

Notes on Some Algae Found in Indiana

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The specimens cited here are to be found in the writer's personal herbarium on file in the Ray C. Friesner Memorial Herbarium of Butler University.

Unless otherwise noted, the species and one variety listed here are new reports for Indiana and were collected by Mrs. Fay K. Daily and the writer.

A check-list of algae reported collected in Indiana is kept on file in the Botany Department of Butler University.

I wish to acknowledge the aid and suggestions given by Drs. Ruth Patrick, Charles Reimer, Francis Drouet and Mrs. Fay K. Daily.

Bacillariophyceae

Achnanthes clevei Grun., *Amphora veneta* (Kütz.) Hus., *Cymbella mexicana* (Ehr.) R.S., *C. sinuata* Grey, *Fragilaria nitzschoides* Grun., *Melosira roseana* Rabh. and *Navicula gracilis* Ehr.

Warren County: With filamentous Chlorophyceae on sand beneath sandstone overhang. Kickapoo Falls near Attica, no. 3031, Aug. 31, 1961.

Chlorophyceae

Schizochlamys aurantia (Ag.) Dr. & Da.

Steuben County: In shallow water, on bottom of Gentian Lake, Wing Haven, 6 mi. N. of Angola, no. 2673, Aug. 24, 1953.

Tetrallantos Lagerheimii Teil.

Parke County: With *Gomphosphaeria Wichuriae* (Hilse) Dr. & Da. Tow from bank of Thomas Lake, 1½ mi. east of Lena, no. 2531, Aug. 25, 1951.

The genus was first reported for Indiana by Palmer and Brown (4) in 1959, but a description was not given of, quote, "a colonial green alga belonging to the genus *Tetrallantos*." This genus is monotypic and the specimen we collected in a small artificial lake fits the description of *T. Lagerheimii*. It is a rare soft-water plankter.

Volvox Carteri Stein.

Marion County: A bloom in pond at Riverside Fish Hatchery, Indianapolis, no. 2752, July 24, 1955.

This specimen was identified by the late Dr. G. M. Smith on Aug. 9, 1955. According to him, it was known definitely only from India and the vicinity of Manila, Philippine Islands previous to this Indiana collection. Zygotes of *V. Carteri* differ from zygotes of all other species in that the mature wall is crenulate in outline.

Zoochlorella parasitica Brandt.

Elkhart County: Floating in Little Lake Simonton, 5 mi. north of Elkhart, no. 2624, Aug. 26, 1952; Kosciusko County: In shallow water near Johnson's Hotel, Lake Wawasee, no. 2694, Aug. 27, 1953; Marshall

County: A very pale blue-green gelatinous ball on bottom of Lake Maxinkuckee near outlet, Culver, no. 1541, Aug. 5, 1946.

This alga frequently passes under the name of *Chlorella* and generally is found inhabiting *Ophrydium* species.

Euglenophyceae

Trachelomonas volvocina var. *punctata* Skvortzow.

Marion County: On surface of pond at Riverside Fish Hatchery, Indianapolis, no. 1569, Aug. 18, 1946.

Myxophyceae

Anabaena flos-aquae var. *Treleasii* Born. & Flah.

Tippecanoe County: Net collection from Hadley's Lake near Klondyke, no. 2831, July 11, 1959.

The vegetative cells are smaller and the spores much longer in this variety (spore up to 60 μ in length) than in the typical variety.

Anabaena unispora Gard.

Steuben County: Net collection from Gentian Lake, 6 mi. north of Angola, no. 2661, Aug. 24, 1953.

This species is typically a hard-water plankter in lakes of glacial origin in Indiana, very rare and found sparingly in the two collections at hand.

Arthrospira Gomontiana Setch.

Marshall County: Surface plankton. Kreighbaum Lake, Aug. 7, 1953. Collected by William R. Eberly.

This is a pseudovacuated species.

Arthrospira Jenneri Stitzenberg.

Steuben County: Lake Lonidaw in Pokagon State Park, July 26, 1949 and Aug. 9, 1949. Collected by Sarah Ann Joyner.

This is not a new species report. The tightly intertwined nature of some of the filaments is of interest and the only readily available drawing of this phenomenon is in Prescott (5).

Dichothrix Orsiniana (Kütz.) Born. & Flah.

Cass County: A purplish colored crust on limestone in abandoned section of Cass Stone Co., 6 mi. west of Logansport, nos. 2994, 2996, June 29, 1961.

Phormidium mucicola Naum. & Huber.

Kosciusko County: Beaver Dam Lake, 4 mi. northwest of Silver Lake, no. 82, June 10, 1939.

This organism is occasionally found to be abundant in the gelatinous matrix of *Anacystis cyanea* (Kütz.) Dr. & Da.

Symploca Muscorum (Ag.) Gom.

Randolph County: From Grassy Sedge Knoll, Cabin Creek Raised Bog, 6.3 mi. north of Modoc, June 16, 1962.

This alga is cited here only because it is an addition to the algal flora of the Cabin Creek Raised Bog (2).

Rhodophyceae*Asterocytis smaragdina* (Reinsch) Forti.

Warren County: In a thin yellow-brown layer of mud, Kickapoo Falls, Attica, nos. 2985, June 23, 1961, and 3022, 3023, 3026, 3020, Aug. 31, 1961.

This rhodophycean was previously collected in Lake County by Dr. Francis Drouet. I (1) stated that there was some doubt as to whether or not this was a rhodophycean or a myxophycean. When the Kickapoo Falls algal filaments were studied in the living condition, the single stellate chromatophore of a bright blue-green color with a single large pyrenoid at its center was extremely vivid. After these collections were dried down on mica or preserved in 2% formalin, they resembled the Lake County specimen. At least morphologically, these plants are rhodophycean and bear little resemblance to the myxophyceae except when seen in the dried or liquid-preserved condition.

Lemanea (Beck's Mill type sensu C. M. Palmer). See Palmer (3).

Lawrence County: Attached to concrete sluiceway in dam, in dripping water, State Fish Hatchery, Avoca, no. 2303, Aug. 1, 1950.

Several of the filaments in these plants measure 50 cm. or approximately 20 inches in length. Palmer (3) noted the greatest length for Indiana *Lemaneas* to be only 20 cm. or about 8 inches in length and G. M. Smith (6) claimed the same for the United States. The remainder of the *Lemanea* plants on the dam and attached to the stones in the streamlet below the dam were the usual small size of approximately 4 to 6 inches in length. The maximum internodal length of these large specimens is scarcely 3 mm. and this agrees with Palmer's measurements for Indiana plants. Thus, the gigantic oversize cannot be attributed to lengthened internodes.

Literature Cited

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5. PRESCOTT, G. W. 1951. Algae of the Western Great Lakes Area. *Cranbrook Institute of Science Bulletin No. 31*.
6. SMITH, G. M. 1933. *Fresh-Water algae of the United States*. New York.