

**A NEW SPECIES OF *GASTRANCISTRUS* WESTWOOD
(HYMENOPTERA: PTEROMALIDAE) REARED FROM
APRICOT FLOWER MIDGE, *CONTARINA PRUNIFLORUM*
COUTIN & RAMBIER (DIPTERA: CECIDOMYIIDAE) IN
MALATYA PROVINCE, TURKEY**

Mikdat Doğanlar* and Talip Yiğit**

* Honorary Professor, Research Station of Biological Control, Adana, TURKEY. E-mail: mikdoganlar@yahoo.com.tr

** Apricot Research Station, Tecde Road, 44100 Malatya, TURKEY. E-mail: talipyigit79@hotmail.com

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ABSTRACT: A new parasitoid species of *Gastrancistrus* Westwood (Hymenoptera: Pteromalidae) reared from Apricot flower midge, *Contarina pruniflorum* Coutin & Rambier (Diptera: Cecidomyiidae) is described in Malatya province, Turkey.

KEY WORDS: *Gastrancistrus* sp. nov., parasitoid, apricot flower midge, Malatya, Turkey

Gastrancistrus (Hymenoptera: Chalcidoidea: Pteromalidae) was described by Westwood (1820) with its type species being *Gastrancistrus vagans* Westwood, 1833. Graham (1969) gave its synonyms and discussed them. He provided an identification key for 49 European species. Noyes (2018) listed 137 world species of *Gastrancistrus*, one of them as unavailable name in current taxon, and gave their synonyms, distributions and literature lists. Özdikmen (2011) created 2 new names of species in *Gastrancistrus*.

Only two natural enemies, *Gastrancistrus pacillus* Walk. (Hym., Chalcidoidea: Pteromalidae) and *Synopeas* sp. (Hymenoptera: Platygasteridae), has been recorded as larval parasitoid of *C. pruniflorum* by Coutin & Rambier (1955), and stated that the parasitism rate reached 8% in 1953 and 14% in 1954. But the name, *Gastrancistrus pacillus* Walker, could not found in the Universal Chalcidoid Data base of Noyes (2018).

Up to now, 3 species of *Gastrancistrus*, *glabellus* (Nees), *hirtulus* Graham, *latirons* (Thomson) have been recorded from Turkey by Doğanlar (1985). Later same species were recorded by Öncüler (1991). *Gastrancistrus glabellus* was recorded by Thuroczy & O'Connor (2009) and by Todorov et al. (2014).

Recently, the specimen of *Gastrancistrus* sp. was reared from larvae/pupae of the Apricot flower midge, *Contarina pruniflorum* Coutin & Rambier (Diptera: Cecidomyiidae) by the second author in 2018. They were sent to the first author for identification, and it was described as a new species for science.

MATERIAL AND METHOD

The study was conducted in 2017 in Malatya province, Turkey. The buds of *Prunus armeniaca* (L.) Dumort with larvae of *C. pruniflorum* were collected from the orchards mainly in the period from March to April. The buds with larvae were brought to laboratory in plastic bags for rearing of the parasites. The larvae, coming out of the bud, were kept under laboratory conditions (24°C temperature

and 60-70 % relative humidity), and about 300 larvae were placed into the cardboard box, filled with soil, screened by fine mashed cloth, kept in the apricot orchard nearby the Apricot Research Station, in Malatya, Turkey. In the beginning of April, 2018, the specimens of *Gastrancistrus* sp. were hatched in the screened box, killed in pure alcohol and sent to the first author for identification.

The left antenna of the holotype was slide-mounted in Canada balsam. The types of the new species were deposited in Insect Museum of Biological Control Station, Yüreğir, Adana, Turkey (IMBC). Photographs of diagnostic characters of the new species were taken by using of Leica DM 500 microscopes with a digital Leica ICC 50 camera attached to it.

Terminology and abbreviations

Morphological terminology follows Graham (1969). Abbreviations used in the descriptions are: OOL= shorter distance between ocello-ocular line, POL= distance between posterior ocelli, F1-6 = funicular segments.

RESULTS AND DISCUSSION

Gastrancistrus pruniflorum sp. nov.

(Figs. 1 a-h)

Description of Female. Length (body+ ovipositor): 1.7-1.8+8 mm. Colour: Body (Fig. 1a) black with bronze to blue-green reflexion. Mandibles yellow with teeth testaceous. Antenna black. Legs concolorous with the thorax, except trochanters, apical tips of femorae and tibiae testaceous, basal 4 segments of tarsi yellow. Tegulae black. Wings hyaline, venation testaceous to brown.

Morphology: Head (Fig. 1b) about 0.9 times as broad as the mesoscutum, in dorsal view 1.75 x as broad as long; temples very short and receding strongly; POL 2.25 OOL. In front view the head about 1.17 times as broad as high, with the vertex moderately arched; gena very slightly curved, converging strongly towards the mouth. Eyes separated by nearly 1.66 times their own length. Malar space 0.37x length of an eye. Breadth of oral fossa about 3.5x malar space. Clypeus 2.6x as broad as long, its anterior margin produced, broadly circular. Mandibles (Fig. 1c) rather small, hardly falcate, their outer tooth longest, the others decreasing regularly in length. Head, especially face, shiny, with very fine reticulation which is not raised above the general surface and is, on the lower part of the head, finely reticulated. Antennae (Fig. 1d) inserted low on the head, the lower edge of their toruli distinctly below the level of the ventral edge of the eyes. Antenna with formula 11253, with scape almost as long as an eye, about 6x as long as broad; combined length of pedicellus and flagellum 0.73x breadth of the head and 1.67x as long as length of scape; pedicellus in profile about 1.9x as long as broad, 1.4x as long as first funicular segment; flagellum moderately clavate; funicle proximally narrower than the pedicellus, thickening distinctly distad, F1 quadrate; F2- F3 1.3x; F4 1.44x as wide as long; F5 1.45x as wide as long and 1.45x as wide as F1; clava 1.76x as long as broad, about as long as 3 funicular segments; flagellum with rather conspicuous and somewhat outstanding bristles; funicular segments with 1-2 sensilla.

Mesosoma (Figs. 1e,f) barely 1.27x as long as broad. Mesoscutum (Fig. 1e) 2.0x as broad as long, shiny, with fine delicate reticulation which is for the most part engraved; mid lobe sparsely hairy, the hairs rather long; notauli deep, slightly curved. Scutellum (Fig. 1f) about 1.4x as long as mesoscutum, slightly longer than broad, strongly convex in the transverse axis, with sculpture, excepting the frenum, rather finer than that of the mesoscutum; 3 pairs of bristles; frenum

marked off by a fine line; the scutello-axillar sutures meet the mesoscutum distinctly mesad of the hind ends of the notauli. Dorsellum about one third as long as the frenum. Propodeum (Fig. 1f) about 0.5x as long as the frenum, shiny with very weak alutaceous sculpture; median carina and plicae absent; spiracles circular, almost touching the metanotum; callus with two to three bristles. Metapleuron, and mesopleuron except the smooth subtriangular dorsal area, shiny with fine delicate and hardly raised reticulation; mesepimeron distinctly marked off, nearly 2.6x as long as broad; mesosternum shiny, with fine sculpture. Postspiracular sclerite with fine reticulation. Legs somewhat slender; hind coxae nearly 2.5 times as long as broad, the dorsal surface of the coxae with some hairs; spur of mid tibia three fourths length of the first tarsal segment. Fore wing (Fig. 1g) slightly more than twice (2.13x) as long as broad; costal cell broad (eight to nine times as long as broad), its lower surface fairly thickly hairy, its upper surface with a row of numerous hairs in the distal half; basal cell with scattered hairs over its distal third to half, and partly closed below by a line of hairs; speculum broad, open, reaching the cubital vein; wing beyond the speculum quite thickly hairy; veins rather thin, the postmarginal 0.65x as long as the marginal vein, which is 2.22x as long as the stigmal vein, the latter slightly curved; stigma very large, almost quadrangular, separated by its own height from the lower edge of the postmarginal vein slightly longer than high, with a short uncus.

Gaster lanceolate, including the ovipositor sheaths 1.6x as long as head plus thorax, usually strongly compressed and much narrower than the thorax; sunken dorsally beyond the basal tergite, the latter with a subtriangular basal fovea; ovipositor sheaths, as seen in dorsal view, projecting beyond the apex of the gaster by slightly longer than a length that of the hind tibia; hypopygium extending 3/5 along the gaster.

Male: similar to female except as follows: Antenna (Fig. 1h) with formula 11162, with scape about 3.6x as long as broad; combined length of pedicellus and flagellum 1.4x breadth of the head and 2.63x as long as length of scape; pedicellus in profile about 1.5x as long as broad, almost as long as first funicular segment; flagellum filiform; F1 1.5x as long as wide; F2-F5 quadrate; F6 quadrangular, lower edge 0.54x as long as upper edge; clava 2.16x as long as broad, about as long as 2 funicular segments; flagellum with long conspicuous and distinct outstanding bristles; funicular segments with 1-2 sensilla. Thorax almost as long as broad. Mesoscutum 1.5x as broad as long. Scutellum about 1.5x as long as mesoscutum. Propodeum 1.28x as long as the frenum; spiracles circular, separated from metanotum by half of its diameter. Gaster lanceolate, 1.3x as long as head plus thorax.

Material Examined: HOLOTYPE female. TURKEY, Malatya leg. T. Yiğit, reared from larvae/pupae of the Apricot flower midge, *Contarina pruniflorum* Coutin & Rambier (Diptera: Cecidomyiidae). Types of the new species was deposited in Insect Museum of Biological Control Station, Yüreğir, Adana, Turkey (IMBC).

Host: Apricot flower midge, *Contarina pruniflorum* Coutin & Rambier (Diptera: Cecidomyiidae).

Distribution. Turkey: Malatya.

Remarks. The female of *Gastrancistrus pruniflorum* sp. nov. closely resembles that of *Gastrancistrus clavatus* (Thomson) in having propodeum smooth or virtually so, without a median carina; callus with two to four bristles; mesoscutum with delicate engraved sculpture; inner angle of axilla more or less smooth and shiny; gaster lanceolate, somewhat compressed, longer than head plus thorax; forewing with marginal vein 2.2 to 3 times as long as the stigmal

vein; postmarginal vein distinctly shorter than the marginal vein. *Gastrancistrus pruniflorum* sp. nov. differs from *G. clavatus* in having ovipositor sheaths, as seen in dorsal view, projecting beyond the apex of the gaster by slightly longer than a length that of the hind tibia; hypopygium extending 3/5 along the gaster; basal cell with scattered hairs over its distal third to half, and partly closed below by a line of hairs; stigma very large, almost quadrangular, separated by its own height from the lower edge of the postmarginal vein slightly longer than high. (in *G. clavatus* ovipositor sheaths projecting, their exerted portion about as long as the first segment of the hind tarsus or slightly more; fore wing (Text-fig. 231 of Graham, 1969) with stigma very large, subcircular, separated by less than its own height from the lower edge of the postmarginal vein; basal cell bare). *Gastrancistrus pruniflorum* sp. nov. also similar to *G. salicis* group species in having all coxae entirely metallic, femora and infuscate at base, most often their proximal one third to three quarters fuscous with a metallic tinge and antennal scape often more heavily infuscate; antennal clava as long as the combined length of the three or four preceding funicular segments; scutellum with 6 to 10 bristles, but it differs from all of them in having breadth of oral fossa about 3.5x malar space; speculum open below (in the *salicis* group breadth of the oral fossa is at most 1-9 to 2-5 times the malar space; speculum closed below, except *G. longigena* Graham, in which breadth of oral fossa about 1.5-1.7x malar space).

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Figure 1. *Colotrechnus pruniflorimus* sp. nov. a-g. female. a. body, in dorsal view; b. head, in frontal view; c. mandible; d. female antenna. e. mesosoma, in dorsal view; f. scutellum and propodeum; g. forewing; h. male antenna (Scale bar for a = 1.5 mm; for b = 0.41 mm; for c = 0.18 mm; for d, h = 0.28 mm; for e, f = 0.46 mm; for g = 1.45 mm).