

of isoprene derivatives, phenols, and organic acids. The last three sections deal with proteins and their derivatives. These sections are introduced by an excellent discussion on the general chemistry of amino acids (P. Desnuelle), followed by a similar section on peptides, written by P. Boulanger and G. Bizerte. The same authors also describe the isolation, the properties, and the classification of the proteins; the physical chemistry is treated by Wurmser and Tonnelat. In the section "Heteroproteins" J. Montreuil reports on glycoproteins, on phosphoproteins, and, in collaboration with P. Boulanger, on nucleoproteins; chromoproteins, discussed by Roche, Bar, and Bizerte, are classified as porphyrinic and nonporphyrinic pigments. In the final section of the chapter on proteins various amines and alkaloids are discussed by Nguyen van Thoai and Robin.

I was impressed by the logical, clear-cut classification and presentation of most of the material. This makes the work extremely valuable to students and other persons who want to know more about biochemistry than a good textbook can offer. Most of the chapters contain a wealth of references, so the reader can easily find more specific literature.

The question may be raised as to whether in the present era of rapid progress in biochemistry the publication of such a voluminous handbook is justified. An enormous amount of time and effort on the part of outstanding biochemists is consumed in such a project. I feel that the time has passed when handbooks can be written by experts of a single nation, and that the writing of handbooks of this type sooner or later will be a cooperative enterprise to be undertaken by scientists of many nations. Despite my opinion on this point, however, I consider the *Traité de Biochimie Générale* an admirable survey of the present state of biochemistry and believe it has great value as a didactic and reference work.

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**Ecological Processes.** Alan Mozley. Lewis, London, 1959. xi + 68 pp. 9s.

By "ecological processes," Mozley means groups of changes occurring with respect to time in ecological situations in nature. He illustrates these processes chiefly from studies of fresh-water mollusks harmful to man—his own field of

research. Little is said about other organisms in the ecosystems discussed.

The most interesting sections of the book are those dealing with animals in changing environments. Succession in animal communities has not been thoroughly studied. Although no quantitative data are presented or referred to, the author's suggestion that pest species are most successful in intermediate stages of a sere, following disturbances of a habitat, is of both scientific and practical importance.

A number of statements, such as "Personally, I expect the numbers of animals in a given place to fluctuate more or less," detract from the book. Much of the material is not expressed in a quantitative manner, nor are there many references to research reports of original data. This serves to underscore the need for quantitative observations and adequately designed experiments in this field, as the author indicates. However, in some sections—for example, those on fluctuations and population stability—important advances are not mentioned.

In my opinion, population ecologists will not find this slender volume especially stimulating. The book seems intended rather to advance the author's plausible suggestion, based on extensive observations, for controlling intermediate hosts of parasites and other pest animals.

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**Notes of a Soviet Doctor.** G. S. Pondoev. Consultants Bureau, New York; Chapman and Hall, London, 1959. iii + 238 pp. \$4.95.

This is an awkward translation of a cloying, chauvinistic "doctor book" written by an elderly Russian physician "for young doctors . . . and medical students." It reads more like a lecture on the facts of life delivered to a group of none-too-bright adolescents by an elderly deacon, not too bright either, but bright enough to stay out of trouble.

A chapter purported to describe the origins of medicine mentions Harvey, ties Darwin and Marx into one sentence, and from there on stays within the Russian borders. It will be interesting to see whether Chinese histories of medicine will contain as many Russian names!

To Western ears, the proud assertions that "the Soviet doctor is a government

agent" and that this gives him freedom and assures "the highest moral standard," sounds like double talk. In our society, the individual and government are competitive, and balance is maintained through a dynamic equilibrium of checks and diversity. In Soviet society, the individual and the government are one, and competition is unthinkable.

In these times, when species suicide is a real possibility instead of a mad dream, an understanding of the differences between the two cultures must be attempted. Reading this book in this context may be of some small assistance, but the road is rough. If only the Soviets could develop a touch of a sense of humor and see the world in colors and shades instead of in the dreary black-and-whites of the Marxist-Leninist religion!

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**Circumpolar Arctic Flora.** Nicholas Polunin. Oxford University Press, New York, 1959. xxviii + 514 pp. Illus. \$20.20.

Although the circumpolar arctic flora is a small one in number of species, any attempt to describe it is fraught with discouraging difficulties. The exact location of the southern boundary of "the arctic" is a matter of controversy, so more or less arbitrary limits have to be set in the listing of species. Vast areas in the north are still unexplored or poorly explored from the botanical standpoint. Although there has been a resurgence of arctic botanical investigation during the past three decades, international communication among botanists has not kept pace with it. Last but not least, a relatively large proportion of the species are polymorphic and difficult to define.

Polunin has recognized and dealt with all of these difficulties in the introduction to the present volume. The introduction also includes a map which defines "the arctic" for immediate purposes, an explanation of how the book is to be used, and a statement about the truly impressive source materials upon which it is based. The treatment is confined to the vascular flora and opens with a key to the families. Keys to the genera appear in the ensuing text, and if there are more than eight species in a genus, descriptive keys to these species are provided. All the descriptions of

genera and species are comprehensive and excellent. They are supplemented with hundreds of line drawings, most of them superb. Polunin will, inevitably, be criticized for the way he has treated a few of the species, but he has been wise in remaining fundamentally conservative in his treatment of most of them. The frequent appearance of the abbreviations "agg." and "s.l." after specific names leaves both the author and the user of the book maximum latitude for interpretation.

One could wish that more references to the literature on difficult polymorphic species had been added to this volume instead of being reserved for another. Nevertheless, the book will be essential to anyone working with the arctic flora. For the first time in botanical history we have a work that constitutes a forthright attempt, by a qualified student, to describe all the basic species of vascular plants known to occur in the arctic.

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**Fundamentals of Ornithology.** Josselyn Van Tyne and Andrew J. Berger. Wiley, New York; Chapman and Hall, London, 1959. xi + 624 pp. Illus. \$11.75.

This book, begun by the late Josselyn Van Tyne and completed by Andrew J. Berger, is intended as a textbook of ornithology at the college or university undergraduate level. It is a serious, scholarly work and a meticulously written book, above the average usually found in a textbook, and should serve its purpose very well indeed. Because of their accuracy and maturely reasoned presentation, the various chapters form digests and summaries of the special topics they treat that should be useful, as convenient references, to more advanced readers as well. The detailed descriptions of all the 160 or so recognized bird families of the world are the best and most readily assimilable short summaries available, and, as such, it seems not at all unlikely that they may well become standard, easy references for professional workers in the field.

Anyone who has attempted to organize the data and then to write reasonably short, and yet selectively inclusive, accounts of fields that are very actively expanding and changing—fields that are suddenly becoming open to new modes of study and to new expository approaches, such as the analysis of be-

havior patterns and of the impact of new devices such as radar on the factors affecting and directing migratory movements of birds—will appreciate the difficulties encountered by the authors and will be impressed by the success of their efforts. A good textbook, as compared with a merely adequate one, must not only give the student, or the non-student reader, the basic information on the subject but must also present it in such a way as to stimulate his thinking about it and whet his appetite. To a degree quite unusual in college texts, this volume succeeds in doing this. In my considered opinion, the Van Tyne-Berger book should meet with wide acceptance and should have a decidedly useful and progressively beneficial and important influence in training potential students of avian biology. To the biologist working in fields or specialties other than ornithology, the book may be not only a handy compendium of existing information but also something of an eye-opener as to the amount of integrated knowledge that exists concerning the most completely surveyed of all comparable animal groups.

The book is not only well conceived and well written; it is also well illustrated with numerous pen-and-ink drawings, by George Miksch Sutton, of a great variety of types of birds. These illustrations are uniformly excellent and add much to the appearance of the volume, illustrating and decorating it at the same time.

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**Mineralogy.** An introduction to the study of minerals and crystals. Edward H. Kraus, Walter F. Hunt, Lewis S. Ramsdell. McGraw-Hill, New York, ed. 5, 1959. ix + 686 pp. Illus. \$9.

The main features that have characterized earlier editions of this popular text, of which the first appeared in 1920, are retained in this new edition. The numerous figures are mainly half-tone reproductions of photographs. They include many portraits of well-known mineralogists and crystallographers and photographs of wooden models of crystals, which the authors seem to prefer to the more widely used line drawings. In the chapters on morphological crystallography (chapters 2 to 9, 88 pages) the Weiss parameters are still given the

same prominence as Miller indices, being listed in every table and in the legend of every figure in which symbols for crystal forms are given. Though there is a brief explanation of axial elements and of how they may be determined from measured interfacial angles, only a single example of axial elements appears in the chapters dealing with particular crystal systems, and none in the descriptive section.

Many minor changes and small rearrangements have been made throughout the text. Among the more important changes is the addition, in the descriptive section, of Hermann-Mauguin symbols to characterize crystal classes. The chapter on chemical mineralogy, retitled "Chemical mineralogy and crystal chemistry," has been expanded by the addition of three and a half pages on crystal chemistry. The material in chapter 14, now entitled "Formation and occurrence of rocks and minerals," has been rearranged and expanded to give more emphasis to what Landes has called "geological mineralogy." In the descriptive section there has been some rearrangement in the order of treatment of silicate minerals, presumably with a view to taking account of structural relationships, but the chondrodite group has been separated from the olivine group, with which it is most closely related structurally, and placed between topaz and datolite. The formulas for chrysotile, members of the epidote group, and a few other minerals have been changed to correspond with the results of recent work.

The concluding chapters, "Gemstones" and "Classification of minerals according to elements," represent the special interests of some of the members of the department of mineralogy at the University of Michigan. The title of the latter chapter is a bit misleading, for this chapter (of over 40 pages) deals at length with the uses of minerals and their products and is illustrated by photographs of power shovels, stock piles, open pits, ore carriers, and industrial plants.

The glossary and the tabular classification of the 32 crystal classes (unfortunately separated from the chapters on crystallography by nearly 400 pages) are unchanged, as are the tables for the determination of minerals, which occupy nearly 170 pages. Several new items have been added to the selected bibliography.

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