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# Revision of the genus *Amputoearinus* (Hymenoptera: Braconidae: Agathidinae) with fourteen new species

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## Abstract

Fourteen new species of *Amputoearinus* are described along with redescriptions for *A. matamata* Sharkey and *A. fernandezi* Sharkey. A phylogenetic hypothesis employing morphological characters is proposed for the species of *Amputoearinus* using three other genera of Agathidinae as outgroups. The fourteen new species are: *Amputoearinus alafumidus* **sp.n.**, *Amputoearinus boringi* **sp.n.**, *Amputoearinus erudio* **sp.n.**, *Amputoearinus flavocacumen* **sp.n.**, *Amputoearinus galbus* **sp.n.**, *Amputoearinus gloriae* **sp.n.**, *Amputoearinus niger* **sp.n.**, *Amputoearinus pectusacutum* **sp.n.**, *Amputoearinus pitzi* **sp.n.**, *Amputoearinus planusfunditus* **sp.n.**, *Amputoearinus seltmannae* **sp.n.**, *Amputoearinus sharanowskiae* **sp.n.**, *Amputoearinus surinen* **sp.n.**, and *Amputoearinus variegatus* **sp.n.**

**Key words**: taxonomy, parasitoid, neotropical

## Introduction

The subfamily Agathidinae is comprised of about 52 genera worldwide, with 20 occurring in the New World (Sharkey 1992). Approximately 2,000 species of Agathidinae exist worldwide with the majority of these are undescribed (Sharkey 2006). Prior to this publication, the genus *Amputoearinu*s included two described species (Sharkey 2006). While the biology of *Amputoearinus* is unknown, most agathidines previously studied are reported as solitary koinobiont endoparasitoids of lepidopteran larvae that attack the first larval instar (Sharkey 1992). Exceptions to this generality are members of the tribes Cremnoptini and Disophrini. Most members of Cremnoptini have rather thick, strong ovipositors, and those of species of Disophrini are short and decurved. Members of these two tribes oviposit into later instars, and, in the case of Disophrini, the hosts are exposed. Although *Amputoearinus* probably belongs to the Earinini (Sharkey *et al*. in press), they

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are unlike other members of the Earinini in that their ovipositors are shorter than the metasoma, suggesting that they may attack exposed hosts.

## Methods and materials

Abbreviations for collections. **AEI**: American Entomological Institute, Gainesville, Florida. Dr. David Wahl. **BLCU:** U.S. National Pollinating Insect Collection, Bee Biology and Systematics Lab, Utah State University, Logan, Utah, Dr. John D. Vandenberg. **CNCI**: Canadian National Collection of Insects, Arachnids and Nematodes, Biosystematic Research Institute, Ottawa, Ontario, Canada, Dr. Henri Goulet. **EMUS**: Utah State University, Logan, Utah, Dr. James Pitts. **FSCA**: Florida State Collection of Arthropods, Gainesville, Florida, Lionel Stange. **HIC**: Hymenoptera Institute Insect Collection. University of Kentucky, Lexington, Kentucky, Dr. Mike Sharkey. **IAvH**: Instituto Alexander von Humboldt, Villa de Leyva, Colombia, Ms. Diana Arias. **IMLA**: Fundacion e Instituto Miguel Lillo, Universidad Nacional de Tucuman, Tucuman, Argentina, Carolina Berta de Fernandez. **INBio:** Instituto Nacional de Biodiversidad, Santo Domingo de Heredia, Costa Rica, Dr. Manuel Zumbado. **INPA:** Instituto Nacional de Pesquisa da Amazonia, Colecão Sistemática da Entomologia, Manaus, Amazonas, Brazil, Prof. Helio Sa Santos. **LACM**: Los Angeles County Museum of Natural History, Los Angeles, California, Brian Brown. **RMNH**: Nationaal Natuurhistorisch Museum, Leiden, Netherlands. Dr. C. van Achterberg. **UNCB**: Insect Collection, Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá D.C., Fernando Fernandez. **USNM**: United States National Museum, Washington, D.C., Dr. David Smith.

Measurements of body length (mm) do not include the ovipositor. Forewing lengths (mm) were measured in lateral view from the apex of the tegula to the apex of the wing. Lengths of the midtibial spur (mm) were taken in lateral view from the most basal visible point of the midtibial spur to the apex. Morphological terminology is based on Sharkey and Wharton (1997). The key to, and descriptions of, *Amputoearinus* species were generated with the software DELTA version 1.04 (Dallwitz 1993). The phylogenetic tree was constructed using parsimony as a criterion and the software PAUP 4.0 beta version (Swofford 2003), with the following commands, Hsearch, nreps = 10000, addseq = random.

## Discussion

Phylogenetic relationships among the genera *Sesioctonus*, *Earinus*, *Austroearinus*, and the species of *Amputoearinus* were conducted using the morphological characters from Table 1. The tree was rooted on *Earinus*, consistent with the results of Sharkey *et al*. (in press). Two trees resulted with the following statistics: length = 18, CI = .833 and RI = .897. The

  

strict consensus tree is shown in Figure 1. *Amputoearinus* was recovered as monophyletic, with *Austroearinus* as its sister group. Table 2 gives the character state transitions for the five nodes resolved in the strict consensus tree (Fig. 1).

Monophyly of *Amputoearinus* is well supported by eight autapomorphies, however resolution of the ingroup is poor. This was expected since only 14 binary characters were included in the dataset. Unfortunately no other characters were apparent to us. The loss of the median areola of the propodeum is a synapomorphy for 12 species. Ten of these are united by the loss of carinae between the metepisternum and the metepimeron (Fig. 1D), and a clade of four species share the loss of a depressed median areola of the metanotum.

*Diversity and distribution*

The genus is recorded from northwestern Mexico to northern Bolivia. Most specimens have been collected in Malaise traps between 0 and 1350m. in elevation. Of the 62 specimens examined, 51 are female and 11 are male. The fact that six species were represented by only one specimen, suggests that there are many more species to be discovered.

**TABLE 1.** Data set for *Amputoearinus*.

| **List of characters** |
|---|
| 1. Presence of projection on propleuron. 1: present. 2: absent. |
| 2. Median areola of propodeum. 1: present. 2: absent. |
| 3. Depression of median areola of mesosoma. 1: not depressed medially, lacking distinct lateral borders. 2: depressed medially with distinct lateral borders. |
| 4. Presence of carinae between metepisternum and metepimeron. 1: smooth, lacking carinae. 2: with carinae. |
| 5. Length of ovipositor. 1: shorter than metasoma. 2. longer than metasoma. Although this appears to be a continuous character, the differences among the included species have a large gap with the gap defined above. |
| 6. Shape of hind coxal cavities. 1: sharing a common foramen with the metasoma. 2: not sharing a common foramen with the metasoma. |
| 7. Presence of pair of carinae between antennal insertions. 1: present 2: absent. |
| 8. Shape of gena. 1: protruding posteroventrally. 2: not protruding posteroventrally. |
| 9. Shape of 2$^{nd}$ submarginal cell of forewing. 1: quadrangular. 2: triangular. |
| 10. Presence of pair of carinae on first metasomal median tergite. 1: with pair of carinae. 2: without pair of carinae. |
| 11. Shape of tarsal claw. 1: with quadrate basal lobe. 2: with acute basal lobe. 3: lacking basal lobe. |
| 12. Completeness of Rs+M vein of forewing. 1: incomplete. 2: complete. |
| 13. Presence of transverse groove on median tergite three. 1: absent. 2: present. |
| 14. Length of medial spur. 1: almost two times longer than lateral spur. 2: subequal to lateral spur. |

to be coninuted.

**TABLE 1** (continued).

**Data matrix** (P=polymorphic)

| TAXA | CHARACTERS | | |
|---|---|---|---|
| | | 1 | 1111 |
| | 12345 | 67890 | 1234 |
| *Earinus limitaris* | 21222 | 12211 | 2212 |
| *Sesioctonus diazi* | 22112 | 12211 | 3P12 |
| *Austroearinus chrysokeras* | 21222 | 12221 | 1112 |
| *A. galbus* | 11221 | 21122 | 1221 |
| *A. erudio* | 12111 | 21122 | 1221 |
| *A. pectusacutum* | 12111 | 21122 | 1221 |
| *A. planusfunditus* | 12211 | 21122 | 1221 |
| *A. gloriae* | 12211 | 21122 | 1221 |
| *A. sharanowskiae* | 12111 | 21122 | 1221 |
| *A. variegates* | 12221 | 21122 | 1221 |
| *A. niger* | 11221 | 21122 | 1221 |
| *A. alafumidus* | 12221 | 21122 | 1221 |
| *A. pitzi* | 12211 | 21122 | 1221 |
| *A. boringi* | 12211 | 21122 | 1221 |
| *A. flavocacumen* | 12211 | 21122 | 1221 |
| *A. seltmannae* | 12211 | 21122 | 1221 |
| *A. matamata* | 12211 | 21122 | 1221 |
| *A. fernandezi* | 12211 | 21122 | 1221 |
| *A. surinen* | 12111 | 21122 | 1221 |

*Diagnosis*

Members of *Amputoearinus* are restricted to the Neotropical realm and may be distinguished from all other agathidine braconids with the following characters: propleuron with ventromedial prominence; RS+M vein of forewing complete; gena with acute posteroventral extension. A key to the Neotropical genera of Agathidinae can be found in Sharkey (2006).

**Key to *Amputoearinus* species**

1. Forewing mostly infuscate with yellow patch in basal quarter and yellow band in apical 3rd quarter (Fig. 4e) ..... 2
- Forewing yellow with infuscate band apically (Fig. 4f) ..... 3

  

- Forewing banded from base yellow, infuscate, yellow, infuscate (Figs. 5b, 4g) .... 7
- Forewing weakly infuscate basally, deeply infuscate apically (Fig. 5a) ..... ..... ***niger*** Lindsay & Sharkey **sp.n.**
- Forewing evenly infuscate with yellowish tinge (Fig. 5c) ..... ..... ***alafumidus*** Lindsay & Sharkey **sp.n.**

2(1). Propodeum completely smooth, lacking small protuberance anteromedially (Fig. 5d) ..... ***surinen*** Lindsay & Sharkey sp.n
- Propodeal sculpture reduced to small protuberance anteromedially (Fig. 5f) ..... ..... ***planusfunditus*** Lindsay & Sharkey **sp.n.**
- Propodeum with distinct carinae (Figs. 5e, 5g, 5h) ..... ***fernandezi*** Sharkey

3(1). Margin between metepimeron and metepisternum smooth, lacking transverse carinae (Fig. 7b) ..... 4
- Margin between metepimeron and metepisternum with transverse carinae (Fig. 7a) ..... 6

4(3). Projection of propleuron acute (Fig. 6e); propodeum completely smooth without small protuberance anteromedially (Fig. 5d); mesopleural suture lacking carinae .. ..... ***erudio*** Lindsay & Sharkey **sp.n.**
- Projection of propleuron blunt (Fig. 6f); propodeal sculpture reduced to small protuberance anteromedially (Fig. 5f); mesopleural suture with carinae ..... 5

5(4). Scutellar sulcus with longitudinal carina (Fig. 6c); median areola of mesosoma depressed medially with sharp carinae laterally and posteriorly (Fig. 7c) ..... ..... ***boringi*** Lindsay & Sharkey **sp.n.**
- Scutellar sulcus lacking longitudinal carinae (Fig. 6d); median areola of mesosoma not depressed medially and lacking sharp carinae laterally and posteriorly (Fig. 7d) ..... ***sharanowskiae*** Lindsay & Sharkey **sp.n.**

6(3). Propodeal sculpture reduced to small protuberance anteromedially (Fig. 5f); carina bordering subpronope posteriorly, extending to anterior margin of pronotum (Fig. 6a); median areola of propodeum absent (Figs. 5d, 5f, 5g) ..... ..... ***variegatus*** Lindsay & Sharkey **sp.n.**
- Propodeum with distinct carinae (Figs. 5e, 5g, 5h); carina, bordering subpronope posteriorly, not extending to anterior margin of pronotum (Fig. 6b); median areola of propodeum present but lateral edges weak (Fig. 5e) ..... ..... ***galbus*** Lindsay & Sharkey **sp.n.**

7(1). Anterior margin of forewing infuscate throughout (Fig. 4g) ..... 8
- Anterior margin of forewing yellow basally (Figs. 4b, 5b) ..... 10

8(7). Projection of propleuron acute (Fig. 6e) ..... ***gloriae*** Lindsay & Sharkey **sp.n.**
- Projection of propleuron blunt (Fig. 6f) ..... 9

9(8). Antenna entirely melanic ..... ***seltmannae*** Lindsay & Sharkey **sp.n.**
- Antenna mostly melanic with yellow tips ..... ..... ***flavocacumen*** Lindsay & Sharkey **sp.n.**

  

10(7). Projection of propleuron acute (Fig. 6e); transverse carina on anterior pronotum extending to dorsal edge of pronotum (Fig. 6a) ..... 11

- Projection of propleuron blunt (Fig. 6f); carina bordering subpronope posteriorly, not extending to anterior margin of pronotum (Fig. 6b) ..... ..... ***pitzi*** Lindsay & Sharkey **sp.n.**

11(10). Median areola of mesosoma not depressed medially and lacking sharp carinae laterally and posteriorly (Fig. 7d) ..... ***pectusacutum*** Lindsay & Sharkey **sp.n.**

- Median areola of mesosoma depressed medially with sharp carinae laterally and posteriorly (Fig. 7c) ..... ***matamata*** Sharkey

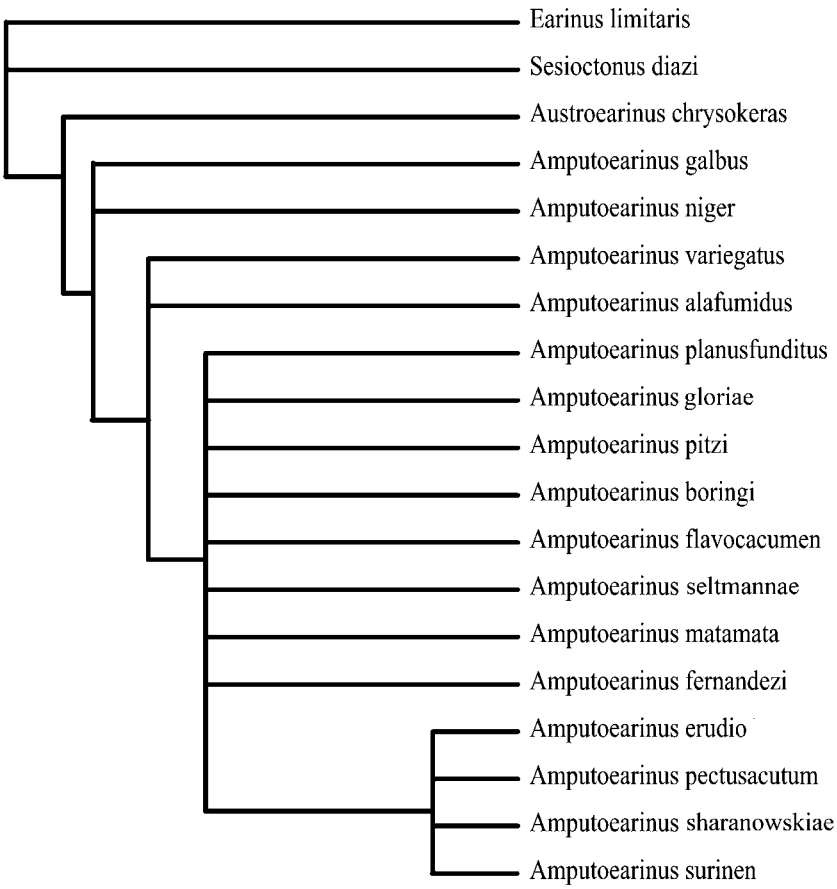


**FIGURE 1.** Strict consensus tree of *Amputoearinus* species.

## Species descriptions

Methods: Descriptions are based on holotype specimens. Variation in continuous and meristic character is given in parenthesis, with other variation contained in a separate section.

  

**TABLE 2.** The character state transitions for the five nodes resolved in the strict consensus tree.

| Node | Character State Transition |
|---|---|
| A | *Austroearinus* + *Amputoearius* |
| | — 2nd submarginal cell of forewing quadrangular → triangular (Figs. 4e, 4g, 5a). |
| | — Tarsal claw with acute basal lobe → quadrate basal lobe. |
| B | *Amputoearinus* |
| | — Projection of propleuron absent → present (Figs. 6e, 6f). |
| | — Ovipositor longer than metasoma → shorter than metasoma (Figs. 2a, 2c, 2d, 3a, 3b, 3f, 4b, 4c). |
| | — Hind coxal cavities sharing a common foramen with the metasoma → not sharing a common foramen with the metasoma. |
| | — Pair of carinae between antennal insertions absent → present. |
| | — Gena not protruding posteroventrally → protruding posteroventrally (Figs. 6e, 6f). |
| | — First metasomal median tergite with pair of carinae → without pair of carinae. |
| | — Transverse groove on median tergite three absent → present. |
| | — Medial midtibial spur subequal to lateral spur → almost two times longer than lateral spur. |
| C | Median areola of propodeum present (Figs. 5e, 5h) → absent (Figs. 5d, 5f, 5g). |
| D | Margin between metepisternum and metepimeron with carinae (Fig. 7a) → smooth (Fig. 7b). |
| E | Median areola of mesosoma depressed medially with distinct lateral borders (Fig. 7c) → not depressed medially, lacking distinct lateral borders (Fig. 7d). |

### *Amputoearinus alafumidus* Lindsay and Sharkey sp.n. (Figs. 2a, 5c)

**Diagnosis:** This species can be distinguished from all other species of *Amputoearinus* by the following character; forewing evenly infuscate with yellowish tinge.

**Description:** Holotype ♀

***Body length:*** 7.4mm. ***Color:*** body black except yellow as follows, palpi, fore and midtarsal spurs, most of foretarsus, basal portions of mid and hind tarsomeres, fore and midtibia at extreme base; orange as follows: ventral surface of propodeum, medial surface of hind coxa, hind femur except for extreme base, hind tibia except for extreme apex, metasoma; forewing evenly infuscate with a yellowish tinge (Fig. 5c). ***Head:*** antenna with unknown number of flagellomeres; left antenna broken after 40th flagellomere; right antenna broken after 39th flagellomere. ***Mesosoma:*** scutellar sulcus lacking longitudinal carina (cf. 6d); projection of propleuron blunt (cf. Fig. 6f); median areola of mesosoma slightly depressed medially with sharp carinae laterally and posteriorly (cf. Fig. 7c); propodeal sculpture reduced to small protuberance anteromedially (cf. Fig. 5f);

  

mesopleural suture with transverse carinae along its length; margin between metepimeron and metepisternum with 4 strong transverse carinae (cf. Fig. 7a); carina bordering subpronope posteriorly, extending to anterior margin of pronotum (cf. Fig.6a); length of midtibial spur 0.6mm; length of midbasitarsomere 0.7mm; left midtibia lacking pegs; hind tibia with 2–4 pegs apically; forewing length 7.1mm. ***Metasoma:*** median syntergite 2+3 length 1.7mm, width 1.3mm.

**Male:** Unknown

**Etymology:** From the Latin *ala* meaning wing, and *fumida* for smoky, because of the entirely infuscate wings of this species.

**Specimen examined:** HOLOTYPE. ♀, **COSTA RICA**, Province Punta[renas], San Luis, Monteverde, [10°18'N 84°49'W], 1000–1350m, FEB 1995, Z. Fuentes, L_N_250850_449250 #4393, (right midtibia broken after coxa, right hind leg broken after first tarsomere), (INBio CR1002 165617).

### *Amputoearinus boringi* Lindsay and Sharkey sp.n. (Fig.2b, 6c)

**Diagnosis:** This species can be distinguished from all other species of *Amputoearinus* by the following characters; longitudinal carina of scutellar sulcus present; median areola of mesosoma depressed medially with sharp carinae laterally and posteriorly; projection of propleuron blunt; carina bordering subpronope posteriorly, extending to anterior margin of pronotum.

**Description:** Holotype ♀

***Body length:*** 7.3mm. ***Color:*** body orange except for melanic as follows: antenna, hind tarsus, mid and hind tibia with melanic patch distally; forewing with infuscate band apically (cf. Fig. 4f). ***Head:*** antenna with 43 flagellomeres. ***Mesosoma:*** scutellar sulcus with weak longitudinal carina (Fig. 6c); projection of propleuron blunt (cf. Fig 6f.); median areola of mesosoma slightly depressed medially, with carinae laterally and posteriorly and transverse carina anteriorly, interior of areola rugulose (cf. Fig. 7c); propodeal sculpture reduced to small protuberance anteromedially (cf. Fig. 5f); mesopleural suture with weak and reduced carinae along its length; margin between metepimeron and metepisternum smooth, lacking transverse carinae (cf. Fig. 7b); carina bordering subpronope posteriorly, extending to anterior margin of pronotum (cf. Fig. 6a); length of midtibial spur 0.6mm; length of midbasitarsomere 0.7mm; midtibia with 3 pegs at midlength; 0–1 peg(s) apically; hind tibia with 3–4 pegs apically; forewing length 7.1mm. ***Metasoma:*** median syntergite 2+3 length 1.6mm, width 1.5mm.

**Male:** Unknown

**Etymology:** in honor of Andy Boring.

**Specimen examined**: HOLOTYPE. ♀, **COLOMBIA**, [Valle del] Cauca, PNN [Parque Nacional Natural] Gorgona, El Saman, 2º58'N 78º11'W, 5m, Malaise, 7–20.ii.2001, H. Torres, Leg. M. 1364, (right hind leg broken off after hind tibia), (IAvH).

  

### *Amputoearinus erudio* Lindsay and Sharkey sp.n. (Fig. 2c)

**Diagnosis:** This species can be distinguished from all other species of *Amputoearinus* by the following character; mesopleural suture smooth, lacking transverse carinae.

**Description:** Holotype ♀

***Body length***: 8.7 (8.8)mm. ***Color***: body yellow except black and brown as follows: antenna, head, propleuron, forecoxa, forefemur ventrally, midcoxa, midfemur, all black; midtibia brown apically, midtarsomeres brown; hind coxa black; hind femur black ventrally, brown dorsally, hind tibia, last tergite of metasoma; ovipositor sheaths black; forewing banded from base yellow, infuscate, yellow, infuscate; foremargin yellow throughout. ***Head:*** antenna with 45 (40) flagellomeres. ***Mesosoma:*** scutellar sulcus lacking longitudinal carina (cf. Fig. 6d); projection of propleuron acute, lacking ridges (cf. Fig. 6e); median areola of mesosoma not depressed medially, lacking sharp carinae laterally and posteriorly (cf. Fig. 7d); propodeum completely smooth (cf. Fig. 5d); margin between metepimeron and metepisternum smooth, lacking transverse carinae (cf. Fig. 7b); mesopleural suture smooth, lacking transverse carinae; carina bordering subpronope posteriorly, not extending to anterior margin of pronotum (cf. Fig. 6b); length of midtibial spur 0.6mm; length of midbasitarsomere 0.9mm; midtibia with 3–5 pegs at midlength, lacking pegs apically; hind tibia with 2–5 pegs apically; forewing length 8.7mm. ***Metasoma***: median syntergite 2+3 length 1.6mm, width 1.6mm.

**Variation:** the lone male specimen of this species differs in the following coloration: body yellow except melanic as follows: head, antenna, propleuron, forefemur ventrally, midfemur; midtibia distally, hind femur black with yellow patch basally; hind tibia and tarsus, metasoma dark brown to black throughout with posterior tip of metasoma black; apex of forewing infuscate.

**Etymology:** the Latin *erudio*, for smooth, because the propodeum of this species is smooth, without sculpture.

**Specimen Examined:** HOLOTYPE. ♀, **COLOMBIA,** Amazonas, PNN [Parque Nacional Natural] Hamacayacu Caño Mata-Mata, [4°18’27”N 72°32’56"W], Malaise, M. Kelsey, Feb. 89, (left hind leg missing tarsus), (IAvH).

PARATYPE. ♂, **PERU**, Loerto Prov., Yanamono Lodge, Quebrada Yanamono [Gorge], 1 km N R. Amazonas, ca. 3º22’S 72º47’W, 28.vi.1978, H.A. Hespenheide, (left antenna broken), (HIC).

### *Amputoearinus fernandezi* Sharkey (Fig. 2d)

**Diagnosis:** This species can be distinguished from all other species of *Amputoearinus* by the following characters; forewing infuscate with yellow patch in basal quarter and yellow band in apical 3rd quarter; propodeum with distinct carinae.

**Description:** Holotype ♀

  

***Body length:*** 6.0 (5.8–6.1) mm. ***Color:*** body yellow except melanic as follows: flagellomeres, pedicel, scape laterally, mid and hind tibia distally, midtarsus distally, hind tarsus, ovipositor sheaths; posterior three terga with black patches laterally; forewing infuscate with yellow patch in basal quarter and yellow band in apical 3rd quarter (cf. Fig. 4e). ***Head:*** antenna with 37 (37–40) flagellomeres ***Mesosoma:*** scutellar sulcus lacking longitudinal carina (cf. Fig. 6d); projection of propleuron blunt, not dorsoventrally flattened, and without ridges (cf. Fig. 6f); median areola of mesosoma well defined with sharp carinae laterally and posteriorly (cf. Fig. 7c); propodeum mostly smooth with pair of short carinae fused anteriorly to appear as an inverted v-shape (cf. Fig. 5g); margin between metepimeron and metepisternum smooth, lacking transverse carinae (cf. Fig. 7b); mesopleural suture with transverse carinae; carina bordering subpronope posteriorly, extending to anterior margin of pronotum (cf. Fig. 6a); length of midtibial spur 0.4mm; length of midbasitarsomere 0.5mm; midtibia with 3–4 pegs at midlength, lacking pegs apically; hind tibia with 5 pegs apically; forewing length 6.0mm ***Metasoma:*** median syntergite 2+3 length 1.4mm, width 1.2mm.

**Variation:** Most specimens have a smooth propodeum with sculpture reduced to a small protuberance anteromedially.

**Specimen Examined:** HOLOTYPE. ♀, **GUYANA**, Dubulay Ranch, 5°40.95”N 57°51.52”W, Malaise, Feb–May 1999, Sharkey & Brown (HIC).

PARATYPES. **BRAZIL,** ♀, Para, Baker, [1°26’60”S 48°28’60”W], (USNM). **GUYANA**, ♀, Dubulay Ranch, 5°40’9.45”N 57°51’52.4”W, Malaise Trap, 16–23.iv.1999, M. Sharkey & B. Brown, (HIC). **SURINAM**: ♀, Paramaribo, Plantation Ma Retraite, [5°49’60”N 55°10’W], Jan. 10, 1964, sweep forest, D.C. Geijskes, (head detached and placed on triangle), (RMNH). ♀, Paramaribo, [5°49’60”N 55°10’W], June 10–13, 1963, Malaise trap, J.v. d Vecht., (RMNH). **TRINIDAD**: ♂, BWI [British West Indies], Maracas, [10°40’60”N 61°23’60”W], July-13-1953, Collector F.J. Simmonds, (head missing), (AEI). ♀, Asa Wright N.C. [Nature Center], [10°37’60”N 61°16’60”W], Jan. 15, 1981, G.E. Bohart, (EMUS).

### *Amputoearinus flavocacumen* Lindsay and Sharkey sp.n. (Figs. 2e, 6f)

**Diagnosis:** This species can be hard to differentiate from other species of *Amputoearinus* because the distinguishing characteristic is antenna melanic with yellow tips. Some specimens have antenna tips broken and otherwise morphological characters mirror those of *Amputoearinus seltmannae*. Differences in the degree of depression of the median areola of the mesosoma, and the shape of the propodeal projection help differentiate these species. *A. flavocacumen* has a gradual depression from posterior to anterior of the median areola of the mesosoma and propodeal structure reduced to a very small protuberance anteromedially. *A. seltmannae* has a steep depression posteriorly of the median areola of the mesosoma and a well defined protuberance anteromedially of the propodeum.

  

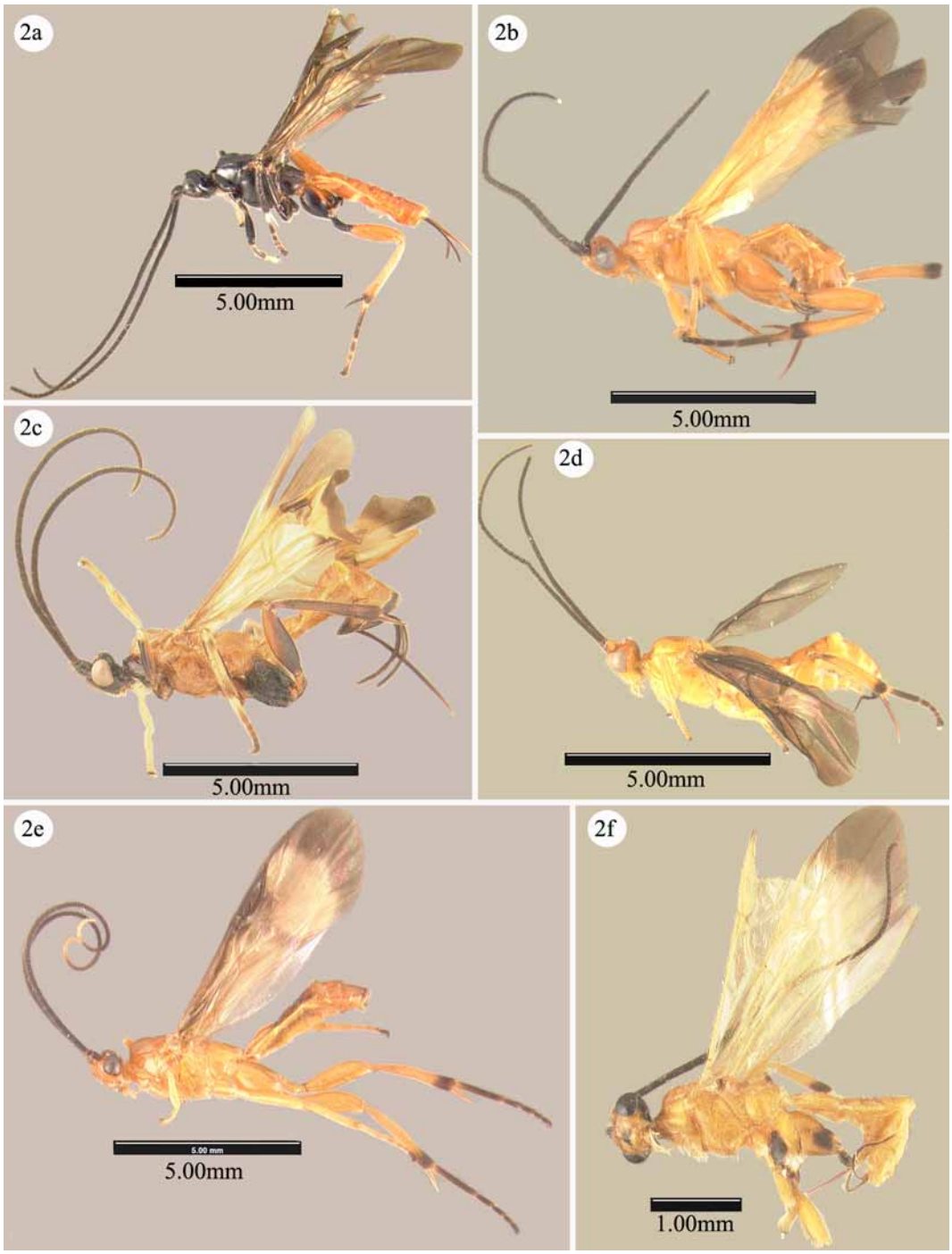


**FIGURE 2.** Lateral habiti. a) *A. alafumidus* b) *A. boringi*. c) *A. erudio* d) *A. fernandezi* e) *A. flavocacumen* f) *A. galbus.*

  

**Description:** Holotype ♀

***Body length:*** 6.1(5.9–8.4) mm. ***Color:*** body yellow except melanic as follows: flagellomeres except yellow tips, scape laterally, midtarsus and hind tibia distally, hind tarsus; ovipositor sheaths; posterior three terga darker yellow than anterior terga; forewing banded from base yellow, infuscate, yellow, infuscate; foremargin infuscate throughout (cf. Fig. 4g). ***Head:*** antenna with 39 (39–46) flagellomeres. ***Mesosoma:*** scutellar sulcus lacking longitudinal carina (cf. Fig. 6d); projection of propleuron blunt (Fig. 6f); median areola of mesosoma gradually depressed from posterior to anterior of mesosoma with sharp carinae laterally and posteriorly (cf. Fig. 7c); propodeal sculpture reduced to small protuberance anteromedially (cf. Fig. 5f); margin between metepimeron and metepisternum smooth lacking transverse carinae (cf. Fig. 7b); mesopleural suture with weak transverse carinae; carina bordering subpronope posteriorly, extending to anterior margin of pronotum (cf. Fig. 6a); length of midtibial spur 0.5mm; length of midbasitarsomere 0.6mm; midtibia with 2–3 pegs at midlength, lacking pegs apically; hind tibia with 2–3 pegs apically; forewing length 5.9 (6.2–7.9)mm. ***Metasoma:*** median syntergite 2+3 length 1.3mm, width 1.0mm.

**Variation**: paratype males: body yellow except for melanic as follows: antenna, with tips yellow, midtarsomere apically, hind tibia apically; propodeum completely smooth; median areola of mesosoma not as depressed posteriorly. Female paratype from French Guiana with propodeum completely smooth; median areola of mesosoma only slightly depressed posteriorly; forewing with yellow patch in basal third .

**Etymology:** from the Latin *flavus* for yellow, and *cacumen* for extreme point, because of the yellow tipped antenna of this species.

**Specimen examined**: HOLOTYPE. ♀, **PERU**, Quince Mil, [13°13’44”S 70°45’36”W], 20–30.x.1962, R.D. Shenefelt, (AEI).

PARATYPES. **BRAZIL**, ♀, Utinga, Belem, [23°37’60”S 46°31’60”W], xii. [19]66, S.J. Oliveira, (antennae tips broken off), (AEI). **FRENCH GUIANA**, ♀, Regina Road Roura-Kaw, km 40, 04°32’01”N 52°07’45”W, alt 276m, Kaw Mountain, Oct. 2004, O. Morvan leg, (antennae tips broken), (HIC). **PERU**: ♂, Pucallpa, [7°50’60”S 72°43’W], 200m, Loreto, 21–31.x.1964, collector J. Schunke, (LACM). ♂, Quince Mil, [13°13’44”S 70°45’36”W], 10–15 xi-1962, (head broken off and placed on triangular point, along with left hind wing), (AEI).

### *Amputoearinus galbus* Lindsay and Sharkey sp.n. (Figs. 2f, 5e, 7a, 6b)

**Diagnosis:** This species can be distinguished from all other species of *Amputoearinus* by the following character; median areola of propodeum present but lateral edges weak at midlength.

**Description:** Holotype ♀

***Body length:*** 6.8 mm. ***Color***: yellow except melanic as follows: antenna; black patch

  

posterior to eye and anterior of head; hind coxa, hind trochanter, hind femur ventrally, midfemur apically; ovipositor sheaths; apex of forewing infuscate (cf. Fig. 4f). ***Head:*** antenna with 43 flagellomeres. ***Mesosoma:*** scutellar sulcus lacking longitudinal carina (cf. Fig. 6d); projection of propleuron blunt (cf. Fig. 6f); carina bordering subpronope posteriorly, not extending to anterior margin of pronotum(Fig. 6b); median areola of mesosoma well defined with sharp carinae laterally and posteriorly (cf. Fig. 7c); median areola of propodeum present but lateral edges weak at mid-length, transverse carinae located anteriorly (Fig. 5e); margin between metepimeron and metepisternum with 3 transverse carinae (Fig. 7a); mesopleural suture with strong transverse carinae; midtibia with 1–2 pegs at midlength, 1 peg apically; forewing length 5.8mm. ***Metasoma:*** median syntergite 2+3, length 1.2mm, width 1.2mm.

**Male:** Unknown

**Etymology:** from the Latin *galbus* meaning yellow.

**Specimen Examined:** HOLOTYPE. ♀, **COLOMBIA**, Choco, PNN [Parque Nacional Natural] Utria Cop. Manual, Sendero Menglar, 6º01'01"N, 7º20'52"W, 28.iii.1998, C. Londoño, (front legs broken off at the coxa, left midleg broken off at tarsus, left hind leg broken off at femur, right hind leg broken off at trochanter, right antenna broken), (IavH 3381).

### *Amputoearinus gloriae* Lindsay and Sharkey sp.n. (Figs. 3a, 5f, 7c)

**Diagnosis:** This species can be distinguished from all other species of *Amputoearinus* by the following characters; forewing banded from base yellow, infuscate, yellow, infuscate, foremargin infuscate throughout; projection of propleuron acute.

**Description:** Holotype ♀

***Body length:*** 6.2 (6.6)mm. ***Color***: body yellow except melanic as follows: head with gena below eye yellow; antenna, pronotum, ventral and lateral mesosoma, midtarsus, hind coxa, trochanter, tibia, tarsus; forewing banded from base yellow, infuscate, yellow, infuscate; foremargin infuscate throughout (cf. Fig. 4g). ***Head:*** antenna with 36 flagellomeres. ***Mesosoma:*** scutellar sulcus lacking longitudinal carina (cf. Fig. 6d); projection of propleuron acute, flattened dorsoventrally with distinct ridges ventrolaterally (cf. Fig. 6e); median areola of mesosoma well defined with sharp carinae laterally and posteriorly (Fig. 7c); propodeal sculpture reduced to small protuberance anteromedially (Fig. 5f); mesopleural suture with weak transverse carinae; margin between metepimeron and metepisternum smooth, lacking transverse carinae (cf. Fig. 7b); carina bordering subpronope posteriorly, extending to anterior margin of pronotum (cf. Fig. 6a); length of midtibial spur 0.4mm, length of midbasitarsomere 0.6mm; midtibia with 3 pegs at midlength, lacking pegs apically; hind tibia with 2 pegs apically; forewing length 5.5 (6.0)mm. ***Metasoma:*** median syntergite 2+3 length 1.2mm, width 0.8mm.

**Variation**: mesopleural suture with stronger transverse carinae; forewing color banded

  

from base hyaline, infuscate, hyaline, infuscate; foremargin infuscate throughout.

**Male**: Unknown

**Etymology:** In honor of the first author's mother, Gloria Lindsay.

**Specimen Examined:** HOLOTYPE. ♀, **COLOMBIA**, Putumayo, PNN [Parque Nacional Natural] La Playa Cabaña Chagra, 0º7'S 74º56'W, 320m, Malaise, 1–15.xi.2001, R. Cobete, Leg. M. 2439, (IAvH).

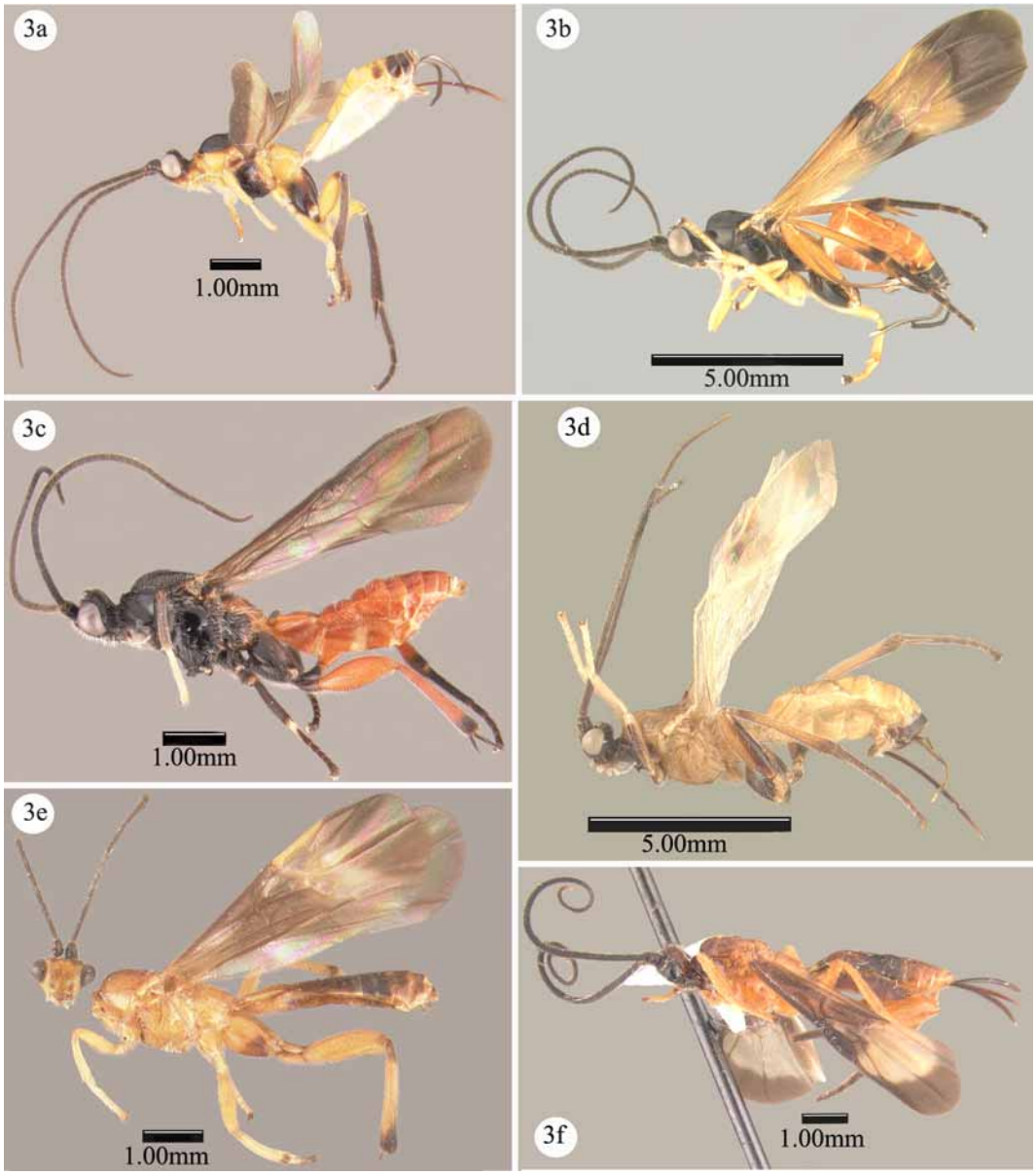


**FIGURE 3.** Lateral habiti. a) *A. gloriae* b) *A. matamata* c) *A. niger* d) *A. pectusacutum* e) *A. pitzi* f) *A. planusfunditus.*

PARATYPES. **COLOMBIA**: ♀, Putumayo, PNN [Parque Nacional Natural] La Paya Cabaña Viviano, 0º7'S 74º56'W, 320m, Malaise, 1–15.xii.2001, E. Lozano, Leg. M. 2795, (HIC). ♀, Putumayo, PNN [Parque Nacional Natural] La Paya Cabaña Viviano Cocha, 0°7'S 74°56'W, 320m, Malaise, 1–30.vii.2002, A. Morales Leg. M.3314, (IAvH 39569). ♀, Putumayo, PNN [Parque Nacional Natural] La Paya Cabaña La Paya, 0°2'S 75°12'W, 330m, Malaise, 15–30xi.2001, R. Cobete Leg. M.2653, (IAvH 39565).

***Amputoearinus matamata* Sharkey** (Fig. 3b, 5g)

**Diagnosis:** This species can be distinguished from all other species of *Amputoearinus* by the following characters; median areola of mesosoma depressed medially with sharp carinae laterally and posteriorly.

**Description:** Holotype ♀

***Body length:*** 7.1 (7.1–7.4) mm. ***Color:*** body black except: fore and midlegs pale yellow except apical tarsomeres black; hind femur and basal hind tibia orange, propodeum orange, metasoma orange except for posterior four segments; forewing banded from base, yellow, black, yellow, black; foremargin yellow (cf. Fig. 5b) ***Head:*** antenna with 43 (43–45) flagellomeres. ***Mesosoma:*** scutellar sulcus lacking longitudinal carinae (cf. Fig. 6d); projection of propleuron acute, dorsoventrally flattened, with weak smooth ridges ventrolaterally (cf. Fig. 6e); median areola of mesosoma well defined with sharp carinae laterally and posteriorly (cf. Fig. 7c); propodeum with pair of short carinae fused anteriorly to appear as an inverted v-shape (Fig. 5g); mesopleural suture with transverse carinae throughout its length; margin between metepimeron and metepisternum smooth with very reduced transverse carinae (cf. Fig. 7b); length of midtibial spur, 0.6mm, length of midbasitarsomere, 0.6mm; midtibia lacking pegs at midlength, 1 peg apically; hind tibia with 3 pegs apically; forewing length 7.5mm. ***Metasoma:*** median syntergite 2+3, length 1.6mm, width 1.2mm.

**Variation:** Paratype male from Brazil has ventral portions of the mesopleuron and hind coxa yellow; propodeal sculpture greatly reduced. Female paratypes from Colombia have propodeal sculpture greatly reduced.

**Specimen Examined:** HOLOTYPE. ♀, **COLOMBIA**, Amazonas, PNN [Parque Nacional Natural] Amacayacu, Matamata, 3°41'S 70°15'W, 150m, Malaise, 12–17.iii.2001, D. Chota Leg. M2765, (IAvH).

PARATYPES. **BRAZIL**, ♂, Para, Faz Taperina, [2°31’60”S 54°16’60”W], 21–23.xi.1969, J&B Campbell, (AEI). **COLOMBIA**: ♀, Amazonas, PNN Hamacayacu (sic.) [9°54’N 75°7’W], Malaise, Feb. [19]89, M. Kelsey, (antennae broken), (IAvH). ♀, Amazonas, PNN [Parque Nacional Natural] Amacayacu, San Martín, 3°46'S 70°18'W, Malaise 19–27, Oct. 2000, B. Amado, M.839, secondary DNA voucher DM027s, (HIC). ♀, Amazonas, Amacayacu Park, west of Leticia, 3°48'S 70°18'W 150m, 1–4.ix.1997,

Sweep, Sharkey, DNA voucher DM027, (metasoma and left hind leg missing), (HIC). **ECUADOR** ♀, Sucumbios (sic) [Succumbios], Rio Napo, Sacha Lodge, 0°30'S, 76°30'W, 220–230m, 16–27.x.1994, MT [Malaise Trap], P. Hibbs, (body broken and placed on 4 separate triangles, mesosoma except wings missing, left antenna broken), (HIC). ♀, Sucumbios, Rio Napo Sacha Lodge, 0.5°S 76.5°W, 290m, 10–21.xi.1994, P. Hibbs, (AEI). **FRENCH GUIANA** ♀, Regina, Kaw Mountain, Patawa, 4°32'643"N 52°09'153"W, x.2005, J.A. Cerda leg, (HIC).

### *Amputoearinus niger* Lindsay and Sharkey sp.n. (Figs. 3c, 5a, 5h, 6a)

**Diagnosis:** This species can be distinguished from all other species of *Amputoearinus* by the following character; median areola of propodeum complete.

**Description:** Holotype ♀

***Body length:*** 7.0 (6.2–9.6) mm. ***Color:*** body black except: propodeum, metasoma yellow, foretarsus off-white, first tarsal segment of midleg white, posterior surface of hind coxa orange, hind tibia orange medially; forewing weakly infuscate basally, deeply infuscate apically (Fig. 5a). ***Head:*** antenna with 41 (40–43) flagellomeres. ***Mesosoma:*** longitudinal carina of scutellar sulcus present (cf. Fig. 6c); projection of propleuron acute (cf. Fig. 6e); median areola of mesosoma well defined with sharp carinae laterally and posteriorly (cf. Fig. 7c); median areola of propodeum rugulose and complete (Fig. 5h); mesopleural suture with transverse carinae throughout its length; margin between metepimeron and metepisternum with transverse carinae (cf. Fig. 7a); carina bordering subpronope posteriorly, extending to anterior margin of pronotum (cf. Fig. 6a); length of midtibial spur 0.6mm, length of midbasitarsomere 0.6mm; midtibia with 0–1 peg(s) at midlength, 0–1 peg apically; hind tibia with 2–3 pegs apically; forewing length 5.8 (5.6–7.8)mm. ***Metasoma:*** median syntergite 2+3, length 1.2mm, width 1.4mm.

**Variation**: Three paratypes differ considerably; female from Estación Cacao in Costa Rica: body color black except for: hind femur, hind tibia orange, black apically; propodeum and metasoma orange. Female from Venezuela: body black except: forefemur and midfemur brown dorsally, black ventrally; foretarsus brown; apex of first midtarsomere off-white; hind femur orange, hind tibia orange basally, black apically; median area of propodeum orange, first three metasomal terga dark orange, fourth to sixth terga orange, posterior two terga black. Male from Costa Rica: body color black except; foretarsus off white, basal midtarsomere off-white basally; hind femur orange, hind tibia orange, black distally, hind tarsomeres black; propodeum orange, metasoma orange.

**Etymology:** from the Latin *niger*, meaning black, dark, because of the mostly black bodies of this species.

**Specimen examined:** HOLOTYPE. ♀, **COSTA RICA**, Prov. Guanacaste, Bagaces, P.N. Palo Verde, Sector Catalina, Fila Catalina, [10°31'60"N 85°15'W], 250m, 13 May 11 - Jun 2000, I. Jimenez, Malaise, L_N_257400_400000, (INBio).

  

PARATYPES. **COLOMBIA**, ♀, Bolivar, Zambrano, 150m, Finca Monterrey, [4°22'17"N 76°8'49"W], Jan. 19 1994, F. Fernandez, (UNCB). **COSTA RICA**: ♀, northern Guanacaste, Guanacaste Nat Pk., [11°7'N 85°37'60"W], Janzen, Voucher Specimen Database, (INBio). ♀, Gua[nacaste], 14km S Cañas, [10°25'60"N, 85°5'60"W], 2–4 Sept 1990, F.D. Parker, (BLCU). ♂: Escazú, [9°55'N 84°7'60"W], May 22 1987, H. & M. Townes, (left hind leg missing tarsus), (AEI). ♀, Prov. Guanacaste, Estación Cacao, [11°7'N 85°37'60"W], 1100m, 2–6 ENE [Jan] 1997, M.A Zumbado, L_N_323200_373000, #45333, (INBio CR1002 489178). **MEXICO**: ♀, Tamaulipas, Gómez Farías, [23°3'N 99°9'W], 900m, Alta Clima, T. Malaise, 8–15.vi.1999, Col. Sonia Hernández A., (HIC). ♀, Tamaulipas, Gómez Farías, [23°3'N 99°9'W], 300m, Los Cedros, T. Malaise, 17–24.iv.1999, Col. Sonia Hernández A., (HIC). ♀, State of Tamaulipas, 16mi S of Ciudad Victoria on Mex 101, [26°21'N 99°1'60"W], 16-June-1975, H.V. Weems, Jr., (FSCA). ♀, Tamaulipas, Gómez Farías, [23°3'N 99°9'W], 300m, Los Cedros, T M 1, 8–15.v.1999, Col. Sonia Hernández A., (HIC). **VENEZ[UELA]**, ♀, Tucuco, Zulia, [11°13'N 71°52'60"W], iv.23.1981, H.K. Townes, (AEI).

***Amputoearinus pectusacutum* Lindsay and Sharkey sp.n. (Figs. 3d, 5b, 6d, 7d)**

**Diagnosis:** This species can be distinguished from all other species of *Amputoearinus* by the following characters; median areola of mesosoma not depressed medially and lacking sharp carinae laterally and posteriorly; projection of propleuron acute; propodeal sculpture reduced to small protuberance anteromedially in females, and lacking a small protuberance in males.

**Description:** Holotype ♀

***Body length:*** 8.6 (8.4) mm. ***Color:*** body yellow except melanic as follows: head, antenna, propleuron, posterior tip of metasoma, hind femur orange dorsally; forewing banded from base yellow, infuscate, yellow, infuscate; foremargin yellow basally (Fig. 5b). ***Head:*** antenna with 48 (45) flagellomeres.

***Mesosoma:*** scutellar sulcus lacking longitudinal carina (Fig. 6d); projection of propleuron acute (cf. Fig. 6e); median areola of mesosoma not depressed medially and lacking sharp carinae laterally and posteriorly (Fig. 7d); propodeal sculpture reduced to small protuberance anteromedially (cf. Fig. 5f); mesopleural suture with weak transverse carinae; margin between metepimeron and metepisternum smooth, lacking transverse carinae (cf. Fig. 7b); carina bordering subpronope posteriorly, extending to anterior margin of pronotum (cf. Fig. 6a); length of midtibial spur 0.6mm, length of midbasitarsomere 0.9mm; midtibia with 4 pegs at midlength, lacking pegs apically; hind tibia with 4–6 pegs apically; forewing length 8.0mm. ***Metasoma:*** median syntergite 2+3, length 1.9mm, width 1.7mm.

**Variation:** paratype male; the lone male specimen of this species differs in having no propodeal sculpture and lacking a small protuberance anteromedially; body yellow except

for as follows: head, antenna, propleuron, all black; midfemur yellow dorsally, black ventrally; hind coxa black; hind femur brown ventrally; yellow dorsally; hind tibia black apically, tarsomeres brown; metapleuron brown; distal two segments of metasoma black.

**Etymology:** from the Latin *acutus*, meaning acute and the Latin *pectus* meaning chest because of the extremely acute projection of the propleuron of this species.

**Specimen examined:** HOLOTYPE. ♀, **COLOMBIA**, Bolivar, Zambrano, Hda. Monterrey, [9°44'58"N 74°49'5"W], Ene [Jan.], [19]95, F. Fernandez, (entire left midleg missing), (UNCB).

PARATYPE. **BRAZIL**, ♂, Mato Grosso Sinop, [15°0'S 59°57'W], xi.1975, M. Alvarenga, Malaise Trap, (entire left hind leg missing, left front leg broken at femur), (AEI).

### *Amputoearinus pitzi* Lindsay and Sharkey sp.n. (Fig. 3e)

**Diagnosis:** This species can be distinguished from all other species of *Amputoearinus* by the following characters; forewing banded from base yellow, infuscate, yellow, infuscate, foremargin yellow basally; projection of propleuron blunt.

**Description:** Holotype ♂

***Body length:*** 7.4mm. ***Color:*** body yellow except melanic as follows: melanic patch posterior to eye; antenna, midtibia with melanic patch distally, hind coxa with melanic patch anterodistally, melanic patch distally and basally on hind tibia, terga distally; forewing banded from base, yellow, infuscate, yellow, infuscate; foremargin yellow basally (cf. Fig. 5b). ***Head:*** antenna with unknown number of flagellomeres, left antenna broken after 17$^{th}$ flagellomere, right antenna broken after 6$^{th}$ flagellomere. ***Mesosoma:*** projection of propleuron blunt (cf. Fig. 6f); median areola of mesosoma slightly depressed with carinae laterally and posteriorly (cf. Fig. 7c); propodeal sculpture reduced to small protuberance anteromedially (cf. Fig. 5f); mesopleural suture with transverse carinae along its length; margin between metepimeron and metepisternum smooth, lacking transverse carinae (cf. Fig.7b); carina bordering subpronope posteriorly, not extending to anterior margin of pronotum (cf. Fig. 6b); length of midtibial spur 0.5mm, length of midbasitarsomere 0.6mm; midtibia with 2 pegs at midlength, lacking pegs apically; hind tibia with 3 pegs apically; forewing length 6.2mm. ***Metasoma:*** median syntergite 2+3, length 1.3mm, width 1.0mm.

**Female:** Unknown

**Etymology**: in honor of Kevin Pitz.

**Specimen examined**: HOLOTYPE. ♂, **BOLIVIA**, Dpto. Santa Cruz, Estac. Experimental General Saavedra, [17°15'S 63°10'W], 9.vii.1972, C. Porter [and] L. Stange (head broken, placed on triangle, right hind leg broken after femur), (IMLA).

  

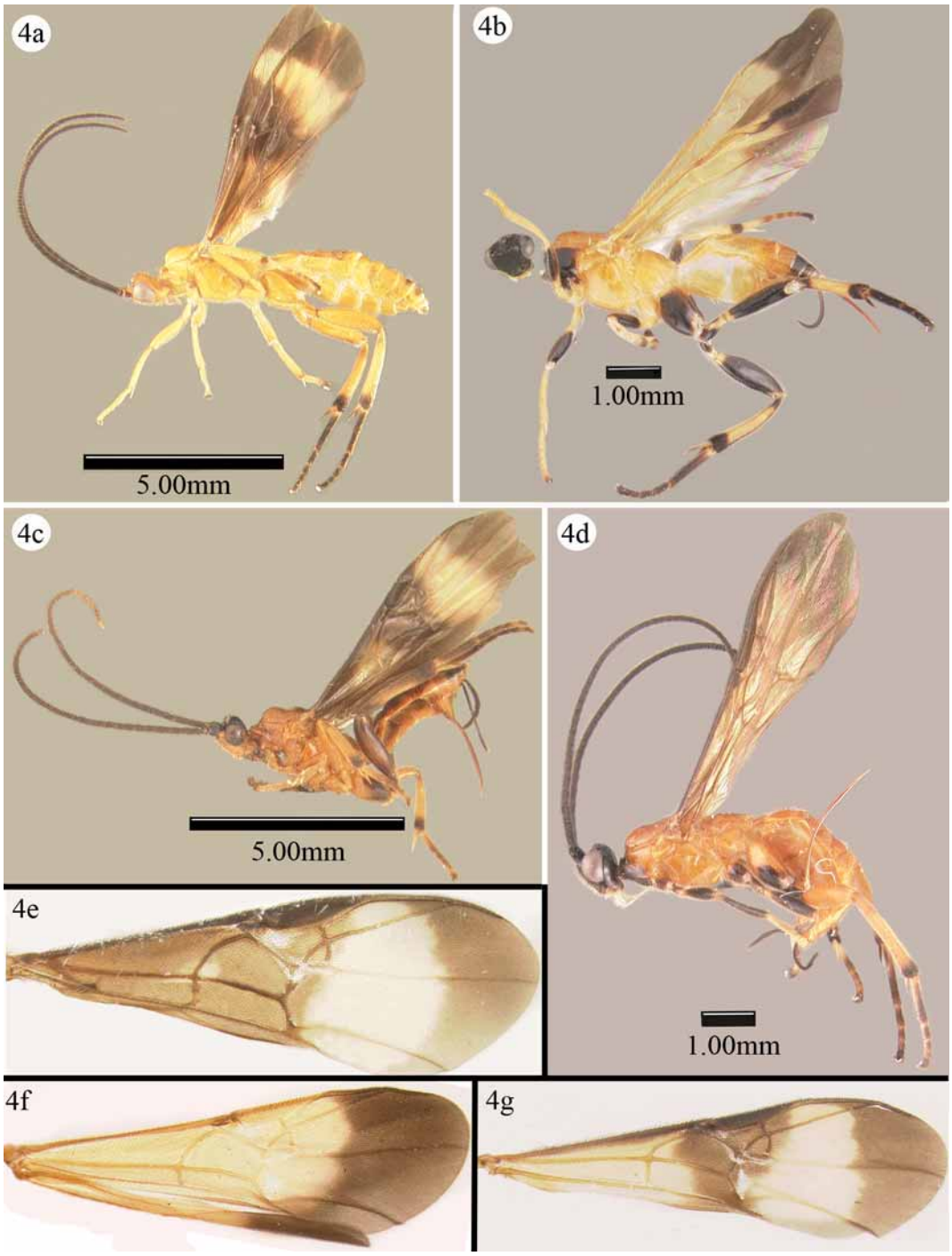


**FIGURE 4.** Lateral habiti a) *A. seltmannae* b) *A. sharanowskiae* c) *A. surinen* d) *A. variegatus* Forewings e) *A. planusfunditus* f) *A. sharanowskiae* g) *A. seltmannae*.

  

***Amputoearinus planusfunditus* Lindsay and Sharkey sp.n. (Fig. 3f)**

**Diagnosis:** This species can be distinguished from all other species of *Amputoearinus* by the following characters; forewing infuscate with yellow patch in basal quarter and a yellow band in apical 3rd quarter; propodeal sculpture reduced to small protuberance anteromedially.

**Description:** Holotype ♀

***Body length:*** 6.9mm. ***Color:*** body yellow except melanic as follows: head, antenna, propleuron, mid, hind tarsus, hind tibia apically, first four metasomal segments; forewing infuscate with yellow patch in basal quarter and a yellow band in apical 3rd quarter (Fig. 4e). ***Head:*** antenna with 41 flagellomeres. ***Mesosoma:*** scutellar sulcus lacking longitudinal carina (cf. Fig. 6d); projection of propleuron blunt (cf. Fig. 6f); median areola of mesosoma slightly depressed medially with carinae laterally and posteriorly (cf. Fig. 7c); propodeal sculpture reduced to small protuberance anteromedially (cf. Fig. 5f); mesopleural suture with weak transverse carinae; margin between metepimeron and metepisternum smooth, lacking transverse carinae (cf. Fig. 7b); carina bordering subpronope posteriorly, extending to anterior margin of pronotum (cf. Fig. 6a); length of midtibial spur 0.6mm, length of midbasitarsomere 0.7mm; midtibia with 4 pegs at midlength, lacking pegs apically; hind tibia with 2–3 pegs apically; forewing length 6.9mm. ***Metasoma:*** median syntergite 2+3, length 1.4mm, width 1.4mm.

**Male:** Unknown

**Etymology:** from the Latin word *planus* meaning smooth, and *funditus* meaning entirely because of the lack of characteristic carinae.

**Specimen Examined:** HOLOTYPE. ♀, [**BRAZIL]**, BR. AM. [Amazonas], Manaus Reserve Ducke, [3°6’48”S 60°1’31”W], 04.ix.1990, Malaise, leg. D. Vidal, (INPA).

***Amputoearinus seltmannae* Lindsay and Sharkey sp.n. (Figs. 4a, 4g)**

**Diagnosis:** This species can be distinguished from all other species of *Amputoearinus* by the following characters; forewing banded from base yellow, infuscate, yellow, infuscate, foremargin infuscate throughout; projection of propleuron blunt; antenna entirely melanic.

**Description:** Holotype, ♀

***Body length:*** 6.6 (6.1–7.5)mm. ***Color:*** body yellow except melanic as follows: antenna, midtarsus, foretibia distally, midtarsus; forewing banded from base yellow, infuscate, yellow, infuscate; foremargin infuscate throughout (Fig. 4g). ***Head:*** antenna with 38 (38–39) flagellomeres. ***Mesosoma:*** scutellar sulcus lacking longitudinal carina (cf. Fig. 6d); projection of propleuron blunt (cf. Fig. 6f); median areola of mesosoma gradually depressed posteriorly to anteriorly with carinae laterally and posteriorly (cf. Fig. 7c); propodeal sculpture reduced to small protuberance anteromedially (cf. Fig. 5f); mesopleural suture with transverse carinae throughout its length; margin between

  

metepimeron and metepisternum smooth, lacking transverse carinae (cf. Fig. 7b); carina bordering subpronope posteriorly, extending to anterior margin of pronotum (cf. Fig. 6a); length of midtibial spur 0.5mm, length of midbasitarsomere 0.7mm; midtibia with 2–3 pegs at midlength, lacking pegs apically; hind tibia with 3 pegs apically; forewing length 6.9 (5.2–7.2)mm. ***Metasoma:*** median syntergite 2+3 length 1.4mm, width 1.3mm.

**Variation**: female paratypes have mesopleural suture with weak and reduced carinae throughout its length.

**Etymology:** in honor of Katja Seltmann.

**Specimen examined**: HOLOTYPE. ♀, **COLOMBIA**, Guaviare, RN [Reserva National] Nukak Maku, C.Moyano, 200m, 2º10’40”N 7[0]º11’25"W, Malaise, Banqueta, Feb 1996, F. Fernandez-F. Escobar, (UNCB).

PARATYPES. **BRAZIL**, ♀, BR. AM. [Amazonas], Manaus, Reserve Ducke, [3°6’48”S 60°1’31”W], 14.vii.1990, Malaise, Vidal Rochal cols. (left antenna broken, right antenna broken at scape) (INPA). **COLOMBIA**: ♀, Caquetá, PNN [Parque Nacional Natural] Chiribiquete Puerto Abeja B4, 0°4'N 72°26'W, 310m, 29.x–12.xi.2000, M.953, J. Forero., (HIC). ♂, Caquetá, PNN [Parque Nacional Natural] Chiribiquete, Rio Cuñare-Amu, Bosque naranja, 0°12’48”N 72°25’25”W, 300m, Malaise, 28.ii.–03.iii.2001, M. Ospina & E. González, (IAvH). **ECUADOR**, ♀, Morona Santiago, Miazal, 50km SE Macas, [2°37’23”S 77°47’41”W], 1–4.vii.1993, 300m, M.&J. Wasbauer, (left antenna broken), (HIC). **PERU**: ♂, Avispas, [12°58’60”S 71°34’W],1–15.x.1962, (AEI). ♂, Dept. of Loreto, Iquitos, Allpahuayo, [3°44’53”S 73°14’50”W], 8–24.vi.2000, Trap H7, I.E Sāāksjārui, leg, (HIC).

### *Amputoearinus sharanowskiae* Lindsay and Sharkey sp.n. (Figs. 4b, 4f, 7b)

**Diagnosis:** This species can be distinguished from all other species of *Amputoearinus* by the following characters; forewing yellow with infuscate band apically; median areola of mesosoma not depressed medially and lacking sharp carinae laterally and posteriorly; projection of propleuron blunt.

**Description:** Holotype ♀

***Body length:*** 6.0mm. ***Color:*** body yellow except melanic as follows: head, antenna, propleuron, fore, mid, hind femur, midtibia distally, midtarsus, hind coxa, trochanter, hind tibia basally and distally, hind tarsus, posterior three terga; apex of forewing infuscate (Fig. 4f). ***Head:*** antenna with unknown number of flagellomeres, antennae broken off at scape, one antenna placed on point and broken after 27$^{th}$ flagellomere. ***Mesosoma:*** scutellar sulcus lacking longitudinal carina (cf. Fig. 6d); projection of propleuron blunt (cf. Fig. 6f); median areola of mesosoma not depressed medially and lacking sharp carinae laterally and posteriorly (cf. Fig. 7d); propodeal sculpture reduced to small protuberance anteromedially (cf. Fig. 5f); mesopleural suture with weak carinae; margin between

metepimeron and metepisternum smooth lacking transverse carinae (Fig. 7b); carina bordering subpronope posteriorly, extending to anterior margin of pronotum (cf. Fig. 6a); length of midtibial spur 0.5mm, length of midbasitarsomere 0.6mm; midtibia with 3–4 pegs at midlength, lacking pegs apically; hind tibia with 5–7 pegs apically; forewing length 6.1mm. ***Metasoma:*** median syntergite 2+3, length 1.3mm, width 1.2mm.

**Male:** Unknown

**Etymology:** In honor of Barb Sharanowski.

**Specimen Examined:** HOLOTYPE. ♀, **COLOMBIA**, Meta, PNN [Parque Nacional Natural] Macarena Borde Rio, quejar, 3º20'N 73º53'W, 460m, Malaise, 24–28.xii.2001, D. Campos, leg. M.2609, (head and antennae detached and placed on triangular point), (IAvH).

### *Amputoearinus surinen* Lindsay and Sharkey sp.n. (Fig. 4c)

**Diagnosis:** This species can be distinguished from all other species of *Amputoearinus* by the following characters; scutellar sulcus lacking longitudinal carina, projection of propleuron blunt, median areola of mesosoma not depressed medially and lacking sharp carinae laterally and posteriorly, propodeum completely smooth, lacking carinae.

**Description:** Holotype ♀

***Body length:*** 6.6 (6.3) mm. ***Color:*** orange except melanic as follows: scape, pedicel, antenna with light brown tips, head posteriorly, propleuron, midtibia apically, hind coxa apically, hind femur, hind tibia basally and apically, hind tarsus; metasoma light brown except for posterior three terga black; forewing infuscate with yellow patch in first quarter and yellow band in apical 3rd quarter (cf. Fig. 4e). ***Head:*** antenna with 36 (40) flagellomeres. ***Mesosoma:*** scutellar sulcus lacking longitudinal carina (cf. Fig. 6d); projection of propleuron blunt (cf. Fig. 6f); median areola of mesosoma not depressed medially and lacking sharp carinae laterally and posteriorly (cf. Fig. 7d); propodeal sculpture completely smooth without carinae (cf. Fig. 5d); mesopleural suture with transverse carinae along its length; margin between metepimeron and metepisternum smooth, lacking transverse carinae (cf. Fig. 7b); carina bordering subpronope posteriorly, extending to anterior margin of pronotum (cf. Fig. 6a); length of midtibial spur 0.6mm, length of midbasitarsomere 0.6mm; midtibia with 4 pegs at midlength, lacking pegs apically; hind tibia with 5–6 pegs apically; forewing length 6.6 (6.2)mm. ***Metasoma:*** median syntergite 2+3 length 1.4mm, width 1.2mm.

**Male:** Unknown

**Variation:** paratype female orange except as follows: black patch laterally on scape and pedicel, antenna with light brown tips, midtarsus brown, hindtibia black apically, hind tarsomeres black, metasoma darker orange than mesosoma.

**Etymology:** named after the Surinen Indians, the earliest known inhabitants of Suriname.

  

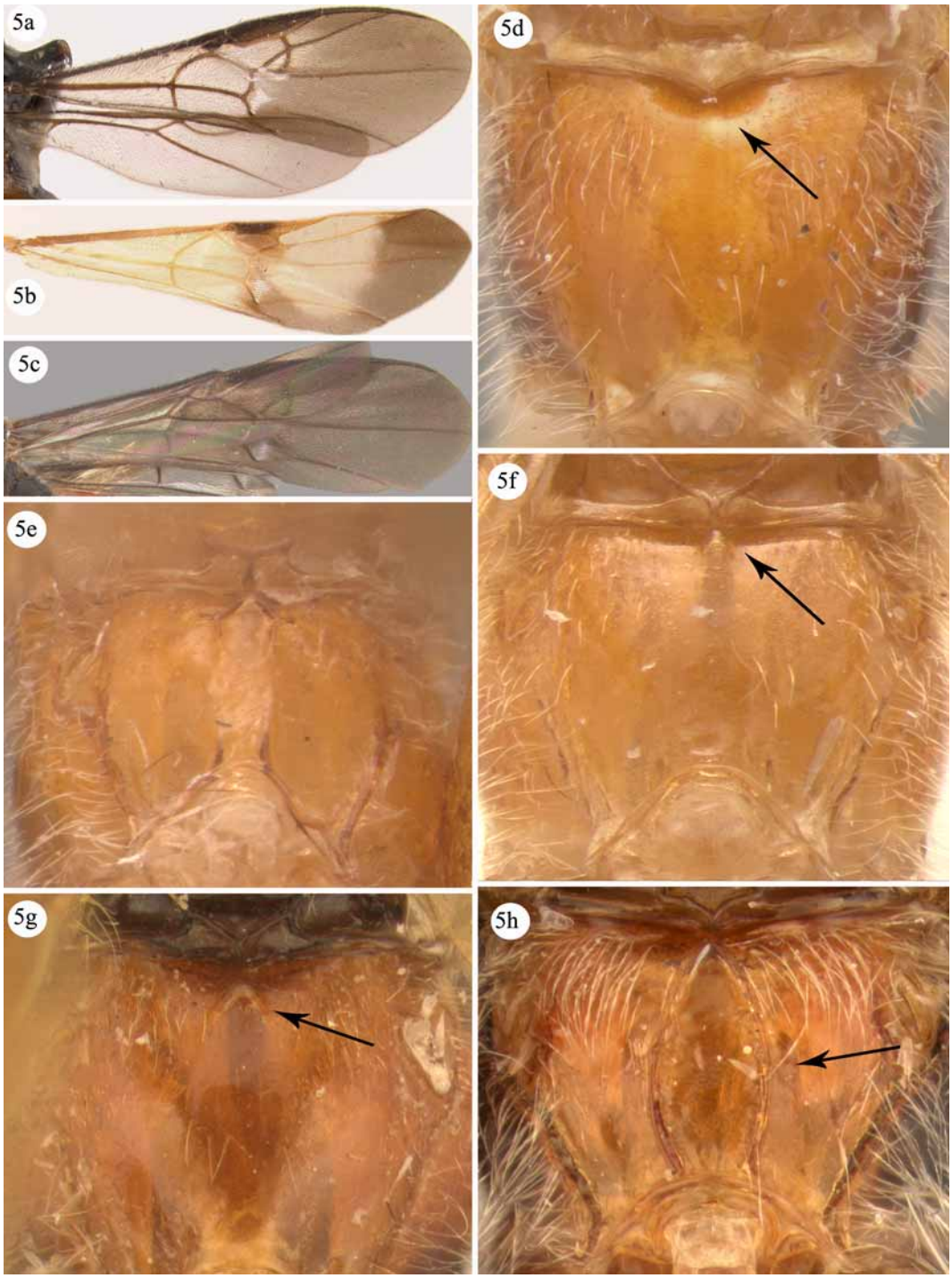


**FIGURE 5.** Forewings: a) *A. niger* b) *A. pectusacutum* c) *A. alafumidus*. Propodeal sculpture: d) ♂ *A. flavocacumen* e) ♀ *A. galbus* f) ♀ *A. gloriae* g) ♀ *A. matamata* h) ♀ *A. niger.*

  

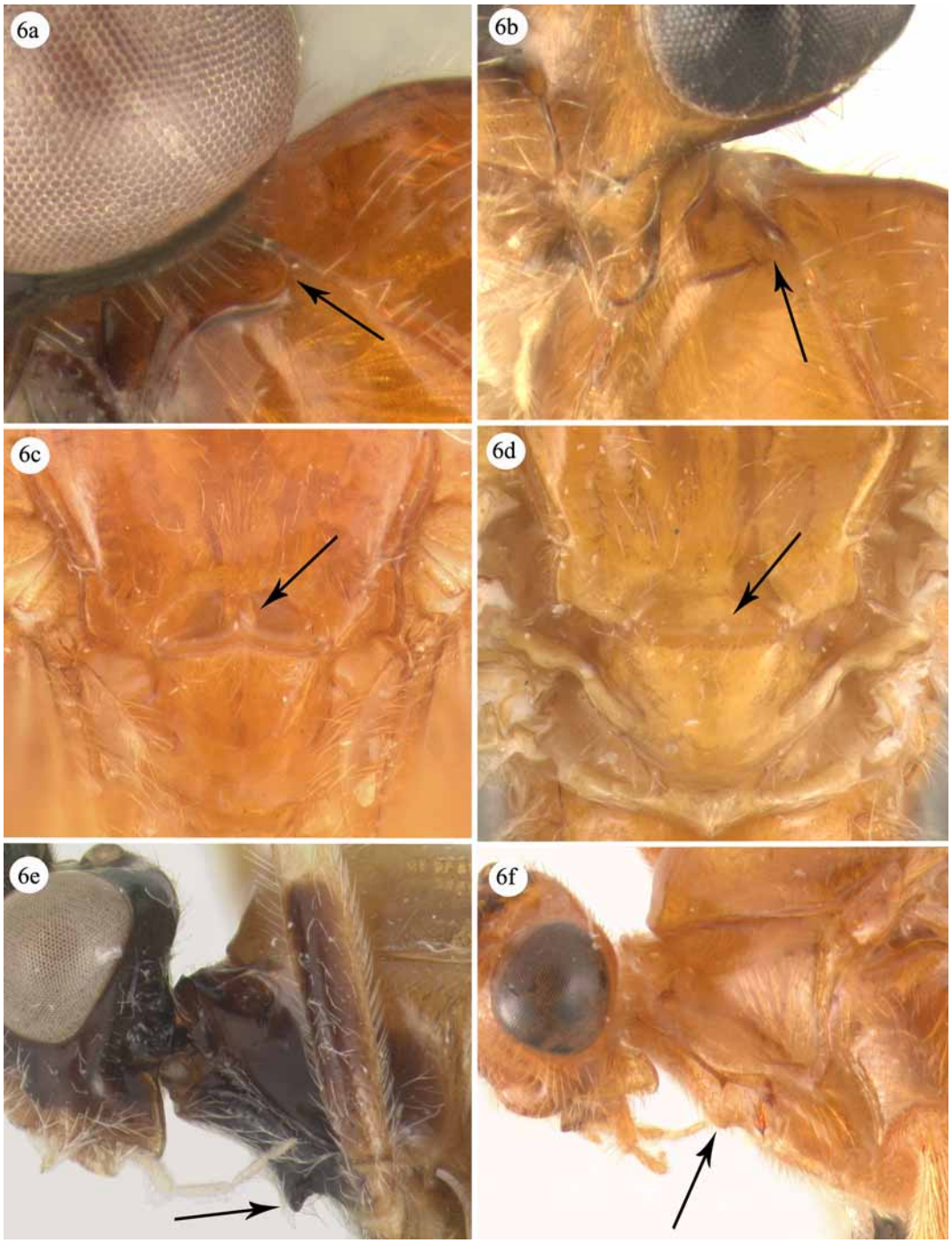


**FIGURE 6.** a) *A. variegatus* carina bordering subpronope posteriorly, extending to anterior margin of pronotum b) *A. galbus* carina bordering subpronope posteriorly, not extending to anterior margin of pronotum c) *A. boringi* dorsal view showing presence of carina on scutellar sulcus d) *A. pectusacutum* dorsal view showing absence of carina on scutellar sulcus e) *A. pectusacutum* projection of propleuron acute f) *A. flavocacumen* projection of propleuron blunt.

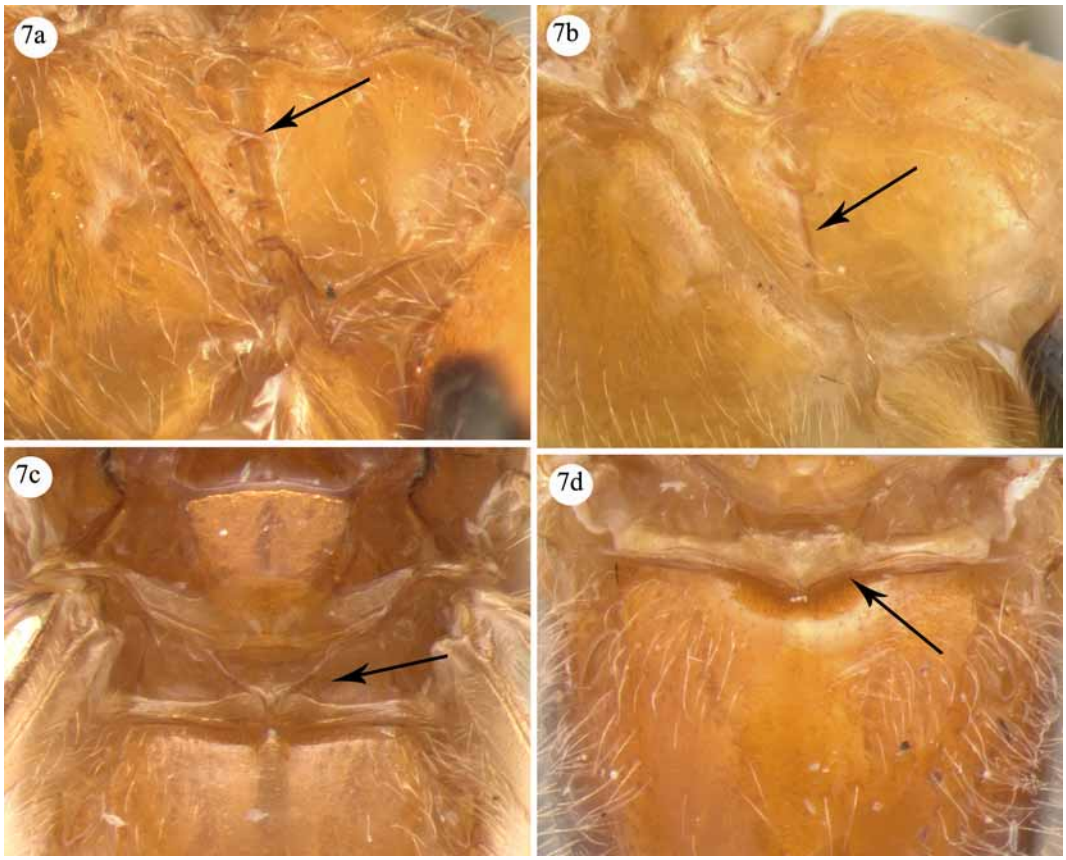


**FIGURE 7.** a) ♀ *A. galbus* margin between metepimeron and metepisternum with transverse carinae b) ♀ *A. sharanowskiae* margin between metepimeron and metepisternum smooth, lacking transverse carinae c) ♀ *A. gloriae* dorsal view showing median areola of mesosoma depressed medially with sharp carinae laterally and posteriorly d) ♂ *A. pectusacutum* dorsal view showing median areola of mesosoma not depressed medially, lacking sharp carinae laterally and posteriorly.

**Specimen examined:** HOLOTYPE. ♀, **SURINAM** [Suriname], Republiek, 45km. S. Paramaribo, [5°30'N 55°12'W], Oct. 26, 1963. D.O. Geijskes, (AEI).

PARATYPE. **BRAZIL**, ♀, Rondonia, 62km SE Ariquemes, [10°52'S 61°57'W], 7–18 Nov. 1995, W.J.Hanson, (BLCU).

### *Amputoearinus variegatus* Lindsay and Sharkey sp.n. (Figs. 4d, 6a)

**Diagnosis:** This species can be distinguished from all other species of *Amputoearinus* by the following characters; forewing yellow with infuscate band apically; margin between metepimeron and metepisternum with transverse carinae; carina bordering subpronope posteriorly, extending to anterior margin of pronotum.

  

**Description:** Holotype ♀

***Body length:*** 7.7 (6.3–8.1) mm. ***Color:*** body yellow except melanic as follows: head, antenna, propleuron, forecoxa, forefemur, foretibia, foretarsus, midcoxa distally, midfemur distally, midtibia, midtarsus, hind coxa anterodistally, hind trochanter, hind tibia with patch distally, hind tarsus; forewing yellow with infuscate band apically (cf. Fig. 4f). ***Head:*** antenna with 43 (40–44) flagellomeres. ***Mesosoma:*** scutellar sulcus lacking longitudinal carina (cf. Fig. 6d); projection of propleuron blunt and lacking ridges (cf. Fig. 6f); median areola of mesosoma slightly depressed medially with sharp carinae laterally and posteriorly (cf. Fig. 7c); propodeal sculpture reduced to small protuberance anteromedially (cf. Fig. 5f); mesopleural suture with transverse carinae along its length; margin between metepimeron and metepisternum with 4 transverse carinae (cf. Fig. 7b); carina bordering subpronope posteriorly, extending to anterior margin of pronotum (Fig. 6a); length of midtibial spur 0.6mm, length of midbasitarsomere 0.7mm; midtibia with 4 pegs at midlength, 1 peg apically; hind tibia with 6–8 pegs apically; forewing length 6.8 (5.9–7.1)mm. ***Metasoma:*** median syntergite 2+3 length 1.4mm, width 1.2mm.

**Male:** Unknown

**Variation:** Majority of paratypes with: body orange except melanic as follows: antenna, black patch posterior to eye, forefemur apically, foretibia, midfemur apically, midtibia except yellow patch distally, tarsi apically; hind trochanter, hind tibia apically, hind tarsus; ovipositor sheaths. Female paratype from Province Puntarenas differs as follows: body orange except for melanic as follows: antenna, black patch posterior to eye, foretibia, forefemur apically, midtibia, midfemur apically, hind trochanter, hind tibia apically, hind tarsus; mesopleural suture with strong transverse carinae ventrally, one strong carina medially, weak carinae dorsally.

**Etymology:** from the Latin *variegatus* meaning of different sorts, due to the color variation of this species.

**Specimen Examined:** HOLOTYPE. ♀, **COSTA RICA**, Alajuela, Penas Blancas, [10°4'N 84°37'W], 700m, 9.vi.1987, E. Cruz, MT, (AEI).

PARATYPES. **COSTA RICA**: ♀, Prov. Guanacaste, Est. Pitilla, 700m, 9km S Sta. Cecilia, P.N. Guanacaste, [10°15'N 85°49'W], 27.vi–14.viii.1992, P. Rios L-N 330200.380200, (INBio CR1000 774564). ♀, Prov. Puntarenas, Golfito, P.N. Rincón, C. Rincón, La Tigrilla, [8°39'N 83°9'W], 600m, 15 JUL 15 AGO [August] 2000, J. Azofeifa, Malaise, L_S_523600_274500 #58106, (INBio). ♀, Alajuela, Penas Blancas, [10°4'N 84°37'W], 700m, 9.vi.1987, E. Cruz, MT, (AEI). ♀, Sector Las Pailas, P. N. Rincón de las Vieja. Prov. Guana[caste], [10°9'N 85°27'W], 800m, 6–7 Jun 1994, D. Garcia, L N 307300_388600 #3050, (INBio CR1000 908225). 2♀, 2km N. Colonia Blanca, 800m, P.N. Rincon de la Vieja, Prov. Alajuela, [10°19'N 84°15'W], 18 a 28 jun 1992, III curso Parataxon, L-N 308800, 397800, (HIC). ♀, Est. Pitilla, 700m, 9km S Sta. Cecilia, P.N. Guanacaste, Prov. Guanacaste, [10°15'N 85°49'W], Jul a Ago [August] 1992, Tp Malaise L-N 330200, 380200, (INBio CR1000 823928). ♀, Guan[acaste] 3km SER Naranjo,

  

[10°31’60”N 85°0’W], May 1992, F.D. Parker, (BLCU). ♀, Guan[acaste], 3km SE P. Naranjo, [10°31’60”N 85°0’W], 21–30 Jun 1992, F.D. Parker, (BLCU). ♀, Alajuela, Penas Blancas, [10°4’N 84°37’W], 700m, 7.vii.1987, E. Cruz, MT, (CNCI).

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