

This section is followed by a discussion of wildlife trade issues. Here strongly felt positions frequently get in the way of evaluation. Kock provides a competent exposition of the CAMPFIRE programme in Zimbabwe but never goes beyond proselytizing to an analysis of the biological and social consequences of this innovative programme. Lavigne *et al* elaborate Valerius Geist's critique of commercial hunting and ranching. The core idea is that sport hunting, as opposed to subsistence or commercial hunting, is so inefficient that its impact on wildlife is minimal, and so lucrative that proceedings can go towards conservation. The authors, however, never analyse this idea, and worry rather inconclusively about whether the North American fur trade is the exception (which proves the rule?). Bowles reiterates many of the arguments used by the protectionist school at the last series of CITES meetings, but such rarefied market arguments need to be more fully grounded in the realities of on-the-ground management and conservation to be effective. The chapter by Thapar is an emotional plea for the conservation of the tiger. It is effective. The final chapter in this section, by Cheeran and Poole, reminds us to consider the welfare and conservation issues of the frequently-forgotten Asian elephant.

Three of the last five chapters deal with ecotourism, an approach which sometimes seems to offer the best of both worlds (providing an economic justification for conservation while not visibly harming wildlife). The chapters by Dunstone and O'Sullivan (on rainforest ecotourism), McNeilage (on gorilla ecotourism) and Evans (on whale watching) examine the positive and negative effects – social, economic and biological. All conclude that when at low numbers and when properly managed, tourists have low impact on wildlife. Leiman and Ghaffar review the sad exploitation of orangutans, especially in the Taiwanese pet market. Redmond writes a sympathetic chapter on elephants, but advocacy overshadows analysis, and the discussion is not compelling.

The challenges by the editors to better understand the relationship between species conservation and animal welfare thus remain largely unmet. Yet this volume is a worthwhile first step, introducing the audience to a full range of types of exploitation. I am sure that the reader will, like I did, find the discussion wide-ranging, intellectually stimulating, and ultimately enjoyable. The next step is to fully understand the implications for conservation and for welfare.

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#### ***The Human/Research Animal Relationship***

Edited by Lee Krulisch, Stephen Mayer and Richard C Simmonds (1996). Scientists Center for Animal Welfare (SCAW): Greenbelt. 104pp. Paperback. Obtainable from SCAW, 7833 Walker Drive, Suite 340, Greenbelt, MD 20770, USA; or from UFAW. Price US\$35 or £22.

This booklet presents the proceedings of three workshops on the bonding between animals used in research and their care-givers or staff members guiding the research. This bonding, representing a more or less intimate relationship, affects not only animal welfare but also the welfare of the humans involved. These proceedings focus on the often forgotten latter aspect: for instance, they repeatedly describe and discuss 'burn-out' phenomena of animal staff members and the consequences for their careers. In the introduction the editors state, that

'the book is addressed to people, particularly in a research setting, who do care about animals and who see the need for responsible and humane treatment of animals, and who recognize that they may bond with some of the animals under their care'.

In his keynote speech the sociologist Ronald Arluke points out that in most laboratories he studied, 'there existed a strong and pervasive conception of scientific work as objective and professional, such that it was inappropriate to be attached to laboratory animals, upset by their sacrifice, bothered by their distress, or conflicted about the morality of using animals in science, as well as to talk about these concerns while on the job'. Arluke discusses three elements that contribute to uneasiness of staff members: 1) attachment to their research animals – most workers were not as detached as was expected; 2) sacrifice of their animals – the term itself being a coping device; and 3) criticism of animal experimentation stemming from family members, friends or organized protestors. The resulting conflicts should be discussed in order to solve them. Richard Simmonds gives a very brief review of the history of the human/animal relationship demonstrating the very diverse views that exist in different cultures. A contribution by Lynette Hart repeats much of what had already been stated by Arluke. Joseph Spinelli focuses on research staff perspectives and describes ways in which people often try to overcome their specific (animal) research problems. The types of coping involved imply a denial of feeling of sadness or empathy. Another possibility is rationalizing participation in unpleasant tasks by citing some higher purpose and blaming authorities or by just considering the animals as objects. In this context self-directed coping mechanisms like smoking are not uncommon. Whether or not one agrees with the ideas of Spinelli, this contribution stimulates thinking over problems that exist and which may result from doing animal research. Spinelli also stresses the need for developing ethical standards for the people involved. Guidelines of these standards are, for example, remarks like: do the job correctly and prevent suffering of the animals as far as possible.

There is an interesting contribution by Hank Davis who illustrates how bonding may affect the animal. For instance, he found that laboratory rats will perform operant behaviour in order to be petted by a human. James Mahoney describes different facts that affect the human/animal relationship and stresses that it is not only necessary to know the species, but also the individual within that species. Thomas Wolfle points out the significance of socialization periods of different research animal species and makes a plea for colony management. Bonnie Mader describes ways for coping with 'burn-out' phenomena. The person at risk could, for example, become aware of the problem, take responsibility for doing something about it, articulate what can be changed or, eventually, be so wise as to leave a frustrating job situation. Finally, Timothy Mandrell lists points that should be covered when interviewing candidates for animal research positions. This list includes, for instance, explanation of the department function and attitude toward animals.

Although the booklet contains redundancies and weak parts, in all it is quite readable and certainly useful in helping to discuss conflicts experienced by animal research personnel. These conflicts often find their origin in the fact that animals are felt to be both objects of research and sentient subjects with which a bond may be developed. The booklet is rather expensive.

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