REVIEWS

Modern Text Book of Intermediate Physics. (Volume One). By A. N. Banerjee. (Das Gupta & Co., Ltd., Calcutta), 1949. Pp. xiv + 224. Price Rs. 6/.

In the preface to the book the author mentions that he has taken pains to state the physical principles in simple language and to show their significance by applying them at once to phenomena with which young readers are quite familiar. In achieving these objects the author has succeeded to a remarkable extent. The treatment of the subject-matter in this first volume is under three heads — General Physics, Sound and Heat. Throughout the book the author has consistently tried to propound the basic principles of classical physics so as to be easily assimilated by the Intermediate student. The first impression of the book is that it is a well-planned text book with plenty of diagrams. A noticeable feature is the illustration of physical principles by a large number of phenomena drawn from every-day life. The treatment of Sound and Heat is fairly satisfactory. Puluj's frictional method of determining mechanical equivalent of heat could have been included. Under radiation correction, methods other than Rumford's compensation method could have been described. Nevertheless the subject-matter of Sound and Heat will meet the requirements of Intermediate students. But the handling of dynamics and statics under General Physics does not come up to the standard required by Mysore and Madras Universities. Topics like centre of gravity, simple machines, requisites of a good balance and equilibrium under concurrent and non-concurrent forces have not received the attention they require. This trouble arises no doubt from the vagaries of the Physics syllabus in different Universities, which handicap the text-book writers all over India by restricting the usefulness of their labour. It would not impair the serviceableness of a book if certain chapters, such as Properties of Matter and Simple Harmonic Motion in the present instance, have to be eschewed by a class of students; but a text-book will fail in its duty to a certain section of students if all the required portions are not included.

Exercises have been set at the end of each chapter; it is regrettable that a uniform procedure has not been followed in giving the answers to the numerical problems. While dealing with rotational motion on page 47, it would have been more precise to mention that *uniform* rotation is meant, especially as this paragraph succeeds accelerated linear motion. Such drawbacks and errors of spelling noticeable here and there have arisen perhaps on account of the hurry in rushing through the publication simultaneously in three different printing presses. Looking at the paucity of Indian text-books on Physics, the present volume is a commendable attempt and I dare say that in the next edition it will be improved and enlarged so as to be useful to a greater circle of Intermediate students.

L. S.

Terrestrial Radio Waves. By H. Bremmer. (Published by Elsevier Publishing Company, Amsterdam, London & New York. London Office: Clever-Hume Press Ltd., 42-A South Audley Street, W. I), 1949. Pp. x + 344. 91 Illustrations. Price $ 6·75.

This book is a most welcome addition to the rather scanty literature available on the subject. It provides an excellent treatment of the mathematical—physical methods for the computation of transmitter fields. It is divided into two parts. Part I deals with the theory for a homogeneous atmosphere and Part II deals with the theory of inhomogeneous atmosphere. Thus, both the ground wave and sky wave propagation come up for adequate treatment. The most essential features of the recent literature on the subject have been successfully incorporated in the text. This adds considerably to the value of the book. Both the prospective investigator and the advanced student have in this book a collected and comprehensive account of the present position of the subject. As such, the book is indispensable to both.

Formulæ which are very essential for numerical calculations of the ground wave field have been collected together. They can thus be used without going into the detailed mathematical derivations. Typical graphs have been well drawn and reproduced for the field of a 1 Kw transmitter. These features extend the utility of the book to the practical engineer.

The printing and get-up of the book are excellent. In brief, the book is worth its weight in gold and the author deserves all praise in producing a work of this type. It can be recommended as a valuable addition to the Mathematics, Physics and Communication Engineering Libraries.

S. V. Chandrashekhar Aiya.

Table of Sines and Cosines to Fifteen Decimal Places at Hundredths of a Degree. By U. S. Department of Commerce, National Bureau of Standards, Applied Mathematics Series 5. (United States Government Printing Office, Washington), 1949. Price 40 cents.

The Applied Mathematics Series of which the volume under reference forms the fifth publication is intended to serve as a vehicle for the publication of mathematical tables, manuals and studies by the Mathematical Laboratories of the National Bureau of Standards. Trigonometric tables with decimal subdivision of the degree are of great convenience in numerous problems of applied mathematics. To meet the need for such tables, the present volume provides a tabulation of the sine and cosine to 15 decimal places at intervals of one-hundredth of a degree. The arrangement adopted here, of columns of sines and cosines side by side and also of the second central differences alongside, will be found convenient in many cases where both sine and cosine functions are desired for the same argument, or where Taylor's theorem is to be used for interpolation.

R. S. K.

An Elementary Text-Book of Organic Chemistry. By D. D. Karve (Dartane Bros, Poona 2), 1949. Pp. viii+192. Price Rs. 2-12-0.

This short course in organic chemistry designed for the I.Sc. and I.Ag. standards of the Bombay and Poona Universities is well-planned, the fundamentals being presented in a simple, easy and straightforward manner.

The opening chapter indicates the scope of organic chemistry as a distinct branch of study. This is followed by a chapter on the purification of carbon compounds. It would nave been better if the methods of fractional and steam distillation had also been mentioned. The logical order should have been maintained as regards the 'qualitative' detection of the elements and their 'quantitative' estimation before the determination of molecular weight and assignment of molecular formula. The tests for halogens might have included confirmatory tests as well. Tests for their detection in the presence or absence of nitrogen could have been given. The fact that it is possible to read up to ·001 of a degree with a Beckmann thermometer by means of a lens has been left out.

The treatment of carbon compounds is uniformly good. Wherever necessary, equations and neat line diagrams have been given. At the end of the book, a summary of the preparation and properties of important compounds dealt with have been given in tabular form. Also, a list of questions covering the whole portion, as well as numerical problems of varied types, are appended for purposes of revision. But the book needs considerable enlargement if it is also to cater to the pass subsidiary standards of South Indian Universities. The book is not without lapses and omissions and corrections, which will no doubt be attended to in the next edition.

M. V. S.

A Community at the Crossroads. By Sapur F. Desai (New Book Co., Ltd., Bombay), 1948. Pp. 201. Price Rs. 10.

Notwithstanding its small size, the Parsi community has often led the rest in business, finance and philanthropy; while, sociologically, it is a close-knit endogamous community, jealously guarding its non-prosetely sing faith. Its amazing adaptability, as is to be seen from its language, customs, manners, etc., according to the many, is at once a source of its strength and weakness.

Mr. Sapur Desai's monograph of the above title is prefaced by a foreward by Sir H. P. Mody and an introduction by Prof. Jehangir J. Asana and reveals four principal features. The first one, which is by far the most valuable and treated at length, is a factual study of demography based on vital statistics on housing and health, and brings out forcefully the dysgemic tendencies of the community. In the next many recommendations are made for social orientation and the abolition of poverty. The short ethnographic survey which follows extends to the very earliest times, and leads to the conclusion that on their entry into India, the Parsis 'ringfaced' themselves with social, sectarian and racial barriers, and that while the effect of the first two is breaking down, the racial barrier is still a rigid force in the community.

On this score, we are asked to believe that there is something in it which is worth preserving. On page 165 we read: "It therefore behoves the community to keep out of intermarriage"; also, it should be left severely alone "in the interests of the world at large and India herself in particular". Is it a happy reflection that at a time when even the Anglo-Indian community is led to identify itself with the rest of the Indian communities, students of demography can still preach sectarianism in the name of science?

M. C. M.