

***Recognition and Alleviation of Pain and Distress in Laboratory Animals***

National Research Council (1992). National Academy Press: Washington DC. 137pp. Hardback. Obtainable from the publishers, 2101 Constitution Avenue NW, PO Box 285, Washington DC 20055, USA (ISBN 0 309 04275 5) Price US\$29.95.

The aim of this book, which is researched and written by a committee is to communicate to the wide variety of people who work with laboratory animals the necessity to avoid inflicting pain and distress at any time. British readers must remember that it is written for research workers in North America, and that regulations and guidelines referred to in the text are not necessarily those in force in Europe. Also, less importantly, some pharmaceutical agents mentioned are not available, or may be known by differing names.

The introductory chapter commences with a general consideration of the problems of pain, stress and distress etc, and makes an admirable attempt to define them. It emphasizes that although pain will cause distress, stress and distress can occur in its absence. Throughout the rest of the book pain and stress are considered separately. A simple but adequate description of the physiology of the perception of pain is followed by a chapter on the basis of non-pain induced stress, which particularly highlights behavioural aspects, and the influence of husbandry. A chapter on the recognition of pain and distress emphasizes the differences between acute and chronic pain and gives excellent behaviourally based guidelines as to their recognition in a variety of species. The significance and limitations of pharmacologically based indicators of stress are also discussed.

The chapter on the alleviation of pain attempts an impossible task; that of covering the whole subject of anaesthesia and analgesia in a few pages. As a result, although there is much useful information included, it could be confusing for readers with limited initial knowledge in this field. It discusses the necessity for a suitable fixed anaesthetic protocol in experimental work, before discussing some anaesthetic agents and the use of analgesics. This is almost the only section of the book in which very precise guidelines, such as tables of doses of anaesthetic and analgesic drugs, are stated, but as the authors have utilized a wide range of references, in some cases unhelpfully large dose ranges are quoted. In the absence of adequate background knowledge it is not always clear as to when the use of certain agents is appropriate. Side effects and the results of overdosage often are not discussed. The limitations to this section are recognized in the preface, which points out that it is not intended to be encyclopedic and that it is the responsibility of the investigator to read the relevant references in full. A very short section on non-pharmacological prevention of pain is included.

The section discussing the use of neuromuscular blocking agents requires particular comment. The table of dose rates of the neuromuscular blocking agent pancuronium is incorrect (should the doses given be micrograms/kg, not milligrams?). More importantly, the authors discuss the problems of assessment of the depth of anaesthesia in the animal under the influence of these drugs, and emphasize the necessity for great care and adequate anaesthesia when a painful procedure is carried out. However they describe, albeit with some precautions, the use for neurological experiments of these agents in non-

anaesthetized animals. Readers should note that in the United Kingdom such practice would be considered cruel, and that under the *Animals (Scientific Procedures) Act 1986*, the use of neuromuscular blocking agents in conscious animals is *never* allowed.

The use of sedative and anti-anxiety drugs in animals is discussed in relation to the control of stress and distress, but greater emphasis is placed on methods of husbandry and management practices which can be used to prevent stress from occurring. An excellent chapter on the subject of euthanasia discusses guidelines for when it should be carried out, lists the requirements for the ideal method, then points out that to date there has been little scientific evaluation of the methods available and more research is required. Although a variety of methods of euthanasia are evaluated, detailed advice and discussion is sensibly limited to those methods most used in laboratory rodents.

In general this is an excellent book which meets the purposes for which it was designed. The chapters on physiology will provide a good introduction to research workers with a limited previous knowledge in the field; the sections on recognition of pain and stress will be a useful guide for the animal technicians looking after the animals, and the whole book should stimulate readers to consider the question of pain and distress in their laboratory animals throughout all stages of the procedures - from housing to the experimental protocol, and afterwards. I would consider it essential reading for all research workers and animal technicians and a useful guide for veterinary students and qualified veterinary surgeons.

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### ***The Behaviour of the Domestic Cat***

John W S Bradshaw (1992). CAB International: Wallingford, Oxon. 240pp. Paperback. Obtainable from the publishers, Commonwealth Agricultural Bureau, Wallingford, Oxfordshire OX10 8DE, UK (ISBN 0 85198 715 X) Price £15.95, US\$30 Americas only.

At one time the domestic cat had a reputation among behavioural biologists for attracting talented and highly motivated students who studied their favourite animal for many years only to remain silent about what they had discovered. Why should that have been? In large part, I think it was because cats are extremely variable in their behaviour. It is hard to generalize without riding roughshod over many obvious exceptions. In the last few years, though, the variability was acknowledged, writing blocks were finally overcome and a lot has now been published about what is fast becoming the most popular pet. John Bradshaw's concise well written survey is an excellent introduction to this field. He intends the book to appeal both to students and research workers, but he also has his eye on members of the general public seeking enlightenment about the cat. In fact, Bradshaw does not play to the gallery too much, never hesitating to tell the reader when an opinion is controversial or an answer is not known. I find it hard to judge whether an interested layperson would be able to read this book from cover to cover without their