Common Exotic Trees of South Florida (Dicotyledons). Mary F. Barrett. University of Florida Press, Gainesville, 1956. 414 pp. Illus. $8.50.

"The southern half of the Florida Peninsula," writes Mary Barrett, "forms an open-air museum of trees from all the continents. . . ." The aim of her book is to provide a means of identifying the trees and to furnish information about them; in short, to make the museum, as she says, "intelligible."

The 26 pages of keys are based almost entirely on characteristics of leaves and twigs (and are preceded by 24 pages of explanation and illustrations of the terms used)—a truly formidable undertaking and a testimony to the author's courage as well as her ingenuity. For the keys work, at least with a few random herbarium sheets; they would go better with living material. There are, of course, difficulties; the inexperienced will make mistakes and end up in *Annona* instead of *Ficus*; but this is true of all keys, and botanists make mistakes, too.

In the remaining 363 pages, each species has a detailed description, with mention of height, bark, pubescence, shape and dimensions of leaves—all in language which may be described as "moderately technical." This is followed by notes on distribution, names, uses, relatives, and references to literature. Under "distribution" we find specific places in Florida (there is also a section on sight-seeing trips). The numerous illustrations are, for the most part, outlines of leaves. There is a bibliography and a good index. All this is well organized, well written, and well printed, and very helpful to anyone determined to know the trees in question.

I confess, however, that I am not sure who will use the book. It is as "popular" as an accurate treatment of nearly 200 species can be. Will the visitor to Florida take the trouble to master the necessary terms and learn how to use the keys? The very limitation of the subject, which was undoubtedly necessary, is troublesome. One must first know whether or not one's tree is a native of Florida, and whether it is a dicotyledon. However, I hope I am unduly pessimistic about the intellectual energies of the lay reader. At least the book has already proved useful to botanists. The latter will recognize, also, the devoted care that has gone into its preparation (which will probably earn for the author the insult of being called "meticulous"). Of course, one can find minor errors here and there (for instance, the name of the father of botany was Carl Linnaeus); but for scholarship and accuracy, the author deserves great credit indeed.

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Photoconductivity Conference. Held at Atlantic City, 4–6 Nov. 1954. Sponsored by the University of Pennsylvania, Radio Corporation of America, and Office of Naval Research. R. G. Breckenridge, chairman, Editorial Committee. Wiley, New York; Chapman and Hall, London, 1956. 653 pp. Illus. $13.50.

A conference report that comes out more than 2 years after the event raises the question whether it is worth while to read it, since many of the results have been published in detail elsewhere. The answer in this case is *Yes*. Many of the 30 contributions have the character of review papers, which, taken together, cover a wide range of problems in photoconductivity research. This book may be regarded as an excellent introduction to modern photoconductor problems, though not for the uninitiated.

The emphasis is on excitation, absorption, and trapping processes and on the relation of photoconductor properties to band structure and electron lifetimes. These subjects are extensively treated, theoretically as well as experimentally. Minor subjects (also related to lifetime problems) include surface effects, noise, and the photoelectromagnetic effect. There is a large amount of overlapping, but this presentation of different viewpoints, or different kinds of treatment, is not at all to be regretted. It adds, rather, to the interest. Unfortunately, there are discrepancies in the notations; sometimes they do not even agree between figures and corresponding text.

The authors are well known in their fields and give expert and stimulating presentations of problems and results on a consistently high level. This high level does not, however, make the reading difficult, or it does so only sporadically, depending on how well grounded the reader (in any case, the reviewer) may be in the different subjects. All papers are amply referenced. A very valuable addition is the record of the discussion remarks. These sometimes clarify viewpoints or bring out limitations in the treatment.

The papers are arranged in several chapters: "Phenomenological theory of photoconductivity," "Photon absorption processes," "Electron processes," "Photoconducting materials," "Current topics." I am not sure about the use of the word *phenomenological* in the first chapter. A "phenomenological" theory should refer only to phenomena, that is, observed events, as for instance in Rydberg's theory of atomic spectra. What the two papers of this chapter actually give may better be called "model" theories (as Bohr's theory), treating photoconductor properties in terms of a simple model and its significant parameters, such as lifetimes. Since, however, I am myself guilty of loose use of *phenomenological* in the sense of meaning something less than a detailed theory of fundamental mechanisms from first principles, I will not labor this point.

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Evolution and Classification of the Mountain Caddisflies. H. H. Ross. University of Illinois Press, Urbana, 1956. 213 pp. Illus. $6.

The knowledge of the phylogeny and dispersal of members of the aquatic orders of insects and what information is available on the probable place and time of origin are scattered and inadequate. H. H. Ross, who for the last 20 years has been engaged in an exhaustive study of the Trichoptera, has filled a portion of this gap by this treatise on the evolution and distribution of three selected families of caddisflies.

The three families that Ross chose are considered the most primitive: Philopotamidae, Rhyacophilidae, and Glossomatidae. They are adapted to cold (or cool) biotic conditions, are more abundant in the mountainous regions, and are widely distributed in the Holarctic. In North America, the families are represented by about 200 species, with the majority recorded from the western montane region.

The author has shown that a biogeographic correlation exists in these three caddisfly families and that, although the fossil record is very meager, it is possible to construct a phylogenetic tree of the order, of each genus, and often of species groups. The study presents the morphologic characters (largely male genitalia) and dispersal patterns available to show this relationship. Extensive use is also made of the structures of the larvae and pupae and of their net-making or case-making habits. The dispersal pattern, like rate of evolution, varies with each group.

The book is profusely illustrated with 370 figures and 45 charts; all are up to the high standard of other Ross (and University of Illinois Press) publications. The book is exceedingly well indexed, and the bibliography of seven pages is certainly complete.

In the course of the study it was necessary to describe four new genera and 37 new species, primarily from South America and Asia. Some keys to genera and species are included, and in the *Rhyacophila* and a few other genera, considerable synonymy is given.

For the entomologist or zoologist who is interested in phylogeny and dispersal, the work, since it applies to three mon-