

First record of *Phytodietus moragai* GAULD, 1997 (Hymenoptera: Ichneumonidae: Tryphoninae) from Ecuador, with a description of the female of this species

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ABSTRACT. *Phytodietus moragai* GAULD, 1997, previously known from Costa Rica, is recorded from Ecuador for the first time. This is the second representative of the genus *Phytodietus* GRAVENHORST, 1829 from South America. A description and illustration of the female of *P. moragai* is provided.

KEY WORDS: Ichneumonid, Neotropical region, South America, *P. cooperi*, Costa Rica, taxonomy.

INTRODUCTION

The worldwide distributed genus *Phytodietus* GRAVENHORST, 1829, belonging to the subfamily Tryphoninae of Ichneumonidae (Hymenoptera), includes 122 described species (BENNETT 2015, KASPARYAN & KHALAIM 2013, KOSTRO-AMBROZIAK 2011a, 2011b, 2012, KOSTRO-AMBROZIAK & BROAD 2016). To date, 22 species of this genus have been recorded in the Neotropical region, 21 of which are known from Mesoamerica (Mexico,

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Costa Rica) (GAULD et al. 1997, KASPARYAN 2007, KASPARYAN & KHALAIM 2013, KASPARYAN & RUÍZ-CANCINO 2004, KHALAIM et al. 2013) but just one, *P. cooperi*, from South America (Ecuador) (KOSTRO-AMBROZIAK & BROAD 2016).

During a survey of parasitoid insects carried out by Dr INCLÁN around Calacali in the northern highlands of Ecuador, a female of *Phytodietus moragai* GAULD, 1997 was found. The species was originally described from Costa Rica based on two males (GAULD et al. 1997). Hitherto, only one additional male of this species has been recorded, also in Costa Rica (CORONADO-RIVERA 2009). Here *P. moragai* is recorded as new to Ecuador and a description of the female of this species is provided. This is the second record of the genus *Phytodietus* from South America.

MATERIAL AND METHODS

The female of *P. moragai* is preserved in the collection of the Laboratory of Ecology and Evolutionary Biology of Insects, University of Białystok, Poland (LEEBI). The photographs were taken using an opto-digital microscope DSX110. The morphological terminology follows GAULD et al. (1997).

TAXONOMY

Phytodietus moragai GAULD, 1997

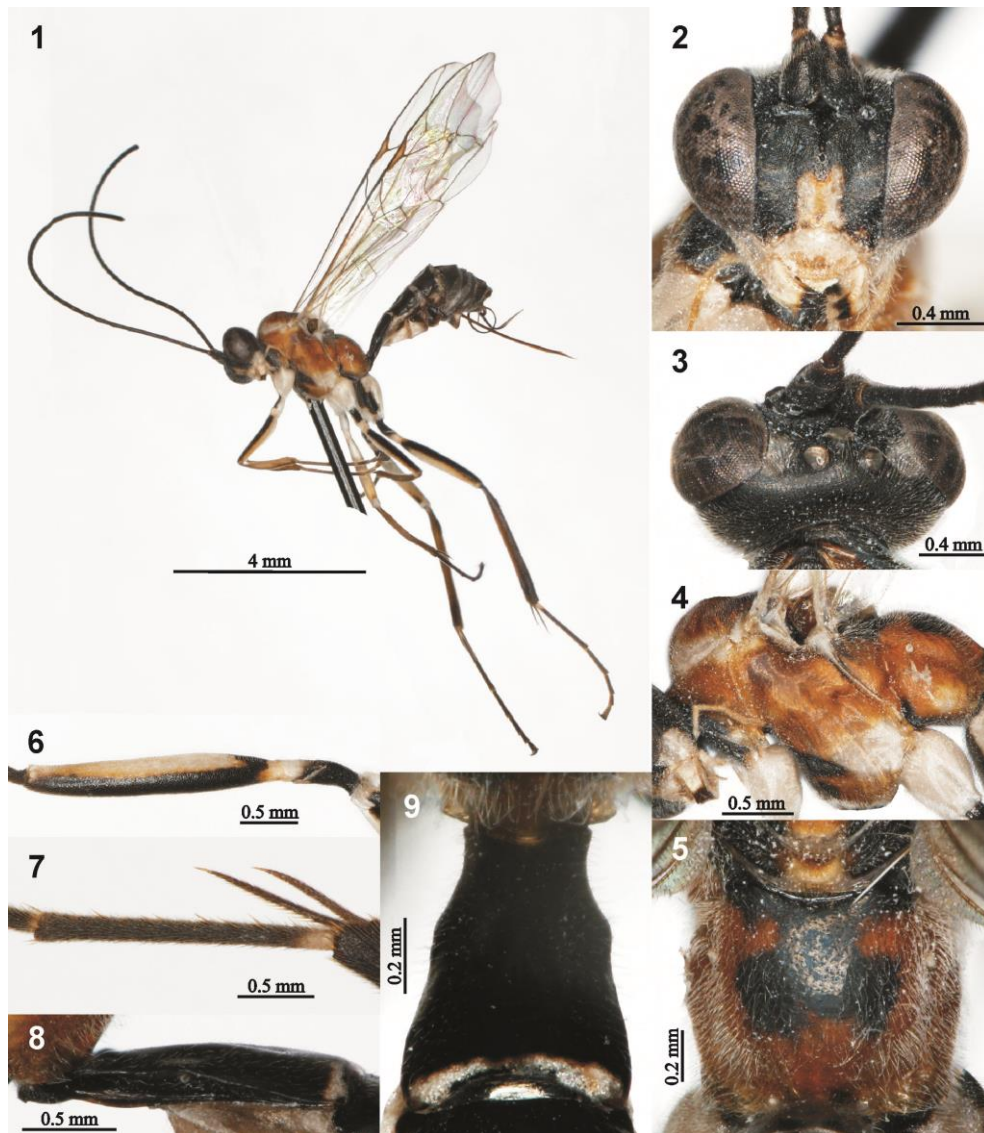
(Figs 1-9)

Comparative diagnosis

P. moragai can be easily distinguished from *P. cooperi* KOSTRO-AMBROZIAK & BROAD, 2016, the second Ecuadorian species of the genus, by the following features: occipital carina complete (ventrally incomplete in *P. cooperi*); metasoma predominantly orange (predominantly black in *P. cooperi*); wings hyaline (entirely brownish infumate in *P. cooperi*).

Material examined

[ECUADOR – Calacali, 11-24.XI.2014, D. J. INCLÁN leg., Malaise trap], [*Phytodietus moragai* GAULD, 1997, ♀, det. A. KOSTRO-AMBROZIAK] – (♀, LEEBI). [Holotype], [COSTA RICA: San José Prov., San Antonio de Escazú, 1300 m, ix-xi.1987/8 (EBERHARD & GAULD)], [*Phytodietus moragai*, det. I. D. GAULD, 1997] – (♂, BNHM). [Paratype], [COSTA RICA: Sn José Prov., San Antonio Escazú, 1300 m, XI. GAULD], [*Phytodietus moragai*, det. I. D. GAULD, 1997] – (♂, BNHM).



Figures 1-9. *Phytodietus moragai*, female: 1. habitus, lateral view; 2. head, facial view; 3. head, dorsoposterior view; 4. mesosoma, lateral view; 5. propodeum, dorsal view; 6. hind femur, lateral view; 7. tibial spurs and first tarsomere of hind leg; 8. first metasomal segment, lateral view; 9. first metasomal segment, dorsoposterior view.

Description. Female (Fig. 1). Body length 7.0 mm.

Head. Face (Fig. 2) 0.88 times as long as wide, matt, covered with distinct leather-like structure and very weak punctures. Clypeus with transverse convexity visible mainly on sides, basally convex, apically inclined. Apical half of clypeus rather trapezoidal but with finely rounded margins, without visible notch centrally. Upper tooth of mandible only slightly longer than lower tooth. Malar space 0.76 times as long as basal width of mandible. Occipital carina distinct and complete, joining hypostomal carina before base of mandible. Temple behind eye (Fig. 3) narrowed but finely curved. Antenna with 37 flagellomeres; flagellomeres 1 to 4 unspecialized, not broader than distal ones.

Mesosoma (Fig. 4). In general subpolished to polished, with short but relatively dense white setae. Pronotum smooth, without wrinkles; epomia absent. Mesoscutum 1.11 times as long as wide. Notauli weakly impressed, nearly invisible near anterior margin of mesoscutum, extending back to level of tegulae. Mesopleuron smooth, without visible punctures, leather-like sculpture or wrinkles, with short but relatively dense hairs; speculum as remainder of mesopleuron. Epicnemial carina distinct, present ventrally and laterally. Metapleuron covered with very fine leather-like sculpture, without wrinkles. Submetapleural carina complete, expanded anteriorly into a lobe (the main part of this lobe belonging to metapleuron). Propodeum (Fig. 5) subpolished, smooth, without transverse wrinkles, crests or longitudinal groove.

Wings. Fore wing length 7.0 mm. Marginal cell 0.25 times as long as wide; areolet present; distance between *2rs-m* and *2m-cu* 1.29 times length of *2rs-m*; *M* distinct; *cu-a* inclivous, interstitial to *Rs&M*. Hind wing length 5.2 mm. All hind wing veins complete but *Cu1* and *cu-a* fine; first abscissa of *Cu1* distinctly longer than *cu-a* and joining *cu-a* at a slight angle.

Legs. Hind femur (Fig. 6) 6.18 times as long as wide. Hind tibia with rather long but thin bristles. Lateral spur of hind tibia 0.55 times as long as first metatarsus (Fig. 7). Hind fifth tarsomere 0.65 times as long as third.

Metasoma. Tergites polished, with short, moderately dense pubescence, without distinct punctures. Tergite I (Figs 8-9) 1.91 times as long as posteriorly wide, with weak constriction between base and spiracle. Median basal pit of tergite I moderately deep; median dorsal carinae present along basal pit and finely raised. Dorsolateral edge of tergite I angled from base to apex. Tergite II 1.07 times as long as anteriorly wide and 0.75 times as long as posteriorly wide.

Colouration (Figs 1-9). Head predominantly black with following parts pale yellow: mandible (with exception of brown teeth), clypeus, maxillary and labial palps, malar space, central longitudinal stripe on face from base of clypeus to central part of face, spots on top of vertex, at eye margin. Antenna dark brown to black. Mesosoma predominantly dark orange with pale yellow/whitish and black marks; pale yellow/whitish: small marks on

pronotum below tegula and above fore leg, tegula, marks on mesopleuron (small below tegula and large, irregular above mid coxa), anterolateral marks on mesoscutum, apex of scutellum, postscutellum, margins of axillary trough of mesonotum and metanotum; black: propleuron, broad band along anterior margin of pronotum, irregular mark on ventrolateral part of mesopleuron, axillary trough of metanotum (with exception of yellow margins) and mesonotum (along yellow margins), marks on mesoscutum (one near anterior margin and two, irregular on the sides of posterior part of mesoscutum), band along submetapleural carina, large irregular mark on propodeum. Fore and mid coxae, trochanters and trochantellus whitish, femora and tibiae yellow, trochanters and femora with black dorsal stripe, tarsi brownish. Hind leg: coxa whitish with black, irregular anterolateral mark, trochanter black, trochantellus pale yellow with black base, femur ventrally and partly laterally yellow, remainder black, tibia brownish, tarsomeres brownish with paler base. Wings hyaline, pterostigma yellowish brown, veins brown. First and following metasomal tergites black with narrow apical and lateral pale yellow bands (bands larger on the lateral part from third tergite to the apex of the abdomen). Ovipositor sheath blackish.

Male (GAULD et al. 1997) similar to female but with fore wing 4.5-5.0 mm and hind wing 3.1 mm. Colour in general similar to female, but with yellow face and inner orbital stripe on frons, with only small orange mark on metapleuron and entirely black propodeum.

Distribution

Costa Rica (GAULD et al. 1997, CORONADO-RIVERA 2009), Ecuador (new record).

Biological notes

Two males from Costa Rica were collected in a suburban garden at an altitude of 1 300 m amsl in September-November (GAULD et al. 1997). In Ecuador, the female was collected in November in mountains around the town of Calacali, outside the nearby Geobotanical Reserve of Pululahua (Fig. 10), at an altitude above 3000 m amsl. There are no current host records.

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Fig. 10. Habitat of *Phytodietus moragai* in Ecuador.

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