

Although divided into sections in the format of an instructional video, the style adopted is much more that of the 'fly-on-the-wall' documentary. As a result, much basic information has been accidentally omitted. For example, the use of specific cage disinfectants suitable for cats is mentioned, but no information is included on how these can be identified and cat-unsafe (eg phenolic) disinfectants avoided. The health-check does not include inspection for fleas or lice, although ear mites are mentioned several times. Other omissions are more tantalizing than glaring: for example, a 'cat personality' assessment is mentioned, but few details are given.

More seriously, the video sets a poor example by showing the technicians cleaning cages and handling soiled materials and litter trays with their bare hands. None of the dangers of potential zoonoses, such as worms, toxoplasmosis and enteritis are referred to, and these should be of particular concern when the background of the cat is unknown, as it so often is in a shelter.

The main emphasis of the film is the respect that should be given to the behavioural needs of the cat, even when, perhaps especially when, it is destined for euthanasia. In so doing, it unintentionally emphasizes just how much we still do not know about those needs. Anthropomorphism can take over by default. For example, in the feral cat room at San Mateo, all the cage fronts are carefully draped with cloths before a cat is removed (usually by netting) for euthanasia. This is claimed to reduce the stress in the other cats, but they can still hear and smell everything that happens subsequently. Are they really any less stressed as a result? One suspects that it is the shelter staff who really need the privacy, who feel uncomfortable taking one cat's life with others looking on.

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***Animals and Science in the Twenty-first Century: New Technologies and Challenges***

Edited by Robert M Baker, Rosemarie Einstein, David J Mellor and Margaret A Rose (1995). The Australian and New Zealand Council for the Care of Animals in Research and Teaching (ANZCCART): Glen Osmond. 112pp. Paperback. Obtainable from ANZCCART, PO Box 19, Glen Osmond, SA, 5064, Australia, or from UFAW (ISBN 0 646 22484 0). Price AUS\$20, or £12 from UFAW including post and packaging.

If, like me, you often feel in despair over how to keep up with the ever-increasing rate of change in the world of animal science, ethics and the relationships between animals and man, here is the book you need!

This is a very readable series of papers given at a conference in Melbourne in 1994, and congratulations are due to those who organized the conference, those who so ably contributed to it and those who edited and produced these proceedings. ANZCCART has much to be proud of and the conference adds to its standing.

In his keynote address, Professor Anderson drew attention to the great changes which had taken place during the last 20 years – for example better anaesthesia, better training for animal technicians, animal experiments ethical committees, increased knowledge on the part of veterinarians of laboratory animal science. As he wisely pointed out, since those changes could not have been predicted 20 years ago, it would be foolish for him to try to predict the

changes for the next 20 years – better to tread the safer ground of outlining trends. These include genetic manipulation, continuance of whole animal experiments but with more stringent accountability for the use of animals and better environmental controls, more study of animals for environmental protection purposes including humane control of pest species, more research into the welfare of intensively farmed animals and increasing community interest in animal welfare and ecological problems.

Professor Anderson continued by reviewing animal experimentation ethics committees and the role of research funding bodies. He provocatively indicated that the ethical committee system is better than the governmental inspectorate of the UK for many reasons, but failed to enumerate them! However, he made up for this with a well-reasoned argument for the scientific community doing better than just defending itself against anti-vivisection groups and suggested that it should take a more active part in defining the limits within which it should work, and to map out the proper pathway whereby scientists face up to their responsibilities. He concluded by calling for a new intercontinental declaration on animals in biomedical science. Such a declaration might be made by an existing organization such as the World Health Organisation and should aim at principles which are better than minimal but internationally acceptable.

Section 1 dealt with new technologies and the 3Rs. The point is made that although the application of gene technology is increasing the use of animals set up as models of human diseases, such models, being more exact, would in effect be a form of refinement; moreover, because once the model is set up fewer animals are used in the research performed, reduction would also be achieved. The effects of genetic engineering was discussed in relation to animal products, with reference to new models which benefit both the animal and the human, those which are neutral to the animal but beneficial to humans, and to the category to be avoided – deleterious effects to the animal but benefit to humans.

The next paper in this section described progress in replacement of animals in the production, and safety and efficacy testing of pharmaceutical and therapeutic products, and the prospects of further progress. Two examples of reduction and eventually entire replacement are in bioassays of insulin and in the production of poliomyelitis vaccine. The final paper in this section concerned the control of pest species such as foxes and rabbits – not by killing them but by alteration of their habitats, preventing breeding, or causing sterility.

Section 2 contained three papers. The first concerned development in technology for producing transgenic animals and the associated problems. This was followed by an examination of the safety systems in Australia to control genetic modification, including the progress from the current non-statutory surveillance system toward a statutory one, while the third paper examined the ethical dilemmas raised by the new technology.

An interesting venture in the conference was the session (Section 3) in which secondary school students ('tomorrow's scientists') asked questions. A wide variety of topics was covered, including genetic engineering and where to draw the line on it; whether society was becoming too dependent on technology; pain and distress in experimental animals; and the relationship between the new technologies and human population pressure. The need for scientists to communicate more effectively with the general community was highlighted by the fact that most of the students were unaware of the existence in Australia of a Code of

Practice for the Care and Use of Animals for Scientific Purposes, and that it is legally binding in most of the states of Australia.

Section 4 comprises four papers on the replacement of live animals for student teaching purposes and it was concluded that although animals were not essential where the purpose of the teaching is to convey facts, they were essential in medicine and veterinary science, where training rather than simply facts were involved. Computer-based teaching minimizes animal usage and in some situations would replace animal experiments entirely. Another paper emphasized the importance of animal care, while the fourth paper explored the delicate balance between the educational value of animal usage and animal welfare.

The next section consisted of a single paper by the recipient of the ANZCCART Student Award and concerned the use of animals in psychology, with reference to the importance of good design in reducing stress, reducing the number of animals used, and increasing the validity of results.

The final section (6) looked to the future; the first paper emphasized the importance of really considering the ethics of animal usage. This was followed by a paper about sentience and thinking in animals; the final paper was a very thought-provoking one on the relationship between animals and man.

Altogether, then, a fascinating and thought-provoking book from both the purely scientific angle and from the angle of ethical and moral dilemmas; don't miss it!

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#### ***Managing Vertebrate Pests: Foxes***

Glen Saunders, Brian Coman, Jack Kinnear and Mike Braysher (1995). Australian Government Publishing Service: Canberra. 141pp. Paperback. Obtainable from the publishers, GPO Box 84, Canberra, ACT 2601, Australia (ISBN 0 644 43157 1). Price AUS\$24.95.

Generally, there is no conflict of interests between the welfare and conservation of wildlife. In Australia, however, the conservation of native fauna and the widespread reduction of fox numbers by humane techniques, appear at first sight to be incompatible goals, and that one will have to be sacrificed for the benefit of the other. Yet despite these apparent difficulties, this book aims to provide a framework to achieve both objectives.

Foxes were first introduced to Australia in the 1860s and 1870s so that they could be hunted with horses and hounds. Their spread was rapid, and within 30 years of the initial release in southern Victoria, foxes were declared a pest in the northern part of the state. Whilst still relatively little is known about the ecology of foxes in Australia, their impact on the native fauna is becoming increasingly apparent, largely due to studies undertaken in Western Australia.

Compared to the other continents, the damage to Australian wildlife since European settlement has been catastrophic and largely unparalleled. In the last 200 years at least 20 species of Australian mammal are known to have become extinct; these are about half the known mammal extinctions worldwide during that period. A further 43 are endangered or vulnerable. Foxes, assisted by habitat changes that make some species more vulnerable to