

participated in many different aspects of the study of vitamin A over a professional lifetime of nearly thirty years. He has obviously been as systematic in his reading and recording of bibliographic data as he has been in conduct of his own research.

The comprehensive character of the work is shown by the sectional organization of historical, assay, chemical, biochemical, physiological, pathological, clinical, dietetic, and animal-husbandry material. In many cases data of importance may be found in two or more of these sections, but with cross reference. This makes the volume useful for quick reference without the necessity for consecutive reading of the entire book. The author shows a gratifying perspective about the various facets of the highly complicated problems he treats.

As features of the excellent organization of this book, mention should be made of the adequate summaries which introduce chapters and sections of the volume. Liberal use of marginal topical headings facilitates rapid perusal of long chapters. The documentation is organized by chapters and is very extensive but is limited to items used in development of the themes.

The line drawings are well done. Some of the plates are reproductions of the classics in the field, suffering as usual from the technical faults inherent in such copying. Nevertheless, they are useful in this compendium of the progress in our knowledge of vitamin A, to date.

The appendix, with nine sections, provides much technical information, which has been well organized. The indexes are separate for authors and subjects. Both are very complete. It is notable that all the authors of each paper quoted are to be found separately listed.

This book will be found useful in the libraries of a wide variety of those interested in vitamin A. Among other matters it provides numerous suggestions of the gaps in the total picture, where investigators might well undertake further research.

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German-English Glossary of Neurophysiology. Roger Merritt Morrell, Ed. Consultants' Bureau, New York. 181 pp. \$7.50.

This German-English dictionary of the specialized language of physiology, anatomy, biochemistry, and electronics was assembled by an American neurophysiologist to help him in his work. Some 9000 words and phrases are entered, these being translated, mostly, into single English words or phrases. The book contains many misspelled German words

and incorrect translations, there being at least 20 such, for example, between pages 58 and 61. The book is very cheaply—and in places very badly—reproduced from a typescript, and it is difficult to understand why it should be so expensive. On the positive side, elimination of low-priority information about the German words (for example, their gender, and umlauts) makes the list easy to use. This book may, despite its many faults, prove to be of some value to English-speaking specialists with a limited knowledge of German scientific terminology.

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Zoogeography: The Geographical Distribution of Animals. Philip J. Darlington, Jr. Wiley, New York, 1957. xi + 675 pp. Illus. \$15.

The orderly geographic patterns of systematic groupings of animals have long challenged the interpretive mind. With modern progress in geology, systematic zoology, ecology, phylogeny, and evolutionary theory, the time is ripe for correlating the data from different fields of biology into a geographic synthesis. Darlington has written an admirable book with a critical evaluation of facts and principles of the distribution of land and fresh-water families of vertebrates. Geographic order and its interpretation are of value not only to biogeographers but also to taxonomists, ecologists, and evolutionists. Principles deduced from the distribution of the lower taxonomic categories are less adequately treated than are those for the families and higher categories, but *Systematics and the Origin of Species*, by E. Mayr (Columbia University Press, 1942), fills this gap. It is understandable why the invertebrates were left out. The systematics, ranges, fossil histories, and phylogenies of the vertebrates are much better known. However, a few excellent studies of the distribution of invertebrates have been published. *Evolution and Classification of the Mountain Caddisflies*, by H. H. Ross (University of Illinois Press, 1956), *The Faunal Connections between Europe and North America*, by C. H. Lindroth (Wiley, 1957), and Darlington's own studies of the Carabid beetles might have been used for corroborative evidence for some of the main concepts.

Many of the gaps in Darlington's book are not the fault of the author. The fault is rather in the complexity of the subject, the dependence upon an unattained taxonomic and phylogenetic precision, and the prevalence of errors in the literature that can only be corrected by specialists (of which there are far too few)

using modern systematic techniques. Darlington has gathered much evidence for the contemporary and ancient causes of major geographic patterns, and even with the omissions, the book should be an important reference work for many years to come.

The style is rather individualistic and, in my opinion, makes for easy reading. Dogmatism is avoided, sometimes to the point of obscuring the evidence that has statistical significance. The illustrations are highly diagrammatic and simplified. More detailed figures of vegetation and climatic patterns would have clarified the correlated animal distributions. For example, Fig. 50 could have shown some of the main ecological features of the Nearctic region, but, as it stands, it is a waste of space. Phylogenetic trees, with inserted data on fossils, geologic time, and contemporary distribution in zoogeographical regions, would have clarified many of the discussions in the text.

I commend the author on his useful tables and lists, upon his use of fossils, and upon his discussions of controversial concepts such as Wegnerian continental drift, oceanic land bridges, and the origin of island faunas. The book is a first-class text for a course in zoogeography, particularly if *Ecological Animal Geography* by Hesse, Allee, and Schmidt (Wiley, 1951) is used as a companion volume.

Much useful zoogeographical information still remains to be discovered, but Darlington has provided a base for further exploration. There is no question but that the science of animal distribution is still in its infancy, but great promise for future maturity is already evident.

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The Friendly Fungi. A new approach to the eelworm problem. C. L. Duddington. Faber and Faber, London, 1957 (order from Macmillan, New York). 188 pp. Illus. \$4.50.

The Friendly Fungi is concerned with the exciting possibility of using predacious fungi for the biological control of eelworms (nematodes) which beset cultivated plants and domesticated animals. These fungi are "friendly" only from our point of view, because the way in which they capture eelworms by means of garrotes, snares, adhesive pegs, and sticky nets and the efficiency with which they dispatch their prey make them distinctly unfriendly to nematodes.

The book begins with a description of nematodes, their habits, and their economic importance. It then goes on to a consideration of the methods by which the control of these pests has been attempted and the difficulties which have