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## ***ISODONTIA ELEGANS* NOW IN MICHIGAN (HYMENOPTERA: SPHECIDAE: SPHECINAE)**

Mark F. O'Brien<sup>1</sup> and Julie A. Craves<sup>2</sup>

### ABSTRACT

*Isodontia elegans* (Smith) (Hymenoptera: Sphecidae), one of the "grass-carrying wasps," previously known only from the western U.S., is now reported from southeastern Michigan, and appears to have spread across the eastern half of the United States in a relatively short period.

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The thread-waisted wasps (Sphecinae) of Michigan are fairly well-studied (O'Brien 1989), with 27 species previously recorded from the state (O'Brien 1989, Cowan 1991). Most of these species are large and easy to identify. They are attracted to nectar, and so are easily observed at flowers, even if their nesting activities are less-easily observed and recorded.

The genus *Isodontia* (Hymenoptera: Sphecidae), whose members are known as "grass-carrying wasps," was represented previously by two species in Michigan; *I. auripes* (Fernald) and *I. mexicana* (Saussure) (O'Brien 1989). All members of this genus use pre-existing cavities for their nests, which they line with grass stems and similar plant materials. The tubular nests are provisioned with Gryllidae or small Tettigoniidae (Orthoptera).

We now add a third species, *I. elegans* (Smith) to the fauna of Michigan. On 9 August 2006, the senior author photographed and collected a male *I. elegans* that was nectaring at Mountain Mint (*Pycnanthemum virginianum*). It was recovered in Ann Arbor, Washtenaw Co., MI, in a butterfly garden in front of the Ruthven Museums Building on the University of Michigan campus. At least two additional *I. elegans* were observed in the same patch of flowers on two days subsequent to the capture of the specimen. An additional *I. elegans* voucher (male) was collected on 31 August 2006. The other two species, *I. auripes* and *I. mexicana*, were also observed nectaring at the Mountain Mint flowers. The junior author photographed *I. elegans* nectaring on *Eryngium planum* at her home in Dearborn, (Wayne Co.) MI in mid-July 2005. No voucher was collected, but her photograph is unmistakably that of *I. elegans*.

*Isodontia elegans* is easily identified by its reddish-brown legs and abdominal segments. No other North American species of *Isodontia* has that color combination. The erect hairs on the frons of the male are yellowish-gold in color. Wings of both sexes have reddish veins and varying amounts of reddish infuscation. The abdominal petiole is black.

Additionally, specimens photographed at West Chicago Prairie (on *Pas-tinaca sativa*) DuPage Co., IL on 1 July 2005, and in Central Park, New York City, NY in July 2006 have been posted online at <http://bugguide.net/node/view/23933>. An additional reference to a specimen caught in Cincinnati, OH is listed online at [http://whatsthatbug.com/wasps\\_2.html](http://whatsthatbug.com/wasps_2.html).

*Isodontia elegans* was previously only recorded from West of the 100th meridian in North America; a western species by definition (Bohart and Menke

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1963, 1976). In the span of two summers, we have reports of this species in urban/suburban locales ranging from Chicago to New York City. We attribute these reports of this non-fossorial species to the transport of goods across the United States. Since *Isodontia* wasps nest in small cavities, they are easily shipped in pallets and other objects/materials that may be used in the landscaping and home-adornment industry, especially if the materials contain suitably-sized hollow nesting areas with completed nests. It's certainly not a surprise that this species has been carried into new habitats, as the North American native species, *I. mexicana* has likewise spread across Europe under similar circumstances (Fonfria 2005, Scaramozzino, et al. 1991, Schmid-Egger and Schmidt 1994, Zettel 2003).

A previous record of the Palearctic spider wasp *Auplopus carbonarius* Scopoli (Hymenoptera: Pompilidae) (Kurczewski and O'Brien 1991) cites the ease in which mud and cavity nesting wasps and bees have been aided by human transport. The ongoing spread of the vespid wasp *Polistes dominulus* (Christ) (Hymenoptera: Vespidae) across the United States is well-documented (Judd and Carpenter 1996, Cervo, et al. 2000). Michigan seems to lie at the center of many sightings of both native and exotic insects that are expanding in range. Michigan's position as an industrial center, transportation hub, port of entry, vacation destination, its shipping and trucking routes, and lack of any large barriers to insect movement may facilitate artificial introduction and range expansion of native and exotic insect species.

It is cautionary not to attribute new range expansions of native species purely to changing biotic or climatic factors, but to consider anthropogenic aids such as unregulated interstate transport as a major factor in the establishment of new populations.



Figure 1. Male *Isodontia elegans*, Ann Arbor, MI, by M.F. O'Brien.

## ACKNOWLEDGMENT

The voucher specimens have been deposited into the Univ. of Michigan Museum of Zoology Insect Collection, Ann Arbor.

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