

as our knowledge of biological mechanisms increased is turning out to be correct.

I welcome the re-issuing of Russell and Burch's opus. The book will be more readily available to the new generation of 'alternatives' researchers and, despite it being dated scientifically, the central arguments are as current today as they were thirty years ago.

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Animals in Biomedical Research. Replacement, Reduction and Refinement: present possibilities and future prospects

Edited by C F M Hendriksen and H B W M Koëter (1991). Elsevier: Amsterdam. 288 pp. ISBN 0 444 81417 5. Price Dfl 235.00, US\$134.50. Obtainable from the publishers, PO Box 1991, 1000 BZ Amsterdam, The Netherlands; or in the USA/Canada from the publishers, Co Inc, PO Box 882, Madison Square Station, New York, NY 10159, USA.

In 1959 Russell and Burch, in their book 'The Principles of Humane Experimental Technique', expanded at length on the idea of the Three Rs - Replacement, Reduction and Refinement - and their possible role in lessening the suffering inherent in much of man's use of animals in scientific research. For many years their ideas, seemingly, passed unnoticed and it was not until relatively recently and especially, perhaps, after the publication of Smyth's 'Alternatives to Animal Experiments' in 1978 that the concept of the Three Rs really began to be taken seriously by the biomedical research community.

Nowadays many biological scientists know of the Three Rs but are somewhat uncertain how they might apply them in their own particular area, to improve the welfare of their laboratory animals. The reading of this book, edited by Hendriksen and Koëter, could go a long way to overcome this uncertainty. Although there is no introduction to explain the purpose of the volume, the subtitle 'Replacement, Reduction and Refinement: present possibilities and future prospects' fully indicates the scope of the work.

There are 22 chapters written by some 28 experts drawn from a wide range of backgrounds in the biomedical sciences. The various contributions cover such matters as the role of animals in toxicological research, in the production of biologicals, in physiological and pharmacological investigations and in education and teaching. The place of alternatives, ie the Three Rs, is considered and there is much discussion on both the merits and the limitations of their use in being able to help fulfil both the requirements of the scientific enquiry and at the same time reduce the animal usage and/or limit the animal suffering.

It becomes apparent that validated replacement techniques can most effectively be employed when the underlying biological mechanisms are understood. They can have a role for example in the screening of chemical compounds for known pharmacological properties and in certain toxicological assessments. They cannot realistically be used in many situations where the aim is the acquisition of new knowledge of physiological mechanisms or disease processes. Replacement is most relevant to the areas of routine screening, testing and the production of biologicals.

Reduction is covered largely in the chapters on the genetic control of laboratory animals and on nutritional factors in animal experimentation. There are, somewhat surprisingly, no specific chapters on experimental design nor on the use of healthy, disease free animals, although these two approaches to Reduction are mentioned briefly in many of the other pieces. Refinement is mainly dealt with in an extensive and most interesting chapter on the husbandry of laboratory animals and in the several pieces on the assessment, prevention and relief of pain and distress.

The book is completed by two chapters by the editors which sum up the present situation and predict the way the subject could develop. There is unfortunately no index. This is a pity, as there is an immense amount of information, much of it not readily available to the non-specialist, scattered throughout the book.

This is a scholarly, up-to-date and important account of both the present situation and the possibility in the future regarding the application of the Three Rs to biomedical research. It can most profitably be read by those working in the biomedical field and by those wanting to understand the possible role and probable limitations of the Three Rs approach to the relief of animal suffering.

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Know Your Cat: an owner's guide to cat behaviour

Dr Bruce Fogle (1991). Dorling Kindersley: London. 128 pp. Obtainable from the publishers, 9 Henrietta Street, Covent Garden, London WC2E 8PS, UK. ISBN 0 86318 644 0. Price £12.99.

Rarely have I seen a popularly written cat book that is so informative and well illustrated as *Know Your Cat* by veterinarian Bruce Fogle! It is a treasure trove of factual information presented in such a way that the reader does not realize he or she is being taught a great deal about these fascinating companion animals.

The work borders on being a 'picture book' with the general text and photo legends being kept to a minimum. The photographic work produced by Jane Burton on special commission is of the highest quality and truly illustrates just about everything cats do and just how they do it. It is unique to see such informative photos all in one book. Bruce Fogle's text explanations are short, to the point and almost always in tune with the latest scientifically based findings on cat behaviour. I constantly found myself comparing his information with that contained in the scientific compendium on the biology of cat behaviour (Turner & Bateson, *The Domestic Cat*, Cambridge) and I must admit, he has 'got it down right'.

Fogle is obviously an astute observer of animal behaviour even though his formal training is in veterinary medicine. Perhaps the latter excuses his personification of these domestic animals and anthropomorphic statements such as 'I don't think we're safe here - let's move on' beside the photo of a mother moving her offspring. But that is exactly