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G. W. Prescott
State University of Iowa

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A BRIEF SUMMARY OF WORK ON IOWA ALGAE

G. W. PRESCOTT

My part in the taxonomic survey of the algal flora of Iowa began in the fall of 1924. It may be of interest at this time to summarize briefly the work done on the algae of Iowa, including my unpublished notes.

The first contribution to a knowledge of Iowa algae was made in 1880 by Dr. Hobby, who published a list of 74 species in the Proceedings of the Iowa Academy for that year. These species were collected from the vicinity of Iowa City.

Between 1880 and 1907, a number of short taxonomic lists and notes appeared by Arthur, Bessey, Shimek, Fink, Meyers, Anderson, Pammel, and Buchanan. All but one of these reports were summarized by R. E. Buchanan and published, together with additions from his own collections, in the Proceedings of the Iowa Academy of Science for 1907. This paper is in the form of a taxonomic key to the then-known species of algae in Iowa and also includes some valuable distribution data. A very few species are reported from Iowa by Wolle in his "Freshwater Algae of the United States," published in 1887.

An additional report which might have been included in Buchanan's summary, is a paper by Professor J. P. Anderson, dealing with Decatur County algae, published in the Iowa Naturalist for 1905. This paper, together with the report of Buchanan, placed the number of known Iowa algae at something over 200 species in 1907.

In his work of that year, Buchanan mentioned the fact that little had been done on the algal flora of the state. This same remark might truthfully have been made at any time during the succeeding twenty years. Between 1907 and 1926 no reports seem to have been made on the algae of Iowa except that Collins reports a few species from Iowa in his "Green Algae of North America," published in 1909. This situation is in marked contrast to the activities on this group in neighboring states during these two decades. Such workers as Smith in Wisconsin, Tilden in Minnesota, Anderson and Walker in Nebraska, Moore, Karrer and Hayden in Missouri, Kofoid in Illinois, Tiffany and Transeau in Ohio,

Michigan and Illinois, together with the collaborators of these algologists, have made sweeping contributions to a knowledge of the algal flora in the middle west.

Doctor R. B. Wylie of this department is largely responsible for the recent and highly scientific explorations into this group of plants in Iowa and the subsequent publications. As director of the Iowa Lakeside Laboratory at Okoboji, he assisted in providing for two surveys of the very rich algal flora of the lake region in Dickinson County. These two surveys were carried on in 1923 by Dr. L. H. Tiffany of Ohio and in 1922 by Dr. G. M. Smith, then of Wisconsin and now Professor of Botany in Stanford University.

The collections of these two algologists, together with 800 collections made by Dr. Wylie himself, which were included in the Tiffany report, have resulted in a long list of algae for Iowa, including several new species. The reports of these surveys were both published in 1926 in the Transactions of the American Microscopical Society.

Doctor Tiffany's work was directed toward the filamentous forms with particular reference to the Oedogoniaceae. In all, his report included 202 species and varieties. Of these 159 were new to the state of Iowa, and one, *Oedogonium wyliei*, was new to science.

It is a striking coincidence that Smith reported exactly the same number of species and varieties of plankton forms that Tiffany reported for the filamentous forms. In Smith's list of 202 forms, 186 were new to Iowa and one genus, *Gloeoactinium*, and 25 species and varieties were new to science.

The work that I began in 1924 on Iowa algae was encouraged by Dr. Wylie, and since then he and other members of this department have assisted me in obtaining collections. I am grateful, also to Professor Conard of Grinnell, Professor Jacques of Iowa Wesleyan, and Professor Clark of the State Teachers' College, for their generosity in furnishing me with algal collections from various parts of the state. My own collections and those turned over to me for identification have contributed something over 750 species and varieties of algae to date. Many collections in my possession have not yet been examined, so that by the time this report is published, the number of my identifications will probably be considerably increased. Of these 750 forms, I have 341 listed which have not been previously reported from Iowa. One hundred and sixty-eight additional species might be reported for the first time from Iowa except that these were covered by the Smith and

Tiffany papers in 1926. In addition there are ten or more species which are apparently new to science, and it is hoped that a report can be published on these new forms in the near future. The total number of known algae for Iowa is now about 1000 species and varieties. This list is being lengthened by additions to both the blue-green and the green algal groups but in particular to the Desmidiaceae which have been relatively neglected in Iowa.

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STATE UNIVERSITY OF IOWA,
IOWA CITY, IOWA.