

innovations, as well as in provoking organizational changes. There is much reference to "social tensions" and "contradictions", to societies as composed of conscious actors rather than "passive recipients". What is seen as demographic or environmental determinism is rejected. The roots of this approach lie in structural-Marxism.

Although I find much to admire in Whittle's book, and recommend it to be read and consulted, I have three main objections to his approach. First there is no allowance for the unintentional consequences of human actions, surely a necessary component of any theory of human evolution. Secondly there is no recognition of the different time-scales over which cultural changes take place: changes which are apparent over several hundred years of the archaeological record may have been imperceptible to individuals. This gives rise to questions of proximate as opposed to ultimate causality. Lastly there is the archaeological record itself, and what we make of it. There are continual references to the difficulties posed by drawing social inferences from settlement or burial data, to the possibilities of social differences being "masked" by communal ideologies. But unless we have the methods to identify social variables, surely the theoretical approach exemplified in this book will struggle to get off the ground?

A rather different approach, and one with which Whittle would presumably disagree, is presented in Graeme Barker's book, the first synthesis of information on prehistoric farming in Europe since Grahame Clark's *Prehistoric Europe — The Economic Basis* (Methuen, 1952). The amount of new data (on settlements, fauna and flora, and on prehistoric environments) collected since that date is truly astonishing. This alone marks out *Prehistoric Farming in Europe* as a book which will join Whittle's on all students' reading lists.

Barker's approach to this evidence is to try and isolate locally varying economies, even within single regions. No longer is prehistoric Europe peopled by a series of cultures, each with their own distinctive economies. Subsistence economies are viewed as local adaptations, with the model of agricultural colonization (as supported by Ammerman and Cavalli-Sforza) being rejected firmly for every area of Europe in turn. But why do subsistence economies change? Barker follows D.B. Grigg (*The Dynamics of Agricultural Change*; Hutchinson, 1982) in proposing four major stimuli: climatic and environmental change, technological change, population increase and social organization. While Whittle would champion the last of these, Barker argues for a combination of environmental and demographic stimuli. It would be unfair to stigmatize these different views as social versus environmental determinism. The

fact that radically opposed interpretations are proposed for the same data is very revealing of the current state of archaeology.

There are important lessons to be learnt from all three of these books. Even in an area as long researched as Europe, there is still a need for rigorous model-building (as in Ammerman and Cavalli-Sforza's work) and scholarly, provocative synthesis (as provided by Whittle and Barker). There is still much to be learnt about agricultural origins and the evolution of agricultural societies in Europe. Opposing theories are welcome, as long as they are relevant to the scale and character of the archaeological record. Ultimately it is our ability to interpret archaeological data in terms of variables relevant to our theories that will ensure progress in our knowledge of the past. □

Robert Chapman is a Lecturer in the Department of Archaeology, University of Reading, Whiteknights, Reading RG6 2AA, UK.

Bird organization

John Andrews

A Dictionary of Birds. Edited by Bruce Campbell and Elizabeth Lack. *Poyser/Buteo*: 1985. Pp.670. £39, \$75.

The Encyclopaedia of Birds. Edited by Christopher M. Perrins and Alex L.A. Middleton. *George Allen & Unwin/Facts on File*: 1985. Pp.445. £25, \$35.

ELEVEN years ago I obtained, by slightly dishonourable means, a copy of Landsborough Thomson's *A New Dictionary of Birds*, then a decade old and out of print. Soon, my conscience stopped pricking me: the book was too useful to sustain a sense of guilt at its mode of acquisition. Time passed. The text became dated and I cannot recall when I last referred to it.

The publication of *A Dictionary of Birds* is thus doubly welcome, being a legitimate acquisition which updates and expands the earlier work. Running to over a million words, contributed by some 280 ornithologists and other specialists, it incorporates a wealth of new fact and interpretation. Like its predecessor, it comprises articles on general subjects relating to birds, and on different kinds of birds treated by families, all of which are covered. There are also short entries defining special terms. The whole work is arranged alphabetically.

The English names of birds chosen as entry headings are those used in Britain but North American names and others used in the English-speaking world have been included as far as possible. Scientific names of groups above generic level are also listed, cross-referring to the vernacular.

Overall, the text is splendidly comprehensive and comprehensible. Though cer-

tainly a serious reference work it does not omit offbeat aspects — for instance birds in art, birds in music and heraldic birds all get extensive consideration along the way from abdomen to zygomatic arch. My only serious criticism concerns the illustrations. The black-and-white photographs are helpful and informative, but the line drawings, many of which are "bird-on-a-stick" pictures, are disappointing and fail to complement the text.

By contrast, the illustrations in *The Encyclopaedia of Birds* are one of its major strengths. Most of them are colour photographs, all of good quality and often of real beauty: there is a pleasing dearth of nest shots and instead many depict infrequently seen aspects of behaviour or physical skills. Supplementing these are colour paintings and line drawings by several acknowledged bird illustrators, extending the range of species covered and the activities portrayed.

The aim of this book is to provide a succinct, up-to-date account of the world's birds. The text, like that of the *Dictionary*, consists of a series of articles by specialist contributors — 90 in this case — dealing with a single family or group of closely related families, the whole arranged in systematic order, and each article covering special physical adaptations, distribution, evolutionary history, classification, breeding, diet and feeding behaviour, social dynamics and spatial organization, conservation and relations with man. An "information panel" — not as gimmicky as it sounds — precedes the text on each family, giving a map of its world distribution and other basic information, and listing all its members. A general introduction discusses classification and the structure and adaptations of birds, and there is a well chosen bibliography and an index to species.

Much of the material is here receiving its first airing in the popular literature: it will be interesting to watch its progression into other, less original works, in the process gradually losing precision or, to judge by some past examples, even comprehensibility. Perhaps surprisingly, most of the expert contributors write well, or were very ably edited, for which Drs Perrins and Middleton should take much credit. Likewise the publisher's production team should share in the congratulations: it is easy to dismiss glossy and abundantly illustrated books as lightweight, but this volume represents a successful union of science and art and has plenty to offer both the armchair birdlover and the serious ornithologist.

Comparisons are odious and both books have a great deal to offer. But, if forced to choose, I would regard the *Encyclopaedia* as desirable and the *Dictionary* as necessary. □

John Andrews is Head of Conservation Planning at the Royal Society for the Protection of Birds, Sandy, Bedfordshire SG19 2DL, UK.