

Image Science: Principles, Analysis and Evaluation of Photographic-type Imaging Processes. By J. C. Dainty and R. Shaw. Pp. xiv+402. (Academic: London and New York, January 1975.) £9.80; \$26.00.

SCIENTISTS are constantly finding new ways of exploiting the immense capacity of photographic film for the recording of scientific data. This book will assist students to join in this enterprise, although it will hardly open their eyes to the modern alternatives to film. It deals with the theory of ideal and real photoreceptors of the photographic type, quantum sensitivity, densitometry and the fundamentals of the analysis of image resolution, image noise and the information content of images. The fundamental derivations are certainly given in a way which enables wider use and could be applied to electrooptic image recording and holographic methods, but the techniques themselves are not explained and are scarcely mentioned in the body of the book.

In its sphere, however, this is a good textbook, helping the reader along by its use of well-chosen diagrams and exercises.

Andrew Holmes-Siedle

Principles and Practice in Modern Archaeology. (Teach Yourself Books.) By David M. Browne. Pp. x+262+11 photographs. (Hodder and Stoughton: London, July 1975.) £1.50.

DAVID BROWNE'S new book is a welcome addition to the growing literature on practical archaeology, all the more so since it is written with both the layman and the would-be student in mind.

After a rather heavy start, defining certain archaeological concepts, the author moves easily through the more practical aspects of the discipline dealing first with techniques of discovery, then with excavation and finally with the treatment and analysis of materials from excavation and fieldwork. He writes clearly and with the good sense born of experience.

The layout is straightforward and the reference system excellent, in that it leads the interested reader immediately to the most significant up-to-date works without losing him in a flurry of superfluous detail. A list of the major museums is appended for good measure.

This book is to be highly recommended, it cannot fail to dispel the popular misconceptions which still bedevil the subject. For those taking part in excavations it should be compulsory reading.

B. W. Cunliffe

Biocontrol of Rodents. (Ecological Bulletins No. 19) Edited by Lennart Hansson and Bo Nilsson. Pp. 306. (Swedish Natural Science Research Council: Stockholm, 1975.) 45 Skr.

THIS bulletin presents the papers from the Nord-Mus symposium on rodents and forest damage held at Lammi, Finland, in 1974. The early papers review the problems clearly and reveal the severity of the situation especially in monoculture situations.

The greater part of the symposium was concerned with the various app-

Books brief

roaches to rodent control based on the increasing reluctance to add synthetic substances to the environment and the need and wish to control rodents by manipulating the qualities of the environment and the biology of the animals. In addition to being good reviews these papers are a stimulating challenge to biologists to pursue such topics as habitat manipulation, competitive displacement, plant repellence, social mechanisms and the feasibility of genetic control of small mammals. Such work will need a multidisciplinary approach and considerable resources. It is to be hoped that the effort and forward looking nature of this symposium will be rewarded with the assistance it deserves.

Graham Twigg

Engineering in Medicine. By B. McA. Sayers, S. A. V. Swanson and B. W. Watson. Pp. vii+103. (Oxford University: London, May, 1975.) £3.25.

THIS is a curious book but I am afraid it does not quite live up to the description on the cover: "a selective review. Using this as a basis, the authors then discuss prospects and priorities—addressing the problem of identifying developments that should be supported . . ."

I have great sympathy with the authors: everyone in the bioengineering field has opinions on the future of bioengineering and of bioengineers; but if the main part of the book is intended to give an authority to the views contained at the end, apparently addressed to the health departments, it does not succeed very well. I think it is unfortunate that they made the review so wide because, even when one knows the difficulties involved and accepts this explanation, the uneven treatment is still disconcerting. Their technique of condensing infor-

mation has led them to use a profusion of expressions such as "clearly", "on the other hand", and "of course" which is also unfortunate in a book of this type.

It is simply not possible to determine for whom this book has been written. It seems to have been put together as a background book for first year students but someone has thought that it was too difficult and one chapter has more than forty phrases in parenthesis in its twenty pages which give explanations in a kindly way ranging from "features of signal shape (waveforms as they are called . . .)" to "fluid outflow (mainly as urine)". This underlies the reviewer's difficulty: if one cannot determine the real aim it is difficult to judge the value; one might hazard a guess, however, that it was not particularly great. It may be, indeed, that the purpose of the book is an expression of personal opinion on scientific management but it is hard to imagine that those able to influence the organisation of research would read right through to the last chapter, which is a pity.

D. C. Simpson

Fracture of Brittle Solids. (Cambridge Solid State Science Series.) By B. R. Lawn and T. R. Wilshaw. Pp. ix+204. (Cambridge University Press: Cambridge and London, August 1975.) Boards £7.20, \$22.00; paper £3.80.

THIS excellent little book offers a comprehensive, readable, and up-to-date survey of studies of the conditions and mechanisms in the fracture of materials. Griffith's concept of energy balance provides the basis and unifying concept of the treatment. A careful consideration of the macroscopic, molecular and atomic contributions to the energy extends the validity of the concept in a most convincing way, not entirely limited by the adjective "brittle".

The authors write from the standpoint of physical metallurgy, and the strength of the book lies in its detailed and convincing treatment of the physical processes involved in fracture. Mathematical formulations based for example, on the theory of elasticity are quoted, not derived, and the book is therefore complementary to the various monographs on fracture mechanics. Much useful information is presented in diagrammatic and tabular form, with comments in the text.

The book should remain a requirement of the serious student of strength of materials for many years.

J. W. Craggs