

functions, and on the adaptations of endotherms to rigorous habitats.

In addition to being well-written and well illustrated, the paperback edition is extremely good value. It should put new

life into any vertebrate course, and it thoroughly deserves to capture the bulk of the market for vertebrate textbooks. □

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Fossils the French way

John C. W. Cope

Elements of Palaeontology. By Claude Babin. Translated by N. Oriss and edited by D. Palmer. Pp.446. (Wiley: 1980.) Hbk £19, \$57; pbk £7.95, \$22.50.

IN HIS introduction to this book the editor mentions the important point, certainly not implicit in the title, that there is an "assumption that the reader is not a novice to palaeontological and biological terminology and technicalities". The approach therefore differs considerably from Rhona Black's *The Elements of Palaeontology* (Cambridge University Press, 1970), a book which has rapidly become the standard introductory palaeontological text.

To the British student the first part of the book will prove to be the most useful. The first chapters cover fossilization, fossil collection and preparation and the basics of palaeontological taxonomy. These are adequate treatments of the subject, but the exhortation to "gather the greatest possible number of samples" will not be welcomed by those with an eye on conservation. There follows a useful résumé of palaeoecological methods; this is well illustrated and many examples will be familiar to English-speaking students.

Part Two of the book carries the curious title "Some Facts of Evolution". After consideration of the origin of life, various aspects of fossil plants and some invertebrate fossil groups are considered. Although the treatment is claimed to be selective and not morphological or taxonomic, I find it difficult to understand why major groups such as sponges, bryozoa or gastropods are omitted whilst minor groups such as hyolithids,

conulariids and tentaculitids are discussed. Treatment of major groups is often idiosyncratic. Under "Echinoderms", for instance, a short discussion of pentaradial symmetry is followed by a presentation of the stylophoran/calcichordate controversy. There is no mention of the other 15 or so echinoderm classes — several of which could provide first-rate examples of evolutionary trends. Similarly, treatment of bivalves is restricted to their origins and their Ordovician diversification. The same approach is applied to other groups, an approach which, rather than stimulating, frustrates by its inadequacies. The final chapter in this section contains some 60 pages on aspects of vertebrate evolution, including a substantial section on hominid evolution.

The final part of the book, "Palaeontology and Evolution", briefly discusses some ideas on evolutionary theory.

The translation (from French) is acceptable but rarely more; it contains a few glaring errors (for instance that the bivalve ligament closes — instead of opens — the shell) but peculiar phraseology and word-order frequently make it awkward to read. Even with an English dictionary to hand, a few sentences are totally incomprehensible.

The good illustrations and useful reference lists cannot compensate for the sketchy and disjointed coverage in Part Two of the book, and although it contains much that is interesting, I must say that I found this book a disappointment. □

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Micropalaeontological survey

Alan Lord

Microfossils. By M. D. Brasier. Pp.193. (George, Allen & Unwin: 1980.) Hbk £12, \$27.50; pbk £6.50, \$14.95.

THE growth and development of micropalaeontology has been closely connected with interest in the world's oceans, coupled with its application to hydrocarbon exploration. The results of the *Challenger* Expedition (1873–1876) stimulated the study of small organisms and their role in modern sedimentation. Stratigraphical studies of fossil

counterparts by such pioneers as T. R. Jones in Britain eventually led to the recognition in the 1920s of the use of microfossils for correlation, particularly between boreholes where drilling usually destroyed macrofossils. Since that time various groups of microfossil have been found to be useful for biostratigraphical and palaeoenvironmental purposes, usually with industry recognizing the value of particular fossils in particular situations after initial academic study. The continuing exploration of the ocean floors

by D/V *Glomar Challenger* has depended on microfossils for stratigraphical control.

Dr Brasier's book provides a broad survey of microfossil groups, giving information for each on biology, hard- and soft-part morphology, ecology and distribution, relationship to sedimentation, classification and applications, together with suggestions as to further reading and hints for study. Coverage of each group tends to reflect its past importance to geologists — foraminifera, ostracods, spores and pollen, conodonts, dinoflagellates and coccoliths are given space in that order. Also included are a brief introduction, a useful appendix on techniques and a good basic bibliography. The style is economic, without a great burden of cited literature, but with many pointers to the student for further information and enough named examples to round out each chapter. Numerous line drawings illustrate the book; use of these is clearly a matter of personal preference when excellent photographs of microfossils are available nowadays.

The book is thoroughly recommended for undergraduates and junior post-graduates, not least because it complements the more detailed *Introduction to Marine Micropalaeontology*, edited by B. U. Haq and A. Boersma (Elsevier, 1978). The paperback is certainly a good buy for anyone with an interest in or need to know about microfossils. □

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Riches of biology

E. C. Cox and R. M. May

Biological Science. 3rd Edn. By W. T. Keeton. Pp.1080 + glossary and index, pp.A51. (W. W. Norton: 1980.) \$19.95, £11.50. Study guide \$4.95, £2.50; teacher's manual no charge.

TEACHING introductory biology is not easy. An average class has an extraordinarily diverse set of interests, preparations, aptitudes and appetites for the subject. It is never clear, moreover, where one should start and where, or at what level, one should end, given both the richness of the subject matter and the diversity of the audience. These difficulties surface in the pages of many introductory texts, often reflecting all manner of confusions on the part of the author about pace, depth, coverage and readership. The problems are variously solved by dealing only with animals or plants; by reducing everything to a few weak bonds, permuted; by centring the discussion on the fate of mankind; or by omitting, except *en*