

Intermediate Electricity. By R. W. Hutchinson, M.Sc. (University Tutorial Press, London), 1941. Pp. viii + 628. Price 12sh. 6d.

This is a thoroughly rewritten version of the well-known "Intermediate Text-book of Electricity and Magnetism" by the same author. The Tutorial Press series has been a favourite with students, particularly those depending on private study. In all the books of the series, the full details of every step and every deduction are always brought home to the learner by being presented in a variety of ways. In fact this insistence, this anxiety to drive home the explanation is sometimes carried to such an extent that the more intelligent students might find a certain sense of inelegance and boredom attending a perusal of the entire book. In keeping with the same spirit of oversimplification, the use of the calculus is eschewed or minimised and even in the case of trigonometric and algebraic work there is more of wordy explanation than symbolic derivation. But on the other hand practical and everyday applications and examples likely to appeal to the experience of students are plentifully introduced and illustrated. These characteristics of the series are fully retained in this new version of the book, but the format, illustrations and typography have been very much improved. The author has also tried to develop the subject *ab initio* in a modern manner, the planetary model of the atom being introduced at the very outset. Modern developments having a bearing on practical life, such as Television, High Voltage Generators, the Grid System of Distribution, and so on, are touched upon in such a manner as to make the fundamental principles easily intelligible. Portraits of the pioneers in the subject are interspersed throughout the book and some highly interesting photographs form full-page illustrations. Questions are collected together at the end and answers supplied. Almost all topics in electricity and magnetism usually included in the Pass Degree courses of Indian universities have been included, but the treatment is not advanced enough to satisfy all the requirements of such a course. Though the standard of difficulty is well within the attainments of Intermediate students, it would not be possible to include all the portions here dealt with in an Intermediate course of two years unless more hours are devoted to physics than it has so far been possible to

do. Thus the book does not exactly satisfy the needs of Intermediate or B.Sc. students, but falls in between. The get-up is now very much better than before and if some details are omitted, or if some more mathematics is supplied, both Intermediate and Pass Degree students can use the book with a good chance of obtaining a clear grasp of the essentials of the subject. T. S. S.

Galois Lectures No. V. By J. Douglas P. Franklin, C. J. Keyser, L. Infeld. (*Scripta Mathematica*, New York), 1941. Pp. 124. Price \$1.25.

This excellent booklet of 124 pages consists of four lectures delivered by eminent mathematicians at the Galois Institute of Mathematics, Long Island University, Brooklyn. These lectures appeared from time to time in the journal *Scripta Mathematica*. The first lecture is a survey of the theories of integration by J. Douglas, the prover of the Plateaux Problem. It is a very well-written and readable article which develops the theory of integration starting from the elementary area concept to that of Denjoy integration, explaining the significance of the various theories. The article is well worth perusal even by applied mathematicians—Engineers, Physicists, etc. The second is on the *simplest unsolved problem* in mathematics, viz., "The Four-Colour Problem" by Franklin, one of the best workers in this field. The author deals with connected problems such as those concerning graphs and gives the usual proof of the fact that five colours are always sufficient to colour any map however complicated it is. The third lecture by Keyser is on the life of Charles Pierce, a pioneer of the teaching and development of mathematics in America in the latter half of the last century. The fourth is by Infeld on the "Fourth Dimension and Relativity", which is written in the form of a dialogue between a relativist with a clever pupil or a scientist with minimum mathematical equipment. A reading of this article by a non-mathematician will dispel many of the wrong notions commonly held by him about relativity and the *reality* of the fourth dimension space associated with it.

The publishers of the *Scripta Mathematica* deserve the gratitude of the mathematical world for publishing this series in bound form. We await the publication of the other numbers of the series with interest.

K. V.