

The report considers a number of other animal welfare issues, such as the degree of suffering that animals are likely to undergo during xenotransplantation procedures, the risk of mutated pathogens infecting animals and whether it is ethically acceptable to genetically modify a pig. The report's conclusion that it is acceptable to genetically modify a pig providing that there is a concomitant benefit to humans and that the pig neither suffers unduly nor ceases to recognisably be a pig, raises some interesting questions of definition!

Finally, it is good news that the Government has accepted the recommendation in the report that there should be a National Committee (the UK Xenotransplantation Interim Regulatory Authority (UKXIRA) chaired by Lord Habgood of Calverton) to oversee xenotransplantation and that such a committee should be backed by legislation.

Animal-to-Human Transplants: the Ethics of Xenotransplantation (1996). Nuffield Council on Bioethics: London. 147pp. Paperback. Obtainable from the publishers, 28 Bedford Square, London WC1B 3EG, UK (ISBN 0 9522701). Price £10.00 including postage and packing within Europe.

Animal Tissue into Humans. A Report by the Advisory Group on the Ethics of Xenotransplantation 1996. The Stationery Office: London. 258pp. Paperback. Obtainable from the publishers, Publications Centre, PO Box 276, London SW8 5DT, UK (ISBN 011 32866 4). Price £25.00.

Farmed fish welfare

This report covers the welfare of farmed salmon and trout with some brief references to carp. The report is the published findings of a study carried out by the Farm Animal Welfare Council (FAWC) to provide advice to Ministers on the development of a Council of Europe Recommendation about the welfare of farmed fish.

The report is in 13 sections and deals with all aspects of fish farming beginning at structure of the industry and site selection. Production-related issues such as feeding, stockmanship and inspection, disease and veterinary care, predators, genetics and slaughter are subsequently covered. At the end of each section there are a series of recommendations of relevance to the welfare of salmon and trout which summarize the main points of the section. A 'quick reference' guide to the main recommendations of the report is also provided. Five appendices are presented which provide information on the FAWC, bodies which gave assistance to the report and also include a glossary of terms, a list of fish diseases and parasites and a full list of references.

This is a detailed report on all aspects of fish farming which contains good, practical recommendations on welfare. Fish have the capacity to experience both stress and pain and guidelines to protect the welfare of these animals, in what is a comparatively recent development in farming, are welcome.

Report on the Welfare of Farmed Fish. Farm Animal Welfare Council (FAWC) (1996). Ministry of Agriculture, Fisheries and Food: London. 52pp. Paperback. Obtainable from FAWC, Government Buildings, Hook Rise South, Tolworth, Surbiton, Surrey KT6 7NF, UK. Free.

Humane control of vertebrate pests

As the editors of this recently-published proceedings point out in their introduction 'The practice of controlling animals perceived as threats to human or environmental interests is uniquely placed on an intersection of various ethical, scientific, economic, social and

conservation issues.' There are many complex, practical and ethical dilemmas in controlling pests. For a start, there is no simple definition of what is and is not a pest. Perspectives and opinions also vary widely on the subject. Incidentally, with the human population of the world at over 5.5 billion and bearing in mind the damage which humans can do to the interests and viability of many other species, who best deserves the label 'pest' is an interesting point.

Traditionally pests were creatures whose activities caused damage or inconvenience to human endeavours or fortunes. Rodents in grain stores are a classic and long-running example. Since it was recognised that introduced species are a major cause of extinctions in other species, the number of species qualifying for the title of pest has increased all around the world. As a result there is, arguably, a greater need for pest control than ever before. However, in view of progress in knowledge of vertebrate neuroanatomy, physiology, behaviour and cognition (and the bases these provide for belief in the capacity of these animals to suffer), we have a strong moral obligation to ensure that pest control measures are humane. There have been many developments in the setting of standards for humane management of farm, laboratory and zoo animals during the last twenty years. In contrast, rather little attention has been given to protection of the welfare of wild animal pests. It is therefore encouraging that this meeting was held and that this book was published as a result.

The book contains papers from 14 authors and covers subjects ranging from the nature of pain and ethical aspects of pest control, to welfare aspects of the use of particular control agents. In the chapter on fertility control of vertebrate pests, it states that fertility control agents deserve to be more extensively evaluated but concludes that it may always be necessary to use birth and death control in combination. The poison sodium fluoroacetate (also known as 1080) is widely used as a vertebrate pesticide in Australia and the use and effects of this agent on target species receive particular attention in this book.

Although focused particularly on Australian problems, the book is likely to be of interest to a wide readership. It highlights the ethical dilemmas of pest control, for example, whether killing one fox to save two bandicoots is generally good and whether the ends of rabbit control justify any means? There are few easy answers in these matters. The resolution of the many conflicts of interest between humans and free-living animals, between indigenous species and those introduced by us and between humans with opposing views about the solutions to these problems, present many challenges.

Humaneness and Vertebrate Pest Control. Seminar Proceedings. Fisher P M and Marks C (eds) (1996). Report Series Number 2. The Department of Natural Resources and Environment: Victoria. 65pp. Paperback. Obtainable from Frank Gigliotti, Vertebrate Pest Research Unit, Victorian Institute of Animal Science, PO Box 48, Frankston, Victoria 3199, Australia (ISBN 0 7306 6598 4, ISSN 1327-1776).