

Book reviews

The Encyclopaedia of Mammals: 2

Edited by David Macdonald
Allen and Unwin, London, 1984, £25.00

David Macdonald has done it again. His first splendid volume covered carnivores, sea mammals and primates. This second part deals with herbivores, insectivores, and marsupials. The whole thing is an expertly compiled, lavishly illustrated, and altogether first-rate piece of mammology. It contains massive amounts of text, and hundreds of full-colour photographs—all at the comparatively knock-down price of £25. I have rarely encountered an encyclopaedia that is so interesting and informative, not to say illuminating, from start to finish

Of course this is not the work of a single person. The contributors to this edited volume comprise a lengthy list of established experts in their diverse fields. So the product is an authoritative assembly of our current state of knowledge on the mammals.

If I were to raise an eyebrow about this fine production, it would be about the lack of discourse on what we *do not* know about mammals. Of course, Macdonald and the publishers may have simply had other intentions. All the same, I was surprised that when we come to that sector of the mammal world that comprises at least 1000 species, or roughly one-quarter of all mammals, viz. bats, many of them virtually undocumented, I did not encounter some creative speculation on how many species might await our discovery. Moreover, I did not find as much information as I would have liked on bats' relations with their biotic communities: more than one in four of bat species is a pollinator, hence many bats are linchpin species in tropical forests. And while there is some good material on the diverse threats that are overtaking bats, by virtue of their specialised lifestyles and often very localised distributions, there is not sufficient emphasis, for my preference, on the prospect that we may conceivably lose more bat species by the end of the century than all other mammals put together.

The nearest competition to this book lies with the voluminous work, Walker's *Mammals of the World*. But the two are not strictly comparable. Macdonald's book is rather less technical, and 120

more popular in substance and style, hence more palatable to the lay reader, and—the big and!—more directed to conservation concerns.

I am sure that this book will become a well-thumbed tome on my shelves.

Dr Norman Myers, Consultant in Environment and Development

Tropical Rain Forest: Ecology and Management

Edited by S.L. Sutton, T.C. Whitmore and A.C. Chadwick

Special Publication No. 2 of the British Ecological Society
Blackwell Scientific Publications, Oxford, 1983, £28.50

This substantial book contains 34 papers presented at Leeds University at Easter 1982 to celebrate the 21st anniversary of the BES Tropical Ecology Group. All contain original research or comment that will be a reference point for many years to come. Tim Whitmore says in the Introduction, 'we hope this volume will appeal to a wide audience interested to discover some of the exciting fields of tropical forest science'. By all accounts it will.

The papers are grouped into four sections: I. Community structure and diversity, both spatial and temporal, of vegetation and forest canopy animals, mainly insects. II. Plant-animal interactions including frugivory and seed dispersal, leaf predation/survival including foraging strategy of leaf-cutting ants. III. Decomposition and nutrient cycling including the role of invertebrates and fungi in litter decomposition and in soil rejuvenation. IV. Resource management, which includes those papers that directly discuss ecological principles of conservation, monitoring and possible strategies.

Using FAO data Alan Grainger estimates tropical deforestation at 6×10^6 ha per year, but estimates are difficult to come by and often official figures can be at variance. The potential of remote sensing is discussed and K.M. Green shows, using the Madhupur Forest of Bangladesh as an example, the value of *Landsat* satellite imagery in the study of land-use changes and ecosystem mapping. In this same section are three Regional reports—1. de Gusmao Camara: Brazil; 2. G.S. Hartshorn; Central America (in which is given a

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list of National Parks and equivalent reserves in the seven countries covered); 3. P.R.O. Kio: Nigeria. Obviously Africa could have been better covered and the state of play in SE Asia, India and China would have been a worthy inclusion.

The book ends with three papers which emphasise global concern. Nicholas Guppy put forward the case for setting up an Organisation of Timber Exporting countries (OTEC) the aim of which would be to achieve co-operation between tropical rain-forest (TRF) owning countries so as best to preserve and manage what is often their greatest resource. Since the proposal was discussed at Leeds several tropical countries have shown considerable interest in the idea. I. Rubinoff, in a second paper, proposes a strategy that requires the establishment of a system of tropical moist forest reserves financed by all of the developed temperate zone nations (with a per capita GNP in excess of \$1500 per year). Whilst the World Bank might be able to administer such a fund the proposed advisory committee of experts from organisations such as FAO, UNESCO, UNEP, IUCN and WWF could doubtfully work without considerable bureaucratic reverberations. The third and last paper is by Brian Johnson who looks at Britain's involvement and possible impact. He argues that Britain's potential influence on world use of TRF cannot be measured by its present or potential demand on rain forest products. British Government policy, it is suggested, inclines to making TRF exploitation more attractive to British private investors. Britain has a substantial contribution to make to studies of TRF because we have here in the UK a principal repository of knowledge on TRF, and Britain is a major centre for dissemination of such information. One feels that had we only one remaining substantial tropical colony whose ownership was in dispute or position politically strategic we would have a Government funded Tropical Research Institute par excellence.

Alas we do not and Government funds for tropical research are scattered very thinly in the votes of ODA, the UGC and relevant Research Councils and quangos like Kew, and the British Museum (Natural History). Thanks to the sustainable resources of the BES and a few other

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NGOs, this Symposium has given considerable food for thought.

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Bats: A Natural History

John E. Hill and James D. Smith
British Museum (Natural History), 1984, £15.00

The publication of this book is timely in view of the recent increased interest in bats. It is a review of the structure, behaviour and diversity of the second largest order of mammals and deals with bats of the world without favouring any geographical area, except as dictated by where research has been concentrated.

In the absence of hard evidence the short chapter on origins and evolution of bats is admitted to be largely speculation, but there is a good review of the evidence to support the increasingly accepted idea that fruit bats (Megachiroptera) have evolved quite separately from the rest of the bats (Microchiroptera).

Both authors are primarily taxonomists, so it is perhaps not surprising that the chapters on 'Form and structure' and that on 'bat systematics' are the longest. The latter includes brief notes on each family, maps of their distribution and a list of all included genera with their distribution and number of included species. Attention is drawn to the many areas where further research is likely to suggest important changes in the ideas on relationships. Surprisingly, this chapter includes some misleading generalisations and minor errors. For example, compared with many bat families, the number of strikingly marked species of Emballonuridae does not merit their description 'as a rule . . . brown or greyish, but some are blackish'; neither do they all have long, narrow wings; and the description of *Rhynchonycteris* is not very accurate.

Other chapters are on flight, food and feeding, thermoregulation, reproduction and development, echolocation and vocalisation, population ecology, and man and bats. All the chapters are illustrated with line drawings and a few black-and-white photographs. Befitting the status of this book as more of a textbook than other general bat