

of certain predatory birds. Much of the book, however, consists of an examination of the fierce controversy which followed *Silent Spring's* publication in 1962 and has raged ever since. We are left in no doubt about the deadly serious nature of the counter-attack by the pesticide champions, and the variety of tactics they have adopted. Vested interests, including not only those with financial motives in industry and agriculture, but also others concerned for political positions and scientific reputations, joined forces in an effort to destroy the Carson camp.

One can readily identify with the writer and his cause, sharing his indignation at the amount and depth of cynical unconcern, covering up, special pleading, downright deceit and shady tricks indulged in by the other side. There are indeed certain highly disturbing aspects, such as the use to which herbicides have been put in Vietnam, and the pressures brought to bear on individuals and institutions in order to make them toe the pesticide line. The 'Mississippi fish kill' is cited as one glaring example of the reckless disregard shown by some chemical manufacturers in disposing of their dangerous creations. The advocacy of a case, however, carries certain risks, and the author will no doubt be accused of bias as was his predecessor. He ends with a review of improvements in the pesticide-wildlife situation, which, while striking a hopeful note for the future, indicates that mankind has still far to go in solving the many problems involved.

D. A. RATCLIFFE

Biological Studies of the English Lakes, by T. T. Macan. Longmans, 80s.

For nearly 40 years scientists at the Windermere laboratories of the Freshwater Biological Association, first at Wray Castle and later at the Ferry House, have studied all aspects of the freshwater biology of the Lake District: physical and chemical factors, bacteria, micro-fungi, algae, animal life both vertebrate and invertebrate (with the notable and surprising exception of Protozoa and rotifers). It was time that the results of their researches should be brought together and summarised, and no one is better qualified to do this than Dr Macan, the Deputy Director of the laboratory.

His book, however, will be mainly of interest to his fellow limnologists, for its main chapters demand for their proper understanding a more than elementary knowledge of chemistry and physics as well as a close acquaintance with freshwater organisms. The text could have had a wider appeal if, when first mentioning names such as *Asterionella* and *Potamopyrgus*, some indication had been given of even the major groups (diatoms and molluscs respectively) to which they belonged.

For the general reader the chapter on fish will probably be the most interesting, especially the results of investigations on the factors that influence the populations of various species such as trout and perch. Equally fascinating is the recent work on the history of lakes and their surroundings, as well as on past climates, revealed by deep mud cores. In particular, research on cores has led to the discarding of old ideas on the evolution of lakes as a slow process of increasing productivity due to the weathering of the rocks in the drainage areas. It is now clear that the productivity of lakes such as Windermere is increasing at a much greater rate than through these purely natural processes, viz., through enrichment by human effluents. Happily, so far, the problems that follow the enrichment of a lake such as are only too familiar in other countries have not seriously affected the Lake District. The best safeguard the area has is the

presence of the laboratory and its team of scientists of international reputation whose work is so ably summarised in this book.

JOHN CLEGG

A Field Guide to the Butterflies of Britain and Europe, by Lionel C. Higgins and Norman D. Riley. Collins, 42s.

Those who are interested in butterflies, as distinct from moths, have long felt the need of a book of this kind. The resident British species, 59 in all, do not provide sufficient scope, and those who study and collect butterflies usually cover the whole of Europe. The scope of this book is wide enough to meet this need, for it includes Europe west of the Iron Curtain, north-west Africa, Madeira, the Canaries and the Azores. Every species, a total of 381, is figured, showing both upper and under sides, and the figures are extremely good. They are life-sized, which is a most important aid to identification, especially for beginners. In addition, flight-times, habitats, range, food-plants, points for identification and local forms are dealt with. With its aid, the butterfly enthusiast should be able to identify any species that he may encounter in the wide area covered by the book. An excellent feature is the distribution maps given for each species. There is a good index, and the book is very well printed and produced. At 42s. it is remarkably good value.

R. SAUNDBY

Brief Reviews

The Mammals of Jasper Park, Alberta, by J. Dewey Soper, Canadian Wildlife Service Report Series No 10, \$2.50, gives a systematic account of the 52 native mammals in this national park, established in 1907; they include black bear (only 'a few pairs' survive the 'ruthless extermination for its fur' before the park was created), marten ('well represented'), fisher, mountain lion (seldom seen), wood caribou, and bighorn sheep. Chapters include history, natural history, naturalists, and there is a selected bibliography and map.

Birds of Isla Grande (Tierra del Fuego), by P. S. Humphrey, D. Bridge, P. W. Reynolds and R. T. Peterson, gives a species by species account of an avifauna about which information 'is scant at best' together with good detailed maps and 21 plates of black and white paintings by J. R. Schroeder designed (and good) for identification, although this is no pocket guide with 400 pages, 11 in × 8½ in. (A pity these could not have been issued loose.) Obtainable from University of Kansas Museum of Natural History, Lawrence, Kansas 66044, \$7.00.

The Avifauna of Northern Latin America, edited by Helmut K. and Jimmie H. Buechner, Smithsonian Institution Press, US \$3.25, is the recently published proceedings of a symposium held in April 1966 with a synthesis of the suggestions made during the discussion. Papers were read on the avifauna of 8 countries: Guatemala, Honduras, British Honduras, Panama, Nicaragua, Mexico, Venezuela and Colombia.

Collins Guide to Tree Planting and Cultivation, by H. L. Edlin (42s) is for the landscape planner and the forester. Part 1 (Tending Trees) goes into every detail of cultivation; Part 2 (Choosing Trees) describes all the likely species, with notes on special growth forms, colour variations, hedge bushes, shelterbelts, dwarfs, trees for special soils and situations, with useful lists of arboreta open to the public and of journals, libraries and organisations.