

should inhibit animal research is rejected on the grounds that using the example of some animal (predatory) species could serve as a justification for the exploitation of other animals. Conversely, Paton's distinction between man and other species, based on our ability to communicate by the spoken and written word is also challenged on the grounds that the morality of communication is determined by its content rather than its existence. In the author's view conscience remains the overriding consideration.

In spite of a lack of convincing ethical argument this chapter does contain good practical advice. In particular, the questionnaire for research workers planning to carry out animal experiments (p 111) provides an essential checklist of questions which should be answered fully and honestly. It is relatively easy to justify animal experiments in drug research on grounds of the relief of human pain and suffering, but this is not obviously applicable to experiments driven by scientific curiosity for the advancement of biological knowledge.

There is a disappointing lack of discussion on the choice of animal models in drug research, particularly the justification of those causing more than minimal pain and distress.

In the chapter entitled 'How much toxicity is acceptable?' the author draws attention to the current view, largely shaped by the media, that the aim should be for absolute safety. In such a climate the public pays little attention to the statistical analysis of risk, and a single side-effect can receive greater emphasis than therapeutic benefit. Toxicity tests are not reviewed in any detail but the pertinent point is made that pharmacokinetic data should receive more attention in the assessment of the relevance of animal studies to man. Regulators should pay more attention to efficacy. Reduced toxicity without increased beneficial effect cannot, in the author's opinion, be a 'prime mover' in drug research. A system of peer review of new drugs by Manufacturers' Associations is suggested with the emphasis on efficacy and therapeutic need.

In looking to the future it is recognized that important advances depend on a leap forward in knowledge and understanding. Although market forces can hasten development they cannot guarantee therapeutic advance. Risks in researching new areas must be seen as challenges rather than obstacles to be avoided. A consensus involving national governments, the World Health Organisation and industry is required to decide the therapeutic areas in which new drugs are most urgently needed. A greater diversification of the industry's efforts should be made into areas in which human need is greatest. Few readers would disagree with these ideals, but their attainment demands major revisions in current relations between healthcare, governments and the pharmaceutical industry. Several sections of this book are devoted to a critical examination of the workings of the pharmaceutical industry. These will prove of interest to all those involved in drug research and development, but are not reviewed here as they have no direct relevance to animal welfare.

Although the book contains a wealth of ideas and information this reviewer found it surprisingly difficult to read. This is perhaps partly due to the author's desire to cover so many facets of each topic while leaving the reader still trying to grasp his main contentions. The three explanatory diagrams did nothing, in my view, to assist this process. There are several references to other publications at the end of each chapter together with the numerous scriptural references already mentioned.

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Der Wolf. Ökologie-Schutz-Jagd. (The Wolf. Ecology-Hunting-Protection)

Henryk Okarma (1997). Parey Buchverlag: Berlin. 106pp. Hardback. Obtainable from the publishers, Kurfürstendamm 57, D-10707 Berlin, BRD (ISBN 3 8263 8431 8). Price DM58.

This German book on wolves is a translation of the original Polish version (1992), translated by Klaus Langwald and edited by Dagmar Altmann-Langwald. The result is a most readable book on the biology of the wolf in general, but especially about its present state in Poland. The latter is the most interesting part of this monograph, since Poland is one of the last central-European countries that harbours a substantial number of free-living wolves. Where humans and wolves live in the same area, mutual relations are strained to say the least, as is the case in Poland. Until 1975 the official policy was directed at the eradication of wolves – this left just 100 to 200 individuals. From then on, wolves have been considered as an endangered species that should be conserved. Out of the present population of about 900 animals, 100 to 200 are killed by hunters every year. However, in most areas wolves are now protected. The book gives a good outline of the areas in Poland that are still inhabited by wolves.

In four successive chapters the author describes and illustrates (with beautiful photographs and drawings) the morphology of wolves (age determination, comparison with dogs, etc), their behaviour (reproduction, ontogeny, main prey species (red deer and boars) etc), and their social organisation, including territory size. The author not only discusses at some length those factors which regulate population size of the wolves, but also shows how, in Poland, some wolves contribute to the regulation of population size and density of their prey. The latter is especially important in terms of regulating a well-balanced ecosystem in which wolves play a significant role. Okarma's figures show, for instance, that each year hunters kill 10 times more red deer than wolves do, while the number of boar killed by wolves is only a fraction of those shot by hunters. These sort of data are of great importance when discussing the presumed destructive role of wolves in nature. The author also describes in some detail the sophisticated way in which a pack of wolves hunts.

There is an informative chapter about various techniques of hunting wolves as practised in Poland, followed by a chapter on wolves in folk tales, literature and art. The author finishes with a short discussion on the protection of wolves and of keeping them in small or large enclosures. Dagmar Altmann-Langwald adds a final chapter on the occurrence of wolves in Germany. For those interested in wolves, and able to read German, this is a worthwhile book.

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AATA Manual for the Transportation of Live Animals by Road

Edited by T C Harris (1996). Animal Transport Association: Redhill. 90pp. Paperback. Obtainable from the publishers, PO Box 251, Redhill, Surrey RH1 5FU, UK (ISBN 0 9528861 0 8). Price £45.00.

Given the public interest in the welfare of animals being transported by road, any attempt to produce a convenient and readable account of the subject, of use to livestock transporters and to those interested in welfare, is to be welcomed. Tim Harris has more experience than