

FURTHER STUDIES OF INDIANA ALGAE

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This report represents a continuation of a study of the algal flora of the lower Wabash Valley which was started in the summer of 1932, a preliminary report of which was included in the Academy Proceedings for that year.

During the months of August, September, and October of 1934, the writers made an attempt to extend the study to additional counties of the southwestern section of the state, but collection of algal samples in these counties was found to be somewhat meager owing to the lack of permanent bodies of water in that section. Ponds and roadside pools, which had in past years proved rich in algal forms, were dry, following the extremely hot, dry summer season.

The writers hope to continue this work during the spring months of the coming year and give a more complete report of the algae of the localities thus far studied.

Samples were received from Lake County and were added to this list, as were other forms identified from collections of 1932-33.

No attempt was made to examine samples in the field or living material in the laboratory. All samples were preserved as collected, in Transeau's solution of water, alcohol, and formaldehyde in the ratio of 6:3:1.

The writers are reporting a total of 58 species and varieties. Of these, two genera, five species, and three varieties have not been previously reported from Indiana. Two species, *Oedogonium foveolatum* and *Oedogonium hirnii* have not been previously recorded in published reports from the United States. The writers also are reporting one new species, *Oedogonium indianense* Britton and Smith, sp. nov.

To Miss Faxon Cook, of Lowell, Indiana, the writers are indebted for the collections made in Lake County.

ALGAE SYSTEMATICALLY ARRANGED

CLASS 1—MYXOPHYCEAE

Order—Chroococcales

⁴*Chroococcus turgidus* (Kuetz) Naegeli. Lake Co., Sept. 22, 1934.

⁴*Microcystis aeruginosa* Kuetzing. Knox Co., Aug. 7, 1934.

⁴*Microcystis flos-aquae* (Wittrock) Kirchner. Knox Co., Aug. 7, 1934.

¹*Microcystis pulvera* (Wood) Migula. Knox Co., Aug. 7, 1934.

Order—Hormogoneales

²*Anabaena spiroides* var. *contracta* Klebahn. Lake Co., Oct. 7, 1934.

⁴*Spirulina major* Kuetzing. Greene Co., Aug. 7, 1934. Lake Co., Sept. 24, 1934.

⁴*Oscillatoria amphibia* Agardh. Greene Co., Nov. 25, 1934.

⁴*Oscillatoria princeps* Vauch. Greene Co., Aug. 7, 1934.

CLASS V—CHLOROPHYCEAE

Order—Volvocales

⁴*Pandorina morum* Bory. Daviess Co., Aug. 7, 1934. Lake Co., Sept. 24, 1934.

Order—Chlorococcales

⁴*Nephrocytium agardhianum* Naegeli. Vigo Co., Aug. 28, 1934.

⁴*Oocystis borgei* Snow. Lake Co., Sept. 24, 1934.

³*Planktosphaeria gelatinosa* G. M. Smith. Marshall Co., Aug. 30, 1934.

⁴*Pediastrum boryanum* (Turpin) Meneghini. Knox Co., Aug. 7, 1934.

⁴*Pediastrum boryanum* var. *longicorne* Raciborski. Lake Co., Sept. 23, 1934.

²*Pediastrum boryanum* var. *granulatum* (Kuetzing) Al. Braun. Marshall Co., Aug. 30, 1934.

⁴*Pediastrum integrum* Naegeli. Marshall Co., Aug. 30, 1934.

⁴*Pediastrum simplex* var. *duodenarium* (Bailey) Rabenhorst. Knox Co., Aug. 30, 1934.

⁴*Pediastrum tetras* (Ehrenberg) Ralfs. Knox Co., Aug. 7, 1934. Marshall Co., Aug. 30, 1934.

⁴*Dictyosphaerium pulchellum* Wood. Daviess Co., Aug. 7, 1934.

⁴*Dimorphococcus lunatus* A. Braun. Vigo Co., Aug. 7, 1934.

⁴*Coelastrum microporum* Naegeli. Knox Co., Aug. 7, 1934.

³*Lagerheimia subsalsa* Lemmermann. Greene Co., Aug. 7, 1934.

⁴*Scenedesmus abundans* (Kirchner) Chodat. Lake Co., Sept. 23, 1934.

⁴*Scenedesmus abundans* var. *longicauda* G. M. Smith. Knox Co., Aug. 7, 1934.

⁴*Scenedesmus acuminatus* (Lagerheim) Chodat. Lake Co., Sept. 23, 1934.

³*Scenedesmus acutiformis* Schroeder. Lake Co., Sept. 23, 1934. Vigo Co., Aug. 28, 1934.

⁴*Scenedesmus arcuatus* var. *capitatus*. Lake Co., Sept. 24, 1934.

³*Scenedesmus armatus* (Chodat) G. M. Smith. Lake Co., Sept. 23, 1934.

¹ Species—not previously reported from state.

² Variety—not previously reported from state.

³ Genus—not previously reported from state.

⁴ Genus or species or variety—not previously reported from county.

⁵ Species—not previously from United States.

⁶ New varieties. New species.

⁴*Scenedesmus bijuga* (Turpin) Lagerheim. Knox Co., Aug. 7, 1934. Pike Co., Aug. 7, 1934. Lake Co., Sept. 23, 1934.

¹*Scenedesmus brasiliensis* Bohlin. Sullivan Co., Aug. 7, 1934.

⁴*Scenedesmus denticulatus* Lagerheim. Knox Co., Aug. 7, 1934.

⁴*Scenedesmus longus* Meyen. Vigo Co., Aug. 7, 1934.

⁴*Scenedesmus obliquus* (Turpin) Kuetzing. Marshall Co., Aug. 30, 1934. Pike Co., Aug. 7, 1934. Lake Co., Sept. 23, 1934.

⁴*Scenedesmus opoliensis* P. Richter. Knox Co., Aug. 7, 1934.

⁴*Scenedesmus quadricauda* (Turpin) de Brebisson. Knox Co., Aug. 7, 1934. Lake Co., Sept. 23, 1934.

⁴*Scenedesmus quadricauda* var. *parvus* G. M. Smith. Knox Co., Aug. 7, 1934.

⁴*Scenedesmus quadricauda* var. *quadrispina* (Chodat) G. M. Smith. Knox Co., Aug. 7, 1934. Lake Co., Sept. 23, 1934.

⁴*Scenedesmus quadricauda* var. *westii* G. M. Smith. Knox Co., Aug. 7, 1934.

⁴*Sorastrum spinulosum* Naegeli. Knox Co., Aug. 7, 1934.

⁴*Tetraedron caudatum* (Corda) Hansgirg. Knox Co., Aug. 7, 1934.

²*Tetraedron caudatum* var. *longispinum* Lemmerman. Knox Co., Aug. 7, 1934.

⁴*Tetraedron minimum* A. Braun. Hansgirg. Lake Co., Sept. 23, 1934.

³*Trochiscia reticularis* (Reinsch) Hansgirg. Vigo Co., Aug. 7, 1934.

Order—Ulotrichales

⁴*Ulothrix zonata* (Weber and Mohr) Kuetzing. Vigo Co., Aug. 7, 1934.

Order—Oedogoniales

⁵*Oedogonium foveolatum* Wittrock. Vigo Co., Aug. 7, 1934. The only monoecious representative of the genus with scrobiculate oospores. Previously reported from Brazil and St. Thomas Island. Antheridia two microns shorter than measurements given by Tiffany.

⁵*Oedogonium hirnii* Gutwinski. Lake Co., Sept. 20, 1934. Previously reported from Austria and Ireland.

⁶*Oedogonium indianense* Britton and Smith. sp. nov. Vigo Co., 1932. Dioecious, macrandrous; oogonium obovoid to nearly pyriform, pore superior; oospore globose to ovoid, usually not filling the oogonium, outer spore wall scrobiculate; antheridium 1-3, sperms 2, division horizontal; vegetative cell 10-16 x 72-110 microns; oogonium 36-46 x 50-64 microns; oospore 35-44 x 40-46 microns; antheridium 13-16 x 9-13 microns.

Order—Zygnemales

⁴*Spirogyra nitida* (Dillw.) Link. Pike Co., Aug. 7, 1934.

Order—Desmidiiales

⁴*Arthrodesmus convergens* Ehrenberg. Sullivan Co., July 7, 1933.

⁴*Closterium acerosum* (Shrank) Ehrenberg. Greene Co., Aug. 7, 1934. Knox Co., Aug. 7, 1934. Pike Co., Aug. 7, 1934.

**Closterium acerosum* var. *elongatum* Breb. Lake Co., Sept. 22, 1934.

**Closterium moniliferum* (Bory) Ehrenberg. Pike Co., Aug. 7, 1934.

**Cosmarium portianum* Archer. Daviess Co., Aug. 7, 1934.

**Cosmarium portianum* var. *nephroideum* Wittrock. Pike Co., Aug. 7, 1934.

**Cosmarium reniforme* (Ralfs) Arch. Marshall Co., Aug. 30, 1934.

**Penium margaritaceum* (Ehrenberg) Breb. Knox Co., Aug. 7, 1934. Pike Co., Aug. 7, 1934.

**Staurastrum alternans* de Brebisson. Sullivan Co., Aug. 7, 1934.

**Staurastrum dickiei* Ralfs. Sullivan Co., Sept. 16, 1934.

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