

an otherwise exemplary review of the potential (conservation) impacts of anthropogenic noise on cetaceans, considers the former effect but does not mention the latter possibility.

For those readers with limited time, reading through the abstracts of such a book should allow them to come away with a decent idea of what each chapter contains. Unfortunately, several abstracts appeared to be *verbatim* reproductions of the chapters' introductions. I did not find these abstracts very useful. Others were far more informative and gave me a good understanding of what was covered in the chapter. I could not help but wonder if the former were the result of the authors neglecting to provide an abstract and the editor doing his best to supply one.

There were a number of typographical issues with the book — missing words, grammatical errors. Half a dozen sentences or so here and there in the text were frankly garbled. One author's biography was missing. I felt some subsections in some chapters could have been fleshed out just a bit more — they were so short or speculative that they could have easily been deleted without hurting the chapter.

These various flaws were minor overall and largely editorial — the value of the book remains solid and those interested in exploring novel research or policy approaches to marine mammal welfare, in the wild and in captivity, would do well to explore its contents. However, all of these flaws could have been minimised or even eliminated altogether by a slightly heavier hand on the reins by the editor and I would urge him to consider applying one should he decide to produce a second edition of this volume. Some of these authors may have been dealing with their topics in a welfare framework for the first time, at least in a formal sense — stronger editorial guidance, on focus and content, from an experienced welfare scientist like Andy Butterworth would no doubt have been both appreciated and of great value to these writers. And any book benefits from a proper proof-read!

I hope to see a second edition. It is to be expected that the suggestions for research questions and projects found throughout the book have already been or soon will be taken up by the marine mammal science community, swelling the ranks of studies on marine mammal welfare science to rival, perhaps, those on primates or elephants one day. Should this occur, a second volume on marine mammal welfare, summarising that work, will be another valuable addition to the literature.

Reference

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Picking a Pedigree? How to Choose a Healthy Puppy or Kitten

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The welfare of pedigree dogs has received unprecedented attention in the UK over the past decade, following concerns that breeding practices used to achieve the appearance, uniformity and genetic 'purity' of the over 200 breeds registered in the UK has led to an unacceptable level of disease in the canine population. The past decade has seen an exponentially expanding literature base exploring breed-related inherited diseases, prime time TV exposés, government and charity reports and an independent inquiry into the state of dog breeding in the UK — all of which have been similarly damning in their conclusions. These activities have led to often heated debate between the pedigree breeding community and animal welfare campaigners. Much of the debate around this topic has focused on the *supply* side of the puppy *supply-demand* market. Dog breeders have been heavily criticised for the breeding practices some employ to produce puppies, and conformational 'ideals' they aspire to that run counter to canine welfare. Indeed, systematic reviews have identified nearly 400 diseases in the dog that are thought to have an inherited component. Despite increasing activity to counter some of the worst of these breeding practices from canine registration organisations (eg banning mating of first degree relatives, limiting numbers of Caesarean sections allowed per bitch and amending breed standards) alongside fervent campaigning from animal welfare charities and veterinary bodies to raise awareness of issues surrounding pedigree dog breeding, inherited disorders still feature prominently in the veterinary caseload. Somewhat paradoxically, some of the most popular breeds in the UK in 2018/19 are those afflicted by the most inherited disorders. In recent years, the spotlight has also been shone upon pedigree cats which share some of the same issues identified in dogs, although much fewer in number and with seemingly fewer associated disorders.

Although continued focus on improving breeding practices are essential for animal welfare, resources and activities that focus on the *demand* side of the puppy-buying market are much welcomed. Empowering potential puppy and kitten buyers with up-to-date information on breed health has the potential to improve animal welfare by: (i) using market forces to reduce the popularity of breeds inherently associated with disease (eg those with extreme conformation); and (ii) placing pressure on breeders to use all the tools at their disposal to improve breed health (eg testing for known genetic conditions and screening for phenotypic abnormali-

ties) due to increased demand for health-tested puppies with sound conformation. Moving puppy and kitten selection from an often emotional and impulsive decision-making process, to a well-informed and considered activity, where the consumer is aware of their behaviour's impact on both their own future companion's health, and the overall state of the pedigree companion animal population is sorely needed. As such, Emma Milne's most recent book *Picking a Pedigree? How to Choose a Healthy Puppy or Kitten* is a much-needed addition to help the general public in what must feel like a minefield in choosing the breed for them.

Emma opens with a timely reminder that the dogs we share our homes and lives with descend from early dogs, first domesticated some 40,000 years ago, and initially selected for a limited number of functional roles — guarding, herding, hunting. This led to some diversification in body shape through early efforts to selectively breed for 'jobs.' This is in sharp contrast with the hundreds of genetically isolated and conformationally distinct breeds currently found around the world, the majority of which have proliferated in the last century. The timescale in which this selective breeding has occurred is startlingly illustrated in Emma's analogy, "if we've been best friends with dogs for an hour, we've created virtually every recognised breed in the last nine seconds." Protests from pedigree breeders that animal welfare campaigners are too extreme when they argue their preference for all dogs to return to a homogenous, proportional body shape is called into question when we realise how long we lived with dogs without dramatically manipulating their size, shape and proportions. The reminder to potential owners that dog breeds are human creations, indeed very recent human creations, and that breeds are not individual species that cannot become 'extinct' is particularly useful and may be new information for many members of the public. This is particularly important when justifying the ongoing existence and intentional proliferation of breeds with profound and inherent health problems that could not exist in nature, and in Emma's words are "only scraping by because of veterinary intervention."

Following this valuable scene-setting, for the bulk of this book Emma goes on to document the inherent health and welfare issues associated with a variety of canine and feline body shapes, those commonly described as 'exaggerated' or 'extreme.' These extreme conformations have hit the headlines in recent years, yet are commonly the media's darlings, used in advertising for their distinctive and quirky looks, despite the problems these features so often go hand-in-hand with. This includes anatomical features, such as chondrodystrophic long-backed, short-legged breeds and their associated orthopaedic deformities (Chapter 4); excessive and abnormal skin folding and its impact on both skin and eye health (Chapter 5); exaggerated ear pinna length and its association with ear disease and injury (Chapter 6); abnormal hair growth — both hairlessness and excessive coats, and their impact on thermal and physical discomfort and behaviour (Chapter 8); and finally extremes of size, from the miniaturised to giant breeds and the health and longevity challenges at each end of this spectrum (Chapter 9). This is followed by a summary chapter of

diseases with an inherited component that are not thought to be linked with body shape (Chapter 10). The content of these chapters is generally comprehensive, but limited scientific evidence is cited despite the large amount available for many disorders in 2019. Although this is likely strategic to avoid alienating would-be owners with citations and jargon, for those who might want to dig deeper on specific issues raised in their breeds of interest, the lack of references may be frustrating or leave some wondering if the claims are purely opinion-based. Other resources on the topic of canine health that include extensive scientific referencing, including UFAW's own breed health webpages, are signposted in Chapter 10 which may go some way to help those in need of further evidence of the issues raised.

The most extensive of the health sections is unsurprisingly an impassioned chapter on the current 'poster child' of inherited diseases in the canine (and feline) world: brachycephalic (flat-faced) breeds, such as the Pug, Bulldog and Persian (Chapter 3). With these dog breeds reaching top 10 most registered tables on both sides of the pond (the French Bulldog now being the most registered breed in the UK), coverage of this topic is timely and sadly needed. Emma uses analogies well throughout the book to illustrate often complex aberrations in anatomy and physiology to the lay owner. For example, comparing the skull of a brachycephalic breed to a 20 m² apartment that contains the furniture moved from a 200 m² apartment — cramped and restricted, just as air space is in flat-faced breeds. The use of photographs to compare normal and abnormal anatomical features is particularly useful in this chapter, for example narrowed versus opened nares which are all too common in flat-faced breeds, but may go unnoticed as a normal part of the breed's anatomy. Some photographs are not for the faint-hearted; ruptured corneal ulcers are likely to make many of us wince, but with ophthalmic disorders so common in brachycephalic breeds I don't believe their use is sensationalist and may become reality for owners who do not heed these graphic warnings. Emma pulls no punches in pleading with owners not to buy flat-faced dogs or cats, appealing to both their own personal interests and general ethics: "by making the decision to not buy or own these animals you will immediately improve your chances of getting a healthy pet and also vastly improve animal welfare in general."

Some of the views expressed in this book may be seen as extreme or unnecessary by some dog lovers, for example the criticism of dog showing as an activity (independent of the breed health consequences), may alienate those members of the public who have enjoyed visiting dog shows such as Crufts, or those who have taken part in showing a well-socialised dog which enjoys the company of their owner, handler and other dogs and, thus, is not perceived to suffer when engaging in this activity. In addition, the lack of data to support some opinions may leave the author open to criticism. Although raising concern over the welfare consequences of behavioural restriction imposed by certain conformations (eg unnatural ear or tail shape) is a logical argument, regretfully there is little empirical evidence of the impact of these features on animal behaviour (and thus

welfare). Some readers may consider these criticisms excessive, particularly when there are an abundance of issues to focus on that are well-documented in the peer-reviewed literature and are common and/or severe. Focusing exclusively on well-documented health problems in future editions may both streamline this book for a naïve reader (who may feel overwhelmed by the breadth of material) and give it increased authority as a text in this area.

The conversational style of the book is likely to engage many potential pet owners, providing interesting anecdotes from an experienced veterinary professional blended with personal insights from Emma's own experiences of pet ownership. Chapters 12 and 13 provide useful practical advice, including the Five Welfare Needs, essentials to look out for when visiting breeders and what to ask. The inclusion of behavioural needs, including socialisation and habituation, is a valuable inclusion and an area often skimmed over when discussing puppy buying in the context of breed health. The fact that Emma is willing to put her head above the parapet and share her (often strong) opinions on the topics discussed is likely to be refreshing for many owners — despite the recognised need for (all-too-rare) pre-purchase consultations, few vets are likely to be willing to pinpoint specific breeds to either advocate or avoid in the way Emma does; a 'to avoid' list based on Emma's opinion is included in Chapter 12 (dogs) and 13 (cats).

The flipside to the opinionated, sometimes provocative style of this book is that it is likely to be inflammatory to current or previous owners of the breeds discussed, and

particularly dog breeders — although the latter are unlikely to be the target audience. Even owners of more moderate, healthy breeds may take offence to statements that paint the majority of pedigree dogs in a poor light. This will come as no surprise to the author who has faced backlash from the pedigree community for many years, and indeed in this book states “we [vets] need to start being more direct with both owners and breeders.” This is not to say that Emma's opinions should be watered down — a diversity of views based on varying experiences are needed in this area — only to comment that the readership of this book is likely to be limited to first time dog or cat owners without historical emotional attachments to particular breeds. Had the author adopted a less-opinionated style, the book may have read more authoritatively; but this is a deliberate choice: Emma is unashamed about writing from the subjective perspective of someone who is on the side of moving away from pedigrees towards a more naturalistic, moderate and outbred dog population. These criticisms should not obscure the value of this readable and engaging practical guide, which is thought-provoking and, if effective, could be a force for good in changing the minds of puppy and kitten buyers-to-be. In Emma's words: “think about the impact that choice could have on your bank account, your emotions and most importantly, the breed of animal you will be perpetuating demand for that continue to be plagued by breed-related disease and early death.”

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