

The Myxomycetes of Athens County, Ohio¹

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ABSTRACT. The goal of this study was to document all reported collections of myxomycetes (slime molds) from Athens County, OH (USA). The compilation of several published and unpublished studies of myxomycete records from Athens County resulted in a total of 52 species. The species were distributed among 6 orders, 9 families, and 25 genera and represent 24% of the myxomycetes known from Ohio and approximately 15% of those recorded for North America. No new collections for the state of Ohio were reported.

OHIO J SCI 102 (2):27–29, 2002

INTRODUCTION

Although widely distributed, myxomycetes (true slime molds, acellular slime molds, or plasmodial slime molds) have not been fully studied throughout Ohio. Despite major taxonomic works by Fulmer (1921) and Keller and Braun (1999), the distribution and ecology of the myxomycetes in several Ohio counties are not well known. For example, of the 88 counties in the state, only 64 have recorded myxomycete collections, and many of these counties have fewer than five recorded species (Keller and Braun 1999). In addition, large gaps in myxomycete distributions are noted throughout the state, with many of the more heavily collected counties occurring near universities (Cooke 1972; Keller and Braun 1999).

Although the collection and study of myxomycetes in Ohio has been ongoing since 1834 (Lea 1849), the distribution of these organisms is not well known (Keller and Braun 1999). The first taxonomic survey in Athens County was carried out by Jones (1943). The purpose of this study is to document all reported collections of myxomycetes from Athens County, OH.

Athens County (centroid: 39° 21' N; 82° 00' W) is located on the unglaciated portion of the Allegheny Plateau and is located in the Low Hills Belt of the Mixed Mesophytic forest region of Braun (1950). Forest composition in the area is driven by topographic and edaphic gradients with oak- (*Quercus* L. spp.) dominated forests occupying dry sites, and forests dominated by beech (*Fagus grandifolia* Ehrh.), maple (*Acer* L. spp.), and tulip poplar (*Liriodendron tulipifera* L.) on mesic sites (Braun 1950).

METHODS

The list of myxomycetes from Athens County was compiled by consulting historical records provided in Keller and Braun (1999), Master's theses submitted to the Department of Environmental and Plant Biology of Ohio University (Jones 1943; Udall 1951), verified collections made for class projects assigned by the second author from 1976–2000, and current research projects of

both authors. Nomenclature follows that of Keller and Braun (1999) [which closely follows the treatment of Martin and others (1983) and the synonymy of Martin and Alexopoulos (1969)].

Collections made by Udall (1951) were from a beech-maple forest in Lee Township, and collections made by Jones (1943) were from Athens Township (mesic forests and Ohio University Campus). Jones' and Udall's theses are available from the Department of Environmental and Plant Biology, Ohio University, Athens, OH. Collections made by Rubino were from oak logs in a mixed-oak forest (Waterloo Wildlife Experimental Research Station, Waterloo Township), and those of Cavender were from various dry and mesic forests throughout the county.

RESULTS

Fifty-two species are reported for Athens County. These species are distributed among 3 subclasses, 6 orders, 9 families, and 25 genera (Table 1). These myxomycete records represent 24% of the 215 myxomycetes known to occur in Ohio, 15% of the approximately 350 reported from North America, and 7% of the approximately 800 species recognized worldwide (Keller and Braun 1999). Sixty-one percent of the genera, 82% of the families, and all of the orders reported from Ohio have been recorded from Athens County.

DISCUSSION

No new records for Ohio were found in the various Athens County myxomycete studies. Interestingly, Jones (1943) reports a collection of *Arcyria carnea* (G. Lister) G. Lister in his thesis; this collection would represent a new record for Ohio. However, nearly all of Jones' original collections have been lost, and verification is not possible. Keller and Braun (1999) did not recognize this species as occurring in Ohio in their survey of Ohio myxomycetes.

Further study and collection will undoubtedly result in the addition of more species to the Athens County myxomycete biota. However, this list will be useful to professionals and amateurs interested in myxomycete distribution and ecology, represents a more complete listing of myxomycetes in Athens County, and furthers our knowledge of the distribution and diversity of Ohio's biota (*sensu* Cooke 1972).

¹Manuscript received 1 July 2001 and in revised form 21 November 2001 (#01-09).

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TABLE 1

Reports of myxomycetes from Athens County, Ohio (USA). Nomenclature follows Keller and Braun (1999).

| Order | Family | Species |
|--------------------------------|-------------------|--|
| Subclass: Ceratiomyxomycetidae | | |
| Ceratiomyxales | Ceratiomyxaceae | <i>Ceratiomyxa fruticulosa</i> (Müll.) Macbr. †, ‡, §, * |
| Subclass: Myxogastromycetidae | | |
| Echinosteliales | Clastodermataceae | <i>Clastoderma debaryanum</i> Blytt † |
| | Echinosteliaceae | <i>Echinostelium minutum</i> de Bary † |
| Liceales | Cribrariaceae | <i>Cribraria aurantiaca</i> Schrad. † § <i>Cribraria microcarpa</i> (Schrad.) Pers. § <i>Cribraria tenella</i> Schrad. § <i>Dictydium cancellatum</i> (Batsch) Macbr. † |
| | Enteridiaceae | <i>Dictydiaethalium plumbeum</i> (Schum.) Rost. † <i>Enteridium splendens</i> (Morgan) Macbr. † ‡ § <i>Lycogala epidendrum</i> (L.) Fries † ‡ § * <i>Tubifera ferruginosa</i> (Batsch) J.F. Gmel. † ‡ § |
| Physarales | Didymiaceae | <i>Diachea leucopodia</i> (Bull.) Rost. † <i>Diderma crustaceum</i> Peck † <i>Diderma floriforme</i> (Bull.) Pers. § <i>Diderma testaceum</i> (Schrad.) Pers. † <i>Didymium clavus</i> (Alb. & Schw.) Rab. † <i>Didymium nigripes</i> (Link) Fries † <i>Didymium squamulosum</i> (Alb. & Schw.) Fries † |
| | Physaraceae | <i>Craterium minutum</i> (Leers) Fries § <i>Fuligo cinerea</i> (Schw.) Morgan † <i>Fuligo septica</i> (L.) Wiggers † † <i>Leocarpus fragilis</i> (Dicks.) Rost. † <i>Physarella oblonga</i> (Berk. & Curt.) Morgan † <i>Physarum cinereum</i> (Batsch) Pers. † <i>Physarum globuliferum</i> (Bull.) Pers. † § <i>Physarum melleum</i> (Berk. & Br.) Masee § <i>Physarum nutans</i> Pers. † § <i>Physarum polycephalum</i> Schw. † ‡ § <i>Physarum pulcherrimum</i> Berk. & Rav. § <i>Physarum pulcherripes</i> Peck § <i>Physarum pusillum</i> (Berk. & Curt.) G. Lister § <i>Physarum stellatum</i> (Masee) Martin † <i>Physarum viride</i> (Bull.) Pers. † § |
| Trichiales | Trichiaceae | <i>Arcyria cinerea</i> (Bull.) Pers. † § <i>Arcyria denudata</i> (L.) Wettst. † † § * <i>Arcyria insignis</i> Kalchbr. & Cooke † <i>Arcyria magna</i> Rex † <i>Arcyria nutans</i> (Bull.) Grev. § <i>Hemitrichia calyculata</i> (Speg.) Farr † § <i>Hemitrichia clavata</i> (Pers.) Rost. † § * <i>Hemitrichia serpula</i> (Scop.) Rost. † † § <i>Metatrichia vesparium</i> (Batsch) Nann.-Brem. † † § <i>Oligonema schweinitzii</i> (Berk.) Martin § <i>Trichia decipiens</i> (Pers.) Macbr. § <i>Trichia favoginea</i> (Batsch) Pers. † § |

TABLE 1 (Cont.)

Reports of myxomycetes from Athens County, Ohio (USA). Nomenclature follows Keller and Braun (1999).

| Order | Family | Species |
|------------------------------|---------------|---|
| Subclass: Stemonitomycetidae | | |
| Stemonitales | Stemonitaceae | <i>Comatricha pulchella</i> (C. Bab.) Rost. ‡ <i>Comatricha typhoides</i> (Bull.) Rost. ‡ <i>Lamproderma arcyrrioides</i> (Summerf.) Rost. § <i>Stemonitis axifera</i> (Bull.) Macbr. ‡ § <i>Stemonitis fusca</i> Roth ‡ § <i>Stemonitis smithii</i> Macbr. ‡ <i>Stemonitis splendens</i> Rost. ‡ † * |

† Records from class projects assigned by J.C. Cavender and verified by J.C. Cavender. Collections are deposited at The Department of Environmental and Plant Biology, Ohio University (14 species).

‡ Collected by Jones (1943) and verified by G.W. Martin. Although Jones' collections were deposited in The Department of Environmental and Plant Biology, Ohio University, they have subsequently been lost (36 species).

§ Collected and identified by D.L. Rubino. Collections are deposited at The Department of Environmental and Plant Biology, Ohio University (30 species).

* Collected and identified by Udall (1951). Udall makes no mention as to the location of the collections or to verification (5 species).

ACKNOWLEDGMENTS. The first author would like to thank the Ohio Biological Survey for funding, Waterloo Wildlife Experimental Research Station for sampling permission, and Brian McCarthy and Karl Braun for assistance and encouragement. We would like to thank Dawn Black for assistance with identification.

LITERATURE CITED

- Braun EL. 1950. Deciduous forests of eastern North America. Philadelphia: The Blakiston Co. 596 p.
- Cooke WB. 1972. Some backgrounds for an Ohio mycobiota. Ohio J Sci 73:83-8.
- Fulmer EL. 1921. The Slime molds of Ohio. Bull. No. 11. Vol. 3, No. 1. Columbus: Ohio Biological Survey. 72 p.
- Jones WJ. 1943. Myxomycetes of Athens Township [MS Thesis]. Athens (OH): Ohio University. Dept of Environmental and Plant Biology. 96 p.
- Keller HW, Braun KL. 1999. Myxomycetes of Ohio: their systematics, biology, and use in teaching. Vol. 13, No. 2. Columbus: Ohio Biological Survey. 182 p.
- Lea TG. 1849. Catalogue of plants, native and naturalized, collected in the vicinity of Cincinnati, Ohio, during the years 1834-1844. Philadelphia: TK & PG Collins. 77 p.
- Martin GW, Alexopoulos CJ. 1969. The Myxomycetes. Iowa City: Univ Iowa Press. 561 p.
- Martin GW, Alexopoulos CJ, Farr ML. 1983. The genera of Myxomycetes. Iowa City: Univ Iowa Press. 102 p.
- Udall LV. 1951. The succession of macrofungi in a beech-maple forest association [MS thesis]. Athens (OH): Ohio University. Dept of Environmental and Plant Biology. 143 p.