Zootaxa 4170 (3): 587–593
http://www.mapress.com/j/zt/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

http://doi.org/10.11646/zootaxa.4170.3.11
http://zoobank.org/urn:lsid:zoobank.org:pub:31646D84-6D95-483C-9DDA-345248F62C0A

Lathrolestes Förster, 1869 (Hymenoptera, Ichneumonidae) from Brazil, with description of two new species and a key to the Neotropical species

ALESSANDRO RODRIGUES LIMA[1] & ALICE FUMI KUMAGAI[2]

[1]*Programa de Pós-graduação em Zoologia, Instituto de Ciências Biológicas, Universidade Federal de Minas Gerais - UFMG, Brazil. E-mail: alerolima@ufmg.br*
[2]*Departamento de Zoologia, UFMG. E-mail: acfk@icb.ufmg.br*

Abstract

The taxonomic knowledge about Brazilian Ichneumonidae species is still incipient, especially for groups poorly represented in the Neotropics, like Ctenopelmatinae. The genus *Lathrolestes* Förster, 1869, mainly Holarctic, is here recorded for the first time to Brazil, with description of *L. piranga* Lima & Kumagai **sp. n.** and *L. pitunauassu* Lima & Kumagai **sp. n.** Additionally, a key to the Neotropical species is provided.

Key words: Malaise trap, parasitoids, taxonomy, Perilissini, Ctenopelmatinae

Introduction

Ctenopelmatinae is a large, mainly northern temperate subfamily that includes more than 100 genera classified in nine tribes (Gauld, 1997; Yu *et al*., 2012). Although most of the Perilissini species occur in the Holarctic region, the tribe is naturally represented in all zoogeographic regions except the Australian and the Oceanic, where a species was introduced as pest control agent. From its 25 described genera, nine occur on Neotropical region, but only *Sialocara* Townes, 1970 was recorded in Brazil. The moderately specious genus *Lathrolestes* Förster, 1869, with 103 valid species, has only recently been recorded in tropical South America, in the Ecuadorian and Peruvian Amazonia (Reschikov, 2015; Reshchikov *et al.*, 2012). It can be recognized within Perilissini by the combination of the occipital carina joining the hypostomal carina at base of mandible and the length of first metasomal tergite being less than twice as long as wide.

Here, we present the first record of *Lathrolestes* in Brazil, with the description of two new species. Additionally, a modified key to the Neotropical species is provided, based on Gauld (1997) and Reshchikov *et al.* (2012).

Methods

Two of the most representative collections of Brazilian Ichneumonidae were visited searching specimens of *Lathrolestes*: Coleção entomológica do Centro de Coleções Taxonômicas da Universidade Federal de Minas Gerais (CCT UFMG), Minas Gerais—Brazil, and Coleção Entomológica Padre Jesus S. Moure (DZUP), Paraná—Brazil.

Specimens were examined using a stereomicroscope LEICA M125. Data on the species not recorded in Brazil were obtained from previous descriptions and illustrations (Gauld, 1997; Reshchikov, 2011; Reshchikov *et al.,* 2012). Morphological terminology follows Gauld (1997) and sculpture follows Eady (1968). Pictures were taken using a DFC295 digital camera attached to a Leica M205C stereomicroscope. When describing the material we provide the exact information contained on the specimen labels and the specimen identification number.

Accepted by J. Jennings: 26 Aug. 2016; published: 26 Sept. 2016

Results

After checking thousands of Ichneumonidae specimens in the visited collections, from all Brazilian regions, only five females of *Lathrolestes* were found. All of them were collected in the Estação Ecológica UFMG, a unit of conservation, research and environmental education within the campus of the Universidade Federal de Minas Gerais, with one hundred and fourteen hectares of deciduous forests and savannah. The specimens were captured using a Malaise trap, that had been installed for five full years, between 1991 and 2013.

Taxonomy

Lathrolestes piranga Lima & Kumagai sp. n.

(Figs 1A–F)

Type locality. Brazil, Minas Gerais, Belo Horizonte (Estação Ecológica UFMG).

Diagnosis. Flagellum black, with segments 10–19 white. Propodeum reddish-brown; petiolar area infuscate. Metasoma reddish-brown; anterior half of tergites II and III infuscate. area superomedia 1.6× as long as wide apically; area petiolaris as long as posterior width, apically 2.5× as wide as basally. Mandible with lower tooth virtually as long as the upper one. Fore wing vein *2rs-m* 0.56× as long as abscissa of *M* between *2rs-m* and *2m-cu*. Hind wing with distal abscissa of *Cu1* joining *cu-a* closer to *M* than to *1A*.

Description (Holotype). Female. Mandible slender, weakly tapered beyond middle; lower tooth virtually as long as the upper one. Malar space 0.3× as long as basal mandibular width. Clypeus punctate, not clearly separated from face; in lateral view flat, with margin blunt; in anterior view 2.2× as broad as long, with margin truncate. Face transverse, 1.75× as broad as long (Fig. 1D). Eye in lateral view as broad as maximum breadth of gena (Fig. 1C). Lateral ocellus separated from eye by 1.3× its maximum diameter. Occipital carina dorsally complete, but very weak centrally, reaching base of mandible without joining hypostomal carina. Antenna with 43 flagellomeres; first flagellomere 1.18× as long as the second one.

Pronotum dorsally smooth; epomia absent. Mesoscutum polished, densely pilose, evenly rounded in lateral view; without distinct notaulus. Mesopleuron polished, pilose, except on speculum, that is smooth and glabrous. Epicnemial carina laterally extending above the level of lower corner of pronotum; its upper end remote from the anterior margin of mesopleuron. Posterior transverse carina of mesosternum reduced to lateral vestiges. Scutellum smooth and shiny; as long as anterior width; strongly convex; without lateral carina. Metapleuron weakly inflated. Submetapleural carina broad in its entire length. Propodeum in lateral view convexly rounded; fully carinate (Fig. 1E); posterior transverse carina on area superomedia straight; area superomedia 1.6× as long as wide apically; area petiolaris as long as posterior width, apically 2.5× as wide as basally; pleural carina complete.

Fore wing length 7.44 mm; vein *cu-a* reaching *M+Cu* opposite of *Rs&M* (Fig. 1A); *2rs-m* 0.56× as long as abscissa of *M* between *2rs-m* and *2m-cu*; *2m-cu* with a single bulla, joining areolet closer to *3rs-m* than to *2rs-m*; abscissa of *Cu1* between *1m-cu* and *Cu1a* as long as *Cu1b*, and the two veins subtending an angle of about 180° in the first subdiscal cell. Hind wing with first abscissa of *M+Cu1* slightly arched; first abscissa of *Cu1* 0.85× as long as *cu-a*, so distal abscissa of *Cu1* joining *cu-a* closer to *M* than to *1A*; distal abscissa of *Rs*, *M*, *Cu1* and *1A* non-tubular; *R1* with nine hamuli.

Middle leg with inner tibial spur 1.5× as long as outer one. Tarsal claw pectinate to its apex.

Metasomal tergite I granulate; 1.4× as long as posteriorly broad in dorsal view; with lateromedian longitudinal carina extending 0.88 of its length, almost to apex (Fig. 1E); with lateral carina present on its entire length; glymma strongly impressed; spiracle slightly before middle. Cercus disc-like. Subgenital plate subquadrate in lateral view. Ovipositor as long as subgenital plate, basally stout, with a long shallow dorsal depression.

Head yellow, with mandible teeth, basal spot and apex of clypeus, interocellar area, occiput and a broad band joining interocellar area and occiput black; flagellum black, with segments 10–19 white. Propleuron yellow, basally infuscate; pronotum black, with a basal yellow band. Mesoscutum with broad black mesoscutal vittae, distally black; scuto-scutellar groove black. Mesopleuron reddish-yellow, with subapical black band and subalar prominence yellow. Fore and middle legs reddish-yellow, with apical tarsomeres infuscate; hind leg reddish-brown, with tarsus reddish-yellow, and apical tarsomere infuscate. Propodeum reddish-brown; petiolar area infuscate.

Metasoma reddish-brown; anterior half of tergites II and III infuscate. Wings hyaline, with distal apex of fore wing distinctly infuscate; pterostigma black.

Male. Unknown.

Comments. *Lathrolestes piranga* **sp. n.** is distinctive among neotropical species in the genus due its mandible with lower tooth virtually as long as the upper one.

Etymology. From the Brazilian Tupi *piranga* (reddish), this species is named in reference to its reddish-brown propodeum and metasoma.

Distribution. *Lathrolestes piranga* **sp. n.** is described from Brazil, Minas Gerais state.

Material examined. Holotype (♀). Brazil, Minas Gerais, Belo Horizonte, Campus UFMG Pampulha, Estação Ecológica, 19°52'30"S; 43°58'20"W, 842m, 01–08.xi.2013, Malaise {trap}. A.F.Kumagai col. [1 ♀, CCT-UFMG-IHY-1502933]

Holotype condition. Left mesotarsus is glued on a triangular label pinned with the specimen. Apart from that it is in good condition.

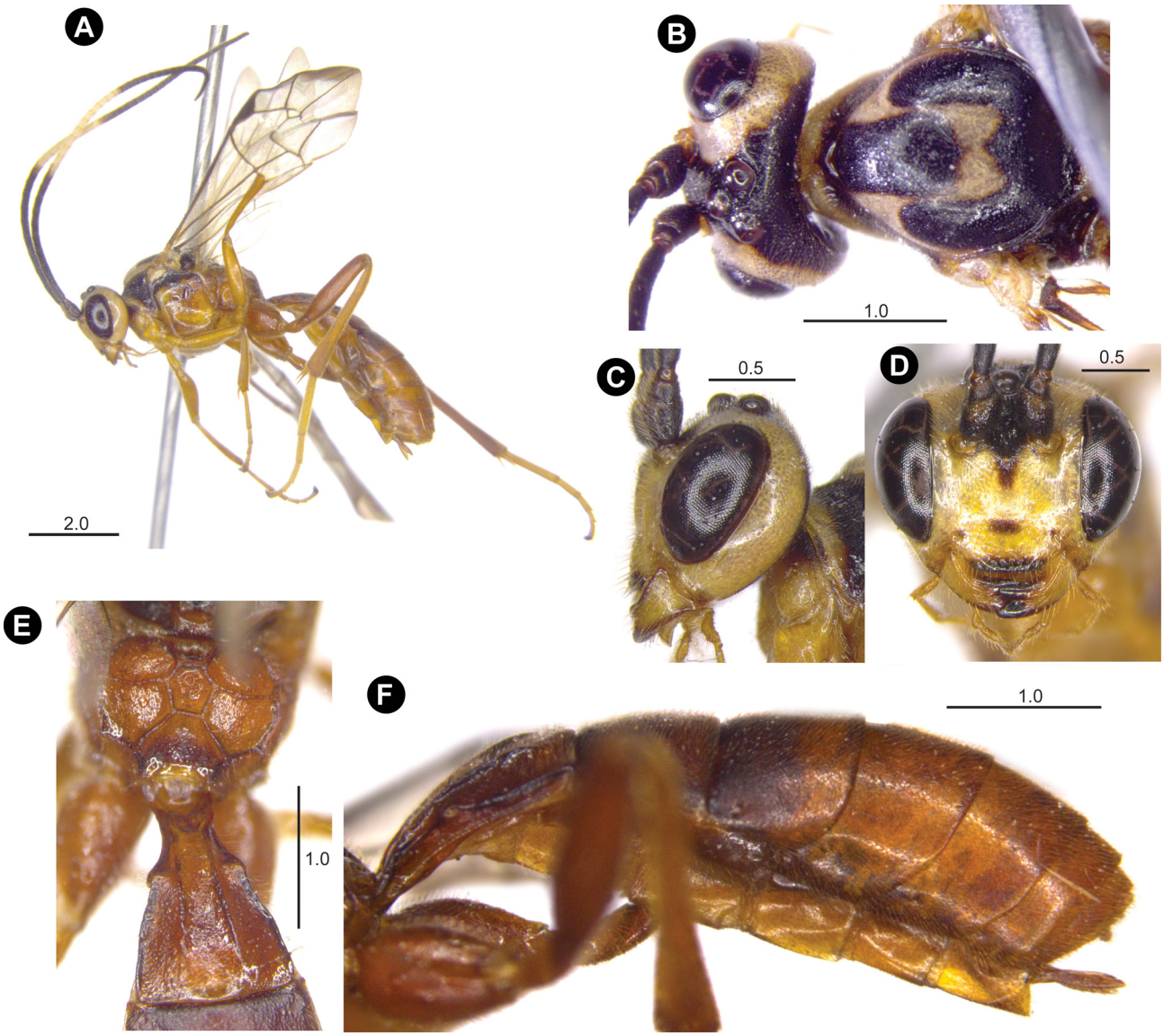

FIGURE 1. *Lathrolestes piranga* Lima & Kumagai **sp. n.** (Holotype) A. Female body, lateral view. B. Head and thorax, dorsal view. C–D. Head. C, lateral view; D, frontal view. E. Propodeum and tergite I, dorsal view. F. Metasoma, lateral view. Scale in millimeters.

***Lathrolestes pitunauassu* Lima & Kumagai sp. n.**
(Figs 2A–F)

Type locality. Brazil, Minas Gerais, Belo Horizonte (Estação Ecológica UFMG).

Diagnosis. Yellow body; with antennal flagellum completely black; metasoma with anterior half of tergite I and entire sternite I brown; basal half of tergites II–IV and entire length of tergites V+ black; fore wing infuscate at apex; area superomedia 1.4× as long as wide apically; area petiolaris as long as posterior width, apically 2.3× as wide as basally. Fore wing vein *2rs-m* as long as abscissa of *M* between *2rs-m* and *2m-cu*. Hind wing with distal abscissa of *Cu1* joining *cu-a* closer to *1A* than to *M*;

Description (Holotype). Female. Mandible slender, weakly tapered beyond middle; lower tooth 2.4× as long as the upper one. Malar space 0.3× as long as basal mandibular width. Clypeus punctate, not clearly separated from face; in lateral view flat, with margin blunt; in anterior view 2.25× as broad as long, with margin convex. Face transverse, 2.16× as broad as long (Fig. 2D). Eye in lateral view as broad as maximum breadth of gena (Fig. 2C). Lateral ocellus separated from eye by 1.6× its maximum diameter. Occipital carina dorsally complete (Fig. 2B), reaching base of mandible without joining hypostomal carina. Antenna with 40 flagellomeres; first flagellomere 1.5× as long as the second one.

Pronotum dorsally with a transverse impressed furrow that is smooth at midline and crossed by numerous crests laterally; epomia absent. Mesoscutum polished, densely pilose, evenly rounded in lateral view; without distinct notaulus. Mesopleuron polished, pilose, except on speculum, that is glabrous. Epicnemial carina laterally extending up to level of lower corner of pronotum; its upper end remote from the anterior margin of mesopleuron. Posterior transverse carina of mesosternum reduced to lateral vestiges. Scutellum smooth and shiny; as long as anterior width; strongly convex; without lateral carina. Metapleuron inflated. Submetapleural carina broad in its entire length. Propodeum in lateral view convexly rounded; fully carinate (Fig. 2E); posterior transverse carina on area superomedia slightly curved towards metasoma; area superomedia 1.4× as long as wide apically; area petiolaris as long as posterior width, apically 2.3× as wide as basally; pleural carina complete.

Fore wing length 6.82 mm; vein *cu-a* reaching *M+Cu* opposite of *Rs&M* (Fig. 2A); *2rs-m* as long as abscissa of *M* between *2rs-m* and *2m-cu*; *2m-cu* with a single bulla, joining areolet closer to *3rs-m* than to *2rs-m*; abscissa of *Cu1* between *1m-cu* and *Cu1a* 1.4× as long as *Cu1b*, and the two veins subtending an angle of about 180° in the first subdiscal cell. Hind wing with first abscissa of *M+Cu1* slightly arched; first abscissa of *Cu1* 2.35× as long as *cu-a*, so distal abscissa of *Cu1* joining *cu-a* closer to *1A* than to *M*; distal abscissa of *Rs*, *M*, *Cu1* and *1A* non-tubular; left hind wing *R1* with six hamuli, right one with seven hamuli.

Middle leg with inner tibial spur 1.5× as long as outer one. Tarsal claw pectinate to its apex.

Metasomal tergite I granulate; 1.4× as long as posteriorly broad in dorsal view; with lateromedian longitudinal carina extending 0.65 of its length; with lateral carina present on its entire length; glymma strongly impressed; spiracle slightly before middle. Cercus disc-like. Subgenital plate subquadrate in lateral view. Ovipositor 1.2× as long as subgenital plate, basally stout, with a long shallow dorsal depression and a rather slender apical portion (Fig. 2F).

Head yellow, with mandible teeth, flagellum, interocellar area and two narrow stripes joining lateral ocelli and occiput black. Mesosoma yellow, with mesoscutal vittae and scuto-scutellar groove black; fore and middle legs yellow, with apical tarsomeres of fore leg and all tarsomeres of middle leg brown; hind leg orange, with apex of tibia and tarsomeres black. Metasoma yellow, anterior half of tergite I and entire sternite I brown; basal half of tergites II–IV and entire length of tergites V+ black; ovipositor sheath, subgenital plate and precedent sternum entirely brown, other sternites laterally brown marked. Wings slightly yellowish with distal apex of fore wing distinctly infuscate; pterostigma black.

Male. Unknown.

Variation. Paratype similar to holotype but antennae with 39 flagellomeres and fore wing length 7.13 mm.

Comments. The holotype has a spurious vein on the left hind wing, parallel to the first abscissa of *Cu*. It is considered to be a malformation since the right hind wing has no trace of such vein and this structure is not present in other Ctenopelmatinae.

Etymology. From the Brazilian Tupi *pitunauassú* (dark), this species is named in reference to its black flagellum.

Distribution. *Lathrolestes pitunauassu* Lima & Kumagai **sp. n.** is described from Brazil, Minas Gerais state.

Material examined. Holotype (♀). Brazil, Minas Gerais, Belo Horizonte, Campus UFMG Pampulha, Estação Ecológica, 19°52'30"S; 43°58'20"W, 842m, 11–18.iii.2008, Malaise {trap}. A.F.Kumagai col. [1 ♀, CCT-UFMG-IHY-1600551]

Holotype condition. The metatarsomeres 3–5 from both left and right legs are missing. Apart from that it is in good condition.

Paratype (3 ♀). Brasil, Minas Gerais, Belo Horizonte, Campus UFMG Pampulha, Estação Ecológica, 19°52'30"S; 43°58'20"W, 842m, 08–15.iv.2008, Malaise {trap}. A.F.Kumagai col. [1 ♀, CCT-UFMG-IHY-1600552]; *same data*, 08–15.xii.2008 [1 ♀, CCT-UFMG-IHY-1502167]; *same data*, 08–15.xii.2008 [1 ♀, CCT-UFMG-IHY-1502084].

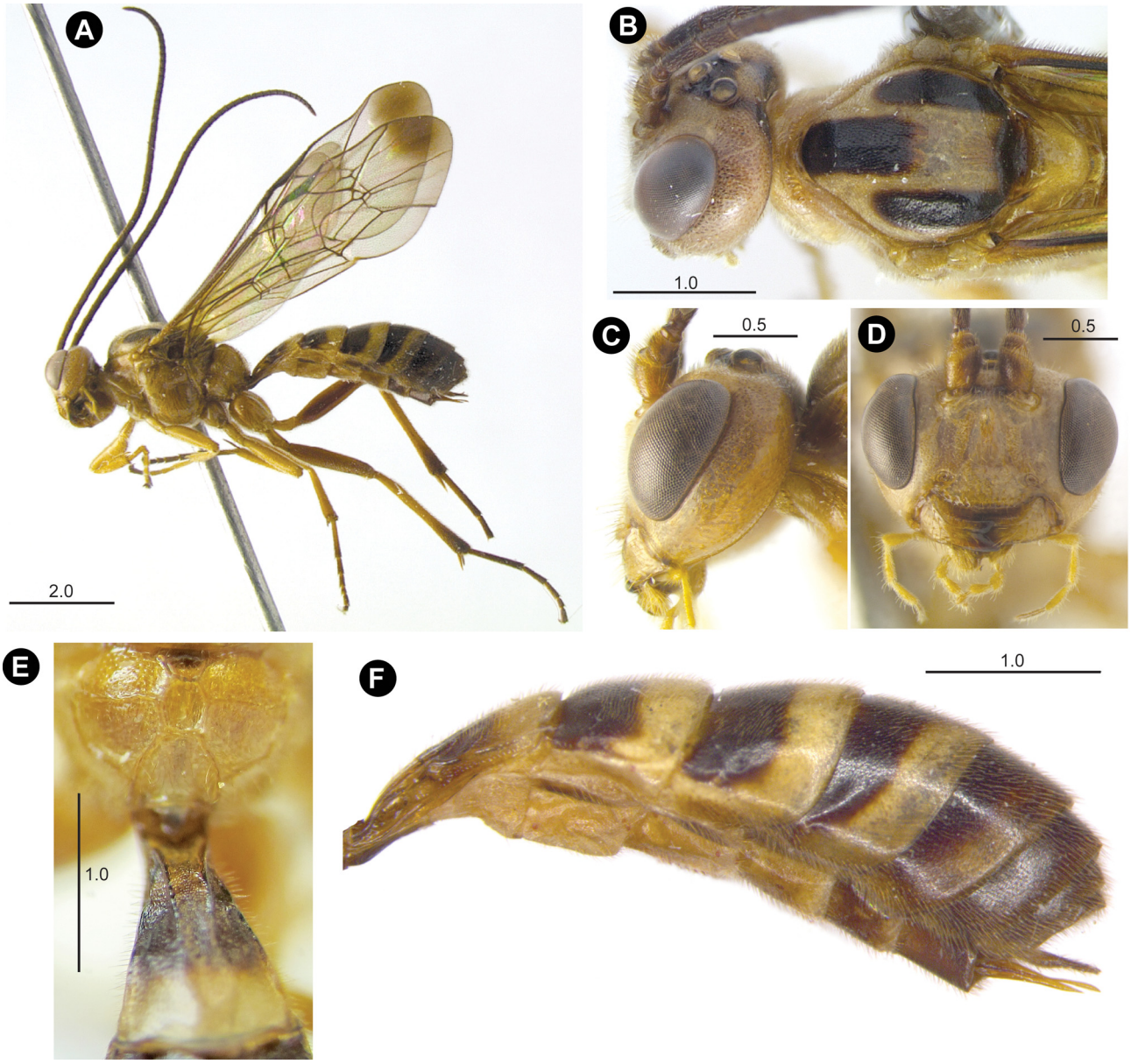

FIGURE 2. *Lathrolestes pitunauassu* Lima & Kumagai **sp. n.** (A–B, F: Holotype; C–D: Paratype) A. Female body, lateral view. B. Head and thorax, dorsal view. C–D. Head. C, lateral view; D, frontal view. E. Propodeum and tergite I, dorsal view. F. Metasoma, lateral view. Scale in millimeters.

Key to the Neotropical species of *Lathrolestes*

1 Area superomedia of propodeum twice as wide as long; first metasomal tergite at most as long as wide apically; fore wing *3rs-m* stub like and almost evanescent, not forming a true areolet 2

1' Area superomedia of propodeum longer than wide; first metasomal tergite 1.25–2× as long as wide apically; fore wing *3rs-m* well pigmented, forming a conspicuous areolet 3
2 Metasomal tergite I with lateromedian longitudinal carina extending more than half its length; face, gena, hind legs and metasoma black (Ecuador) . . . . . *L. gauldi* Reshchikov, Veijalainen & Sääksjärv, 2012
2' Metasomal tergite I without lateromedian longitudinal carina; face, gena, hind coxa and femur, and metasomal tergites reddish; remaining parts of hind legs and the last three tergites black (Peru) . . . . . *L. fiedleri* Reshchikov, 2015
3 Mesoscutum with notaulus strongly impressed anteriorly; upper part of head and mesosoma granulate, mat; lateromedian longitudinal carinae of first metasomal tergite separated centrally by about the diameter of its spiracle. (Costa Rica) . . . . . *L. karenae* Gauld, 1997
3' Mesoscutum with notaulus vestigial or absent; upper part of head and mesosoma fairly smooth and polished; lateromedian longitudinal carinae of first metasomal tergite separated centrally by far more than the diameter of its spiracle 4
4 Tergites of metasoma reddish-yellow 5
4' Tergites of metasoma black and yellow or only some tergites reddish-yellow 7
5 Fore wing hyaline at apex; first tergite of metasoma 1.25× as long as wide apically (Mexico) . . . . . *L. tepeyollotlis* Reshchikov, 2011
5' Fore wing infuscate at apex; first tergite of metasoma 1.4–1.7× as long as wide apically 6
6 First tergite of metasoma 1.7× as long as wide apically; lower mandible tooth clearly longer than upper; clypeus reddish-yellow apically. Pronotum, mesoscutum and mesopleuron reddish-yellow. (Mexico) . . . . . *L. quetzalcoatlus* Reshchikov, 2011
6' First tergite of metasoma 1.4× as long as wide apically; lower mandible tooth about as long as upper; clypeus black apically. Pronotum black with anterior border yellow; mesoscutum black with yellow marks; mesoscutum reddish-yellow with apical black band and subalar prominence yellow. (Brazil) . . . . . *L. piranga* Lima & Kumagai **sp. n.**
7 Antennal flagellum orange-brown basally; fore wing pterostigma translucent golden; area superomedia of propodeum 1.5× as long as wide. (Costa Rica). . . . . *L. haroldi* Gauld, 1997
7' Antennal flagellum black basally; fore wing pterostigma dark brown or black; area superomedia of propodeum either short, 1–1.4× as long as wide, or longer, 1.6× as long as wide 8
8 Middle of face black; area superomedia of propodeum 1.6× as long as wide; first tergite of metasoma twice as long as wide apically, with weak lateromedian longitudinal carina. (Mexico) . . . . . *L. kukulcanis* Reshchikov, 2011
8' Middle of face yellow; area superomedia of propodeum 1–1.4× as long as wide; first tergite of metasoma 1.4–1.9× as long as wide apically, with conspicuous lateromedian longitudinal carina 9
9 First tergite of metasoma with weak lateromedian longitudinal carinae, only distinguishable basally. (Costa Rica) . . . . . *L. irenea* Gauld, 1997
9' First tergite of metasoma with strong lateromedian longitudinal carinae, clearly discernible behind the middle of tergite . . . 10
10 Area petiolaris of propodeum as long as wide apically. First tergite of metasoma 1.4× as long as wide apically. Propleuron yellow; flagellum completely black; apex of clypeus yellow. (Brazil) . . . . . *L. pitunauassu* Lima & Kumagai **sp. n.**
10' Area petiolaris of propodeum 0.6–0.7× as long as wide apically. First tergite of metasoma 1.6–1.7× as long as wide apically. Propleuron black; flagellum black with white band medially; apex of clypeus black 11
11 Propodeum with carinae bordering area petiolaris joining each other angularly. Female ovipositor without a notch at apex. (Mexico) . . . . . *L. xochiquetzalis* Reshchikov, 2011
11' Propodeum with carinae bordering area petiolaris forming an evenly arched carina. Female ovipositor with a long shallow dorsal subapical notch. (Costa Rica) . . . . . *L. jennyae* Gauld, 1997

Discussion

Recent findings concerning Ichneumonidae species in the Neotropical region suggest that the diversity of the family in the tropics is much higher than was expected (see Sääksjärv *et al*., 2004; and Veijalainen *et al*., 2013), indicating the lack of specialists as the main cause of this misconception. This appear to be the same tendency for Brazil, where recent studies have continuously result in the description of many new species.

However, *Lathrolestes* was found in only one locality, Estação Ecológica UFMG, where despite five years of Malaise sampling only one specimen of *L. piranga* Lima & Kumagai **sp. n.** and four specimens of *L. pitunauassu* Lima & Kumagai **sp. n.** were collected. Both species were collected on periods of high precipitation. A similar situation was found in Amazonian studies (Sääksjärv *et al*., 2004; Reshchikov *et al*., 2012), and may indicate that, despite the insufficient collection effort, *Lathrolestes* specimens may be rare, or at least adults do not occur in large numbers at the same time.

Acknowledgments

We thank Dr Adalberto José Santos (UFMG) and Dr Paulo Christiano De Anchietta Garcia (UFMG) for allowing the use of the Leica M205C stereomicroscope. We also thanks Dr Claudia Maria Jacobi (UFMG) for useful comments and Alexey Reshchikov for reviewing the manuscript.

References

Eady, R.D. (1968) Some illustrations of microsculpture in the Hymenoptera. Proceedings of the Royal Entomological Society of London. Series A, *General Entomology*, 43, 66–72.
http://dx.doi.org/10.1111/j.1365-3032.1968.tb01029.x

Förster, A. (1869) Synopsis der Familien und Gattungen der Ichneumonen. *Verhandlungen des Naturhistorischen Vereins der Preussischen Rheinlande und Westfalens*, 25 (1868), 135–221.

Gauld, I.D. (1997) The Ichneumonidae of Costa Rica, 2. Introduction and keys to species of the smaller subfamilies, Anomaloninae, Ctenopelmatinae, Diplazontinae, Lycorininae, Phrudinae, Tryphoninae (excluding *Netelia*) and Xoridinae, with an appendices on the Rhyssinae. *Memoirs of the American Entomological Institute*, 57, 485 pp.

Reshchikov, A.V. (2011) Mexican species of *Lathrolestes* Foerster (Hymenoptera: Ichneumonidae; Ctenopelmatinae), with descriptions of four new species and an identification key. *Tijdschrift voor Entomologie*, 154 (1), 15–24.
http://dx.doi.org/10.1163/22119434-900000305

Reshchikov, A. (2015). A new species of *Lathrolestes* Förster (Hymenoptera: Ichneumonidae) from Peruvian Amazonia. *Biodiversity data journal*, 3.3, e4327.
http://dx.doi.org/10.3897/BDJ.3.e4327

Reshchikov, A.V., Veijalainen, A. & Sääksjärv, I.E. (2012) A new species of *Lathrolestes* (Hymenoptera, Ichneumonidae) from Ecuadorian Amazonia, with a key to the Neotropical species of the genus. *ZooKeys*, 251, 21–27.
http://dx.doi.org/10.3897/zookeys.251.3709

Sääksjärv, I.E., Haataja, S., Neuvonen, S., Gauld, I.D., Jussila, R., Salo, J. & Burgos, A.M. (2004) High local species richness of parasitic wasps (Hymenoptera: Ichneumonidae; Pimplinae and Rhyssinae) from the lowland rainforests of Peruvian Amazonia. *Ecological Entomology*, 29, 735–743.
http://dx.doi.org/10.1111/j.0307-6946.2004.00656.x

Townes, H.K. (1970) The genera of Ichneumonidae, Part 3. *Memoirs of the American Entomological Institute*, 13(1969), 307 pp.

Veijalainen, A., Sääksjärv, I.E., Erwin, T.L., Gómez, I.C. & Longino, J.T. (2013) Subfamily composition of Ichneumonidae (Hymenoptera) from western Amazonia: Insights into diversity of tropical parasitoid wasps. *Insect Conservation and Diversity*, 6, 28–37.
http://dx.doi.org/10.1111/j.1752-4598.2012.00185.x

Yu, D.S.K., van Achterberg, C. & Horstmann, K. (2012) Taxapad 2012—World *Ichneumonoidea 2011. Taxonomy, Biology, Morphology and Distribution.* On USB Flash drive. Ottawa, Ontario, Canada.