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The Genus *Sphaerellopsis* in Indiana

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Butler University
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Edited by

J. E. Potzger

The *Butler University Botanical Studies* journal was published by the Botany Department of Butler University, Indianapolis, Indiana, from 1929 to 1964. The scientific journal featured original papers primarily on plant ecology, taxonomy, and microbiology. The papers contain valuable historical studies, especially floristic surveys that document Indiana's vegetation in past decades. Authors were Butler faculty, current and former master's degree students and undergraduates, and other Indiana botanists. The journal was started by Stanley Cain, noted conservation biologist, and edited through most of its years of production by Ray C. Friesner, Butler's first botanist and founder of the department in 1919. The journal was distributed to learned societies and libraries through exchange.

During the years of the journal's publication, the Butler University Botany Department had an active program of research and student training. 201 bachelor's degrees and 75 master's degrees in Botany were conferred during this period. Thirty-five of these graduates went on to earn doctorates at other institutions.

The Botany Department attracted many notable faculty members and students. Distinguished faculty, in addition to Cain and Friesner, included John E. Potzger, a forest ecologist and palynologist, Willard Nelson Clute, co-founder of the American Fern Society, Marion T. Hall, former director of the Morton Arboretum, C. Mervin Palmer, Rex Webster, and John Pelton. Some of the former undergraduate and master's students who made active contributions to the fields of botany and ecology include Dwight W. Billings, Fay Kenoyer Daily, William A. Daily, Rexford Daudenmire, Francis Hueber, Frank McCormick, Scott McCoy, Robert Petty, Potzger, Helene Starcs, and Theodore Sperry. Cain, Daudenmire, Potzger, and Billings served as Presidents of the Ecological Society of America.

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THE GENUS *SPHAERELLOPSIS* IN INDIANA

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A new alga was recorded for Marion County in the State of Indiana in May, 1960, when a sample of water from a small fish pond on the property of Professor William Cupp, near the Butler University campus, was found to contain a large number of individuals of *Sphaerellopsis fluviatilis* (Stein) Pascher (1927). No previous report of the occurrence of this genus in Indiana is listed in the flora records of the state.

The presence of *Sphaerellopsis fluviatilis* (Stein) Pascher in California was reported by Smith, 1933. Since this first report of its occurrence in the United States, it has been reported to exist in Ohio by Lillick and Lee, 1934. In 1954 this organism was reported by Forest as occurring in a river in Tennessee.

Sphaerellopsis is a unicellular member of the Order Volvocales of the Division Chlorophyta. It differs from members of the genus *Chlamydomonas* in being surrounded by a persistent gelatinous sheath that differs in shape from the protoplast. The cell with its sheath is entire and individuals in this collection appear to be sub-spherical. The protoplast is elongate and fusiform with two equally long flagella, an anterior eyespot and two contractile vacuoles. The chloroplast is massive and bears a single pyrenoid.

Some asexual reproductive stages were present in the Indiana material. Here the gelatinous sheath of the mother cell persisted around the daughter protoplasts with each of the new individuals surrounded by its own sheath.

Size of the vegetative cells varied from 14-30 microns in length and 10-30 microns in width.

No sexual reproduction was observed but according to Pascher it is isogamous.

Specimens of *Sphaerellopsis fluviatilis* (Stein) Pascher have been placed in the Butler University Herbarium.

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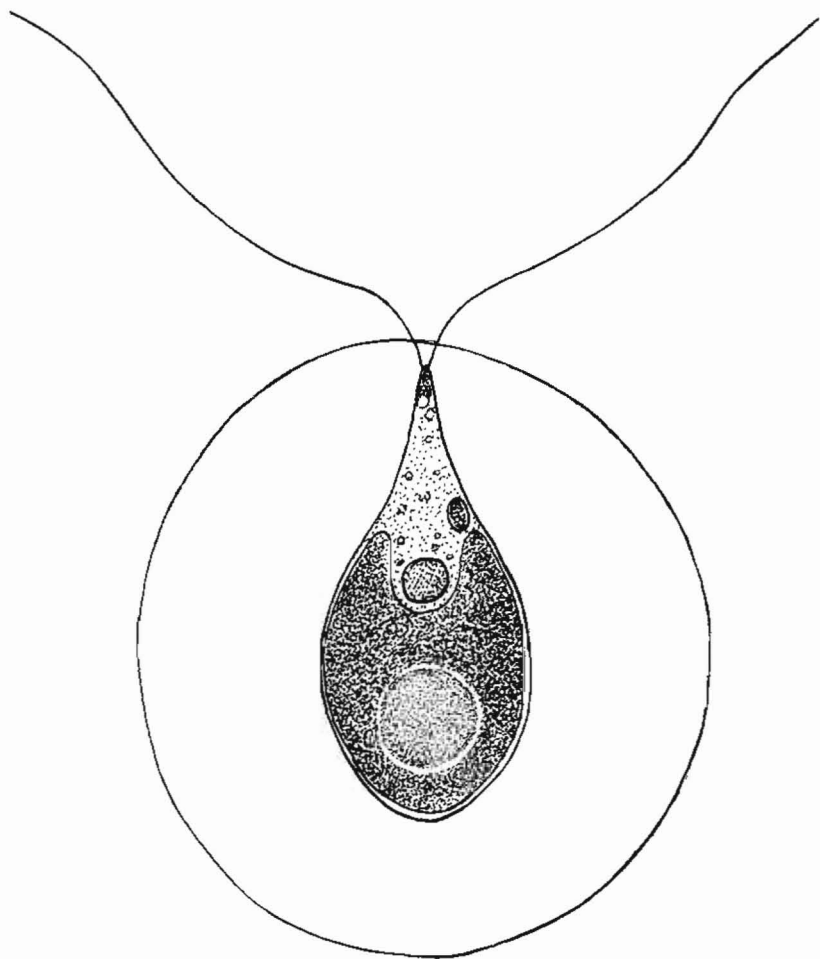


FIGURE I

Cell of *Sphaerellopsis fluviatilis* (Stein) Pascher (x2000).