

a great many articles on this subject and has supported and discarded several explanations. He now supports the view that the "Monster" is substantially an artefact, produced by eruptions of débris and marsh gas from the bed of the Loch. His book is the best-constructed of the four available and valuable in driving one theory to its logical conclusion but, on the one hand, it is too partial in its advocacy, and on the other, even Dr. Burton is forced to admit that there is a hard core of evidence which may point to an unknown and zoological explanation. It is disturbing to read his caption to the well-known "Surgeon's Photograph" of 1934: "Although so animal-like it could as well have been a large tree-root brought to the surface by convection currents . . .", and then to turn up his article in the *Illustrated London News* of 20th February, 1960, where, after a prolonged consideration of this same photograph, he concludes "if this photograph is genuine, as I am now convinced beyond all doubt that it is, then there is no argument about the reality of the Loch Ness Monster, nor any doubt of its being a large animate body".

D. W. T.

ANIMALS AS SOCIAL BEINGS. By ADOLF PORTMANN. Hutchinson. 30s.

It is important that today, as man spreads his powerful influence over more and more of the globe's surface, we should understand the social needs of other forms of animal life. For, without society, the higher forms of life will perish. Isolated or disrupted groups of animals are soon eliminated and we must learn the rules of their social organization before it is too late. Space, food and health are not enough. For an animal to survive it must have the proper social—as well as physical—environment and a book that tells us more about "animals as social beings" is obviously of great importance. Unfortunately, Professor Portmann's new volume is not such a book. It tells us a great deal about the social behaviour of animals, but it does not tell us *more* than we knew already from the writings of the comparative ethologists over the past twenty years.

It could be argued that, even though the book is only a review of other people's work, it is nevertheless valuable as a popular summary—but unfortunately a much better summary already exists (*Social Behaviour in Animals*; Methuen, 1953), written by one of the greatest ethologists, Niko Tinbergen, and available at less than half the price of the new volume.

Although Tinbergen's book was published eight years ago, it is as up-to-date as the new volume, there being no reference by Portmann to any work published after 1953.

The great difference between Tinbergen's writing and Portmann's is that the former is setting out in a thoroughly objective way the results that he himself and his colleagues have obtained. He adds no embellishments. Portmann, on the other hand, has a habit of adding his own subjective comments to his descriptions of the ethologists' experiments, especially where human behaviour is concerned. For example:

"But what is *our* natural state of society? There is no such thing. In all stages of man's social life there is a world alien from, and opposed to,

nature." Social anthropologists would, I feel, be somewhat taken aback by such a statement. Later he writes: "By our very nature we are called ever and again to create and preserve new social forms. The drive to find these corresponds to the animals' drive towards hereditary forms; but the finding of them is our freedom and our constant duty."

These two quotations hardly bear analysis, but it is worth noting how shamefully old mother "nature" is used in the two cases.

But if we are to criticize Portmann, it must be said in his defence, that the ethologists themselves have not produced new popular books about their work in recent years and must not therefore complain too loudly if their studies are served up by others from outside the field. The greatest service that the publication of Portmann's book can do for us is to stimulate the leading ethologists to write new popular books on animal behaviour.

Having commented thus, it should be added finally that Portmann's volume is extremely well produced and beautifully illustrated. If they ignore the subjective comments, new-comers to ethology can learn much from it.

D. M.

TIGER TRAILS IN ASSAM. By PATRICK HANLEY. Robert Hale, Ltd. 18s.

The author spent thirty years of a wandering life in India—fifteen of them in Assam—on a tea-garden bordering the Naga Hills. Here it was his practice, on leave-days, to wander alone in the jungle following up any tracks he came across, or sometimes, on moonlight nights, to sit in a tree or machan. In this way he claims to have met many animals at close quarters and witnessed some amazing incidents, including "tigers killing their prey on at least 120 separate occasions" (p. 43), and pythons killing on forty more (p. 143). When one reads, on p. 122, "many kinds of deer" in Kenya, or on p. 49 of a "herd of 20 barking deer" one wonders how he could have spent so much time in the jungle without learning more about the habits of animals, or even their names. What, for instance, can his "grouse" (p. 22) have been and was his "lynx" (pp. 49, 144) perhaps the *chaus*, which has slightly tufted ears? Still more puzzling is the "tiny creature, scarcely 2 feet tall, which we called mouse-deer" (p. 83). Barking- and hog-deer are both about this height: mouse-deer are only 1 foot high and neither the central-Indian (spotted) kind nor either of the Malayan ones are known within 800 miles of Assam. His most glaring error is on page 22, "hullock monkeys, called langur in other parts of India." Is it possible for anyone familiar, as he was, with the langur further west, to live where he must have heard hoolocks calling every morning for fifteen years and to take so little note of the creatures around him as to confuse a long-tailed monkey with a tail-less ape—the white-browed gibbon? On p. 128 he again turns the hoolocks into monkeys, this time American ones, "great capuchin monkeys which the natives call hullocks."

When he says (p. 111) "that nothing except a man-eater or rogue-elephant will attack man unprovoked", and (p. 42) "wild beasts, suddenly