

American legislation alone. Fortunately, this parochialism does not pervade the rest of the book: in some of the case studies there are very good references to European and Australasian legislation.

Despite my reservations about the introductory chapter, I warmly recommend this volume as a collection of very interesting and well-written case studies raising a variety of ethical questions concerning man's understanding and use of animals. These studies are well suited for teaching purposes – and not least, for courses concerning the use of animals for experimentation.

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International Zoo Yearbook, Volume 36

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Every year I look forward eagerly to the publication of the latest volume of the book that we abbreviate as the IZY. It consists of two functionally distinct parts. There is always a huge reference section, this year constituting well over half the book. This starts with an indexed country-by-country listing of sort information on a large number of the world's zoos. For each entry there is a mailing address, telephone and fax number. Also listed are the principal officials of each zoo, its area, the number of yearly visitors, the number of animals in the principal groups, and the total number of specimens. Where available, the IZY gives the zoo's source of funding, its specialities, and its membership of professional organizations. This is a very useful service to members of the profession and to many researchers seeking information about potential sites for studying particular animals.

Also in the reference section is an exhaustive list (188 pages) of 'animals bred in captivity', in this case covering 1995/96. This is divided into sections on fishes (I'm glad they use that plural!), amphibians, reptiles, birds and mammals. This is followed by a census of 'rare animals in captivity' (111 pages), annotated to identify their status in the wild. This list, thankfully, includes invertebrates. Finally, there is a list of international stud-books and a register of rare species as well as the usual author and subject indices. This reference section is the result of a laudable and enormous (not hyperbole) volume of dedicated work. It is a mine of useful information for a very wide audience.

The large reference section at the back of the book is preceded by sections containing essays and articles. In this volume there is a Guest Essay – so named but not in essay form. The subject is how 'an in-depth institutional review' stimulated a critical examination of how to strengthen participation in field conservation. I suspect that such fashionable fads in management devices are really time-honoured mechanisms with new ritual and a new in-language. To some, we in the zoo movement are now an 'industry' (heaven forbid) and words like 'reconnaissance', 'strategy' and 'metapopulations' are raging round our retreats, whether or not they involve 'masterminds'. One conclusion is unexceptional: 'One issue that is often discussed in the zoo movement is whether field conservation is inappropriate or impossible for some zoos. We strongly believe that neither is the case.' For me, any shift in

emphasis towards greater involvement in in situ conservation efforts by the international zoo movement would be a welcome step. However, in this context, what is usually meant is the field conservation of individual vertebrate species. Saving ecosystems is often argued as a side-effect of this. Here, when deciding on so-called keystone species, that is those whose conservation is thought to hold up an entire system, it is important to realize that there is a close correlation between the area of a reserve and the number of species it can conserve. This is one of the lessons incorporated in theoretical zoogeography, and the studies of minimum critical size in Amazonian forests.

Section 1 is entitled 'Old World Primates'. It contains 17 articles. As usual in collections of contributions from a wide range of sources these have a comparable range of content and quality. While there is overlap in subject matter, I counted at least 11 articles principally concerned with husbandry/management and status in captivity, 4 on behaviour, 1 on nutrition, and 1 on environmental enrichment. The first large group certainly involve welfare components, sometimes emphasized and sometimes implied. The paper by Schulze (pp 34-48), to my mind the most polished and professional, refers to stress-related problems in the husbandry of slender lorises, *Loris tardigradus nordicus*, and makes recommendations for reducing these in zoo and other enclosed situations. (I try to avoid using the word *captive* since its opposite is *free* and the implication that wild animals are free is biologically inappropriate). This author points out that the 'caution' involved in their responses to strange noises and other stimuli, is of survival value. It is important to relate the neophobia, *sensu lato*, seen in some zoo animals to the wild situation. It is certainly a feature found in wild slender lorises, as I was able to see in Sri Lanka. Timidity works. The paper by Agoramoorthy (pp 118-122) on the status of orangutans in Taiwan reveals some immediate welfare problems there. A paper on the hand-modulation of vocalization behaviour in siamangs (pp 84-89) is notable for the fact that it is well-written, and also because this interesting behaviour was identified because caged conditions greatly facilitate the detailed observation of this fast-moving and wide-ranging species. It will be very difficult to confirm these findings in wild populations, but at least workers will now be primed to look for hand-modulation. The paper by Dickie (pp 131-139) on environmental enrichment in the Old World primate collection at Edinburgh Zoo, is, despite its restrictive title, a very good summary of methods ranging over a considerable number of zoos.

Section 2 is entitled 'The Developing Zoo World'. This is about progress in the zoo world. It contains 13 articles. These range from an article on 'best practice' in the 'zoo industry' through to ones on the ladybird spider, mole rats and Amazon river dolphins.

Throughout sections 1 and 2 many of the articles are very useful guides to breeding and raising interesting species. These can be read with interest by a much wider audience than zoo professionals. Perhaps more importantly, many of the contributions are testimonials to the extraordinary dedication, ingenuity and sheer enthusiasm of zoo staff. They are worth reading just to dispel the negative feelings about zoo staff prevalent among some of those who neither know nor work with them.

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