

A new species of the genus *Holcencyrtus* from Mexico (Hymenoptera: Encyrtidae)

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Holcencyrtus gonzalezi sp. n. is described from Mexico and a key to world species of the genus *Holcencyrtus* is given.

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The genus *Holcencyrtus* Ashmead, 1900 was placed in the tribe Acroaspidiini of the subfamily Tetracneminae by Gordh & Trjapitzin (1980), the revisers of this tribe. They included in it the genera *Acroaspida* Compere & Zinna, 1955; *Aeptencyrtus* De Santis, 1964; *Coelaspida* Timberlake, 1923; *Holcencyrtus* Ashmead, 1900; *Pelmatencyrtus* De Santis, 1964; *Phasmencyrtus* Gordh & Trjapitzin, 1978; and *Pheidoloxenus* Ashmead, 1904. Noyes & Woolley (1994) synonymized *Acroaspida*, *Coelaspida*, *Phasmencyrtus* and *Pheidoloxenus* with *Holcencyrtus*, and I agree with this point of view. The tribe Acroaspidiini is characterized by the tridentate mandibles, which is a plesiomorph state in the subfamily Tetracneminae. Females are myrmecomorphous, with rudimentary wings, and possess a well-developed abdominal petiole. The latter character is unique among encyrtids and represents a synapomorphy indicative of the monophyly of the tribe Acroaspidiini. Their males are fully winged and have the typical encyrtiform habitus.

This article contains a description of *Holcencyrtus gonzalezi* sp. n. collected by Dr. A. González Hernández in the State of Nuevo León, Mexico and found by the author in the collection of the Department of Entomology, University of California, Riverside during visit to the USA in May 1997. Previously, only 2 species of *Holcencyrtus* were known from Mexico: *H. osborni* (Timberlake, 1923) from the State of Veracruz (Timberlake, 1923; Trjapitzin & Trjapitzin, 1995; Trjapitzin & Rufz Cancino, 1996) and *H. scapus* (Gordh & Trjapitzin, 1980) from the

State of Hidalgo (Gordh & Trjapitzin, 1980). In addition, 2 unidentified species of *Holcencyrtus* were cited for the States of Colima (Cázares de Hoyos et al., 1989) and Tamaulipas (González Hernández, 1989).

The distribution of all 9 known species of the genus *Holcencyrtus* is restricted by the New World. Females of 8 of them are keyed here. *H. niger* (Ashmead, 1888) from the USA (Florida) is known only from the male sex and not included in the key. Its holotype was redescribed by Gordh & Trjapitzin (1980). Hosts are known for 3 species of *Holcencyrtus*. They are mealybugs (Homoptera: Pseudococcidae). 2 species were used in attempts of biological control of mealybugs injurious to cacao and sugarcane. *H. wheeleri* (Ashmead, 1904) and *H. scapus* (Gordh & Trjapitzin, 1980) were reared from nests of ants where they might be parasitoids of mealybugs cultivated there by ants.

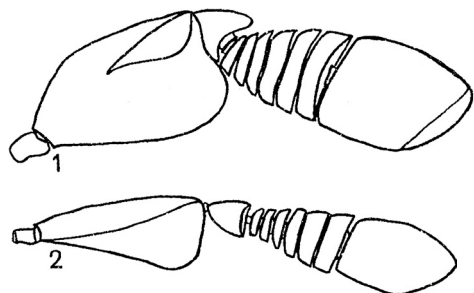
***Holcencyrtus gonzalezi* sp. n.** (Fig. 2)

Holotype. ♀, Mexico, Nuevo León, San Juan, Río San Juan, 14.VII.1983 (A. González H.).

Paratypes. 4 ♀, as holotype.

The holotype and two paratypes of the new species are preserved in the collection of Entomology Research Museum, Department of Entomology, University of California, Riverside, USA; one paratype is in the collection of Department of Zoology, Institute of Biology, Autonomous National University of Mexico (UNAM), Mexico, D. F., and one paratype in the collection of Zoological Institute, Russian Academy of Sciences, St.Petersburg.

Description. Female. Head as wide as high. Maximum width of head (in dorsal view) 1.6 times exceeding its length meas-



Figs 1, 2. Antennae of *Holcencyrtus*, ♀. 1, *H. osborni* (holotype); 2, *H. gonzalezi* sp. n. (paratype).

ured medially and 1/3 or somewhat less exceeding its length at posterolateral angles. Margin of occiput deeply excavate, acute; occipital processes with acute apices; angle between occipital excavation and tempus about 90°. Minimum width of frontovertex 0.37 of maximum head width. Distance between posterior eye margins and occipital margin about 1/4 of frontovertex width. Apical angle of ocellar triangle somewhat more than 90°. Distance from posterior ocelli to ocular margins less than diameter of an ocellus, that to occipital margin about twice diameter of an ocellus; distance between posterior ocelli greater than that from posterior to anterior ocellus (6-7 : 4); distance (in frontal view) from anterior ocellus to upper margin of facial cavity greater than minimum frons width (17 : 12). Facial cavity situated in the lower part of head (occupying 0.2 head height), deep, separated from frontal part of head by acute and rather strongly concave margin; upper slope of facial cavity almost vertical. Facial elevation between scrobes strongly convex. Antennal toruli at oral border, distance between them equal to 0.25 head width. Distance between margins of eyes and lateral margins of facial cavity much less than minimum width of frontovertex and eye height (4-5 : 12 : 23). Lower head margin (in frontal view) strongly convex. Scape of antennae strongly widening to apex and flattened, twice as long as wide; upper edge of scape almost straight, its lower edge smoothly concave in the basal part; outer flange of scape well developed, with an excavation in apical half. Pedicel longer than wide at apex. Funicle strongly widening to its apex; 6th funicular segment twice or nearly twice as wide as 1st; all segments of funicle wider than long. Club a little wider than 6th funicular segment, 1.4-1.5 times as long as wide and as long as funicle

and a half of pedicel. Pronotum campanuliform; its hind margin slightly and smoothly excavate; length of pronotum, measured along its middle, somewhat less than its width. Mesonotum wider than long (9 : 5), shorter than pronotum, slightly convex, declivous in apical part. Tegulae 0.6-0.7 times as long as mesonotum. Axillae flat, their apices not meeting. Scutellum slightly shorter than its maximum width and a little shorter than mesonotum; apex of scutellum transversely truncate, this truncation about 0.6 times as wide as scutellum; lateral margins of scutellum straight, converging distally to the truncation; basal half of scutellum concave. Fore wing rudiments very short, only a little longer than tegulae (7 : 6). Mesosoma broadening towards its apex, 1.5 times as long as wide at the level of propodeum, which is 1.3-1.4 times as wide as pronotum. Propodeum large, declivous, as long in the middle as scutellum; posterolateral angles of propodeum rounded; middle part of propodeum broadly elevated; its lateral parts concave; spiracles situated in anterolateral angles of propodeum. Mesotibial spur a little shorter than middle basitarsus. Abdominal petiole broadening posteriorly, its length/maximum width ratio 1 : 2. Gaster (material treated in critical point dryer): 1.5-1.6 times as long (without hypopygium) as its maximum width and as long as or slightly shorter than mesosoma and head combined; abdominal tergite III of holotype 0.36 times as long as gaster; tergite IV about 0.15 times, V - 0.1, VI - about 0.13, VII - 0.09, VIII - 0.09 times (length measured in the middle); distance from the level of pygostyles to apex of gaster equals to 0.27 of gaster length; abdominal syntergite IX with short anterolateral lobes and convexly truncate apex, this truncation half as wide as syntergite; syntergite length/maximum width ratio 6 : 11. Paratergites rather broad. Last (VII) sternite of holotype noticeably projecting beyond by about 0.1 of gaster length. Ovipositor sheaths barely exerted.

Coloration. Body dark with metallic lustre. Frontovertex with rather strong green-bronze-violet lustre; tempora and cheeks with intense violet-goldish-green, middle facial elevation with bluish green lustre. Antennal scape brown-yellow or yellow-brown with narrow dark stripe on lower margin or also on upper margin; pedicel, funicle and club black. Palpi brownish yellow. Pronotum violet-bronze-green; mesonotum, axillae, scutellum, tegulae and propodeum with

similar lustre. Fore wing rudiments dirty white. Tergites of gaster dark, green-blue-violet, but abdominal tergite IV (3rd gastral) is sharply distinguished by its bright green lustre. Fore femora and tibiae brownish black. Middle femora black-brown, darker dorsally; middle tibiae dark with brownish yellow apices; mesotibial spur and middle basitarsus yellowish white; 2nd-4th segments of middle tarsi also light, but brownish; 5th segment darkened. Hind femora black-brown, tibiae brown-black, and tarsi darkened.

Sculpturing. Frontoververtex with exceedingly minute, cellulate, but not deep sculpture and with very minute, not dense punctation. Hind dorsal half of pronotum with relatively large cellulate sculpture and with punctation; sculpturing of mesonotum and scutellum is similar. Middle part of propodeum reticulate. Gastral tergites smooth, in some areas with very minute punctures.

Body length 1.3-1.5 mm.

Male and biology unknown.

Etymology. The species is named after the collector Dr. Alejandro González Hernández (Autonomous University of Nuevo León, San Nicolas de los Garza, N.L., Mexico).

Key to species of the genus *Holcencyrtus*
(females)

- 1(6). Apex of scutellum with a group of coarse, long, dark setae arranged in a more or less compact bundle; this group may be divided into 2 bundles, or it consists of flattened dark setae arranged along hind border of scutellum.
- 2(3). Propodeal spiracles situated on distinct tubercles. Basal part of scutellum concave, apex elevated, conical, its bundle of setae directed anteriorly. Antennal scape not modified and almost not widened, 5 times as long as wide. Maxillary and labial palpi 3-segmented. 0.85 mm. – USA (Georgia), ex *Stemmatomerinx* sp. **H. elegans** (Gordh & Trjapitzin, 1978)
- 3(2). Propodeal spiracles not situated on tubercles. Scutellum flat or not strongly modified, setae on its apex directed posteriorly. Antennal scape modified, more or less strongly widened and flattened or with a longitudinal cavity, 1.7-2 times as long as wide. Maxillary palpi 4-segmented, labial palpi 3-segmented.
- 4(5). Upper edge of antennal scape angulate; club 2-segmented, 3 times as long as wide. Fore wing rudiments filiform. Body predominantly pale. 0.7-1.4 mm. – Trinidad, ex *Ferrisia virgata* Cockerell on cacao; Argentina; introduced from Trinidad into USA (California), where it infested *Planococcus citri* Risso, *Pseudococcus adonidum* Linnaeus, *P. calceolariae* Maskell and *P. maritimus* Ehrhorn; introduced from California into Ghana for biological control of *Planococcoides njalensis* Laing, the vector of a virus disease of cacao **H. myrmicoides** (Compere & Zinna, 1955)
- 5(4). Upper edge of antennal scape convex, but not angulate; club undivided, 1.6 times as long as wide. Fore wing rudiments not filiform. Body dark with metallic lustre. 1.3 mm. – USA (New Jersey), on gramineous plants *Spartina alterniflora* and *S. patens* **H. dennoi** (Gordh & Trjapitzin, 1980)
- 6(1). Apex of scutellum without a group of coarse, long, dark setae arranged in 1 bundle or 2 bundles and without a group of flattened dark setae along hind border.
- 7(10). Fronto-facial ridge weakly developed, rounded or not acute; facial cavity shallow. Head hypognathous. Mesonotum at least 4 times as wide as long. Antennal scape angularly broadened at very apex.
- 8(9). Scutellum basally with a broad depression and a broad tubercle-like apex. Antennal scape with 2 small lateral flanges, 3 times as long as wide. 1.25 mm. – Mexico (Hidalgo), from nest of ant *Pheidole ceres* Wheeler var. *tepanica* Wheeler **H. scapus** (Gordh & Trjapitzin, 1980)
- 9(8). Scutellum pointed basally, with a distinct pit and rounded apex. Antennal scape with 1 large apicomedial flange, 2.3 times as long as wide. 1.85 mm. – USA (Texas), from nest of ant *Pheidole kingi instabilis* Emery **H. wheeleri** (Ashmead, 1904)
- 10(7). Fronto-facial ridge strongly developed, acute; facial cavity rather deep. Head subprognathous. Mesonotum less than twice as wide as long. Antennal scape strongly, but not angularly broadened, especially in the apical half.
- 11(12). Antennal scape 2.47-2.7 times as long as wide. Frontovertex with minute cellulate sculpturing and with rather dense punctation, dull. General coloration of head and mesosoma brown or dark brown. 1.1-1.4 mm. – Cuba **H. gordhi** (Trjapitzin & S.Trjapitzin, 1995)
- 12(11). Antennal scape 1.44-2 times as long as wide.
- 13(14). Upper edge of antennal scape angularly convex (Fig. 1). Frontovertex very superficially transversely reticulate, with sparse and minute punctation, lustrous. Abdominal tergite IV (2nd gastral) not distinguished by its lustre from other tergites. 0.59-0.64 mm. – Mexico (Veracruz), ex *Dysmicoccus boninsis* Kuwana and *Birendracoccus saccharifolii* Green on sugarcane; introduced from Mexico into Hawaiian Islands, where it was reared from *Saccharicoccussacchari* Cockerell on sugarcane and from *Planococcus kraunhiae* Kuwana; the species did not acclimatize on these islands **H. osborni** (Timberlake, 1923)
- 14(13). Upper edge of antennal scape almost straight (Fig. 2). Frontovertex with exceedingly minute, cellulate, but not deep sculpturing and with very minute, not dense, punctation. Abdominal tergite IV (2nd gastral) distinguished by its bright green lustre. 1.3-1.5. – Mexico (Nuevo León) **H. gonzalezii** sp. n.

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