

Archidium ohioense confirmed in Missouri

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ABSTRACT. — *Archidium ohioense* is confirmed for Missouri based on a specimen from the Gans Creek Wild Area in Rock Bridge Memorial State Park, Boone County. An earlier report of this species from the state is *A. alternifolium*. There are now 326 moss taxa verified from Missouri.

Archidium Brid. (Archidiaceae) is a genus of 36 accepted species (Tropicos 2021), seven of which occur in North America (Spence 2007; Toren et al. 2016). The diminutive plants (1–20 mm high) grow in dense, yellow-green turfs on soil in disturbed habitats, and are often partially buried or otherwise obscured by vegetation, including other bryophytes. Its plants are nondescript and have mostly erect, ovate to lanceolate leaves with acute to acuminate apices. The lateral or terminal capsules are sessile, ovoid, cleistocarpous (i.e. lack an annulus and operculum) and contain few, but massive spores. These spores, up to 310 µm long, are the largest of any bryophyte (Snider 1975); this character immediately separates *Archidium* from all other genera.

Archidium ohioense Schimp. ex Müll. Hal. (**Figure 1**) is the most common and widespread *Archidium* species in eastern North America (Snider 1975; Spence 2007). The species was recently discovered in the Gans Creek Wild Area in Rock Bridge Memorial State Park, Boone County, representing the first documented occurrence of the species in Missouri. It was found near a trail in a rocky, dolomite glade at the Coyote Bluff overlook. The specimen grew among grasses, intermixed with a thalloid liverwort, *Mannia fragrans* (Balb.) Frye & L. Clark, and a moss *Tortella humilis* (Hedw.) Jenn. The small plants of *Archidium* were initially overlooked in the field when the specimen was collected. Only later, while re-examining a duplicate specimen of the intended collection, *M. fragrans*, were the small *Archidium* plants discovered.

Although *Archidium ohioense* was previously reported from southwestern Missouri by Redfearn (1961), that specimen [Dade County, 1 mile west of Bona, Redfearn 6987 (CANM, MO)] was later annotated as *A. alternifolium* (Dicks. ex Hedw.) Schimp. by Jerry Snider and cited in his 1975 taxonomic revision of the genus. *Archidium ohioense* and *A. alternifolium* are nearly identical morphologically. Both have similarly sized, ovate-lanceolate, acuminate upper vegetative and perichaetial leaves with entire to serrulate margins and single, percurrent to excurrent costae. Both also have similarly sized, rhomboidal upper and median leaf cells and similarly sized capsules and spores. However, *A. alternifolium* is paricous with its antheridia and archegonia located in the same cluster, but not intermixed. The antheridia are commonly naked or enclosed by 1–2 pairs of bracts in the axils of the perichaetial leaves below the archegonia. By comparison, *A. ohioense* is autoicous with its antheridia and archegonia on the same plant, but not in the same cluster. In *A.*

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ohioense the antheridia are in small axillary buds consisting of 1–3 pairs of bracts positioned well below the perichaetia.

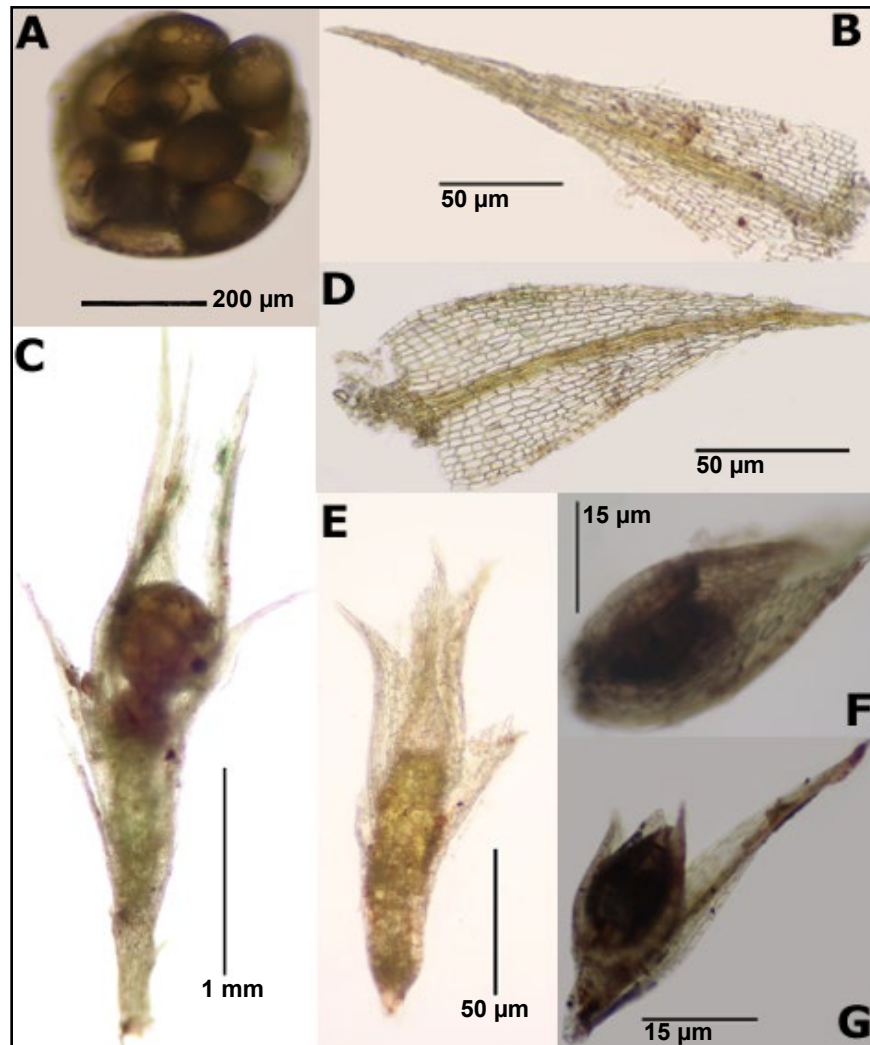


Figure 1. *Archidium ohioense*. **A.** Capsule with spores. **B.** Perichaetial leaf. **C.** Habit with capsule. **D.** Stem leaf. **E.** Lateral perichaetium. **F.** Perigonium with antheridia. **G.** Perigonium in leaf axil. All from *Atwood & Brinda 3173* (MO).

The occurrence of *Archidium ohioense* in Missouri is near the western edge of its expected distribution in eastern North America (Spence 2007). Although there are a few scattered reports from adjacent states, i.e., Illinois (McKnight 1987), Kansas (Churchill 1985) and Oklahoma (Snider 1975), most of these records are based on historical specimens, some 50 to over 150 years old (CNABH portal 2021). The scarcity of more recent *Archidium* specimens in herbaria is likely the result of their being overlooked rather than rare. Sterile plants are inconspicuous and could intentionally be passed over by collectors due to their resemblance to the habit of the weedy

Ceratodon purpureus (Hedw.) Brid., or more likely due to their superficial resemblance to sterile, unidentifiable species of *Pleuridium* Rabenh. or *Bruchia* Schwägr. Missouri bryologists also rarely focus their floristic efforts on disturbed habitats such as ditches, margins of arable fields and edges of trails where more populations of the species might be found. The addition of *A. ohioense* to the Missouri bryoflora increases the number of mosses reported from the state to 326 taxa (Atwood & Holmberg 2018; Darigo 2015; Holmberg & Atwood 2014).

Specimen cited: U.S.A. MISSOURI: BOONE CO.: Gans Creek Wild Area, Rock Bridge Memorial State Park, along trail in rocky, dolomite glade, near edge of lookout on Coyote Bluff. On soil among grasses, *Mannia fragrans* and *Tortella humilis*, 12 May 2015. *Atwood & Brinda 3173* (MO 6764097).

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