

'insert the thumb forcibly through the lamb's anal ring' to stimulate it to breathe. As regards the risk of zoonoses, particularly where abortion is concerned, the (probably minor) risk of toxoplasmosis spreading from an infected sheep to pregnant women is highlighted, but there is no mention of the much more real danger to them of enzootic (chlamydial) abortion. The author also strongly warns against feeding barley to sheep, yet this cereal is widely and successfully fed today.

Many of the photographs of lambing and associated problems are good and those showing malpresentations are helpful, but I cannot go along with the advice to leave ewes trying to lamb for four hours before intervention. Although premature interference must be guarded against, surely the sooner an abnormality such as breech presentation is detected the better.

In his preface the author states that he hopes that the book will be suitable for flockmasters, agricultural and veterinary students and veterinary surgeons in practice. At one time there was a lack of sheep books for all these readers, as indicated in the now very dated forward to the first edition. I suggest that there are now much more accurate and up-to-date ones than this.

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The New Anthropomorphism

John S Kennedy (1992). Cambridge University Press: Cambridge. 194pp. Obtainable from the publishers, CUP, Customer Services Department, The Edinburgh Building, Shaftesbury Road, Cambridge CB2 2RU, UK (ISBN 0 521 41064 9 hardback, 0 521 42267 1 paperback) Price £27.95 hardback, £10.95 paperback.

This is an important book, which many readers of this journal will find challenging, perhaps even irritating. My own views are not dissimilar to the line that Kennedy takes on many issues so perhaps even this review should carry a health warning!

Professor Kennedy is a distinguished scientist much of whose work has been on motivational systems in insects. This has led him to a firm belief in Occam's razor (ie when alternative hypotheses exist, the one requiring the fewest assumptions should be preferred) and thus a distaste for overcomplicated (and untestable) explanations. The thesis of this book is that current studies of behaviour are riddled with such explanations. Although we may think our science is now more objective than it was in the days when appeal was made to vital forces to explain the actions of animals, there is a new and more insidious form of anthropomorphism creeping in to many areas of behavioural research.

Kennedy argues that we are biased towards anthropomorphism, and it is perhaps even inevitable in our explanations of animal behaviour because it is such a good way of predicting what animals will do. Natural selection and learning are both adaptive processes, so that an intelligent human and an automaton may behave in superficially

very similar ways but for very different reasons. We tend to think, speak and write of animals as if they were like us, simply because they tend to behave as if they were.

But are they? Kennedy examines a whole range of issues where animal behaviour has been interpreted, consciously or unconsciously, in human terms: from self-awareness to language, from consciousness to suffering. Sometimes, as in a good deal of sociobiological wording, the problem is no more than a snappy turn of phrase which might be taken to imply more than the data suggest as far as the animal's capabilities are concerned. However, in many cases Kennedy shows that anthropomorphic attitudes have hampered research and led to false conclusions. The most difficult cases are those that involve notions which are intrinsically subjective. Do animals have intentions and purposes? Are they conscious? Do they suffer? Kennedy is right in my view to be highly sceptical about the progress of research in this area and to stress the dangers of assuming that animals are like us. Much that he criticizes here is certainly bad science, and he is quite right in stressing that we will only progress scientifically if we can achieve the very difficult task of stripping ourselves of a good deal of anthropomorphic baggage.

To me this approach to scientific research is wise and sensible: indeed, research on humans might benefit a good deal if equivalent assumptions were stripped away. I have a hunch we too are much less complex than we give ourselves credit for. I am less happy, when Kennedy discusses animal suffering. He quotes C W Hume: 'If I assume that animals have feelings of pain, fear, hunger, and the like, and if I am mistaken in doing so, then no harm will have been done; but if I assume the contrary, when in fact animals do have such feelings, then I open the way to unlimited cruelties', but is unhappy with this conclusion because of the damage to science that false assumptions may make. I think here he approaches the problem too much as a scientist: the assumptions one brings to bear in designing experiments are not necessarily the same as those one should adopt in deciding how to treat animals. While I go along with Kennedy in much of his criticism of scientific research in this field, when I am deciding how to behave towards the animals in my care, my preference is with Hume.

Anyone interested in animal welfare should read this book. As I said at the outset, it may well irritate them, but its arguments must be taken seriously. It certainly brings up the problems of studying welfare from an objective scientific viewpoint. But then I doubt if many who work in this field think they have chosen a sinecure!

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