

The other two new chapters focus on low stress restraint, handling and weaning of cattle and biosecurity. The major focus of the latter chapter is quite rightly on prevention of disease outbreaks. However, particularly considering the nature of the rest of the book, it would be useful to have a section within the chapter on ensuring good animal handling and welfare during mass culls, which is a common component of biocontainment and a critical time during which animal welfare can be severely compromised. This is likely to be particularly important for poultry. Current research examining the slaughter of diseased flocks might provide useful material for a review in the fourth edition of this text, should it be published in the future. Within this current edition there is also a 'Useful websites' section that provides access to further reading for interested parties and also lists organisations that can advise on animal handling.

For those who are completely new to this title, the remaining chapters are concerned with pigs, poultry, deer and horses. The initial chapters provide a good overview of animal stress and welfare, assessment of animal welfare and the influence of retailers and welfare standards set by industry. There is also a chapter on the use of working dogs to control and protect livestock. In many countries, livestock are marketed at some point in their lives, many prior to slaughter. Although this text does not deal specifically with livestock markets as a chapter or the design of market facilities in particular, the behavioural principles of handling the different species are discussed in-depth throughout and form the basis of handling animals anywhere, including markets. Many of the recommendations for handling facilities on-farm or at the slaughterhouse also apply to market facilities. This publication is therefore also suitable for those interested in handling livestock at markets.

As would be expected, the book is biased towards the main red meat species: cattle, sheep and pigs and these have individual chapters dedicated to handling and others to transport. The chapters featuring cattle are divided into dairy cattle, range cattle and relatively tame cattle. This is particularly useful and gives the text global application, since cattle across the world are housed and looked after under a variety of circumstances.

It has been seven years since the second edition of *Livestock Handling and Transport* was published and indeed since then a great deal of research has been published in most areas that the text is concerned with. Updating your current copy, if you already own one, is therefore prudent. However, if you plan to purchase the book for your own personal use and if you work specifically on the welfare of deer, it may well be more cost-effective to acquire a copy of the previous edition. Although the farming of deer is common, unfortunately there has not been a great deal of research into the handling and transport of deer since 2000. This text is not just for students and researchers who need a comprehensive review of the issues surrounding the handling and transport of farmed animals. Some chapters, for example 'Handling facilities and restraint of range cattle', also provide detailed figures of the design of

handling facilities and their dimensions. The text explains the finer details as necessary and helpfully discusses the advantages and potential pitfalls of the associated equipment, depending on their specific purposes or the type of animal that will be put through them. As such, agricultural engineers may find these sections invaluable when designing livestock facilities. The long-term success of buildings that handle live animals is very much dependent on the incorporation of animal behaviour and welfare into the design. Modifications as an after-thought can be problematic, expensive and time-consuming. Therefore, planning ahead is crucial and this book assists with that. Some of the chapters also provide further references for those readers who require more specific detail on the design of facilities.

*Livestock Handling and Transport* as a whole text has great potential for improving animal welfare in a variety of situations including handling on-farm, during transport and at markets and slaughterhouses. The readership of a publication such as this is likely to be mostly made up of academics and students. It will therefore help to inform and focus future research. If, as an individual, you can afford to purchase *Livestock Handling and Transport*, I would strongly recommend it as a thorough review of the relevant literature relating to domestic cattle, sheep, pigs and poultry. It also contains a good review of research into horse and deer handling and transport. Ensure your teaching or research institute library considers acquiring a copy too. If you work as a stockman or agricultural engineer and are keen to have a clearer understanding of animal behaviour and welfare in relation to your job and the industry, it is likely that you will find this book fascinating and probably a great help. There is a vast potential for this text to improve animal handling if it is read by managers and stockpersons who are directly responsible for animal handling and welfare. Anyone involved in livestock production can consider owning a copy of this book an investment.

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### **Cattle Lameness and Hoofcare: an Illustrated Guide, Second Edition**

R Blowey (2008). Published by Old Pond Publishing, Dencora Business Centre, 36 White House Road, Ipswich IPI 5LT, UK. 128 pp Hardback (ISBN 978-1-905523-28-3). Price £19.95.

Lameness in dairy cattle ranks as the third largest economic loss to farmers, as the author states in his opening paragraph. Superseded only by mastitis and infertility in financial cost, where does lameness rank in welfare terms? Infertility is indeed a costly problem in dairy cows, but it cannot be construed to be a painful condition, though culling an animal due to its inability to breed does not constitute good welfare practice. Mastitis is a painful condition, especially in its acute form, however it is relatively transient in nature and can be easily recognised and treated by the farmer.

Lameness, however, is often poorly identified, by its nature a painful condition and if not treated will invariably lead to premature culling: it is the worst of everything! Often attributed to housing and other methods of production, lameness is a disease we often, though perhaps unwittingly, inflict on cattle and, as such, should be viewed as the greatest insult to an animal's welfare even if it ranks only third in its financial cost. It goes without saying therefore that if any serious consideration of farmed cattle welfare is to be made, a thorough understanding of lameness must be established and this book provides exactly that.

As a veterinary surgeon, Roger Blowey holds world renown in many fields of cattle medicine in addition to lameness. He brings a wealth of knowledge from 40 years experience in the field, practising, teaching and researching to this detailed yet approachable hardback. Now in its second edition, the book contains in the region of 150 colour photographs, 30 more than the previous edition, and at least as many practical line diagrams. The illustrations complement the easy-to-follow text and are well positioned so the reader can refer to the relevant illustration on the same page which is to be commended; all too often texts refer to illustrations over the page or worse.

The first chapter provides a review of costs and incidence of lameness in the UK, closing with a brief account of assessing lameness by locomotion scoring. The author wisely doesn't delve into the confusing area of the many 'locomotion' and 'mobility' score systems, readers seeking a comprehensive review of this murky subject should look elsewhere! A simple 1–5 scoring scheme is outlined, though sadly lacks any of the author's usually excellent photographs to demonstrate postures of lame cattle. In defence, these are best assessed visually in motion and not easily transferred to the medium of textbooks.

In the second chapter, a simple yet thorough review of foot structure and function is well executed with descriptive diagrams and parallels to the human equivalents for ease of understanding. Having established a sound appreciation of hoof structure, the basic aetiology of lameness lesions is then broached for a full expansion under each recognised condition. The anatomy and growth of the hoof naturally leads on to its response to environmental conditions and causes of overgrowth, which are dealt with in chapter three. The next chapter is dedicated to corrective trimming of hoof overgrowth; the author describes his preferred 'four-cut' technique, broadly comparable to Dutch five-step trimming. Small but invaluable pieces of advice abound in this section, from correct techniques of restraint to sharpening tools. Something of use can be found here for the complete beginner to the most experienced professional foot trimmer. The contentious issue of using power tools is dealt with diplomatically. Blowey's advice is that these tools are necessary if large numbers of cows are to be treated, balanced with a warning that the operator must already be proficient and experienced with a knife first, and a claw must always be 'finished' this way. The author refers to the notion that grinding horn (instead of cutting) causes overheating, quoting trial work showing this to be unlikely.

Chapter six comprises thirty-four pages, over a quarter of the book, on the lesions and diseases of the bovine claw, along with some treatment advice for these conditions. The author's extensive library of photographs really comes into its own here; especially with some of the rarer conditions ensuring the uninitiated don't miss unusual conditions like axial wall fissures and deals with the subtle differences of heel, sole and toe ulcers. A thorough review of foot-bathing principles makes this section a must-read for anyone with an interest in treatment of infectious lameness in cattle. However, veterinary-level treatment is not exhaustively covered, those seeking surgical techniques would best look elsewhere.

The final chapter deals with the causes and prevention of lameness, dealing with most aspects of UK farm environments and management, with some discussion of foreign parallels. Advice on cubicle design, milking management and foot hygiene abounds with tips from many years of experience in this field to ensure maximum environmental comfort for cows. Some of the latest thinking on cow flow and behaviour could perhaps have been dealt with in more detail for the second edition, though there is plenty already in this section to be applied on many farms. The book is finished with a useful 'checklist' to minimise the causal factors of lameness.

Pitched at anyone with an interest in cattle lameness, farmers, vets, professional trimmers and consultants alike will find plenty of information in *Cattle Lameness and Hoofcare* and the illustrated nature of the text is invaluable. Readers outside the UK will not find specific disease information relevant to their country but the underlying principles of cattle lameness are universal so this is a minor handicap. This reviewer considers this a core text for any person involved in the care and management of cattle in order to understand and correct both cattle lameness and its causes.

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### ***Carrots and Sticks: Principles of Animal Training***

PD McGreevy and RA Boakes (2007). Published by Cambridge University Press, The Edinburgh Building, Cambridge CB2 2RU, UK. 301 pp Paperback (ISBN 978-0-521-68691-4). Price £45.00.

Despite the wealth of published material available on animal cognition, and related topics, there are remarkably few texts available which detail how knowledge of animal learning can be used in an applied setting when training captive animals. Commonly, books can be found which provide a basic overview of 'how to train', but do not attempt to provide the scientific principles which underpin how animals learn, and thus how this can be used to achieve human-driven, goal-directed learning (training). This greatly limits these texts, which invariably are only useful to practitioners within a specific industry or to training the specific behaviours reviewed. Given this background there was an obvious need and niche for this book.