

Physics and Chemistry of Surfaces. By Jacques Oudar. Pp. xii+130. (Blackie: Glasgow and London, July 1975.) £6.55.

PROFESSOR Oudar's book aims to provide an introduction to two aspects of surface chemistry. The first section is devoted solely to chemisorption of gases on metals, the rest of the book concerns the oxidation of metals. Clearly with less than 120 pages of script and that divided into sixteen chapters, no single topic can be discussed in any detail. Thus the book provides a cursory view of a field which has undergone major development in the last decade. The strength of the book is that it has set its descriptions of modern techniques and recent results in the context of the older approaches to the subject.

As a textbook it is too short to be of value as a source of reference or an extension of lecture notes. It is, however, easy to read and very well illustrated. There are occasional errors in the transcription and some of the concepts presented are not universally held. It does provide, however, a valuable overview of the subject but it is rather expensive for its length.

A. E. Lee

The Early Development of Mammals. (The Second Symposium of the British Society for Developmental Biology.) Edited by M. Balls and A. E. Wild. Pp. vii+410. (Cambridge University Press: Cambridge and London, 1975.) £18.00; \$49.50.

THIS is an excellent book, covering many of the current lines of research in mammalian embryology. The 23 chapters include culture and storage methods, fertilisation, parthenogenesis, differentiation, expression of genes and antigens, induction, development of the lymphoid and haemopoietic systems, teratomas and teratocarcinomas, sex reversal, athymia and cell death. Inevitably, the mouse holds the centre of the stage, but other mammals make brief appearances from time to time.

The 30 contributors are all actively engaged in research in mammalian development and write with authority. Most give a short review of previous work in their particular field followed by an account of recent experiments. In general, the standard of presentation is high. The style is concise but readable, the illustrations and index are adequate and there is the minimum of repetition between chapters. An occasional paragraph is muddled

or incomprehensible and would have benefited from tougher editing, but such blemishes are few and become insignificant when set beside all that is good. The British Society for Developmental Biology, and particularly the two editors, have clearly had a major task in bringing together so much in one book and they are to be congratulated on the result.

The book will be of great value to all research workers on mammalian development and to many other biologists who want to know where the subject has got to. Its wide coverage and attractive presentation should also make it stimulating reading for teachers and students of undergraduate courses in developmental biology. Unfortunately, many potential readers will be put off by the price from buying the book for themselves.

D. A. T. New

Books brief

Chemistry of Viruses. Second Edition. (Springer Study Edition.) By C. A. Knight. Pp. x+325. (Springer: Berlin, Wien and New York, 1975.) DM48; \$20.70.

KNIGHT has set out to produce a compendium of chemical information covering the major classes of viruses. The result is an impressive collection of data dealing almost exclusively with the virus particle and presented in a style somewhere between a handbook and a textbook. Purification and especially composition are considered in great depth, often including precise experimental details, and clearly reflect the author's wide experience and knowledge of the subject. Particularly useful is the treatment of the four virion components (protein, nucleic acid, lipid and carbohydrate) in terms of methods of purification, methods of analysis and function. Unfortunately there is no mention of the agarose gel electrophoresis and restriction endonuclease cleavage techniques which are currently much in use for nucleic acid analysis. Also absent is any reference to the cohesive, repetitious and inverted repetitious base sequences present at the ends of many types of viral DNA genome. The interactions between virus particles and chemical agents which lead to inactivation and mutation are

discussed in a clear and reasonably comprehensive manner albeit in somewhat less depth than earlier chapters. The final chapter collects together a set of topics which make curious bedfellows, for example, virus reproduction, genetic recombination, viroids, reconstitution, cell-free synthesis and origin of viruses. They are discussed very superficially, much like an afterthought, and could well have been omitted or included in a general introduction. But this is otherwise a minor criticism of a worthwhile book which will serve as a very useful source of information on most aspects of the virion.

D. A. Ritchie

Equilibrium and Non-equilibrium Statistical Mechanics. By Radu Balescu. Pp. xiv+742. (Wiley-Interscience: New York and London, 1975.) £16.20.

STATISTICAL mechanics is a fascinating and confusing subject: it is tremendously successful in practice, but its ultimate justification has proved surprisingly difficult to establish. And although there has been much recent work on foundations, it is forbiddingly difficult for the average physicist to understand. This book is the one to read in order to remove one's misconceptions and in order to achieve an understanding of the subject.

The style and presentation are admirably clear, and there are many enjoyable asides and perceptive comments. Among the applications selected for discussion, plasmas and classical gases predominate, and there is an excellent account of modern work on critical phenomena, including Wilson's theory. In the non-equilibrium section the emphasis is on kinetic equations and their justification by the methods of the 'Brussels school' of which the author is a distinguished member. There is a delightful appendix giving a nontechnical summary of recent work on the ergodic problem.

Obviously, in such a vast subject every author has his own preferences, and for my own taste there is not enough emphasis on specific quantum phenomena: quantum theory tends to be treated as a correction to classical physics, and some of the most exciting applications of statistical mechanics, to photons and superfluids, are barely mentioned. But within its self-imposed limits this book is certainly a very valuable addition to the literature and deserves to be widely studied.

E. H. Sondheimer