

Editorial

In Volume 13, No. 1, the comment was made that the Review of Dolphinarium in the UK had not yet resulted in the promulgation of standards under which facilities may be licensed to keep the animals for 'commercial display'. At the time of writing, this report, the draft comments of the Steering Group, has now been circulated to operators for comment. In summary, the Steering Group are recommending the Department of the Environment to put more pressure on operators to conform, and in fact, recommend that the time allowed for reaching standard is calculated from the 1 January 1988 so that, in one sense, the clock was already started. They are also recommending that inspectors under the Zoo Licensing Act be given copies of the proposed alterations before the first year is out. Unfortunately, the Steering Committee Report is nearly as long as the original document. It suggests that the minimum horizontal dimension of each pool be twice the adult body length of the species concerned, which in the case of the Atlantic bottlenose dolphin is defined as 2.74 metres and of the Pacific race, 3.05 metres. Carefully rounding this up, they recommend 7.0 metres for the minimum horizontal dimension of *Tursiops truncatus* and 15 metres for *Orcinus orca*. A variation of up to 20% in one direction is allowed, provided that the same percentage is applied to an increase in the minimum horizontal dimension taken at 90° to the first. It suggests a minimum 1000 m³ of water for up to five *Tursiops truncatus*, and 12 000 m³ for up to five *Orcinus orca*. On depth, a new concept has been introduced, that of 'minimum average enclosure depth'. This may vary by as much as up to 20% of the minimum vertical depth, which is quoted as 7 metres for *Tursiops truncatus* and 15 metres for *Orcinus orca*. The consequent minimum average enclosure depth for the two species is defined as 5.6 metres for *Tursiops truncatus* and 12 metres for *Orcinus orca*. The Steering Committee confirms that no decision be taken on changes in licensing cetacea for display until a period of 15 years has passed, but certainly suggests a review after that time. Operators are, of course, in touch with the Department of the Environment about certain anomalies in the Report, but presumably promulgation is intended for later this year, and in the meantime, statutory exemptions have been granted to all operators for a further year to allow continuance of commercial exhibition.

Readers will notice that for the second time, we have incorporated colour into this volume, which I hope improves the quality for subscribers. However, I must say that this is an expensive procedure, and unless and until we can increase the number of subscribers substantially, we will not be able to produce another issue containing colour.

For the first time, we have Book Reviews to which I would draw readers' attention with our gratitude to the reviewers. Dr Andrew Greenwood, I am sure, needs no introduction to subscribers. As a member of the International Veterinary Group, he is well travelled worldwide, and has written extensively in many scientific journals. For a number of years, he has arranged the Scientific Programme of the European Association of Aquatic Mammals Symposia. Dr Bernard Stonehouse is a popular biologist and author, with special interests in marine mammals and birds. He is currently editor of 'Polar Record'. Dr Christine Lockyer is currently employed by the Natural Environment Research Council's Sea Mammal Research Unit at Cambridge. She has been working in the cetacean research field for over 18 years, specialising in large whale biology, and aspects of small cetacean behaviour. Her work has mainly been in connection with whaling and conservation, and she has collaborated with scientists worldwide. Currently, she is focusing on the pilot whale taken in the Faroe Islands, where the whales are driven ashore and their meat used for human consumption. The aim of the study is to provide data and information, which will lead to a rational management plan for the pilot whales in these waters, and to prevent any possible over-exploitation.

I would like to draw readers attention to the 1988 I.A.A.M. Conference, which is being held, this year, from the 22-26 May at EPCOT's Centre, the Living Seas in Orlando, Florida. Further information and registration may be obtained from Tom Hopkins at the Living Seas (305) 827-7688.

The Editor apologises to readers, and in particular, to the author Gunther Behrmann, whose article on morphology and histology of the laryngeal sac of toothed whales was published in Volume 13, No. 3 on page 119 without details of the references. These are now printed on page 6 of this volume.

Book Reviews

CURRENT MAMMALOGY, Vol. 1. Edited by H. H. Genoways. Plenum Press, New York and London. 519 pp. Price £49

This volume is the first of a series, where it is intended to cover the whole range of mammalogy through broad reviews, accounts of new discoveries and syntheses of data which give new insight into a subject. The 13 chapters in the first volume do indeed cover a very wide range, from evolution through reproduction to social behaviour, rodent control and ecology. The standard is high, although some chapters contain rather more 'meat' than others. A general criticism is that the title (at least on the basis of this first volume) might more appropriately be given as 'Current USA Mammalogy', but perhaps a more international coverage will emerge as the series progresses. Similarly, some of the chapters (notably that on reproductive physiology) are not as general as their titles suggest (this one could more accurately be entitled small land mammal reproduction).

Readers of 'Aquatic Mammals' are likely to be most interested in the chapter by Oftedal, Boness and Tedman on 'The behaviour, physiology and anatomy of lactation in the Pinnipedia'. This gives a very nice review of the subject, with milk analyses, energetics and lots of ideas for student projects. The following chapter, by Wells, Scott and Irvine is a further account of their work on the social structure of free-ranging bottlenose dolphins in Florida. Even for those who have followed their earlier publications, this chapter presents all the information in a very clear way, and as such is well worth reading. Again, many topics for student projects suggest themselves, as well as ideas for improved husbandry and accommodation design.

However, the other chapters are also worthwhile—at least for skimming in order to see some of the latest ideas in other areas. This applies particularly to the

first four chapters which discuss various aspects of evolution, including experimental methodology and theoretical questions. The reviews of rock dwelling mammals and of ants and termites as mammalian food are good general accounts, although the latter is long on lists and short on analysis. Fowler's chapter on density dependence in populations of large mammals is interesting, but his bland acceptance of the quoted examples in the cetacea would have many members of the IWC Scientific Committee laughing. (This is a very controversial subject for whale management—but too complicated to go into here).

The study of the Nevada kit fox is almost a classic in its clarity and thoroughness, and would make an excellent model for projects on other species.

The two final chapters are very different. Temme describes a mutation in the Polynesian rat on the Enewetak nuclear test site while the final chapter reviews the methods of controlling commensal rodents.

For those who are only interested in one or two chapters, this volume is probably not worth the price, and would best be borrowed from a library. However, for those needing more general material, perhaps for reference or to assist student projects, it is good value because it describes the state of the art in many fields. Papers in future volumes will appear only by invitation, but the Editorial Board requests the submission of one-page prospectuses from mammalogists who would like an invitation to prepare a manuscript. Perhaps next time some European aquatic mammal work will be seen?

Margaret Klinowska PhD
Research Group in Mammalian Ecology and
Reproduction
Physiological Laboratory
University of Cambridge

News and Views

Les Phoques Moines: Monk Seals. Report of the Second International Conference on Monk Seals. K. Ronald and R. Duguy (Eds.) La Rochelle, 1984. 120 pp. 60 FFS. (Musée Oceanographique, 17000 La Rochelle, France).

As the only phocids granted endangered status in the IUCN Red List, the Mediterranean and Hawaiian monk seals well deserve the efforts of a number of dedicated scientists to rescue them from extinction. One is increasingly aware, however, that the Hawaiian monk seal is getting the better end of the deal and that its Mediterranean cousin, to which the majority of this conference was dedicated, suffers from the twin disadvantages of not living under the protection of the U.S. Fish and Wildlife Service and being insufficiently well-known to maintain conservation momentum.

It is perhaps symptomatic of this problem that, whereas the first international conference on the Mediterranean monk seal in 1978 was an expenses-paid jamboree with all the high-powered panoply of the international conservation industry (simultaneous translation, publication by UNEP, executives from Switzerland), this publication clearly results from a much more low-key affair. It is a credit to the dedication of the editors to their crusade that this booklet has been produced to a reasonable standard as a supplement to 'Annales de la Société des Sciences Naturelles de la Charente-Maritime'.

The book contains 13 complete working papers, together with a summary of the discussion and an extensive 'action plan'. Some of the papers reveal new knowledge of the status of *Monachus monachus* since 1978 and survey its distribution in a number of areas. All this information is uniformly depressing. Hopelessly optimistic, by comparison, seem the contributions outlining proposed conservation plans and creation of reserves for existing or proposed transplanted populations. *Monachus* has unquestionably declined throughout the region since 1978 and absolutely nothing appears to have been done with any degree of success to prevent this decline from continuing. This is not to decry the efforts and dedication of the participants but to recognise political facts. When the Greek government (as of the conference at least) is not prepared to grant full protection to an endangered species, there would seem to be little point discussing idyllic tourist-free reserves in some of the most desirable resort areas in Europe.

It is to be hoped that the recent EEC-supported

research programme will be productive, although doubts are inevitable, and that the current Franco-Moroccan initiative to provide a breeding and research centre will succeed. If ever there was a cause to which the EAAM should apply itself the Mediterranean monk seal is it, and to that end this book is required reading for everyone.

Andrew Greenwood, MA VetMB MIBiol MRCVS.

Right Whales: Past and Present Status. Brownell, R. L. Jr., Best, P. B. and Prescott, J. H. (editors). 1986. Cambridge, International Whaling Commission. (Reports of the IWC 10). 289 pp, illustrated, hard cover. ISBN 0 906975 16 6, ISSN 0255-2760. Available from IWC, The Red House, Station Road, Histon, Cambridge CB4 4NP, UK. £35.00 plus £2.50 postage.

Subtitled 'Proceedings of the workshop on the status of right whales' and published in December 1986, this volume is the edited papers of a nine-day meeting at the New England Aquarium, Boston, MA, 15-23 June 1983. The International Whaling Commission's responsibility for protecting particular whale stocks goes back many years; its own work began in 1946 but responsibility for some species—right whales and gray whales for example—was inherited from the League of Nations Convention, which came into force in 1931. This meeting was a response to the IWC's request, to its Scientific Committee, for an assessment of the degree to which the Commission's actions in extending protection to whale stocks had resulted in the recovery of species. The Scientific Committee, noting that few protected stocks were being systematically monitored, called for 'the analysis of available historical or recent data for any protected stock that would clarify initial unexploited levels, trends in population size or current population levels'.

Right whale stocks were chosen for investigation, say the editors of this volume, 'because it was believed that data existed and . . . could be analysed to provide the information required'. Right whales are large and prominent and, as Roger Payne's studies have shown, can be individually identified on sight. Surviving populations could be studied in detail without killing. It was hoped that, 'by getting the appropriate people together, some conclusions could be reached not only about what right whale populations had done in the

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past, but also about their current status and future trends*.

The volume starts with a 33-page report on the workshop, listing participants and cataloguing in a dozen appendices much useful information on the species concerned, northern and southern right whales *Eubalaena glacialis* and *E. australis*. It includes notes on relevant historical documents, distributions and stock identities, early catches, biological parameters of northern and southern right whales, trends in recent sightings, population models, estimates of initial and present population size, feeding relationships, environmental factors likely to effect recovery of stocks, and recommendations for further research. This was clearly a well thought-out workshop, and these data alone form a most useful pool of background information on the species.

The 24 edited papers that follow are presented in three regional sections, covering the North Pacific Ocean, North Atlantic Ocean and southern hemisphere, and a final historical section. However, historical papers creep unblushingly into the regional sections, and one historical paper covers southern African fishing up to 1975. There are papers on particular stocks (*E. glacialis* off Japan, Cape Cod, and in the northeastern and northwestern Atlantic; *E. australis* off Australia, Chile, Argentina, subantarctic South America and Antarctic Peninsula), papers on recent sightings, a useful annotated bibliography of North Pacific stocks, and accounts of long-term distribution and behaviour studies based on photo-identification of individuals. The historical section has papers on Basque whaling (including archaeological evidence of a 16th century Basque settlement on the Labrador coast), on Long Island whaling (which continued well into the 20th century), on New Zealand, Australian and South African whaling, and on widespread French whaling in southern oceans during the 18th and 19th centuries.

The conclusions and recommendations, tucked modestly away in the introductory report, are as firm as the limited data allowed. The workshop classified stocks for which it had recent information into three groups of decreasing prosperity. South African and Argentinian stocks probably number at least 400–600 each, and may be increasing. Stocks in the northwest Atlantic, northwest Pacific, off southwest Australia, southeast Australia and New Zealand probably number between 100 and 200 each; their stability is uncertain. Stocks in the northeastern Atlantic and northeastern Pacific are probably down to a few individuals and close to extinction. No right whales should be killed from any stock, and reports of recent catches off southern Brazil should be investigated by the Commission. Because their coastal distribution makes right whales particularly

vulnerable to human interference, known calving and feeding grounds should be managed. Research should be continued and expanded along lines that the workshop spells out in detail, giving high priority to photo-recognition studies, radio-tracking, and skin-tissue sampling for biochemical assay of sex and stock discreteness.

This is an invaluable compendium on right whales and will remain so for many years; no-one working on either species can afford to be without it close at hand. The papers are well presented, and the book as a whole reaches the high standards of illustration, editing and presentation that we have come to expect from IWC Special Issues. It took three and a half years to produce, perhaps inevitably with editors as far apart as California, Massachusetts and Cape Town, but the papers have lost nothing but immediacy and may have gained in maturity.

Dr Bernard Stonehouse,
Scott Polar Research Institute,
University of Cambridge,
Cambridge CB2 1ER, UK.

Behaviour of Whales in Relation to Management
Edited by G. P. Donovan, Cambridge: International Whaling Commission, 1986. 282 pp. £20.

This volume which is the 8th in the successful Special Issue series of the *Reports of the International Whaling Commission* on specialist topics in the cetacean field, encompasses papers presented at a workshop session of the same name held in Seattle, Washington, 19–23 April 1982. As is often the situation with meeting proceedings, there was a delay in publication: in this case 4 years. However, readers may be assured that many of the papers have been presented in the form of detailed reviews, with some incorporating new information—such as Marsh and Kasuya's paper 'Evidence for reproductive senescence in female cetaceans', and new theories—such as Brownell and Ralls' paper 'Potential for sperm competition in baleen whales', which present fresh ideas on the subject of mating strategies in baleen whales.

The book contains 14 papers, each with its own bibliography, covering multifarious behavioural aspects of large whales. These include reproduction, circadian rhythms, communication (both acoustic and postural) and seasonal migratory and ecological behaviour, as well as more management issues pertaining to distribution and abundance and the benign methodology now used relating to this such as use of natural markers (pigmentation patterns) and acoustic tracking with towed hydrophone arrays. Each paper has been authored by an acknowledged expert in the cetacean field.

The volume usefully incorporates the complete

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report of the workshop which included a critical appraisal of facts raised by many of the individual papers within the framework of the agenda. The report (pp. 1-56, edited by M. F. Tillman and G. P. Donovan) reflects the opinions of some 35 international scientists (listed in the report) who attended the workshop. The major topics addressed by the report include aspects of social behaviour (age effects, minimum school size for breeding and the effect of removals from schools), site fidelity (identification of breeding and feeding sites, and migration routes), periodicity in the breeding cycle, reactions to vessels (fleeing and seeking ships, particularly those associated with whaling-type activities), patterns of respiration (especially in relation to sightability), patterns of vocalisation, and other problem areas (such as behaviour near ice). The report is concluded with a series of recommendations and an extensive bibliography covering 6 pages.

The volume has been well produced and is reasonably priced for a book covering a specialist topic. The book is definitely worthy of purchase by libraries and specialists, but may also have a wider appeal to specialists in other fields such as zoo-keeping, fisheries, conservation, and for the interested student.

Christina Lockyer
Sea Mammal Research Unit

Handbook of Marine Mammals Volume 3: The Sirenians and Baleen Whales Edited by Sam H. Ridgway and Sir Richard Harrison. Orlando, Florida: Academic Press, Inc. 1985. xviii + 362 pp. £49

This book is the third volume in the series born in 1981, which encompasses 'The Walrus, Sea Lions, Fur Seals and Sea Otter' (vol. 1) and 'Seals' (vol. 2). There are 12 chapters, each with bibliography, and an overall book index, a preface as well as a preface to the series and contents lists to vols 1 and 2. The contributors are all acknowledged experts in their subject, and in all, there are 14 international authors. The chapters, in chronological order, encompass 'Dugong—*Dugong dugon*' (Nishiwaki and Marsh), 'Manatees—*Trichechus manatus*, *T. senegalensis*, *T. inunguis*' (Caldwell and Caldwell), 'Gray whale—*Eschrichtius robustus*' (Wolman), 'Minke whale—*Balaenoptera acutorostrata*' (Stewart and Leatherwood), 'Bryde's whale—*Balaenoptera edeni*' (Cummings), 'Sei whale—*Balaenoptera borealis*' (Gambell), 'Fin whale—*Balaenoptera physalus*' (Gambell), 'Blue whale—*Balaenoptera musculus*' (Yochem and Leatherwood), 'Humpback whale—*Megaptera novaeangliae*' (Winn and Reichley),

'Right whales—*Eubalaena glacialis* and *E. australis*' (Cummings), 'Bowhead whale—*Balaena mysticetus*' (Reeves and Leatherwood), and 'Pygmy Right whale—*Caperea marginata*' (Baker). The blue whale chapter also covers the southern Hemisphere pygmy sub-species, *Balaenoptera musculus brevicauda*.

Each chapter follows a similar format, with only slight variation according to the species considered. There is a description of species, names, taxonomy and evolution; external appearance and size; distribution and abundance (with maps where appropriate) and population size; anatomical characteristics including skeleton, dentition and soft organs and tissues; behaviour, including social organization, sound production, feeding, locomotion, diving and captivity; life history, growth, age and reproduction; food; disease and pathology; predation; exploitation and protection. Most of the text is unlikely to date quickly, although there is no mention, for example, in the chapter on the Bryde's whale, of the Japanese interest in exploitation of the South Pacific, nor of the newly reported diminutive sub-species there. Such omissions are almost certainly due to the long delay in publication.

The content of the book is likely, however, to be useful to the interested student and informed layman as a handbook, as its title claims. The volume will also provide a useful standard reference work on the natural history of these mammals for specialists. For reasons of space, many new and exciting facts about the mammals have had to be briefly mentioned. The book is very well produced, although the price is relatively high for a natural history reference work. There are many similar current biology and natural history books about these marine mammals already in existence. However, this particular handbook presents far more authoritative detail than many others. The association of sirenians and baleen whales under 'one roof' seems to be one of editorial and production convenience rather than one of taxonomic or ecological consideration. The whale specialists will gain from this alliance, but those interested only in the sirenian content will probably not be tempted to purchase this volume.

One criticism, or rather a comment, is that a tree showing the taxonomic and evolutionary relationship of the species covered would be helpful to the student. This presentation is given briefly for the sirenians in the individual chapters, but elsewhere, the reader must either be assumed to be familiar with the taxonomy or will have to piece together the inter-relationships of the families, genera and species from the individual chapters and other reference works.

Christina Lockyer
Sea Mammal Research Unit

Erratum

References omitted from 'Aquatic Mammals', Volume 13, No. 3, Page 119 in the paper by Gunther Behrmann: 'Morphology and Histology of the Laryngeal Sac of Toothed Whales'.

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