

and the cost of purchase, compared with cattle, is much lower and therefore more easily found. The reproductive cycle and fecundity of sheep allows stocks to be quickly built up or alternatively used to provide a more regular supply of animal protein in areas which tend to be low in animal protein sources. The size of the carcass also suits the average family; sheep meat is a feature of religious festivals. One of the shortcomings of this book is the lack of guidance on the preparation, evaluation and cutting of a carcass. Information derived from the assessment of the carcass would also have a useful role in selection procedures.

The book was originally published to meet the growing need for information and guidance on sheep production in the areas already referred to. There was a need for a suitable text for those being trained for supervisory or advisory work in those areas. The text meets most of the requirements of such courses. It comprises sections on 1. Sheep Farming in Humid Tropical Africa. 2. Anatomy and Physiology 3. Pathology - Prophylaxis, Hygiene 4. Feeding 5. Reproduction and Genetic Improvement 6. Farm Buildings 7. Husbandry Systems and Productivity 8. Development Projects in the Humid Tropics.

The twelve photographic plates at the beginning of the book provide good illustrations of breeds and the type of housing used in various areas. The appendices are useful but the bibliography is only useful to those with fluency in French.

The section on Feeding is the most comprehensive with a reasonable balance between theory and practice. Sections seven and eight are particularly good for those entering advisory work and needing to gather and interpret production data. The major weakness of the book is its failure to provide guidance on corrective action, for example where the rate of lamb loss is as high as 36 per cent it is reasonable to expect some emphasis given to the care of the new-born and their husbandry to weaning. There is also little attention given to the skills required to carry out routine treatments and tasks.

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***The Good Zoo Guide: The What, Where, Why and How of Britain's Best Zoos and Wildlife Parks***

John Ironmonger (1992). Harper Collins Publishers: London. 208pp. Paperback. Obtainable from the publishers, PO Box, Glasgow G4 0NB, UK. (ISBN 0 00 219921 1) Price £7.99.

Two hundred and eight pages long, this book follows in the footsteps of Geoffrey Schomburgk's *Penguin Guide to British Zoos*, 1970, and Interzoo's *Wildlife 74-6*. It covers 31 zoos in detail, but the title is misleading. Neither Jersey nor Dublin is in Britain and it is not until readers reach page 46 that they are apprised of the fact that 'zoos' do not include bird collections. I also feel that it is invidious to refer to the 'Best Zoos' - one is bound to query why others are 'second class' - do their inspections under

the *Zoo Licensing Act 1981* not allow them into the top grade? Although extolling the virtues of collections belonging to the National Federation of Zoological Gardens, a number of mammal collections belonging to the same are omitted. It would have been preferable to have acknowledged these limitations in the title.

Part one, asking 'How green are our zoos?' sets out some very good moral points. It was good to read that the authors realized that, in general, zoo animals 'tend to live longer lives' (p23) and yet page 44 contradicts this by quoting the misconception that dolphins live shorter lives in captivity. The comparison with the only wild school so far studied over a long period shows that the annual survivorship rate in captivity already exceeds that in the wild. More careful research though would have revealed that the Père David's Deer world population did not have 18 ancestors - some of that herd were non-breeders (p16). A little research would have shown that Whipsnade had already commenced hiring out binoculars to the visitor before 1962 (p21).

Part two, 'Keeping animals in zoos and wildlife parks', discusses a number of species - including birds. An important point is made here (p33), that the 'putting down' of surplus stock is no different (and less in degree) than the annual euthanasia of tens of thousands of unwanted puppies and kittens. It does however raise a more controversial point, as to whether some species should be kept in captivity at all.

Part three enters the subjective field of awarding 'stars' and perhaps this is an area best left to the visitor. Equating Dudley with Drusillas or Jersey with Regent's Park would not meet with universal approval. Giving Twycross an '0' for chimpanzees, while Colchester, Regent's Park, Whipsnade, Windsor and Woburn all rate a 'G', seems inappropriate.

Part four, 'The good zoos', describes these in such depth that it is not surprising it includes a number of errors. Page 102 states that Howletts was the first British zoo to breed Przewalski's wild horse and the snow leopard. The former were bred at Whipsnade before 1957 and the latter also there in 1961. Miss Molly Badham is correctly praised for her work at Twycross, but surely Miss Natalie Evans ought to share in the plaudits?

Part five, 'Where to find the mammals', excuses its own deficiencies and highlights the reasons - most acceptably. Even with a number of omissions, the lists are still more up-to-date than those in the *International Zoo Yearbook*. Windsor is quoted as the only zoo keeping dolphins, and even in the subsidiary section on page 203 the highly successful group at Flamingoland, in Yorkshire, is omitted.

Part six gives the geographical location of 137 zoos around the British Isles - a handy reference section for the zoo visitor - and summarizes, though not always accurately, the type of collection to be found.

A number of typographical errors diminish the impact of this book and betray the efficiency of the proof-reading. We find, for example, a lack of pagination on page 39 (pp 000-00), the duplication of a sentence on reindeer on page 128, 'Rhibnos' on page 152, 'Prarie' Marmots on page 166 and 'Peere' David's Deer on page 173!

In summary, the book would have been improved if greater objectivity had been achieved, although, with the obvious enthusiasm of the authors, it must be acknowledged that this would have been very difficult. It was right to highlight the part played by John Aspinall but it might have been put better into context by saying that where Whipsnade led the way forward in the 1930's, Chipperfield showed a different direction in the 1960's, Aspinall in the 1970's and Jim Cronin of Monkey World (p185) for the future in the 1990's.

A good purchase for any serious visitor about to embark on a British zoo tour, it is to be hoped that new updated versions will be published regularly, including perhaps the mammal collections which have been stimulated - possibly by their omission in this book - to have progressed to 'Best zoo' status.

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***A Review of Captive Polar Bears in Great Britain and Ireland (1992)***

Stefan Abbott Ormrod (1992). Born Free Foundation: Surrey. 39pp. Paperback. Obtainable from The Born Free Foundation, Coldharbour, Dorking, Surrey RH5 6HA, UK. Price £10 including postage.

The debate as to whether Polar Bears should be kept in British zoos has been a topic of controversy for many years. This report attempts to follow up and summarize past research in order to answer four specific questions: 1. Do polar bears suffer as a consequence of stereotypic behaviour?; 2. Will environmental enrichment programmes eliminate stereotypic behaviour?; 3. Do captive polar bears contribute to conservation, research, or education? and 4. Should these issues be addressed by law? These are all important questions which should be addressed.

Ormrod claims that for the purposes of his report lengthy observations were not needed for they would only lead to duplication of previous work. Having spent a maximum of 12 hours at each zoo, a great deal of information about the management and behaviour of the animals was either misinterpreted or missed out. By the author's own admission, in one instance, he could not distinguish between two female bears who were kept together. Furthermore, the male and female polar bears kept at Dublin Zoo were incorrectly identified. Although the intention was to avoid duplicating past work, it would seem that this is exactly what has happened. The bulk of this report is dedicated to qualitative descriptions of the individual stereotypic patterns - information which had already been detailed in previous publications.

In no part of the methods section is it stated what types of sampling were used. I am quite concerned about this lack of information for the reader cannot establish what events or behaviours, if any, were recorded. One might question if the author has not spent enough time in front of the animals to be able to accurately identify individuals, has he spent enough time to accurately judge the animals' behaviour?