

naturalists' trusts or the Otter Haven Project's work in this field. More too could have been said about the way in which the water authorities' schemes affect otter habitat, the opportunities which exist to reconcile the needs of land drainage and wildlife conservation, and the initiatives which some water authorities (for example, the Wessex and Welsh) have already taken. I am slightly uneasy about teaching the general public how to search for otter signs (chapter 10); increased disturbance was mentioned in chapter 9 as a possible reason for the otter's decline, and further disturbance by well-meaning otter-watchers may not be desirable.

Philip Wayre's achievements in breeding otters in captivity are unsurpassed, and he writes about his work with an infectious enthusiasm. This is a fascinating introduction to otters, but could have given more information about the animal's conservation.

ANGELA KING

**A Wood in Ascum: a Study in Wetland Conservation, edited by A.H. Fitter and C.J. Smith.** Ebor Press, York, and Yorkshire Naturalists' Trust, £4.95.

This small volume records the history and present ecology of 'the Wicken Fen of the North', the 100-acre Askham Bog just two miles from the centre of York. The first hundred pages are occupied by chapters dealing with the history of the area, its habitats and its flora, with selected animal groups and with current management. None of the chapters dealing with the flora and fauna attempts to be comprehensive; instead special attention is paid to groups or species of particular interest. The chapters on history, habitats and plants contain much astute observation and summaries of a considerable amount of recent research. The final third of the book is given over to appendices listing species recorded on the bog. Unfortunately there is no index.

The book was produced to commemorate the centenary of the publication, in 1879, of the first systematic account of the biology of the area. The desire to meet this deadline is perhaps reflected in a degree of repetition, some roughness of style and poor collation between some sections. Immediate contrasts suggest themselves between this book and the monographs on Hayley Wood and Monk's Wood, both of which also seem to be aimed at the interested amateur and the professional. The smaller size of the present volume inevitably means less complete coverage, while the general standard of production, especially of figures, is lower. Within such limitations however this book compares quite favourably to the other two studies.

Despite some weaknesses the book will be of great interest to many conservationists, both as a record of a particular site and as an impressive indication of the observation and research needed to understand and adequately manage nature reserves.

H.J. HARVEY

**Population Ecology of Raptors, by Ian Newton.** Poyser, £10.80.

By synthesising studies on diurnal birds of prey world-wide this book fills a gap in the review literature. Its 18 chapters range from mating systems, dispersion, aspects of breeding and movements (including migration), through to conservation management and captive rearing. The pesticide problem and other anthropogenic issues are given three chapters – appropriately, since the identification, analysis, and amelioration of the pesticide problem has become something of a classic success for the role of science in wildlife management. Photographs are well chosen and reproduced, and a fine line drawing by Jim Gammie heads each chapter. Tables are relegated to an appendix. The style is highly readable as well as scholarly.

After a short introduction to raptor biology, the discussion begins with sex ratios and dimorphism. Breeding density – conventionally the focus of population ecology – is dealt with as early as chapter 3. The central theme concerns the role of food, and by the final chapter it is not surprising to read the 'overall conclusion that, in the absence of human intervention, almost every aspect of the natural population ecology of a given

raptor species can be explained in terms of food' – a point of view with strong echoes of David Lack. It would be odd if food did not figure strongly in raptor research, but this seems to have produced a tendency to demonstrate the food hypothesis rather than test it. As Newton observes, the effect has been merely to confirm food relationships already found with other birds. It may also have diverted attention away from other processes. For example, there are various implicit hints that mates rather than food might be the primary resource for raptors, and that calibre of mate may be the most relevant variable to define. Competence at finding and catching food might seem the most obvious criterion, but as the best hunters may often get the best feeding areas or territories, the real problem is to explain how they do so. Newton agrees that raptor social behaviour and organisation deserve fuller study. On conservation he argues that nature reserves and legal protection will not be enough to ensure long-term raptor conservation, particularly of the migratory and larger species.

This book should interest ornithologists generally, and also be valuable to wildlife managers and conservationists. However, further evidence of the same kind will do little to advance our knowledge of raptor population ecology, and perhaps this phase of research should now be ended. Newton advocates a greater use of experiments in future studies, and hopes that these will challenge his conclusions. Worthy sentiments!

ART N. LANCE

**The Animal World**, by Maurice and Robert Burton. Macmillan, £4.95.

**Animals and Their World**, by Mary Parker Buckles. Ridge Press/Blandford Press, £8.95.

The first title, seen only on the spine of the book on the shelf of a bookshop, might mislead a prospective buyer into thinking that this was just another animal encyclopaedia, of which there have been so many in recent years. The subtitle, however, identifies the work as 'An Encyclopaedia of Animal Behaviour', and further examination confirms that it is truly encyclopaedic in scope.

We are so accustomed to think that the study of animal behaviour is a recent science that it is useful to be reminded by the authors that its roots lie in the careful observations of earlier naturalists, including Darwin and Fabre (Gilbert White might also have been mentioned), before Lorenz and his followers established the European school with their classic studies of 'instinctive' or innate behaviour of wild animals in natural situations. More recently, behaviourism, with which the name of J.B. Watson is linked, has concentrated in the laboratory on studying the ability of an animal to modify its behaviour in the light of experience: in other words, learning.

Both aspects of study are considered in this book in thirteen chapters covering such topics as feeding, escape from enemies, territory, reproduction, movements and migrations, social life, language; and two chapters deal with unusual behaviour and unsolved problems. An attractive and valuable feature is the use of wide margins to give specific examples of observed behaviour.

The text throughout is written in the attractive, clear style and language for which Dr Maurice Burton has become well known. His son, Dr Robert Burton, has collaborated in the text, and his daughter, Jane, has contributed the 31 beautiful colour plates. The many splendid line illustrations are by Hilary Burn. This paperback edition is very good value for money.

*Animals and their World* is concerned only with mammals and with their ecology worldwide. Two hundred and seventy species have been selected to show how they are adapted for living in their respective climatic zones: tropical rain forest, temperate deciduous forest, coniferous forest, tropical grassland, temperate grassland, desert, tundra and ocean. The brief account of each animal includes much fascinating and up-to-date information. There are also introductory chapters on mammals in general and to each geographical zone. Among the illustrations are eighty in full colour and over