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Review of the genus *Eotilla* Schuster, 1949 (Hymenoptera: Bradynobaenidae: Typhoctinae: Eotillini) and description of new species from Argentina

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Abstract

Diagnoses for the genus *Eotilla* Schuster, 1949 based on males and females, new generic and specific characters, descriptions of two new Argentinian species (*Eotilla schusteri* Torréns, Fidalgo, Roig-Alsina & Brothers, **sp. nov.** and *E. medanito* Torréns, Fidalgo, Roig-Alsina & Brothers, **sp. nov.**, based on both sexes), a description of the female of *E. superba* Brothers, 1974 and redescriptions of the males of *E. mickeli* Schuster, 1949 and *E. superba* are provided. A key to the species of *Eotilla* is presented.

Key words: *Eotilla*, diagnosis, key to species

Introduction

Schuster (1949) described *Eotilla* and *Prototilla* and placed them in a new subfamily (Eotillinae) within the family Mutillidae, along with four other subfamilies (Typhoctinae, Apterogyninae, Sphaeropthalminae and Mutillinae) found in the Neotropical region. In phylogenetic studies of Hymenoptera Aculeata, Brothers (1975, 1999) and Brothers and Carpenter (1993) placed Eotillini and Typhoctini as tribes of Typhoctinae, but distant from Mutillidae and relocated within Bradynobaenidae (with Chyphotinae, Apterogyninae and Bradynobaeninae).

Recent molecular phylogenetic studies of the superfamily Vespoidea by Pilgrim *et al.* (2008) indicate that the family Bradynobaenidae—according to the concept of Brothers (1975)—is paraphyletic; they placed Apterogyninae and Bradynobaeninae in Bradynobaenidae within a superfamily Scolioidea, and Chyphotinae and Typhoctinae in Chyphotidae within a superfamily Thynnoidea. This result was utilized by Debevec *et al.* (2012). Heraty *et al.* (2011) in their study of the phylogeny of Hymenoptera, confirmed the lack of a close relationship between Mutillidae and *Chyphotes* Blake, 1886, but showed a close relationship between *Chyphotes* and *Colocistis* Krombein, 1942 (their only representative of Tiphiidae). Since the positions of these groups remain in discussion, however, we retain the generally used classification.

At present, the Typhoctinae contains two tribes: Typhoctini with *Typhoctes* Ashmead, 1899 (North and Central America) and *Typhoctoides* Brothers, 1974 (Chile and Argentina) and Eotillini with *Eotilla* (Chile and Argentina) and *Prototilla* (Argentina). The revision of *Prototilla* by Torréns *et al.* (2012) included a diagnosis of Eotillini and a comparative table between the two genera of the tribe; two new species based on males and two new species based on females were described and *P. typhoctoides* (Martinez & Fritz, 1974) (ex *Eotilla typhoctoides*) was proposed as a new combination. The authors did not include sex associations because of extreme sexual dimorphism, and collection data did not indicate particular associations.

Currently, *Eotilla* comprises two species: the type species, *E. mickeli* Schuster, 1949 (Chile) and *E. superba* Brothers, 1974 (Argentina), both based on males. Mickel (1968), however, assigned a female from Argentina to *E.*

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pronotum lighter than the rest of the mesosoma and metasoma, and others with the mesosoma and T1 lighter than the rest of the metasoma; also, in some specimens the coloration of the head, femora, tibiae, pleura and propodeum is darker. One specimen from Neuquén (Las Lajas) has a particular coloration of the metasoma, with the vertical surface of T1, the anterior half of T2 and S2 and the last three terga of the metasoma dark brown and the rest lighter, but the morphological characters and disposition of setae correspond to this species. The pronotum has a few scale-like setae on the central area of the dorsum or none; otherwise the scale-like setae on the mesosoma and metasoma show variation in density but not in disposition.

Discussion. As discussed above for *E. superba***,** all females were collected at the same locality as males, so they are considered conspecific.

Mickel (1968) described a female specimen from Argentina and attributed it to *E. mickeli* Schuster (from Chile); however, the notable differences between species from Argentina and Chile, and the remarkable similarity of that specimen with the description above, suggests that it was misidentified and is actually this species.

Etymology. Named in honor of the describer of the genus *Eotilla* (and *Prototilla*), Rudolf M. Schuster.

Distribution. Argentina: Catamarca, La Rioja, Neuquén (Fig. 38).

Phenology. September, December–April.

Material examined. *Holotype* ♂: ARGENTINA: La Rioja, Santa Teresita [28°35'57"S 66°33'32"W], 690 m, 8–28/IV/2006, Porter, Torréns y Fidalgo, MT (1♂, MACN). *Paratypes*, 9♂ and 8♀: Catamarca, Andalgalá [27°34'60"S 66°21'2"W], 12/XII/1973, JH Hunt #1495, det. as *E. mickeli* by Snelling (1♂, LACM); Andalgalá, Villavil [27°34'36"S 66°15'02"W], 30/XII/1973, FE Enders, JHHunt#1504 (2♀ LACM, 1♀ DJBC); same data but JHH#1502 (1♀ LACM); El Pucará empalme [27°42'17"S 66°00'36"W], 7/I/1974, FE Enders, #JHH1499 det. as *E. mickeli* by Snelling (1♀, LACM); La Rioja, Udpinango, 5 km S de Udpinango 28°43'16"S 66°47'34"W, 1011 m, 16–25/III/2005, P. Fidalgo, G. Fidalgo and J. Torréns, YPT (1♀, DJBC); same location, II/2006, Fidalgo, Diez and Torréns, YPT (1♀, MACN); same location, 8–28/IV/2006, pit-fall (1♀, IFML); same location, 26/I/2007, Torréns, Fidalgo and Diez, YPT (5♂, MACN); same location, I/2007, J. Torréns and C. Nieto, YPT (1♂, DJBC); same location, 26/II/2007, Fidalgo, Diez and Torréns, YPT (1♂, IFML); same location, 2–9/XI/2011, J. Torréns and P. Fidalgo, YPT (1♀, IFML); La Puerta, 28°50'13"S 66°39'29"W, 16–18/XI/09, A. Aranda, pit-fall (1♀, MACN); 7 km E de Anillaco [28°46'29"S 66°51'53"W], IX–X/2013, A. Aranda, pit-fall (1♂, IFML); Neuquén, Covunco [38°46'1"S 70°3'18"W], 18/I/1949 (Allotype, 1♀, IFML); 20 km Las Lajas, ANP Cuchillo Curá [38°36'40"S 70°23'54"W], 20/I/1992, J. Sganga (1♀, IFML)

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