cats and understand the satisfaction of such a neat solution. It is also an extremely useful work of persuasion for those still trying to get others to adopt this method — the scientific references are there, the arguments charted and the successes laid out — an excellent tool in the battle for feline welfare. Claire Bessant

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The Appliance of Pig Science (BSAS Publication 31)

Edited by JE Thompson, BP Gill and MA Varley (2004). Published by Nottingham University Press, Manor Farm, Main Street, Thrumpton, Nottingham NGII 0AX. 204 pp Paperback (ISBN I 09476I 50 X). Price £37.50.

This book is the published proceedings of a meeting entitled The Appliance of Pig Science held by the British Society of Animal Science in September 2003, at the University of Nottingham's School of Agriculture, Sutton Bonington, UK. It was felt that — to quote from the Preface — "with the British pig industry once again at a crucial crossroads, the need and willingness for better and more effective communication and collaboration between all sectors of the pig industry is greater than ever before". The meeting "...provided a unique opportunity for those involved in the research and application of pig science, managers of pig enterprises and those in commerce, to unite in discussing the problems and highlighting potential solutions that could lead the industry back to a profitable future". The subject coverage of this proceedings volume suggests that the intentions of the meeting were largely met.

The publication starts with a nine-page introductory piece by Richard Longthorp, Chairman of the National Pig Association, which provides an overview of the key issues. This interesting and important contribution is, somewhat strangely, acknowledged in the Preface but is not listed in the Table of Contents or included within the main pagination or, seemingly, covered by the otherwise short but useful Index. There follows some 19 papers, varying in length from three pages (with no references) to 16 pages (with 45 references), and then eight fairly substantial written accounts (all with references) of the Workshop and the Posters displayed at the meeting. The Editors, in their Preface, make the point that the papers have "...undergone minimal editorial processes and, accordingly [they] accept no responsibility for their accuracy". Three of the papers are prefaced with the sentence "The editors have compiled this summary based on the presentation given by the author". Inevitably then, the material in the different contributions has been covered at various lengths and at various depths. The subject matters range over knowledge transfer, innovation, marketing, commercial competitiveness, nutrition and the environment, and several of the contributions are pertinent to pig health and welfare. Two papers in this latter subject area, by Iain Mortimer on "Regaining a high health status - light at the end of the tunnel" and by Sandra Edwards on "Current developments in pig welfare", are to be specially commended.

This book contains a very assorted collection of items on various aspects of pig science and production. The wide range of coverage is one of its strengths; much, but not all, of the material is new and original. It is nearly certain that anyone working with pigs will find something of immediate interest, and it is then nearly inevitable that some other paper will catch their eye and lead them on to explore a hitherto unappreciated piece of applied pig science. In many ways this is a book for the information browser. It is to be hoped that the agricultural and veterinary abstracting and indexing services are able to alert the pig industry, as a whole, to the various and often very valuable contents of this volume.

The British Society of Animal Science is to be congratulated on holding the original meeting and for publishing the proceedings.

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The Human-Animal Relationship. Forever and a Day

FH de Jonge and R van den Bos (2005). Published by Royal Van Gorcum, Industrieweg 38, 9403 AB Assen, P.O. Box 43, 9400 AA Assen, The Netherlands. 294 pp Paperback (ISBN 90 232 4082 0). Price €32.50.

The book is divided into 5 parts, presenting a total of 19 essays: (I) Animals and Culture; (II) The Human-Animal Bond; (III) Public Perception; (IV) Ethics and Law; (V) Human-Animal Relationships, Global Economy and Modern Farming.

The vast field of human-animal relationships is slowly gaining greater academic and public awareness. However, the literature still remains comparatively scarce, so any new addition to our knowledge and thinking is a welcome one. Although the 19 essays together give much pause for both thought and re-thinking of many aspects of the human-animal relationship, unfortunately the failure to have most of them either professionally translated or at least proof read by an English language editor, tends to frustrate the reader almost from the outset.

The essays cover a rather random but broad variety of subjects, arbitrarily assigned in a few cases, and with some overlap among them. (Part I) Animals and Culture: (1) Serpell presents a broad survey of the changing cultural and religious approaches to animals among different peoples of the world, from ancient to modern times, with regard to killing and exploiting animals for food, providing a picture of how the ancient world and so-called 'primitive' societies related — and some societies still do — to the animals they hunted or kept as a means to survive. (2) van't Hooft and Millar provide a survey of non-Western societies' approach to animal husbandry, with examples from Latin America, India and Africa, and suggest how a modern scientific approach, when combined with an understanding of the local beliefs and practices (cosmovision) regarding nature, can benefit the local human and animal inhabitants. (3) Noske outlines a proposal for alternative methods of

keeping, training, and studying horses, from an approach of how the horse may better serve the human to one of how horse and human may better understand one another, for the benefit of both. This essay gives pause for thought for all those involved with horses. (4) Zwart examines the truthfulness of scientific versus literary sources in a review of approaches to writing on animals from Plato to Darwin, from fables and stereotypes to systematic classification, revealing the literary qualities of some scientific writings (particularly Darwin), as well as fictional representations of animals in such works as Moby Dick.

(Part II) The Human-Animal Bond: (5) van Dierendonck and Goodwin's discussion of horse-human interactions reveals how modern practices of keeping horses can lead to conflict or abnormal behaviour, which is attributable to a lack of human understanding of the social, locomotory, feeding and foraging behaviours of the wild horses from which today's domesticated animals are descended. An action plan is provided for more welfare-centred human-horse interaction, again for the benefit of both. (6) Davis offers an interesting perspective for all researchers involved with laboratory animals, elucidating how animals are able to use humans as predictors of pain or pleasure, often without the human side of the equation being aware of this, and therefore sometimes becoming a 'confounding variable' in a study, as a "walking Pavlovian stimulus". The essay offers strategies for anticipating and dealing with such effects. (7 and 8) Schilder and Endenberg, the authors of the next two essays, respectively, present reasons for miscommunication between pets and their owners, and the issue of dealing with human grieving for a dead pet.

(Part III) Public Perception: (9) Swabe, Rutgers and Noordhuizen-Stassen survey the attitudes towards killing animals displayed by different cultures. The ambiguous nature of the human-animal relation is explored and analysed, and includes polarised views on eating meat and animal euthanasia. (10) Aarts and van Woerkum examine the issue of ambivalence in farm animal welfare (in relation to Dutch intensive farming) and highlight the complexity of the issue, including the extent of responsibility of the consumer, the farmer and the government. (11) Macer, Kishida and Kudo explore the development of human-animal relationships in modern Japan, revealing them to be more focused on a utilitarian approach and concern for human health issues, than on animal welfare. (12) de Jonge and Spruijt highlight the need to develop better arguments and methods in the scientific contribution to improving animal welfare. The uncertainties that ensue from inadequate experimental design, faulty methodologies or value judgements are discussed and parameters are provided for more accurate measurements of animal welfare, as expressed through both positive and negative behaviours.

(Part IV) Ethics and Law: (13) Francione puts the case for animal rights, particularly the right to 'personhood' and questions the 'rights' of humans to animal ownership, which is equated with human slavery; the moral argument against considering animals as 'property' — which denies rights is also propounded. Probing questions are raised regarding claims to the 'humane' treatment of animals, and the issue of 'moral schizophrenia' is discussed. (14) de Bordes surveys the history of animal welfare laws in the Netherlands, which is considered to exemplify most of the EU. Despite good intentions there are only minimal results, with Ministries tending to pass on responsibility to the public. (15) de Cock Buning explores the moral aspects of the human-animal relationship and where the authority lies, outlining the different types of relationships, from symmetrical (partner) to asymmetrical (steward). This essay includes aspects of morality within the animal kingdom itself. (16) Lund, in the last essay in this section, gives a history of organic farming and its philosophy, noting how its ecocentric approach to animals leads to a moral dilemma; an eco-contract between farmers and animals is proposed and outlined.

(Part V) Global Economy and Modern Farming: In the final three essays, Koolmees (17) addresses the roles and development of veterinary medicine in factory farming, explicating the eternal conflict of interest between pressure on vets to use their knowledge to increase animal food and products supply, and their considerations of animal welfare. Advances in veterinary medicine and technology are discussed, together with the change to preventive rather than curative methods. Issues of veterinary responsibility for disease eradication programs are raised and analyses of potential health hazards are provided; the poor image of the food industry that can reflect on the vets is shown to be slowly improving. (18) Noordhuizen-Stassen and Noordhuizen examine the ethical aspects of animal health programs world-wide. Animal health is shown to be a prerequisite for public health and food safety, presenting the positive side of consumer concern. EU regulations are outlined in regard to reduction, prevention and eradication of disease, and the moral dilemmas involved are discussed. Finally, (19) Appleby investigates the human-animal relationship from the perspective of a global economy, concentrating on farm animals. The effects on both animals and humans of worldwide economic changes are explored, with the price competition in international trade shown to put standards at risk on the one hand, whereas expanding communication is leading to greater international awareness and concern for animal welfare on the other.

The problem with this publication lies, as noted earlier, in that English is the native tongue of only a minority of the contributors, whose essays are fluent and comprehensible, and [these] essays are interspersed among the majority of essays by non-native English speakers, whose varying language abilities make the reader run the gauntlet from laughter to frustration. Although some, indeed, have a good command of English, one gets sufficiently annoyed by the others to want to put the book aside. Consequently, however well-intentioned or scientifically-valuable the studies may be, if one has to struggle, as we did, to make sense of the stumbling and often faulty grammar and vocabulary, one becomes tempted to give up.

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Another, although less problematic, aspect is that of the target readership; the level varies, making it unclear whether the book is intended for the scientific community or for the layperson. Perhaps the best approach would be for the readers simply to pick those essays whose subject matter draws their interest. However, leaving this aside, as well as the unfortunate lack of language editing of this book, one overall message of many of the essays — and an extremely important one for anyone involved in human-animal interaction — is that whether our interaction is for human benefit or that of animals, a greater understanding of the animal's own world is essential. Even where animal welfare — as opposed to human interest — is the declared aim, the tendency today, as the editors and many of the contributors note, is to approach this from an anthropomorphic point of view. The point frequently raised and reinforced here is that an attempt to comprehend the world as it is perceived by the animals, from their point of view as sentient beings whose senses differ in their perception and comprehension from our own, will surely be to the benefit of both scientific endeavour and exploration, and the improved welfare of the animals, whether as livestock, in the laboratory or as pets.

Sometimes offering solutions and in other cases highlighting the problems, and the history and culture behind them, the book brings to the reader's notice the necessity for greater discussion and awareness of many of the ethical, cultural, welfare and scientific issues, as well as the physical and psychological health problems inherent in the vast field of the human-animal relationship.

In summary, there is a great deal of information, and much of interest, in this book; whether the reader will have the patience to winnow it out is another matter.

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