

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.

The general aim of this book was to demystify animal training and demonstrate that the same animal learning principles underpin the training of any species in any context... “the basic idea behind *Carrots and Sticks* is that (these) differences are superficial ones and that the same general principals apply to any kind of animal training”. This was especially welcomed as the field of animal training is littered with a diverse array of jargon terms (thankfully a comprehensive glossary is also provided). Frequently there can be multiple terms used to refer to the same animal learning principle, but vary between industries, or according to the species being trained. More dangerously, on occasion, terms are created which have no foundation in animal learning theory at all and so the mechanism by which they work seems highly contentious. As such, animal training can be a minefield to those with little experience of animal learning theory or ‘hands-on’ training.

Carrots and Sticks was divided into two main parts, reflecting the often quoted need for both ‘science’ and ‘art’ in achieving successful captive animal training. The first part, ‘General principles’, provided an overview to animal learning theory and was divided into four chapters: ‘Instincts and their modification’; ‘Learning theory and positive reinforcement’; ‘Fear, punishment and avoidance training’; and ‘Animal intelligence’. Each of these chapters summarised key research undertaken in these areas and reflected on how these topics could be of use when considering (planning or implementing) training of captive animals; many examples which would be familiar to people working around animals were also given. The second part of the book was comprised of a variety of case histories of animal training events and was divided into three chapters: ‘Companion and performance animals’; ‘Exotic animals’; and ‘True working animals’. These chapters were probably of greatest interest to the ‘would-be trainer’ or those considering whether or not to undertake training. The format for the case studies provided: a training profile (information about the animal, the training aim and an assessment of the animal’s personality); background about the situation and animal; an overview of the training programme (including number of training sessions per week, duration of sessions, and time taken for the goal to be achieved); and finally a explanation of which animal learning principles underpinned the training (ie the types of cues used, what type of reinforcer was used).

The layout of the book and its general aims were brilliant. The first part of the book integrated experimental results and familiar anecdotes describing animal behaviour in different situations, which were very helpful to illustrate animal learning principles. However, some sections of the text felt overly cumbersome which, in part, was probably due to the large amount of information which the authors managed to include. Also, the text were not referenced, and only a selected and small bibliography were included; this style was probably chosen to ensure the text were accessible to as wide an audience as possible and not put-off those who find embedded references tedious.

An area which this book avoids is the implications of training on the welfare of animals. The authors are keen to emphasize that positive reinforcement is to be encouraged and has many benefits over some other types of training. However, no discussion is provided about the ramifications of training, indeed the authors state that “...Having considered various approaches, you will be better able to decide for yourself whether it is right or wrong that animals are used in these ways. Are certain behaviours undignified? How can animal welfare be ensured when animals are required to work for a living? Should zoos require their animals to perform? Can this enrich their lives? Is it possible that your informed response to these questions may be at odds, say, with your views on riding horses. Regardless of these dilemmas, the information in this book should add to your fascination with the non-human animals with whom we share the world”. To this end, *Carrots and Sticks* provides a text which describes the science and art of training animals, from an objective standpoint. Providing the reader with the information they would need if attempting to create a training programme. In an area of applied science and animal management which is becoming increasingly popular and actively implemented on a practical level with more and more species in most captive animal industries, this book provides a much-needed insight into the ‘nuts and bolts’ of learning and how these can be used to train animals, or to identify where training is occurring already in some systems. Another volume describing the impact of training and whether caveats should exist to determine whether training should be undertaken, is now sorely required; but the research probably needs to be done first!

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Domestic Duck Production: Science and Practice

P Cherry and TR Morris (2008). Published by CABI, Wallingford, Oxfordshire OX10 8DE, UK. 272 pp Hardback (ISBN 978-0-85199-054-5). Price £65.00, US\$130.00, €105.00.

This book is described as a practical guide for technical and advisory staff involved in commercial and subsistence-level duck production.

The text is based on the authors’ wide experience of duck husbandry and management, underpinned by some detailed and very relevant research spanning over 30 years of work.

The overall effect is of a very comprehensive review of a diverse range of topics on management, nutrition and growing conditions, but it is not an easy read! There is so much data presented, covering a wide range of interacting factors that it is often difficult to sort the wheat from the chaff.

The book starts with an interesting and informative review of the history and biology of ducks through domestication. A common theme for this and the remaining chapters is relating evolutionary development to domestic adaptation