

Myxomycetes New or Rare in Indiana

WILLIAM D. GRAY¹, Ohio State University

Since publication of the first paper on Indiana Myxomycetes (Gray, 1936) the project, which was at first concerned only with the myxomycetes of Clark County, has been expanded to include a survey of the entire state. The present paper constitutes the first report on the expanded project.

With few exceptions the specimens of earlier Indiana collectors have been unavailable, and hence the starting point has been merely a composite list of the species reported by these workers; it is to be hoped that this list will be eventually supplanted by properly labelled herbarium specimens of the various Indiana forms. Collections have thus far been made in twenty-nine counties and from these collections much data has already been gained concerning the relative abundance of various species in the state. The present report is concerned with species not hitherto reported for Indiana or species collected infrequently enough that they should receive some comment. Species being reported for the first time are marked with asterisks; all specimens are deposited in the DePauw University Herbarium under the numbers herein listed:

* *Arcyria occidentalis* (Macbr.) G. Lister

A single specimen (W8108 from Putnam County) forms the basis for the first report of this species from Indiana. Superficially it resembles a rather yellowed fruiting of *Arcyria cinerea* (Bull.) Pers.

* *Badhamia rubignosa* (Chev.) Rost.

Members of the genus *Badhamia* apparently are not abundant in the state as is evidenced by the reports of earlier workers and by the writer's own collecting experience. Hagedorn (1944) states that this species is common and abundant throughout continental North America, and Macbride and Martin (1934) describe it as probably the most common *Badhamia* in North America; however, our only Indiana specimen is a large fruiting (W3008) taken in Jasper County. The species is not inconspicuous and cannot be easily overlooked so it would seem that perhaps it is not so abundant in Indiana as in other states.

Badhamia utricularis (Bull.) Berk.

This species has been reported twice from Indiana: first by Underwood (1894) from Putnam County and again by Gray (1936) from Clark County. Because of the paucity of *Badhamias* in the state, a third collection is herein reported. It is interesting

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to note that this collection (No. 122) was made in Putnam County at Fern, which was one of the regions explored earlier by Underwood. It is quite possible that Underwood's early report was based on a specimen taken from the same region as No. 122.

**Clastoderma Debaryanum* Blytt

Our only representative of this species is a fruiting (GWM5398) which Dr. G. W. Martin obtained by placing forest litter from Clark County in a moist chamber. Judging from its distribution as reported by Hagelstein (1944) and Macbride and Martin (1934) it is to be expected in Indiana although probably not in abundance.

Comatricha pulchella (Bab.) Rost.

Hitherto represented by only two reports (Thomas, 1901 and Gray, 1939) a third collection of this species is now reported. This third report is based on No. 300 which was collected in Decatur County.

Craterium leucocephalum (Pers.) Ditm.

The genus *Craterium*, in which Macbride and Martin recognize seven species, thus far has been represented in Indiana by reports of but two species. Olive (1898) and Barbazette (1909) both reported *C. leucocephalum* from Indiana and Mutchler (1903) reported this species in addition to *C. cylindricum* Masee. Due to the paucity of records for this species it seems worthwhile to report five collections made by the writer in Ripley County and one by Dr. Martin in Clark County. Species of *Craterium* are not easily overlooked and hence it would appear that such species are not common in this region. This is substantiated in part by the observations of Mr. William Botts, who collects in northern Kentucky and has noted the infrequent occurrence of *Crateriums*. (Nos. 593, 608, 618, 621, 634, and GWM 5631)

Cribraria elegans Berk. & Curt.

This delicate *Cribraria*, first reported from Clark County (Gray, 1939), has since been collected in Scott County (No. 156) and Decatur County (No. 306).

Cribraria minutissima Schw.

This species was reported first by Mutchler (1903) from the Lake Winona region and again by Barbazette (1909) from Northern Indiana. Two additional reports of the species are hereby made; these are based on specimens Nos. 5450 and 5478 obtained in moist chambers by Dr. Martin on material gathered in Clark County.

**Didymium minus* Morgan

Regarded by Hagelstein and also by the Listers as only a variety of *D. melanospermum* (Pers.) Macbr., this species is represented

by a single collection (No. 625) from Ripley County. It is to be expected in the eastern part of the state, since it was reported by Morgan (1894) from the Miami Valley, Ohio.

Didymium xanthopus (Ditmar) Fr.

No. 628 from Ripley County is this species and represents the second report for Indiana since Mutchler also reported it in 1902. Lister (1925) regarded this form as only a variety of *Didymium nigripes* (Link) Fr., and Hagelstein (1944) remarked that he regarded it as a species somewhat reluctantly. I am of the opinion that it is a distinct species, since I have grown both *D. nigripes* and *D. xanthopus* from spore material supplied by Mr. Hagelstein and noted rather marked differences between the two. *D. nigripes* forms a colorless plasmodium whereas *D. xanthopus* forms a cream-colored one when grown on carrot decoction agar. Under identical conditions, plasmodia of *D. xanthopus* are far more vigorous growing than those of *D. nigripes* and several times it has been possible to obtain large amounts of plasmodium of the former by growing it on rolled oats in a moist chamber using the method devised by Camp (1936). Martin (The Myxomycetes, North American Flora; in press) has also noted differences between these two forms with regard to plasmodial colors and states that the plasmodium of *D. nigripes* is "gray or colorless" while that of *D. xanthopus* is "yellowish white, pale flesh-color, rose or green". It is quite true that caution should be exercised in the use of plasmodial color as a criterion of species; however, when two forms consistently exhibit a difference under similar culture conditions, it seems obvious that the difference is a real one.

**Echinostelium minutum* de Bary

There is no report of a field collection of this species from Indiana. Since it is the smallest species of myxomycete (sporangia 40-50 microns in diameter), it is easily overlooked in the field. This report of the species is based on Dr. Martin's No. 5477 which developed in a moist chamber on litter from Harrison County.

**Enerthenema papillatum* (Pers.) Rost

As with *Echinostelium minutum* there is no record of a field collection of this species in Indiana. Dr. Martin's No. 5467, which developed in a moist chamber on litter from Harrison County, is this species.

**Hemitrichia abietina* (Wig.) Lister

Represented by two collections thus far: one (No. W5638) from Putnam County, the other (No. W5821) from Montgomery. Both collections were from decaying wood and on first appearance resemble weathered fruitings of *Arcyria deundata* (L.) Wettstein.

Lamproderma violaceum (Fries) Rost.

Lamproderma arcyryonema Rost. seems to be our most abundant Indiana species of *Lamproderma*. *L. violaceum* was reported once by Underwood (1894), presumably from Putnam County; another collection (Wa 782) is herein reported from the same county.

**Licea pusilla* Schrad.

This species is apparently infrequently collected, since Hagelstein lists it only for Pennsylvania, whereas Macbride and Martin list it for North Carolina, Iowa, and Europe. We have a single specimen (Martin 5451), which developed in a moist chamber on litter from the Clark County State Forestry.

**Lycogala conicum* Pers.

Only one collection has thus far been made in Indiana of this rare species—No. 313 taken in Decatur County in August, 1938. A portion of the fruiting was sent to the late Mr. Hagelstein who reported it in *Mycologia* in 1939. This report completes our observations on the occurrence of the genus *Lycogala* in Indiana, since all four species have now been reported for the state. Indiana specimens of *Lycogala flavofuscum* (Ehr.) Rost. have not been seen by the writer; however, the species is unmistakable and has been reported by Underwood (1894), Thomas (1901), Mutchler (1902 and 1903), and Van Hook (1916).

**Mucilago spongiosa* var. *solida* STURGIS

Mucilago spongiosa (Leyss.) Morg. has been recorded two times for Indiana, but there is no previous report of this variety. Hagelstein states that the variety is not infrequent wherever the species occurs in abundance. (320; Floyd County).

**Physarum penetrale* Rex

The elongated sporangium and long columella of this species make it easily recognized. The present report is based on a single somewhat weathered collection, No. 488 from Harrison County. Macbride and Martin regard the species as cosmopolitan but not common in North America.

**Physarum viride* var. *incanum* Lister

Physarum viride (Bull.) Pers. has been collected in the state frequently; however, we have only one collection of var. *incanum* (W3024; Marshall County).

Stemonitis carolinensis Macbr.

This species was earlier reported by Mutchler (1903) and Van Hook (1916). Two additional collections have been made: No. 130 from Harrison County and No. 142 from Floyd County.

**Stemonitis flavogenita* Jahn

Hitherto unreported for the state, this species has been collected twice—once in Clark County (No. 50) and once in Harrison

County (No. 60). Both specimens were found on decaying wood, which is in agreement with Macbride and Martin's statement that such a substratum is its main habitat.

Stemonitis virginiensis Rex.

This species, while not included in a list of *Stemonitis* species prepared by Whetzel (1902), was reported once by Mutchler (1903). It seems worthwhile to note that we now have seven collections of the species from Indiana: one from Clark County, two from Washington County, and four from Orange County (Nos. 188, 418, 419, 420, 421, 434, 436.).

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