

state of knowledge of zoo animal nutrition. These include “Dietary Analysis for Mammals and Birds: A Review of Field Techniques and Animal-management Applications”, “Nutrition of Marsupials in Captivity”, and “Standardizing Nutrition Information within Husbandry Guidelines: The Essential Ingredients”. They should be invaluable to curators and keepers responsible for developing appropriate diets for the animals in their collections.

Section Two of the IZYG is entitled “The Developing Zoo World”, and as the name suggests, consists of a series of articles which describe recent advances and innovations in captive animal husbandry and management. In particular, this includes improvements in the reproduction, breeding and raising of captive endangered species. In total, 10 of the 12 articles in this section are concerned with this and only the articles about a mixed-species exhibit of Goeldi’s monkeys and Pygmy marmosets, and the daily activity budgets of captive and released Scarlet macaws can be said to be different. Perhaps this emphasis reflects the fact that most zoo professionals still see their main role as breeders of captive wildlife and hence as managers of self-sustaining captive populations.

The IZYG continues to be an interesting, useful and accurate mirror on the international zoo world. This one volume manages to pack in a variety of factual information about the world’s zoos and aquariums, zoo associations and international studbooks for rare species of wild animals in captivity. Its articles reflect current research and advances in aspects of captive wildlife husbandry, while the Guest Essay provides an insight into the continued development and objectives of the modern zoo. Consequently it is a book that I would recommend to anyone interested in zoos — their history, development, aims and objectives, and their role and continuing relevance in today’s society. It goes on making a valuable addition to our knowledge and understanding of just what we should expect from today’s zoos.

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Encyclopedia of Animal Behavior [Three Volumes]

Edited by M Bekoff (2004). Published by Greenwood Press, 88 Post Road West, Westport, CT 06881, USA. 528 pp Hardback (ISBN 1 313 32746 7). Price £200.00.

In the words of the editor, Marc Bekoff, the three volumes that make up this new *Encyclopedia of Animal Behavior*, comprise “the most complete and comprehensive collection of original essays on the topic of animal behaviour. There are no rivals in its breadth, depth, or scope”. Ignoring any lack of modesty, Bekoff deserves at least two cheers just for attempting such a major endeavour.

Each of the three volumes that together make up this encyclopedia runs to around 400 pages and in total there are just over 300 entries, with essays of between 300 and 7000 words on topics ranging from shoaling behaviour in

fish to the vocalisations of grasshopper mice. The book is indeed broad in scope and includes much material on animal welfare and animal rights, as well as a useful section on careers in animal behaviour.

Encyclopedias are tricky things to get right, though. The first and most obvious expectation that an encyclopedia has to satisfy is that the reader will be able to find, quickly and easily, information about the topics that they are interested in.

The other expectation of a ‘good’ encyclopedia is more subtle; it is that the information provided on any subject is up-to-date, impartial and accurate (you wouldn’t buy an atlas published by the Flat Earth Society to help your children with their geography homework).

So how well does Bekoff’s new publication measure up to these two criteria?

I couldn’t resist the temptation, when these volumes landed on my desk, to look straight away for entries on my own favourite subjects and animals. Nothing under ‘m’ for mara — well, that’s perhaps not too surprising, as not everyone shares my passion for obscure South American rodents. But nothing under ‘m’ for ‘methods’ either, nor under ‘g’ for ‘game theory’, nor ‘e’ for ‘extra-pair paternity’ — nor even under ‘p’ for ‘paternity’. Of course, some of these topics are mentioned in the text — they are just not listed in the index. One of the flaws that makes this encyclopedia less useful than it might be is that you have to try and second-guess the main subject heading before you can find the information you want. For example, ‘mate choice’ comes under mating, which in turn is (quite reasonably) located in a section on reproductive behaviour. But it takes a while to work all this out, by which time an impatient student may have chucked the book on the floor and logged onto Google.

I’ll come back to the second criterion — the impartial, accurate and objective material one — in a moment. More, first, on the index and, in particular, on topics that would appear not to merit an entry.

The content of the encyclopedia has a strong American flavour, so there are plenty of entries by and about ethologists hailing from the other side of the pond. Some of the Brits do make it into the text: Richard Dawkins merits an entry all of his own and Bill Hamilton is listed, but there is no mention in the index of either of the Ridelys, nor of Nick Davies, Tim Clutton-Brock, Tim Birkhead, Robert Hinde, Marian Stamp-Dawkins or Aubrey Manning. All of these contributors to the field of ethology are conspicuous by their absence (although there is an index entry for Fraser Darlin [sic]). To be fair to the editor, though, textbooks by Marian Stamp Dawkins, Krebs and Davies and Tim Clutton-Brock are listed in a special section on recommended reading, at the end of Volume Three.

Producing an encyclopedia like this is a huge endeavour and it is easy to be sniffy about omissions from the index. Of more serious concern is the variability in content, approach and standard of writing of the subject entries.

Bekoff says, in the introduction to this book, that, “as word about the encyclopedia spread, people contacted me and asked if they could contribute”. But the danger with a compendium where many of the subject authors are self-selected is that their entries do not always represent mainstream or entirely objective views of a particular subject area. A handful of the authors (I will spare their blushes by not naming them here) appear to have used Bekoff’s invitation to contribute to this venture as an excuse to promote either a pet idea or their most recent publication (or both). In the entries for one or two subjects that I know a little about, it was disconcerting to find that some widely cited and respected papers had been completely ignored — but that the author’s own work had been cited rather fulsomely. A student picking up this book would not necessarily be able to judge which of the entries are objective, wide-ranging and up-to-date reviews of current knowledge — and which are not.

A better approach, perhaps, would have been for the editor, or an editorial panel, to have sought out an acknowledged expert in each of the subject areas and invited him or her to contribute. The essays that work best are those written either by academics who are well established and well regarded experts in a particular field — or by contributors with no particular axe to grind and no recent book of their own to promote. Janice Moore is brilliant on parasite-mediated change in host behaviour; Pat Gowarty’s summary of female-female sexual selection is clear, concise and beautifully written. Sue Margulis has written a very useful and readable section on how to study animal behaviour (although to find her contribution, you are expected to search under ‘e’ for ‘education’, or ‘c’ for ‘classroom activities’, rather than the more intuitive ‘s’ for ‘studying animals’ or ‘m’ for ‘methods’).

Black and white photos are scattered throughout the text, but these are very variable in quality. For an encyclopedia that costs quite this much (a little over £200 for the three volumes), some use of colour photos in the main body of the text would have been nice, although there are a few colour plates in the centre of each volume.

Individual subject entries each have their own short list of references. I always find this approach frustrating — to track down a vaguely remembered reference at some later date, you have to be able to recall not only the name of the author whose paper caught your interest, but also the title of the section in which his or her work was cited. I wonder if I am alone in much preferring a single, comprehensive reference list at the end of a textbook? And frustration over not being able easily to find references in this encyclopedia is compounded by the use of an extraordinary variety of different referencing systems; surely something that could have been checked and tidied up before publication?

So who should buy this book? On the back cover of each volume, the encyclopedia is described as “the most authoritative, comprehensive and accessible resource on the scientific study of animal behaviour”. But with a price tag (in the UK) of over £200, Bekoff’s encyclopedia is likely to be far

from accessible to individual undergraduate students (and not too many other individual purchasers either).

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Jane Goodall: A Biography

Greene M (2005). Published by Greenwood Press, 88 Post Road West, Westport, CT 06881, USA. 146 pp Hardback (ISBN 0 313 33139 1). Price £16.99.

This is what might be termed a potted biography. Not for those who enjoy a good read. Take this example: the suggestion that Jane’s love of a toy chimp when she was two was ‘the first indication of what would become her life’s work’.

This is a difficult book to review especially as Jane Goodall has written her own autobiographies (referred to in the book) which are very readable, this book is not. However the reason for this can probably be found in the Foreword to the series which states ‘in response to high school and public library needs, Greenwood developed this distinguished series of full-length biographies specifically for student use.’ Thus the book seems to be designed for high school students who need information for projects and assignments, and can only be reviewed fairly in this context.

It fulfils this goal; the information is all there and readily accessible. There is even a helpful ‘timeline’ which lists milestones in the subject’s life. Jane Goodall is a remarkable woman and observer of animal behaviour who has written copiously and interestingly about her work, and the book does reflect this. Chapter 4 ‘the hidden world of the chimpanzee’ also provides a useful short history of man’s relationship and study of primates and apes in particular. Chapter 5 provides a concise account of the start of Jane’s chimp work in Gombe, and the chimps that she named and became familiar to, thereby inspiring, many a young primatologist as well as readers of her popular books. It also describes her then groundbreaking discovery that chimpanzees were users and manufacturers of tools. Further chapters go on to describe the many changes in her own life as well as those of the Gombe chimps. Chapter 10 is interesting in that it outlines the changes in her thinking which resulted in her becoming a worldwide ambassador for chimpanzees not only in other African countries, but also in zoos and laboratories.

However this Chapter also tells of the deeply depressing present situation; deforestation of Gombe, the decline of chimpanzee populations throughout Africa, and Jane Goodall’s ongoing battle.

This book, therefore, is a useful potted biography for anyone who wants to have quick access to the life and times of an extraordinary woman. It is not a great read, nor is it that informative, but it is useful and fulfils the purpose for which it was intended.

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