

## Contributions to the diversity of Platygastriinae (Hymenoptera: Platygasteridae) – Part 1

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### Platygastriinae, new species, *Euxestonotus*, *Ipitrachelus*, *Isostasius*, *Leptacis*, *Metaclisis*, *Platygaster*

**Abstract.** The following 16 species are described as new: *Euxestonotus grammeri* (Togo), *Ipitrachelus australiensis* (Australia), *Isostasius australiensis* (Australia), *Leptacis echidna* (Australia), *L. hydepiercei* (Togo), *L. plantationis* (Togo), *L. queenslandensis* (Australia), *L. zogbeganensis* (Togo), *Metaclisis tyrestaensis* (Sweden), *Platygaster ecuadoriana* (Ecuador), *P. falstrica* (Denmark), *P. hedegaardi* (Togo), *P. interrupta* (Togo), *P. jaloszynskii* (Brazil), *P. jenseni* (Denmark), and *P. junci* (Argentina). The work is illustrated by 30 text-figures.

### INTRODUCTION

Platygastriinae is a subfamily of tiny wasps, predominantly egg-larval or egg-pupal parasitoids of gall midges (Diptera, Cecidomyiidae), less frequently developing in adult Hemiptera and eggs of Coleoptera. Several species are important in biological control. Platygasterids are taxonomically challenging insects, and even the European fauna is poorly studied, as demonstrated by new species being frequently described from areas where other insect orders and families are traditionally well-studied. In tropical parts of the world an even smaller part of the diversity has been described, though the number of species does not seem much higher than at more northern latitudes. In fact, it seems probable that many species have a very wide, even cosmopolitan distribution over several biogeographical regions, thus species should just as well be examined on a global basis, not from isolated countries or regions. During my examination of platygasterids from many parts of the world, acquired through various sources, a number of new species have appeared. They are described below.

### MATERIAL AND METHODS

The specimens were mounted on card points on pins, and measurements were taken with a Leitz Wetzlar microscope along the longest and widest dimensions of the relevant body parts.

Terminology: Standard abbreviations used are A1-A10 = antennal segments 1-10, OOL = distance between lateral ocellus and eye, LOL = distance between lateral and anterior ocelli, POL = distance between lateral ocelli, and T1-T6 = tergites 1-6.

The material is deposited in the Swedish Museum of Natural History, Stockholm (SMNH) or in the Zoological Museum, University of Copenhagen, Denmark (ZMUC).

### TAXONOMY

#### *Euxestonotus grammeri* sp. nov.

(Fig. 1)

**Type material.** Holotype (♀): Togo, Région des Plateaux: N of Kessibo-Wawa, at the border to Ghana (N of Badou), at river Wawa (7°42'11" N, 0°35'26" E), 180 m, 24.iv.2008, M. v. Tschirnhaus leg. (ZMUC). Paratype: (1 ♂): same data as holotype (ZMUC).

**Diagnosis.** Head hardly twice as wide as long; female A2 1.7 times as long as wide, preapical antennal segments of female about as wide as long; fore wing with sparse microtrichia; female metasoma 2.4 times as long as wide, T1 1.4 times as wide as long, T2 1.3 times as long as wide; A1-A2 and legs brightly coloured; body length around 1 mm.

**Description.** Female. Body length 0.9 mm. Black; legs including coxae pale brownish yellow, mandibles and A1-A2 light brown, A3-A10 dark brown.

Head from above 1.95 times as wide as long, 1.2 times as wide as mesosoma; occiput rounded, finely and much transversely reticulate-coriaceous; vertex and frons smooth. OOL about equal to ocellar diameter. OOL:POL:LOL = 1.1:5.2:2.2. Head in frontal view 1.2 times as wide as high. Antenna (Fig. 1) with A1 0.8 as long as height of head, hardly noticeable longer than distance between inner orbits. Length:width A1-A10 = 10.5:1.9; 3.0:1.8; 1.0:1.0; 1.9:1.4; 1.8:1.2; 1.4:1.1; 2.0:1.9; 2.0:2.0; 2.0:2.2; 3.0:2.0. Flagellar pubescence short but distinct.

Mesosoma 1.5 times as long as wide, 1.1 times as high as wide. Sides of pronotum smooth, in upper half with sparse hairs. Mesoscutum with sparse and scattered hairs, in anterior third finely reticulate-coriaceous, rest smooth; notauli missing in extreme anterior part, otherwise as usual for genus. Mesopleuron smooth. Scutellum sparsely hairy, smooth. Metapleuron with pilosity all over. Propodeal carinae parallel, well separated but area between them distinctly longer than wide.

Fore wing 2.5 times as long as wide, 0.8 times as long as entire body, surpassing tip of metasoma by a distance equal to slightly less than combined length of T4-T6, clear, with rather sparse but distinct microtrichia; marginal cilia 0.06 width of wing. Hind wing 5.8 times as long as wide; marginal cilia about half the width of wing.

Metasoma as long as rest of body, 2.4 times as long as wide, 0.85 as wide as mesosoma. Length:width T1-T6 = 3.5:5.0; 14.5:11.0; 2.5:9.0; 2.0:7.0; 1.5:5.2; 2.0: 3.5. T1 with two longitudinal carinae. T2 slightly striated in basal foveae to 0.2 length of tergite, rest of T2 smooth. T3-T6 with faint microsculpture.

Male. Body length 0.8 mm. As female, but A4 angular at inner apex, about twice as long as A3, and 1.4 times as long as wide. Antennae damaged (shrunk), but preapical segments each about as long as wide, A10 twice as long as A9. Flagellar pubescence fully as long as width of segments. Metasoma 0.85 as long as rest of body.

**Differential diagnosis.** Runs to *E. phobos* Buhl, 1998 (from Malawi, Kenya, South Africa) in Buhl's (1998) key, but *E. phobos* has T2 almost twice as long as wide, fore wings rather densely hairy, hind wings with marginal cilia hardly 0.3 width of wing, metasoma less sharply pointed, antennae dark brown with A1 only basally lighter, and *E. phobos* is larger, 1.1-1.4 mm. *E. charon* Buhl, 2004 (from Nigeria, only male known) has male A4 about three times as long as A3, and flagellar pubescence only 0.6 width of segments.

**Etymology.** Named in honour of American actor Kelsey Grammer.

**Distribution.** Only known from the southwest of Togo.

***Iphitrachelus australiensis* sp. nov.**

(Fig. 2)

**Type material.** Holotype (♂): Australia, Queensland, Mount Glorious (27°19'54" S, 152°45'29" E), Malaise trap in rain

forest, 28.x.-26.xi.1998, N. Power leg. (ZMUC). Paratypes: (2 ♂♂): same locality but 7.ii.-2.iii.1998 (ZMUC).

**Diagnosis.** OOL about 0.25 of LOL, hardly as long as ocellus; A1 with wide lamella, male A4-A8 with constrictions apically, with hairs hardly more than twice the length of each segment; T1 with scales which are separated in more than apical half.

**Description.** Male. Body length 0.65-0.80 mm. Dark brown, head blackish; A1-A2 and legs including coxae pale yellowish; A3-A10 and mandibles light brownish.

Head from above 2.0 times as wide as long, as wide as mesosoma across tegulae, evenly and sharply reticulate; occiput postero-medially with a deep, roundish fovea. OOL hardly as long as ocellar diameter, and hardly one-fourth of LOL. Head in frontal view 1.5 times as wide as high. Antenna (Fig. 2): A1 with a wide lamella, hardly noticeable longer than height of head, 1.15 as long as distance between inner orbits. Length:width A1-A10 = 11.5:3.5; 2.2:1.6; 2.2:1.7; 4.0:1.7; 4.2:1.8; 3.2:2.1; 3.6:1.5; 2.8:1.5; 2.5:1.4; 3.8:1.3. Flagellar hairs at their longest (on A5) about twice as long as length of segment.

Mesosoma 1.3 times as long as wide, wider than high (16:13). Sides of pronotum reticulate in about upper 0.3 and lower 0.4, smooth in between. Mesoscutum and scutellum reticulate, virtually bare, separated by a wide and smooth scuto-scutellar groove; notauli complete, posteriorly widened and smooth, mid lobe posteriorly finely pointed. Mesopleuron smooth. Metapleuron antero-medially smooth and with a few pilae, otherwise covered by a whitish reticulate membrane projecting behind, upper and lower corners forming almost right angles, hind margin medially with an incision. In dorsal view propodeal membrane pointed postero-laterally, antero-medially separated, the two inner sides converging and meeting postero-medially.

Fore wing longer than entire body (50:48), 2.3 times as long as wide, almost clear, with fine and dense microtrichia; submarginal vein medium brown, almost 0.25 as long as wing; marginal cilia hardly visible. Hind wing about six times as long as wide; marginal cilia 0.3 width of wing.

Metasoma 0.7 times as long as rest, 1.9 times as long as wide, 0.65 as wide as mesosoma. T1 with white foamy scales which are separated in more than apical half, overlapping T2 to one-seventh the length of this. T2 1.33 times as long as wide, antero-laterally outside each scale with a longitudinal depression to hardly 0.3 length of tergite. Apical tergites smooth, combined 0.2-0.3 times as long as T2.

**Differential diagnosis.** *I. australiensis* runs to *I. gracilis* Masner, 1957 in Masner's (1976) key, but that species has narrow lamella on A1, and T1 with scales almost completely confluent. S.W. Indian *I. neogracilis* Anjana & Rajmohana, 2017 (only female known) also has almost completely confluent foamy structures on T1. *I. shajii* Anjana & Rajmohana, 2017 has distinctly longer OOL than in *I. australiensis*. Afrotropical *I. africanus* Huggert, 1976, and *I. danielssoni* Buhl, 2005 has T1 with only remnants of hyaline tissue. Philippine *I. masneri* Buhl, 1997 has flagellar hairs longer than in *I. australiensis*. *I. korensis* Megyaszi, 1999 has shorter antennae and OOL longer than in *I. australiensis*.

**Etymology.** Named after the country with the type locality.

**Distribution.** Only known from the easternmost part of Queensland.

***Isostasius australiensis* sp. nov.**

(Fig. 3)

**Type material.** Holotype(♀): Australia, SW Australia, west coast, Canal Rocks, 4.5 km SSW<sup>1</sup> Yallingup, 12.4 km SW<sup>1</sup> Dunsborough (33,41 S, 115,00 E), coastal dunes and rocks, dry ground, salt- and wind-exposed, 21.ii.1989, M. v. Tschirnhans leg. (ZMUC). Paratype: (1 ♂): same data as holotype (ZMUC).

**Diagnosis.** Head finely pustulated; basal flagellar segments of female each about as long as wide, A7-A8 subequal; notauli absent; femora dark reddish brown, tibiae slightly lighter.

**Description.** Female. Body length 1.1 mm. Black, A1-A2 slightly lighter; mandibles, coxae and femora dark reddish brown; trochanters, tibiae and segments 1-4 of tarsi slightly lighter brown.

Head from above 2.1 times as wide as long, almost 1.2 times as wide as mesosoma; occiput and vertex rounded, finely pustulated; frons finely but distinctly reticulate-coriaceous (not transversely so), with a longitudinal midline from anterior ocellus to antennal insertions. OOL slightly longer than diameter of lateral ocellus; OOL:POL:LOL = 2.0:6.0:2.5. Head in frontal view 1.3 times as wide as high. Antenna with A1 0.6 times as long as height of head, 0.7 as long as distance between inner orbits. Length:width A1-A10 = 9.5:2.8; 3.0:1.9; 1.0:0.9; 1.0:1.0; 0.9:1.0; 1.0:1.2; 2.0:2.5; 1.5:3.0; 1.8:3.4; 4.2:3.3. Flagellar pubescence short.

Mesosoma 1.33 times as long as wide, 1.05 times as wide as high. Sides of pronotum almost uniformly reticulate-coriaceous. Mesoscutum evenly covered by decumbent hairs, uniformly reticulate-coriaceous, without notauli; scuto-scutellar grooves narrowly triangular, with a few fine hairs along fore margin. Mesopleuron almost smooth, below tegula with four longitudinal furrows, the two lower ones short, only present near hind margin. Scutellum sparsely hairy, evenly convex, above level of mesoscutum, finer reticulate-coriaceous than this. Metapleuron with pilosity all over. Propodeal carinae short, slightly diverging, area between them much wider than long.

Fore wing 1.9 times as long as wide, barely surpassing tip of metasoma, faintly infuscated, with fine and dense microtrichia; submarginal vein one-third as long as wing, light brown, apical knob dark brown; marginal cilia 0.06 width of wing. Hind wing 4.2 times as long as wide, with two hamuli; marginal cilia almost 0.2 width of wing.

Metasoma fully 0.8 times as long as rest of body, 1.9 times as long as wide, only slightly wider than high, 0.9 as wide as mesosoma. Length:width T1-T3 = 2.0:7.5; 19.0:15.5; 8.0:9.8. T1 with several, more or less incomplete weak longitudinal ridges not reaching anterior margin. T2 basally striated to about 0.2 of length from base, medially to about 0.1 of length, also with a few hairs basally, smooth behind striation, but in about hind 0.25 with fine reticulate microsculpture. The pointed apical T3 with rough microsculpture except at margins.

Male. Body length 1.1 mm. Length:width A1-A10 = 10.0:2.6; 3.2:2.0; 1.1:1.0; 1.0:1.1; 1.0:1.4; 1.1:2.1; 2.0:3.0; 1.8:3.0; 2.0:3.0; 5.0:3.0. Flagellar pubescence about 0.2 width of segments. Metasoma 0.8 times as long as rest of body, apical tergites combined 0.25 as long as T2.

**Differential diagnosis.** The hitherto only known Australian (Tasmanian) species of the genus, *I. braesia* (Walker, 1839) has notauli, this is also the case for Indian *I. poroicus* Mukerjee, 1981, Palaearctic *I. punctiger* (Ness von Esenbeck, 1834), *I. scrutator* (Walker, 1835), Neotropical *I. crassus* Brues, 1922, *I. subfilicornis* Buhl, 2004, and Vietnamese *I. achterbergeri* Buhl, 2009.

Afrotropical *I. polaszeki* Buhl, 2004 has head with transverse sculpture, A7 relatively much smaller than A8, and T3 longer than in *I. australiensis*. Nearctic *I. fascipennis* Ashmead, 1893 has notauli indicated posteriorly, *I. musculus* Ashmead, 1887 is shiny black with black coxae and black knob of submarginal vein. *I. inserens* (Kirby, 1800) has blackish legs and black knob of submarginal vein. *I. affinis* (Walker, 1835) has blackish brown legs. All *Isostasius*-species described by Szabó (1981) have A3 longer than wide. *I. andriescui* Fabritius & Grellmann, 1971 has different dimensions of basal and preapical flagellar segments.

**Etymology.** Named after the country with the type locality.

**Distribution.** Only known from the southwestern tip of Australia.

***Leptacis echidna* sp. nov.**

(Figs. 4-5)

**Type material.** Holotype (♀): Australia, Queensland, Mount Glorious (27°19'54" S, 152°45'29" E), Malaise trap in rain forest, 28.x.-26.xi.1998, N. Power leg. (ZMUC). Paratypes: (1 ♀, 2 ♂♂): same data as holotype (ZMUC).

**Diagnosis.** A small species without hyperoccipital carina; female A4 fully 2.5 times as long as A3, almost twice as long as A5, A8-A9 each slightly transverse; scutellar spine reaching anterior margin of T1; fore wing 3.25 times as long as wide, marginal cilia fully 0.5 width of wing; female metasoma hardly as long as mesosoma.

**Description.** Female. Body length 0.65-0.75 mm. Dark brown, metasoma medium brown, A1-A6, mandibles and legs including coxae light brownish.

Head from above 1.8 times as wide as long, without hyperoccipital carina; occiput distinctly, transversely reticulate-coriaceous; vertex and frons faintly reticulate, on frons with rather large and much transverse meshes. OOL fully as long as diameter of lateral ocellus; OOL:POL:LOL = 1.0:2.5:6.0. Eyes bare. Head in frontal view almost 1.2 times as wide as high. Antenna (Fig. 4) with A1 0.85 as long as height of head, 1.1 times as long as distance between inner orbits. Length:width A1-A10 = 9.5:1.8; 2.1:1.1; 1.0:0.9; 2.6:0.8; 1.4:0.9; 1.2:1.0; 2.2:1.8; 1.8:2.0; 1.8:2.0; 3.2:1.8. Flagellar pubescence distinct.

Mesosoma 1.6 times as long as wide, 1.15 times as high as wide. Sides of pronotum smooth except for faint reticulation in upper anterior corner, in upper half with very sparse hairs. Mesoscutum evenly and rather sparsely hairy, weakly reticulate-coriaceous, postero-medially smooth, without notauli; hind margin slightly and broadly rounded with five long hairs over each scuto-scutellar groove. Mesopleuron smooth except for three weak lines just below tegulae. Scutellum (Fig. 5) almost smooth, moderately hairy, with a translucent pointed spine just reaching anterior margin of T1, scutellum also translucent below base of spine. Metapleuron smooth and bare, with short white pilosity only along hind margin. Propodeal carinae low, very slightly separated.

Fore wing 1.1 times as long as body, 3.25 times as long as wide, slightly pointed at apex, faintly infuscated, with fine and dense microtrichia; marginal cilia fully half the width of wing. Hind wing about 10 times as long as wide; marginal cilia 1.6 times as long as width of wing.

Metasoma about 0.7 times as long as rest of body, 1.6 times as long as wide, hardly as long as and hardly as wide as mesosoma. Length:width T1-T2 = 3.2:5.0; 11.0:10.0. Apical tergites combined 0.25 as long as T2. T1 smooth and swollen in anterior half, behind with two

longitudinal carinae, laterally with hairs which also form two small patches at base of T2, covering two tiny basal foveae. T2 smooth, apical tergites with reticulation on most of visible part.

Male. Body length 0.60-0.65 mm. Length:width A1-A10 = 9.0:1.6; 2.0:1.3; 1.0:1.0; 2.5:1.4; 1.8:1.0; 2.7:0.9; 3.0:1.4; 2.8:1.3; 2.8:1.2; 3.6:1.2. Flagellar hairs mostly slightly longer than width of segments; A4 with a fine triangular projection around midlength.

**Differential diagnosis.** Approaching *L. bismarckensis* Buhl, 1997, but that species has fore wing shorter than body, marginal cilia 0.4 width of wing, and scutellar spine shorter than in *L. echidna*. Malaysian *L. reticuliceps* Buhl, 2001 has spine only half as long as propodeum. Afrotropical *L. aramis* Masner, 1960 has longer female A4, and Afrotropical *L. longiciliata* Buhl, 2003 has head rather uniformly reticulate, and shorter scutellar spine and shorter marginal cilia on fore wings than *L. echidna*. Indonesian *L. mymaroides* Buhl, 2008 has fore wing 2.9 time as long as wide, marginal cilia of hind wing twice as long as wing width, and metasoma as long as rest of body.

**Etymology.** Named after the Australian mammal family Tachyglossidae the species of which have coarse hairs which also characterise the present new species (unusually hairy wings).

**Distribution.** Known from the easternmost part of Queensland only.

***Leptacis hydepiercei* sp. nov.**  
(Figs. 6-7)

**Type material.** Holotype (♀): Togo, Région des Plateaux: Otandjobo near Zogbégan (SE of Badou), at river Otandjoboli (7°34'42" N, 0°41'37" E), 500 m, at river, swept, cocoa plantation, 21.iv.2008, M. v. Tschirnhaus leg. (ZMUC).

**Diagnosis.** A small species with hyperoccipital carina; female A4 about three times as long as wide, fully twice as long as A3, A9 about 1.2 times as long as wide; scutellar spine in lateral view about two-thirds as long as propodeum; fore wing 2.8 times as long as wide, marginal cilia one-third the width of wing; female metasoma 0.9 as long as rest of body.

**Description.** Female. Body length 0.7 mm. Blackish, T1 light brown; A1, mandibles and legs including coxae light yellowish brown; A2-A6 and tegulae medium brown, A7-A10 dark brown.

Head from above 1.85 times as wide as long, 1.2 times as wide as mesosoma, reticulate with large meshes which are distinctly transverse on occiput and vertex, only slightly on frons. Hyperoccipital carina low but sharp. OOL about half as long as diameter of lateral ocellus; OOL:POL:LOL = 0.5:6.5:3.0. Head in frontal view wider than high (13:12). Eyes with a few very short hairs. Antenna (Fig. 6) with A1 0.8 as long as height of head, 1.2 as long as distance between inner orbits. Length:width A1-A10 = 9.5:2.0; 2.8:1.1; 1.1:0.8; 2.3:0.8; 1.2:1.0; 1.2:1.0; 2.1:1.3; 2.1:1.8; 2.2:1.9; 3.8:1.9. Flagellar pubescence distinct, numerous setae slightly more than half the width of segments.

Mesosoma 1.6 times as long as wide, 1.15 times as high as wide. Sides of pronotum smooth, in upper half with very few hairs. Mesoscutum faintly reticulate-coriaceous, rather sparsely and evenly hairy, without notauli; hind margin narrowly brownish, medially slightly convex over base of scutellum, at each side with a couple of long hairs over each negligible groove. Mesopleuron smooth, with only a single impressed longitudinal line just below tegula. Scutellum (Fig. 7)

sculptured and hairy as mesosocutum; spine slightly brownish translucent, about two-thirds as long as propodeum. Metapleuron smooth and bare, with long whitish pilosity in less than posterior half. Propodeal carinae rather low, translucent brown, slightly but distinctly separate.

Fore wing 0.9 times as long as entire body, surpassing apex of metasoma by a distance equal to 2.5 times the combined length of T3-T6, 2.8 times as long as wide, almost clear, with moderately sparse and distinct microtrichia; marginal cilia one-third the width of wing. Hind wing 9.3 times as long as wide; marginal cilia 1.15 times as long as width of wing.

Metasoma 0.9 times as long as rest of body, 2.0 times as long as wide, 0.9 times as wide as mesosoma. Length:width T1-T2 = 4.0:4.5; 12.0:10.0. T3-T6 combined only 0.3 as long as T2, T6 much transverse (about 3 times as wide as long). T1 with two weak longitudinal carinae, with a transverse depression around midlength. T2 with two small, slightly pubescent basal foveae. Hind 0.2 of T2 and most of T3-T6 with distinct reticulate sculpture.

Male. Unknown.

**Differential diagnosis.** Runs to *L. hanseni* Buhl, 2010 in Buhl's (2011a) key, but that species has stronger scutellar spine, more elongate wings with longer marginal cilia, and shorter metasoma than *L. hydepiercei*. *L. porthos* Masner, 1960 has longer scutellum and shorter metasoma than *L. hydepiercei*.

**Etymology.** Named in honour of American actor David Hyde-Pierce.

**Distribution.** Only known from the southwest of Togo.

### ***Leptacis plantationis* sp. nov.**

(Figs. 8-9)

**Type material.** Holotype (♀): Togo, Région des Plateaux: Abriwa-Nko, about 5 km N of Badou, at creek Ègnulu-Agbadja (7°37'18" N, 0°36'13" E), 310 m, plantation (cocoa, avocado), 24.iv.2008, M.v. Tschirnhaus leg. (ZMUC).

**Diagnosis.** A small species with head 1.85 times as wide as long, with a weak hyperoccipital carina; female A4 1.8 times as long as A3, A7 1.2 times as long as A8, A9 slightly transverse; notauli absent; scutellar spine reaching middle of T1; fore wing 3.2 times as long as wide, with dense microtrichia, marginal cilia fully one-third the width of wing; female metasoma 0.8 as long as rest of body.

**Description.** Female. Body length 0.65 mm. Dark brownish, T1 lighter; A1, mandibles, and legs including coxae light brownish.

Head from above 1.85 times as wide as long, 1.2 times as wide as mesosoma. Occiput strongly and slightly transversely reticulate, smoother in posterior third. Hyperoccipital carina low and indistinct but almost complete. Vertex finely and distinctly reticulate-coriaceous, hardly transversely so. OOL equal to diameter of lateral ocellus. Frons superficially, slightly transversely reticulate with rather large meshes. OOL:POL:LOL = 1.0:5.0:2.5. Eyes bare. Head in frontal view hardly more than 1.1 times as wide as high. Antenna (Fig. 8) with A1 0.9 times as long as height of head, 1.15 times as long as distance between inner orbits. Length:width A1-A10 = 9.2:1.7; 2.8:1.1; 1.2:0.8; 2.2:0.8; 1.2:1.0; 1.0:1.0; 2.2:1.5; 1.8:2.0; 1.8:1.9; 3.3:1.9. Flagellar pubescence distinct.

Mesosoma 1.5 times as long as wide, 1.2 times as high as wide. Sides of pronotum smooth, in upper 0.4 with three rows of hairs. Mesoscutum with fine rugosity in anterior 0.4, smoother behind, evenly and moderately densely hairy, without notauli; hind margin slightly rounded, at each side with three hairs over each small scuto-scutellar groove. Mesopleuron smooth except for four fine longitudinal lines just below tegula. Scutellum (Fig. 9) reaching about middle of T1, almost smooth, with slightly denser hairs than mesoscutum, in posterior half light brownish. Spine without lamella below. Metapleuron smooth, with pilosity only along posterior margin. Propodeal carinae low, dark, close together but separate.

Fore wing 3.2 times as long as wide, clear, with dense and moderately fine microtrichia, fully 0.9 as long as entire body; marginal cilia about 0.35 width of wing. Hind wing 8.6 times as long as wide; marginal cilia 1.3 times as long as width of wing.

Metasoma 0.8 times as long as rest of body, 1.1 times as long as mesosoma, 1.9 times as long as wide, 0.9 as wide as mesosoma. Length: width T1-T2 = 3.3:4.0; 10.0:9.0; T3-T6 very short, combined 0.3 as long as T2. T1 smooth, with two well separated parallel longitudinal carinae, swollen in anterior half, with only sparse hairs standing out from sides. T2 along anterior margin with a narrow margin of pilosity and two small, roundish, pubescent basal foveae, otherwise smooth.

Male. Unknown.

**Differential diagnosis.** Runs to *L. tenuis* Buhl, 2005 in Buhl's (2011a) key, but *L. tenuis* has A7 1.5 times as long as A8, and fore wing 2.9 times as long as wide. Could also run to *L. microcera* Buhl, 2003 in the mentioned key, but that species has relatively wider head and shorter scutellar spine than *L. plantationis*, and scattered long microtrichia on fore wings. *L. hanseni* Buhl, 2011 has A1 1.1 times as long as height of head, and metasoma shorter than mesosoma. The also similar *L. orientalis* Buhl, 1997 from the Philippines has A3 relatively longer, A7 1.5 times as long as A8, and it is at least 0.9 mm. Likewise, *L. kierkegaardi* Buhl, 1997 from the Bismarck Archipelago has relatively longer A3 and less transverse head, and it is 0.9 mm.

**Etymology.** The name refers to the type locality, a plantation.

**Distribution.** Known from the southwest of Togo only.

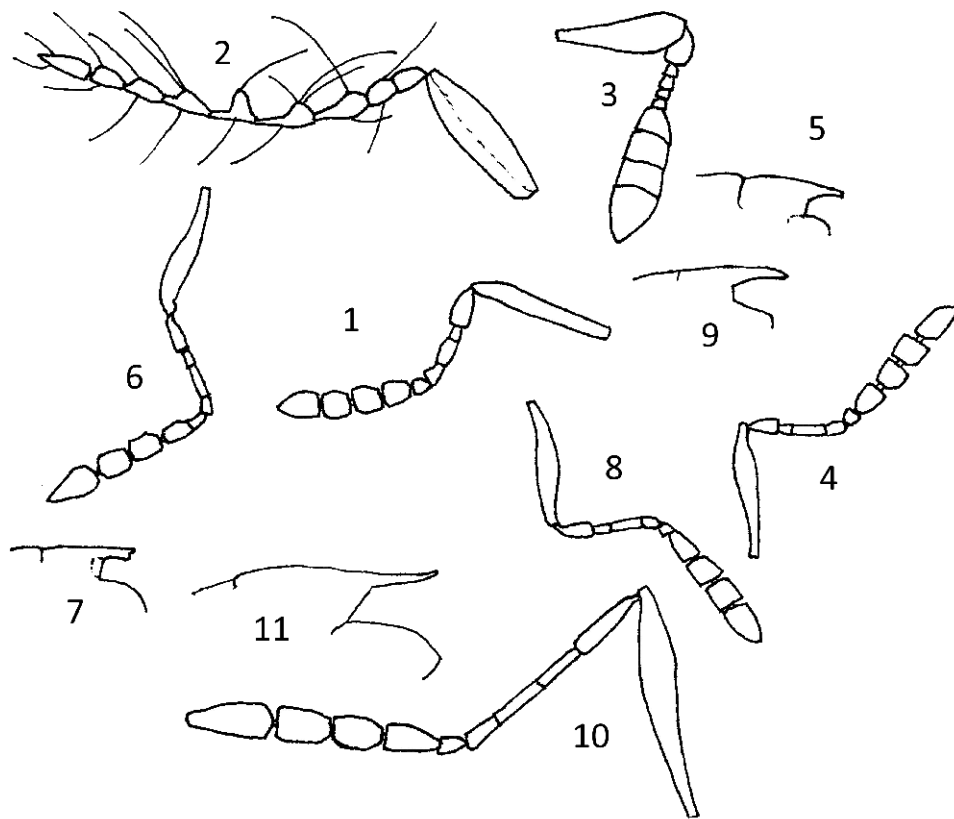
### ***Leptacis queenslandensis* sp. nov.**

(Figs. 10-11)

**Type material.** Holotype (♀): Australia, Queensland, Mount Glorious (27°19'54" S, 152°45'29" E), Malaise trap in rain forest, 30.i.1998, N. Power leg. (ZMUC).

**Diagnosis.** A pale species with hyperoccipital carina, and OOL hardly one-third of LOL; A1 longer than height of head, A7 hardly longer than each of A8-A9 which are about 1.5 times as long as wide; mesoscutum densely hairy; scutellar spine just reaching T1; fore wing fully 3.3 times as long as wide, marginal cilia 0.25 width of wing; hind wing with marginal cilia equal to width of wing; metasoma twice as long as wide, with T1 as wide as long.

**Description.** Female. Body length 1.25 mm. Rather uniformly yellowish brown, coxae and legs slightly lighter.



Figs. 1-11. 1- *Euxestonotus grammeri* sp. nov. ♀, antenna; 2- *Ipitrachelus australiensis* sp. nov. ♂, antenna; 3- *Isostasius australiensis* sp. nov. ♀, antenna; 4-5- *Leptacis echidna* sp. nov. ♀, antenna (4), scutellum, with propodeum to the right (5); 6-7- *L. hydepiercei* sp. nov. ♀, antenna (6), scutellum, with propodeum to the right (7); 8-9- *L. plantationis* sp. nov. ♀, antenna (8), scutellum, with propodeum to the right (9); 10-11- *L. queenslandensis* sp. nov. ♀, antenna (10), scutellum, with propodeum to the right (11).

Head from above 1.6 times as wide as long, 1.15 times as wide as mesosoma, finely reticulate-coriaceous, transversely so on frons, behind eyes smooth; hyperoccipital carina fine but almost complete. Ocelli black, diameter of lateral ocellus 1.5 times as long as OOL. OOL:POL:LOL = 1.0:8.0:3.3. Head in frontal view with vertex rather convex, 1.2 times as wide as high. Antenna (Fig. 10) with A1 longer than height of head (17:16) and longer than distance between inner orbits (17:11). Length:width A1-A10 = 17.0:2.7; 6.0:1.5; 3.5:1.0; 4.0:1.0; 2.8:1.2; 2.0:1.2; 4.0:2.0; 3.8:2.5; 4.0:2.7; 6.2:2.7. Flagellar pubescence short but distinct.

Mesosoma 1.9 times as long as wide, 1.3 times as high as wide. Sides of pronotum smooth, with a few inconspicuous hairs. Mesoscutum almost smooth, finely and densely hairy, bare on areas inside tegulae and where admedian lines should be, without notauli; hind margin slightly convex. Scuto-scutellar grooves covered by fine and rather dense hairs. Mesopleuron smooth. Scutellum (Fig. 11) finely and densely hairy; spine pointed, reaching anterior margin of T1. Mesopleuron smooth and bare, with a fringe of rather short, dense whitish pilosity along hind

margin. Propodeal carinae high, translucent, fused.

Fore wing nearly 1.1 times as long as entire body, 3.33 times as long as wide, slightly infuscated, with fine and dense microtrichia; marginal cilia 0.25 width of wing. Hind wing 9.7 times as long as wide; marginal cilia equal to width of wing.

Metasoma 0.85 times as long as rest of body, slightly longer than mesosoma (34:32), 2.0 times as long as wide, hardly wider than mesosoma. Length:width T1-(T3-T6) = 6.0:6.0: 23.5:17.2; 4.5:16.0. Apical tergites very short, T6 about 4.5 times as wide as long. T1 swollen in anterior half, smooth and bare here, sharply separated from posterior half which has two faint longitudinal carinae and dense hairs towards sides. T2 without basal foveae but with two patches of pubescence basally; T2-T5 smooth except for a narrow line of rugosity posteriorly, T6 with such sculpture except at extreme base.

Male. Unknown.

**Differential diagnosis.** *L. gloriosa* Buhl, 2014 has head 1.95 times as wide as long, OOL half as long as LOL, A7 relatively longer and A8-A9 shorter than in *L. queenslandensis*, fore wing 3.6 times as long as wide, and a more elongate metasoma. *L. queenslandensis* is also strikingly similar to *L. acutalata* Buhl, 2004 from Borneo, but *L. acutalata* has A1 not longer than height of head, notauli indicated by complete hairy lines, and marginal cilia of wing slightly shorter (0.2 width of fore wing, 0.8 width of hind wing).

**Etymology.** Named after the state with the type locality.

**Distribution.** Only known from the easternmost part of Queensland.

### ***Leptacis zogbeganensis* sp. nov.**

(Figs. 12-13)

**Type material.** Holotype (♀): Togo, Région des Plateaux: Zogbégan, village part Zogbégan-Carrière (SE of Badou), at creek Elèbè, V-shaped valley near cocoa-plantation downstream of village (7°34'50" N, 0°40'03" E), 650 m, remains of secondary rainforest, 20.-25.iv.2008, M. v. Tschirnhaus leg. (ZMUC).

**Diagnosis.** A small species without hyperoccipital carina; female A4 2.3 times as long as A3, A8-A9 each slightly transverse; notauli faint but almost complete; scutellar spine slightly surpassing end of propodeum; fore wing 2.8 times as long as wide, marginal cilia 0.2 width of wing; female metasoma 0.8 as long as rest of body.

**Description.** Female. Body length 0.85 mm. Blackish; A1 and legs including coxae light brown; A2-A6 medium brown; A7-A10, mandibles and tegulae dark brown.

Head from above 1.9 times as wide as long; occiput with distinct and much transverse meshes; sculpture on vertex and frons faint, meshes on frons moderately large and slightly transverse; sculpture in lower third, above antennal insertions, transverse and rough. Hyperoccipital carina absent, head bluntly angled. Head in frontal view 1.2 times as wide as high. Eyes virtually bare. OOL equal to half the diameter of lateral ocellus; OOL:POL:LOL = 0.8:3.0:6.5. Antenna (Fig. 12) with A1 0.8 as long as height of head, 1.05 times as long as distance between inner orbits. Length:width A1-A10 = 10.5:2.2; 2.7:1.4; 1.5:0.9; 3.5:1.0; 1.0:1.0; 1.0:1.1; 3.1:2.0; 2.2:2.3; 2.0:2.3; 3.4:2.0. Flagellar pubescence moderately distinct.

Mesosoma 1.6 times as long as wide, 1.15 times as high as wide. Sides of pronotum smooth, with a few hairs in upper half. Mesoscutum with scattered, short and sparse hairs, with faint reticulation, smoother postero-medially; notauli faintly indicated, almost complete; mid lobe rather finely pointed to base of scutellum. Scuto-scutellar grooves each with about six long hairs. Mesopleuron smooth, with a few faint longitudinal striae just below tegula. Scutellum (Fig. 13) with more uneven surface than mesoscutum and with denser hairs, with a rather thin, light brown spine which is slightly longer than propodeum; sides of scutellum in dorsal view evenly narrowed to a blunt point. Metapleuron smooth and bare in slightly more than anterior half, behind with long white pilosity. Propodeal carinae low, dark, clearly separated.

Fore wing 0.9 times as long as body, surpassing tip of metasoma by a distance equal to 2.5 times combined length of T3-T6, 2.8 times as long as wide, faintly infuscated, with fine and dense microtrichia; marginal cilia hardly 0.2 width of wing. Hind wing 8.0 times as long as wide; marginal cilia 0.8 width of wing.

Metasoma 0.8 times as long as rest of body, 1.1 times as long as mesosoma, narrower than mesosoma (12:13), 1.9 times as long as wide. Length:width T1-T6 = 4.0:5.5; 14.0:12.0; 1.2:10.8; 1.2:9.2; 1.2:8.0; 2.8:6.0. T1 with two longitudinal carinae, in basal half smoother and swollen, laterally slightly hairy. T2 with two small, pubescent basal foveae reaching about 0.12 length of T2, rest of T2 smooth. T3-T5 each with a transverse row of dense, distinct punctures, virtually bare; T6 smoother in basal half, with rugosity and a few punctures posteriorly.

Male. Unknown.

**Differential diagnosis.** Runs to *L. nana* Masner, 1960 or *L. macrotoma* (Kieffer, 1910) in Buhl's (2011a) key, but *L. nana* has frons with very fine sculpture and OOL equal to ocellar diameter, *L. macrotoma* has a thinner and more pointed scutellar spine than *L. zogbeganensis*, and it is 1.5 mm. But most important, Masner's and Kieffer's species are without notauli, this making *L. zogbeganensis* a rather characteristic species. *L. wawa* Buhl, 2015 from Togo has notauli indicated to 0.7, but that species has A4 larger relative to A3, a diminutive scutellar tooth, and a body size of only 0.45 mm.

**Etymology.** Named after the type locality.

**Distribution.** Only known from the southwest of Togo.

***Metaclisis tyrestaensis* sp. nov.**

(Figs. 14-15)

**Type material.** Holotype (♀): Sweden, Sö, Haninge kommun, Tyresta, Urskogsslingan (59°10.608 N, 18°14.816" E), flat rock and pine forest, 28.iv-18.vi.2004, Swedish Malaise Trap Project leg. (SMNH).

**Diagnosis.** Female antenna with all flagellar segments except A6 slightly elongate, A7-A8 each about 1.1 times as long as wide; female metasoma 1.4 as long as rest of body, with a hump at junction T1-T2; T1 smooth except for fine striation antero-medially; T2 distinctly striated to 0.35 laterally, 0.2 medially, laterally very finely striated to 0.8; T6 as long as wide, twice as long as T5.

**Description.** Female. Body length 1.6 mm. Black, metasoma brownish towards apex; mandibles, antennae, tegulae and legs including coxae dark brown; trochanters, knees and tarsi lighter brown.

Head from above 1.9 times as wide as long, slightly narrower than mesosoma across tegulae (23:24), finely leathery and rather densely and uniformly hairy (including eyes), frons in lower half smoother medially and with a weak longitudinal impression here. Cheeks striated as usually in genus. OOL:POL:LOL = 2:8:3. Head in frontal view 1.3 times as wide as high. Antenna (Fig. 14) with A1 about 0.7 as long as height of head, 0.9 times as long as distance between inner orbits. Length:width A1-A10 = 12.6:2.5; 5.0:1.9; 2.3:1.4; 1.6:1.4; 1.8:1.7; 1.8:1.9; 2.2:2.0; 3.0:2.7; 3.0:2.8; 5.0:2.8. Flagellar pubescence short.

Mesosoma longer than wide (27:24), 1.4 times as wide as high. Sides of pronotum with dense punctures with hairs. Mesoscutum finely leathery and densely hairy; notauli complete, in posterior half distinctly widened, almost smooth, distance between notauli at hind margin about 2.5 times the width of one of them. Mesopleuron smooth, anteriorly in upper 0.3 with fine longitudinal wrinkles, in lower 0.25 with rather dense punctures with hairs. Scutellum separated from mesoscutum by a row of about 16 dots; disc 1.7 times as wide as long, uniformly finely leathery as mesoscutum, medially almost bare, towards sides sparsely hairy. Metapleuron with whitish pilosity all over.

Fore wing reaching midlength of T6, 2.4 times as long as wide, almost clear, with fine and dense microtrichia; veins medium light brown, submarginal vein 0.45 as long as wing; marginal cilia 0.05 width of wing. Hind wing 4.5 times as long as wide; marginal cilia one-sixth the width of wing.

Metasoma (Fig. 15) 1.4 times as long as rest of body, 2.25 times as long as wide, about as wide as mesosoma. Length:width T1-T6 = 4.0:12.0; 25.5:24.2; 5.5:23.0; 4.5:19.8; 5.0:15.5; 10.0:10.0. Sternite 6 as long as S3-S5 combined, 1.3 times as long as T6. T1 with numerous fine longitudinal striae medially in anterior half, otherwise rather smooth; junction of T1-T2 with a distinct hump. T2 distinctly striated in basal foveae to 0.35 length of tergite, behind this with very faint striation to about 0.8 length of tergite; medially distinctly striated to 0.2 of length, almost smooth and virtually without striation behind. T3-T6 faintly reticulate. T2 with sparse hairs laterally, T3-T6 with numerous hairs in shallow punctures (50 on T3, 40 on T4, 30 on T5, 16 on T6, all approximately).

Male. Unknown.

**Differential diagnosis.** *M. striatitergitis* Szabó, 1959 has slightly more slender antennae, mesosoma slightly narrower than head, metasoma only 1.0-1.2 times as long as rest of body, T2 sharply striated in anterior half, and basal antennal segments distinctly lighter than apical ones. *M. tyrestaensis* has shorter antennae than *M. germanica* Buhl, 2019, *M. iranica* Buhl, 2019 and *M. suecica* Buhl, 2009, and more pointed and differently striated metasoma than these. *M. tyrestaensis* has more slender antennae than *M. areolata* (Haliday, 1836), *M. phragmitis* Debauche, 1947, and *M. semistriata* Buhl & Jałoszyński, 2016. It runs to *M. longula* Masner, 1981 in Masner's (1981) key, but *M. longula* differs from *M. tyrestaensis* in having OOL shorter than ocellar diameter, shorter antennae, and T1 entirely costate.

**Etymology.** Named after the type locality.

**Distribution.** Known from Tyresta National Park only, just south of the Swedish capital Stockholm.

***Platygaster ecuadoriana* sp. nov.**

(Figs. 16-17)

**Type material.** Holotype (♀): Ecuador, NE part of the country, road from Minacaspi (about 2-4 km from the junction) to the east to Narupa, 28 km NNE Tena (00°43.55' S, 77°45.39' W), 1260 m, 28.ii.2006, M. v. Tschirnhaus leg. (ZMUC).

**Diagnosis.** Head 1.9 times as wide as long, occiput medially finely transversely reticulate-striate; female A4 1.6 times as long as A3, A7-A8 each slightly longer than wide, A9 as long as wide; mesoscutum with only few hairs and very short notauli; scutellum unevenly convex, vertical behind; female metasoma hardly shorter than rest of body; T2 striated from basal foveae to half of length, medially almost smooth, apical tergites each with at most 10 strong punctures.

**Description.** Female. Body length 1.3 mm. Black; antennae, mandibles, tegulae, coxae and legs more or less dark brown, A1-A3 slightly lighter; fore legs light brown.

Head from above 1.9 times as wide as long, 1.1 times as wide as mesosoma; occiput broadly rounded, medially (behind ocelli) in posterior half finely transversely reticulate-striate, medially in anterior half smoothly transversely reticulate, laterally finely reticulate-coriaceous (not transversely so). Vertex almost smooth between ocelli, laterally weakly reticulate-coriaceous. Frons in upper half smooth, in lower half finely obliquely striated. OOL distinctly longer than ocellar diameter; OOL:POL:LOL = 3:7:3. Head in frontal view 1.25 times as wide as high, with vertex slightly protruding over eyes (which are bare). Antenna with A1 0.85 times as long as height of head, 1.1 times as long as distance between inner orbits. Length:width A1-A10 = 15.5:2.8; 4.0:1.8; 1.7:1.1; 2.7:2.0; 3.2:1.8; 3.2:2.4; 3.2:2.8; 3.2:3.0; 3.0:3.0; 5.0:2.2. Flagellar pubescence short but distinct.

Mesosoma 1.45 times as long as wide, slightly more than 1.1 times as high as wide. Sides of pronotum weakly reticulate-coriaceous in upper half, finely longitudinally striated in lower half, smooth along upper and hind margins, in upper half and along hind margin with numerous hair-sockets. Mesoscutum weakly reticulate-coriaceous, in posterior half almost smooth, with a few hairs along (imaginary) notaulic courses and laterally; notauli very shortly indicated behind, mid lobe wide here and distinctly prolonged to base of scutellum; scuto-scutellar grooves covered by dense and long golden hairs. Mesopleuron smooth. Scutellum (Fig. 16) at level of mesoscutum, medially smooth and with a few slightly raised hair-sockets, towards sides with dense such hair-sockets; hairs long, grey and distinct; scutellum posteriorly almost vertically sloping, at each side of mid posterior slope slightly excavated and with dense hairs. Metapleuron with pilosity all over. Propodeal carinae low, dark, parallel; area between them smooth and shiny, slightly wider than long.

Fore wing 0.85 as long as entire body, surpassing tip of metasoma by a distance equal to combined length of T3-T6, 2.6 times as long as wide, slightly infuscated; marginal cilia 0.08 width of wing. Hind wing 6.0 times as long as wide, with two hamuli; marginal cilia one-third the width of wing.

Metasoma (Fig. 17) 0.95 as long as rest of body, 2.15 times as long as wide, hardly 0.9 times as wide as mesosoma. Length:width T1-T6 = 5.0:9.0; 20.0:17.3; 2.0:15.5; 2.0:14.0; 2.0:12.0; 4.1:9.5. T1 with seven almost uniform longitudinal carinae, with only a few hairs laterally. T2 with two basal foveae which are slightly pubescent basally and striated to half the length of tergite, between them with two short carinae to 0.15 length of tergite, rest of tergite as well as following tergites smooth. T3-T5 each with a medially interrupted transverse row of strong punctures with hairs (6 on T3, 8 on T4, 10 on T5). T6 with 8 superficially inserted hairs.

Male. Unknown.

**Differential diagnosis.** Similar to *P. costaricae* Buhl, 2003, especially in conformation of scutellum, but *P. costaricae* has eyes distinctly hairy, occiput finely transversely striated, vertex with numerous distinct hair-implantations, shorter antennae, mesoscutum rather densely hairy, postero-medially with a narrow prolongation, and metasoma 1.1 times as long as rest of body. Also *P. noyesi* Buhl, 2011 has a similar conformation of scutellum, but *P. noyesi* has head 2.5 times as wide as long, occiput strongly half-circularly striated, A7-A8 each slightly transverse, and T3-T4 each with about 20 strong punctures. *P. ecuadoriana* runs to *P. meridionalis* (Ashmead, 1894) in Buhl's (2011b) key, but that species has head much wider than mesosoma, notauli reaching half the length of mesoscutum, and wings clear.

**Etymology.** Named after the country with the type locality.

**Distribution.** Northeastern Ecuador.

***Platygaster falstrica* sp. nov.**

(Figs. 18-19)

**Type material.** Holotype (♀): Denmark, LFM, Horreby Lyng, 8.v.2018, P.N. Buhl leg. (ZMUC).

**Diagnosis.** Head twice as wide as long, occiput transversely reticulate-coriaceous and with a few short carinae, frons finely reticulate-coriaceous, in lower 0.4 striated; female A9 1.65 times as long as wide; notauli complete; scutellum low, sculptured; fore wing clear, 2.8 times as long as wide; metasoma 1.8 times as long as rest, distinctly constricted behind T2; T1 with two carinae; T2 striated in basal foveae to hardly 0.3, rest of metasoma smooth.

**Description.** Female. Body length 1.5 mm. Black; antennae, mandibles, tegulae, coxae and legs dark brown; knees, tibiae distally, and segments 1-4 of tarsi lighter brown.

Head from above 2.0 times as wide as long, wider than mesosoma (18:16), reticulate-coriaceous, on occiput slightly transversely so and with three very short transverse carinae antero-medially, on frons superficially so and smoother towards a weak, impressed longitudinal midline which splits in lower 0.4 of frons, indicating a triangular, transversely striated area above antennal insertions. OOL:POL:LOL = 3.0:6.0:2.5. Eyes with a few fine hairs. Head in frontal view 1.15 times as wide as high. Antenna with A1 0.85 as long as height of head, longer than distance between inner orbits (13:12). Length:width A1-A10 = 13.0:2.0; 4.0:1.8; 1.7:1.2; 2.0:1.5; 2.4:1.6; 2.4:1.6; 2.8:1.8; 3.2:2.0; 3.3:2.0; 5.4:1.9. Flagellar pubescence short.

Mesosoma 1.4 times as long as wide, 1.1 times as high as wide. Sides of pronotum reticulate-coriaceous and with numerous hairs in upper 0.4, smooth below. Mesoscutum with few hairs (about 14 on mid lobe), distinctly reticulate-coriaceous, slightly smoother on a small spot medially on each lateral lobe and at posterior tip of mid lobe; notauli distinct and virtually complete; mid lobe posteriorly narrow but not finely pointed, just touching base of scutellum; scuto-scutellar grooves large, triangular, each with only three fine hairs. Mesopleuron with three longitudinal wrinkles in posterior two-thirds just below tegula, otherwise smooth. Scutellum (Fig. 18) slightly convex, just above level of mesoscutum, sparsely hairy, distinctly reticulate-coriaceous. Metapleuron with pilosity all over. Propodeal carinae short, parallel, widely separated; area between them smooth, about twice as wide as long.

Fore wing clear, 2.8 times as long as wide, almost reaching tip of metasoma, with fine and dense microtrichia; marginal cilia 0.07 width of wing. Hind wing 6.5 times as long as wide, with two hamuli; marginal cilia 0.25 width of wing.

Metasoma (Fig. 19) 1.8 times as long as rest of body, 3.5 times as long as wide, 1.4 times as wide as high, hardly noticeable wider than mesosoma. Length:width T1-T6 = 3.2:8.0; 20.0:16.5; 6.3:13.5; 9.0:8.0; 9.5:6.0; 8.8:4.2. T1 with two strong longitudinal carinae, smooth between them, laterally with hairs which continue on anterior part of basal foveae on T2. Basal foveae of T2 striated to almost 0.3 length of tergite, rest of tergite as well as following tergites smooth. Apical tergites with fine hairs in shallow punctures (10 on each of T4-T5, slightly fewer on T3 and T6. Apical tergites moderately flattened, T5 at midlength 1.9 times as wide as high. Sternite 2 with a hump anteriorly.

Male. Unknown.

**Differential diagnosis.** The somewhat similar *P. austriaca* Buhl, 2008 has head only 1.7 times as wide as long with frons strongly transversely reticulate-coriaceous, A9 very slightly longer than wide, and T2 striated in basal foveae to more than half the length of tergite. *P. hortensis* Buhl, 2019 has occiput with transverse carinae, A9 1.8 times as long as wide, and fore wing 2.4 times as long as wide. *P. confinis* Thomson, 1859 has smoother frons and slightly thicker antennae than in *P. falstrica*, and apical tergites not quite smooth. *P. tengoei* Buhl, 2010 has T2 more striated and metasoma less constricted behind T2 than in *P. falstrica*. *P. gladiator* Zetterstedt, 1838 and *P. subuliformis* (Kieffer, 1926) have metasoma more sculptured than in *P. falstrica*, *P. gladiator* also has occiput more striated, and fore wings yellowish and less elongate than in *P. falstrica*; *P. subuliformis* also has preapical antennal segments less elongate than in *P. falstrica*.

**Etymology.** The name refers to the island of Falster with the type locality.

**Distribution.** The southern Danish island of Falster.

### *Platygaster hedegaardi* sp. nov.

(Figs. 20-22)

**Type material.** Holotype (♀): Togo, Région des Plateaux: Kodjo-Kopé N of Badou, at creek Djodji (7°38'56" N, 0°35'43" E), plantation (cocoa, oilpalm), 24.iv.2008, M. v. Tschirnhaus leg. (ZMUC). Paratype: (1 ♀): same data as holotype (ZMUC).

**Diagnosis.** A small species (hardly 1 mm) with head 1.3 times as wide as mesosoma; occiput without transverse sculpture, only faintly reticulate, laterally with a few transverse striae, hyperoccipital carina distinct, LOL 1.4 as long as OOL; female A4-A6 slightly elongate, A9 as long as wide; notauli very short; scutellum smooth and evenly convex; fore wing with sparse microtrichia; female metasoma as long as rest of body; T2 striated to 0.4, medially almost smooth.

**Description.** Female. Body length 0.7-0.9 mm. Dark brown, head darkest; A1-A3 and legs including coxae brownish yellow, mandibles and tegulae slightly darker.

Head from above 2.0 times as wide as long, 1.3 times as wide as mesosoma; occiput on large mid area only with faint (and not transverse) reticulation, just outside width of ocellar area with about three fine vertical carinae (indistinct in paratype). Hyperoccipital carina distinct and complete. Vertex and frons smoothly leathery or very finely, faintly reticulate, with just a few weak

wrinkles above antennal insertions. OOL:POL:LOL = 2.0:5.0:2.8. Head in frontal view 1.3 times as wide as high. Antenna (Fig. 20) with A1 0.8 times as long as height of head, as long as distance between inner orbits. Length:width A1-A10 = 11.0:2.5; 3.0:1.3; 1.0:1.1; 2.0:1.4; 1.8:1.2; 2.0:1.8; 2.0:2.0; 2.2:2.2; 2.5:2.5; 4.0:2.0. Flagellar pubescence very inconspicuous.

Mesosoma 1.35 times as long as wide, 1.15 times as high as wide. Sides of pronotum smooth, faintly leathery in anterior third, with sparse hairs in upper 0.4, only three hairs in lower half. Mesoscutum with sparse hairs, faintly leathery; notauli very shortly indicated posteriorly; mid lobe narrow, just reaching base of scutellum; scuto-scutellar grooves narrow, each covered by only 3-4 short hairs. Mesopleuron smooth. Scutellum (Fig. 21) distinctly and evenly convex, smooth except for weak rugosity anteriorly, sparsely hairy. Metapleuron with pilosity all over. Propodeal carinae short, parallel; area between them distinctly transverse, almost smooth.

Fore wing 2.4 times as long as wide, about 0.9 times as long as entire body, almost clear, with rather sparse and long microtrichia; marginal cilia 0.08 width of wing. Hind wing 5.7 times as long as wide, with two hamuli; marginal cilia 0.25 width of wing.

Metasoma (Fig. 22) about as long as rest of body, 1.7-2.1 times as long as wide, narrower than mesosoma (13:14). Length:width T1-T6 = 3.5:6.8; 12.5:12.5; 2.0:11.5; 2.0:10.0; 2.0:8.5; 4.1:7.0. T1 with a transverse impression a little posterior to midlength, with three distinct longitudinal carinae and some finer ones. T2 with basal foveae weakly striated to 0.4 length of tergite (in paratype to hardly one-third the length of tergite), medially with three longitudinal carinae, the longest medial one hardly one-fourth as long as tergite, T2 otherwise smooth. T3-T6 with very faint microsculpture and each with a transverse row of 4-6 hairs in moderately deep punctures.

Male. Unknown.

**Differential diagnosis.** Similar to *P. otandjoboliensis* Buhl, 2014, but that species has head almost 1.4 times as wide as mesosoma, fore wing with fine and dense microtrichia, metasoma shorter, and body appendages darker. *P. hedegaardi* runs to *P. nigeriana* Buhl, 2004 or *P. terco* Sundholm, 1970 in Buhl's (2011a) key, but these species both have LOL at least twice as long as OOL. *P. hedegaardi* differs from the somewhat similar *P. malaisei* Buhl, 2005 in conformation of occiput.

**Etymology.** Named in honour of the prominent Danish historian and author, Lars Hedegaard.

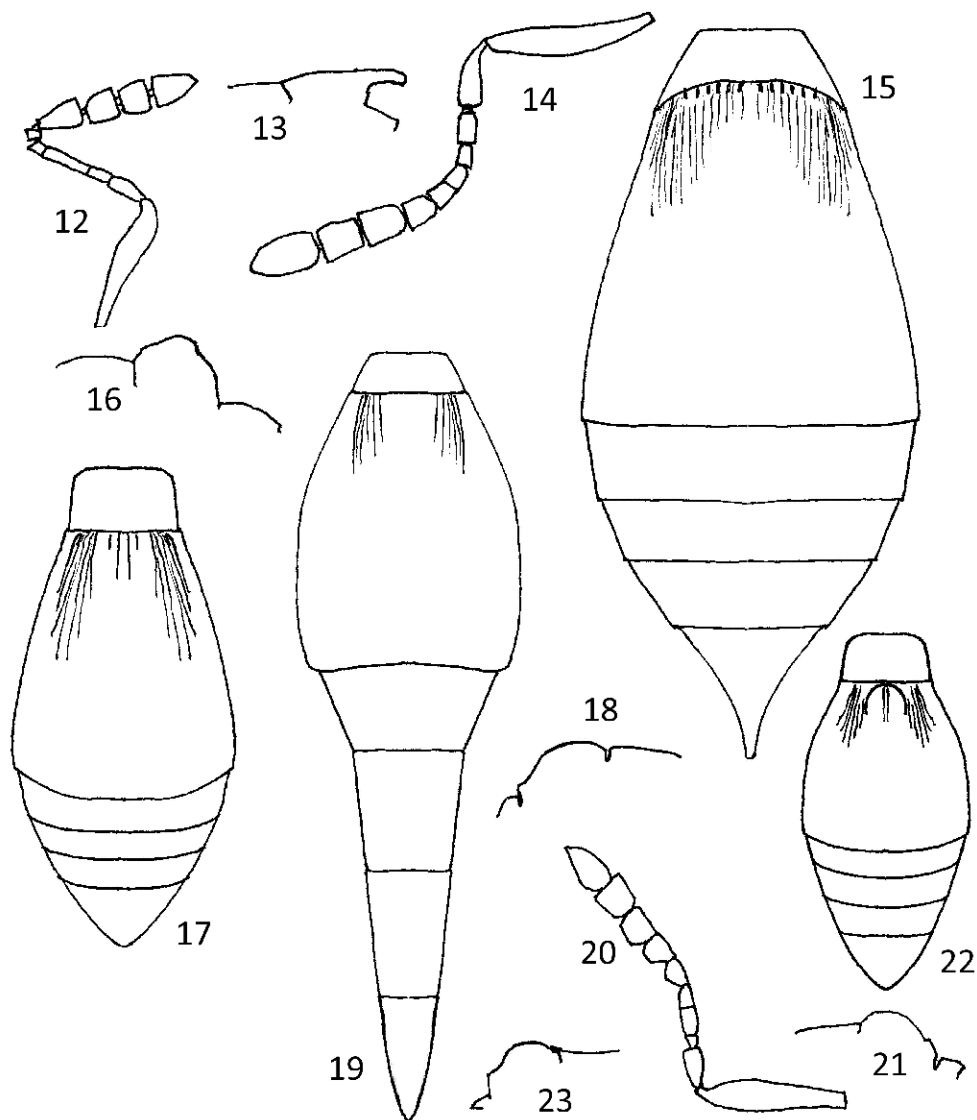
**Distribution.** Only known from the southwest of Togo.

### ***Platygaster interrupta* sp. nov.**

(Fig. 23)

**Type material.** Holotype (♀): Togo, Région des Plateaux: Zogbégan, village part Zogbégan-Carrière (SE of Badou), at creek Elèbè, V-shaped valley near cocoa-plantation downstream of village (7°34'50" N, 0°40'03" E), 650 m, remains of secondary rainforest, 20.-25.iv.2008, M. v. Tschirnhaus leg. (ZMUC).

**Diagnosis.** A small species with a few transverse striae behind a weak hyperoccipital carina, LOL as long as 1.2 OOL; female A9 1.6 times as long as wide; notauli absent; scutellum rather low, convexity ending in a step posteriorly; female metasoma 0.85 as long as rest, T2 laterally striated to 0.4, medially to 0.2; apical tergites each with at most six punctures.



Figs. 12-23. 12-13- *Leptacis zogbeganensis* sp. nov. ♀, antenna (12), scutellum, with propodeum to the right (13); 14-15- *Metaclisis tyrestaensis* sp. nov. ♀, antenna (14), metasoma (15); 16-17- *Platygaster ecuadoriana* sp. nov. ♀, scutellum, with propodeum to the right (16), metasoma (17); 18-19- *P. falstrica* sp. nov. ♀, scutellum, with propodeum to the left (18), metasoma (19); 20-22- *P. hedegaardi* sp. nov. ♀, antenna (20), scutellum, with propodeum to the right (21), metasoma (22); 23- *P. interrupta* sp. nov. ♀, scutellum, with propodeum to the left.

**Description.** Female. Body length 0.8 mm. Blackish, A1-A2 and legs including coxae light brownish yellow; A3-A10, mandibles and tegulae medium brown.

Head from above 2.2 times as wide as long, 1.25 times as wide as mesosoma. Occiput with a few rough, irregular transverse striae on a finely reticulate background. Hyperoccipital carina weakly indicated, but head rather sharply angled behind ocelli. Vertex with a few striae posteriorly, laterally weakly reticulate, between ocelli smooth. Frons smooth, with a few faint transverse striae above antennal sockets. OOL:POL:LOL = 1.5:4.0:1.8. Head in frontal view 1.2 times as wide as high. Antenna with A1 about as long as height of head, one and a third times as long as distance between inner orbits. Length:width A1-A10 = 13.0:2.0; 3.6:1.5; 1.1:0.9; 2.9:1.2; 2.7:1.0; 3.0:1.3; 3.2:1.7; 3.0:2.0; 3.0:1.9; 4.8:1.8. Flagellar pubescence short.

Mesoscutum 1.5 times as long as wide, higher than wide (14:13). Sides of pronotum smooth, in upper third with sparse hairs. Mesoscutum smooth, rather evenly and moderately densely hairy, without notauli, hind margin with a prolongation covering extreme base of scutellum; scuto-scutellar grooves rather small, triangular, each covered by 6-7 fine hairs. Mesopleuron smooth. Scutellum (Fig. 23) smooth, with denser hairs than mesoscutum, only slightly above level of this, posteriorly irregularly sloping. Metapleuron smooth, with sparse pilosity all over. Propodeal carinae distinctly diverging; area between them dull, at apex about as long as wide.

Fore wing 2.5 times as long as wide, 0.85 times as long as entire body, surpassing tip of metasoma by a distance equal to 1.5 combined length of T3-T6, weakly infuscated, with dense and rather fine microtrichia; marginal cilia 0.08 width of wing. Hind wing 5.7 times as long as wide, with two hamuli; marginal cilia about one-third the width of wing.

Metasoma 0.85 as long as rest of body, 1.8 times as long as wide, narrower than mesosoma (12:13). T1 with three stronger longitudinal carinae and a weaker one on each area between and beside them. T2 striated in basal foveae to almost 0.4 length of tergite, medially to 0.2 length of tergite, rest of tergite and following tergites smooth (though surface of T6 slightly uneven). T3-T6 each with 4-6 fine hairs in shallow punctures. Length:width T1-T6 = 3.5:5.7; 13.5:12.0; 1.2:10.5; 1.1:9.0; 1.0:7.0; 2.0:5.0.

Male. Unknown.

**Differential diagnosis.** Similar in antennal structure to *P. grandidieri* Buhl, 2015 from Madagascar, but *P. grandidieri* is larger, with somewhat more elongate flagellar segments, and it has longer notauli and striae on T2, and scutellum more evenly convex. The somewhat similar *P. zambiana* Buhl, 2007 has scutellum evenly convex, OOL = 1.5 LOL, and T2 almost smooth. *P. interrupta* has similar conformation of scutellum as *P. pubiventris* Buhl, 2005 and *P. udzungwensis* Buhl, 2010, but *P. pubiventris* has shorter antennae, and *P. udzungwensis* is distinctly larger (1.5 mm) with metasoma as long as rest of body, T3-T5 with each 14-16 deep punctures, and distinctly darker legs than *P. interrupta*, and both species have T2 striated to half of length.

**Etymology.** The name refers to the abruptly ending, or interrupted even convexity, of the scutellum.

**Distribution.** Only known from the southwest of Togo.

### *Platygaster jaloszynskii* sp. nov.

(Figs. 24-26)

**Type material.** Holotype (♀): Brazil, Estado São Paulo, road BR 116 to Curitiba at km 319, SW<sup>1</sup> São Lorenzo da Serra, driveway to camp site, in grass, herbs, ginger, 19.ii.1986, M. v. Tschirnhaus leg. (ZMUC).

**Diagnosis.** Head 1.75 times as wide as long, occiput half-circularly striated, OOL = LOL; female A8-A9 each 1.9 times as long as wide; notauli indicated over most of length; scutellum smooth, evenly convex; female metasoma 1.3 times as long as rest, not constricted behind T2; T2 striated to 0.7, medially to 0.15.

**Description.** Female. Body length 1.1 mm. Dark brown, including antennae; mandibles, tegulae, coxae and legs medium-light brown; trochanters, most of fore tibiae, base of mid and hind tibiae, and most of tarsi lighter than rest.

Head from above 1.75 times as wide as long, 1.15 times as wide as mesosoma; occiput rounded, finely half-circularly striated (striation continues behind eyes); vertex finely reticulate-coriaceous, medially transversely so; frons in upper half smooth, in lower half with fine oblique striation out from a midline. Eyes bare. OOL:POL:LOL = 2:5:2. Head in frontal view 1.15 times as wide as high. Antenna (Fig. 24) with A1 shorter than height of head (14:15), longer than distance between inner orbits (14:11). Length:width A1-A10 = 14.0:2.0; 4.0:1.4; 1.8:1.0; 2.8:1.2; 3.2:1.1; 3.4:1.3; 3.7:1.7; 3.4:1.8; 3.4:1.8; 4.5:1.7. Flagellar pubescence negligible.

Mesosoma 1.5 times as long as wide, higher than wide (16:15). Sides of pronotum slightly longitudinally reticulate-coriaceous, smooth along wide upper and hind margins. Mesoscutum with sparse, scattered hairs, finely reticulate-coriaceous; mid lobe smooth on posterior half, lateral lobes on large mid area; notauli weak, but indicated except on anterior one-sixth of their courses; mid lobe behind ending in a rather fine point touching base of scutellum; scuto-scutellar grooves of moderate size, triangular, each covered by about four fine hairs. Mesopleuron smooth. Scutellum (Fig. 25) slightly above level of mesoscutum, evenly convex, smooth, sparsely hairy. Metapleuron with rather short pilosity all over. Propodeal carinae parallel; area between them smooth, fully as long as wide.

Fore wing two-thirds as long as entire body, reaching midlength of T6, 2.4 times as long as wide, clear; disc almost bare, with only a few microtrichia near apex; marginal cilia about 0.1 width of wing. Hind wing 5.4 times as long as wide, with two hamuli; marginal cilia 0.3 width of wing.

Metasoma (Fig. 26) 1.3 times as long as rest of body, 2.95 times as long as wide, 1.35 times as wide as high, 0.8 times as wide as mesosoma. Length:width T1-T6 = 4.0:6.0; 16.0:12.2; 4.0:11.3; 3.0:9.5; 3.0:8.2; 5.0:6.0. T1 covered by numerous uniform, distinct longitudinal carinae. T2 striated in basal foveae 0.7 length of tergite, medially to 0.15, rest of tergite as well as T3-T5 smooth, T6 with reticulation; T3-T6 each with about eight fine hairs in shallow punctures, on T3-T5 arranged in a transverse row. Sternite 2 without hump anteriorly.

Male. Unknown.

**Differential diagnosis.** Runs to *P. nudiptera* Buhl, 2011 in Buhl's (2011b) key, but that species has head 2.1 times as wide as long, LOL = 1.6 OOL, A4 larger relatively to A3 and A5, and metasoma much more constricted behind than in *P. jaloszynskii*. The somewhat similar *P. flabellata* Buhl, 2003 has dense microtrichia on fore wings, a more pointed metasoma with T2 striated to only 0.3, and rugose apical tergites.

**Etymology.** Named in honour of the Polish entomologist, my longtime co-worker Paweł Jałoszyński (Wrocław).

**Distribution.** Known from just south of the city of São Paulo only.

***Platygaster jenseni* sp. nov.**

(Figs. 27-28)

**Type material.** Holotype (♀): Denmark, NEJ, Tofte Skov, 30.vi.-1.vii.2005, P.N. Buhl leg. (ZMUC).

**Diagnosis.** Head hardly 1.9 times as wide as long, behind with only a few short transverse carinae and a few finer striae; female A8-A9 each about 1.4 times as long as wide; notauli distinct in about posterior 0.75; scutellum weak and evenly convex, smooth; female metasoma 0.8 as long as rest; T2 striated to nearly half of length, medially to about 0.2.

**Description.** Female. Body length 1.5 mm. Black, antennae and coxae hardly lighter except dark brown fore coxae; mandibles medium brown; legs dark brown, but fore femora towards apex, fore tibiae except mid dorsal part, base and apex of mid and hind tibiae, and segments 1-4 of all tarsi light brown.

Head from above 1.85 times as wide as long, 1.05 times as wide as mesosoma; occiput rounded, finely pustulated, with a couple of moderately strong transverse carinae which are as long as distance between eyes, adjoined by a few finer transverse carinae and striae; vertex with a few striae between posterior ocelli, otherwise smooth medially, finely pustulated laterally; frons with a weak longitudinal midline, finely leathery fan-like out from this; above antennal insertions with fine transverse striation from malar space. OOL:POL:LOL = 4.0:8.0:3.5. Head in frontal view 1.15 times as wide as high. Eyes rather small, hardly twice as high as malar space (9.5:5.0). Antenna (Fig. 27) with A1 0.9 as long as height of head, longer than distance between inner orbits (18:16). Length:width A1-A10 = 18.0:2.5; 5.0:2.0; 2.0:1.3; 3.0:1.6; 3.6:1.7; 4.4:2.0; 4.0:2.8; 4.0:2.9; 4.0:2.9; 5.5:2.3. Flagellar pubescence 0.3 width of segments.

Mesosoma 1.5 times as long as wide, 1.05 times as high as wide. Sides of pronotum with about 25 hairs, nearly all in upper half, smoothly reticulate-coriaceous (not longitudinally so) except along smooth upper and hind narrow margins. Mesoscutum with a few scattered hairs (most of them along margins or notauli), with a patch of reticulation around anterior half of notaulic courses, otherwise smooth; admedian lines weakly indicated in anterior 0.35 of disc; notauli distinct, but absent in nearly anterior 0.25 of their courses, posteriorly well separated; blunt mid lobe not prolonged, not quite reaching scutellum; scuto-scutellar grooves rather large, triangular, each covered by about 10 fine hairs. Mesopleuron smooth. Scutellum (Fig. 28) weakly convex, at about level of mesoscutum, smooth, towards sides moderately hairy. Metapleuron with pilosity all over. Propodeal carinae short, slightly diverging; area between them wider than long, with a couple of crenulae anteriorly.

Fore wing clear, hardly 0.9 as long as entire body, surpassing tip of metasoma by a distance equal to 1.6 combined length of T3-T6, 2.65 times as long as wide, with fine and dense microtrichia; marginal cilia 0.08 width of wing. Hind wing 5.3 times as long as wide, with two hamuli; marginal cilia 0.3 width of wing.

Metasoma 0.8 times as long as rest of body, 1.7 times as long as wide, as wide as head. Length:width T1-T6 = 7.0:11.0; 25.0:23.2; 3.2:22.0; 2.8:19.5; 3.0:14.8; 3.2:8.6. T1 with numerous rather fine longitudinal carinae. T2 distinctly striated in basal foveae to 0.45 length of tergite, striated medially to slightly more than 0.2, otherwise smooth. T3-T5 with faint traces of reticulation, with distinct such sculpture basally on T6. Apical tergites with hairs in moderately strong punctures (in a single transverse row on each of T3-T5): 6 on T3, 10 on T4, 12 on T5, 8 on T6.

Male. Unknown.

**Differential diagnosis.** Runs to *P. suecica* (Kieffer, 1926) in Buhl's (2006) key, but *P. suecica* has occiput with only a few short striae medially, frons smooth medially, less slender antennae, mesoscutum and scutellum reticulate-coriaceous, and notauli complete.

**Etymology.** Named in honour of Aage V. Jensen (1911-1986), the great benefactor for Danish nature who has bought the type locality for its protection.

**Distribution.** Only known from northeastern Jutland, Denmark.

***Platygaster junci* sp. nov.**  
(Figs. 29-30)

**Type material.** Holotype (♀): Argentina, Provincia Neuquén, southern bank of Lago Mascaradi, 33 km SW of Bariloche, 5 km of Ruta Nacional 258, W of small creek (41,21.47 S, 71,34.04 W), 820 m, large Juncus-swamp, 17.iii.1996, M. v. Tschirnhaus leg. (ZMUC).

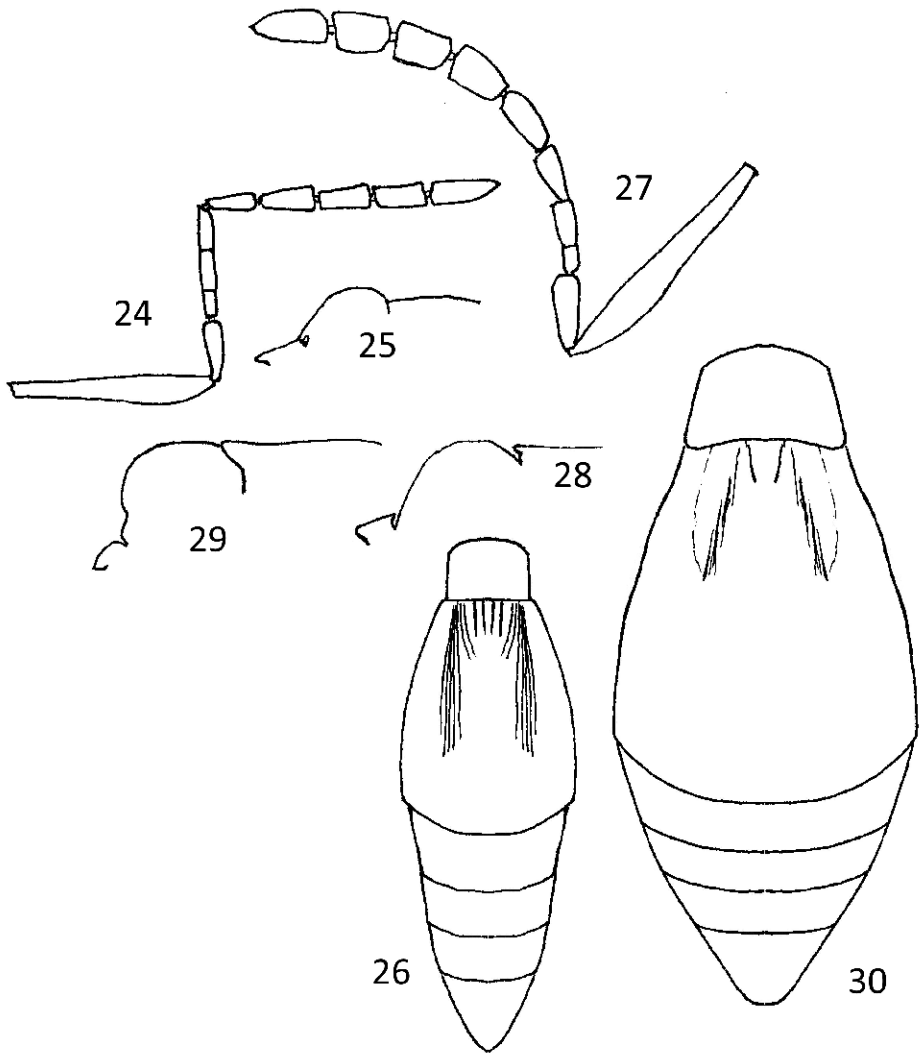
**Diagnosis.** Head fully two and a third times as wide as long, distinctly striated behind; female A9 twice as long as wide; notauli visible in posterior two-thirds; mid lobe distinctly prolonged over base of the low scutellum; female metasoma about as long as rest; T2 weakly striated to 0.4, medially to 0.15; T6 bluntly pointed.

**Description.** Female. Body length 1.5 mm. Black; A1-A2, mandibles, tegulae, coxae and legs dark brown; fore tibiae, base of mid and hind tibiae, and all tarsi lighter brown.

Head from above 2.35 times as wide as long, 1.1 times as wide as mesosoma; occiput distinctly half-circularly striated, bordered by a low and slightly incomplete hyperoccipital carina in front; vertex weakly reticulate-coriaceous, with transverse elements medially; frons finely, obliquely reticulate-striate, smooth along a slightly impressed longitudinal midline. OOL:POL:LOL = 2.5:8.0:3.0. Eyes with a few short hairs. Head in frontal view 1.25 times as wide as high. Antenna with A1 shorter than height of head (18:21), 1.1 times as long as distance between inner orbits. Length:width A1-A10 = 18.0:2.8; 5.0:1.8; 2.2:1.3; 3.5:1.8; 3.3:1.7; 4.0:2.0; 4.0:2.2; 4.0:2.2; 4.0:2.0; 5.0:2.0. Flagellar pubescence very short.

Mesosoma 1.45 as long as wide, 1.1 as high as wide. Sides of pronotum with distinct hair-sockets in upper 0.4 and along hind margin; smooth along upper and hind margin, rest finely reticulate-coriaceous, longitudinally so in lower half. Mesoscutum evenly and rather densely hairy, hair-sockets slightly raised, otherwise smooth except for reticulation along anterior margin; notauli indicated in posterior two-thirds, mid lobe behind wide and distinctly prolonged over base of scutellum; scuto-scutellar grooves each covered by numerous (slightly more than 10) long hairs. Mesopleuron smooth. Scutellum (Fig. 29) at level of mesoscutum, smooth and bare on large mid area, laterally densely hairy, evenly sloping behind, on each side of posterior slope with a large hairy excavation. Metapleuron with pilosity all over. Propodeal carinae short, parallel; area between them smooth, twice as wide as long.

Fore wing about 0.75 as long as entire body, surpassing tip of metasoma by a distance nearly as long as combined length of T3-T6, 2.4 times as long as wide, faintly infuscated, with fine and dense microtrichia; marginal cilia 0.04 width of wing. Hind wing 4.8 times as long as wide, with two hamuli; marginal cilia 0.25 width of wing.



Figs. 24-30. 24-26- *Platygaster jaloszynskii* sp. nov. ♀, antenna (24), scutellum, with propodeum to the left (25), metasoma (26); 27-28- *P. jenseni* sp. nov. ♀, antenna (27), scutellum, with propodeum to the left (28); 29-30- *P. junci* sp. nov. ♀, scutellum, with propodeum to the left (29), metasoma (30).

Metasoma (Fig. 30) hardly longer than rest of body (45:44), 2.1 times as long as wide, 0.9 as wide as mesosoma. Length:width T1-T6 = 6.5:11.0; 25.0:21.5; 4.0:20.5; 3.0:16.5; 3.0:13.0; 5.0:9.0. T1 with numerous uniform longitudinal carinae. T2 weakly striated on slope of narrow basal foveae to 0.4 length of tergite, between them striated to about 0.15, otherwise smooth. T3-T6 smooth, T3-T5 each with a transverse row of about 10 hairs in moderately deep punctures; T6 along margins with 8 more shallow punctures with hairs.

Male. Unknown.

**Differential diagnosis.** Runs to *P. topali* Buhl, 2004 in Buhl's (2011b) key, but *P. topali* has head only 1.9 times as wide as long, OOL:LOL = 4:3, A9 1.8 times as long as wide, notauli reaching to only 0.25, and metasoma much more pointed than in *P. junci*.

**Etymology.** Named after the *Juncus* abundant at the type locality.

**Distribution.** Known from the east-central part of Argentina only.

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