Book Reviews

The Travels of William Bartram. Naturalist's edition. Francis Harper. Yale University Press, New Haven, 1958. lxii + 727 pp. Illus. + plates. $8.50.

Not since Samuel Eliot Morison followed in the wake of the "Admiral of the Ocean Sea" or Allan Nevins tracked "Fremont, Pathmarker of the West" has there been a painstaking study of an American explorer comparable to Harper's tracing of the travels of William Bartram for the twenty years prior to publication of this volume—a goalpost in natural-history literature. The story of William Bartram's life and travels has been more or less told by Darlington (1849), Coues (1875), Stone (1905), Van Doren (1928), Fagin (1933), Brannon (1939), Earnest (1940), Allen (1951), Cheston (1953), and Herbst (1954), but never before so comprehensively as by Francis Harper in what has been appropriately called the "naturalist's edition" of Bartram's *Travels.* The author built, on the careful studies published in 1942 and 1943, around a plan to reproduce, verbatim and *literatim,* the *Travels* of Puc Puggy (as the Seminoles called Bartram) in such a way that this volume may be used with as much confidence as the original 1791 Philadelphia edition; to interpret the scene day by day; and to place the critical words of the narrative in what amounts to a variorum index worthy of a Shakespearian scholar. This annotated index opens up the text at once to the biologist, anthropologist, geographer, or whosoever seeks to know 18th century Florida in its "Eden" days. A field naturalist's affection for the Okefinokee, the Tallapoosa, and the Suwannee and for Bartram's favorite Alachua Savanna is evident on every page of Harper's commentary. The Seminole, wolf, deer, and sand-hill crane that lived on the Savanna are gone, and every true naturalist is saddened by that loss. Lesser prizes survive: the toothache tree still grows at the Rigolets, and the splendid *Magnolia macrophylla* (*"M. auriculata"* of Bartram) at its type locality (unless it has been wiped out in the last two decades). Evidence of Harper's careful pursuit of the Bartram trail is his reporting that tabanid flies, which plagued Billy Bartram in Taylor County, Georgia, also proved so annoying to John Lyon, who passed the same spot in July 1803, 28 years later, that Lyon noted it down in his journal. Records from letters of Muhlenberg and many others sharpen the focus on indistinct passages, and Harper has searched out marginalia, association copies, and the like to enrich the glosses. Here is a 20th century "book of distinction" to read and to treasure. I predict that the book will win a publisher's award for its physical format. Best of all, this "naturalist's edition" of a classic is consummately satisfying for the naturalist reader of scholarly tastes.

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Mitotic Poisons and the Cancer Problem. John J. Biesele. Elsevier, New York, 1958. 214 pp. $7.50.

The many screening programs in cancer chemotherapy carried out especially during the last decade involved testing of thousands of compounds. These screening procedures made use of different approaches—studies of transplanted tumors, tissue culture, microorganisms, and so forth. However, all were concerned with the primary target, the cell, and the effect on it of a chemical agent. A large number of such agents was found to affect mitosis, and a considerable body of information has been accumulated with regard to such "mitotic poisons."

Beginning with a discussion of the concept of mitotic poisons and a classification of such agents, this book is concerned with the response of cells to such substances, presented from the biochemical viewpoint as well as from that of traditional cytomorphology. Inhibition of cell division, damage to the spindle and to the chromosomes during the several phases of the mitotic cycle, and the behavior of other cellular components are discussed from the standpoint of the changes produced, the probable mechanisms underlying such aberrations, and the possible meaning of these changes. The deleterious effects on the mechanics of cell growth and proliferation of antimetabolites and the more newly studied therapeutic agents, as well as the classic mitotic poisons, are discussed.

This is an active area, and the writer has collected and critically presented a sizable mass of data in admirably concise and readable form. The substantial bibliography should be of great value to all interested investigators. Of particular usefulness to workers in the cancer field, this book should also appeal to workers in many disciplines who are interested in basic cytology and the phenomena of cellular damage inflicted by chemical agents.

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Flora of the British Isles: Illustrations. Part I, *Pteridophyta-Papilionaceae.* A. R. Clapham, T. G. Tutin, E. F. Warburg; drawings by Sybil J. Roles. Cambridge University Press, New York, 1958. 144 pp. $5.

This quarto-size book is a companion volume to the smaller but thicker *Flora of the British Isles* by the same authors and is designed to be used with it in identification. The arrangement of the figures (there is no text) follows that of the *Flora,* as does the nomenclature, except for rare changes that bring the names up to date. Some species not in the *Flora* are illustrated if they have become recognized or established recently, while a few aliens so rare that fresh material could not be got have been omitted.

The drawings have been made in nearly every instance from fresh specimens, and the aim has been to show the appearance of living plants. In general they accomplish this very well. For each species there is shown the habit of the plant as well as details of pubescence, bracts, flowers, seeds, or other critical parts. The figures are labeled with the scientific name, the common name, and the flower color, and a scale of magnification is provided.

Illustrations of this sort are very useful, for the amateur as well as for the expert, in identification, in particular, of introduced or hard-to-identify groups of plants. This flora may be compared with the new Britton and Brown *Illustrated Flora,* by Gleason, and the *Illustrated Flora of the Pacific States,* by Abrams. The illustrations in the three books are of approximately the same quality, those of the later volumes of Abrams being perhaps the best, and there are approximately the same number. In the two American books the illustrations and text

are combined in sets of three and four large volumes, respectively, and the books are therefore scarcely suitable for extensive field use. One wonders, however, whether the portability of a manual is of sufficient importance to warrant separation of the keys and descriptions from the illustrations. There are arguments on both sides, and it may be that in the long view the postponement of publication of the drawings may speed the appearance of a manual by a factor large enough to offset most of the disadvantages of such a procedure.

For this first of an expected four volumes of illustrations for their excellent *Flora* the authors are to be congratulated. It will be of real use to herbaria everywhere which are concerned with problems of general identification.

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Applied Optics and Optical Design. A. E. Conrady. Dover, New York, 1957 (unabridged and corrected edition of ed. 1). ix + 518 pp. $2.95.

This celebrated treatment of lens design exerted a great influence on computational methods when it first appeared in England in 1929. Written by a highly individualistic, not to say uncompromising, teacher of his subject, the book makes no concessions by way of popularization. Thus, although the treatment is not especially mathematical, the reading is not easy. Perhaps it is a sign of our scientific times to find this rigorous account of one of the disciplines of physics appearing as a paperback; serious students will welcome its increased availability. They will do well to read it, in order to relive the thinking which led to the design of the famous Holoscopic series of microscope objectives. The publishers assure us about the durability of the binding, which will be essential if its meaty contents are to be thoroughly digested.

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Annual Review of Entomology. vol. 3. Edward A. Steinhaus, Ed. Ray F. Smith, Assoc. Ed. Annual Reviews, Palo Alto, Calif., 1958. vii + 520 pp. $7.

This is the third and latest volume of an annual series, started in 1956, comprising numerous papers in which specialists in the various branches of entomology have prepared, for their colleagues and others, authoritative and scholarly progress reviews of their specialties. The very definite need for a reference work of this particular type was long realized by all who had to struggle with the widely scattered literature of entomology. Until the establishment of this series, nothing comparable to it existed anywhere.

It was in 1953 that a committee of the Entomological Society of America was appointed to examine the problem of providing adequate reviews of the literature. After exhaustive search and study, the committee recommended that such needs would best be met by a review publication of the general type published by the nonprofit organization, Annual Reviews, Inc. After appropriate investigations and appraisals, the work was started cooperatively between Annual Reviews and the Entomological Society of America. The objective has been the publication of authoritative, concise treatments of subjects of current interest. It is expected that the more active fields of research will require critical reviews annually, while less active fields will be summarized and evaluated as developments require. It is certain that this latest volume will be given the same warm welcome accorded those previously issued, because it possesses the same outstanding usefulness. It is a privilege to commend the 23 papers which make up this volume to the attention of fellow workers everywhere.

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Host-Parasite Relationships in Living Cells. A symposium. Sponsored by the James W. McLaughlin Fellowship Program, University of Texas, Medical Branch, 27 Apr. 1956. Harriet M. Felton, Ed. Thomas, Springfield, Ill., 1957. xix + 245 pp. Illus. $6.50.

This symposium, held in April 1956, was a fruitful commingling of scholars from various disciplines, all concerned largely with biological events within the cell and aware of the urgent need to span the gaps between various disciplines that are focused primarily on the same objective. Contributors to the symposium were E. W. Dempsey, R. J. Dubos, R. Dulbecco, C. E. Georgi, R. A. Good, J. H. Hanks, S. Mudd, C. M. Pomerat, M. G. Sevag, and J. T. Syverton. The meeting contributed to the construction of bridges between cytology and microbiology, including both morphologic and physiologic aspects.

The studies presented and discussed included morphologic observations by electron and light microscopy, immune mechanisms active at the cellular level, and metabolic and other factors influencing the resistance of either host cell or parasite to the effects of the other. A generous portion of this book is devoted to a faithful transcription of the stimulating informal discussion that took place.

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Psychotropic Drugs. S. Garattini and V. Ghetti, Eds. Elsevier, Amsterdam, 1957 (order from Van Nostrand, Princeton, N.J.). 606 pp. Illus. $19.50.

This book consists of papers presented at the International Symposium on Psychotropic Drugs, held in Milan, Italy, in May 1957. Most of them are written in English; others are in German, French, or Italian, with English summaries. These papers reflect the surging interest in biological aspects of normal and abnormal brain function which has resulted from a number of recent events: the discovery that lysergic acid diethylamide, in extremely minute doses, elicits a model psychosis; the discovery that reserpine and chlorpromazine induce effects almost opposite to those of lysergic acid diethylamide; and finally, and most important, the discovery that the biologically active amines, serotonin and norepinephrine, are present in certain parts of the brain. This book, spiced with the diverse viewpoints, hopes, prejudices, disagreements, and naiveties inevitable to a new and emotionally charged area of research, leaves the reader with an appreciation of the urge that provokes investigators to work in "psychopharmacology." This word has been coined to represent the branch of pharmacology which uses drugs affecting behavior to study brain function in the expectation of arriving at an understanding of normal brain function and, ultimately, at the cure or prevention of mental disease.

A number of biochemical papers discuss the possibility that brain norepinephrine and serotonin act as central synaptic transmitters and that certain psychotropic drugs elicit central effects by interaction with these amines. Various views are presented to the effect that mental disease is due to interference with synaptic transmission either by formation of an aberrant metabolite or by the faulty formation, release, or metabolism of a neurohormone. In addition, the effects of psychotropic drugs on a number of enzyme systems involved in brain intermediary metabolism are described.

In the papers on the behavioral effects of psychotropic drugs are described a number of the ingenious methods for studying normal animal behavior and