

developments and produced a book of real value to all British naturalists. The chapter headings are the same as in the original edition, but one is at once impressed with the great advances in our knowledge of the fauna, flora and ecology of the area; there are new distribution maps on the pine marten, the wintering grounds of Greenland, white-fronted and barnacle geese, the distribution of red-breasted merganser and goosander, and *Dryas* heaths, and a revised map of the breeding stations of the grey seal. There is only one reference to Shetland, and readers hoping to find natural history information on Orkney and Shetland will be disappointed. A more suitable title would have been "The Highlands and Western Isles".

Evidence of increased book production costs is shown by the fact that the 1947 edition (price 16s.) contained forty-five plates in colour compared with only six in the new edition. There is, however, a better selection of black and white photographs.

GEORGE WATERSTON

**Flora Europaea. Volume I, Lycopodiaceae to Platanaceae**, Edited by T. G. Tutin and others. Cambridge University Press, 84s.

**The Vegetation of Scotland**, Edited by J. H. Burnett. Oliver & Boyd, 6 gns.

In their separate ways both these monumental works will remain standard reference books for many years. Though purely botanical, they are of the utmost interest to conservationists, first because identification of plants and knowledge of their distribution is the basis of all conservation, and secondly because vegetation is in fact what we are seeking to conserve. Keep the vegetation stable and you will not have much trouble with its associated animals.

The long awaited first volume of *Flora Europaea*, the first flora of the continent of Europe ever written, has been in preparation for ten years. Edited by six British botanists, copiously aided by specialists in every country of Europe, it is triumphantly successful in providing a compendious account of the flowering plants and vascular cryptogams of the Continent. There are no illustrations, but a key is provided to each family and genus, and the accounts of species are admirably succinct and comprehensive. The first volume covers the ferns and their allies, the conifers, the catkin-bearing plants, and five other major families: pinks, buttercups, polygonums, crucifers and saxifrages. The order is somewhat different from what we have been accustomed to in Britain, different even from that in the new Cambridge *Flora of the British Isles*, but in this and in the changing of a number of familiar individual names (including the very first two in the book) we must bow to the superior wisdom of taxonomists; no doubt they will one day stop being wise.

Professor Burnett's book, also the work of an able team, does for Scotland what Tansley's *The British Islands and Their Vegetation* did for Britain as a whole twenty-five years ago. It does not replace that magnificent achievement, but it does incorporate the substantial body of fresh knowledge that has come to hand since; and it makes us cry out for similar volumes to bring us up to date for England, Ireland and Wales. Even those whose interest extends no further than mammals will find important chapters on the grazing effects of sheep, deer, rabbits, hares and voles. The first section of the book deals with the physical background, climate and soil. The actual vegetation is discussed under four zones, maritime, forest, lowland aquatic and montane, each itself subdivided, the forest zone, for instance, into

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