be almost entirely ignored? Ewing completely ignored it, and Bozorth gives it about ten lines.

L. F. BATES

APPLIED MECHANICS FOR ENGINEERS

Applied Mechanics for Engineers

By Sir Charles Inglis. Pp. xii+404. (Cambridge: At the University Press, 1951.) 42s. net.

WHEN an authority of the eminence of the late Sir Charles Inglis writes a text-book on "Applied Mechanics for Engineers", it is natural to expect a work combining technical perfection with lucidity of exposition. These expectations are fully justified. The book is based on lectures given over a number of years to students working for an honours degree in engineering in the University of Cambridge, but it is also addressed to the average student, whose many difficulties are fully understood and sympathetically resolved.

The presentation of the subject of applied mechanics to engineering students offers wide scope for diversity of treatment. Throughout this book the ideal aimed at by the author has been to keep mathematics as a servant and not allow it to become a master. Thus graphical methods, intelligent approximation and step-by-step solutions of differential equations all receive attention. Even in vibration problems where "that vague commodity known as common sense may be an untrustworthy guide", methods of solution are used in which "the physical aspect of the problem is not obscured by the mysticism of an ingenious mathematical technique".

The book, unfortunately perhaps, is not an omnibus treatise on applied mechanics, since fluid mechanics and strength of materials are omitted. The first six chapters deal with the general conditions of equilibrium and their application to problems in statics, taut cables and catenaries, and the stresses and deformation of frameworks. Then follows a chapter on the friction between dry surfaces.

The remainder of the book forms a masterly, lively, and very readable treatise on engineering dynamics. Two chapters are devoted to basic particle dynamics and kinematics, followed by an introduction to simple harmonic motion and harmonic analysis. Circular motion, up to compounding of angular velocities, is then treated. Two-dimensional rigid dynamics is introduced, followed by chapters on the principle of energy and momentum. The field is now set for the next four chapters on mechanical vibrations, covering forced and damped vibrations, torsional oscillations, coupled systems and aperiodic cases. The final chapter, on gyroscopic principles and applications, as would be expected, is a classic of its kind. Mechanisms have been deliberately omitted; but the exclusion of balancing of multi-cylinder engines is surprising as this type of problem lends itself to the combined analytical and graphical treatments which the author so strongly advocates.

A valuable feature is the number of problems set for solution, which occupy about one-fifth of the book. A few of these examples might be thought to be somewhat removed from engineering practice; but there is no doubt that any student who can successfully solve them all is well equipped for his professional career.

Sir Charles Inglis obviously enjoyed writing this book and has set a high standard to which the publishers have responded. Only a few minor slips in references to diagrams were noted. The work is a most valuable and welcome addition to the literature, well worthy of study by student and teacher alike.

A. S. T. THOMSON

CHEMISTRY IN WAR-TIME GERMANY

American Fiat Review of German Science, 1939-1946

Vols. 34 and 35. Theoretical Organic Chemistry, Part 1. By Walter Hückel (senior author) and F. Seel (co-author). Pp. ix+213. Theoretical Organic Chemistry, Part 2. By Walter Hückel (senior author) and J. Goubeau, G. V. Schulz and G. Scheibe (co-authors). Pp. xi+221. Translated, edited and published in cooperation with the Office of Technical Services, Department of Commerce, U.S. Government. (Petersburg, N.Y.: The O. W. Leibiger Research Laboratories, Inc., 1950-1951.) 5.30 dollars each vol.; subscription for 88 vols., 400 dollars.

IMMEDIATELY after the Second World War a very considerable effort was made by the Western Allies to learn how German industry had been conducted during that period. The comprehensive reports (B.I.O.S. in Great Britain), when critically pieced together, give an adequate account of technology with an occasional reference to more purely scientific work. The Allied Governments wisely realized that it would be just as valuable, if not so urgent, to obtain similar information on the progress of pure science. This could not be conveniently done by sending teams of academic experts to explore university laboratories. It was therefore a much happier idea to let the Germans do the job themselves at a period when it was difficult to continue their old work and initiate new ventures. The present volumes under review are part of a very large undertaking covering pure science and medical science, in which leading German authors have given an account of war-time work in Germany. No less than eighty-four volumes have been so prepared in the German language and submitted to the relevant military authorities. These have now been translated into English by the Leibiger Research Laboratories through the co-operation of the Department of Commerce of the United States Government.

The two volumes under notice cover what is called theoretical organic chemistry, or rather physical organic chemistry as it is now understood in Britain. Since the reviews cover the period 1939-45, they are now to some extent of historical interest because the field is one in which rapid advances have been made, and therefore these reviews cannot be taken as representing the present state of affairs.

As might be expected, W. Hückel plays the leading part, with the assistance of a large number of collaborators. Space will not permit even a detailed list of the topics discussed. In the first volume