

A new species of *Encarsia* Förster (Hymenoptera: Aphelinidae), parasitoid of *Acutaspis agavis* (Townsend & Cockerell) (Homoptera: Diaspididae) from Mexico

S.N. Myartseva

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Encarsia ameca sp. n. reared from *Acutaspis agavis* (Townsend & Cockerell) in the state of Jalisco, Mexico, is described; this species of armored scale is also a new host record for *Ablerus elegantulus* (Silvestri).

S.N. Myartseva, División de Estudios de Postgrado e Investigación, UAM Agronomía y Ciencias, Universidad Autónoma de Tamaulipas, Cd. Victoria, 87149, Tamaulipas, Mexico. E-mail: smyartse@uat.edu.mx

Introduction

The agave *Agave tequilana* Weber is cultivated traditionally and utilized in Central America widely, especially in Mexico. This crop is growing in the states of Jalisco, Michoacán, Guanajuato, Nayarit and Tamaulipas, but is distributed also in the states of Colima, Mexico State and Puebla (ScaleNet, 2006). The drink "tequila", produced from agave, is exported from Mexico to many countries. Ninety percent of this national beverage is produced by the state of Jalisco (González Hernández et al., 2007). Therefore, the study of pests of this crop and plant protection continually have importance in Mexico.

In Mexico, the armored scale *Acutaspis agavis* (Townsend & Cockerell) (fam. Diaspididae) is one of the most important insect pests of agaves in dry areas. This species is distributed in Trinidad and Tobago, Costa Rica, Venezuela, U.S.A. (Arizona, Texas, Florida) and Mexico (Miller, 2005; ScaleNet, 2006). Predators (fam. Coccinellidae) are better known as natural enemies of this scale in Mexico. Only two polyphagous aphelinid species are known to occur as parasitoids of *Acutaspis agavis*: *Aphytis diaspidis* (Howard) was reared in Mexico also from *Diaspis echinocacti* Bouché (Rosen & De Bach, 1978; Myartseva & Ruíz Cancino, 2000; Noyes, 2002). Data on *Aphytis mytilaspidis* (Le Baron) as parasitoid of *Acutaspis agavis* are given by Jiménez-Jiménez (1961).

Material and methods

In 2007, the author received for identification parasitoids reared by Dr. Samuel Ramírez Alar-

cón in February-March from the armored scale *Acutaspis agavis* (Townsend & Cockerell) in the State of Jalisco, Mexico. In this material, three parasitoid species of the family Aphelinidae are found: *Aphytis* sp., *Ablerus elegantulus* (Silvestri) and *Encarsia* sp. This scale species is a new host record for *Ablerus elegantulus* (Silvestri). *Encarsia* sp. is described here as the new species *Encarsia ameca* sp. n.

Encarsia ameca sp. n. (Figs 1-5)

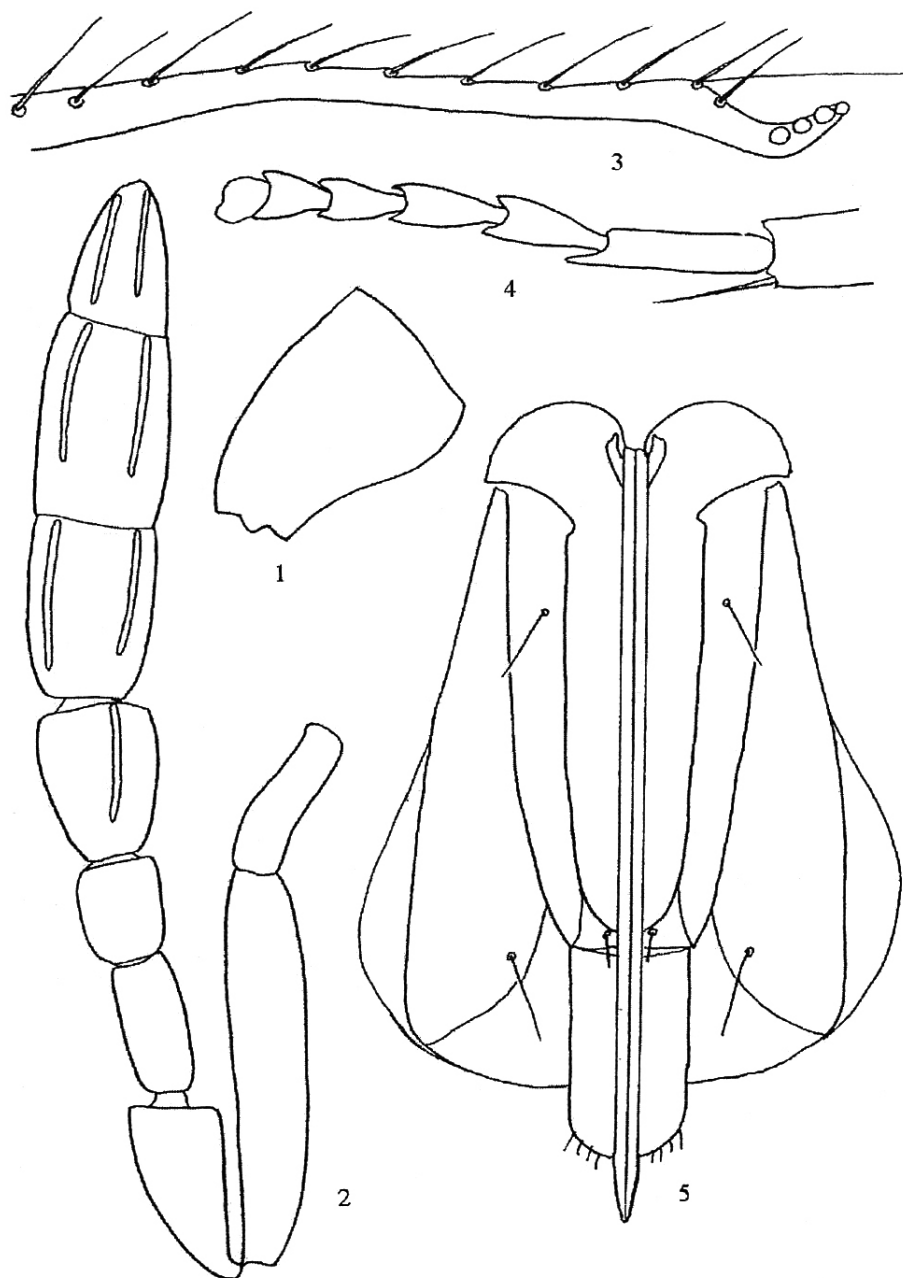
Holotype. ♀, **Mexico**, Jalisco, Mpio. Ameca, ex *Acutaspis agavis* (Townsend & Cockerell) on *Agave tequilana* Weber, II-III.2007 (coll. S. Ramírez Alarcón).

Paratypes. 4 ♀, same data as holotype, II-III.2007 (coll. S. Ramírez Alarcón).

The holotype and 2 paratypes are preserved in Entomological Museum of the California University in Riverside, State of California, U.S.A.; one paratype female, in the Entomological Museum of the Tamaulipas University, Ciudad Victoria, Tamaulipas, Mexico; one paratype female, in the United States National Museum of Natural History, Washington DC, U.S.A.

Description. Female. Length of body: 0.8-0.9 mm.

Coloration. Head brownish black; frontovertex yellow; eyes bordered with yellow; cheeks below genae black. Antennae yellow, with radicle, scape, pedicel and apical segment of club very slightly infusate. Ocelli reddish. Mesosoma brownish black; mesoscutum laterally brownish yellow; scutellum light yellow, its anterior margin, lateral and hind margins of mesoscutum bordered with black, side lobes yellow, with apical part slightly infusate. Fore wings hyaline; marginal and stigmal veins infusate. Legs whitish yellow; coxae black; fore and middle femora slightly infusate



Figs 1-5. *Encarsia ameca* sp. n., female: 1, mandible; 2, antenna; 3, marginal and stigmal veins; 4, middle tarsus and midtibial spur; 5, ovipositor.

basally; hind femora, except for apices, blackish; hind tibiae slightly infusate basally. Gaster brownish black; apices of stylets black; third valvulae and second valvifer light.

Structure. Head 1.3 times as wide as high; frontovertex transversely striate, 0.6 times as wide as head. Ocelli in small obtuse triangle; distance between posterior ocelli slightly less than distance from posterior ocellus to eye margin. Eyes setose, about 1.4 times as long as cheeks. Mandible 3-dentate (Fig. 1). Antennae (Fig. 2) inserted at the level of lower margin of eyes. Distance between toruli about 0.7 times the distance from torulus to eye margin and about 1.2 times the distance to mouth margin. Antennal segments with following ratios of length to width: radicle, 3.3; scape, 5.3; pedicel, 2.1; flagellum segment I, 2.1; II and III each, 1.3; IV, 1.4; V, 1.5; VI, 1.8. First two segments without sensilla, third segment with one, next segments with two longitudinal sensilla each. Club 3-segmented, longer than funicle and half of pedicel combined. Sculpture of midlobe of mesoscutum reticulate, cells near lateral and posterior margins slightly elongate. Midlobe with 3 pairs of setae situated symmetrically. Scutellar placoid sensilla widely spaced, separated by a distance about 7 times as great as width of one sensillum. Distance between anterior pair of scutellar setae slightly greater than that between posterior pair of setae. Axillae with one seta in middle of anterior part each; side lobes with one seta each. Fore wing about 2.5 times as long as wide, uniformly setose, its marginal fringe 0.2 times the wing width; 4 basal groups of setae. Marginal vein subequal to submarginal vein, with 8 setae along anterior margin; stigma vein with uncus slightly elongate (Fig. 3). Hind wing about 9 times as long as wide, its marginal fringe about as long as maximum width of wing. Tarsal formula 5-5-5. Midtibial spur about 0.7 times as long as basitarsus; basitarsus about as long as two next tarsal segments combined (Fig. 4). Second-seventh gastral tergites with 2, 2, 2, 4, 4 and 4 setae, respectively. Ovipositor (Fig. 5) not exerted, about as long as middle tibia; third valvula about 0.4 times as long as second valvifer, with some setae at apex. Second valvifer with one seta apically and one longer seta medially. Outer plates each with one long seta distally.

Male. Unknown.

Comments. *Encarsia ameca* sp. n. is close to *E. perniciosi* (Tower), but differs as follows: in *E. perniciosi*, face with a brown cross-band above toruli, fore wings infusate under marginal vein, first flagellar segment subquadrate or only slightly longer than wide, second flagellar segment longer than third segment; in *E. ameca*, face brownish black, without cross-band above toruli, fore wings hyaline, first flagellar segment slightly more than twice as long as wide, second flagellar segment only 0.7 times as long as third segment.

Etymology. The new species is named after its type locality.

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