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Ex Roem. & Schult. (Dipsacaceae) In Indiana, A North American
Record**

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FIRST REPORT OF YELLOW-FLOWERED TEASEL, *DIPSACUS STRIGOSUS* WILLD. EX ROEM. & SCHULT. (DIPSACACEAE) IN INDIANA, A NORTH AMERICAN RECORD

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ABSTRACT. This paper reports the presence of *Dipsacus strigosus* Willd. ex Roem. & Schult. in Indiana. The species, native to western Asia, is naturalized in several locations in Europe. This is the first documented occurrence in North America. The new record was collected along a recently constructed bike path in a moist wooded area of the Butler University campus in Indianapolis, Indiana, USA. Like the two other species of the genus known in the Indiana, *D. strigosus* is likely to be invasive, so efforts will be made to eradicate this population. The plant should be monitored and looked for in other sites.

Keywords: invasive plants, teasel, Midwest, Indiana flora, *Dipsacus strigosus*

Teasels, members of the genus *Dipsacus* L. (Dipsacaceae), are biennial or short-lived perennial plants native to Europe, western Asia, and northern Africa (Gleason & Cronquist 1991). Two species, *D. fullonum* L. (common teasel) and *D. laciniatus* L. (cut-leaf teasel) have been known from Indiana for at least 80 years (Dolan 2016). They are thought to have been introduced to North America intentionally for use in wool combing. Both species are listed as highly invasive in the state (Indiana Invasive Species Council 2021). A third species, *D. sativus* (L.) Honck. (fuller's teasel) is known from Ohio and several other states in the eastern United States (USDA NRCS 2021).

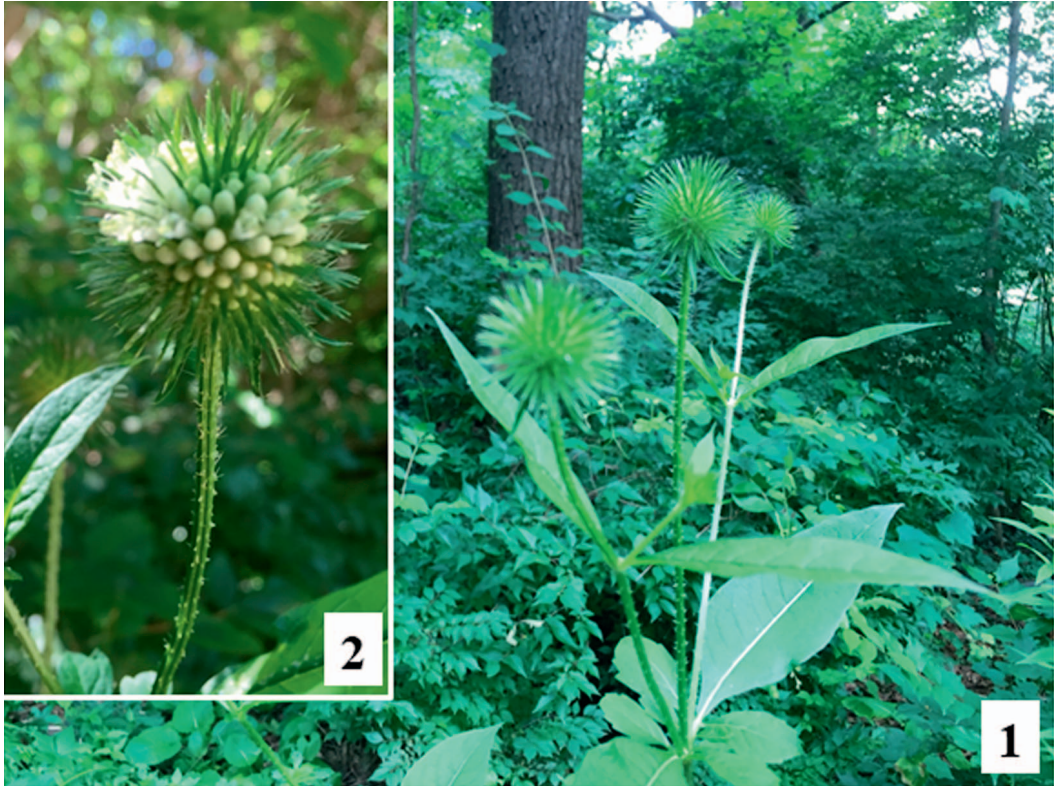
A new teasel species is reported for Indiana, *Dipsacus strigosus* Willd. ex Roem. & Schult. This is the first record for the species in North America (George Yatskievych, Pers. Comm., author of the upcoming treatment of Dipsacaceae for Flora of North America; iDigBio 2021). It may well be the first reported spontaneous occurrence outside of Eurasia (GBIF 2021). *Dipsacus strigosus* is native to Ukraine, southern Russia, and western Asia, where it grows in shady thickets and wet/mesic woodlands (Wirth & Csiky 2019).

The collection location is along a recently constructed and paved bike path in a section of mostly natural moist wooded habitat on the Butler University campus (GPS coordinates 39.84375° N –86.1699° W). Co-occurring species include *Campanulastrum americanum* (L.) Small

(American bellflower), *Impatiens pallida* Nutt. (yellow jewelweed), *Verbena urticifolia* L. (white vervain), and *Verbesina alternifolia* (L.) Britton ex Kearney (wingstem) under a canopy of *Lonicera maackii* (Rupr.) Maxim. (Amur honeysuckle), *Acer negundo* L. (box-elder), and *Celtis occidentalis* L. (hackberry). The population consists of 20–30 individuals in an area ca.10 m in length. Individuals occur on both sides of the path. Plants were first seen in late summer 2020 near the end of flowering and tentatively identified as *Dipsacus pilosus* L. (small teasel). A specimen collected then was sent to Deam Herbarium (IND), Indiana University for determination by Paul Rothrock, associate curator emeritus. Based on size of the inflorescences and apparent anther color, he concluded the specimen might be *D. strigosus*. Additional specimens were collected in 2021 earlier in the flowering season that confirmed the plant to be *D. strigosus*.

Dipsacus strigosus plants are extremely prickly (Fig. 1). Inflorescences are globular, rather than conical or oval as in other Indiana teasels (Fig. 2). Receptacle bracts lack long awns. Cauline leaves are opposite, short petiolate, not sessile, and connate. Rosette leaves are very broad. Corollas are white, turning cream colored with age. Anthers are whitish. The most closely related congener is *D. pilosus*, another teasel not known in North America but reported as often confused with *D. strigosus* in Europe (Manual of the Alien Plants of Belgium 2021). *Dipsacus strigosus* and *D. pilosus* can be distinguished by inflorescence size and anther color (Ahrens 2007). *Dipsacus*

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Figures 1–2.—*Dipsacus strigosus* (yellow-flowered teasel). 1. Prickly stem and opposite, short-petiolate cauline leaves. Plants can reach 1.5 m in height. 2. Globular inflorescence with white petals and anthers.

strigosus has larger diameter flowering heads (ca. 30–40 mm vs. 15–25 mm in *D. pilosus*). Anthers of *D. pilosus* are dark purple and contrast strongly with the color of the corollas.

Yellow-flowered teasel is noted in Europe to have invasive tendencies and to be found in urban habitats (Verloove 2012; Wirth & Csiky 2019). It can reach population sizes in the tens of thousands (Wirth & Csiky 2019). This species is not planted as an ornamental and other uses are not reported. Its mode of introduction into Europe and Indiana are not known. Possible seed spread via landscaping equipment, flooding, or by external animal transport have been proposed (Wirth & Csiky 2019). The persistence of the population on the Butler campus (rosettes in 2021 indicate presence for at least 3 years) suggests *D. strigosus* can become naturalized in North America. Efforts will be made to eradicate it on the Butler campus.

In recent years *Dipsacus* has generally been placed in the family Caprifoliaceae. The upcoming treatment of the genus in the Flora of North

America will separate it into the Dipsacaceae (Kay Yatskievych, Pers. Comm.), as treated here.

Voucher specimens of *Dipsacus strigosus* are deposited at Deam Herbarium (IND) and Friesner Herbarium (BUT).

ACKNOWLEDGMENTS

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