



First record of *Clistopyga melanoptera* Castillo, Sääksjärvi & Bordera (Hymenoptera: Ichneumonidae: Pimplinae) in Brazil

Diego G. Pádua¹ & Marcio L. Oliveira

Programa de Pós-Graduação em Entomologia, Instituto Nacional de Pesquisas da Amazônia, CEP: 69067-375, Manaus, Amazonas, Brazil

¹Corresponding author. E-mail: paduadg@gmail.com

Abstract. The parasitoid wasp *Clistopyga melanoptera* Castillo, Sääksjärvi & Bordera, 2016 was described recently and was known only from the type locality, Cusco, Peru. Here we provide a first record of this species for Brazil, at Manaus, 1700 km from the type locality. A distribution map, images and morphological variations are provided.

Key words. Amazonas, Ephialtini, Neotropics, parasitoid wasp, rain forest.

Clistopyga Gravenhorst, 1829 is a small genus of the subfamily Pimplinae with only 49 recognized species worldwide (YU et al. 2012; BORDERA et al. 2014, 2016; SÄÄKSJÄRVI et al. 2015; VARGA & RESHCHIKOV 2015). The genus is a parasitoid wasp which utilizes eggs in spider egg-sacs (NIELSEN 1929; GAULD & DUBOIS 2006).

This genus was considered as a sister lineage to the *Poly-sphincta* group of genera, but recently MATSOMOTO (2016) showed that the genus has a different origin.

The genus is characterized by the fore wing vein *3rs-m* absent; male lower part of gena indented above mandibular base; occipital carina convex and mediodorsally complete; female subgenital plate large and convex; ovipositor usually upcurved, except straight in some species (GAULD et al. 1998). Based on ovipositor characteristics, GAULD (1991) separated the *Clistopyga* from Costa Rica into two species-groups: *chaconi* (upcurved ovipositor) and *henryi* (straight ovipositor).

Recently, BORDERA et al. (2016) reviewed the *C. chaconi* species-group and described 11 new species. One of these, *C. melanoptera*, was known only from the type locality (Amarakaeri Communal Reserve in the Department of Cusco, Peru).

The main aim of this paper is to report the occurrence of *C. melanoptera* for the first time in Brazil, provide digital images, distribution map and taxonomic notes on this species.

The studied specimens are deposited in the Invertebrate Collection of the Instituto Nacional de Pesquisas da Amazônia (INPA), Manaus, Amazonas state, Brazil. The

morphological terminology mostly follows that of GAULD (1991) and the format of the description and measurements follow those of BORDERA et al. (2014).

Specimens were examined using a ZEISS Stemi 1000 stereomicroscope and measurements were made through a millimeter ocular, calibrated with a precision ruler. Digital images were taken using DFC420 digital camera attached to a Leica M165C stereomicroscope, combined with Leica Application Suite V3.4.1 software (Version 2009). The distribution map was made using a SimpleMappr (SHORTHOUSE 2010).

Clistopyga melanoptera Castillo, Sääksjärvi & Bordera, 2016

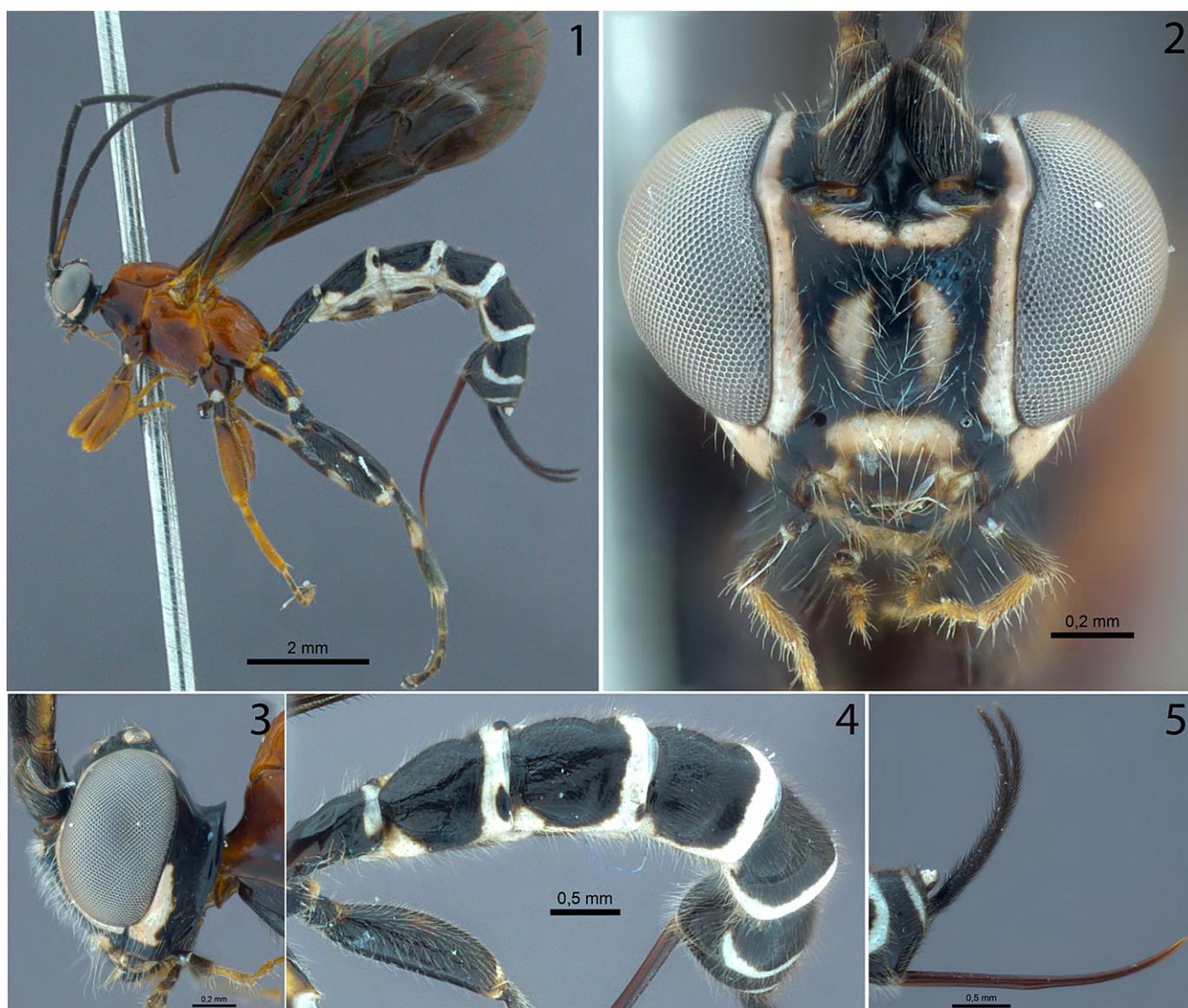
Figures 1–5

Clistopyga melanoptera CASTILLO, SÄÄKSJÄRVI & BORDERA, 2016: 21.

Diagnosis. This species can be distinguished from the other species of the *C. chaconi* species-group by the following combination of characters: wings black, except a wide hyaline band bordering veins *Rs+2r*, *2rs-m* and *2m-cu* of fore wing; first flagellomere about 6.0 times longer than wide; malar space 0.8 times longer than basal mandibular width; occipital carina strongly raised, forming a dorsomedial flange, conspicuously upcurved posteriorly; length of metasomal tergite I twice its posterior width; ovipositor slender, strongly upcurved at distal 0.45, about 1.4 times length of hind tibia; setae of ovipositor sheath about 1.35 times the sheath basal width (BORDERA et al. 2016).

Distribution. Brazil (Amazonas state); Peru (Department of Cusco) (Figure 6).

Material. Brazil, Amazonas, Manaus, Reserva Ducke, Platô Dossel, 21.vi–06.vii.2007 (G. Freitas & M. Feitosa colls.), 1 ♀, INPA-HYM 031657; idem, but Platô Leste/Oeste, 14.ii–06.iii.2007, Malaise trap, 2 ♀, INPA-HYM 031658, INPA-HYM 031662; idem, but Baixio Leste/Oeste, 27.ix–09.x.2006, Suspensa trap, Sub-bosque (J. Vidal, R. Ale-Rocha & G. Freitas colls.), 1 ♀, INPA-HYM 031659; idem, but Platô Leste/Oeste, 09–20.x.2006, Malaise trap, 1 ♀, INPA-HYM 031660; idem, but 16–30.xi.2006, Suspensa trap (J. Vidal & G. Freitas), 1 ♀,



Figures 1–5. *Clistopyga melanoptera* ♀: (1) habitus, lateral view; (2) face, frontal view; (3) head, lateral view; (4) metasoma, laterodorsal view; (5) ovipositor and ovipositor sheath, lateral view.

INPA-HYM 031661; idem, but iii.1995 (unknown collector), “But – 3” [code], 1 ♀, INPA-HYM 031663; idem, but INPA, 20.v.1980 (Francisco Peralta), 1 ♀, INPA-HYM 031664; idem, but EMBRAPA, cultivation of organic Guaraná, point woods, 02°53′29.14″ S, 059°58′45.80″ W, 21.xii.2012, Malaise (K. Schoeninger leg.), 1 ♀, INPA-HYM 031665; idem, but cultivation of the conventional Guaraná, 02°53′42.18″ S, 059°59′10.58″ W, 14.ix.2012, 1 ♀, INPA-HYM 031666.

Comments. We found the following morphological variations compared with the original description: female. Body 8.0–12.3 mm; face 1.17–1.27 times wider than high (from supraclypeal suture to base of antenna); gena in dorsal view 0.4–0.64 times longer than eye; posterior ocellus separated from eye by 0.65–1.0 times its maximum diameter; distance between posterior ocelli 0.65–1.0 times maximum diameter of posterior ocellus; clypeus width 1.44–1.66 times length; malar space 0.8–1.0 times longer than basal mandibular width; antenna with 34–36 flagellomeres, first flagellomere 4.2–6.0 times longer than wide; metapleuron

2.0–2.4 times longer than deep; propodeum in dorsal view 1.15–1.25 times longer than medial width; hind femur 3.85–4.0 times longer than wide and 0.88–0.9 times longer than hind tibia; fore wing length 7.38–8.9 mm; abscissa of *Cu*1 between *1m-cu* and *cu* and *Cu*1 1.85–2.35 times longer than *Cu*1*b*; hind wing with *cu-a* 0.5–0.7 times longer than abscissa of *Cu*1 between *M* and *cu-a*; tergite I 1.8–2.0 longer than posteriorly width; lateromedian longitudinal carinae reaching 0.2–0.31 of the tergite length; sternite I extending back 0.5–0.6 of the length of tergite; tergite II 1.1–1.35 times longer than posteriorly width; ovipositor upcurved at distal 0.25–0.45 and 1.3–1.4 times length of hind tibia; ovipositor sheath 0.9–1.1 times length of hind tibia, length of setae on average about 1.3–1.5 times sheath basal width.

In Brazil, only *C. amazonica* Bordera & Sääksjärvi, 2016, *C. jakobii* Graf, 1985, and *C. rondoniae* Bordera & Sääksjärvi, 2016 (FERNANDES et al. 2016) were recorded, but with our new record of *C. melanoptera*, a fourth species is recorded for the country. The geographic distribution of



Figure 6. Distribution map of *Clistopyga melanoptera* Castillo, Sääksjärvi & Bordera, 2016 in South America.

C. melanoptera is extended to Manaus, 1700 km from the species' type locality.

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LITERATURE CITED

- BORDERA, S., I.E. SÄÄKSJÄRVI, C. CASTILLO, E. PALACIO, & A. GONZÁLEZ-MORENO. 2016. The Neotropical species of *Clistopyga* (Hymenoptera, Ichneumonidae, Pimplinae). Part I: the *C. chaconi* species-group, with the description of eleven new species. *European Journal of Taxonomy* 206: 1–37. <https://doi.org/10.5852/ejt.2016.206>
- BORDERA, S., A. GONZÁLEZ-MORENO, A.I. KHALAIM, & I.E. SÄÄKSJÄRVI. 2014. Revision of North American species of *Clistopyga* (Hymenoptera: Ichneumonidae: Pimplinae). *The Canadian Entomologist* 146: 355–414. <https://doi.org/10.4039/tce.2013.74>
- FERNANDES, D.R.R., B.F. SANTOS, D.G. PÁDUA & R.O. ARAUJO. 2016. Ichneumonidae in Catálogo Taxonômico da Fauna do Brasil. PNUD. Accessed at <https://www.fauna.jbrj.gov.br/fauna/faunadobrasil/2248/>, 28 April 2017.
- GAULD, I.D. 1991. The Ichneumonidae of Costa Rica I. *Memoirs of the American Entomological Institute* 47: 1–589.
- GAULD, I.D. & J. DUBOIS. 2006. Phylogeny of the *Polysphincta* group of genera (Hymenoptera: Ichneumonidae; Pimplinae): a taxonomic revision of spider ectoparasitoids. *Systematic Entomology* 31: 529–564. <https://doi.org/10.1111/j.1365-3113.2006.00334.x>
- GAULD, I.D., J.A.U. GÓMEZ & P.S. HANSON. 1998. *Guía de los Pimplinae de Costa Rica* (Hymenoptera: Ichneumonidae). San José: Universidad de Costa Rica. 188 pp.
- MATSUMOTO, R. 2016. Molecular phylogeny and systematic of the *Polysphincta* group of genera (Hymenoptera, Ichneumonidae, Pimplinae). *Systematic Entomology*, 41(4): 854–864. <https://doi.org/10.1111/syen.12196>
- NIELSEN, E. 1929. A second supplementary note on the life histories of the polysphinctas. *Entomologiske Meddelelser* 16: 366–368.
- SÄÄKSJÄRVI, I.E., C. CASTILLO, S. BORDERA & G.R. BROAD. 2015. *Clistopyga caramba* sp. nov. (Hymenoptera: Ichneumonidae; Pimplinae), an astonishing example of mimicry in spider-attacking parasitoid wasps. *Zootaxa* 4013(2): 287–292. <https://doi.org/10.11646/zootaxa.4013.2.9>
- SHORTHOUSE, D.P. 2010. SimpleMappr, an online tool to produce publication-quality point maps. Accessed at <https://www.simplemappr.net/>, 15 September 2016.
- VARGA, O. & A. RESHCHIKOV. 2015. New records of the genus *Clistopyga* Gravenhorst, 1829 (Hymenoptera: Ichneumonidae; Pimplinae) from the Oriental region, with description of a new species. *Zootaxa* 3964(5): 561–569. <https://doi.org/10.11646/zootaxa.4013.2.9>
- YU, D.S., C. VAN ACHTERBERG & K. HORSTMANN. 2012. *World Ichneumonoidea 2011: Taxonomy, Biology, Morphology and Distribution*. Vancouver: Taxapad 2012. Accessed at <https://www.taxapad.com/>, 15 September 2016.

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