

Précis de Pétrographie

Roches Sédimentaires, Métamorphiques et Éruptives. Par Prof. Jean Jung. Pp. 314+20 planches. (Paris : Masson et Cie, 1958.) Broché, 3,600 francs ; Cartonné toile, 4,600 francs.

TO Prof. Jung, petrography and petrology are ill-separated, and in this book he considers not only the descriptions of different sorts of rocks in thin section but also their mutual relations and origins. The book is intended as an introduction to the science of rocks for students engaged on degree courses, and it is an admirable introduction, concise and essentially complete. There are, however, no references or bibliographies, which may be considered a drawback in a work which is so condensed. It is organized in four sections, the first on rock-forming minerals, the second on sedimentary and residual rocks, the third on metamorphic rocks, and the fourth on igneous rocks, each of which is copiously illustrated with excellent line drawings and photographs.

An early chapter contains one of the most compact, readable, logical, and memorable expositions of the structure of the silicates to be found in any text-book, and sets the tone for the rest of the book. The clarity of the writing is such that very modest linguistic ability, aided by a good dictionary, is sufficient to make the text easily intelligible. Even so, it is probable that the majority of English-speaking students will not wish to add translation to the other burdens involved in mastering a new subject, and possibly the greatest value of the "Précis de Pétrographie" outside the French-speaking world will be to more advanced students, who will find in it a rapid means of verifying the systems of rock nomenclature and classification in use in France, together with the accepted views on petrology current there.

J. C. M. TAYLOR

The Physics of Elementary Particles

By Prof. J. D. Jackson. (Investigations in Physics, No. 9.) Pp. x+135. (Princeton, N.J. : Princeton University Press ; London : Oxford University Press, 1958.) 30s. net.

THIS book gives a simple and readable account of the main features of elementary particles and their interactions other than the electrodynamic interaction of photons with electrons and positrons.

The first part of the book deals with pi-mesons and nucleons, particularly pion-nucleon scattering and photo-pion production. These processes are treated from a semi-classical point of view, but an outline is also given of the dispersion relation approach to scattering. The determination of the spin and parity of the pions is not discussed, which is a pity, as a few extra pages would have added greatly to the completeness of the picture.

The next section gives the basic facts about *k*-mesons and hyperons, introduces the concept of 'strangeness' and distinguishes clearly between strong and weak interactions.

The last part of the book describes the weak interactions, including a discussion of space and time reflexion, and charge conjugation invariance. The final sections review the experimental determination of the β -decay interaction and discuss the universal Fermi interaction.

In his preface the author wisely remarks: "In a field of physics that is changing every instant it is senseless to hope that a book written to-day will

endure beyond to-morrow, but I hope that this volume will serve for a short time as a useful introduction to a fascinating subject". He has succeeded admirably in this limited objective. P. T. MATTHEWS

Analytical Chemistry

Some New Techniques. By A. G. Jones. Pp. viii+268. (London : Butterworths Scientific Publications ; New York : Academic Press, Inc., 1959.) 40s.

IN this useful book, several of the more recent techniques of analytical chemistry are described. Larger texts, mainly American, have appeared which cover similar ground, but these have generally been designed for advanced student training. The book under review is aimed at senior chemists who have little time to delve into the original literature and who want a succinct account of a new technique.

The methods which have been chosen are flame photometry, differential spectrophotometry, gas chromatography, ion exchangers, acid-base titrations in non-aqueous media, coulometric titrations, differential refractometry and the determination of oxygen and hydrogen in metals. In each section, the principles of the method are delineated, the essential apparatus is described and the applications are discussed. A broad idea of the possibilities of each technique is given and, just as important, its limitations are mentioned ; the reader is warned of the most likely sources of error. A number of references is given to more detailed texts and to the original literature.

The section on the determination of oxygen and hydrogen in metals is devoted to the analysis of the one-time rarer metals ; most of the actual techniques in this part have been used for years in the iron and steel industry, but their broader application is quite recent and has involved special problems.

In general, this little book serves its purpose admirably and should be welcomed as a simple exposition of several very valuable techniques.

A. M. G. MACDONALD

Mites, or the Acari

By T. E. Hughes. Pp. vii+225. (London : The Athlone Press, University of London, 1959. Distributed by Constable and Co., Ltd.) 42s. net.

IT is surprising in view of the economic importance of mites and ticks that this should be the first comprehensive account of their biology and anatomy to be published in Britain. Mr. Hughes's text can be considered in two sections. In Chapters 1-6 an account is given of the biology of both free-living and parasitic species, while Chapters 7-14 deal with their anatomy. The formidable task of gathering biological information from a scattered literature and presenting a readable survey has been well done, although it is unfortunate that a number of errors have escaped the author's notice. For example, it is incorrectly implied that the Bdellidae are exclusively littoral and that the Rhodacaridae prefer saturated conditions. The second section is more authoritative. The discussion of the external and internal anatomy of the Acari is based on a critical review of evidence, a considerable amount of which has been derived from the author's own researches. The outline classification presented in the final chapter should prove useful to the general zoologist. The book is well produced and the text-figures are of high standard throughout. G. O. EVANS