REVIEWS

Fundamentals of Vibration Study. By R. G. Manley (with a Foreword by Dr. W. Ker Wilson). (Chapman & Hall, London), 1942. Pp. xii + 128. 13*s.* 6*d.*

This is a neat little volume to which the budding mathematicians, preparing for the first university degree in this country, can turn for a pleasant and profitable holiday in an easy chair. In books of engineering mathematics the symbolic operations cease to appear as pure abstractions in their logical nakedness; they look as concrete and real as the dashpot, the shaft and the wheel and the engineer is usually instructed to handle them as such. However much the pure mathematician may protest against this rough handling he cannot deny that it has led to a successful exploitation of the routine in Nature and also to a fundamental control over Nature's forces. It is very much to be desired, therefore, that a student of mechanics who loses his zest for the subject, in the prevalent atmosphere of fictitious problems, should take up a simple and easy book like Manley's to see how some practical problems of engineering are solved.

The publisher's blurb, which consists of a part of the Author's Preface, brings out very clearly that the book is not a university text-book and that it is intended for technicians whose knowledge of mathematics does not very much extend beyond the matriculation syllabus of a British university. Dr. Wilson's Foreword rightly emphasizes the importance of vibration research in the modern problems of transport and elsewhere. The book itself consists of six chapters running over 96 pages and, contrary to the expectations raised by the title, only mechanical vibrations are discussed. Systems of one, two and many degrees of freedom and even continuous sytsems are gradually introduced. Damping and forced vibrations are explained at an early stage and the useful concepts of dynamic and torsional stiffness and effective inertia are elucidated with graphs and figures. Elements of elasticity and the Fourier series constitute the most difficult topics introduced here. The reader for whom the book is intended may find himself out of his depth here. Alive to this difficulty, the author has provided three appendices which are of the nature of running commentaries on vectors, determinants, bending of beams, etc. There are 22 exercises with answers in the end. A bibliography introduces some well-known university texts. The index is quite exhaustive.

One misprint which the reviewer has noted is in the last formula of p. 16 where an overhead dot is missing. On p. 13, the 'finite solution' is mentioned. It should be the 'finite-period solution'. On p. 56 'dynamic theorem' is printed instead of 'dynamical theorem'. On p. 99, where vectors are defined, it should have been pointed out that, in addition to having direction and magnitude, vectors must obey the parallelogram law of addition. But these are minor blemishes. The book is both concise and precise and it should not fail to attract and profit those for whom it is intended.

V. V. NARLIKAR.

Organic Chemistry. By P. B. Sarkar and P. C. Rakshit. (H. Chatterjee & Co., Ltd., Calcutta), 1942. Pp. vi+562. Price Rs. 5.

There are not many Indian publications on theoretical organic chemistry, and the authors are to be congratulated in bringing out this neat little volume, which appears to be admirably suited to the requirements of the B.Sc. (Pass) students of our universities. The essential principles of organic chemistry are given clearly and succinctly so that they may be easily followed by the beginner. The opening chapter deals with the scope and definition of the subject, and the characteristic features of carbon compounds. The inclusion in this part of a short account of the history of development of theories of organic chemistry, together with the accounts of work of some of the pioneers in this subject, would have been an improvement. The usual methods of purification of organic compounds, and of detection of elements and their quantitative estimations, together with the common methods of arriving at the formulæ of compounds, have been dealt with in the two succeeding chapters. The chapter dealing with valency is rather too brief, and it is unfortunate that the electronic theory, which is now so well

established and lavishly used for the interpretations of structures of both inorganic and organic compounds, should have been omitted almost entirely. It is very desirable that this be included in a future edition, as the elementary students should be given an opportunity, whenever possible, of representing the important compounds, such as nitro-paraffins, nitriles, etc., by electronic formulæ. These have been found to help very considerably in removing the difficulties of the beginner in understanding their peculiarities.

Descriptive organic chemistry commences from the sixth chapter with hydro-carbons, both saturated and unsaturated. The chapter on halogen derivatives should perhaps have followed the chapter on alcohols, from which most of the others are derived. The chapter dealing with alcohols has been written ably; in view of the importance of "power alcohol" at present, a short description of the modern method of manufacturing absolute alcohol by the azeotropic distillation process could have been profitably introduced.

The treatment of the matter and its arrangement in the book are both quite satisfactory. Experimental details for preparing most of the important carbon compounds have been given, and, if details of some of the important reactions are also included, the treatment would have been complete. The book is sure to be very profitable for the students preparing for the degree examinations in chemistry of our universities.

B. B. D.

Recent Advances in Sex and Reproductive Physiology (Second Edition). By J. M. Robson. (J. A. Churchill Ltd., London), 1940. Pp. xii + 329. Price 15*sh.*

Fully appreciating the value of results of recent research, the author has revised the first edition of his book published in 1934. A noteworthy feature of the book is that large sections have been rewritten and "new chapters have been added on the properties of the male hormone and other androgens, on the chemistry of the gonadic hormones and on the methods used in the standardisation of the sex hormones". It would be in the fitness of things to state that the book constitutes a worthy contribution to our knowledge of the subject. The book is well got up and is bound to stimulate further research on various aspects of the physiology of reproduction. Whilst commending its use by the clinicians, the volume is strongly recommended for an intensive study by mammalian embryologists and physiologists.

A. S. R.

Practical Histology and Embryology. By Nellie B. Eales. (Macmillan & Co., Ltd., London), 1940. Pp. vii + 111. Price 3*sh.* 6*d.* net.

This little volume on practical histology and embryology is written by an experienced investigator and teacher, with the object of presenting to the pupils and teachers alike, the simple methods in micro-technique which the author has employed with excellent results. The subject-matter is dealt with in two parts. Part I embodies an easily comprehensible account of the structure of simple tissues, glands and tissue complexes. Before proceeding to deal with embryology the author introduces, wisely enough, the student to sections of representative regions of the rabbit embryo. In Part II important features in the development of the frog, the chick and the rabbit are described. The illustrations in both Parts I and II have been selected with great care. The appendix contains the formulæ for the preparation of the commonly employed physiological saline solutions, macerating fluids, fixatives and stains. This low priced handy volume is strongly recommended for use by the students of the pre-clinical classes in medical colleges and the degree classes.

A. S. R.

Dravyamu-Sakti (*Matter and Energy*) in Telugu, Part I. By Vasanta Rao Venkata Rao, M.Sc., Maharaja's College, Vizianagaram, 1942. Demy 16mo. Pp. 102. Price As. 8.

This booklet explains in simple, homely, non-technical language, in Telugu, the salient points in the subject of "Matter and Energy". It is the third in the series of popular science publications by the author in book form, of the articles contributed by him to the Telugu Journal *Bharati*, having for its object the spread of up-to-date scientific information among the masses. How far he has been successful in his praiseworthy attempt is not known. In the present publication the author prepares the ground for giving to the layman, in later articles, some idea of Broadcasting and kindred subjects of present-day interest. He begins with the old world idea of the molecule and the atom, explains the periodic law of the elements and leads the reader on to the modern conception of the atom,