

First published records of Swamp Jack-in-the-pulpit, *Arisaema stewardsonii* Britton (Araceae), in Ontario

Colin CHAPMAN-LAM 

Beaty Centre for Species Discovery and Botany Section, Canadian Museum of Nature, Ottawa, Canada; cchap032@gmail.com

Sean BLANEY Atlantic Canada Conservation Data Centre; sean.blaney@accdc.ca

Introduction

Multiple taxa have been described within the *Arisaema triphyllum* (L.) Schott complex on the basis of morphological, cytological, and some ecological differences (Treiber 1980; Wyatt and Stoneburner 2022). At least two of these, *A. stewardsonii* Britton and *A. pusillum* Nash, are present in eastern Canada but not previously confirmed to occur in Ontario (NatureServe 2024; NHIC 2023; Scoggan 1978). These taxa are not always accepted because the distinguishing morphological characters overlap and are often not discernible in herbarium specimens (e.g., Thompson 2000). Intermediates and hybrids have also been reported (e.g., Huttleston 1949), although Wyatt and Stoneburner (2022) consider there to be little to no evidence of hybridization. Weakley and the Southeastern Flora Team (2023) consider the taxa to behave as biological species, noting that occasional mixed populations show little introgression or hybridization. The NHIC (2023) treats them at the subspecific level and reports only *A. t.* subsp. *triphyllum* for Ontario; however, they note that *A. t.* subsp. *stewardsonii* (Britton) Hutt. and *A. t.* subsp. *pusillum* (Peck) Hutt. are known from southern Quebec and could also be present. There are some iNaturalist records from Ontario initially identified as *A. triphyllum* that are possibly *A. stewardsonii* Britton; however, it is not always possible to produce a confident determination when the observer did not deliberately photograph the diagnostic characters. This note serves to confirm the presence of *Arisaema stewardsonii* within Ontario with a specimen record.

Results and Discussion

Arisaema stewardsonii is distinguished from other taxa in the complex by its strongly fluted spathe (meaning the spathe has folds with marginal ridges), cylindrical spadix, and green abaxial leaflet surfaces (Wyatt and Stoneburner 2022; Weakley and Southeastern Flora Team 2023). In the common and widespread *A. triphyllum* s.s., the spathe is not fluted / ridged, the spadix is clavate (club-shaped), and the abaxial leaflet surfaces are glaucous. *Arisaema pusillum*, reported from southern Quebec, also has a cylindrical spadix and green abaxial leaflet

surfaces; however, its spathe is not or only weakly fluted, and the spathe hood is not striped (vs. white stripes in *A. stewardsonii*).

Arisaema stewardsonii tends to be more restricted to wet sites than is *A. triphyllum*. Habitat is described as "wet or swampy woods and thickets" (Fernald 1950, for northeastern North America), "rich low woods, mucky areas usually in thickets or along the edges of intervalles" (Roland and Smith 1969, for Nova Scotia), bogs and peaty swamps (Wyatt & Stoneburner 2022, for the whole range; Weakley and the Southeastern Flora Team 2023, for southeastern USA). The Ontario specimen record (*Chapman-Lam* 5820; see Materials for more collection details) is from a Black Ash (*Fraxinus nigra*) swamp with deep organic muck and no peat moss. We have also seen several individuals within Rideau River Provincial Park (photographs only, see iNaturalist observation 168127783), where it was growing in rich, very moist floodplain swamps. Although these habitats are widespread in Ontario and more work will be required to confirm provincial distribution and abundance, *A. stewardsonii* may be a provincially rare species. Despite having been reported west to Minnesota (Fernald 1950; GBIF 2024; Wyatt and Stoneburner 2022), the well-curated *Arisaema triphyllum* (s.l.) records in iNaturalist (GBIF 2024; n = 45,281) show a strong eastern distribution and do not map *A. stewardsonii* occurrences west of eastern Ohio and the Appalachian Mountains, suggesting that it may be rare and/or inaccurately reported westward. A restricted southeastern Ontario range, in combination with its similarity to *A. triphyllum*, would account for the absence of previous Ontario records. It is considered of conservation concern in neighbouring Quebec, where its provincial status rank is S3 (Vulnerable; see Master et al. 2012 for rank definitions).

Acknowledgments

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Material

https://data.canadensys.net/micropublications/research?r=specimen_25



Figure. *Arisaema stewardsonii* habit, with inset showing spathe detail.