

of its economic values and the use of economic-incentive based approaches to regulating wildlife tourism activities.

Part 3, meanwhile, focuses on planning and managing wildlife tourism. Four chapters are included. Chapter 9, by Gianna Moscardo and Rebecca Saltzer, examines the markets for wildlife tourism while Chapter 10, by Sue Beeton, considers business issues. However, ethical considerations are not considered in this chapter, presumably because they are considered elsewhere in the book. Chapter 11, by the editor, develops the management framework for wildlife tourism first presented in Chapter 1 while in Chapter 12 Gianna Moscardo, Barbara Woods and Rebecca Saltzer discuss the fundamental role of interpretation in wildlife tourism. The final chapter, by Karen Higginbottom and Noel Scott, then rounds off proceedings by attempting to synthesise the lessons developed previously in the book, using the destination-based strategic planning process as an organising framework. While these chapters will be of considerable interest to tourism and wildlife management specialists, their relevance to animal welfare is relatively limited.

This book comes as a very welcome addition to the hitherto rather sparse literature on wildlife tourism. Indeed, almost a decade has elapsed since the last major work in this area (Shackley 1996), and the literature base has been in severe need of being updated for some time. I will certainly be using this book in my own teaching. However, my major disappointment with this book is the absence of any form of index — this might have been useful. Indeed, some would argue that the inclusion of a decent index should be seen as a basic courtesy to readers.

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Reference

Shackley M 1996 *Wildlife Tourism*. International Thomson Business Press: London, UK

The Laboratory Mouse

Edited by H Hedrich and G Bullock (2004). Published by Elsevier Academic Press, UK. Available in Europe, Middle East and Africa from Elsevier, Customer Services Department, Linacre House, Jordan Hill, Oxford OX2 8DP, UK, and in the USA and Canada from Elsevier, Customer Service Department, 11830 Westline Industrial Drive, St Louis, MO 63146, USA. 656 pp Hardback (ISBN 0 12 336425 6). Price £134.95.

The aim of this book is to provide a concise handbook where new and/or established researchers can easily track down the most up-to-date information on the laboratory mouse. Much emphasis is put on mouse genomics, the generation of mouse mutants and on the genetic map of the mouse, providing useful information on a topic that has become an important issue in the biological sciences, but which may be a bit over-represented (110 pages). Other aspects, in particular the 3Rs, are less-represented. Only a

minor part is spent on methodology, alleviation of pain, behaviour and housing.

The book is divided into six parts:

1. *History, development and genetics of the mouse as a laboratory model.*

Besides the chapters in the above-mentioned section, a small part deals with the mouse as a model for human diseases, focussing on transgenic mice and the role of mice in pre-clinical safety studies.

2. *Anatomy and developmental biology.*

The anatomy part consists of a series of drawings, followed by useful short descriptions of the histology of organs, focussing on features characteristic to the mouse in general. This chapter also includes early mouse development and a nicely illustrated part on imaging techniques.

3. *Pathophysiology and non-infectious diseases.*

This part provides a wealth of information on, for example, the cardiovascular system, the respiratory system, the skin, the gastro-intestinal tract, models for auto-immune diseases, haematology and spontaneous neoplasms in inbred strains. The small chapter on the social behaviour of mice, which is the only part on 'normal' behaviour in the book, is a bit disappointing especially as the references are rather outdated — the majority older than 1996.

4. *Infectious agents and diseases.*

This part specifically deals with viral infections, as the editors state that these are the most frequent infections in genetically modified mice, and pose the greatest risk to mouse facilities. This has resulted in a comprehensive chapter on murine viruses including clinical symptoms, infection routes and diagnostics.

5. *Husbandry and production.*

Although attention is paid to special housing conditions such as Individually Ventilated Cages and Isolators, important topics, such as environmental enrichment, are limited to just a few lines under 'Refinement' and focus mainly on the unwanted increase in variation in experimental results, ignoring the type of enrichment used by the cited authors. Even the provision of nesting material is advocated only for pregnant females.

Gnotobiology, breeding techniques and cryopreservation are also discussed in this chapter. However, it is rather surprising that for vasectomy in male mice "shaving of the ventral abdomen is not considered absolutely necessary", injection anaesthesia seems to be preferred to inhalation anaesthesia and the need for post-operative pain relief is not discussed. The references in this chapter also seem to be a bit outdated.

In the clearly written health monitoring section, the Federation of European Laboratory Animal Science Associations (FELASA) recommendations for health monitoring are followed. The informative part on nutrition pays attention not only to nutritional requirements, types of diet and *ad libitum* feeding versus food restriction but also to individual versus group housing and possibilities for enrichment.

6. *Procedures.*

In this part we find a well-written chapter on legal regulations for the protection of animals used for scientific experiments. However, the chapter on necropsy methods is written mainly from the US perspective and mentions toe amputation as identification of living animals, retro-orbital bleeding for blood collection and CO₂ euthanasia for neonatal mice — methods that are discouraged in several European countries.

Part 6 also deals with handling and restraint and administration routes where, in my opinion, a recommended needle size of 23G for intraperitoneal injection is quite big. References are not quite up-to-date. Although the chapter on

anaesthesia, analgesia and euthanasia is clearly written, the poor analgesic properties of pentobarbital are not discussed and cooling is considered an appropriate form of analgesia/anaesthesia of neonatal mice.

At the end of the book a glossary is provided. In general the book is well-written, clear and easy to read. It is a useful book for the inexperienced as well as for the experienced scientists who use mice as an experimental animal.

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