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NEW PREY FAMILIES FOR *CRABRO ADVENA*
(HYMENOPTERA: SPHECIDAE)Frank E. Kurczewski¹

ABSTRACT

Three new prey families of adult Diptera are presented for *Crabro advena*, bringing to 14 the total number of fly families captured by this euryphagous wasp. The variety of prey flies used as provisions by this species is probably related to its varied nesting habitat.

Crabro advena Smith is one of the commonest species in the genus in the northeastern United States. It nests from late spring through summer in a variety of friable soils ranging from silty loam to rather loose sand. I have observed this species excavating and provisioning burrows at the edges of cultivated fields and in lawns, gardens, sand pits and paths through open woodlands. *Crabro advena* is much less selective of where it nests than several other congeners which are quite specific in nesting site preference, e.g., *C. argusinus* Bohart (sand beaches, cliffs and dunes), *C. cribrellifer* (Packard) (shaded woodlands) and *C. monticola* (Packard) (deep bare sand) (Matthews et al. 1979, Evans et al. 1980).

In the early 1980's I observed several small aggregations of *C. advena* nesting in sandy soils in upstate New York and northwestern Pennsylvania. All aspects of nesting behavior noted were typical for the species (Kurczewski and Acciavatti 1968, Evans et al. 1980) and females stored a variety of paralyzed adult flies in their nests. Three of the flies collected from the wasps or their cells (Ethology Note No. CRA-83) represented new prey families for *C. advena*: THEREVIDAE, *Ozodiceromyia frontalis* (Cole); DOLICHOPODIDAE, *Condylostylus siphon* (Say); SCATHOPHAGIDAE, *Scathophaga stercoraria* Linnaeus (det. F. C. Thompson, IIBB, USDA-ARS).

O'Brien and Kurczewski (1980), in summarizing prey records for *C. advena*, reported a total of 11 families of adult flies from the suborders Brachycera and Cyclorrhapha. Their study and those of Kurczewski and Acciavatti (1968), Kurczewski et al. (1969) and Evans et al. (1980) on this species noted a preponderance of Muscoidea of the families Anthomyiidae, Muscidae, Calliphoridae, Sarcophagidae and Tachinidae in the wasps' cells. Approximately 85 percent of the prey items belonged to this superfamily (O'Brien and Kurczewski 1980). If one eliminates two species of Brachycera, *Symphoromyia pluralis* Curran (Rhagionidae) and *Rhagoletis cingulata* (Loew) (Tephritidae), from their list this percentage would be even higher (95 percent).

The new prey families presented herein indicate an increased euryphagy for *C. advena*. The broad selection of prey families taken by this species is

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probably related to its wide choice of habitats. *Crabro argusinus*, *C. cribrellifer* and *C. monticola*, on the other hand, are much more narrow in nesting site preference and demonstrate a much more limited prey selection: *C. argusinus* (primarily Dolichopodidae and Ephydriidae, Evans 1960, Matthews et al. 1979, Evans et al. 1980); *C. cribrellifer* (Asilidae, Barrows et al. 1978, Evans et al. 1980); *C. monticola* (primarily Tabanidae and Therevidae, Evans 1960, Evans et al. 1980).

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