

Broom, D.M. and Fraser, A.F. 2015. *Domestic Animal Behaviour and Welfare*, 5th edn, pp. 472. Wallingford: CABI.

Pre-publication copy of Preface to 5th edition of book.

Preface

All of those who have an interest in livestock production or companion animal management and breeding, including every farmer, pet-owner and veterinary surgeon, need to know about domestic animal behaviour in order that they can carry out their jobs and care for their animals properly. All of these people and all consumers of farm animal products have to consider their moral stance in relation to domestic animal welfare and require precise information about that welfare in order to do so. This book is a comprehensive guide to the behaviour and welfare of domestic animals. It provides practical information for those involved with farming, pet animals and veterinary work and reviews scientific information about the assessment of animal welfare, and the evaluation of the effects on animals of genetic selection and of different management methods and housing conditions. Such assessment necessarily involves measurement of physiology, disease state and production as well as behaviour.

Ethology developed rapidly after 1950 and became fully established as a part of academic courses on biological subjects by 1980-1990. Ethology is the observation and detailed description of behaviour with the objective of finding out how biological mechanisms function. Some years after its expansion in zoological teaching, animal behaviour has become part of veterinary and animal science or agriculture courses. Indeed, it is an essential part of professional knowledge for all who use and care for animals and is a subject of widespread interest to the general public. There have been exciting developments in our knowledge of the behaviour of domestic animals and these are incorporated in this new edition.

Animal welfare science arose as a scientific discipline after 1980 and the major increase in its academic study is still occurring. The welfare of an individual is its state as regards its attempts to cope with its environment. This includes the state of mechanisms in its brain and other parts of the body including feelings and systems for dealing with disease. Coping with the environment involves a wide range of interacting biological systems and so the subject is a fundamental biological science. Its development has been rapid. There have long been researchers working on animal health, which is a key part of animal welfare. Other than these, there were only 20-30 animal welfare scientists before 1990 but there are now several thousand. In recent years, the E.U. Welfare Quality and Animal Welfare Indicators (AWIN) projects have provided much valuable information about welfare outcome assessment in practical situations. The use of animal-based welfare outcome indicators by welfare inspectors, veterinarians and farmers has developed, facilitated by the European Food Safety Authority reports and guidelines. This dynamic area of increasing knowledge has changed what we know about the many animal welfare topics discussed in this book.

The evaluation of behaviour and welfare are also important in human biology and medicine. The detailed scientific study of behaviour was developed for non-

humans before it was applied to humans. It provides information that cannot be accurately obtained by asking people questions. The methodology developed in animal welfare science is also being applied to human psychiatry and medicine. The rapidly developing field of anthrozoology, which concerns interactions between humans and other species, has depended greatly on studies involving the behaviour and physiology of pets and their owners.

A further area of rapid development in science has been the study of brain function. Since the brain has a controlling effect on all behaviour and all methods of coping with the environment of an individual are centred in the brain, neuroscience, including studies of cognitive functioning, is of central importance to the subject of this book. Studies of how clever animals are and of the representations of events that they have in their brains, alter the way in which people think of the animal species. These studies are directly relevant to understanding animal needs and hence welfare. Some of the burgeoning literature on animal cognition is discussed in this new edition.

This book extends the coverage of the fourth edition in that much new information is provided and chapters have been added on welfare during stunning and slaughter, the welfare of sheep and goats and the welfare of additional pet species. Hence all major farmed animals and companion animals are considered. Both authors have planned this up-dated edition and provided new illustrations while the text revision has been carried out by Donald Broom. After introducing the concepts of behaviour and welfare, behaviour description, learning, cognition, motivation, evolution and welfare assessment are considered. There follow sections on the various aspects of individual, social and reproductive behaviour. Welfare during transport and slaughter, welfare and disease, and the various kinds of abnormal behaviour are then described. In the final eleven chapters, the welfare of different species is discussed. In addition to the reference list in the book, further useful reading information is available on-line. The book is illustrated with many photographs and, since an understanding of the meaning of concepts is so important in this subject area, it includes an extensive glossary.

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