masses, elasticity, impact, general wave theory, and sound. Now we have ample evidence that matter is composed of small particles—atoms—and although we cannot see them, we recognise their existence and know some of their properties. This aspect of physics is dealt with in Part II. on the atomic structure of the material world, which contains sections on the system of the elements, the three states of aggregation of matter, temperature, specific heat, heat and change of state, the three principles of thermodynamics, and the atom. Not content with the knowledge of the atomic constitution of matter, the physicist has probed in turn into the structure of the atom and its consequences, with which Part III. is concerned. In this, the sections deal respectively with magnetism, electrostatics, electric currents, 'interactions' between electricity and magnetism, electrolysis, ions and electrons, radioactivity, electro-magnetic rays, and atomic constitution. Finally, there are numerous phenomena which, apart from ponderable matter, require a medium—the so-called ether—for their explanation. Part IV. is devoted to such etherial phenomena, and contains sections on 'disturbed' (reflection, refraction, etc.) and 'undisturbed' propagation of light, interference and diffraction, polarisation, light and colour, and the ether—treated also from the relativistic viewpoint.

After a careful perusal of this book, one feels that the author has departed from the traditional 'dry as dust' presentation of physics which is the bugbear of so many young students. For this it is to be feared our examination system is largely to blame, for it has tended to foster the grouping of the branches of physics into somewhat disinterested watertight compartments. A treatment of physics on the lines of Prof. Wulf's "Lehrbuch" would, we believe, be of inestimable value to the junior classes in our universities, and serve to give them some of the enthusiasm for their subject that one usually meets with only amongst more advanced students.

## Our Bookshelf.

*A Dictionary of Applied Chemistry.* By Sir Edward Thorpe, assisted by eminent Contributors. Revised and enlarged edition. Vol. 7: Thalenite to Z. With an Index to the whole work by Frances M. G. Micklethwait. Pp. viii + 765. (London: Longmans, Green and Co., Ltd., 1927.) 60*s*. net.

THE first duty of a reviewer of the seventh and final volume of "Thorpe's Dictionary" is to congratulate those who have been responsible for the enterprise on the successful completion of their arduous task. As the first volume appeared in 1921, the publication of a fresh volume has become almost an annual event; but only five volumes had been completed when Sir Edward Thorpe died in February 1925. The work on the two remaining volumes has therefore been completed by Dr. Forster Morley, whilst Dr. Micklethwait has prepared an index to the whole work, which occupies more than 150 pages of the text of the last volume.

As in the earlier volumes, the emendation and enlargement has been so well distributed that it is not easy to discover where the new material has been incorporated, but the present volume is noteworthy for the addition of two articles on toluene and xylene by Prof. Rowe and Dr. Davies, which account for nearly 120 extra pages, and for an article by Prof. Briscoe on the physical and chemical properties of water, which covers rather more than 40 pages, compensation being provided by an expansion of about 4 pages in the article on wine. Prof. Hopkins has also contributed a new article on vitamins. These additions provide evidence of the thoroughness of the revision, and justify the expectation of a long lease of life for a work of reference which first appeared in 1890–1893.

*Katalyse mit kolloiden Metallen.* Von Walter Hückel. (Kolloidforschung in Einzeldarstellungen, herausgegeben von Richard Zsigmondy, Band 6.) Pp. viii + 86. (Leipzig: Akademische Verlagsgesellschaft m.b.H., 1927.) 6 gold marks.

IN presenting this account of laboratory methods of using colloidal metals as catalysts, attention is directed mainly to the work of Paal and of Skita on the application of metals of the platinum group to the hydrogenation of different types of organic compounds. The earlier investigations of the phenomena accompanying the decomposition of hydrogen peroxide are only introduced to elucidate the theory of the kinetics of colloidal catalysis, since they form the subject matter of a separate volume in the same series. The use of colloidal metals has greatly simplified the important process of hydrogenation, since many reductions can be carried out in solution at ordinary temperatures.

Paal's method has given very valuable results, particularly in the terpene series, but it is much more limited in scope than that of Skita, which appears to be applicable to most unsaturated compounds. Since, however, the latter method requires special apparatus in which a pressure of 2-3 atmospheres can be developed, it has received much less attention. Much less is known about the application of colloidal catalysts to the reduction of inorganic compounds or to oxidation processes. The volume ends with a chapter on the mechanism of catalytic hydrogenation, in which theories of hydrogen activation are discussed.

*Evolution of the Drama in Hull and District.* By Thomas Sheppard. Pp. xii + 254. (Hull: A. Brown and Sons, Ltd., 1927.) n.p.

IN this volume the versatile curator of the Hull Museum has published, with some expansion and numerous illustrations, an address delivered by