

painless method of birth control; numbers will have to be reduced by killing off the excess either by famine, epidemic disease, or nuclear war—probably the latter, for conventional warfare is not effective. This history of civilization has always been discontinuous, and the present phase seems to be bent on its own destruction, after which some totally different phase may, or may not, succeed. It is certain that we cannot continue along our present path for more than a century or two. "Nature leads and science points the way—to the conservation of variety, to the rational exploitation of fisheries and game populations, to the control rather than the elimination of pests and parasites and to the stabilisation of human populations at an economic level. . . . We inhabit a small world and must learn to adapt ourselves to its limitations or perish . . . we are steadily destroying our world and may end up by destroying ourselves."

Prof. Cloudsley-Thompson has written a thoughtful and stimulating book; it is well illustrated, indexed, and provided with references to further reading, but there are too many misprints.

L. HARRISON MATTHEWS

THE BATS OF WEST AFRICA

The Bats of West Africa

By D. R. Rosevear. Pp. xvii + 418 + 2 plates. (London: British Museum (Natural History), 1965.) 155s.

THE fascinating mammalian life of tropical West Africa has long been a subject of intense interest to zoologists. Students of the region will be deeply indebted to D. R. Rosevear for this superb monograph on its Chiroptera, the first comprehensive work of the kind yet attempted. *The Bats of West Africa* has been chiefly prepared with a view to the needs of young African scientists, but will prove to be of equal value to specialists in this field elsewhere.

The work covers the whole of tropical West Africa south of the eighteenth parallel of latitude north, to the coast, including Fernando Po Island; the eastern limit is the River Sanaga in Cameroon Republic, and thence north-east to Jebel Marra, following the watersheds dividing the West African drainage area from those draining to the Congo or the Nile.

A systematic check-list gives ready reference to the species occurring in the area and a general introduction to the Chiroptera provides fundamental information on their distribution, habits, reproduction, parasites, sensory perception and other important aspects of bat biology, as well as details of those aspects of structure of systematic importance. Methods of collection and preparation and measurement are also discussed and taxonomic practice and problems briefly treated. The systematic section which follows is well and clearly organized, with keys to the identification of genera and species, and useful synonymies. The information in the text is very full, covering the description, distribution, habits, biology and systematic problems of each species. The text is illustrated with very clear line drawings by Joanna Webb and the author, which greatly enhance the value of the work. A very full list of references, together with a list of journals with their abbreviations, is provided. A useful glossary of technical terms follows, and an illustrated account of taxidermy applied to bats will prove of value for those unfamiliar. A description of the zones of local vegetation is followed by a most valuable geographical gazetteer, supplemented by a folding-map at the back of the volume. *The Bats of West Africa* is a vital need for all serious students of African Chiroptera. It is comprehensive and eminently practical and will be a first source of information on its subject for many years to come.

D. L. HARRISON

FOSSIL MAN

Guide to Fossil Man

A Handbook of Human Palaeontology. By Michael H. Day. Pp. 289. (London: Cassell and Co., Ltd., 1965.) 42s. net.

IN the face of the present fashions in physical anthropology, it is a pleasure to review a book on fossil man, a subject seemingly dry as dust, and yet of fundamental importance to anyone interested in the study of man. Whatever we may learn of primate behaviour, it is human palaeontology which forms the basis on which knowledge of our origin and our nature can be built, and which alone can indicate the manner of the evolution of man. This *Guide to Fossil Man* is the first book of its kind ever to be produced in Britain, and we must be grateful to Dr. Day for undertaking such a task.

Apart from two short sections on the environment, culture, dating and anatomy of fossil man (22 pages), the book brings together information relating to forty key sites which have yielded "the bulk of significant hominid fossils". The sites are treated in turn, country by country, in the manner of a catalogue, and the information given for each fossil site is divided under a number of headings; synonyms; found by; geology; associated finds; dating; morphology; dimensions; affinities; original; casts; references. The information given is both accurate and quite extensive, and its value is much enhanced by numerous photographs.

However, this book represents the view of just one man on significant hominid fossils, and subjectivity is apparent both in the selection of the fossils and in their interpretation. It is not difficult to find fault with the selection of fossils which have been included. While on one hand we find an entry devoted to the very insignificant fragments from Ubeideya, of which both date and affinity are uncertain, there is at the same time no reference to any of the important skulls of Middle Pleistocene age from southern Europe, Russia and Persia. In fact the so-called Neanderthal remains are very poorly represented, and while Dr. Day may feel that the distribution and character of these people are not of central significance to students of human evolution, they do represent the best recorded phase of this evolutionary process, and as such are wonderful material for students of human palaeontology. I would on no account feel justified in omitting a full consideration of this group in a course in human palaeontology. At the other end of the morphological sequence, it is remarkable that there is a six-page entry for the *Gigantopithecus* remains from China but no reference to the fragments classified as *Ramapithecus*, which have a claim to hominid status at least equal and probably much greater. At the same time, the late age of *Gigantopithecus* makes it clearly an interloper in any study of human evolution, while the early Mio-Pliocene age of *Ramapithecus*, and its remarkable morphology, make it more than merely a probable candidate for a stage in human phylogeny.

In contrast, Dr. Day gives very full treatment to the fossils from the early Pleistocene of Africa, and this part of the book is of real value as a record of what has been discovered in the Transvaal and in Tanzania. But here we must record that a very one-sided account is given of the significance of the Olduvai fossils, and the published opinions of such distinguished palaeontologists as Profs. W. le Gros Clark and J. T. Robinson, which represent an important body of opinion, are quoted neither in the text nor the references. Any book intended for students, let alone for professional reference, should quote widely in its treatment of controversial issues, since one of the most valuable exercises for any student is to make up his own mind on a controversial matter, and for this he must be well informed.

Though I believe these criticisms to be fair and justified there is nevertheless no real question of the value of this