Redescription of *Idiopus affinis* La Salle et Polaszek, 1997
(Hymenoptera: Pteromalidae) from México with some data on female chalcidoids having a 4-segmented antennal club

Переописание *Idiopus affinis* LaSalle et Polaszek, 1997
(Hymenoptera: Pteromalidae) из Мексики с некоторыми данными о самих хальцидидах, имеющих 4-члениковую булаву усика

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ABSTRACT: A diagnosis of the genus *Idiopus* La Salle et Polaszek, 1997 is given; *I. affinis* La Salle et Polaszek, 1997 from México with a 5-segmented antennal club is redescribed and illustrated, including new data on some morphological structures. Presence of a 4-segmented club in some genera of Chalcidoidea is discussed.

РЕЗЮМЕ: В работе даны диагноз рода *Idiopus* La Salle et Polaszek, 1997 и переопись *I. affinis* La Salle et Polaszek, 1997 по материалам из Мексики, с новыми данными о некоторых морфологических структурах; приведены виды, также имеющие нёхакраательную для хальцид 4-члениковую булаву усика, и другие признаки, затрудняющие определение таксономического положения данного рода.

Introduction

The parasitoid *Idiopus affinis* La Salle and Polaszek, 1997 was described from the Central American countries Guatemala, El Salvador and Costa Rica [La Salle et al., 1997]. It has been reared as a parasitoid of the giant whitefly *Aleurodicus dagessii* Cockerell (Aleyrodidae: Aleurodicinae). This whitefly species was described from specimens found on *Hibiscus* collected in the State of Guanajuato, México. *A. dagessii* has also been found on other plants in Southern U.S. and Central America, including important crop and ornamental plants, such as *Citrus*, *Persea*, *Psidium*, *Prunus*, various palms, *Aralia*, *Eucalyptus*, *Ficus*, *Morus*, and *Geranium* [La Salle et al., 1997].

Because of the unusual morphology of *I. affinis*, a rather rare species of Chalcidoidea, we provide here a diagnosis of the genus and the redescriptions of the species, with new data on some morphological structures based on Mexican specimens. This parasitoid species has potential as a biological control agent of the polyphagous whitefly *A. dagessii*.

Genus *Idiopus* La Salle et Polaszek, 1997

Type species: *Idiopus affinis* La Salle et Polaszek, 1997, by original designation.

DIAGNOSIS. FEMALE.

Head. In frontal view rounded, somewhat triangular, occipital margin behind ocular acute, concave. Eyes distinctly setose. Malar sulcus absent. Antennal scrobes short and not deep. Antenna inserted close to mouth margin. Antenna without anelli, with long scape and pedicel; funicle 5-segmented, club 4-segmented, pointed. Mandibles with one tooth and a short truncation, and with small appendix on base; maxillary palpi two-segmented, labial palpi one-segmented.

Mesosoma. Pronotum vertical, transverse. Notauli complete, straight. Axillae slightly advanced forward of scutocutellar suture. Scutellum with a distinct inferior border along hind margin. Propodeum vertical, transverse, with median and submedian carinae. Forewing densely hairy; marginal vein longer than submarginal, postmarginal vein absent, stigmatic vein rudimentary, almost reduced, submarginal vein dorsally with many strong setae. Fore tibial spur long, curved, midtibial spur thin, about as long as basitarsus. Tarsi 4-segmented.

Metasoma. Petiole present, about two times wider than long. Gaster about as long as thorax, rounded on apex. First tergite about 1/3 the length of gaster. Ovipositor not extended, without sheaths.

*Idiopus affinis* La Salle et Polaszek, 1997

Figs. 1-9.

Coloration. Head and thorax black; face on level of antennal scrobes and along ventral margin of eyes pale, translucent and shining; antenna whitish-yellow, pedicled and scape (except

Female-body length 1.02–1.20 mm.

Foliation. Head and thorax black; face on level of antennal scrobes and along ventral margin of eyes pale, translucent and shining; antenna whitish-yellow, pedicled and scape (except
apical 1/3 black; eyes brown, ocelli redish. Legs whitish-yellow; fore coxa and femora black, tibia infuscate tarsally; middle femora with blackish dorsal margin on 1/2 apical part and midtibia with blackish 1/2 basally; hind legs blackish on dorsal margin of 1/2 apical part of femora and on apex of tibia. Wings hyaline, submarginal vein basally infuscate, marginal vein light yellow, and setation, of dissection. Gaster whitish-yellow, two first tergites infuscate-apical half of 5th, 6th fully and basal half of 7th tergites brownish-black. Labial and maxillary palpi pale, mandibles brown on apices of teeth and truncation.
Idioporus affinis: La Salle et Polaszek, 1997 (Hymenoptera: Pteromalidae) from México

Figs. 10-11. Antennae of some Chalcidoidea females. 10 — Diglochiis zylicaola (Walker) (Pteromalidae) (after Dzhano'kmen, 1979), 11 — Tetartilia sp. (Encyrtidae) (orig.).

Discussion

Chalcidologists: La Salle, Polaszek, Noyes and Zolnerowich (1997) seriously debated problems of I. affinis placement. This species was assigned to the pteromalid subfamily Euonitae, where a new tribe, Idiopini, was created for this genus because its unusual morphological structures.

The most important morphological feature of I. affinis is the presence of a 4-segmented antennal club. This is very unusual for the Chalcidoidea, and chalcidoidea with rare (in those three club segments are quite exceptional) [La Salle et al., 1997]. In the family Pteromalidae, such club segmentation is known only in some species of Diglochiis Foerster, 1856 [Dzhano'kmen, 1979] (Fig. 10) and Coelopisthia Foerster, 1856 [Bouček and Heydon, 1997]. In the family Encyrtidae, only Tetartilia yoshimotoi Noyes, 1980 and an undescribed species of this genus from México have a 4-segmented club. However, this Mexican species of Tetartilia Noyes, 1980 has the apical segment incompletely separated by a partial suture (Fig. 11).

Almost all Pteromalidae species have the tarsal formula 5-5-5, but I. affinis has the tarsal formula 4-4-4, which is typical for the Euophoridae. In addition, the
pteromalid genus *Macromesus* Walker, 1848 also has females with 4-segmented midtarsus.

*L. affinis* does not have the typical combination of characteristics of the Eumophorinae, and as its systematic position is not clear, we have here studied the morphology of this species to assist in its proper taxonomic placement. In this article, we have provided additional characteristics for *L. affinis*, not indicated earlier: unique structures of the mandible and the labial and maxillary palpi (Figs. 1–3), the ovipositor (Fig. 9), hind wing, hind femora and petiole. Following La Salle et al. [1997], we also consider that a final solution for the placement of this morphologically unusual taxon requires further study, as well as classification and fauna of Chalcidoidae.

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