

although long expected, and the delay may be attributable to the transfer of the producing agency from the Academy to the State Economic Council.

The English version has been done well, and for an undertaking of this sort the editors probably deserve as much credit as the translators. The jargon of half a dozen disciplines has been comprehensibly rendered, and although much of the wordiness of the original remains, this is inevitable. The maps are well reproduced, and the half-tone illustrations are as good as the poor originals will permit. One criticism of editorial policy must be made, however. In a work so strongly geographical in tone, it is a pity that neither the transliteration nor the form of place-names is that used at the moment by government map-makers in the United Kingdom and the United States. The user who tries to locate a place in any official gazetteer or map may thus be in difficulties.

TERENCE ARMSTRONG

WEEDS IN BRITAIN

Weeds and Aliens

By Sir Edward Salisbury. (The New Naturalist: a Survey of British Natural History.) Pp. 384+16 plates. (London: William Collins, Sons and Co., Ltd., 1961.) 30s. net.

IN this book, the latest in the New Naturalist series, Sir Edward Salisbury discusses, in sixteen chapters, the weed flora of Britain. Not only does he interpret the nature of weeds, and describe diminishing and spreading species and their association with differing ecological conditions, but he also considers characteristics of individual species, reasons for their survival as weeds and, briefly, their control by herbicides.

The author demonstrates clearly his unique knowledge of weeds in general and British weeds in particular. On many occasions, for example, in the genus *Chenopodium*, the reader is made aware of the several closely allied species forming a related group of weeds, clear line-drawings helping to pinpoint diagnostic morphological differences. Data on the reproductive capacity of many species show unmistakably the hallmark of Salisbury.

The case for detailed studies of the life-history, ecology and physiology of weeds, both for academic interest and for their control, is argued persuasively. Especially pleasing is the emphasis placed on the need for investigations on factors affecting establishment of weeds, a field which, until recently, has had less than its share of attention.

To substantiate his arguments, the author makes liberal use of interesting speculations, and logical deductions, not to mention, when available, up-to-date quantitative data. Indeed, the reader cannot fail to be stimulated by Salisbury's dynamic approach to the study of weeds, but he is left with the knowledge that much research is necessary before the adaptation of weed species to characteristic situations can be explained fully.

A disappointing feature of the book are the sections dealing with the association of weeds and specific ecological conditions. Many species are discussed in these chapters; they are briefly described but there are few diagrams to help in their identification. Several, often isolated, facts are presented in the consideration of species; in some, but by no means all, cases there are suggested control measures.

These latter do not fall into any systematic pattern. Indeed, chemical control measures seem to be demonstrated empirically with few principles being expounded; for example, the author states that *Poa annua* is resistant to both 2-methyl-4-chlorophenoxy-acetic acid and dichlorophenoxyacetic acid, but so are all Gramineae, and the chapter on chemical control, as presented, is of doubtful value.

There are a few surprising statements. For example, Salisbury considers *Allium vineale* more a grassland than an arable weed of heavy land, while bare fallowing is scarcely its most effective control measure. Exception can be taken to the use of common plant names. Some, for example tinker-tailor grass, are not only unaccompanied by specific names but are far from common; others, for example hungerweed and mousetail grass, are much less widely used to describe *Alopecurus myosuroides* than the unquoted synonyms blackgrass and slender foxtail.

In spite of these criticisms the book, containing some 150 references covering many subjects, will be as thought-provoking to the research worker as it is stimulating to the naturalist.

ALEC LAZENBY

PALÆOGEOLOGICAL MAPS

Palæogeologic Maps

By A. I. Levorsen. (A Series of Geology Texts.) Pp. viii+174. (San Francisco and London: W. H. Freeman and Company, 1960.) 43s.

THIS stimulating book deals not only with palæogeological maps in the strict sense but also with palæostructural, palinspastic and 'worm's eye' maps. These maps are quite easy to construct if the stratigraphical data are available; consequently the introductory chapters are short and the greater part of the book is devoted to their interpretation. To demonstrate the kind of information that can be extracted from these maps, about one hundred have been selected of areas ranging in size from a few square miles to whole continents. The maps have been well chosen and are clearly reproduced, the accompanying explanations are lucid and the deductions logical. Among the numerous uses that the author lists for these maps, the most important seem to be to distinguish between sedimentary and structural basins, to separate the structural effects of superimposed fold movements, to locate buried outcrops and to indicate the sources of ancient sediments. In one section the principles are applied to the problem of continental drift and clearly point against the conventional reconstruction of Gondwanaland.

It is disappointing to the British reader that by far the greater number of examples are chosen from North America. This is understandable in an American book, and in any event the technique is more suited to areas that have not been strongly folded. Nevertheless, of several good palæogeological maps published of British areas, the author selects only Buckman's map of the Cotteswolds, probably the first of all such maps. It is, evident, however that much more could be done in Britain along the lines developed in the book—perhaps with surprising results.

Study of the maps presented should provide excellent exercise for students at all stages and they are fortunately arranged in a graduated series. Their full appreciation requires an understanding of the four-dimensional scope of geology.

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