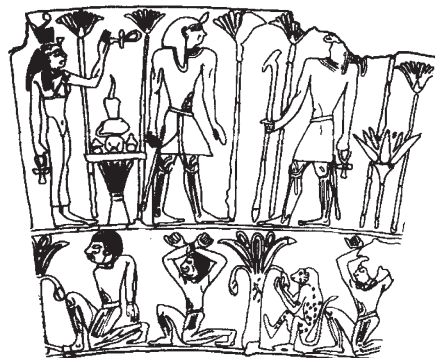


this volume are lively and interesting, and in some cases new and original as well.

The book is the collective work of four authors: justifiably so, for there is no one today who could cover the subject single-handed with the same authority. Indeed perhaps there never was, for the earlier textbooks in general did not venture very far back into the palaeolithic period. Inevitably, however, in the necessary work of compression some detail is lost. We no longer see the comprehensive summaries of pottery styles and of the artefact forms



Pictures of the past — decoration on a vase dating from the late eighth or seventh century BC found at Tarquinii in Etruria.

which occupied so large a proportion of many earlier accounts. Instead the themes treated are sometimes at a further remove from the raw data. In consequence this book will perhaps be more vulnerable to change as problems come to be solved and new questions arise. But, in a sense, the better the textbook the more rapidly will it be affected by the progress of current research.

The book is well-organized chronologically, and the treatment wisely takes the survey down to the beginning of the modern era (the BC - AD interface) for Europe as a whole. The emergence of the civilization of classical Greece thus falls within its scope, together with that of the Etruscans of Italy. This presents problems of treatment, which many earlier authors have avoided, since of course the availability of written sources brings Greece out of prehistory and into the light of history at that time, and the summary offered here will no doubt find its critics. But the solution is a bold one, and I find it altogether effective.

Minor faults and failings in several places can be rectified in a second edition. Meanwhile it is a pleasure to salute the appearance of a survey which for the first time since the New Archaeology of the 1960s presents the prehistory of Europe in a coherent and satisfying way. It will at once take its place as a new standard work, for it is quite simply the best introduction to European prehistory which is currently available. □

Colin Renfrew is Disney Professor of Archaeology at the University of Cambridge, and a Fellow of St John's College, Cambridge.

Fossil selection

W.S. McKerrow

Atlas of Invertebrate Macrofossils.

Edited by John W. Murray.

Longman/Halsted: 1985. Pp.241. Pbk £13.95, \$24.95.

IT IS very seldom that I have opened a new book with such delight. About half of its pages consist of magnificent photographs of well-preserved fossils, and primary congratulations must go to the photographers who have so ably produced these illustrations. The preface informs us that there are about 3,000 named minerals, but that the invertebrate macrofossils include tens of thousands of genera and hundreds of thousands of species. It has never been easy to select what to teach from this myriad. Now we have a choice of 900 well illustrated fossil genera, more than enough for an undergraduate course. Some of my favourite genera are missing, but most are there; more significantly only one or two minor groups of macrofossils are absent: hyolithids and archaeocyathids seem to have escaped the editor's net. (Vertebrates and microfossils are also absent, but by deliberate decision. Do they warrant two more books along the same lines?)

Seven of the contributors are from

British universities, five from the Natural History Museum, one from the Geological Survey of Greenland and one from Brigham Young University, Utah. They all know what is needed to give authoritative descriptions of the common fossil groups. Although there is some bias towards north-west Europe, the fossils illustrated and described include genera from all over the world. So the book will be a useful text for any student in any country who can read English, while the diagrams and photographs should even prove helpful to those with only a scanty knowledge of the language.

Most chapters include a glossary of descriptive terms, and also an evolutionary diagram showing the relationships of the larger taxonomic groups. But, as the editor points out (p.2), "taxonomy is not the main aim of palaeontology. It is the application of correctly identified fossils to the problems of biostratigraphy and palaeoecology which makes palaeontology a major part of geology". The teacher who uses this book in class will still have plenty of work to do, especially in explaining the biology, ecology and evolution of these extinct animals. However, this atlas will make his task (and that of the student) so much more pleasant and so much more efficient. □

W.S. McKerrow is a Lecturer in the Department of Earth Sciences, University of Oxford.

A view of solids

R. Rudham

Solid State Chemistry and its Applications.

By Anthony R. West.

Wiley: 1984. Pp.734. £37, \$67.95.

HAVING carefully defined solid state chemistry as the synthesis, structure, properties and applications of solid materials, the author of this book is somewhat confined within a straitjacket of his own manufacture. Unfortunately, his definition precludes consideration of the important interactions between solids and gases or liquids. The fact that the book has nothing to say about adsorption and heterogeneous catalysis is perfectly acceptable, but when metal oxidation is similarly ignored one cannot help questioning the desirability of such a definition of solid state chemistry.

The non-mathematical approach adopted by the author contributes to the readability of his work, but inevitably introduces some shortcomings. For example, the law of mass action treatment given for lattice defect equilibria is less informative than that of statistical thermodynamics, where the compensating contributions to the overall free energy from defect formation and configurational entropy are directly seen. Nevertheless, the

chapters on structure and properties present an interesting and coherent account of these fundamental aspects.

What is less certain is the merit of the last four chapters on glasses, cements, refractories and organic solids, when serious consideration of diffusion processes and solid state chemical reactions has been omitted. In particular, the final chapter on the organic solid state seems something of an afterthought and in its brevity unjustly emphasizes the inorganic nature of the subject. To be fair, the early chapter on synthetic methods presents information on chemical reactions involving solids, but also in judiciously absolves the book from consideration of their kinetics. It is in this chapter that one of the major founders of modern solid state chemistry, Carl Wagner, receives his only mention.

West has written a remarkably readable account of solid state chemistry as he sees it, but who will read it? Both size and price will preclude its formal adoption as an undergraduate text, although it should make the recommended reading lists. Postgraduate students and other researchers will find it gently informative on areas other than those of their personal endeavours. The most probable readership will be non-chemists who have reason to enquire into the nature and physical behaviour of solids at the atomic level. □

R. Rudham is a Reader in Physical Chemistry at the University of Nottingham.