

the second educational conference of the Association of University Professors and Lecturers of the Allied Countries in Great Britain. Likewise, the dozen pages dealing with the Soviet Union should at least have been supported by reference to Mr. A. G. Korol's book.

Mr. Kerr's painstaking current observations scarcely lift the book above the level of competent journalism, and in this it contrasts sharply with Dr. Davie's scholarly but slightly astringent study of Scotland and her universities in the nineteenth century. There is no popular appeal in this book and its title is slightly misleading. Nevertheless, its exposition of a phase of Scottish history illustrates the nature of some of the interactions between universities and the society in which they function, and points to dangers which arise when academic independence is either infringed or abused. It is a book for the student rather than for the general reader, though it has obvious messages for the present-day debate—if they are not perhaps altogether those which Mr. J. Grimond had in mind when he commended the book recently to Mr. H. Brooke in the House of Commons.

R. BRIGHTMAN

SOCIAL BEHAVIOUR AMONG ANIMALS

Animals as Social Beings

By Prof. Adolf Portmann. Translated from the German by Oliver Coburn. Pp. 247+32 plates. (London: Hutchinson and Co. (Publishers), Ltd., 1961.) 30s. net.

THIS book is a translation of Prof. Portmann's *Das Tier als soziales Wesen* and is concerned to present the "basic phenomena of social life" in animals, and the implications for the life of the individual and the group, including, in some cases, human groups. It draws largely on the work over the past twenty-five years of those students of animal behaviour known as ethologists. The book apparently developed from some lectures delivered to a non-scientific audience with the purpose of describing some of the advances in animal behaviour study. It does not claim to be either comprehensive or authoritative (the author's own research has not been in this field), and it is a popularization in the best sense: it selects many interesting facts to illustrate chosen themes, often quoting extensively from the original papers of the workers concerned, rendering them in a very readable context.

But one's reservations come more to the fore when seeing how these facts are related together in his treatment of the whole field. Prof. Portmann has read widely in the literature of the subject, but he has a point of view probably untypical of most of the ethologists whose work he quotes, which colours much of the later parts of the book. For example, he dislikes the conventional view of natural selection as the major agent of evolution. It is of course true that social behaviour raises special evolutionary problems, as Darwin was well aware, but Prof. Portmann gives it a marginal role and seems too ready to resort to other, as usual unspecified, agencies; he writes, for example, of "primordial darkness, which can yet be imagined as fraught with creative existence".

Quite apart from this criticism of the general approach, the reader should be warned that the

ethological theories of instinct, etc., outlined in parts of the book are in a stage of vigorous metamorphosis, from which they will probably emerge with a very different look.

Finally, Prof. Portmann has been ill-served by his translator. The original must have been extremely difficult to deal with, and perhaps for this reason the English version misses out a certain amount, but there are too many absurdities, for example, the dying act of the male sea-horse (instead of the final act of its courtship), a hierarchy of nerves (instead of a nervous hierarchy), while bees are said to have hindquarters and birds to brush their feathers.

J. M. CULLEN

PROGRESS IN PHYSIOLOGY

Annual Review of Physiology

Vol. 24. Edited by Victor E. Hall, in association with Frederick A. Fuhrman and Arthur C. Giese. Pp. v+604. (Palo Alto, Calif.: Annual Reviews, Inc., 1962. Published in co-operation with the American Physiological Society.) 7 dollars.

THE *Annual Review of Physiology* has selected its contributors because they can write good reviews." The editors of this volume begin their preface on this confident note. They have good reason to be pleased with their choice of Prof. Wallace O. Fenn to write the introductory chapter. Under the heading "Born Fifty Years Too Soon" he compares research conditions in physiology as they were a few decades ago and as they are to-day. Physiologists and other biologists will enjoy reading and re-reading Prof. Fenn's lively reminiscences and penetrating comments, based on his long experience of research in the United States.

The editors have restricted the number of topics reviewed in this volume to 16, and this has meant that reviewers have been free to write readable, critical assessments of their subjects, rather than being virtually confined to the recording of card indexes of references. Thus, the longest article, on kidney, water and electrolytes (G. Giebisch), extends to 64 pages. As usual, there are chapters on heart, respiration, digestion, reproduction and peripheral circulation. This year's volume also covers growth and differentiation, temperature, cutaneous sensibility, the adenohypophysis and adrenal cortex, and blood volume regulation. There are chapters on somatic functions of the nervous system, excitation and synaptic transmission, and on the physiological bases of memory. The final two chapters will interest not only physiologists but also biologists in general. They deal with the comparative endocrinology of the invertebrates (W. G. Van der Kloot), and with the effects of latitude on physiological properties of animal populations (F. J. Vernberg). These two chapters are full of interesting observations and experiments. To select just one example, it has been shown that the queen bee secretes an unsaturated 10-carbon acid, 9-oxo-2-decenoic acid, which acts as a 'social' hormone towards the worker bees, preventing them from building new queen cells. When this acid is no longer released in the hive, the ovaries of the workers begin to develop, and these bees then start to build cells for new queens.

The general high quality of the articles in this volume justifies the editors' claim that they select people who can write good reviews.

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