

case his keys and remarks are clear, and others can follow his reasoning. His obvious knowledge of the group is little short of amazing even with due appreciation of his indebtedness to the work of previous students, notably Jepson and the latter's pupil, J. T. Howell. To the former he pays the compliment of using his method of citation of references and specimens. In this connection one may remark the excellent, distinctive typography. There is a lovely color plate of *C. purpureus* and innumerable photographs uniformly of exceptional beauty and value as well as a number of good drawings.

Finally let us turn to the descriptive account of the seventy-odd species and a number of varieties distinguished by Van Rensselaer in cultivation. He describes them in the idiom of the horticulturist, usually adding some remarks as to distribution, where cultivated and the growing conditions required. It would have been desirable if, besides the index to the entire book, page references after the descriptions had been given in each part to the other part. In this case some discrepancies in names used for the same plants would have been discovered. For example on page 14 we find the name *C. austromontanus* instead of *C. foliosus* in which it is included by McMinn, page 223. On page 30 the name *C. exaltatus* is given as "a new horticultural designation" while McMinn ignores it except as a variety of *C. gloriosus, et cetera*. Some of these slips, or they may be differences in opinion between the two authors, are going to confuse if not anger bibliographers, not to mention certain professional botanists who, of course, are almost God-like in the perfection of their own work!

Above the rare mistakes, here is a living work, jointly conceived, jointly prepared, inspiring to everyone whether amateur or professional in the garden, herbarium or laboratory, and creating a closer bond of understanding, of friendship between all who have to do with plants, as Major General Lassiter has happily phrased it. The contributors who made the book possible are to be congratulated and thanked for supporting so worthwhile a project that is destined to become a classic of its kind. Humanity needs many similar books and from them will be born the realization that adequately financed herbaria and gardens must always be the basis for them.—J. FRANCIS MACBRIDE, Field Museum of Natural History, Chicago.

Practical Plant Anatomy. By ADRIANCE S. FOSTER. Pp. 1-155. D. Van Nostrand Company, Inc., New York. 1942. \$2.50.

This compact book of fourteen chapters or "Exercises" is spirally bound in flexible fabrikoid. Each exercise consists of a brief but accurate résumé of both early and recent papers dealing with the subject of the chapter, some discussion of the subject matter and different points of view thereon, and suggestions for study of selected materials and drawings to be made by the student. A short but well-chosen bibliography completes each

exercise. The book is primarily a laboratory guide for a course in plant anatomy, although the discussions contain much factual material not usually included in a strictly laboratory guide.

The suggestions for study, the material recommended, and the diagrams and drawings which the student is supposed to make, are all thoughtfully handled. The author has succeeded in reducing the number of drawings required to a minimum, a feature that will be welcomed by the immature students who want to confine their laboratory work to a definite, set period. This feature is not as reprehensible as it might seem to some proponents of many drawings, for *diagrams* are substituted for the tedious, time-consuming detailed drawings to show relationships among various tissues. Of course, any student interested in making numerous detailed drawings of cellular types will find adequate hints throughout the text if he looks for them! The total absence of figures and illustrations mitigate against the use of the book as a guide to a study of plant anatomy by those who are unable to work under the direction of a trained instructor or where the library facilities do not afford extensive reference works.

No attempt was made to give directions for the preparation of permanent microscope slides. But a far better point of view has been taken in that free-hand, temporary mounts of fresh materials are called for in nearly every exercise. No student using this method will get the idea that xylem is always stained red and that phloem and parenchyma cells are characterized by an affinity for a blue or green stain! Brief directions for macerating woody tissues and for the use of a few special reagents are included in the short appendix. The index is gratifyingly complete.

The method of approach is analytical and classificatory rather than phylogenetic. The author's reason for thus avoiding controversy is well stated in the following excerpt from Exercise IV (p. 39): "Since all methods for classifying plant tissues are open to objection, the writer has adopted a non-committal and 'practical' attitude in this book. Instead of following any one scheme of classification, the emphasis is placed first of all upon the salient morphological features of the *principal types of plant cells*. These cell types recur in various regions, 'tissues' and organs of the higher plants, and a thorough knowledge of their form, structure, development, and presumable function(s) must constitute the necessary analytical approach to anatomy."

The format and typography is good and errors are extremely few. The fabrikoid cover helps to protect the book from damage where liquids may be spilled on the laboratory table and the spiral binding permits the book to lie flat when opened to any page. The numerous references in the text and the bibliographies following each exercise hold valuable keys to voluminous literature on plant anatomy.—IRA L. WIGGINS, Stanford University.



Wiggins, Ira L. 1943. "Practical Plant Anatomy by Adriance S. Foster." *Madroño; a West American journal of botany* 7, 29–30.

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