Book Reviews

The Algae of Illinois. Lewis Hanford Tiffany and Max Edwin Britton. Chicago: Univ. Chicago Press; London: Cambridge Univ. Press, 1952. 407 pp. Illus. $10.00.

European botanists have given earnest attention to algal floras since very early times, and, correspondingly, these plants have been adequately dealt with both in Britain and on the continent. Whereas their literature is replete in handbooks and monographic works on algae, these plants, relatively, are poorly represented in the botanical literature of the Western Hemisphere. The increased interest in fresh-water algae in this country during the past decade or so, and the need for published accounts of their taxonomy and ecology, are beginning to be reflected and met. For the second time in two years there has appeared a contribution to our knowledge of fresh-water algae, again from Midwestern America—*The Algae of Illinois.*

Students of the algae will welcome this book for a number of reasons—perhaps the most important one being that the work deals with all seven of the algal phyla (only the Charophyceae in the Chlorophyta and the Chloromonads being disregarded). Of the 888 species treated, a little more than one fourth (238) are diatoms. This group of plants, as biologically intriguing as they are economically important, has been much slighted in North America, and no general account of them has been published in this country since the early work of Francis Wolle. Hence, the present volume answers a great need, and this section of the book might be said to be its most useful contribution.

That Illinois lies mostly outside the region more favorable for desmids in North America is indicated by the inclusion of only 86 species of this very large group. The authors refer, however, to "peat bogs" and "undrained swamps" in the northern part of the state, where desmids undoubtedly abound. Hence, it is to be expected that these algae occur much more prevalently than suggested by their poor representation in the Illinois list.

There is a key to nine classes (subdivisions of algal phyla), which the beginning student will be called on to use in making identifications of unknown species. Each class subsequently treated contains a key to genera, and each genus a key to species. There is no general artificial key to genera, however. Some phycologists will not agree entirely with the authors that "a single key to all genera" has a "value" that is "dubious," nor that it is "fairly easy to recognize the class to which an alga belongs." The beginning student, for whom the book should have the greatest attraction, will need to resort to the initial key to the classes each time he wishes to make an identification. He may experience some difficulty, however, as not a few forms of fresh-water algae do not possess clearly evident characteristics that place them in this or that phylum. Experienced students and even specialists are occasionally puzzled in attempting properly to assign some genera.

Each species is briefly described with a masterful touch in simplicity and conciseness. Some terms, especially as employed by the phycologist, do not appear in the glossary. Beginners may be bothered at first by the inconsistent use of the terms "chromatophore" and "chloroplast," for the latter term does not occur in the glossary.

The work does not pretend to be critical, and there are few critical remarks, nor are there any new species and varieties described from Illinois. Rather, as is explained, this is the illustrated and descriptive portion of a two-volume catalogue of Illinois algae. It represents the forms observed by the authors and the names that have appeared in the literature. Each form is illustrated, most illustrations being borrowed.

Because of the problem of space, no doubt, ecological notes and references to habitats have been almost entirely omitted—an adjustment which leaves much to be desired.

The determination of an unknown species has been facilitated by what the authors refer to as "convenient signposts." The reader may also find, however, a few dead-end and unmarked streets. These detract but little from the general adequacy and usefulness of the treatment—but the student will not find it possible to key out the genus *Plectonema,* for example (p. 330); also, he will experience some difficulty in keying out species of *Pediastrum* (p. 110), where there is a disagreement between terminology and morphology of various forms. Although the portions of the plate legends giving magnifications of the figures will not be much used, in case they are, the reader should be on guard for discrepancies, as on Plate 12. But these are all very minor problems, easily resolved, especially should the book be used under the supervision of an instructor.

Aquatic organisms are famous for their disrespect of political as well as many natural boundaries, so such a book as this will have a usefulness beyond the implication of its title. It can be predicted that the authors' hopes will be realized and that this volume will stimulate additional studies in American phycology. It is recognizable at once as a fine contribution to our knowledge of algal distribution, and its format should serve as a model for future publications.

There is a good bibliography of reference works, but this list does not include citations to the literature on Illinois algae, especially inasmuch as these appeared in the junior author's, *A Catalog of Illinois Algae* (1944).

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