

for the conservation benefit justifying their captivity. The Federation's views are based on some principles stated in the document, including that "elephants are worthy of our respect as another long-lived, intelligent, species. If we cannot look after them properly then we should not even attempt to do so", and that the continued presence of elephants in zoos can only be justified "by demonstrating a conservation benefit to the species". The report also aims to address the concerns of those who question the keeping of elephants in British and Irish zoos.

The Federation believes that the solution to the problem of the ongoing wild population decline resulting from habitat loss, poaching and other factors is most unlikely to be solved by captive breeding *per se*, but that it is "vital to achieve normal breeding in zoos" both to remove any temptation for importation of wild-caught animals and "arguably, to retain such an effective 'ambassador' species on which to base educational conservation messages and thereby enlist real support for direct conservation...".

The introductory chapter sets out the reasons for the production of the guidelines and also includes the Federation's Policy Statement on elephants. The latter makes various stipulations about the rationale for elephant keeping and about their care — for example: "their presence must enable progressive educational activities, and demonstrate links with field conservation projects and benign scientific research leading to continuous improvements in breeding and welfare standards". This is followed by chapters on biology and field data and on management in captivity. The latter includes sections on the captive environment, feeding and nutrition, behaviour, captive breeding, population management, handling and training, transportation, medical management and research. It also sets out standard operating procedures, which are mandatory for zoos that are members of the Federation, on staff training, the use of chains or shackles, voice control, the use of ankus or hooks, and the use of electric goads. The section on the captive environment establishes mandatory standards for Federation zoos. It is made clear that those Federation members who do not currently comply are required to do so within five years.

The literature relevant to the husbandry of animals, which encompasses studies of many aspects of the biology and ecology of wild and captive populations of the species in question and of others also where relevant, grows continually. It is very important that this literature is properly and regularly reviewed, critically assessed and interpreted, and incorporated into updated management guidelines for use by those responsible for animal care. As the number and range of wild species managed in captivity (in zoos, as companion animals, and in other circumstances) grow, so too does the need for detailed husbandry manuals such as this. It is a valuable review that will be of interest not only to everyone responsible for elephant management and welfare but also to many others who are interested in elephant welfare and conservation. A summary document excerpted from the main report that lists the Zoo Federation's mandatory standards and operating procedures is available separately.

Management Guidelines for the Welfare of Zoo Animals: Elephants *Loxodonta africana* and Elephas maximus (2002) Compiled by Stevenson M. Published by The Federation of Zoological Gardens of Great Britain and Ireland. Available from The Federation of Zoological Gardens of Great Britain and Ireland, Zoological Gardens, Regents Park, London NW1 4RY, UK. 163 pp. A4 paperback (ISSN 0963-1712).

New Zealand Ethics Advisory Committee Annual Report 2001

The National Animal Ethics Advisory Committee (NAEAC) of New Zealand published their Annual Report for the year 2001 in June this year. The report contains an overview of the animal welfare infrastructure in New Zealand and a list of functions of the NAEAC. It also runs through

the selection process for committee members, lists its current membership, and briefly explains how the committee operates. There is a short chapter on Codes of Ethical Conduct and another on Animal Ethics Committees. The year's issues, which included transgenic animals/xenotransplantation, assistance for Animal Ethics Committees, inspectors appointed under the Animal Welfare Act 1999, and liaison with other bodies, are reviewed and discussed.

Chapter eight in the report is entitled 'Statistics' and it summarises figures for animal usage, sources of animals, status of animals, outcome for the animals, organisation type, animal re-use, purpose of animal manipulations and grading of these manipulations. It is interesting to note that the animal types most commonly used in 2001 were fish, mice, sheep and cattle and that there was a small decrease in the number of animals manipulated — from 324 395 in 2000 to 318 583 in 2001. Although there is a slight decrease in the total number of animals used, there is a much more significant decrease, from 47 583 in 2000 to 17 265 in 2001, in the 'severe suffering' and 'very severe suffering' categories of experiment. The number of transgenic/genetically modified animals reported as manipulated during 2001 totalled 1556 — the lowest number in the last five years.

Finally, towards the end of the report there is a small section with some examples of successful implementation of the 3Rs. These include the development of accurate mathematical models of electrical activity of the heart; the development of equipment for remote monitoring of the cardiovascular system; the use of cell culture methods to develop, test and characterise potential cancer treatment drugs isolated from sponges; ongoing development of tissue culture veterinary vaccine, which replaces the use of animals in the vaccine production process; and ongoing development of computerised teaching models to replace the use of animals in undergraduate teaching programmes.

The report will make interesting reading for anyone wishing to find out basic information about the NAEAC or statistics relating to records required under New Zealand's Animal Welfare (Records and Statistics) Regulations 1999.

National Animal Ethics Advisory Committee 2001 Annual Report (2002) Published by the National Animal Ethics Advisory Committee, c/o Ministry of Agriculture and Forestry, PO Box 2526, Wellington, New Zealand. 30 pp. A4 paperback.

Methods and welfare considerations in behavioural research

The United States National Institute of Mental Health, together with other bodies of the United States National Institutes of Health, has prepared a handbook entitled '*Methods and Welfare Considerations in Behavioural Research with Animals*'. It is intended for use by Institutional Animal Care and Use Committees in their reviews of protocols on research in animal behaviour and cognition; it is also intended to assist investigators when planning their experiments.

The handbook contains a description of, and references for, commonly used behavioural research methods and associated animal welfare considerations, the first of which is 'fundamental contributions of behavioural research'. Within this chapter, there are, amongst other things, brief reports of research on animal welfare, pain, stress and effects of early experience. Following this, there is a chapter on 'general considerations' that should be taken into account when planning or assessing experiments. Topics mentioned include the role of training, monitoring, evaluation of new procedures and the track record of individual investigators; observation of experimental animals; and the importance of species used and relevant ethological considerations.