

woodland and scrub, grasslands, and dwarf shrub heaths (heather moor). A final section discusses the history and pattern of Scottish vegetation. The illustrations are mainly utilitarian, which is not to say that they are unattractive.

R. S. R. FITTER

**Waterfowl To-morrow**, edited by **J. P. Linduska**. US Department of the Interior, Fish and Wildlife Service, \$4.00.

Over a hundred conservationists and research workers have contributed chapters on all aspects of the subject to this immensely informative and well-illustrated book about the changing status of North American wildfowl. The main nesting areas in Canada and the United States are described, and their relative value to individual species assessed; the four migration "flyways" are discussed in biological terms and as administrative units, and the picture is completed by an examination of the wintering grounds in the southern States and Mexico. Natural factors controlling populations are considered, such as past glaciation, present climate, botanical succession, predators, parasites, and disease. As might be expected the largest section deals with the influence of man himself—sometimes beneficial, as when he provides reservoirs for resting birds, or crops and harvest waste as food, but all too often disastrous, with breeding grounds drained for agriculture and poisoned by pesticides; ponds and rivers polluted, and feeding places sprayed with spent lead shot, which is eaten in bulk by ducks and usually lethal.

Chapters on the historical and modern management of federal, state, and private refuges deserve a wide readership among conservationists concerned with similar problems in Europe and elsewhere. Perhaps the most interesting part of the book deals with the possibilities for manipulating wildfowl stocks. In particular, the concept of farming certain areas for waterfowl and thereby maintaining a large field-feeding population, while keeping crop-damage in neighbouring agricultural land to a minimum, has progressed a long way in the USA. This, with temporary but lavish flooding, burning, or waterweed control, can result in wildfowl concentrations that we in Europe can hardly imagine. Throughout, the book assumes the hunter's right to take a legitimate harvest of these concentrations; in many ways he indirectly helps to finance both research into what *is* a legitimate harvest, and the setting up of refuges that protect his future sport.

Bird-watching is, perhaps surprisingly, increasingly popular. At one refuge in Wisconsin where 44,500 goose-hunting trips were made, 75,800 people came just to watch the geese, and it is interesting to speculate whether these bird-watchers will contribute the equivalent in monetary terms of the hunters they are replacing. One reason why we and the rest of the world are far behind North America in the depth and detail of our knowledge, and the achievement of our conservation projects is our general disinclination to make sacrifices for the wildlife we so obviously enjoy.

PETER SCOTT

**Seals of the World**, by **Judith E. King**. British Museum (Natural History), 11s.

A great deal of valuable information on the distribution, structure, and biology of sea-lions, fur-seals, and true seals is brought together in this excellent well-written book, illustrated with many distribution maps, line drawings, and photographs.

The major part consists of a species by species account, but the author does not entirely succeed in her attempt to give each one the same treatment; for instance, she shows how to identify some species but not others. In

general, the information is presented clearly but with a tendency to oversimplify or inadequately explain complex biological phenomena. This is particularly true of speciation and the geographical variation in seals; she is apparently surprised that, although there is mixing in the populations of the Pribilof fur seal, there are no specific or subsequent differences between them; surely it would be surprising to find such differences in this situation. Again the differences in the time of breeding of the California sea lion on the Galapagos Islands and in California is dismissed as being due to the fact that these areas are in different hemispheres; in fact the Galapagos are on the equator and there is clearly some other factor responsible for the difference of six months in the breeding season of these two groups. Among grey seals it is not true that the bulls take up the inland breeding territories first and that these offer the best sites. In fact the shore is occupied first and offers the best site for mating.

But most of these criticisms are minor and I recommend the book, which is extremely cheap for the amount of information it contains, as a "best buy".

J. C. COULSON

**The Seal Summer, by Nina Warner Hooke. Barker, 21s.**

The relentless mass slaughter of seals by man has gone on for generations, and we have no reason to expect a seal to show anything but antipathy towards human beings. Today most seals show a preference for wild, remote and isolated places. It is therefore remarkable in the extreme that during the summer of 1961 a wild grey seal should have frequented a Dorset beach and deliberately cultivated the company of holiday makers.

Nina Warner Hooke who lives near the beach in question, has collected as much information as possible about this extraordinary seal and presented it in a very readable form. She vividly and entertainingly describes its forthcoming behaviour in swimming with bathers, wrapping its flippers round their limbs and even trying to tug off their swimming suits! On the beach it associated itself with picnic parties and allowed itself to be fondled and caressed by people of all ages. Indeed, it was so like a confiding domestic pet that it has clearly been difficult, on occasion, to resist a subjective interpretation of its behaviour. The contrast between this almost embarrassingly friendly wild seal and my now cool, word-responsive tame seal Atlanta is strikingly presented. Photographs which show the seal intimately associating with its human companions convincingly support and confirm the record in the text. Attention is focused upon an individual animal in a way which will arouse the wide public interest which is an important factor in seal conservation.

H. G. HURRELL

**Shadows in the Sea, by Harold W. McCormick, Tom Allen and Captain William Young. Sidgwick & Jackson, 35s.**

The authors of this interesting book have collected an enormous amount of information, much of it new, which is refreshing because a great deal of nonsense has been written about sharks in the past. It is evidently based on the immense knowledge of the late Captain Young, a shark-hunter for over sixty years, and a man of immense experience in this field; Chapter 3 gives an account of his life.

The first part deals with well authenticated accounts of shark attacks in many parts of the world, and then proceeds to the means of combating sharks—a manual of anti-shark warfare—and to methods of shark fishing.