

HEALTH AND PRODUCTIVITY OF THE GRAZING ANIMAL

Animal Health, Production and Pasture

By Alastair N. Worden, Dr. Kenneth C. Sellers and Dr. Derek E. Tribe. With the collaboration of Donald W. Jolly. Pp. xii+786. (London: Longmans, Green and Co., Ltd., 1963.) 60s. net.

THIS book owes its origin to a suggestion once made by Sir James Scott Watson, who expressed the need to sum up the factors which influence the health and productivity of the grazing animal. This the editors have achieved: perhaps the only criticism is the lack of adequate treatment of the horse, for only its parasitic infestation with worms is considered. There are in all twenty-nine chapters, the authors being mainly from Great Britain, but the Commonwealth is well represented. Each expert brings his own peculiar knowledge to bear on the problem—knowledge which has mainly been accumulated since the War. The book is intended as a work of reference to farmers, students and veterinarians and as a stimulus to agricultural and veterinary research workers and the advisory services. It is excellently produced and well indexed. Each chapter has its own bibliography.

It is freely recognized that our knowledge of the problems of producing grass and of managing pastures outstrips our knowledge of the problems of animal production and of satisfactorily conserving grass. The deficiencies and uncertainties are discussed.

In the introduction, which occupies the first twenty-nine pages, the editors describe the disorders of the foot of grazing animals, facial eczema, silica, selenium, industrial contaminants and the ecology of these animals. Then follow the chapters on grassland management, pasture chemistry, the nutritional value of herbage, forage crops and of their conserved products; the nutritional physiology of the ruminant; the measurement of pasture output; grazing behaviour; the animals which use grass; disorders of cattle related to grass including parasitic diseases; mineral requirements and metabolism; plant toxicology and photosensitivity; and finally herbicides. Each author has taken his subject from first principles to an advanced stage and in a straightforward synthesizing account.

This valuable book by so many distinguished contributors will do much to rectify the lack so far of an effective and concerted effort to evaluate the contribution of our pastures, especially as feed for our ruminants. But it is still salutary to remember that no really adequate methods of pasture evaluation are yet available.

D. P. CUTHBERTSON

WILDFOWL IN BRITAIN

Wildfowl in Great Britain

A Survey of the Winter Distribution of the Anatidae and their Conservation in England, Scotland and Wales. Prepared by the Wildfowl Trust. Edited by G. L. Atkinson-Willes. (Monographs of the Nature Conservancy, No. 3.) Pp. xiv+368+42 plates. (London: H.M. Stationery Office, 1963.) 45s. net.

THIS officially published volume gives the results of an investigation promoted by the Nature Conservancy through the agency of the Wildfowl Trust. The aim was to estimate the numbers of the various species of ducks, geese and swans inhabiting or visiting Great Britain, with regional and seasonal breakdown of the numbers and regard to fluctuations from year to year; the figures will also provide an indispensable base-line for later study of long-term trends. The project involved securing the constant co-operation of many observers, and working out reliable methods for making the counts. The considerable

feat of organization was performed for the Trust mainly by Mr. Atkinson-Willes, who also edited the report.

An introduction on aims and methods is followed by a survey, region by region, of wildfowl habitat and distribution throughout the country. The third section gives the present status of wildfowl, species by species, in Great Britain as a whole. Two short sections then discuss the influence of man and the establishment of refuges. There is also a selected bibliography.

The reliability of the estimates naturally varies from species to species, and suitable qualifying words are used in each case. There is enough evidence, however, to convince the reader that the figures do approximately represent the orders of magnitude of the respective populations. A few examples may be quoted: the population of the mute swan is about 18,000; 45–60,000 pink-footed geese arrive in autumn; the number of mallard is guessed as 500,000 at its winter peak; of the tufted duck there are probably not more than 1,000 breeding pairs, but there may be 30,000 birds in mid-winter; and there are, perhaps, 25–35,000 eiders, mainly resident, in Scotland and a further 4,000 in England and Wales.

The monograph is well produced, with numerous maps, diagrams, and relevant photographs. It is also pleasantly decorated with drawings by Mr. Peter Scott, honorary director of the Wildfowl Trust; and his previously published colour plates of all the species are also included. This enterprise in 'quantitative ornithology' was well worth undertaking, and its outcome deserved such handsome presentation. LANDSBOROUGH THOMSON

WILD ANIMALS IN CAPTIVITY

The International Zoo Year Book

Vol. 4, 1962. Edited by Caroline Jarvis and Desmond Morris. Pp. viii+345+48 plates. (Published for the Zoological Society of London by Hutchinson of London, 1963.) 84s.

MENAGERIES, bear pits, aviaries and aquaria were for centuries the prerogative of the sporting and the curious among royalty and landed magnates. But it was not until the end of the eighteenth century that naturalists and anatomists, notably those of France, began to make scientific use of such collections. The Jardin des Plantes in Paris dates from this period and the Zoological Societies of London, Ireland and Antwerp from the early years of the nineteenth century. These marked the real commencement of the modern zoo, which usually has a three-fold object—the advancement of science and the education and recreation of the public. In the present century, zoos have multiplied enormously and there are now more than 400 of them in the world, ranging from tiny specialized collections, some of them little more than amusement parks, to great institutions counting their annual attendances in millions.

The publication by the Zoological Society of London in 1959 of its first *International Zoo Year Book* reflects great credit on the officers of the Society at that time. The enterprise has been rewarded by the success it deserved, and now we have Volume 4 for 1962, extending to 350 pages with more than 50 photographic and other illustrations. A glance at this splendid production shows at once the great scientific importance that zoos, in the widest sense of the term, have now assumed in the modern world. Apart from the standard reference section, which lists the zoos and aquaria of the world, their personnel and the species of the main vertebrate groups bred therein during the year under review, there are special sections—all of them of great importance. One can do little more than list them.

Section 1 has articles by 15 or more authors on "aquatic exhibits", and the latter part of the book contains ten