



THE NEW YORK BOTANICAL GARDEN



Springer

Review: [untitled]

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Source: *Economic Botany*, Vol. 19, No. 3 (Jul. - Sep., 1965), pp. 318-319

Published by: Springer on behalf of New York Botanical Garden Press

Stable URL: <http://www.jstor.org/stable/4252635>

Accessed: 13/08/2010 09:47

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Diseases of Turfgrasses. Houston B. Couch. 289 pp. illus. Reinhold Publishing Corporation, New York, 1962. \$10.00.

Diseases of Turfgrasses is a worthy contribution to the literature. The book is nicely composed and organized for ready location of information. However, several objections can be raised. First, the book is weak on graphic aids to identification of organisms. Second, the chapter on relations of management to disease is not as complete or comprehensive as needed. Third, suggestions on the general effectiveness of various fungicides are not clearly handled.

With regard to the strong points of the book, it is a most complete review of turfgrass diseases. The common and uncommon diseases are thoroughly covered. The book contains a list of diseases that have been found on individual grasses. This information is very useful and is not commonly available. A number of black and white pictures of diseases on turf give good portrayal. Some good color plates of disease symptoms are included. The book is a valuable addition to the now limited supply of publications on turfgrass disease. It should prove more useful to workers in the technical and scientific areas than to those in applied work.

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A Professor's Story of Hybrid Corn. Herbert Kendall Hayes. 237 pp. illus. Burgess Publishing Company, Minneapolis, 1963. \$6.50.

This book is both an important historical account of the development of hybrid corn and a summary of the methodology of producing hybrid corn. Professor Hayes is uniquely qualified to record this story. He knew personally the small group of pioneers, George H. Shull, Edward M. East, and Donald F. Jones, whose cumulative research led to the development of commercial hybrid corn. Both Dr. Hayes and Dr. Jones were students of E. M. East, who started the corn-breeding research at the Connecticut Agricultural Experiment Station and later became Professor of Genetics at the Bussey Institution of Harvard University. It was his students' continuation of

East's studies on the nature and use of heterosis which eventually made hybrid corn possible. Dr. Hayes has been a distinguished authority on plant-breeding techniques and has been co-author of several books on the subject; his summary on the methodology of corn breeding consists of clear authoritative statements.

The 18 chapters of this book may be roughly divided as follows. The first four chapters present the historical research on hybrid corn in a manner flavored with the author's personal experiences with the early pioneers. The next six chapters deal with various theoretical aspects of the nature of hybrid vigor, while the following seven chapters, which constitute the largest part of the book, are devoted to the applied aspects of producing hybrid-corn seed. A final chapter emphasizes the importance of continued basic and applied research to the realization of further advances in increasing the yield and utility of America's principal food plant.

Doctor Hayes usually gives due credit to various scientists for their contributions to the hybrid-corn story, but in discussing the modern technique of producing hybrid-corn seed with cytoplasmic male-sterile females and restorer-gene males, he fails to give credit to those who have developed this system and who have published a number of articles concerned with various aspects of it.

Unlike the other books by Dr. Hayes, this volume is not designed as a text. It is valuable as a reference book, and no maize library would be complete without a copy.

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Plants at Work. F. C. Steward. 184 pp. illus. Addison-Wesley Publishing Company, Reading, Massachusetts, 1964. \$2.95.

Here is an elementary book, intended for courses in general botany and plant physiology, with a completely novel outlook. The material, much of which will be of interest to those teaching courses in economic botany, is presented from the experimental point of view, but the pertinent aspects of history and plant morphology are ade-

quately interwoven into the fabric of the book. Although it could be used as the basis of a special course, I predict that the major role of this excellent work will be as a supplement in several types of biology courses that employ other texts. In fact, there are a number of pages that I plan to assign as reading in Harvard's course in economic botany which I teach. One of the valuable parts of the book is the brief but well chosen and up-to-date bibliography.

It is indeed a welcome discovery to find a book by a biochemist and cell physiologist that is broad in its outlook and yet keeps to a straight path. Perhaps it is a reflection of the author's British training. Steward is presently Professor of Botany and Director of the Laboratory for Cell Physiology, Growth, and Development at Cornell University. He was assisted in preparing the book by A. D. Kirkorian, his teaching assistant at Cornell. Addison-Wesley has, as usual, done an excellent job of publishing. The paper is good; the many illustrations are clear and precise; and the paper binding is of good quality. I expect a useful future for Steward's little text and congratulate him and his publishers on a creditable job.

RICHARD EVANS SCHULTES
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The Leguminous Plants of North Carolina.

Robert L. Wilbur. 294 pp. illus. North Carolina Agricultural Experiment Station, Tech. Bull. No. 151, 1963. gratis.

This is an excellent treatment. It is profusely illustrated, both with plant sketches and distribution maps. The keys are original and for the most part easy to use. Much of what is excellent comes out of Wilbur's preoccupation with detail. In spite of very clear line drawings, he sees fit to include, in some instances, 300 to 700 words of description. A compliment to the North Carolina Agricultural Experiment Station for its willingness to bear such verbal surfeit. The book is paper bound and is stitched with thread, making it a practical field companion.

I took this book with me into the field in

North Carolina, and nearly every legume found could be readily identified by the drawings alone. Hence, it is probable that much of the descriptive detail could have been omitted without loss of utility. A few complaints, however: (1) there is very little discussion of the ecology of the approximately 116 native legume species which Wilbur treats (fully 1/3 of the 172 specific taxa treated in the text are introduced); (2) flowering dates are not given; and (3) no introductory account of the floristic or vegetational regions of the state is given. One gets the impression that Wilbur knows his plants as individuals in the herbarium, not as populations in nature. (No knock intended for I've admired most of all his ability to extrapolate from the dead to the living.)

On matters nomenclatural, Wilbur is a tiger! He stalks the ambiguous synonym with relish, if not cunning. Even author citations get the full treatment: ". . . therefore, *T. fraxinifolia* should neither be cited as '(Nutt.) M. A. Curtis' nor '(Nutt. ex T. & G.) M. A. Curtis.'" (For the curious, it should be *M. A. Curtis*.)

Chromosome counts, as obtained from the literature, are listed for approximately 68% of the species treated. These are included near the end of the text; a better form would have been to include them at the end of the species descriptions, although the summary is helpful.

I rate this book—primarily because of its excellent illustrations—above my own *Legumes of Texas* (1959). What better recommendation can a reviewer give?

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Pasture and Range Plants. Anonymous. 176 pp. illus. Phillips Petroleum Company, Bartlesville, Oklahoma, 1963. \$5.95.

Beginning in 1955 the Phillips Petroleum Company issued a series of six well-done booklets, *Pasture and Range Plants*, to further knowledge of the grasses, legumes, and forbs of the interior grasslands of North America. The booklets comprise 220 color plates of various plants, each plate occupy-