

## Another devil comes to town: *Pilosella aurantiaca* new to Missouri

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ABSTRACT. — *Pilosella aurantiaca*, devil's paintbrush, is reported new to Missouri from a population in St. Louis County that has persisted and spread for at least two years.

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### INTRODUCTION

*Pilosella aurantiaca* (L.) F.W. Schultz & Schultz-Bip. (Asteraceae) [= *Hieracium aurantiacum* L.] is a scapose perennial with involucre of attractive orange ray flowers that is native to central and northern Europe, primarily in montane regions (Wilson & Callihan 1999). Commonly applied vernacular names for this species include devil's paintbrush, orange hawkweed, king devil, and fox-and-cubs.

According to Voss and Reznicek (2012), in the United States the species was planted as an ornamental in Vermont before 1875. It has subsequently spread and become widely distributed in the Northeast and Great Lakes regions, as well as in the northwestern states and Colorado Rockies, with outlying populations reported from as far south as Florida, Georgia, and Arkansas (USDA 2023). The species is classified as a noxious invasive in much of the western portion of its range in the United States (Kartesz 2015). It grows in a wide variety of habitats from wetlands and forests to lawns, roadsides, and old fields, and can become particularly abundant in sandy or rocky soils with low to moderate vascular competition. As an example of its ubiquity in northern regions, it is known from every county but one in the six New England states (Kartesz 2015, Native Plant Trust 2023).

Despite its early use as an ornamental in North America, by the mid-20<sup>th</sup> century Bailey (1949) noted its propensity to become a "bad weed," also observing that it was "probably no longer cultivated." Stone (2010) provides a comprehensive overview of the ecological, invasive impacts, and distributional status of the species in the United States, including discussion of allelopathy.

Although abundant in boreal regions, *Pilosella aurantiaca* is rare and sporadic in the southern portions of its range in the United States. The closest populations to Missouri include a record from Washington County, in northwestern Arkansas, ca. 29 miles south of the Missouri border [weed in lawn, 30 May 1977, *Richard Denton 19* (UARK 10377); digital image accessed

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via SERNEC (2023)]. This is the only record from the south-central states. Spyreas et al. (2017) list a record from Cole County, Illinois, ca. 125 miles east/northeast of the St. Louis area, but rank the report as medium confidence with no specimen information available. Eilers and Roosa (1994) report it as rare in Iowa, with records from three northeastern counties.

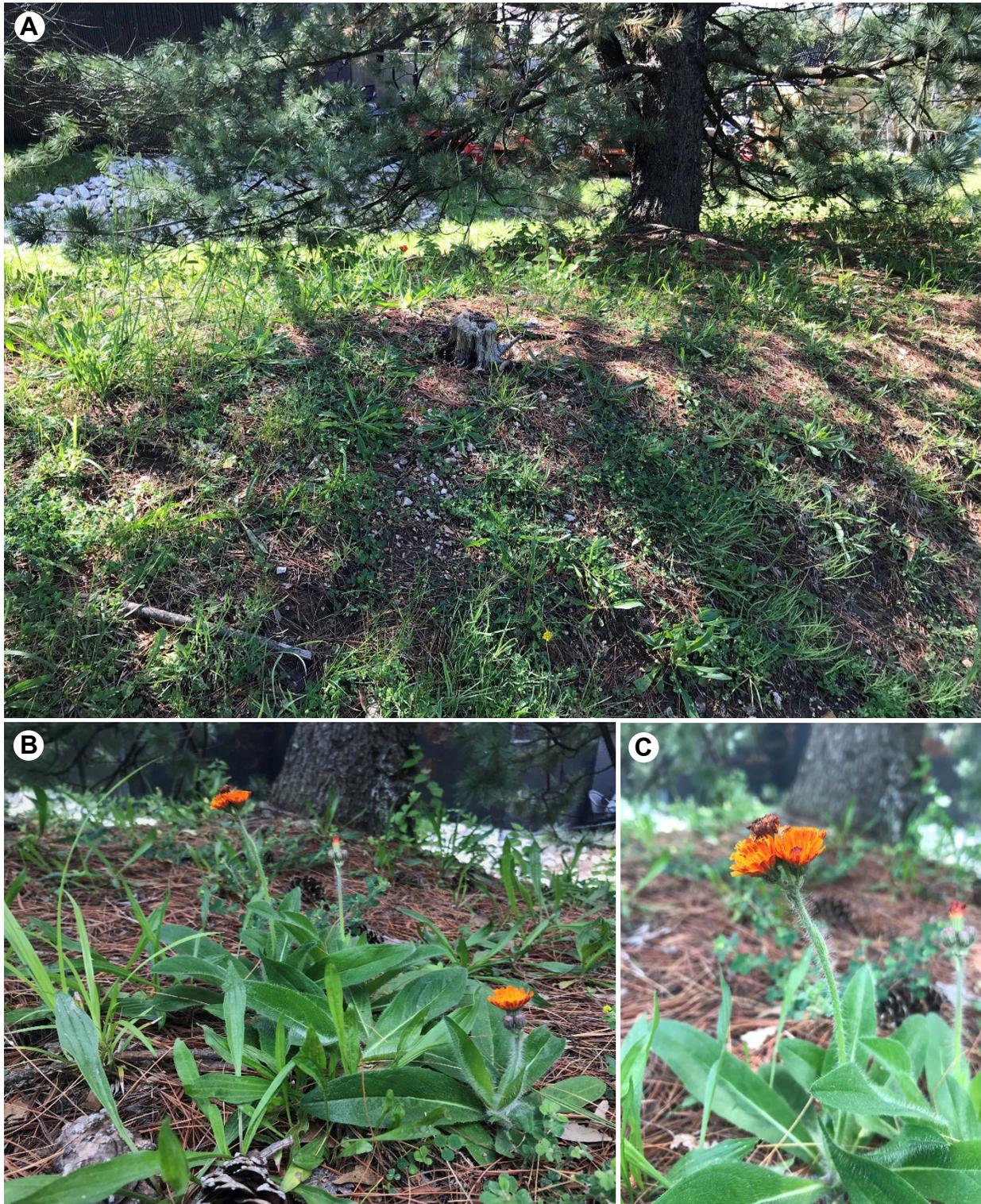
Species of *Pilosella* Hill. were traditionally included within *Hieracium* L., but based on their stoloniferous habit, pappus bristles in a single series, and projecting ribs at the fruit apices, as well as recent molecular data (e.g., Bräutigam & Greuter 2007, Kilian et al. 2009), there is growing recognition of *Pilosella* as a separate genus. Interestingly, the name *Pilosella* was first applied to two disparate groups of plants in the 16<sup>th</sup> century, when Leonhart Fuchs used it for species later included in *Hieracium*, and Johannes Thal applied it to what is now known as *Arabidopsis thaliana* (L.) Heynh. in the Brassicaceae (Rydborg 1907). Since Hill (1756) was the first post-Linnaean application of *Pilosella*, for a common British hawkweed, the name validly applies to *Hieracium* segregates.

In the Missouri flora, in addition to *Pilosella aurantiaca*, the adventive *Hieracium caespitosum* Dumort. would be included within *Pilosella* [as *P. caespitosa* (Dumort.) P.D. Sell & C. West]; the other three species, all native in Missouri — *H. gronovii* L., *H. longipilum* Torr., and *H. scabrum* Michx — would be retained within *Hieracium*.

#### MISSOURI POPULATION

In May 2022, we found a small population of *Pilosella aurantiaca* growing in needle litter under a line of mature planted *Pinus strobus* on a sparsely vegetated roadside embankment in Webster Groves (**Figure 1**). The trees have been in place for at least 40 years, forming a visual screen between a commercial area to the east and residences on the west side of the road. We have regularly walked along this road for decades, but only noted the *Pilosella* in 2022, when there were three scattered stoloniferously spreading clumps and ca. four additional isolated individuals scattered along the embankment, in well-drained, rocky soil with pine needle humus. The plants were associated with a sparse weedy vegetation of *Galium pedemontanum*, *Lonicera maackii* seedlings, *Plantago lanceolata*, *Schedonorus pratensis* (Huds.) P. Beauv., *Sonchus asper*, and *Trifolium repens*. The population spanned ca. 10 meters along the shaded embankment.

The population expanded in 2023, with the original area containing more flowering scapes, and a few new individuals up to 5 meters beyond the area inhabited by the plants in 2022. The plants fruited in both 2022 and 2023. In 2023, we also noted plants in a sloping residential lawn on the west side of the road. The Missouri population may have originated from an adjacent overgrown garden bed at this residence, although the plants here appeared weedy and as noted above, the species is rarely if ever cultivated and is not commercially available. Given the abundance of the species in many recreational areas and campgrounds in northern regions, campers and vacationers could inadvertently spread seeds.



**Figure 1.** *Pilosella aurantiaca* at the Missouri site: **A.** Site image showing scattered basal rosettes. **B** and **C.** Flowering plants. Photos: Douglas Ladd, 22 May 2022.

With its milky sap, scapose habit, involucre of exclusively ligulate flowers,  $\pm$  entire leaves, multiple flowering heads, and capillary white pappus bristles, *Pilosella aurantiaca* would readily key to *Hieracium* in Yatskievych (2006). Within his key to *Hieracium*, *P. aurantiaca* would key to *H. caespitosum* (= *P. caespitosa*), from which it reliably differs primarily in the orange ray flowers drying to dark or purplish red, versus the persistently yellow flowers of *H. caespitosum*.

*Specimen cited:* **U.S.A. MISSOURI:** ST. LOUIS CO.: City of Webster Groves, in SW part of city, along E side of West Old Watson Rd., just south of Wester Glen Court; weedy roadside embankment in needle litter under mature *Pinus strobus*, 38.56426°N, 90.36683°W, 22 May 2022, Douglas Ladd 36805 (MO).

### SUMMARY

Despite its ubiquity in northern parts of the country, *Pilosella aurantiaca* seems to be a weakly competitive weed in southern regions, as evidenced by the rarity of records in non-montane areas in the southern half of the United States. It is likely to continue to expand both vegetatively and through wind-dispersed seeds at the Webster Groves location as long as the benign neglect of infrequent mowing and lack of plantings continue, and the pine allée remains to provide acidified needle humus and light shade. However, the species is extremely unlikely to become a problem from a conservation or management perspective. In its current setting it adds color and pollinator resources to an otherwise drab ruderal waste site. Although seed production in the species appears to be primarily apomictic (Koltunow et al. 1998), the flowers provide pollen and limited nectar for native pollinators in the United States (e.g., Heinrich 1976, Strickler et al. 1996).

### ACKNOWLEDGEMENTS

Thanks to Caleb Morse, University of Kansas, and Gerould Wilhelm, Conservation Research Institute, for suggestions and comments.

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*Missouriensis*, **41**:32-36. 2023.

\*pdf effectively published online 29 December 2023 via <https://monativeplants.org/missouriensis>

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