

# ***Lendatus*, a new genus of Xanthopygina (Coleoptera: Staphylinidae: Staphylininae) with description of three new species (#39356)**

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First submission

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# ***Lendatus*, a new genus of Xanthopygina (Coleoptera: Staphylinidae: Staphylininae) with description of three new species**

**Stylianos Chatzimanolis** Corresp. 1

<sup>1</sup> Department of Biology, Geology and Environmental Science, University of Tennessee at Chattanooga, Chattanooga, Tennessee, United States

Corresponding Author: Stylianos Chatzimanolis  
Email address: stylianos-chatzimanolis@utc.edu

A new genus of Xanthopygina rove beetles is described here as *Lendatus* **gen. nov.** The new genus includes three new species: *L. bolivianus* **sp. nov.**, described from Bolivia, *L. philothalpiformis* **sp. nov.** described from Costa Rica and Panama, and *L. platys* **sp. nov.** described from Bolivia, Colombia, Ecuador and Peru. *Lendatus* belongs to the *Isanopus* group of genera of Xanthopygina and can distinguished from all the genera based on the long apical setae of the paramere. A key to the three species of *Lendatus* along with photographs and illustrations is provided for the identification of species.

1 *Lendatus*, a new genus of Xanthopygina (Coleoptera: Staphylinidae:  
2 Staphylininae) with description of three new species.

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5 Stylianos Chatzimanolis

6

7 Department of Biology, Geology and Environmental Science, University of Tennessee at Chattanooga,  
8 615 McCallie Ave., Dept. 2653 Chattanooga, TN, USA

9

10 Corresponding Author:

11 Stylianos Chatzimanolis

12 Email address: [stylianos-chatzimanolis@utc.edu](mailto:stylianos-chatzimanolis@utc.edu)

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## 42 Abstract

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44 A new genus of Xanthopygina rove beetles is described here as *Lendatus* **gen. nov.** The new  
45 genus includes three new species: *L. bolivianus* **sp. nov.**, described from Bolivia, *L.*  
46 *philothalpiiformis* **sp. nov.** described from Costa Rica and Panama, and *L. platys* **sp. nov.**  
47 described from Bolivia, Colombia, Ecuador and Peru. *Lendatus* belongs to the *Isanopus* group of  
48 genera of Xanthopygina and can distinguished from all the genera based on the long apical setae  
49 of the paramere. A key to the three species of *Lendatus* along with photographs and illustrations  
50 is provided for the identification of species.

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## 54 Introduction

55

56 Xanthopygina is a diverse group of mostly neotropical rove beetles that includes (before the  
57 publication of this paper) 29 genera. In the latest phylogenetic analyses of the subtribe,  
58 Chatzimanolis & Brunke (2019) were able to examine all genera of Xanthopygina and identified  
59 the major lineages of the subtribe. One of them was the *Isanopus* group of genera, which  
60 included four genera: *Zackfalinus* Chatzimanolis (Chatzimanolis 2012) as the sister group of  
61 *Peripus* Chatzimanolis & Hightower (Chatzimanolis & Hightower 2019; identified in the  
62 phylogeny paper as genus 5), and *Isanopus* Sharp (Chatzimanolis 2008) as the sister group of  
63 genus 2. That genus 2 is described in this paper as the new genus *Lendatus* Chatzimanolis and  
64 includes three new species.

65 The sister group relationship between *Isanopus* and *Lendatus* was first identified by  
66 Chatzimanolis (2014) in the first molecular phylogeny of the subtribe, where *Lendatus* was  
67 presented in that phylogeny as ‘undescribed genus’. Delimiting new taxa, especially above the  
68 species level is not straightforward and ideally one should have multiple lines of evidence before  
69 proposing formal taxonomic names. While I had strong molecular evidence that *Lendatus* is  
70 indeed a new genus for quite some time, I did not feel comfortable describing *Lendatus* as a new  
71 taxon until the completion of the morphological analysis of the subtribe that included all  
72 described genera and a number of undescribed ones.

73

74

## 75 Materials & Methods

76

77 Specimen preparation, study and photography followed other recently published papers on  
78 Xanthopygina (e.g., Chatzimanolis & Hightower 2019). Dissected aedeagi were placed in small  
79 glass vials filled with glycerin and pinned underneath the specimen. I took the following  
80 measurements: HL: head length, at middle, from the anterior margin of frons to the nuchal ridge;  
81 HW: Head width, the greatest width, including the eyes; PL: pronotum length, at middle; PW:  
82 pronotum width, greatest width; EL: elytra length, measured in lateral view from the  
83 anterolateral angle of the elytra to the apex of the elytra; however, I used these measurements  
84 only proportionally (e.g., PW/PL). As a surrogate of total body length, I used forebody length  
85 (FL), measured by adding HL+PL+EL. I examined specimens using an Olympus ZX10  
86 stereomicroscope and I took photographs using a Canon 40D camera equipped with a MP-E 65

87 mm macro lens on a Cognisys StackShot 3X macro rail and controller ([https://www.cognisys-](https://www.cognisys-inc.com/products/stackshot/stackshot.php)  
88 [inc.com/products/stackshot/stackshot.php](http://www.cognisys-inc.com/products/stackshot/stackshot.php)). I automontaged images using Helicon Focus Pro  
89 6.7.1 (<http://www.heliconsoft.com/heliconsoft-products/helicon-focus/>). I removed the  
90 background of photographs using Fluid Mask 3 (<https://www.vertustech.com>). Type labels are  
91 separated by a slash '/'. Text within brackets [ ] is explanatory and was not included in the  
92 original label. Generic description was extracted from the matrix in Chatzimanolis & Brunke  
93 (2019) with addition of a few other characters. I produced maps using the online program  
94 SimpleMappr (Shorthouse 2010). In this paper, I used the phylogenetic species concept of  
95 Wheeler & Platnick (2000) to delimit different species. Datasets for each species in DarwinCore  
96 format are available online at [https://figshare.com/authors/Stylianos\\_Chatzimanolis/384794](https://figshare.com/authors/Stylianos_Chatzimanolis/384794).

97

98 I examined specimens from the following institutions:

99

100	BMNH	The Natural History Museum, London, UK (M. Barclay).
101	CMNC	Canadian Museum of Nature, Ottawa, ON, Canada (R. Anderson).
102	CMNM	Carnegie Museum of Natural History, Pittsburgh, PA, USA (R. Davidson).
103	CNC	Canadian National Collection, Ottawa, ON, Canada (A. Brunke).
104	CRO	G. de Rougemont collection, Oxford, UK (G. de Rougemont).
105	DEBU	University of Guelph Insect Collection, Guelph, ON, Canada (S. 106 Marshall).
107	FMNH	Field Museum of Natural History, Chicago, IL, USA. (C. Maier).
108	MNCR-A	National Museum of Costa Rica, San José, Costa Rica (A. Ruiz).
109	MUSM	Universidad Nacional Mayor de San Marcos, Museo de Historia Natural, 110 Lima, Peru (D. Silva).
111	NHMD	Natural History Museum of Denmark, University of Copenhagen, 112 Copenhagen, Denmark (A. Solodovnikov).
113	SEMC	Snow Entomological Collection, Biodiversity Institute, University of 114 Kansas, Lawrence, KS, USA (Z. Falin).
115	UNSM	University of Nebraska State Museum, Lincoln, NE, USA (B. Ratcliffe).
116	UTCI	The University of Tennessee at Chattanooga, Chattanooga, TN, USA 117 (S. Chatzimanolis).

118

119 Please note that several of the specimens currently deposited in SEMC will be transferred to  
120 MUSM per previous institutional/collecting agreements.

121

122 The electronic version of this article in Portable Document Format (PDF) will represent a  
123 published work according to the International Commission on Zoological Nomenclature (ICZN),  
124 and hence the new names contained in the electronic version are effectively published under that  
125 Code from the electronic edition alone. This published work and the nomenclatural acts it  
126 contains have been registered in ZooBank, the online registration system for the ICZN. The  
127 ZooBank LSIDs (Life Science Identifiers) can be resolved and the associated information viewed  
128 through any standard web browser by appending the LSID to the prefix <http://zoobank.org/>. The  
129 LSID for this publication is 0612FF19-38E8-4072-AF74-0EB16165841F. The online version of  
130 this work is archived and available from the following digital repositories: PeerJ, PubMed  
131 Central and CLOCKSS.

132

## 133 Results

134

135 Taxonomy

136

### 137 *Lendatus Chatzimanolis*, new genus

138 (Figs. 1, 2, 3, 4, 5, 6, 7, 8, 9)

139

140 urn:lsid:zoobank.org:act:73EEC4F3-E35B-4E67-9FAA-5C8C14222ABB

141

142 **Type Species.** *Lendatus platys*, new species, here designated.

143

144 **Diagnosis.** *Lendatus* belongs to the *Isanopus* group of genera (Chatzimanolis and Brunke 2019)  
145 based on the following morphological characteristics: basal transverse carina on sternum 3  
146 acutely pointed medially; lack of dense meshed microsculpture on sterna 5–7 (Fig. 4C);  
147 antennomeres 8–10 quadrate or elongate (Fig. 3E); and mesocoxae moderately to strongly  
148 separated (Fig. 4B). *Lendatus* was recovered as the sister group to *Isanopus* (Chatzimanolis  
149 2014; Chatzimanolis and Brunke 2019) and the sister group relationship is supported by the  
150 following morphological characteristics (besides the molecular data supporting that relationship):  
151 coarse punctures impressed in flange at posterior angle of pronotum (Fig. 2); and lateral area of  
152 basal transverse carina on sternum 3 sinuate. Synapomorphies for *Lendatus* include: apical setae  
153 on paramere long, produced over the median lobe (Figs. 5, 6, 7), longer than any other  
154 Xanthopygina genus; and distribution of punctures on disc of pronotum split into anterior and  
155 posterior parts by diagonal longitudinal line. Additional characteristics that can distinguish  
156 *Lendatus* from *Isanopus* include: paramere not extremely reduced (as in *Isanopus*) and  
157 tarsomeres of middle and hind legs not enlarged and lobed (as in *Isanopus*).

158 Some species of *Oligotergus* Bierig may look superficially similar to *Lendatus*, but  
159 species in that genus typically lack the characteristics of the *Isanopus* group. Additionally, *L.*  
160 *philothalpiformis* has the same color pattern with some *Philothalpus* Kraatz species but  
161 *Philothalpus* can be easily distinguished by the presence of a pair of accessory ridges on the  
162 anterior basal transverse carina of tergum 3 (see Chani-Pose et al. 2018).

163

164 **Description.** Habitus as in Fig. 1. Body medium-sized, forebody 4.6–5.8 mm long; without long  
165 bristle-like setae. Coloration of head and pronotum dark brown to black with metallic overtones  
166 or bright reddish-orange; elytra dark metallic green, blue or purple; abdomen dark brown or  
167 reddish brown to dark brown.

168 Head (Fig. 2) shape rectangular; head length in comparison to pronotum shorter to  
169 subequal. Eye size relative to length of head large, more than 3/4 length of head. Postclypeus in  
170 comparison to frons not deflexed, anterior margin more or less straight. Middle of epicranium  
171 impunctate but with microsculpture. Postmandibular ridge laterally; with deep punctures  
172 demarcating raised postmandibular ridge dorsolaterally present. Gular sutures not joined before  
173 neck extended close to each other at base of head capsule. Nuchal ridge *incomplete* dorsally.  
174 Neck disc punctures sparse.

175 Antennae (Fig. 3E), antennomere 1 same width or slightly wider than 2. Antennomere 3  
176 elongate, three times as long as wide; antennomere 4 with tomentose pubescence; antennomere 6  
177 with curved, distinctly longer and thicker subapical setae than other macrosetae, forming circlet;



178 antennomeres 1–11, cylindrical, longer than wide; antennomeres 8–10 symmetrical;  
179 antennomeres 5–10 without club; antennomere 11 in males subequal to 10.

180 Mouthparts with labrum having broad U-shaped emargination, lobes strongly separated.  
181 Mandibles (Figs. 3A–B) relative length typical (i.e. closed mandible not extending beyond  
182 margin lateral margin of head); without asymmetrical torsion. Mandibles in dorsal view curved  
183 from apical half; in lateral view straight; left and right mandibles each with one tooth. Maxilla  
184 (Fig. 3D) with galea much shorter than palpus; maxillary palpus with P<sub>3</sub> distinctly shorter than P<sub>2</sub>;  
185 P<sub>4</sub> distinctly longer than P<sub>3</sub>; P<sub>4</sub> not dilated. Hypopharynx and labial palpi as in Fig. 3C; labial  
186 palpus P<sub>3</sub> widest before apex, without long dense setae on entire lateral sides. Ligula small, entire.  
187 Mentum with alpha setae present; hypostomal cavity present, moderately delimited.

188 Pronotum (Fig. 2) shape of lateral margins in dorsal view posteriad of midpoint straight  
189 to sinuate, (except *L. platys convex*); anterior angles in dorsal view not strongly acuminate and  
190 produced laterad. Pronotum near anterolateral angles without raised impunctate spots;  
191 anterolateral corners with punctation; disc of pronotum with punctation split into anterior and  
192 posterior parts by diagonal longitudinal line of punctures; with coarse punctures impressed in  
193 flange at posterior angle of pronotum; with microsculpture. Pronotum subquadrate; narrower  
194 than head at widest points. Hypomeron (Fig. 4A) with superior marginal line continuous to  
195 anterior margin; superior marginal line without deflection under anterior angles in ventral view;  
196 inferior marginal line continued as a separate entity beyond anterior pronotal angles and curving  
197 around them. Postcoxal process absent. Basisternum slightly longer than furcasternum;  
198 basisternum with pair of macrosetae situated far from anterior margin of prosternum.

199 Elytra without contiguous polygon-shaped meshed microsculpture or patches of white  
200 setae. Elytral setae not reduced, easily seen at low magnification (e.g., 40x). Mesoventrite (Fig.  
201 4B) with anterior margin forming “lip”; without median carina; mesoventral process triangular;  
202 process extended distally to distance about 2/5 between mesocoxae. Metaventrite (Fig. 4B) with  
203 large punctures; metaventral processes, small, rounded, triangular, extended to beginning of  
204 metacoxae.

205 Legs with tarsal segmentation 5-5-5; prefemora without lateroventral apical spines;  
206 protarsi with modified pale (adhesive) setae ventrally; tarsomeres 1–4 of protarsi dorsoventrally  
207 flattened. Mesocoxae (Fig. 4B) moderately separated; intercoxal area distinctly recessed  
208 compared to mesoventral process. Metacoxae without coxal shield; metatibia without thick and  
209 long apical spurs but with smaller spurs and spines. Meso/metatarsi without asymmetrically  
210 lobed tarsomeres 1–4; tarsomeres 3–5 of metatarsi with chaetotaxy developed only at margins of  
211 dorsal surface, dorsal surface of tarsomeres glabrous along midline. Pretarsal claws with  
212 empodial setae.

213 Abdomen (Figs. 4C–D) with protergal glands having well-developed acetabula. Anterior  
214 basal transverse carina on terga 3–5 without pair of accessory ridges; tergum 3 without posterior  
215 basal transverse carina and without curved carina (arch-like) on disc; center of tergum 5 with  
216 punctation; posterior half of tergum 5 in lateral view not appearing bulging. Sternum 3 with  
217 acutely pointed basal transverse carina medially; laterally basal transverse carina sinuate; basal  
218 transverse carina absent on sternum 4; sternum 5 without dense, meshed microsculpture  
219 anterolaterally; sternum 7 with sparse punctation laterally. Males with secondary sexual  
220 structures (emargination medially on sterna 7 and 8); without porose structure. Females without  
221 obvious secondary sexual structures.

222 Aedeagus as in Figs. 5–7; with long median lobe and single paramere; paramere with  
223 sensory peg setae and long apical setae; median lobe with single subapical tooth; median lobe  
224 without apical tooth, carina or paired apex. Spermatheca not sclerotized.

225

226 **Etymology.** The name is in honor of my dear friends Dr. Ntina Karametsi, Dr. Lia Koutelou, Mr.  
227 Dimitris Kotsis, Dr. Tania Patsialou and Dr. Eleni Zika. The name is made up from a  
228 combination of letters from the first names. The name is masculine.

229

230 **Habitat.** Collected in lowland tropical rainforests and mid-elevation cloud forests using a variety  
231 of trapping techniques and by shifting leaf litter. The genus most likely inhabits the leaf litter.

232

233

234 ***Lendatus bolivianus* Chatzimanolis, new species**

235 (Figs. 1A, 2A, 5, 8)

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237 urn:lsid:zoobank.org:act:14E6C64D-E882-41D3-85DA-75930F62DCF1

238

239 **Type material. Holotype**, here designated, male, “Bolivia: La Paz, 9.4 km E. Chulumani, Apa-  
240 Apa, 2400 m, 16°20.99S 67°30.30W, 17.i.2001, R. Anderson, upper yungas litter, BOLA01-  
241 002” / “SM0459200 [barcode label]” / “HOLOTYPE *Lendatus bolivianus* Chatzimanolis, des.  
242 Chatzimanolis 2019”. In the collection of SEMC.

243

244 **Paratypes.** Six; one with same locality label as holotype and barcode label SM0459190 (1♀  
245 SEMC); “Bolivia: La Paz Prov. Chulumani, 9.2 km E of, 2300 m, 16°20.59S 67°30.18W, 19–21  
246 Jan[uary] 2001, J. S. Ashe, R. S. Hanley, BOL1AH01 039 ex: flight intercept trap” /  
247 “SM0236239” (1♂ SEMC); “Bolivia: La Paz 9.4 km E Chulumani, 2200 m, 16°20.99S  
248 67°30.30W, 19–21.i.2001, J. S. Ashe, R. S. Hanley, BOL1AH01 038 ex: flight intercept trap” /  
249 SM0574084, SM236231 (1♀ SEMC; 1♀ UCI); “Bolivia: Chulumani, Apa-Apa forest,  
250 16°21’S, 67°30’W, 12–14.xi.2007, 2000 m, shifting forest litter, V. Grebennikov leg.” (1♀, 1♂  
251 NHMD). All paratypes with label “PARATYPE *Lendatus bolivianus* Chatzimanolis, des.  
252 Chatzimanolis 2019”.

253

254 **Diagnosis.** *Lendatus bolivianus* and *L. platys* can be distinguished from *L. philothalpiiformis* by  
255 the coloration of head and pronotum (dark brown to black in *L. bolivianus* and *L. platys*; bright  
256 reddish-orange in *L. philothalpiiformis*). *Lendatus bolivianus* can be distinguished from *L. platys*  
257 by the shape of the pronotum (becoming narrower (concave) posteriorly (Fig. 2A) in *L.*  
258 *bolivianus*; becoming wide (convex) posteriorly (Fig. 2C) in *L. platys*); the shape of the paramere  
259 (paramere wider, converging to apex in dorsal view (Fig. 5B) in *L. bolivianus*; paramere  
260 narrower, parallel-sided from base to apex in dorsal view (Fig. 7B) in *L. platys*); and the length  
261 comparison between the anterior portion of the paramere and median lobe (median lobe slightly  
262 longer than paramere (Figs. 5A–B) in *L. bolivianus*; median lobe much longer than paramere  
263 (Figs. 7A–B) in *L. platys*).

264

265 **Description.** Forebody length 4.9–5.5 mm. Coloration of head, pronotum and ventral side of  
266 body dark brown to black; mouthparts and antennae dark orange; elytra metallic purple with  
267 green overtones; legs dark brown except tarsi dark orange; abdomen dark brown to black except  
268 segment 7 (posterior 1/4 orange) and segment 8 (orange).


269 Head with 1–2 irregular rows of medium-sized punctures on each side of central  
270 impunctate area (except anteriorly); with additional 3–4 large punctures on epicranium; with  
271 microsculpture and micropunctures. Head width/length ratio = 1.61. Pronotum width/length ratio  
272 = 0.95; pronotum widest anteriorly, becoming gradually narrower posteriad; diagonal  
273 longitudinal line of punctures on disc of pronotum with 3–4 large punctures; anterolaterally to  
274 that line pronotum with 5–6 medium-sized punctures; posterolaterally to that line pronotum  
275 impunctate; pronotum with microsculpture and sparse micropunctures; pronotum/elytra length  
276 ratio = 0.82. Males with narrow, deep emargination on sternum 7; sternum 8 with deep U-  
277 shaped emargination.

278 Aedeagus as in Fig. 5; paramere in dorsal view gradually converging to rounded apex; in  
279 lateral view paramere slightly convex, converging to broadly rounded apex; paramere with peg  
280 setae as in Fig. 5C; paramere narrower but slightly longer than median lobe; median lobe in  
281 dorsal view converging to apex; in lateral view median lobe becoming narrower from middle to  
282 apex; with small dorsal subapical tooth.

283

284 **Distribution.** Known from the province of La Paz in Bolivia.

285

286 **Habitat.** All specimens  collected in the Yungas forest along eastern slope of the Andes  
287 Mountains in Bolivia by shifting litter or flight intercept traps.

288

289 **Etymology.** The specific epithet refers to the country of Bolivia.

290

291

292 ***Lendatus philothalpiiformis* Chatzimanolis, new species**

293 (Figs. 1B, 2B, 3, 4, 6, 9)

294

295 urn:lsid:zoobank.org:act:7AFD3EE5-49B1-495D-A289-2C390B06BF61

296

297 **Type material. Holotype**, male, here designated, “Costa Rica: Puntarenas, Corcovado National  
298 Park, Sirena Station, upper Rio Claro trail, 100 m, 8°28'29''N 83°35'8''W, 28.Jun[e]–  
299 1.Jul[y].2000, Z.H. Falin, CR1ABF00 061, ex: flight intercept trap” / “SM0203906 [barcode  
300 label]” / “HOLOTYPE *Lendatus philothalpiiformis* Chatzimanolis, des. Chatzimanolis 2019”. In  
301 the collection of SEMC.

302

303 **Paratypes.** 121: “Costa Rica: Alajuela, Estac. Biol. San Ramón, 900 m, 1.vii.–31.viii.1995, P.  
304 Hanson, CR1H93-95 5, ex: malaise trap” / “SM0075968” (1♂ SEMC); same locality except  
305 1.viii.–30.ix.1995, CR1H93-95 6, SM0075818 (1♀ SEMC); same locality except 10°13'4''N  
306 84°35'46''W, xi.–xii.1999, SM0457580 (1♂ SEMC); same locality except 10°13'4''N  
307 84°35'46''W, ii.–iii.2000, SM0457607 (1♀ SEMC); “Costa Rica: Alajuela, E.B. San Ramón,  
308 R.B. San Ramón, 27 km N & 8 km W San Ramón, 10°13'30''N 84°35'30''W, 850–950 m,  
309 29.vi.–6.vii.1999, R. Anderson, wet premontane forest CR1A99-108A” / “SM0188194” (1♂  
310 SEMC); same locality except 900 m, CR1A99-113B, SM0186510 (1♀ SEMC); same locality  
311 except 810 m, 10°13'4''N 84°35'46''W, 8.vii.2000, J.S. Ashe, R. Brooks, Z.H. Falin,  
312 CR1ABF00 084, ex: flight intercept trap, SM0203647, SM0203665 (1♂, 1♀ SEMC); same  
313 locality except 900 m, 10°13'4''N 84°35'46''W, 8.vii.2000, P. Hanson, CR1EH99 01,  
314 SM0235433 (1♂ SEMC); “Costa Rica: Prov. Alajuela, A.C.A. San Ramón, Reserva Biol Alberto  
315 Brenes, Rio San Lorencito, 850 m, 24.iii.1999, C. Moraga, Sombrereta, L\_N\_245500\_470800

316 #52477" / INB0003030776, INB0003030777, INB0003030779 (2♂, 1♀ NHMD); "Costa Rica:  
 317 Prov. Alajuela, San Ramón, Est. Biol. Villa Blanca, Send. La Capilla, 1115 m, 16.iii.–9.iv.2010,  
 318 B. Hernández, Tp. Malaise, L\_N\_242482\_483371 #99630" / "INB0004248707" (1♀ NHMD);  
 319 "Costa Rica: Prov. Alajuela, Upala, P.N. Volcán Tenorio, Cerro La Carmela, 1026 m, 17.ii.–  
 320 18.iv.2010, J.A. Azofeifa, Tp. Malaise, L\_N\_298828\_427338 #99732" "INB0004256029" (1♀  
 321 NHMD); "Costa Rica: Alajuela, Peñas Blancas, 800 m, 19.v.1999, J.S. Ashe, R. Leschen, R.  
 322 Brooks, ex: flight intercept trap" / "SM0046201" (1♀ SEMC); "Costa Rica: Prov. Alajuela, La  
 323 Fortuna, Sector Catarata, 500 m, 3.xi.1997–6.i.1998, G. Garballo, Malaise,  
 324 L\_N\_268500\_462500 #48837" / "INBIOCR002595077" (1♀ MNCR-A); "Costa Rica: Cartago  
 325 Prov., Refugio Nac. de Fauna Silvestre Tapanti, 2 km E Station, 1320 m, 9°44.287'N  
 326 83°46.875'W, 30.x.–1.xi.2001, R. Brooks, ex: flight intercept trap, CR1B01 15" / SM0474732,  
 327 SM0474730, SM0474731, SM047429 (2♂, 1♀ SEMC; 1♂ UTCI); same locality except 1 km E  
 328 Station, 1410 m, 9°45.129'N 83°46.936'W, CR1B01 13, SM0474724 (1♀ SEMC); "Costa Rica:  
 329 Prov. Cartago, La Represa. Tapanti, 1800 m, vii.1995, R. Delgado, interseccion LN 185900  
 330 563300 #5342" / "INBIOCR002209951" (1♂ MNCR-A); "Costa Rica: Prov. Cartago, Pejibaye,  
 331 Estación Biológica Copal, Sendero Tigra, 1090 m, 3–14.iv.2005, J. Azofeifa Z., Tp. Malaise,  
 332 L\_N\_196286\_563684 #80039" / "INB0003938486" (1♂ NHMD); "Costa Rica: Guanacaste,  
 333 Guanacaste Conservacion Area, Maritza Field Station, 950 m, 13.ii.1996, R. Anderson, CR1A96  
 334 010C, ex: dry-tropical wet forest trans. litter" "SM0083887" (1♂ SEMC); "Costa Rica:  
 335 Guanacaste, Estac. Cacao, 1000–1400 m, SW side Volcan Cacao, vii.1989–iii.1990, Malaise,  
 336 TP.-GNP Biod. Survey" / INBIOCR000203134, INBIOCR000248458, INBIOCR000258332,  
 337 INBIOCR000203124, INBIOCR000203105, INBIOCR000168862 (2♂, 4♀ MNCR-A); same  
 338 locality label except II curso Parataxon., vi.1990, INBIOCR000250397 (1♂ MNCR-A); same  
 339 locality label except iii–viii.1990, INBIOCR000231448 (1♀ MNCR-A); same locality label  
 340 except 21–29.v.1992, INBIOCR000374813 (1♀ MNCR-A); same locality label except 1988–  
 341 1989, INBIOCR000101546, INBIOCR000042128 (2♀ MNCR-A); "Costa Rica, Guanacaste,  
 342 Estac. Pitilla, 9 km S Santa Cecilia, 700 m, xi.1989, C. Moraga & P. Rios, 330200, 380200" /  
 343 "INBIOCR000111406" (1♂ MNCR-A); "Costa Rica, Guanacaste, Tierras Morenas, 685 m,  
 344 xi.1993, G. Rodriguez, L N 287800\_427600 #2476" / "INBIOCR001947013" (1♀ MNCR-A);  
 345 "Costa Rica, Prov. Guanacaste, Macizo Miravalles, Estac. Cabro Muco. Sitio Azufral, 1100 m,  
 346 22.ix.–5.x.2003, J. Azofeifa, Intersección L\_N\_299769\_411243 #75479" / "INB0003771446"  
 347 (1♀ NHMD); "Costa Rica: Heredia Prov., 6 km ENE Vara Blanca, 10°11'N 84°07'W, 1950 m,  
 348 15–22.iv.2002, montane forest leaf litter, R. Anderson, CR2A02 03" / SM0527314, SM0527301  
 349 (2♂ SEMC); "Costa Rica, Heredia, Finca Murillo, 9 km NE Vara Blanca, 1450–1550 m,  
 350 10°14'17''N 84°06'06''W, R. Anderson, 14–20.ii.2005, INbio-CET-ALAS transect, CRA105  
 351 007" / "SM0693946" (1♀ SEMC); "Costa Rica: [Heredia] Vara Blanca, viii.[19]38" / "Field  
 352 Mus. Nat. Hist.1966, A. Bierig Colln., Acc. Z-13812" (1♂ FMNH); "Costa Rica: Prov. Limón,  
 353 P.N. La Amistad. Punto., 1300–1400 m, 25.x.–2.xi.2007, M. Moraga, B. Gamboa, Tp. Malaise,  
 354 L\_N\_198990\_627455 #92615" / "INB0004126042" (1♂ NHMD); "Costa Rica: Prov. Limón,  
 355 Manzanillo, RNFS Gandoca y Manzanillo, 0–100 m, 9.xi.–13.x.1992, K. Taylor, L-S 398100,  
 356 610600" / "INB000937676" (1♀ MNCR-A); "Costa Rica: Puntarenas, Corcovado National Park,  
 357 Sirena Station, Corcovado trail, 150 m, 8°29'7''N 83°34'39''W, 28.Jun[e]–1.Jul[y].2000, Z.H.  
 358 Falin, CR1ABF00 059, ex: flight intercept trap" / "SM0203552" (1♀ SEMC); "Costa Rica:  
 359 Puntarenas, Corcovado National Park, Sirena Station, Rio Pavo trail, 5 m, 8°29'5''N  
 360 83°35'33''W, 25–28 Jun[e].2000, Z.H. Falin, CR1ABF00 037, ex: flight intercept trap" /  
 361 "SM0203763" (1♂ SEMC); "Costa Rica: Puntarenas, Monteverde,, 24.v.1989, 1400 m, J.S.

362 Ashe, R. Leschen, R. Brooks, #419, ex: pitfall trap” / “SM0046200” (1♂ SEMC); same locality  
 363 label except Boehme house, #437, SM0046209 (1♂ SEMC); same locality label except Cerro  
 364 Chomogo, 1550 m, flight intercept trap, SM0046211 (1♂ SEMC); same locality label except  
 365 1520 m, flight intercept trap, SM0046199 (1♂ SEMC); same locality label except 1570 m,  
 366 9.v.1989, flight intercept trap, SM0046198 (1♀ SEMC); same locality label except 1630 m,  
 367 7.vii.1990, S.E. Roberts, flight intercept trap, SM0046193 (1♂ SEMC); same locality label  
 368 except 1610 m, 7.vii.1990, S.E. Roberts, flight intercept trap, SM0046210, SM0046208 (2♂  
 369 SEMC); same locality label except 21.v.1989, flight intercept trap, SM0046195, SM0046204,  
 370 SM0046202, SM0046197, SM0046194, SM0046205, SM0046196 (3♂, 2♀ SEMC; 1♂ 1♀  
 371 UTCI); same locality label except 1550 m, flight intercept trap, SM0046203 (1♂ SEMC); same  
 372 locality label except 28–31.v.1992, M.L. Jameson, flight intercept trap, SM0045890 (1♂  
 373 SEMC); “Costa Rica, Puntarenas, San Luis-Monteverde, LN250-850-449-250, 17–31.xii.1993,  
 374 Z. Fuentes, 1040 m, ex: malaise trap, #2583” / “SM0068168” (1♂ SEMC); same locality label  
 375 except ii.1993, #1897, SM0068198, INBIOCR002522864, INBIOCR002522865,  
 376 INBIOCR001166927 (1♀ SEMC; 3♀ MNCR-A); same locality label except ii.1992,  
 377 INBIOCR000842619 (1♀ MNCR-A); same locality label except 1000–1350 m, 17–31.xii.1992,  
 378 #2583, INBIOCR002523162 (1♂ MNCR-A); same locality label except 1000–1350 m, xii.1993,  
 379 #2493, INBIOCR001714070 (1♂ MNCR-A); same locality label except vii.1993, #2424,  
 380 INBIOCR002523005 (1♂ MNCR-A); same locality label except 1–31.x.1993, #2425,  
 381 INBIOCR001957088 (1♂ MNCR-A); same locality label except vii.1992, INBIOCR000722993  
 382 (1♂ MNCR-A); same locality label except x.1993, #2428, INBIOCR002523051 (1♂ MNCR-A);  
 383 same locality label except xi.1993, #2443, INBIOCR001938006, INBIOCR001938032,  
 384 INBIOCR001938005, INBIOCR001938033 (2♂, 2♀ MNCR-A); same locality label except  
 385 ix.1993, #2429, INBIOCR002523059 (1♂ MNCR-A); same locality label, A. C. Arenal, xi.1993,  
 386 #2427, Z. Fuentes, Amarilla, SM0068204, SM0068201, INBIOCR002523429,  
 387 INBIOCR002523428, INBIOCR002523427 (2♂ SEMC; 1♂, 2♀ MNCR-A); same locality label,  
 388 A. C. Arenal, i.1993, Z. Fuentes, LN 449250\_250850 #2584, SM0068203, INBIOCR002523178,  
 389 INBIOCR002523177, INBIOCR002523179 (1♂ SEMC; 3♂ MNCR-A); same locality label, A.  
 390 C. Arenal, i.1993, Z. Fuentes, LN 449250\_250850 #2585, SM0068196, SM0068200 (2♀  
 391 SEMC); same locality label except 20–27.vi.1994, #3029, INBIOCR001922841,  
 392 INBIOCR001922842 (1♂, 1♀ MNCR-A); “Costa Rica, Puntarenas, Res. Biol. Monteverde, Est.  
 393 La Casona, 1520 m, K. Flores, iv.1992, L-N 253250 449700” / INBIOCR000990559,  
 394 INBIOCR000793519 (1♂, 1♀ MNCR-A); same locality label except ix.1991,  
 395 INBIOCR000510117 (1♂ MNCR-A); “Costa Rica: Puntarenas Prov., Hacienda La Amistad,  
 396 8°58.102’N 82°46.883’W, 1900 m, premont.-lower mont. moist forest, sifting leaf litter,  
 397 12.vi.2012, Solodovnikov, Brunke, Puliafico, Selvantharan” / “Chatzimanolis DNA Voucher,  
 398 Extraction SC-405, Extraction date: 27.iii.2015” (1♂ NHMD); “Costa Rica, Puntarenas, R.F.  
 399 Golfo Dulce, 3 km SW Rincon, 10 m, v–vi.1992, P. Hanson, ex: malaise” / “SM0069525” (1♂  
 400 SEMC); “Costa Rica, Puntarenas, Altamira Biol. Sta. 1510–1600 m, 9°1.76’N 83°0.49’W, 4–  
 401 7.vi.2004, J. S. Ashe, Z.H. Falin, I. Hinojosa, ex: flight intercept trap, CR1AFH04 144” /  
 402 “SM0606679” (1♂ SEMC); “Costa Rica, Puntarenas, Las Alturas Biol. Sta. 1660 m, 8°56.17’N  
 403 82°50.01’W, 31.v.–3.vi.2004, J. S. Ashe, Z.H. Falin, I. Hinojosa, ex: flight intercept trap,  
 404 CR1AFH04 092” / “SM0606867” (1♀ SEMC); “Costa Rica: Puntarenas, Fca. Cafrosa, Est. Las  
 405 Mellizas, P.N. Amistad., 1300 m, R. Delgado, 19.vi.–26.vii.1990, L-S-316100, 596100” /  
 406 “INBIOCR000667816” (1♂ MNCR-A); “Costa Rica, San Jose, Zurqui de Moravia, 1600 m,  
 407 iv.1994, P. Hanson, ex: malaise” / “SM0069535” (1♂ SEMC); same locality except iii.1994,

408 SM0069520 (1♂ SEMC); same locality except 1–30.viii.1995, CR1H93-95 14, SM0077306 (1♂  
 409 SEMC); same locality except 10°3'0''N 84°1'0''W, 1–30.ix.1995, CR1H95-96 07, SM0134461  
 410 (1♂ SEMC); “Costa Rica: San Vito de C. B., Las Cruces, 1200 m, 9.vii.–7.viii.1982, malaise tr,  
 411 B. Gill” (1♀ CNC); “Panama: Bocas del Toro, 4 km N. Boquete, La Culebra trail, 1500 m,  
 412 17.vii.1995, A. Gillogly” / SM0004684, SM0004685 (1♂, 1♀ SEMC); “Panama: Bocas del  
 413 Toro, 8°34'N 81°50'W, 1500 m, 25 km NNE San Felix, leg. J. Wagner, 6.vi.1980” /  
 414 “FM(HD)#80-5, Berlese floor litter & root mat, nr. ridge top, Qda. Alicia cloud forest” (1♀  
 415 FMNH); same locality except 10–12.vi.1980, Camino I7, malaise trap (1♀ FMNH); “Panama:  
 416 Chiriqui Prov., La Fortuna Cont. Divide Trail, 8°46'N 82°12'W, 1150 m, 23.v.–9.vi.1995, J.  
 417 Ashe, R. Brooks, #155, ex: flight intercept trap” / SM0046213, SM0007044, SM0003729,  
 418 SM0046214 (3♂, 1♀ SEMC); same locality except 1100 m, #157, SM0003687 (1♀ SEMC);  
 419 same locality except, 9–12.vi.1995, #185, SM0003498 (1♀ SEMC); same locality except 1200  
 420 m, 9.vii.1995, R. Anderson, PAN2A95 10C, ex: berlese forest litter, SM0037220 (1♀ SEMC);  
 421 same locality except Hydrolog. Trail, 8°42'N 82°14'W, 1050 m, 9–12.vi.1995, #188,  
 422 SM0005052 (1♂ SEMC); same locality Hydrolog. Trail, 8°42'N 82°14'W, 1150 m, 23.v.–  
 423 9.vi.1995, #156, SM0003747 (1♀ SEMC); “Panama: Chiriqui, 4 km N Sta. Clara Hartmann’s  
 424 Finca, 27.vi.–3.vii.1981, B. Gill, 1500 m” (1♀ CMNC); “Panama: Chiriqui, La Fortuna Dam,  
 425 1200 m, 14.vi.–15.viii.1982, wet forest FIT, B. Gill” (1♀ CNC); All paratypes with label  
 426 “PARATYPE *Lendatus philothalpiiformis* Chatzimanolis, des. Chatzimanolis 2019”.

427

428 **Diagnosis.** *Lendatus philothalpiiformis* can be easily recognized among the existing species in  
 429 the genus due to the bright reddish-orange coloration of the head and pronotum. Additionally, it  
 430 is the only species known with a Central American distribution.

431

432 **Description.** Forebody length 4.6–5.8 mm. Coloration of head, pronotum and prosternum bright  
 433 reddish-orange (in few specimens brown); mouthparts, antennae and legs reddish-orange to  
 434 brown; elytra metallic green or blue; meso- and metaventrite brown; abdomen reddish-orange to  
 435 brown (frequently with segment 6 dark brown) except segment 7 dark brown with posterior 1/3  
 436 orange and segment 8 orange.

437 Head with 1–2 irregular rows of large punctures on each side of central impunctate area  
 438 (except anteriorly); with additional 3–4 large punctures on epicranium; with microsculpture and  
 439 micropunctures. Head width/length ratio = 1.5. Pronotum width/length ratio = 0.92; pronotum  
 440 widest anteriorly, becoming strongly narrower (concave) posteriad; diagonal longitudinal line of  
 441 punctures on disc of pronotum with 3–4 large punctures; anterolaterally to that line pronotum  
 442 with less than 5 large punctures; posterolaterally to that line pronotum impunctate; pronotum  
 443 with microsculpture and micropunctures; pronotum/elytra length ratio = 0.92. Males with  
 444 broad, shallow margination on sternum 7 (Fig. 4C); sternum 8 with shallow V-shaped  
 445 emargination.

446 Aedeagus as in Fig. 6; paramere in dorsal view almost parallel-sided but apex wider; in  
 447 lateral view paramere slightly convex, converging to narrow rounded apex; paramere with peg  
 448 setae as in Fig. 6C; paramere narrower than median lobe except just before apex; paramere  
 449 longer than median lobe; median lobe in dorsal view converging to apex; in lateral view median  
 450 lobe becoming narrower from middle to narrowly elongate apex; with large dorsal subapical  
 451 tooth.

452



453 **Distribution.** Known from many provinces in Costa Rica and the provinces of Bocas del Toro  
454 and Chiriqui in Panama.

455

456 **Habitat.** Specimens were collected with malaise, pitfall and flight intercept traps and by shifting  
457 leaf litter in wet tropical lowland forests or tropical cloud forests.

458

459 **Etymology.** The specific epithet is derived from the words *Philothalpus* and *formis* and refers to  
460 the superficial resemblance of this species to species in the genus *Philothalpus*.

461

462

463 ***Lendatus platys* Chatzimanolis, new species**

464 (Figs. 1C, 2C, 7, 8)

465

466 urn:lsid:zoobank.org:act:920D79A5-D1D4-4B73-8263-30D4908E3823

467

468 **Type material. Holotype**, here designated, male, “Ecuador, Sucumbios, Sacha Lodge, 0.5°S  
469 76.5°W, 270 m, 13–23.vi.1994, Hibbs, ex: malaise” / “SM0022600 [barcode label]” /  
470 “HOLOTYPE *Lendatus platys* Chatzimanolis, des. Chatzimanolis 2019”. In the collection of  
471 SEMC.

472

473 **Paratypes.** 49: same locality label as holotype, SM0022371 (1♂ SEMC); same locality label as  
474 holotype except 14–24.v.1994, SM0023298 (1♀ SEMC); same locality label as holotype except  
475 3–16.viii.1994, SM0020931 (1♀ SEMC); “Bolivia: Santa Cruz, Amboro National Park, Los  
476 Volcanes, c.1000 m, 18°06’S 63°36’W, 20.xi.–12.xii.2004” / “flight interception trap, H. Mendel  
477 & M.V.L. Barclay, BMNH(E) 2004-280” (5♂, 2♀ BMNH); “Colombia: Valle del Cauca, PNN  
478 Farallones de Cali, Anchicaya, 3°26’N 76°48’W, 730 m, 27.ii.–27.iii.2001, Malaise, S. Sarria  
479 leg., M1538” / “SM0548730”(1♀ SEMC); “Ecuador: Morona-Santiago, Macas, 1300 m,  
480 20.ix.1989, M. Cooper” / “M. Cooper BMNH(E) 2004-275” (1♀ BMNH); “Ecuador: Napo,  
481 Yuturi Lodge, Rio Napo, 270 m, 0°32’54’’S 76°2’18’’W, 20–21.iii.1999, R. Brooks, D. Brzoska,  
482 ECU1B99 010, ex: flight intercept trap” / SM0153450, SM0153439, SM0153432, SM0153459  
483 (3♂ SEMC; 1♂ UTCD); “Ecuador: Napo, Tena-Baeza Rd. km 24, N. Cotundo, 36-4000’,  
484 3.v.1982, H. Frania, leaf litter, ridge” (1♂ FMNH); “Ecuador, Napo Prov. Yasuni N.P., Yasuni  
485 Research Sta., 0°38’S 76°36’W, 215 m, 27.vii.–1.viii.1998, lowland rainforest, Ratcliffe,  
486 Jameson, Smith, Villatoro (1♂ UNSM); “Ecuador: Napo, Yasuni Nat. Park Biol. Res. Station,  
487 220 m, 0.67°S 76.39°W, 18–26.v.1996, P. Hibbs, MT, primary forest (1♀ CNC); “Ecuador:  
488 Prov. Orellano, Yasuni Natl. Park, Yasuni Research Stn., 0°40’50’’S 76°24’2’’W, 250 m, 28.iv.–  
489 8.v.2009, on lead, M. Cannon (1♂ DEBU); “Ecuador: Sucumbios, Sacha Lodge, 270 m,  
490 0°28’14’’S 76°27’35’’W, 21–24.iii.1999, R. Brooks, ECU1B99 047, ex: flight intercept trap” /  
491 SM0153262, SM0153263, SM0153255 (3♂ SEMC); “Ecuador: [Sucumbios], Napo R. Sacha  
492 Lodge, 250 m, 26–28.x.2004, FIT, G. de Rougemont leg. (1♀ CRO); “Peru: Dept. Cusco: Cock  
493 of the Rock Lodge, NE Paucanambo, 13°03.5’S 71°32.7’W, 1120 m, 4–9.xi.2007, D. Brzoska,  
494 ex. flight intercept trap, PER1B07 001” / “SEMC0871107” (1♂ SEMC); “Peru: Cuzco Dept.,  
495 Consuelo, Manu Rd km 165, 9.x.1982” / “FMHD #82-361, beating dead branches, L.E. Watrous  
496 & G. Mazurek” (1♂ FMNH); same locality labels except 4.x.1982, FMHD #82-337, leaf litter  
497 (1♀ FMNH); same locality labels except 5.x.1982, FMHD #82-410, rotten palm bait trap (1♂  
498 FMNH); same locality labels except 6–7.x.1982, FMHD #82-411, flight intercept trap (1♂  
499 FMNH); same locality labels except Pillahuata, Manu Rd. km 128, 20.ix.1982, FMHD #82-265,

500 litter along gravel stream (1♂ FMNH); same locality labels except Pillahuata, Manu Rd. km 128,  
 501 24.ix.1982, FMHD #82-283, litter along stream (1♂ FMNH); same locality labels except  
 502 Pillahuata, Manu Rd. km 128, 27.ix.1982, FMHD #82-310, litter in runoff in mossy forest (1♂,  
 503 1♀ FMNH); same locality labels except Pillahuata, Manu Rd. km 128, 28.ix.1982, FMHD #82-  
 504 311, litter along gravel stream (2♂ FMNH); “Peru: CU[sco] Campamento Comerciato,  
 505 23.xi.2002, 12°47’S 73°22’W, 1350 m, Pitfall, J. Grados” / “*Isanopus* spp. det. Asenjo 2004”  
 506 (1♂ MUSM); “Peru: CU[sco] Campamento Segakiato, 10.xi.2002, 12°43’S 73°18’W, 1850 m,  
 507 Pitfall, J. Grados” (1♀ MUSM); “Peru: Dept. Loreto, Campamento San Jacinto, 2°18.75’S  
 508 75°51.77’W, 7.vii.1993, 175–215 m, R. Leschen #44, ex: flight intercept trap” / “SM0080093”  
 509 (1♀ SEMC); “Peru: Dept. Loreto, 1.5 km N. Teniente Lopez, 2°35.66’S 76°06.92’W,  
 510 18.vii.1993, 210–240 m, R. Leschen, #119. ex: flight intercept trap” / “SM0080094” (1♀  
 511 SEMC); “Peru: JU[nin], 1 km S Mina Pichita, 2100 m, 25.i.2005, 11°05’40.2’’S 75°4’49.6’’W,  
 512 A. Asenjo” (1♀ MUSM); “Peru, Dept. Madre de Dios: Pantiacolla Lodge, Alto Madre de Dios  
 513 R., 12°39.3’S 71°13.9’W, 420 m, 14–19.xi.2007, D. Brzoska, ex. flight intercept trap, PER1B07  
 514 004” / “SEMC0872413” (1♂ SEMC); “Peru: Madre de Dios: Pantiacolla Lodge, 8 km NW El  
 515 Mirador Trail, Alto Madre de Dios River, 800 m, 12°38’30’’S 71°16’41’’W, 23–26.x.2000, R.  
 516 Brooks, PERU1B00 102, ex: flight intercept trap” / SM0210891, SM0210653 (1♀ SEMC; 1  
 517 ♀ UTCI); “Peru, Madre de Dios Dept., CICRA Field Station, trail 6, research plot, 12.55207°S  
 518 70.10962°W, 295 m, 11–13.vi.2011, Chaboo team, Malaise trap, PER-11-MAT-021” /  
 519 “SEMC1060728” (1♂ SEMC); “Peru, Madre de Dios Dept., CICRA Field Station, ~2 km NW of  
 520 cafeteria, research plot, 12.55212°S 70.10921°W, 295 m, 7–9.vi.2011, Chaboo team, flight  
 521 intercept trap trap, PER-11-FIT-021” / “SEMC0956719” (1♀ SEMC); “Peru: Dept. Madre de  
 522 Dios, Manu Prov., Parque Nac. Manu, Zona Res. Rio Manu, Cocha Juarez, trail nr. Manu” /  
 523 “Lodge, 18–24.ix.1991, flight intercept trap, A. Hartman, Field Museum” (1♂ FMNH); “Peru:  
 524 Madre de Dios, Tambopata Wildlife Res. 30 km SW Pto. Maldonado, 12°50’S 69°20’W, 290 m,  
 525 26.xi.1982, J.J. Anderson coll.” (1♂ CMNH); “Peru, Ucauali Dept., Tingo Maria-Pucallpa Rd.,  
 526 Riente Chino, km 205, 1300 m, 9°8’12’’S 75°47’20’’W, 11–14.x.1999, R. Brooks, PERU1B99  
 527 007A, ex: flight intercept trap” / SM0185071, SM0185076 (1♂ SEMC; 1♂ UTCI). All paratypes  
 528 with label “PARATYPE *Lendatus platys* Chatzimanolis, des. Chatzimanolis 2019”.

529

530 **Diagnosis.** *Lendatus platys* and *L. bolivianus* can be distinguished from *L. philothalpiformis* by  
 531 the coloration of head and pronotum (dark brown to black in *L. bolivianus* and *L. platys*; bright  
 532 reddish-orange in *L. philothalpiformis*). *Lendatus platys* can be distinguished from *L. bolivianus*  
 533 by the shape of the pronotum (becoming wide (convex) posteriorly (Fig. 2C) in *L. platys*;  
 534 becoming narrower (concave) posteriorly (Fig. 2A) in *L. bolivianus*); the shape of the paramere  
 535 (paramere narrower, parallel-sided from base to apex in dorsal view (Fig. 7B) in *L. platys*;  
 536 paramere wider, converging to apex in dorsal view (Fig. 5B) in *L. bolivianus*;) and the length  
 537 comparison between the anterior portion of the paramere and median lobe (median lobe much  
 538 longer than paramere (Figs. 7A–B) in *L. platys*; median lobe slightly longer than paramere (Figs.  
 539 5A–B) in *L. bolivianus*).

540

541 **Description.** Forebody length 4.7–5.6 mm. Coloration of head, pronotum and ventral side of  
 542 body dark brown to black; mouthparts and antennae dark orange to brown; elytra metallic blue,  
 543 green or purple (blue most commonly); legs dark brown except tarsi dark orange; abdomen dark  
 544 brown to black except segment 7 (posterior 1/3 orange) and segment 8 (orange).



545 Head with 2–3 irregular rows of medium-sized punctures on each side of central  
 546 impunctate area (except anteriorly); with additional 4–6 large punctures on epicranium; with  
 547 microsculpture and micropunctures. Head width/length ratio = 1.53. Pronotum width/length ratio  
 548 = 1.02; pronotum widest medially, lateral sides of pronotum convex; diagonal longitudinal line  
 549 of punctures on disc of pronotum with 5–6 large punctures; anterolaterally to that line pronotum  
 550 with 5–8 medium-sized punctures; posterolaterally to that line pronotum impunctate; pronotum  
 551 with microsculpture and micropunctures; pronotum/elytra length ratio = 0.89. Males with  
 552 narrow, deep emargination on sternum 7; sternum 8 with deep U-shaped emargination.

553 Aedeagus as in Fig. 7; paramere in dorsal view almost parallel-sided but apex slightly  
 554 wider; in lateral view paramere convex, converging to broadly rounded apex; paramere with peg  
 555 setae as in Fig. 7C; paramere narrower but longer than median lobe; median lobe in dorsal view  
 556 converging to apex; in lateral view median lobe becoming narrower from middle to narrowly  
 557 elongate apex; with small dorsal subapical tooth.

558

559 **Distribution.** Known from the department of Santa Cruz in Bolivia, the department of Valle del  
 560 Cauca in Colombia, the provinces of Morona-Santiago, Napo, Orellana and Sucumbios in  
 561 Ecuador, and the departments of Cusco, Loreto, Junín, Madre de Dios and Ucayali in Peru.

562

563 **Habitat.** Specimens were collected with malaise, baited pitfall and flight intercept traps and by  
 564 shifting leaf litter in wet tropical lowland forests or tropical cloud forests.

565

566 **Etymology.** The specific epithet is derived from the Greek word πλατύς (wide) and refers to the  
 567 wide shape of the pronotum.

568

569

#### 570 **Key to the species of *Lendatus***

571

572 1. Color of head and pronotum (Fig. 2B) bright reddish-orange (rarely brown); distributed  
 573 in Central America (Fig. 9) ... *Lendatus philothalpiformis*

574

575 - Color of head and pronotum dark brown to black (Figs. 2A, C); distributed in South  
 576 America (Fig. 8) ... 2

577

578 2. Pronotum becoming narrower (concave) posteriorly (Fig. 2A); paramere wider,  
 579 converging to apex in dorsal view (Fig. 5B); anterior portion of median lobe slightly longer than  
 580 paramere (Figs. 5A–B) ... *Lendatus bolivianus*

581

582 - Pronotum becoming wide (convex) posteriorly (Fig. 2C); paramere narrower, parallel-  
 583 sided from base to apex in dorsal view (Fig. 7B); anterior portion of median lobe much longer  
 584 than paramere (Figs. 7A–B) ... *Lendatus platys*

585

586

587

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589

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592 paper.

593  
594  
595

## 596 References

597

598 Chani-Posse, M.R., Brunke, A.J., Chatzimanolis, S., Schillhammer, H., Solodovnikov, A. (2018)  
599 Phylogeny of the hyper-diverse rove beetle subtribe Philonthina with implications for  
600 classification of the tribe Staphylinini (Coleoptera: Staphylinidae). *Cladistics*, 38, 1–40.  
601 <https://doi.org/10.1111/cla.12188>

602

603 Chatzimanolis, S. (2008) A revision of the neotropical beetle genus *Isanopus* (Coleoptera:  
604 Staphylinidae: Staphylinini). *Journal of Natural History*, 42 (25–28), 1765–1792.  
605 <https://doi.org/10.1080/00222930802124057>

606

607 Chatzimanolis, S. (2012) *Zackfalinus*, a new genus of Xanthopygina (Coleoptera: Staphylinidae:  
608 Staphylinini) with description of 20 new species. *Annals of the Carnegie Museum*, 80, 261–308.  
609 <http://dx.doi.org/10.2992/007.080.0401>

610

611 Chatzimanolis, S. (2014) Phylogeny of xanthopygine rove beetles based on six molecular loci.  
612 *Systematic Entomology*, 39 (1), 141–149.  
613 <https://doi.org/10.1111/syen.12040>

614

615 Chatzimanolis, S & Brunke, A.J. (2019) A phylogeny of Xanthopygina (Insecta: Coleoptera)  
616 reveals major lineages and the origin of myrmecophily. *Zoologica Scripta*, 48, 494–506.  
617 <https://doi.org/10.1111/zsc.12358>

618

619 Chatzimanolis, S & Hightower, H.J. (2019) *Peripus*, a new genus of Xanthopygina (Coleoptera:  
620 Staphylinidae) from South America. *Zootaxa*, 4648 (2), 371–383.  
621 <https://doi.org/10.11646/zootaxa.4648.2.10>

622

623 Shorthouse, D.P. (2010) SimpleMappr, an online tool to produce publication-quality point maps.  
624 [Retrieved from <http://www.simplemappr.net>. Accessed June 15, 2019].

625

626 Wheeler, Q.D. & Platnick, N.I. (2000) The phylogenetic species concept (sensu Wheeler and  
627 Platnick). In: Q.D. Wheeler & Meier, R. (Eds.), *Species Concepts and Phylogenetic Theory: A*  
628 *Debate*. Columbia University Press, New York, NY, pp. 55–69.

629

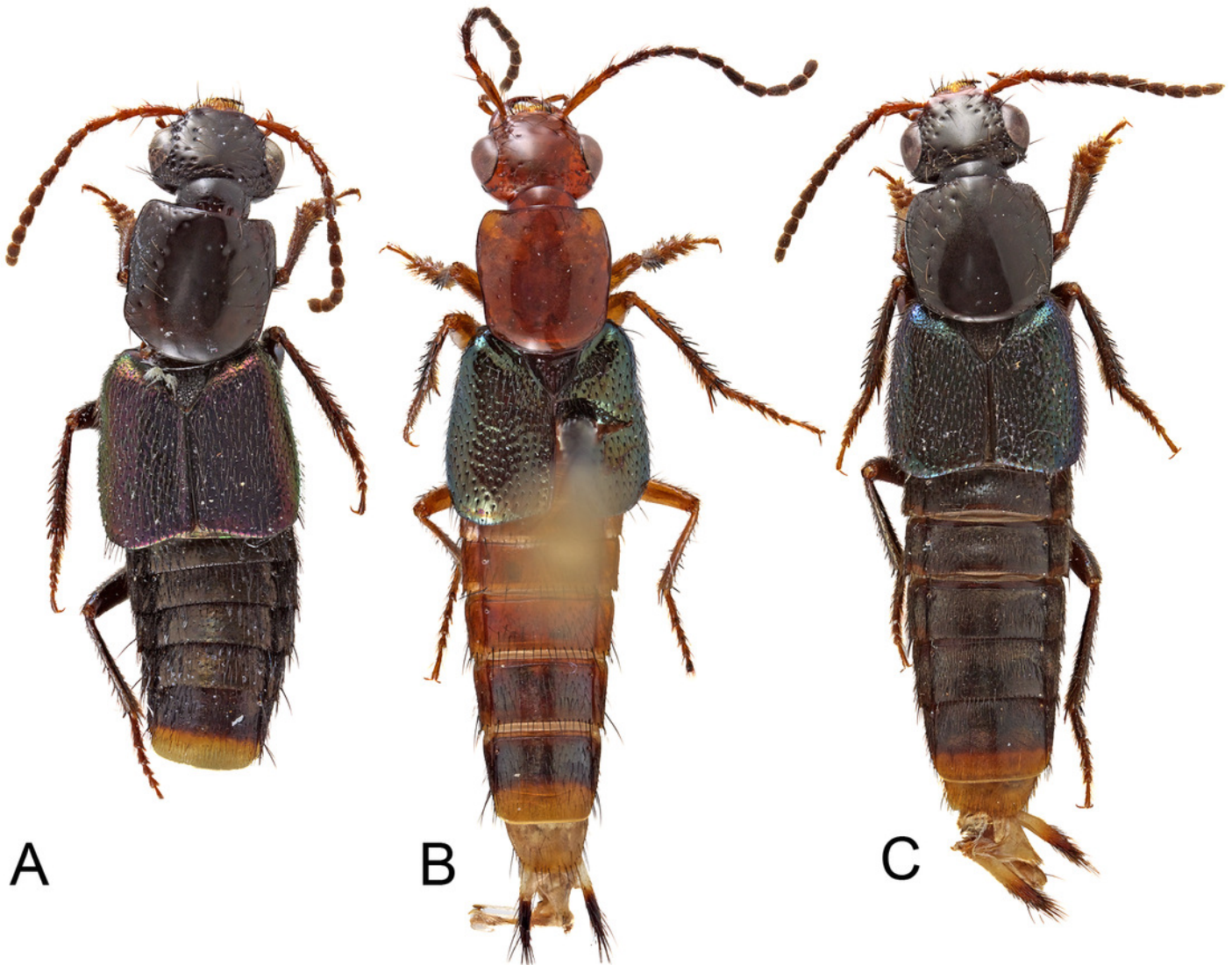
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# Figure 1

Habitus photographs of species of *Lendatus* Chatzimanolis.

(A) *Lendatus bolivianus* Chatzimanolis. (B) *Lendatus philothalpiformis* Chatzimanolis. (C) *Lendatus platys* Chatzimanolis. Not to scale.



## Figure 2

Heads and pronota of species of *Lendatus* Chatzimanolis.

(A) *Lendatus bolivianus* Chatzimanolis. (B) *Lendatus philothalpiiformis* Chatzimanolis. (C) *Lendatus platys* Chatzimanolis. Not to scale.

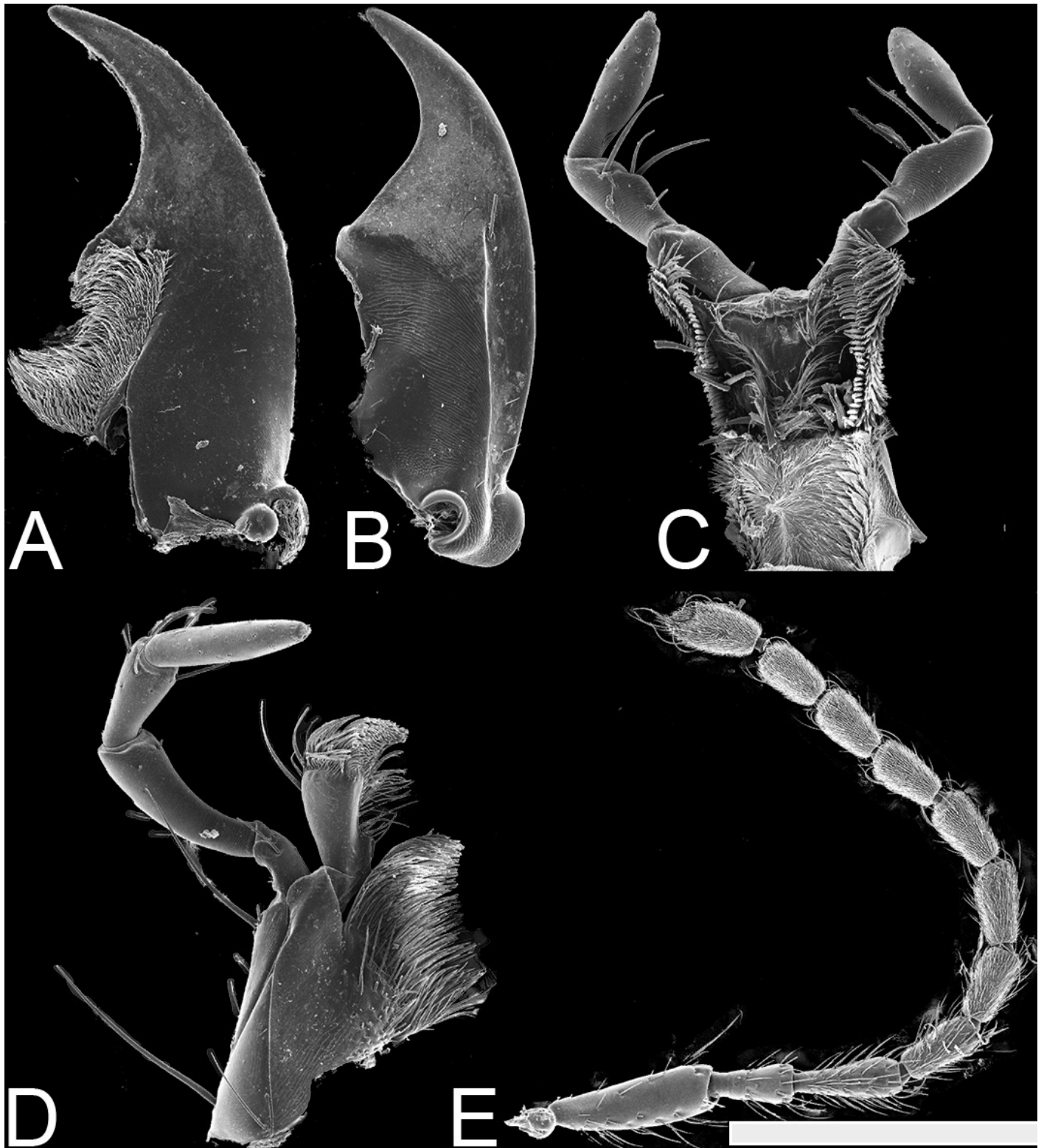


## Figure 3

SEM photographs of *Lendatus philothalpiformis* Chatzimanolis.

(A) Ventral view of left mandible, scale bar = 0.56 mm. (B) Dorsal view of right mandible, scale bar = 0.56 mm. (C) Hypopharynx and labial palps, scale bar = 0.88 mm. (D) Maxilla, scale bar = 0.56 mm. (E) Antenna, scale bar = 1.09 mm.

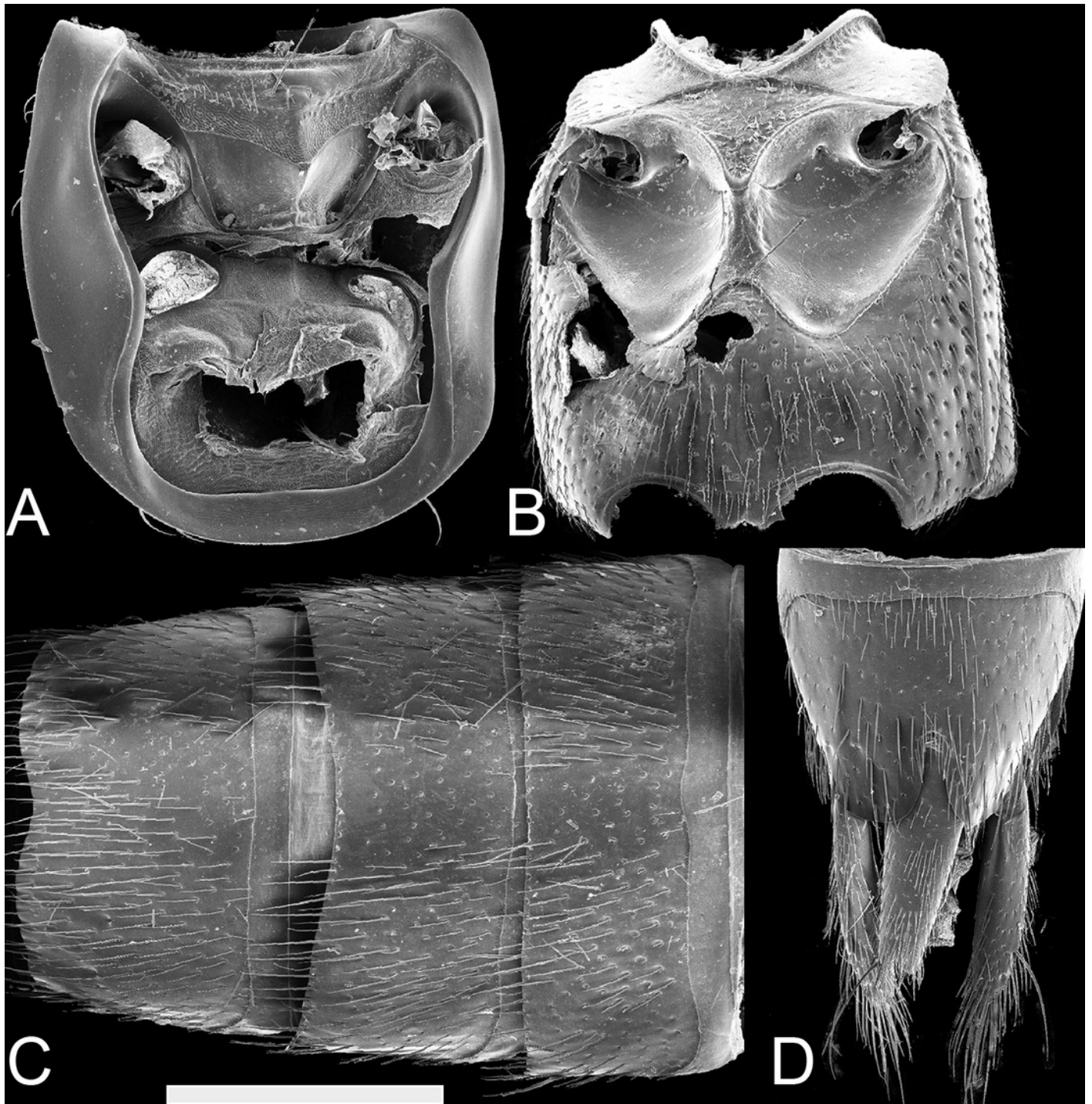




## Figure 4

SEM photographs of *Lendatus philothalpiformis* Chatzimanolis.

(A) Prosternum and pronotal hypomeron, scale bar = 1.09 mm. (B) Meso- and metaventrite, scale bar = 1.44 mm. (C) Abdominal sterna 5-7, scale bar = 1.25 mm. (D) Abdominal sterna 8-9, scale bar = 1.27 mm.

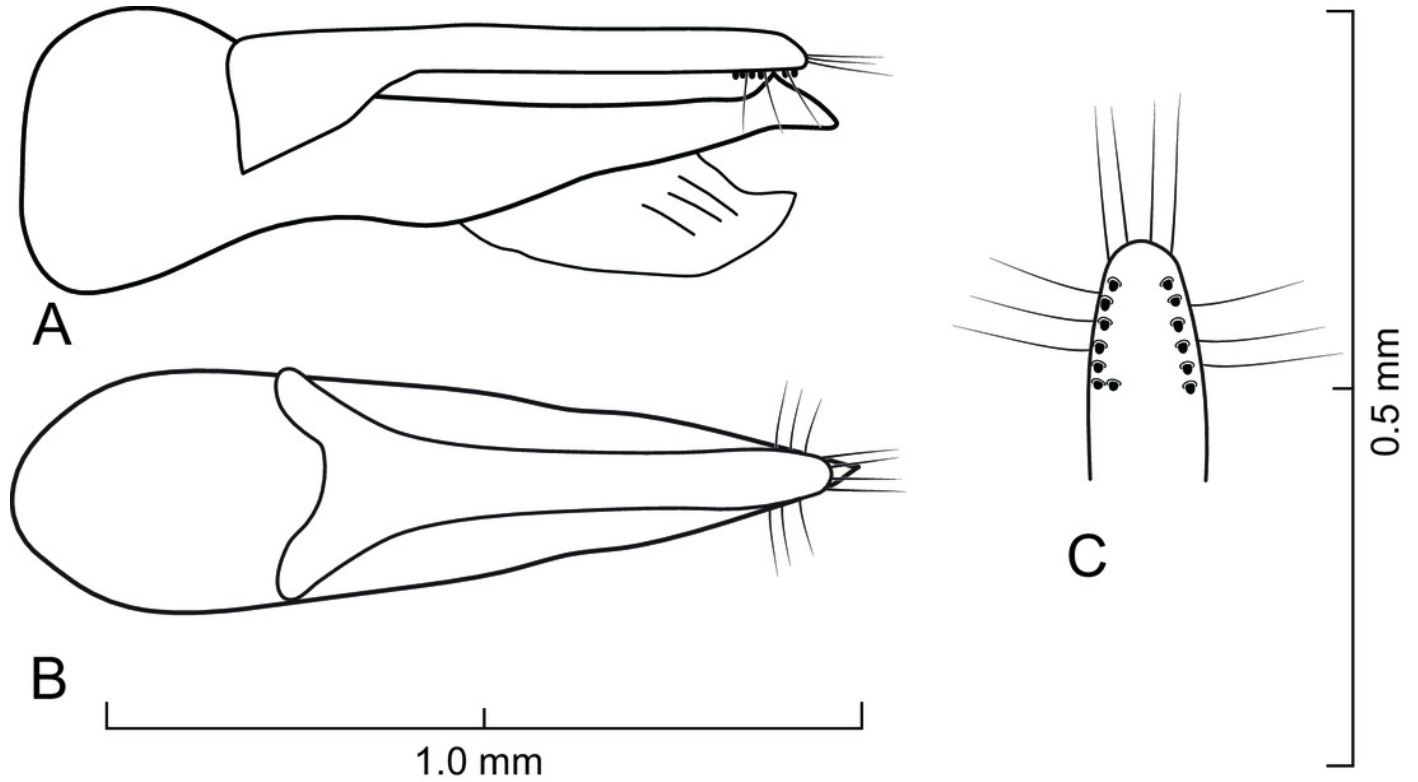




## Figure 5

Aedeagus of *Lendatus bolivianus* Chatzimanolis.

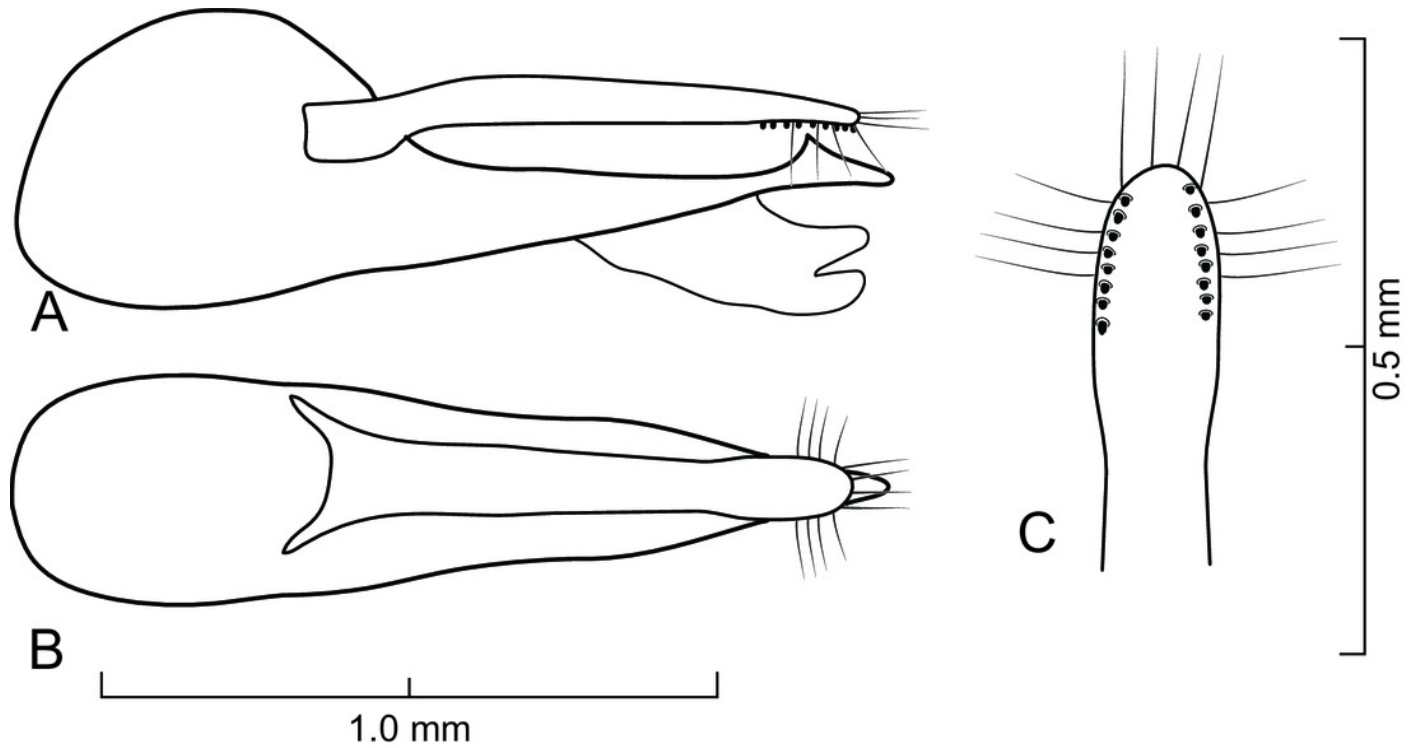
(A) Lateral view. (B) Dorsal view. (C) Detail of paramere, ventral view.



## Figure 6

Aedeagus of *Lendatus philothalpiformis* Chatzimanolis.

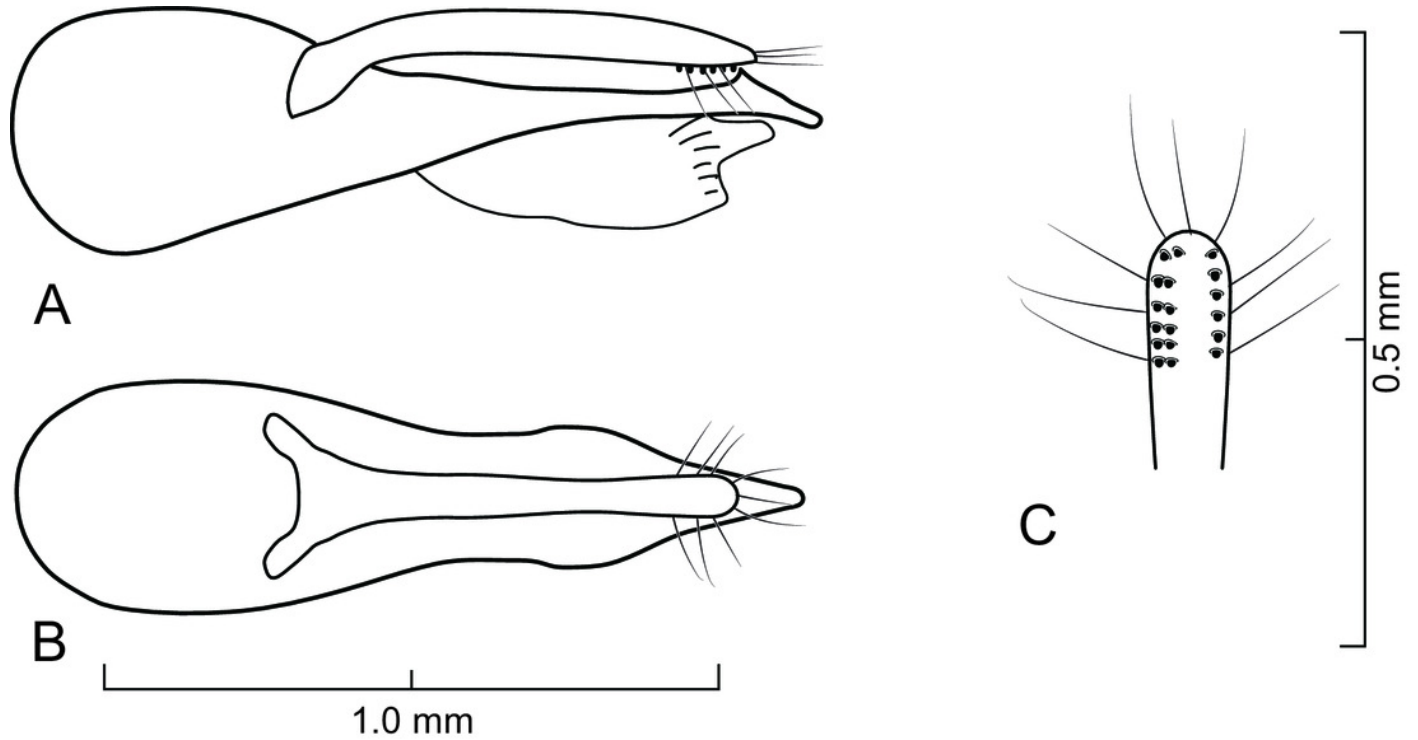
(A) Lateral view. (B) Dorsal view. (C) Detail of paramere, ventral view.



# Figure 7

Aedeagus of *Lendatus platys* Chatzimanolis.

(A) Lateral view. (B) Dorsal view. (C) Detail of paramere, ventral view.



## Figure 8

Distribution map of *Lendatus bolivianus* Chatzimanolis (squares) and *Lendatus platys* Chatzimanolis (circles).





## Figure 9

Distribution map of *Lendatus philothalpiformis* Chatzimanolis.

