

environments. These include high mortality in general, egg yolk retention, and deviation of the long bones of chicks. The ostrich industry has often emphasized rearing chicks in a limited space, particularly in the first weeks of life. However, this chapter describes foster rearing and artificial rearing options that allow protection of the chick while providing ample opportunities for physical exercise and food foraging.

It is very commendable that this book devotes a complete chapter to ostrich welfare. This section identifies the major factors that affect the well-being of captive ostriches. Disease, nutrition, behavioural abnormalities and climatic conditions are presented as commonly recognized influences on ostrich welfare. An extensive, factual assessment of transportation as a stressor is also included. This transportation discussion appropriately culminates with specific guidelines for safe movement of these animals. A major welfare issue of the industry is the humane slaughter of ostriches. Different techniques are described with the emphasis on minimizing pain and distress.

This book provides significant scientific and practical information and is a valuable addition to the field of ostrich literature. Animal welfare concerns are interspersed throughout its text and answers to these issues are offered with clarity.

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Management and Welfare of Farm Animals: The UFAW Farm Handbook, 4th edition
Edited by R Ewbank, F Kim-Madslien and C B Hart (1999). Universities Federation for Animal Welfare: Wheathampstead. 308pp. Paperback. Obtainable from the publishers, The Old School, Brewhouse Hill, Wheathampstead, Herts AL4 8AN, UK (ISBN 1900630001). Price £17.00.

The first edition of this book was published in 1971 and this current version is edited by Roger Ewbank, Frances Kim-Madslien and Barrie Hart. In the 11 years since the third edition, British agriculture has evolved, rather than changed in any dramatic way, and the handbook has followed a similar path. It is a masterpiece of compression, covering almost every species of agricultural interest in the UK. Guineafowl, quail and fish have been added since the third edition and the only remaining omissions of note are ostriches and horses. It is in every sense a real handbook, not intended to sit on a bookshelf and be taken down occasionally to check some esoteric point – rather it is to be kept at one's elbow for constant reference. It is full of practical guidance for inexperienced animal carers (for example, describing the effective use of a keeling harness and coloured crayons for rams during breeding to show which ewes have been tupped and when), and helpful information for ensuring that animal management and care is of the highest standard. At the same time, it generally provides a high level of scientific evidence, discussion and rigour.

After the excellent introductory chapter by Ewbank, the others are devoted to particular species and follow the well-tried pattern established by earlier editions, with sections on the UK industry, breeding and genetics, natural history and behaviour, environment and housing, production, nutrition and feeding, management, health, care and handling. The only 'new' area to receive significant attention is transport.

It would be inappropriate to pick out individual chapters for attention but, in general, those species of greatest economic importance, such as cattle (beef and dairy), sheep, pigs and domestic fowls (laying hens and broilers) receive the most detailed coverage, while relative newcomers such as quail, guinea fowl and turkeys are dealt with more briefly. There is no

section on welfare as such – but most of the authors integrate it effectively into the other topics and, of course, pay it particular attention when discussing housing, management, handling, health and transport.

In the chapter on dairy cattle, Leaver makes the very important point that, as the agricultural labour force steadily shrinks and systems become more intensive, new opportunities to improve welfare are appearing. For example, the introduction of robotic milking machines means that cows can be milked whenever they choose, with consequent benefits in udder health. However, he emphasizes that as people are freed from repetitive chores some of the time saved should be used to monitor the animals and thus improve welfare.

To compress so much information into a single book and yet remain clear and authoritative is difficult, but it has generally been accomplished. John Webster, for example, discusses the complex issue of beef calf castration in two paragraphs – and concludes that it is generally unnecessary but, if it must be carried out, then crushing with a Burdizzo and application of a rubber ring under local anaesthesia, is the ‘least worst method’. In the same chapter he points out that, although deep straw is the best bedding material for cattle, it is expensive and impossible to keep clean with high-water-content foods such as silage. Cubicle and slatted-floor systems may, on balance, be better, but only for animals over 6 months of age and only when they are at a high enough stocking density to treat the manure through the slats. However, the continuing high incidence of foot problems shows that the ideal floor system has not yet been achieved – this is an area where more research and development is still needed.

The book is full of tables, photographs and diagrams, they average out at about one every two pages, and are generally very effective in illustrating and amplifying the text. They vary from the practical (how to hold a hypothermic lamb in order to tube-feed colostrum) to the theoretical (John McInerney’s relationship between productivity and welfare). There are few ways in which a book like this (and the UFAW handbooks must now be regarded as classics in their area) can be improved. However, one might be to have a one-page summary to open each chapter. All the contributors are authorities in their fields and should be challenged to distil their accumulated wisdom into 600 or 700 words, which would also provide a useful overview of their chapter.

In his opening chapter, Roger Ewbank offers ‘health and well-being’ as one of the definitions of welfare; and all the contributors’ chapters contain sections entitled ‘Health and disease’ in which they deal briefly with husbandry methods intended to minimize disease transmission and with the commonest causes of ill-health and disease. Some focus particularly on the relationships between ill-health and welfare, while some make effective use of tables to show the commonest disease conditions, symptoms and methods of control. In some species long experience has resulted in excellent disease control, while methods are still evolving in others. Wall, for example, describes how fish farmers are now beginning to use ‘all-in, all-out’ and ‘site-resting’ methods derived from terrestrial agriculture in both salmon and rainbow trout farming, to minimize disease outbreaks which have become a progressively more serious issue as the size and number of units have increased.

As in the third edition, almost all the chapters ended with a section entitled ‘The way ahead’ – and I think this is an excellent feature. Inevitably, there is some variation in quality – a few are too brief and do little more than summarize earlier points, whereas others look at the way the industry is likely to develop in the future and discuss possible effects on welfare. David Sainsbury, for example, discusses the pros and cons of the possible alternatives that

are likely to replace the battery cages that will be banned by an EU Directive after 2012. Wall points out that the fish farming industry, which is expanding rapidly and introducing new species like turbot and halibut, will need to command public support and must be able to show that due attention is being paid to the needs and welfare of the animals.

Everyone, no matter how experienced, will learn something from this book. Having worked throughout my career with hens and broilers, I was amazed to read that ducks should never be held by their feet, but always caught and lifted by the neck (no matter how heavy), and only then should a hand be placed under the body to support their weight. It didn't say whether the same technique would work with swans! Seriously, however, this handbook should be available to every veterinary and agricultural student dealing with farm animals as well as in the offices of all agribusinesses and stock farming enterprises.

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Companion Animals & Us: Exploring the Relationships Between People & Pets

Edited by A L Podberscek, E S Paul and J A Serpell (2000). Cambridge University Press: Cambridge. 335pp. Hardback. Obtainable from the publishers, The Edinburgh Bldg, Shaftesbury Rd, Cambridge CB2 2RU, UK; or for North American orders from, 40 West 20th St, New York, NY 10011-4211, USA (ISBN 0521631130). Price £50.00/US\$80.00.

The purpose of this book is to examine in detail the human-companion animal bond and the many questions that have arisen as a result of increasing interest and awareness in it. Its contribution to animal welfare lies in the elucidation of the mysteries associated with pet-keeping in first and third world societies through the ages. By using a multitude of disciplines, such as anthropology, history, psychology, literature, sociology and human and veterinary medicine, we increase our understanding of this bond. A thorough understanding brings awareness of the importance of the human-pet relationship, and of the need for continued education and research to enhance the health and well-being of both the human and animal species.

This hardback book comprises 335 pages, divided into four parts and consisting of 17 chapters. Twenty-one authors from a variety of disciplines contributed to the work. Part I (Chapters 2–7) looks at the history of pet-keeping and illustrates the influence of cultural differences, beginning with the Amazonian Indians and moving on to Ancient Greek and Roman societies. Chapter 4 examines religion and its influence on the evolution of pet-keeping and hunting during the Middle Ages. A fascinating chapter about Japanese children and the role of insects as pets follows. This section ends with a look at the interesting (and sometimes bizarre) rituals performed by contemporary western society 'for' their pets, such as weddings and bar mitzvahs. It also considers the part our pets play, if any, in helping us reconnect with nature. Part II (Chapters 8–10) explores the nature of the human-companion animal relationship. Chapter 8 reviews several studies investigating potential health benefits, not just from pet ownership, but also from observation of and interaction with animals. The next chapter deals with various aspects of personality research. It is divided into three major areas: cross-species personality comparisons, the influence of human personality on companion animal personality, and personality determination of pet owners versus non-owners. It also looks at the personalities of pet owners of different species. The long-debated question of the correlation between love of people and love of pets is addressed in Chapter