

organisational structure and philosophy, employee recruitment, training and retention, and marketing and development. The authors recognise that zoos are not only conservation organisations, but also vibrant and intricate businesses, and they conclude: “A new generation of zoo managers must take a more holistic approach, while at the same time never losing sight of their primary objectives”.

If there is a weakness in this excellent volume of the *International Zoo Yearbook*, it is perhaps that it discusses zoos from only one standpoint — that of zoos. All of the authors are either still working in zoos or come from a zoo background. While this certainly provides for informed and knowledgeable articles, it also means that we are only getting a zoo perspective on their role today and how they should be tackling the future. As M Hutchins writes in his article “Zoo and aquarium animal management and conservation: current trends and future challenges”: “To meet the challenges of the future and address the concerns of their critics, zoos and aquariums must get better at doing what they claim to do.” It would be interesting to hear what these zoo critics really feel about what zoos are doing now, and how they would like to see them develop into the future.

Nevertheless, this is a book that I would recommend to anyone interested in zoos — their history, development, aims and objectives, and their role and relevance into the future. It makes a valuable addition to our knowledge and understanding of just what we should expect from today’s zoos.

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Pain and Practical Pain Therapy. Proceedings from the AVERT and ANZCAART Conference, 14–16 May 2001, Melbourne, Australia

Edited by M Bate (2002). Obtainable from M Bate, c/o Research Office, The University of Newcastle, University Drive, Callaghan, NSW 2308, Australia (email: Mary.Bate@newcastle.edu.au). 140 pp. Paperback. Price Aus\$22.00.

This book is a collection of papers derived from a conference held in Melbourne in May 2001. The conference was organised jointly by the Australian Veterinarians in Ethics, Research and Teaching (AVERT) and the Australian and New Zealand Council for the Care of Animals in Research and Teaching (ANZCAART). There are 22 papers, grouped into five sections, with an introductory paper on human responsibilities and animal pain. This paper asks the reader to consider in a challenging manner what is the nature of pain, what is the function of pain, and what is the place of pain in our physical and mental life.

Three papers are grouped under the theme ‘Understanding pain’. The first is an informative overview of the Australian Code of Practice for the Care and Use of Animals for Scientific purposes. It is relevant to conducting research on animals in Australia. This is followed by two papers on the mechanisms of pain. Both papers provide the reader with a

good résumé of our current understanding of the pathophysiology and the causes of pain. Readers at all levels of knowledge will gain a useful understanding of the basis of pain.

The next section comprises four papers focussing primarily on the recognition and assessment of pain in animals. This is a challenging field of animal pain, and the authors have summarised much of the literature concerning pain assessment and have incorporated personal observations. There are summaries of possible pain-induced behavioural alterations in many domestic species and a review of the currently used pain assessment ‘tools’. The final paper deals with the selection of an analgesic for use in various pain scales in dogs and cats. There are useful tables of drug dose rates for the management of acute and ongoing pain. This paper leads into a section on pain therapy, which includes papers on analgesics as anaesthetics and a useful paper on nursing animals in pain. There is a summary of complementary therapies in pain management and a paper on considerations for pain management in experimental animals.

The section on ‘Clinical analgesic practice’, which contains an overview of practical techniques for pain management in small animals, is comprehensive; ‘pocket pets’, ruminants, birds and wildlife are also considered. The section on pain management in ruminants covers castration in calves, dehorning in cattle and velvetting in deer.

Overall, this is an informative book for the general or species-specialist practitioner. As is inevitable in a collection of papers from a conference, there is overlap in some areas (in particular, recognition and management of pain in small animals) while there are some notable omissions (eg little consideration of horses or pigs). However, it is a useful addition to the growing literature on animal pain, and it is recommended to general readers and to undergraduate veterinary students.

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Animal Social Complexity: Intelligence, Culture, and Individualized Societies

Edited by FBM de Waal and PL Tyack (2003). Published by Harvard University Press, Fitzroy House, 11 Chenies Street, London WC1E 7EY, UK; <http://www.hup.harvard.edu>. 640 pp. Hardback (ISBN 0 674 00929 0). Price £33.50.

What do we mean by social complexity, what are its causes, and what does it tell us about an animal’s cognitive abilities? These are questions addressed by this book, but to them could be added another: why should animal welfarists be concerned about social complexity? Complexity is a relative term. Social insects, such as some hymenoptera, show considerable social complexity, but this book does not deal with the rather mechanistic lives of these organisms. Instead the editors and organisers of the conference, of which this book is the proceedings, take complexity to refer to the numbers of relationships and the variety of interactions between animals. They are concerned not only with how