

sky down to declination 40° S., in a single chart. The limits of the constellations are marked, the constellations are outlined, the names and Greek letters of the principal stars are given, and the magnitude of each single star is indicated. Novæ, double stars, nebulae, clusters, and meteor radiants are shown. But the unique feature of the chart is that the spectral type of each star is indicated, stars of spectral types *B*, *A*, *F*, *G*, *K* and *M* being shown in blue, white, green, yellow, orange and red respectively; the colours have been inserted by hand and not obtained by successive colour printing, which may account for the rather high cost of the chart. For many purposes of quick reference the chart will prove very useful.

H. SPENCER JONES

6/6

SCIENTIFIC ORCHID GROWING

Orchids are Easy to Grow

By Harry B. Logan and Lloyd C. Cosper. Pp. viii + 312 + 20 plates. (Chicago and New York: Ziff-Davis Publishing Co., 1949.) 6 dollars.

THE chief developments in horticulture in Great Britain during the past forty years have been the increasing popularity of hardy shrubs and herbaceous plants for growing in the open, and the steady application of scientific knowledge to the cultivation of all kinds of plants. The former tendency, due to the introduction of numerous high-altitude Chinese plants, on one hand, and the redistribution of wealth, on the other, has struck a heavy blow at the cultivation of greenhouse and stove plants, of which orchids have always been the most popular. The number of amateurs interested in orchids has greatly diminished, and this, coupled with a disposition to regard orchid growing as a kind of mysterious cult, has retarded to a great degree the application of scientific methods to this branch of horticulture.

In "Orchids are Easy to Grow", the authors propound in a convincing manner the view that the proper application of scientific outlook and method to the growing of orchids can bring them within the reach of any seriously minded gardener who is prepared to take a little trouble. Although written primarily for the American public, most of the subject-matter is equally applicable to orchid growing in other temperate regions.

After introductory chapters describing the nature of orchids and the fundamental rules of orchid culture, chapters follow on growing orchids in the home, in the garden, and in greenhouses of various types. Other chapters deal with the details of cultivation, treated in a very practical manner, while there is a series of chapters on the more important orchid genera in cultivation. Throughout the book emphasis is laid on the scientific aspect of the subject and the necessity of applying knowledge in a logical manner at every step. It is unfortunate, therefore, that in a number of places the botanical information is not accurate, while the nomenclature and terminology is at times rather hazy. For example, the terms 'genus' and 'family' are used interchangeably in some instances. The checking of the manuscript by a competent botanist would have prevented these blemishes in an otherwise useful and interesting book.

Apart from numerous illustrations in the text, there are a score of beautifully reproduced coloured plates, mostly of artificial hybrids.

V. S. SUMMERHAYES

NATURAL HISTORY OF THE INTERTIDAL ZONE 9/6

The Sea Shore

By Dr. C. M. Yonge. (New Naturalist Series.) Pp. xvi + 311 + 72 plates. (London and Glasgow: Wm. Collins, Sons and Co., Ltd., 1949.) 21s. net.

THE scholarship, grace and the spirit of youth, together with grace and charm of exposition, combine to make Prof. C. M. Yonge's book on the life of the sea shore a pleasure to read. This is another volume in the eminently successful New Naturalist series, which is designed to present British natural history in modern scientific perspective for the general reader. It is quite obvious, however, that more than the general reader is catered for, and the biologist, as well as men of science in other fields, will derive profit and enjoyment from this synthesis of knowledge concerning the British intertidal fauna and flora.

Although the sea-shore includes a relatively small area of the British Isles—somewhat more than 600,000 acres—it represents a region that is very richly populated by marine plants and animals, and includes many diverse types of invertebrate animals that are easily accessible to study nowhere else. It is a valuable training ground for the young zoologist, and the multiplicity of diverse environmental factors operating in this narrow zone makes the study of functional adaptation one of peculiar interest and complexity.

The background of this book is threefold: the animals and plants of the shore; the character of the substratum; and the nature of the sea-water medium lavaging it. These large fields have been succinctly but carefully presented. Against this backdrop is presented a drama of intertidal life, as seen in rock pools, on and under rocks and seaweeds, on sandy shores, muddy shores, and in estuaries. Special groups and environments are treated separately, as shore fishes, barnacles and molluscs, rock and wood borers, and fouling organisms. In addition to describing peculiar adaptations of individual species to their particular niches, analyses of general delimiting factors are presented. This is particularly well shown in zonation on rocky shores, where each species is restricted to an optimal level determined by physical and chemical conditions of light density, exposure or immersion, temperature, salinity, and by gravity responses. Horizontal as well as vertical distribution is affected by external factors. Temperature plays a part in restricting species to lengths of the coast-line; other influences, still unknown but possibly ascribable to minute and undetected differences in composition of Atlantic water, are still to be found.

A pleasing feature of this book, in common with others of this series, is the account of the history of shore biology in Great Britain. This can profitably be read in conjunction with "British Marine Life" by the same author. Salient works are referred to in the text, and there is a useful bibliography in an appendix. The illustrations are outstanding and comprise, besides text-figures, excellent photographs of living animals in their natural surroundings. The majority are by Dr. D. P. Wilson, well known for his photographs of marine organisms, who has produced a special series of coloured, as well as black-and-white, photographs for this volume. In general, the colours are good. The text is remarkably free from errors.

J. A. COLIN NICOL