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Domestic Animal Behavior for Veterinarians and Animal Scientists. By KATHERINE A. HOUP & THOMAS R. WOLSKI. Ames: Iowa State University Press (1982). Pp. xii + 356. Price £30.50.

Those who have experience of veterinary practice know much more about animal behaviour than most of those who have just completed a veterinary course. Authoritative courses on behaviour are taught in few veterinary schools despite the facts that behavioural symptoms are used extensively in disease diagnosis; that a knowledge of behaviour is essential when examining and treating animals; and that members of the public often seek veterinary advice concerning the treatment of behavioural abnormalities. Houpt & Wolski join the growing band of us who advocate that those who study and practise veterinary medicine need to understand the principles of animal behaviour and the practical application of those principles. The book is based on a behaviour course for veterinary students and is also advertised as being appropriate for those concerned with animal production on farms.

The chapters in the book deal with topics such as sexual behaviour, communication, ingestive behaviour, etc. They include varying amounts of general discussion and a summary of information about dogs, cats, horses, pigs, cattle, sheep and goats. This organization is preferable to one in which there is a chapter for each type of animal but when reading the book it is still necessary to plod through the catalogue of animals in each chapter. The veterinary emphasis on the animals which are of most value in veterinary practice is apparent, for there is extensive discussion of dogs and horses but virtually no mention of poultry or other smaller animals. In this book there is practical advice on animal handling and sensible comment on behavioural disorders of pets, which will be of great use to veterinary students. There is also enough good science to put this advice and comment into a reasonable context but the quality of the general discussion of behaviour is rather variable. The practical advice is often very specific; for example it is pointed out that cows may kick at a painful area so injections into the shoulder should be given from the other side of the animal, a procedure which 'generally requires a small cow or long arms'. Veterinary practitioners are encouraged to advise people not to let their children play with large irritable dogs and not to breed from an irritable dog 'since its offspring would approximate the parents' temperaments'.

The accounts of hormones and reproductive behaviour, problems with sexual behaviour, and maternal behaviour, are generally good, both scientifically and practically. There are also useful accounts of behavioural changes during development in Chapter 6 and two appendices. The chapters on the control of food intake and on biological rhythms and sleep are more academic than the others, although the latter starts with the statement that humans respond to alarm clocks, etc., but animal rhythms are a consequence of responses to internal signals. The discussions of learning and social behaviour are rather out of date in their approach. After starting with the statement that 'Learning can be classi-

fied into two main types: classical conditioning and operant conditioning' Houpt and Wolski describe the conventional psychological laboratory approach to learning. They do not explain the role of learning in the everyday life of animals and have difficulty in making the big jump from laboratory experiments to veterinary problems. Social structure is discussed solely in relation to aggression. The dominance order determined by the results of physical attack is described but, apart from an unexplained comment that leadership in pigs is not correlated with dominance, other aspects of social structure are not considered.

Two topics which are covered in a detailed way in this book are behavioural disorders of pets and why people own pets. Behavioural disorders, especially in dogs and horses, are discussed at length in Chapter 10 as well as being mentioned in other chapters such as that on communication. This information is not readily available elsewhere and will be of much use to veterinary practitioners. The relationships between owners and their pets are surveyed well in Chapter 8 although the title 'Human-animal relationships' implies that farm animals and even wild animals might be included. For those principally interested in farm animal production the book has some useful sections, particularly those on the physiological control of food intake, reproduction and maternal behaviour, but it does not include enough information on behavioural disorders or on topics which are not a veterinary problem, such as feeding behaviour and many aspects of social behaviour. Some useful points about farm animal welfare are made in a chapter on 'Cruelty' but each subject is mentioned very briefly and hence merely draws attention to the problem. The absence of information on poultry is an especial disadvantage of the book for those taking animal science courses. A general point about format is that reference lists are given at the end of each chapter rather than at the end of the book. This makes references more difficult to find and severely reduces the value of the work as a reference source. In summary, the book will be useful to those taking veterinary courses, although they should use a more general behaviour text as well, but of less use to those studying agriculture. Its price will deter most individual students from purchasing it but it has enough unique, well explained information to be an essential purchase for veterinary and agricultural libraries.

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