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***AUPLOPUS CARBONARIUS*, A PALEARCTIC SPIDER WASP,  
EXTENDS ITS RANGE TO MICHIGAN  
(HYMENOPTERA: POMPILIDAE)**

Frank E. Kurczewski<sup>1</sup> and Mark F. O'Brien<sup>2</sup>

ABSTRACT

Three females of *Auplopus carbonarius*, a Palearctic species detected recently in southeastern New York, were collected in a Malaise trap in Ann Arbor, Michigan, during the summer of 1988. Females of the species can be separated morphologically from those of the similar *A. variolarum* by the polished and essentially impunctate pygidium, dusky wings, and median clypeal tooth.

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Nolfo (1983) reported that *Auplopus carbonarius* Scopoli, a Palearctic spider wasp belonging to the tribe Auplopodini, had successfully established itself in New York State (Rockland and Nassau Counties). Three females of this species were collected in a Malaise trap in Ann Arbor, Washtenaw County, Michigan, on 15-18 and 27-31 July, and 11-14 August 1988. This is a considerable range extension (ca. 800 km).

Problematic identification resulted from using Townes' (1957) key to the Nearctic species of *Auplopus*, in which the specimens key to *Auplopus variolarum* Townes. However, *A. variolarum* is known only from a female holotype from the Chisos Mountains, Texas (Townes 1957, Krombein 1979). Our specimens of *A. carbonarius* are entirely black, but under high magnification (25x) the tarsi, maxillary and labial palps, tegulae, clypeal lip and tooth and sting are fuscous. The apical one-third of the mandible is rufous as indicated by Nolfo (1983). The pygidium is fuscous in coloration, polished and essentially impunctate, whereas that of *A. variolarum* is punctate (Townes 1957). The latter characteristic, wing density, and shape of clypeal lip can be used to separate females of the two species. The three females of *A. carbonarius* compare perfectly with determined specimens of this species from northeastern Europe in the UMMZ.

Mud plastered to the midtibiae of one female (15-18 July 1988) evinces its behavior of constructing mud cells to hold its spider prey. Amputation of the spider's legs is commonplace in this genus (Evans and Yoshimoto 1962). Nothing has been published about its behavior in North America, but in Europe the species provisions its multicelled nests with no less than eight families of mostly errant spiders, with a preponderance of records from the family Clubionidae (Richards and Hamm 1939, Grandi 1954). A cell is made before the spider is captured and capped over with mud after the provisioning is completed (Evans and Yoshimoto 1962).

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## DISCUSSION

It is notable, but not surprising, that *A. carbonarius* has extended its range from that reported by Nolfo (1983). Mud nests of this species and other aulopodines are likely to be cryptic and could be dispersed through commerce such as shipments involving wooden pallets or cargo containers. A similar pattern of distribution has been reported in the Great Lakes region and eastern Canada for *Trypoxylon clavicerum* Lepeletier & Serville (Sphecidae: Larrinae) (Coville 1984). The New World sphecine, *Sceliphron caementarium* (Drury), has spread via commerce to Europe, Australia, and the Pacific Islands (Bohart and Menke 1976). Interestingly, many of the pompilid and sphecid species that have extended their ranges considerably are mud-daubers or hollow-cavity nesters. It is also likely that *A. carbonarius* has a much wider distribution in North America than we report.

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