the extent to which some of these have been reduced relative to output of food in the USA, mainly through increasing the productivity of individual animals. The drive to sustainable intensification has the potential to exacerbate welfare problems as perceived by the animals and by the people. Lameness, infertility and reduced active life in dairy cows are cited as examples of this conflict. No real solutions are offered for this dilemma, but it is put forward as a case for serious attention. The third chapter in this section is given the broad title of 'Animal welfare and food safety' but concentrates specifically on the extent to which stress can affect the bacterial population and immune system within the gastrointestinal tract of animals and the impact that this can have on the health of the animals and the safety of food from animals especially when these stresses occur in the run-up to slaughter. This is a good, comprehensive review of a very important topic.

Part III considers ways by which advances in science can be translated into policy and practice. The first chapter by Joy Mench makes the very important point that at this stage of our knowledge of farm animal welfare, some of the most useful research can be done on farms rather than in research establishments, since for many of the big questions the farm or production establishment is the unit of assessment and the individual animals provide the data set. I strongly support her assertion that well-designed, commercial scale, experimental studies are most likely to lead to practical solutions to complex endemic environmental problems, such as lameness in poultry and cattle. David Fraser explores the bridge between welfare science and farm practice and describes how scientific evidence can and should contribute to legal standards and codes of practice. Much of these might seem self-evident to welfare scientists but perhaps it needs to be said. The final chapter in this section considers the role of US veterinarians in animal welfare education, policy, politics and research. In the author's own words "the veterinary profession in the United States has lagged behind other parts of the world (especially the United Kingdom and the European Union)" but is now catching up. I guess that is good news.

Part IV examines animal welfare standards in different areas of the world, in particular, those of the World Association for Animal Health (OIE). This is largely descriptive. It examines the extent to which these standards have succeeded in achieving minimally acceptable standards for farm animal welfare in Asia, Oceania and South America. It does not explore the (to me) more promising issue as to the extent welfare standards on individual farms and production units can be enriched through properly monitored, nongovernmental independent schemes. (The RSPCA 'Freedom Food' scheme is just one of many).

The final section, somewhat misleadingly titled 'Emerging issues', addresses two unrelated topics. The first is 'Slaughter without stunning'. It reviews the evidence relating to issues such as time to loss of consciousness and considers strategies to minimise distress at and preceding the neck cut. It recognises that many Islamic authorities

permit reversible stunning but does not risk asking why the dictates of shechita should not consider non-injurious, reversible, gaseous narcosis (eg using argon) as a humane gesture to poultry. The final chapter, 'Urban agriculture' looks at the history and revival of backyard farming in the USA and considers the pros and cons for animal health, welfare and food safety. It sits oddly with the rest of the book, but it is a good read.

The strength of a multi-authored *Advances* book written for those already reasonably well informed and active in any field is determined by the extent to which it has something new to say: ie it brings together a lot of brand new good science, it explores synergies between disparate scientific disciplines or it reveals new approaches to best practice. About half the chapters in this book do this well.

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A Practical Approach to Animal Welfare Law, Second Edition

N Sweeney (2017). Published by 5M Publishing Ltd, Benchmark House, 8 Smithy Wood Drive, Sheffield S35 IQN, UK. 318 pages Paperback (ISBN: 9781910455807). Price £35.95.

Laws are essential for protecting the welfare of animals. This is a feature not only of modern society, but of ancient ones too. As readers of the Old Testament will recall, for example, the ancient Israelites were prohibited from severing a limb from a live animal (Genesis 9:4), failing to afford cattle a day of rest (Exodus 20:10; 23:12), and muzzling oxen while they are threshing (Deuteronomy 25:4). There were also positive duties of care: an Israelite was required to feed his animals before himself (Deuteronomy 11:15) and to relieve animal suffering (Deuteronomy 22:4).

Laws are, however, of limited benefit without observance and enforcement; things which are, in turn, dependent on the law's requirements being known by people who are in a position to ensure those things. Good animal welfare depends on veterinarians, livestock farmers, breeders, local authority officers, slaughterers, transporters and police officers having a 'working knowledge' of animal welfare laws relevant to their activities.

Equipping such persons with such knowledge is not easy. Animal welfare legislation is complex, may vary, as between the different constituent countries of the UK, and may be replete with concepts (such as 'suffering', 'responsibility' and 'neglect') which require explanation. Against that background, how are 'people in the field'— ie people who are responsible for ensuring and enforcing animal welfare on a day-to-day basis — to be provided with the knowledge and understanding of animal welfare law which they need? Noël Sweeney's book, now in its second edition, seeks to provide a practical answer in a practical way. Appropriately entitled *A Practical Approach to Animal Welfare Law*, it deliberately avoids getting bogged

down in legal detail, recognising that an obsession with obtaining complete legal accuracy would make for a very dense text which explained exceptions and nuances at the expense of readability and utility.

The book sensibly makes a choice not to attempt to cover all areas of animal welfare law, choosing instead to focus on several specific pieces of legislation. The particular choices that it makes do, however, have the effect of radically limiting the groups of people whom it might benefit. The book is structured around three UK statutes: the Animal Welfare Act 2006 (AWA), the Dangerous Dogs Act 1991 (DDA), and the Anti Social Behaviour Crime and Policing Act 2014 (ABA). The choice of those three statutes signals that the book's focus is on UK law relating to companion animals. Although the AWA is, in principle, applicable to all species of vertebrate animals, an animal is only a 'protected animal' for the purposes of that Act if it is either of a domesticated species or under human control, with the consequence that the Act generally excludes animals in the wild. The DDA and the ABA are even more confined in terms of their scope of application, being concerned with the control of dogs. The key pieces of legislation relevant to farm animals and wildlife are not considered. The consequence of these deliberate choices is to make this a book that will be of relevance to people in the UK who are dealing on a day-today basis with the welfare of companion animals, especially (but not only) dogs. Those people include local authority animal welfare officers, RSPCA inspectors, veterinary surgeons, police officers and magistrates' clerks — for all of whom this book will be invaluable. It is very much intended as a practical manual to be used in the field, and you can imagine its 300 pages sliding nicely into the glove compartment of a local authority dog warden's van.

This book does not make the mistake of so many legal 'guides' of focusing on explaining the substantive requirements of an area of law, whilst giving relatively little attention to the practicalities of investigation and enforcement. In explaining the operations of each of the three statutes, it not only explains the substantive requirements and standards of animal welfare and dog control law but gives at least as much attention to the (no less complex) legal powers that enable animals to be rescued, premises to be entered and searched, evidence gathered, and prosecutions brought. It also covers the sentencing of offenders. Further, the book deliberately avoids compartmentalising its discussions of enforcement from its discussions of substantive animal welfare requirements, since the latter are explained by reference to actual court cases as examples of how such requirements have been interpreted, applied and enforced in practice. The author has not allowed his analyses to be retarded by the limited number of animal welfare law cases that have been decided in the higher courts whose judgments serve as precedents binding on lower courts. Instead, he has sought out unreported cases from lower level courts to exemplify the concepts and procedures he is explaining. This approach contributes greatly to the book's practical focus and utility.

The book's readability owes much to the author's style, which is informal almost to the point of being conversational. As a reader, one quickly begins to imagine oneself as a police officer being instructed in animal welfare through participation in a well-designed, practically focused training course delivered by a knowledgeable, passionate and slightly quirky instructor. As one leafs through the pages, one gets more than a slight insight into the author's personality. His discussion of topics is not limited to objective factual expositions of the law (though it certainly provides those) but is often also opinionated and a little provocative. Across the book as a whole, this approach contributes greatly to engaging the reader, but occasionally the author's opinions can seem a little simplistic or even unfair. An example is his criticism of the Protection of Animals Act 1911 which was, until 2006, the principal UK statute prohibiting cruelty to animals: he claims that it "allowed animal abusers to escape their just desserts by a combination of legal loopholes and judicial fudges" and included "deficienc[ies]" each of which "was drafted and thereafter interpreted... to the detriment of animals". He criticises that Act's underlying rationale, which was essentially to protect human interests (in particular, Victorian and Edwardian sensibilities with respect to humans' sense of moral goodness), without always recognising the way that similar rationales still inform the current legislation. His discussion of court judgments is non-deferential: rather than simply stating how the courts have interpreted particular legislation and taking that interpretation to represent the law, the author gives his view (eg explaining what the court decided and then stating, "the court was right"). Had the author adopted a less-opinionated style, the book would surely have read more authoritatively; but this is another deliberate choice he has made: he is unashamed about writing from the subjective perspective of someone who is on the side of stronger and more effective protections for animals.

Although the book is 'introductory' in the sense of requiring no prior knowledge of the subject matter, it does not seek to provide a broad introduction to the topic of animal welfare law. Little time is devoted to the historical context or the philosophical underpinnings of animal welfare law. Instead, the book moves swiftly into explaining the current law's rules, practical requirements and application. This is perhaps regrettable, since even a reader looking for a practical guide might have appreciated a less-abridged introduction to the animal welfare law landscape, complemented by an introductory discussion of the interactions between law, science and technology which inform key concepts such as 'welfare' and 'suffering'. Throughout the book as a whole, the emphasis is very much on stating what the legislation says and how it has been interpreted by the courts. It may be that in future editions the author will consider how to weave in greater consideration of animal welfare philosophy and science, and also of the relevance of veterinary and scientific evidence, given that this area of law is uniquely one in which philosophy and science bear upon the law's practical application.

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Whilst the book can be relied upon as a broadly accurate (ie not over-technical) guide to the legislation applicable in England and Wales, it does not explain clearly the differences for Scotland and Northern Ireland. This concession to simplicity promotes the book's readability but means that readers in those jurisdictions should treat it as a useful introduction to legal principles but not assume that its descriptions of the legal rules necessarily apply there.

These minor criticisms should not obscure the value of this highly readable, interesting and engaging practical guide. It is precisely what its title describes it as being, albeit that its material scope is narrower than 'animal welfare law' generally, being instead limited to the practical enforcement of three key statutes in the context of companion animals. It will do much to improve animal welfare by ensuring that police officers and others out 'in the field' have the

knowledge, and thus the confidence, to carry out their enforcement functions. As such, it accomplishes its objective.

To the reader with a need for a deeper or wider knowledge of animal welfare law, however, the book is also a reminder of the gaping need for a more comprehensive treatment of the subject, such as was provided by Mike Radford's book *Animal Welfare Law in Britain: Regulation and Responsibility*, published in 2001. Radford's book pre-dates the AWA and is now long out of date: an updated version is sorely needed. One is also left wondering if Sweeney (the author of the book here reviewed) might in due course turn his skill for writing readable practical guides on animal welfare to farm animals and wildlife, which would be greatly welcome.

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