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**Further new species of Platygastriinae  
from rainforest canopies in Tanzania  
(Hymenoptera, Platygasteridae)**

**Peter Neerup BUHL**

**Abstract**

The following 12 species are described as new to science: *Leptacis minuscula*, *L. pakenhami*, *L. suturalis*, *L. truncativentris*, *Platygaster divergens*, *P. punctifrons*, *Synopeas basifurcatum*, *S. densum*, *S. fibigeri*, *S. meulengrachtsi*, *S. nigrotrochantericum*, and *S. scharffi*. The work is illustrated by 48 text-figures.

**Zusammenfassung**

12 neue Arten von Platygasteridae werden beschrieben: *Leptacis minuscula*, *L. pakenhami*, *L. suturalis*, *L. truncativentris*, *Platygaster divergens*, *P. punctifrons*, *Synopeas basifurcatum*, *S. densum*, *S. fibigeri*, *S. meulengrachtsi*, *S. nigrotrochantericum* und *S. scharffi*. Die Arbeit ist mit 48 Abbildungen versehen.

## Introduction

In my recent paper on canopy fogged Afrotropical platygastriids (BUHL 2011) several species were left undescribed. Some of the more distinct of these species are described below. That they all were present in the material in very few specimens is an indication of the diversity of the group in the canopies of the Eastern Arc Mountains.

Standard abbreviations used in the descriptions are A1-A10 = antennomeres 1-10, OOL = distance between lateral ocellus and eye, LOL = distance between lateral and anterior ocelli, and T1-T6 = tergites 1-6.

All material has been mounted on card points on pins, and it is preserved in the Zoological Museum, University of Copenhagen (ZMUC).

## Material

### *Leptacis minuscula* nov.sp. (figs 1-4)

**M a t e r i a l e x a m i n e d :** Holotype male: Tanzania, Tanga, Muheza District, Kwamgumi Forest Reserve, 4°57'S 38°44'E, 170-220 m, 6.x.1995 (ZMUC).

**D i a g n o s i s .** A very small species (only male known) with hyperoccipital carina only indicated, scutellar spine very small, acute, without lamella below, and T1 and base of T2 rather strongly setose.

**D e s c r i p t i o n .** Male. Body length 0.60 mm. Body black; antennae, mandibles, tegulae, T1 and legs including coxae pale brownish yellow.

Head from above (fig. 1) 2.15 times as wide as long, 1.3 times as wide as mesosoma, reticulate with rather large (not transverse) meshes, strongest on occiput; hyperoccipital carina hardly present but head distinctly angled. Eyes bare. OOL slightly shorter than diameter of lateral ocellus, hardly 0.25 times as long as LOL. Head in frontal view 1.25 times as wide as high. Antenna (fig. 2) with A1 0.9 times as long as height of head, longer than distance between inner orbits (9:8); A7-A9 each about 1.33 times as long as wide; flagellum with inconspicuous pubescence.

Mesosoma 1.6 times as long as wide, 1.2 times as high as wide. Sides of pronotum distinctly reticulate (not longitudinally so) in about anterior half (over entire length in lowest part), rest smooth. Mesoscutum evenly and moderately densely setose, faintly and uniformly reticulate-coriaceous, without notauli; hind margin only very slightly convex medially; scuto-scutellar grooves each with three long setae. Mesopleuron smooth. Scutellum (fig. 3) sculptured as mesoscutum, towards sides slightly denser setose, posteriorly with a short, thin, semitransparent tooth without lamella. Metapleuron smooth and bare in most of anterior half, in medial part with sparse pilosity, dense only posteriorly. Propodeal carinae brownish semitransparent, of moderate height, in posterior half slightly diverging.

Fore wing about as long as entire body, 2.7 times as long as wide, almost clear, with fine and rather dense microtrichia; marginal cilia 0.3 width of wing. Hind wing 12 times as long as wide; marginal cilia 1.6 width of wing.

Metasoma (fig. 4) shorter than mesosoma (15:16), 0.9 times as wide as this. Most of T1 and base of T2 with dense long whitish pilosity; T1 swollen in anterior half, in posterior half with two longitudinal carinae; T2-T7 smooth, apical tergites with a few inconspicuous setae.

**C o m m e n t s .** Other small Afrotropical *Leptacis* species include *L. pumilio* MASNER 1960, which, however, has vertex rounded with no trace of ridge, brown flagellum, and T1 with only sparse setation; *L. nana* MASNER 1960 has scutellar spine blunt, and *L. insularis* MASNER 1960 has T1 bare dorsally, cf. MASNER (1960). Furthermore, *L. microcera* BUHL 2003 has a complete hyperoccipital carina, distinctly stronger scutellar spine and T1 with only as few setae; *L. luboi* BUHL 2003 has head only 1.8 times as wide as long, very slightly wider than mesosoma, with a high hyperoccipital carina, and scutellum with a distinct lamella below spine; and *L. longiciliata* BUHL 2003 has head only 1.8 times as wide as long, sides of pronotum smooth except in upper anterior corner, scuto-scutellar grooves with dense setae, mesopleuron with longitudinal lines in upper third, and scutellar spine fully 0.7 as long as propodeal carinae, with a lamella below, cf. BUHL (2003a, 2003b).

**E n t y m o l o g y .** The name refers to the small body size.

#### ***Leptacis pakenhami* nov.sp. (figs 5-8)**

**M a t e r i a l e x a m i n e d :** Holotype female: Tanzania, Tanga, Lushoto District, Mazumbai Forest Reserve, 4°49'S 38°29'E, 1650-1730 m, 27.xi.1995 (ZMUC).

**D i a g n o s i s .** A rather small species with weakly indicated hyperoccipital carina; female A4 about 1.7 times as long as A3, A9 1.1 times as long as wide; notauli almost complete; scutellar tooth only about 0.25 as long as propodeum; female metasoma slightly shorter than rest of body.

**D e s c r i p t i o n .** Female. Body length 0.85 mm. Body medium brown; antennae, mandibles, tegulae and legs including coxae more or less light brown (could be paler than natural due to stay in alcohol).

Head from above (fig. 5) 1.85 times as wide as long, 1.05 times as wide as mesosoma, faintly reticulate, on occiput and frons transversely so; hyperoccipital carina only weakly and incompletely indicated. OOL equal to shorter diameter of lateral ocellus; LOL = 2.25 OOL. Eyes bare. Head in frontal view 1.15 times as wide as high. Antenna (fig. 6) with A1 0.75 times as long as height of head, as long as distance between inner orbits; A9 1.1 times as long as wide.

Mesosoma 1.5 times as long as wide, 1.05 times as high as wide. Sides of pronotum smooth except for faint reticulation in upper anterior corner. Mesoscutum with very few setae, weakly reticulate-coriaceous; notauli finely indicated almost to anterior margin, distinctly converging behind, mid lobe slightly and bluntly prolonged to base of scutellum; scuto-scutellar grooves with a few long setae. Mesopleuron smooth. Scutellum (fig. 7) weakly reticulate-coriaceous, sparsely setose, behind with a low and very short tooth. Metapleuron smooth and bare, with short pilosity in posterior 0.4. Propodeal carinae low, parallel, distinctly separated; area between them smooth, very slightly longer than wide.

Fore wing about as long as entire body, 3.2 times as long as wide, faintly yellowish, with moderately dense and rather long microtrichia; marginal cilia 0.25 width of wing. Hind wing about eight times as long as wide; marginal cilia 0.8 width of wing.

Metasoma (fig. 8) shorter than head and mesosoma combined (24:26), 1.2 times as long as mesosoma, 0.9 times as wide as this. T1 with two strong, parallel medial longitudinal carinae, laterally with a fringe of short pubescence and a few longer setae. T2 with two small, slightly pubescent basal foveae, rest of tergite as well as T3-T5 smooth, T6 finely reticulate-coriaceous.

**C o m m e n t s .** In BUHL'S (2011) key this species could run to either *L. kenya* BUHL 2008, *L. graciliventris* BUHL 2003, *L. luboi* BUHL 2003, or *L. disticha* BUHL 2005, but the first three mentioned species all lack notauli, the first two also has much more pointed metasoma than *L. pakenhami*, and *L. luboi* has a high hyperoccpital carina and differently shaped scutellum and propodeal carinae. *L. disticha* is one of the few other *Leptacis*-species with almost complete notauli, but it differs from *L. pakenhami* e.g. in having much longer scutellar spine, fore wing only 2.7 times as long as wide, and metasoma hardly longer than mesosoma, cf. BUHL (2005).

**E t y m o l o g y .** Named after British nature writer and tree enthusiast Thomas Pakenham.

### ***Leptacis suturalis* nov.sp. (figs 9-12)**

**M a t e r i a l e x a m i n e d :** Holotype female: Tanzania, Tanga, Lushoto District, Mazumbai Forest Reserve, 4°49'S 38°29'E, 1650-1730 m, 6.vii.1995 (ZMUC).

**D i a g n o s i s .** A moderately sized species without hyperoccipital carina, female A4 about twice as long as A3, A9 1.4 times as long as wide; notauli absent; scutellar spine sharply pointed and slightly longer than propodeum; marginal cilia of fore wing 0.3 width of wing, of hind wing 0.8 width of wing; female metasoma 0.85 times as long as rest of body.

**D e s c r i p t i o n .** Female. Body length 1.4 mm. Body dark reddish brown, antennae and mandibles light brownish, legs including coxae yellowish.

Head from above (fig. 9) 2.0 times as wide as long, as wide as mesosoma, reticulate-coriaceous, on occiput and medially on frons transversely so; hyperoccipital carina absent, head rather smoothly rounded. OOL 0.7 times as long as shorter diameter of lateral ocellus; LOL = 3.5 OOL. Head in frontal view 1.1 times as wide as high. Antenna (fig. 10) with A1 about as long as height of head, 1.66 times as long as distance between inner orbits; A9 1.4 times as long as wide.

Mesosoma 1.7 times as long as wide, 1.15 times as high as wide. Sides of pronotum reticulate-coriaceous (not longitudinally so) in upper anterior part, rest smooth. Mesoscutum evenly and moderately densely setose, finely reticulate-coriaceous; notauli absent; antero-lateral sutures of disc along sides of pronotum unusually distinct as dark, straight, rather strongly converging lines (i.e. sides of pronotum wide in dorsal view); hind margin slightly and broadly convex, medially reaching base of scutellum, at each side with eight long pale setae. Mesopleuron smooth, in upper 0.2 with about seven weak longitudinal lines over most of length. Scutellum (fig. 11) denser setose and with rougher sculpture than mesoscutum, raised along medial third, ending in a light brownish spine

which is very slightly longer than propodeum, spine with a distinct semitransparent lamella below its base. Metapleuron smooth and bare, only with short pilosity in posterior 0.3. Propodeal carinae low, almost parallel, slightly but distinctly separated, area between them smooth.

Fore wing about as long as entire body, 2.8 times as long as wide, almost clear, with fine and dense microtrichia; marginal cilia 0.3 width of wing. Hind wing 7.6 times as long as wide; marginal cilia 0.8 width of wing.

Metasoma (fig. 12) 0.85 times as long as head and mesosoma combined, longer than mesosoma (38:35), 0.9 times as wide as this. T1 swollen in anterior 0.4, in posterior 0.6 with two parallel carinae rather close together, laterally of carinae with short pubescence which continues in the two small basal foveae on T2; T2-T5 smooth, with a narrow stripe of dull microsculpture along hind margins, T6 smooth only basally; T3-T6 with a few very inconspicuous setae.

**C o m m e n t s .** In BUHL'S (2011) key this species runs to either *L. pilosa* BUHL 2005 or *L. brevigaster* BUHL 2004, but both these species have relatively shorter and more blunt scutellar spine than *L. suturalis*, and they have marginal cilia of hind wing longer than width of wing, cf. BUHL (2004a, 2005).

**E t y m o l o g y .** The name refers to the unusually distinct sutures along the antero-lateral borders of mesoscutum of this species.

### ***Leptacis truncativentris* nov.sp. (figs 13-16)**

**M a t e r i a l e x a m i n e d :** Holotype female: Tanzania, Tanga, Lushoto District, Mazumbai Forest Reserve, 4°49'S 38°31'E, 1370-1435 m, 04.xii.1995 (ZMUC).

**D i a g n o s i s .** A moderately sized species with hyperoccipital carina; female A4 about 1.9 times as long as A3, almost six times as long as wide, 2.3 times as long as A5; A9 1.4 times as long as wide, A10 1.9 times as long as A9; notauli absent; scutellar spine strong, overreaching base of T1; fore wing with dense microtrichia, marginal cilia of fore wing 0.2 width of wing; female metasoma hardly longer than mesosoma.

**D e s c r i p t i o n .** Female. Body length 1.5 mm. Body black; A1-A6, mandibles, tegulae and legs including coxae light brownish; A7-A10 slightly darker, reddish brown.

Head from above (fig. 13) 2.0 times as wide as long, 1.05 times as wide as mesosoma, finely reticulate-coriaceous with small meshes which just above antennal insertions are transverse; hyperoccipital carina complete and rather strong. Eyes bare. OOL 0.7 times as long as shorter diameter of lateral ocellus, 0.3 times as long as LOL. Head in frontal view 1.2 times as wide as high. Antenna (fig. 14) with A1 nearly 1.1 times as long as height of head, 1.8 times as long as distance between inner orbits; A9 about 1.4 times as long as wide.

Mesosoma 1.6 times as long as wide, 1.15 times as high as wide. Sides of pronotum with very faint longitudinal microsculpture except along wide margins. Mesoscutum evenly and moderately densely setose, weakly and uniformly reticulate-coriaceous, without notauli; hind margin medially with a short, transverse, brownish semitransparent plate to base of scutellum, at each side with dense (about 14) long greyish setae over scuto-scutellar grooves. Mesopleuron smooth except for a few weak longitudinal carinae over

most of length in upper 0.2. Scutellum (fig. 15) slightly more roughly sculptured and denser setose than mesoscutum, with a strong brownish spine overreaching base of T1, with an inconspicuous vertical lamella below its base. Metapleuron smooth and bare along upper margin and in slightly more than anterior half, rest with whitish pilosity. Propodeal carinae low, dark, parallel, close together but distinctly separated; area between them smooth, fully five times as long as wide.

Fore wing as long as entire body, 2.8 times as long as wide, with faint yellowish tint and fine and dense microtrichia; marginal cilia 0.2 width of wing. Hind wing 6.7 times as long as wide; marginal cilia 0.6 width of wing.

Metasoma (fig. 16) 0.8 times as long as head and mesosoma combined, hardly longer than mesosoma (39:38), wider than this (24:23), 1.5 times as wide as high. T1 with two weak longitudinal medial carinae, laterally of carinae with short whitish pubescence which continues in basal foveae on T2; narrow hind margin of T2 and entire T3-T6 dull reticulate-coriaceous; apical tergites with very inconspicuous setae; T5-T6 vertical.

**C o m m e n t s .** In BUHL'S (2011) key this species runs to either *L. hanseni* BUHL 2010 or *L. papei* BUHL 2011, but the first mentioned species has scutellar spine much dilated below, and the last mentioned species has much thinner scutellar spine than *L. truncativentris*, and both species have distinctly longer marginal cilia of wings than *L. truncativentris*, cf. BUHL (2010, 2011).

**E t y m o l o g y .** The name refers to the unusually blunt metasoma.

### ***Platygaster divergens* nov.sp. (figs 17-20)**

**M a t e r i a l e x a m i n e d :** Holotype female: Tanzania, Tanga, Lushoto District, Mazumbai Forest Reserve, 4°49'S 38°29'E, 1650-1730 m, 27.xi.1995 (ZMUC).

**D i a g n o s i s .** Head distinctly more than twice as wide as long, rounded and strongly striated behind, OOL and LOL equal; female A9 1.33 times as long as wide; notauli indicated in posterior third; scutellum weakly convex; propodeal carinae strongly diverging; female metasoma 1.33 times as long as rest of body, constricted behind T2.

**D e s c r i p t i o n .** Female. Body length 1.8 mm. Body black; A1-A5, mandibles, all coxae, and mid and hind legs medium brown, A6-A10 and tegulae darker brown; fore legs, base of mid and hind tibiae, and segments 1-4 of all tarsi light brown.

Head from above (fig. 17) 2.33 times as wide as long, 1.15 times as wide as mesosoma; occiput strongly half-circularly striated; hyperoccipital carina absent; vertex finely transversely striated up to lateral ocelli, with a few transverse striae between ocelli, otherwise weakly reticulate-coriaceous; frons very finely fan-like striated out from a weak longitudinal impression medially. OOL = LOL. Head in frontal view 1.4 times as wide as high. Antenna (fig. 18) with A1 as long as height of head, longer than distance between inner orbits (20:17); A9 1.33 times as long as wide.

Mesosoma 1.5 times as long as wide, 1.15 times as high as wide. Sides of pronotum with longitudinal microsculpture except along rather narrow upper and hind margins. Mesoscutum evenly and moderately densely setose, reticulate-coriaceous in anterior 0.4, rest smooth; notauli faintly indicated in posterior third, mid lobe slightly and bluntly prolonged to base of scutellum; scuto-scutellar grooves densely setose. Mesopleuron

smooth. Scutellum (fig. 19) smooth and almost bare in medial third, laterally densely setose and dull. Metapleuron with pilosity all over. Propodeal carinae distinctly diverging; area between them smooth, measured anteriorly as long as wide, measured posteriorly 1.6 times as wide as long.

Fore wing just reaching apex of metasoma, 2.5 times as long as wide, faintly infuscated, with fine and dense microtrichia; marginal cilia 0.06 width of wing. Hind wing 4.3 times as long as wide, with two hamuli; marginal cilia 0.2 width of wing.

Metasoma (fig. 20) 1.33 times as long as head and mesosoma combined, 0.7 times as wide as mesosoma. T1 with 12 longitudinal carinae. T2 without striation in the two narrow basal foveae which reach 0.4 length of tergite, between foveae with a few weak longitudinal carinae reaching at most one-sixth the length of tergite, T2 otherwise smooth except for micropunctuation along narrow hind margin. T3-T6 smooth except for micropunctuation along narrow hind margin of T3 and T4; T3 at about midlength with a slightly uneven transverse row of 10 setae which are inserted in rather deep punctures, T4-T6 each with about 12 more scattered such setae, on T6 the setae are inserted in shallow punctures. T5 at midlength 1.8 times as wide as high; sternite 2 flat, not prolonged anteriorly.

**C o m m e n t s .** This species runs to *P. mazumbaiensis* BUHL 2011 or *P. ethiopica* BUHL 2004 in BUHL'S (2011) key, but *P. mazumbaiensis* has OOL 1.6 times as long as LOL, much stronger convex scutellum, and metasoma evenly narrowed towards apex (not constricted behind T2) with 22 punctures on T5; *P. ethiopica* has head only twice as wide as long, weakly striated behind, propodeal carinae almost parallel, and metasoma evenly narrowed towards apex. *Platygaster splendens* SUNDHOLM 1970 is somewhat similar to *P. divergens*, but it has head only twice as wide as long, notauli completely absent, and propodeal carinae parallel. Cf. also SUNDHOLM (1970) and BUHL (2004b).

**E t y m o l o g y .** The name refers to the strongly diverging propodeal carinae.

#### ***Platygaster punctifrons* nov.sp. (figs 21-24)**

**M a t e r i a l e x a m i n e d :** Holotype female: Tanzania, Tanga, Muheza District, Kwangumi Forest Reserve, 4°57'S 38°44'E, 170-220 m, 5.xi.1995 (ZMUC). Paratypes: 2 females, same data but 9.xi.1995 (ZMUC).

**D i a g n o s i s .** Female. Body length 1.3-1.5 mm; frons especially laterally with numerous distinct punctures, head behind rounded and rather strongly transversely striated; female A4 fully twice as long as A3, A9 1.1 times as long as wide; notauli weakly indicated in posterior half; scutellum slightly convex, smooth; female metasoma very slightly longer than rest of body, T2 striated in basal foveae to half the length of tergite, medially to 0.25 of length, apical tergites each with 10-12 shallow punctures.

**D e s c r i p t i o n .** Female. Body length 1.3-1.5 mm. Body black; A1-A3, mandibles and legs light brownish; A4-A10 and coxae dark brown.

Head from above (fig. 21) 2.2 times as wide as long, 1.15 times as wide as mesosoma; occiput rather strongly transversely striated, behind eyes vertically so; hyperoccipital carina absent but anterior dense striation on occiput almost forming a weak carina; vertex posteriorly with transverse sculpture up to lateral ocelli, rest reticulate-coriaceous (not transversely so) and with sparse, distinct punctures; frons with numerous distinct

punctures in upper 0.3 and in two uneven rows along inner orbits (to about 0.15 width of frons on each side), the number of punctures on frons varies from about 30 (paratypes) to about 40 (holotype), frons otherwise almost smooth except for fine oblique to transverse striation in about lower third. OOL = 1.25 LOL. Head in frontal view 1.25 times as wide as high. Antenna (fig. 22) with A1 0.8 times as long as height of head, as long as distance between inner orbits; A9 1.1 times as long as wide.

Mesosoma one and a third times as long as wide, 1.05 times as high as wide. Sides of pronotum smooth, with numerous seta-implantations in upper half and along hind margin. Mesoscutum with few setae, most of them laterally and along notauli, smooth except for weak rugosity at anterior end of notauli, these weak, fading out in anterior half; mid lobe rather narrowly prolonged, touching base of scutellum; scuto-scutellar grooves covered by numerous whitish setae. Mesopleuron smooth. Scutellum (fig. 23) slightly and evenly convex, smooth, bare medially, towards sides moderately densely setose. Metapleuron with dense whitish pilosity all over. Propodeal carinae short, parallel; area between them fully twice as wide as long, smooth.

Fore wing 2.5 times as long as wide, just reaching base of T6 to slightly surpassing tip of metasoma, clear, with moderately dense microtrichia; marginal cilia 0.1 width of wing. Hind wing 5.4 times as long as wide, with two hamuli; marginal cilia 0.25 width of wing.

Metasoma (fig. 24) 1.05 times as long as head and mesosoma combined, narrower than mesosoma (19:20). T1 with about six complete as well as some incomplete longitudinal carinae. T2 striated in basal foveae to half the length of tergite, medially to 0.25 of length. T3-T6 smooth; T3, T5 and T6 each with 10, T4 with 12 (sometimes also 12 on each of T3 and T5) setae inserted in shallow punctures, forming a transverse row on each of T3-T5.

**C o m m e n t s .** This species runs to *P. gambiana* BUHL 2006 or *P. setiventris* BUHL 2010 in BUHL's (2011) key, but *P. gambiana* has occiput smooth, distinctly margined in front, and female A9 1.4 times as long as wide; *P. setiventris* has longer and more setose female metasoma, cf. also BUHL (2006, 2010)

**E t y m o l o g y .** The name refers to the unusually distinctly punctured frons.

### ***Synopeas basifurcatum* nov.sp. (figs 25-28)**

**M a t e r i a l e x a m i n e d :** Holotype female: Tanzania, Tanga, Lushoto District, Mazumbai Forest Reserve, 4°49'S 38°31'E, 1370-1435 m, 08.xii.1995 (ZMUC).

**D i a g n o s i s .** Female close to 2 mm with strong hyperoccipital carina, A4 about 1.6 times as long as each of A3 and A5; A9 1.2 times as wide as long; notauli absent; scutellum keeled along middle but hardly modified posteriorly; fore wing hardly with marginal cilia; female metasoma very slightly shorter than rest of body, 1.4 times as wide as high, T2 antero-medially with a strong furrow, T6 1.3 times as wide as long.

**D e s c r i p t i o n .** Female. Body length 1.9 mm. Body black, A1 and legs light brown; A2-A10 and last segment of all tarsi medium brown; mandibles and coxae dark brown.

Head from above (fig. 25) 1.8 times as wide as long, about as wide as mesosoma, finely reticulate-coriaceous (not transversely so) and with scattered fine punctures, frons in lower half with distinct transverse wrinkles which become wider towards antennal



insertions, just above these almost as wide as entire frons; hyperoccipital carina strong and complete. OOL one third as long as longer diameter of lateral ocellus, hardly more than one fifth of LOL. Head in frontal view 1.2 times as wide as high. Antenna (fig. 26) with A1 shorter than height of head (22:25), 1.3 times as long as distance between inner orbits; A9 1.2 times as wide as long.

Mesosoma 1.5 times as long as wide, 1.1 times as high as wide. Sides of pronotum finely reticulate-coriaceous (not longitudinally so) in upper half, smooth below and along narrow hind margin, in lower 0.2 with a large, bare excavation over entire length. Mesoscutum sparsely and rather evenly setose, finely and almost uniformly reticulate-coriaceous, without notauli; hind margin medially with a slightly transverse, smooth, dark brown prolongation to base of scutellum; scuto-scutellar grooves with dense, long whitish setae. Mesopleuron smooth. Scutellum (fig. 27) distinctly raised along middle along entire length, smooth and almost bare here, laterally of medial keel densely setose, posteriorly the keel is low, slightly lamella-like and brownish. Metapleuron smooth and bare in slightly more than anterior 0.2, posteriorly with dense whitish pilosity. Propodeal carinae high and dark brown, fused except anteriorly.

Fore wing 0.8 times as long as entire body, 2.4 times as long as wide, almost clear, with fine and moderately dense microtrichia, hardly with marginal cilia. Hind wing 4.8 times as long as wide; marginal cilia at most 0.3 width of wing.

Metasoma (fig. 28) slightly shorter than head and mesosoma combined (56:58), hardly 0.9 times as wide as mesosoma, 1.4 times as wide as high. T2 in anterior 0.3 with a broad and deep medial furrow or impression, rest of tergite smooth except for a narrow stripe of reticulation along hind margin; T3-T5 also with such a stripe; T6 distinctly reticulate-coriaceous except basally. T3 bare, T4 with 8 setae inserted in shallow punctures in one transverse row, T5 with 16 setae inserted in two irregular transverse rows of such punctures.

**C o m m e n t s .** This species runs to *S. bicolor* SUNDHOLM 1970 in BUHL'S (2011) key, but *S. bicolor* is only 1 mm long, it has A4 shorter relative to A3 and A5, less convex scutellum, and T6 less pointed than *S. basifurcatum*, cf. SUNDHOLM (1970). Cf. also *S. densum* nov.sp. below.

**E t y m o l o g y .** The names refers to the characteristic furrow at base of T2.

### ***Synopeas densum* nov.sp. (figs 29-32)**

**M a t e r i a l e x a m i n e d :** Holotype female: Tanzania, Tanga, Lushoto District, Mazumbai Forest Reserve, 4°49'S 38°31'E, 1370-1435 m, 04.xii.1995 (ZMUC).

**D i a g n o s i s .** Female close to 2 mm with strong hyperoccipital carina, A4 about 1.4 times as long as each of A3 and A5; A9 1.6 times as wide as long; notauli absent; scutellum at level of mesoscutum, not keeled along middle, posteriorly with a low lamella; fore wing with fine and dense microtrichia, without marginal cilia; female metasoma 1.15 times as long as rest of body, 1.5 times as wide as high.

**D e s c r i p t i o n .** Female. Body length 1.9 mm. Body black; A1-A6 and legs light brownish, A7-A10 and coxae slightly darker, reddish brown, mandibles very dark brown.

Head from above (fig. 29) 2.1 times as wide as long, as wide as mesosoma, finely reticulate-coriaceous with small (hardly transverse) meshes, above antennal insertions with five wrinkles; hyperoccipital carina strong and complete. OOL 0.9 times as long as shorter diameter of lateral ocellus; LOL = 2.8 OOL. Head in frontal view 1.2 times as wide as high. Antenna (fig. 30) with A1 shorter than height of head (23:25), 1.4 times as long as distance between inner orbits; A9 1.6 times as wide as long.

Mesosoma 1.4 times as long as wide, hardly higher than wide. Sides of pronotum sculptured as head, smooth along narrow hind margin and in about lower half, in lower 0.2 with a distinct excavation. Mesoscutum rather evenly and moderately densely setose, uniformly sculptured almost as head, without notauli; hind margin medially with a smooth, brownish prolongation to base of scutellum, prolongation about as long as its basal width; scuto-scutellar grooves each with 14-15 long setae. Mesopleuron smooth. Scutellum (fig. 31) slightly and evenly convex, not keeled along middle, smooth and sparsely setose along medial third, laterally densely setose, only in posterior 0.2 with a narrow, low, oblique, brownish lamella. Metapleuron smooth and bare in anterior 0.2, rest with pilosity which is dense in posterior half. Propodeal carinae parallel, close together but separated, brownish.

Fore wing 0.8 times as long as entire body, 2.4 times as long as wide, almost clear, with fine and dense microtrichia; marginal cilia absent. Hind wing 4.3 times as long as wide; marginal cilia 0.2 width of wing.

Metasoma (fig. 32) 1.15 times as long as head and mesosoma combined, 0.9 times as wide as mesosoma, 1.5 times as wide as high. T2-T5 reticulate-coriaceous along narrow hind margins, T6 reticulate-coriaceous all over; T3 with 2, T4 with 8, T5 with 14, and T6 with 12 fine setae, forming a transverse row on each of T4-T5. Sternite 2 prolonged below T1.

**C o m m e n t s .** This species runs to *S. mazumbaiense* BUHL 2011 in BUHL's (2011) key, but *S. mazumbaiense* is at most 1.3 mm long, it has female A9 only 1.33 times as wide as long, propodeal carinae fused, wings more elongate and with longer marginal cilia than in *S. densum*, metasoma only 1.33 times as wide as high, and T6 down-curved. *S. densum* is also rather similar to *S. basifurcatum* nov.sp., cf. above.

**E t y m o l o g y .** The names refers to the dense microtrichia on fore wings.

### ***Synopeas fibigeri* nov.sp. (figs 33-36)**

**M a t e r i a l e x a m i n e d :** Holotype female: Tanzania, Tanga, Lushoto District, Mazumbai Forest Reserve, 4°49'S 38°31'E, 1370-1435 m, 04.xii.1995 (ZMUC).

**D i a g n o s i s .** A small species with hyperoccipital carina complete, female A4 very slightly longer than A5, A9 1.4 times as wide as long; notauli very faintly indicated posteriorly; scutellum with a blunt, short but distinct tooth; fore wing without marginal cilia; female metasoma shorter than mesosoma, about 1.5 times as long as wide, and 1.33 times as wide as high.

**D e s c r i p t i o n .** Female. Body length 0.8 mm. Body medium brown; A1-A6, mandibles and legs including coxae yellowish.

Head from above (fig. 33) 1.9 times as wide as long, 1.1 times as wide as mesosoma, finely reticulate-coriaceous, on occiput the meshes are slightly transverse and more distinct than on rest of head; hyperoccipital carina distinct and complete. LOL = 2.5 OOL; OOL about equal to longer diameter of lateral ocellus. Head in frontal view 1.25 times as wide as high. Antenna (fig. 34) with A1 shorter than height of head (11:13), 1.05 times as long as distance between inner orbits; A9 about 1.4 times as wide as long.

Mesosoma 1.5 times as long as wide, 1.15 times as high as wide. Sides of pronotum finely reticulate-coriaceous (not longitudinally so), smooth in about lower 0.3. Mesoscutum evenly and moderately densely setose, finely and uniformly reticulate-coriaceous; notauli very faintly indicated posteriorly; hind margin slightly convex medially, hardly reaching base of scutellum; scuto-scutellar grooves wide, each with about four setae. Mesopleuron smooth. Scutellum (fig. 35) almost smooth, sparsely setose, denser towards sides, without carina along middle, posteriorly semitransparent with a narrow lamella with a blunt tooth above. Metapleuron with long whitish pilosity, sparse in anterior half, dense behind. Propodeal carinae semitransparent, very close together but slightly separated.

Fore wing slightly longer than entire body (47:46), 2.35 times as long as wide, clear, with fine and dense microtrichia; marginal cilia absent. Hind wing 6.3 times as long as wide; marginal cilia half as long as width of wing.

Metasoma (fig. 36) 0.9 times as long as mesosoma, 0.9 times as wide as this, one and a third times as wide as high. T2 smooth. T3-T5 with at most very fine microsculpture, T6 dull reticulate-coriaceous; T4-T5 each with a transverse row of punctures with fine setae.

**C o m m e n t s .** This species runs to *S. gnom* BUHL 2011 in BUHL'S (2011) key, but *S. gnom* differs from *S. fibigeri* in having no hyperoccipital carina, much smaller scutellar tooth, and distinctly more pointed metasoma.

**E t y m o l o g y .** Named in honour of the chairman of the Danish Entomological Society, lepidopterist Michael Fibiger.

### ***Synopeas meulengrachtii* nov.sp. (figs 37-40)**

**M a t e r i a l e x a m i n e d :** Holotype female: Tanzania, Tanga, Muheza District, Kwamgumi Forest Reserve, 4°57'S 38°44'E, 170-220 m, 18.vii.1995 (ZMUC).

**D i a g n o s i s .** A small species without hyperoccipital carina; female A4 about 1.2 times as long as A5, A9 1.4 times as wide as long; notauli faintly indicated posteriorly; scutellum at level of mesoscutum, with a rather short but distinct tooth; female metasoma 1.2 times as long as rest of body, 1.05 times as high as wide.

**D e s c r i p t i o n .** Female. Body length 0.85 mm. Body light brownish; mandibles, A1 and legs including coxae light yellowish, A2-A10 more or less medium brown.

Head from above (fig. 37) 2.0 times as wide as long, wider than mesosoma (16:13), finely reticulate-coriaceous, on occiput and above antennal sockets slightly transversely so; hyperoccipital carina absent. OOL almost twice the diameter of lateral ocellus; LOL = 1.5 OOL. Head in frontal view one and a third times as wide as high. Antenna (fig. 38) with A1 0.75 times as long as height of head, 0.85 times as long as distance between inner orbits; A9 1.4 times as wide as long.

Mesosoma 1.3 times as long as wide, hardly higher than wide. Sides of pronotum faintly reticulate-coriaceous with some longitudinal elements, smooth along narrow hind margin and in most of lower third. Mesoscutum sparsely setose, faintly reticulate-coriaceous, notauli faintly indicated posteriorly; hind margin medially with a smooth, semitransparent prolongation which covers extreme base of scutellum; scuto-scutellar grooves each with about seven long setae. Mesopleuron smooth. Scutellum (fig. 39) along middle smooth and bare, towards sides rather densely setose. Metapleuron smooth and bare in anterior 0.25, rest with rather sparse pilosity. Propodeal carinae short, low, very close together but separated.

Fore wing 0.8 times as long as entire body, 2.4 times as long as wide, clear, with moderately dense microtrichia; marginal cilia absent. Hind wing 5.7 times as long as wide; marginal cilia 0.4 width of wing.

Metasoma (fig. 40) 1.2 times as long as head and mesosoma combined, narrower than mesosoma (12:13), 1.05 times as high as wide. T2 smooth, T3-T5 with a fine transverse stripe of reticulation, T6 dull reticulate all over.

**C o m m e n t s .** This species runs to *S. cynipsoides* BUHL 2004 in BUHL's (2011) key, but *S. cynipsoides* has scutellar tooth shorter and more upwards directed, and metasoma 1.6 times as high as wide, cf. also BUHL (2004b).

**E t y m o l o g y .** Dedicated to the memory of the late Danish naturalist and communicator Jens Meulengracht-Madsen.

#### ***Synopeas nigrotrochantericum* nov.sp. (figs 41-44)**

**M a t e r i a l e x a m i n e d :** Holotype female: Tanzania, Tanga, Muheza District, Kwamgumi Forest Reserve, 4°57'S 38°44'E, 170-220 m, 5.xi.1995 (ZMUC).

**D i a g n o s i s .** Hyperoccipital carina strong; female A4 about 1.4 times as long as A5, A9 1.7 times as wide as long; notauli absent; fore wing without marginal cilia; scutellum slightly above level of mesoscutum, posteriorly vertical, without tooth or lamella; female metasoma about 1.6 times as long as wide, 0.8 times as long as rest of body, 1.5 times as wide as high.

**D e s c r i p t i o n .** Female. Body length 1.0 mm. Black, including mandibles, base of A1, coxae and trochanters; rest of antennae and legs light-medium brown with mid and hind knees and last segment of all tarsi slightly darkened.

Head from above (fig. 41) 2.0 times as wide as long, 1.1 times as wide as mesosoma, finely reticulate-coriaceous (not transversely so), frons towards sides with fine, sparse punctures, in lower 0.3 with four strong transverse carinae above antennal insertions, antennal sockets situated in a rather deep excavation; hyperoccipital carina strong and complete. OOL equal to diameter of lateral ocellus, half as long as LOL. Head in frontal view 1.25 times as wide as high. Antenna (fig. 42) with A1 0.8 times as long as height of head, as long as distance between inner orbits; A9 1.7 times as wide as long.

Mesosoma 1.3 times as long as wide, as high as wide. Sides of pronotum finely reticulate-coriaceous (not longitudinally so), smooth in lower third. Mesoscutum evenly and moderately densely setose, finely and uniformly reticulate-coriaceous, without notauli; just in front of scutellum with a small smooth area, hind margin very slightly

convex here; scuto-scutellar grooves each with about 13 setae. Mesopleuron smooth except for about four very short longitudinal wrinkles along upper part of hind margin. Scutellum (fig. 43) along middle raised, smooth and bare, densely setose towards sides, posteriorly pointed in dorsal view, vertically cut off in lateral view, but not lamella-like (hardly semitransparent) here. Metapleuron with dense whitish pilosity (less dense in anterior 0.4). Propodeal carinae slightly transparent, fused.

Fore wing about 0.9 times as long as entire body, 2.33 times as long as wide, clear, with fine and moderately dense microtrichia; marginal cilia absent. Hind wing 4.8 times as long as wide; marginal cilia 0.25 width of wing.

Metasoma (fig. 44) 0.8 times as long as head and mesosoma combined, 1.15 times as long as mesosoma, very slightly narrower than this, about 1.5 times as wide as high. T2-T5 each with a narrow transverse stripe of reticulation in front of hind margin, T6 with reticulate sculpture all over; apical tergites with a few inconspicuous setae.

**C o m m e n t s .** Hard to place in BUHL'S (2011) key, but it runs to about *S. lineae* BUHL 2011, *S. soederlundi* BUHL 2005, and *S. ibadanense* BUHL 2004, which, however, all have scutellum of a shape distinctly different from *S. nigrotrochantericum*, cf. also BUHL (2004a, 2005, 2011).

**E t y m o l o g y .** The name refers to the trochanters which are strikingly darkened in contrast to most of rest of the legs.

#### ***Synopeas scharffi* nov.sp. (figs 45-48)**

**M a t e r i a l e x a m i n e d :** Holotype female: Tanzania, Tanga, Lushoto District, Mazumbai Forest Reserve, 4°49'S 38°31'E, 1370-1435 m, 04.xii.1995 (ZMUC).

**D i a g n o s i s .** Hyperoccipital carina indistinct; female A4-A5 of equal length, A9 1.25 times as long as wide; notauli absent; marginal cilia of fore wings very short; scutellum rounded, at level of mesoscutum, without modifications; female metasoma 1.9 times as long as wide, hardly as long as rest of body, 1.4 times as wide as high.

**D e s c r i p t i o n .** Female. Body length 1.3 mm. Body blackish; A1-A6, mandibles and legs light brownish yellow, extreme base of A1 darkened; A7-A10 and coxae medium brown.

Head from above (fig. 45) 2.2 times as wide as long, about 1.15 times as wide as mesosoma, finely reticulate-coriaceous, slightly transversely so on occiput and above antennal insertions; hyperoccipital carina indistinct but head distinctly angled. OOL hardly as long as shorter diameter of lateral ocellus; LOL = 5 OOL. Head in frontal view one and a third times as wide as high. Antenna (fig. 46) with A1 0.9 times as long as height of head, 1.1 times as long as distance between inner orbits; A9 1.25 times as long as wide.

Mesosoma 1.3 times as long as wide, almost 1.1 times as high as wide. Sides of pronotum finely reticulate-coriaceous (not longitudinally so) in slightly more than upper half, smooth below. Mesoscutum sparsely and evenly setose, finely reticulate-coriaceous, smooth on a small area postero-medially in front of the short, blunt and smooth prolongation to base of scutellum, this prolongation slightly brownish transparent; notauli absent; scuto-scutellar grooves each with about ten long setae. Mesopleuron

smooth. Scutellum (fig. 47) evenly and weakly convex, medially smooth and almost bare, towards margins densely setose, without modifications. Metapleuron with dense whitish pilosity except along narrow anterior margin. Propodeal carinae dark brownish, fused, from above thick and dull.

Fore wing 0.9 times as long as entire body, 2.25 times as long as wide, faintly infuscated, with fine and rather dense microtrichia except in basal 0.4; marginal cilia very short. Hind wing 4.8 times as long as wide; marginal cilia one third the width of wing.

Metasoma (fig. 48) about 0.95 times as long as head and mesosoma combined, 0.9 times as wide as mesosoma, 1.4 times as wide as high. T2-T6 smooth, T4-T5 each with a medially interrupted transverse row of eight setae inserted in shallow punctures.

**C o m m e n t s .** This species runs to *S. laeiventre* BUHL, 2011 in BUHL's (2011) key, but *S. laeiventre* has female A4 longer than A5, A9 1.5 times as wide as long, notauli indicated posteriorly, and metasoma 1.5 times as wide as high.

**E t y m o l o g y .** Named after Dr. Nikolaj Scharff (Zool. Mus., Copenhagen) who has contributed to the canopy fogging project.

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Author's address:

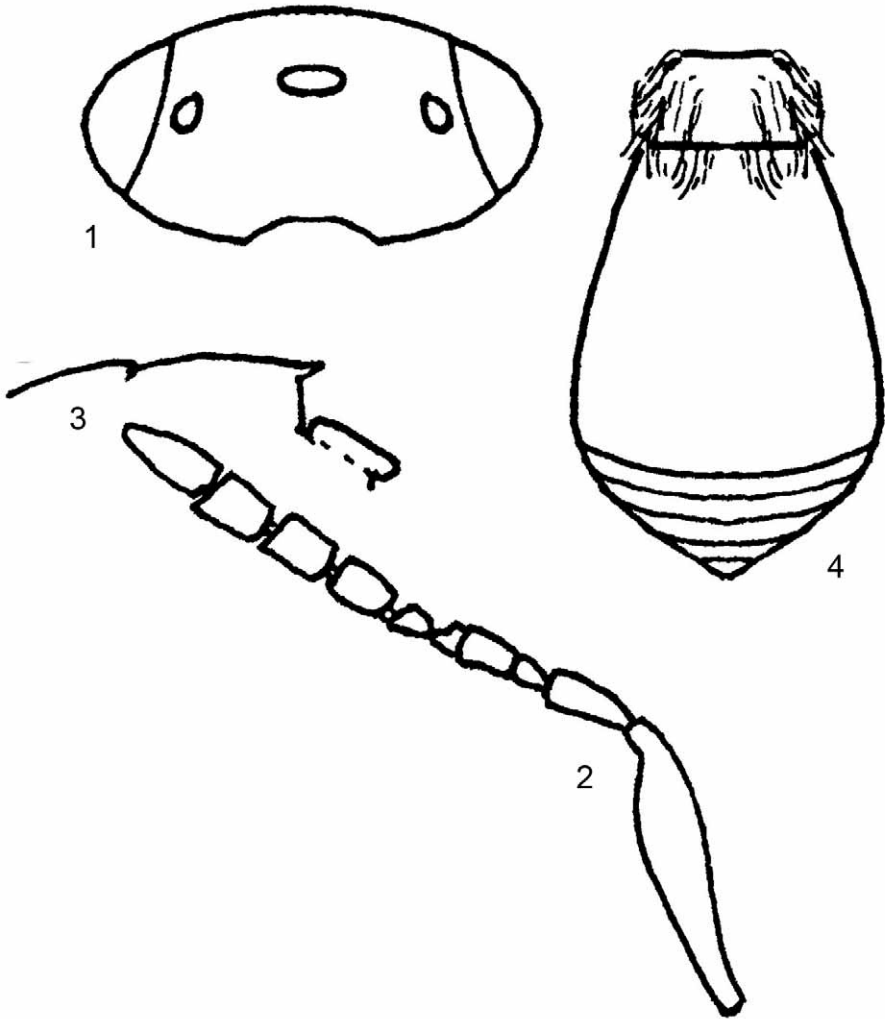
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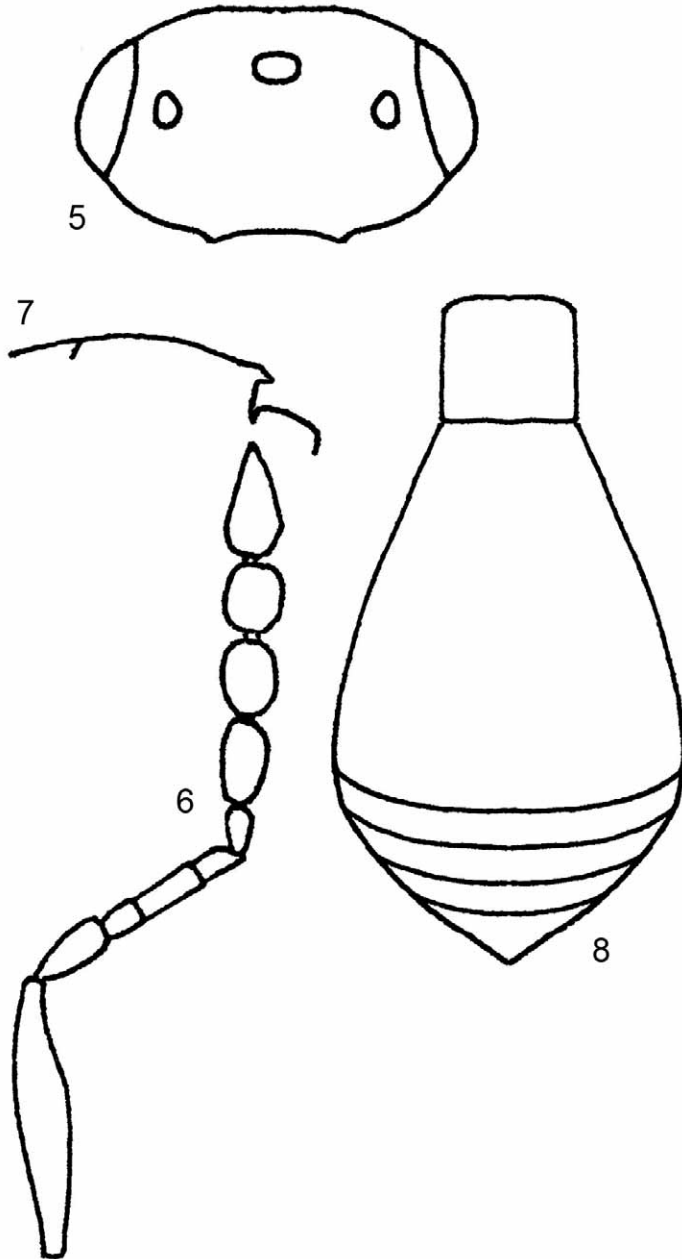
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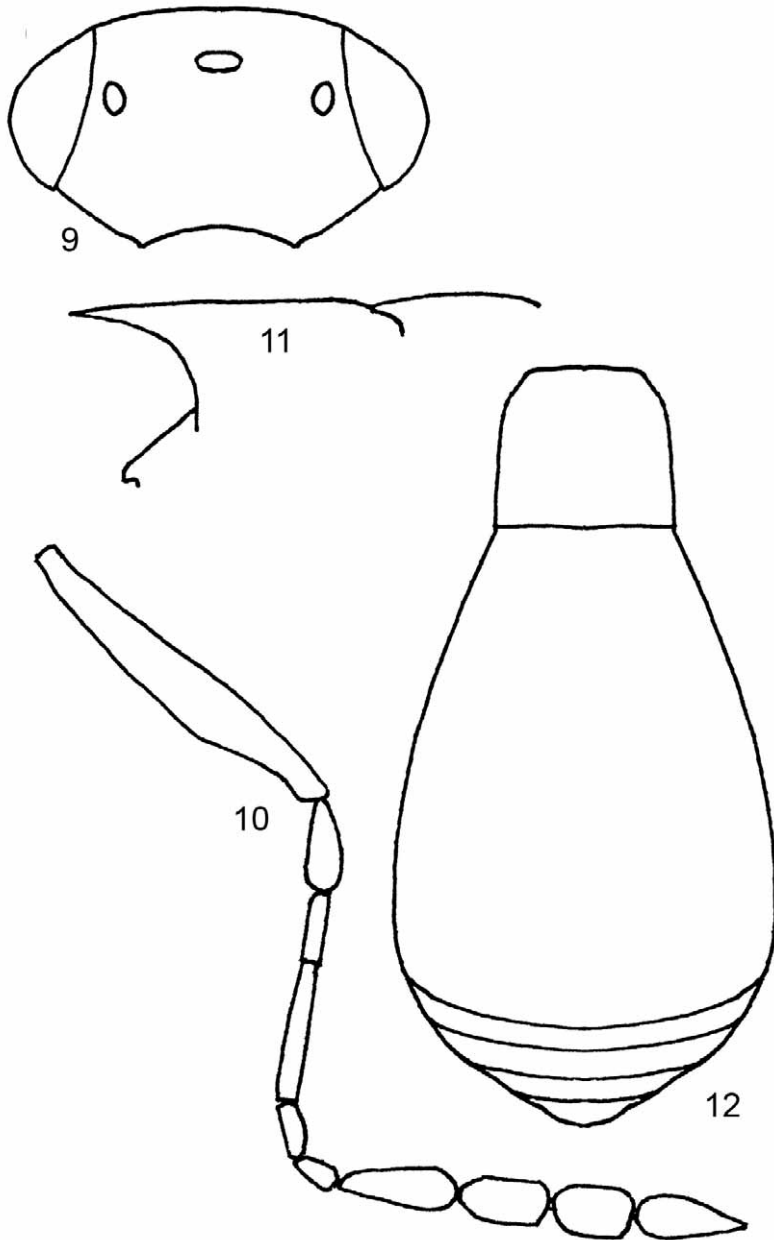


**Figs 1-4:** *Leptacis minuscula* nov.sp. male: (1) head, (2) antenna, (3) scutellum and propodeum, (4) metasoma.

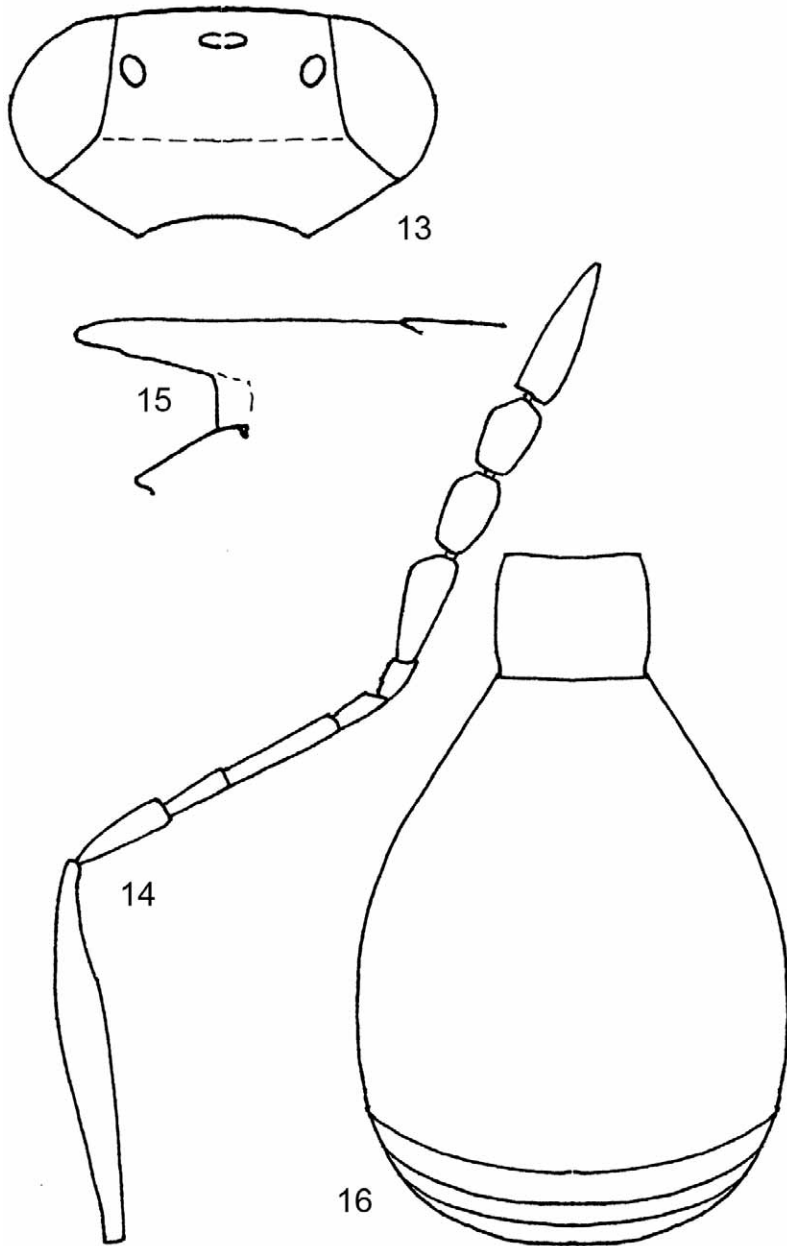




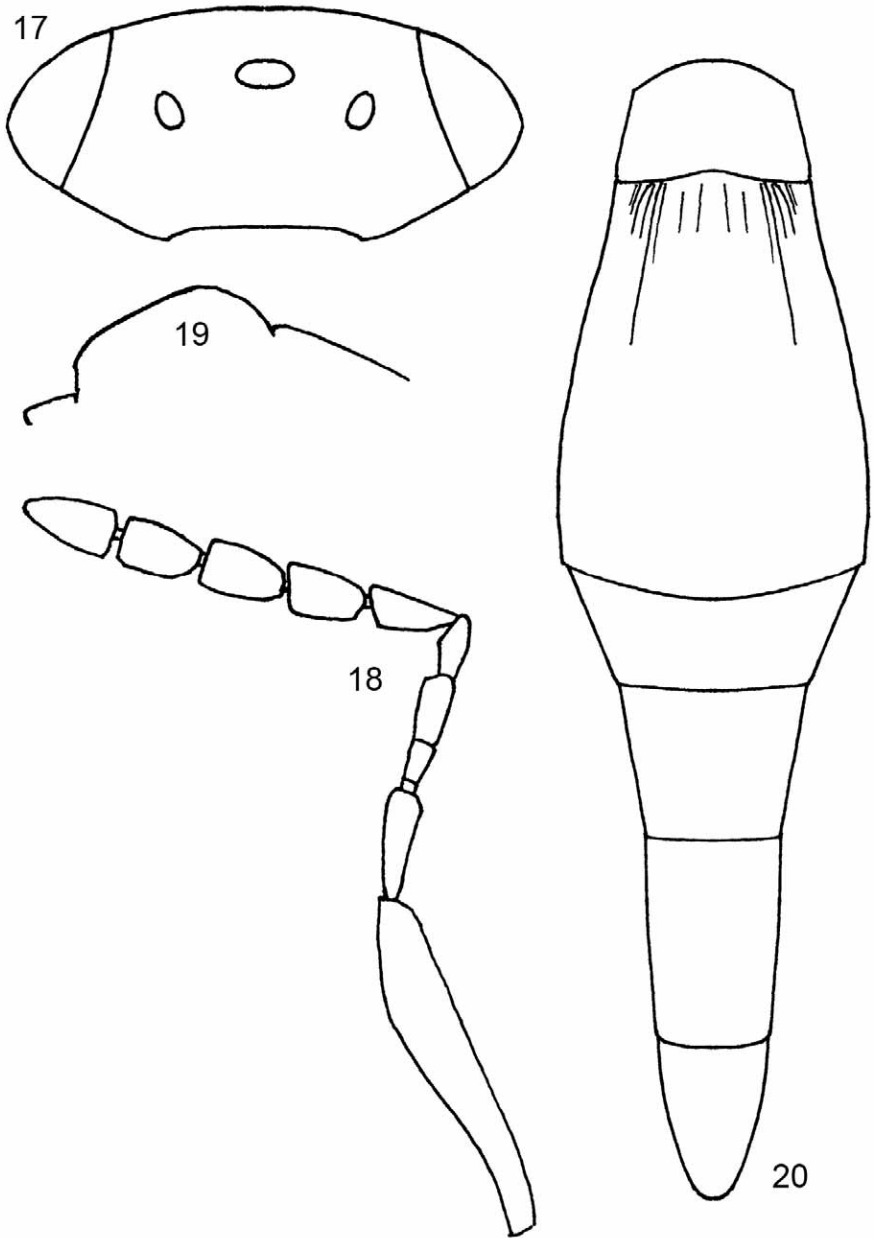
**Figs 5-8:** *Leptacis pakenhami* nov.sp. female: (5) head, (6) antenna, (7) scutellum and propodeum, (8) metasoma.



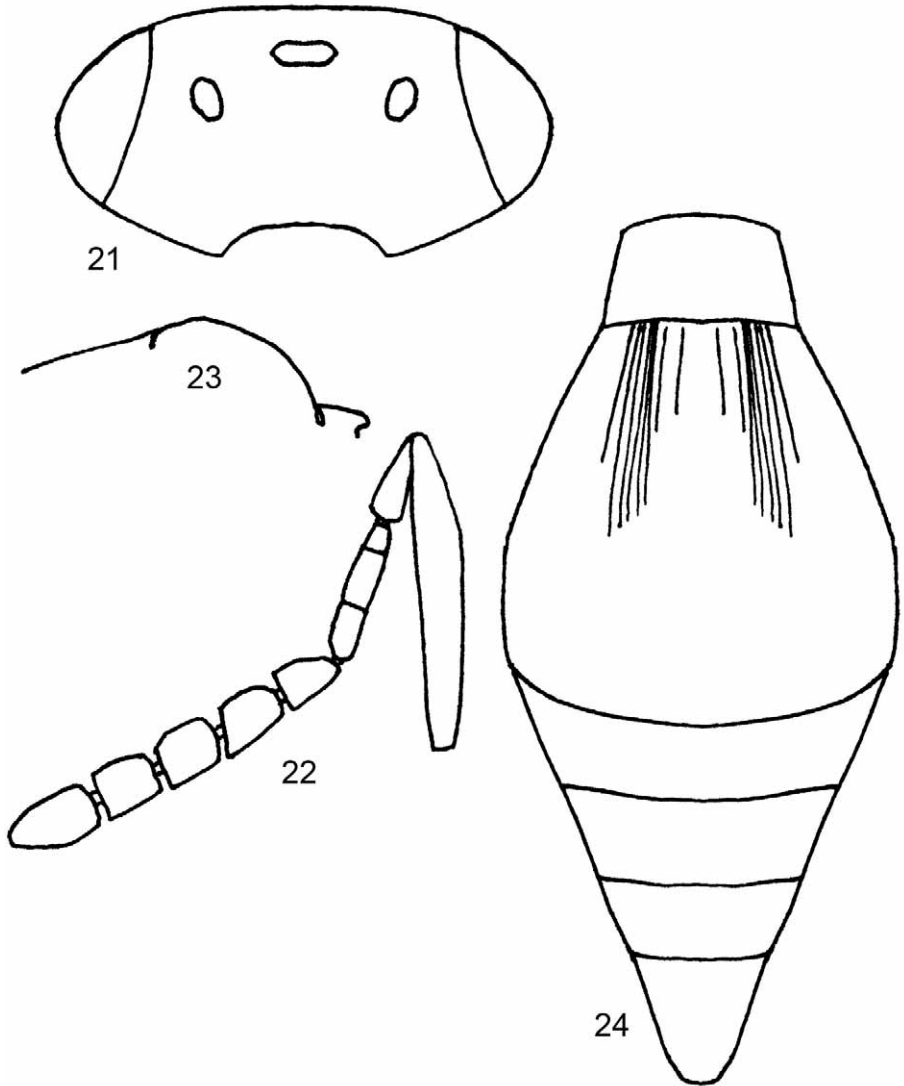
**Figs 9-12:** *Leptacis suturalis* nov.sp. female: (9) head, (10) antenna, (11) scutellum and propodeum, (12) metasoma.



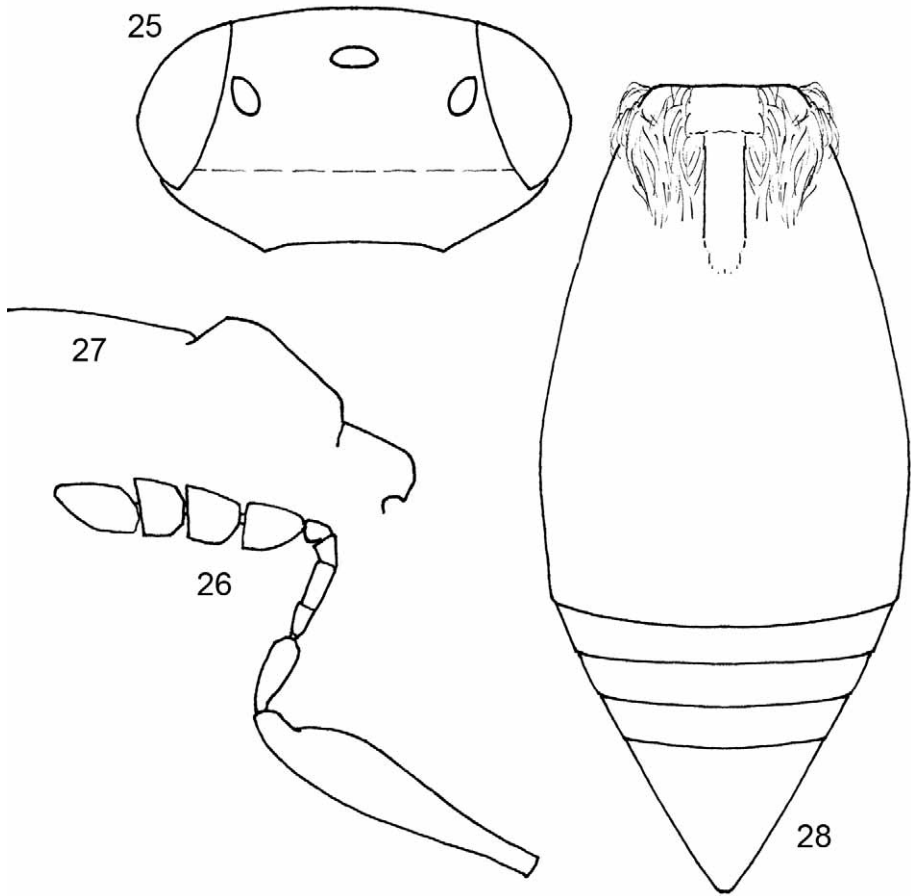
**Figs 13-16:** *Leptacis truncativentris* nov.sp. female: 13 head, 14 antenna, 15 scutellum and propodeum, 16 metasoma.



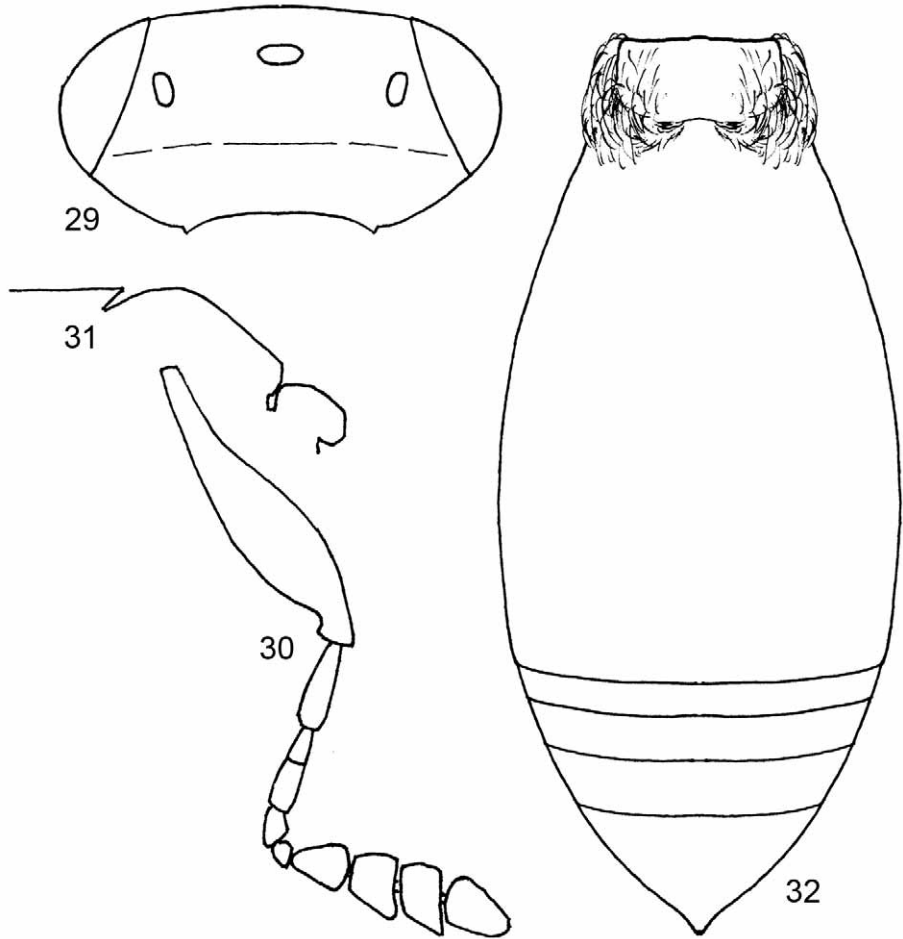
**Figs 17-20:** *Platygaster divergens* nov.sp. female: (17) head, (18) antenna, (19) scutellum and propodeum, (20) metasoma.



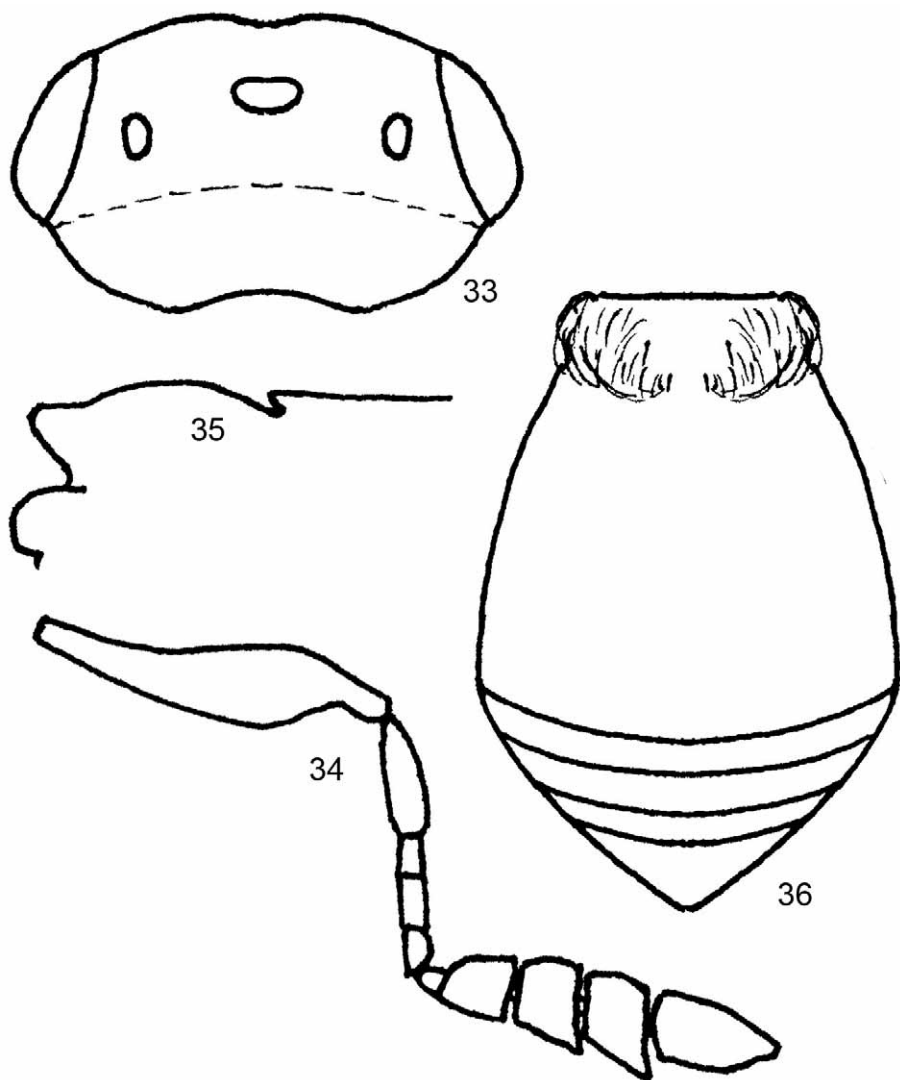
**Figs 21-24:** *Platygaster punctifrons* nov.sp. female: (21) head, (22) antenna, (23) scutellum and propodeum, (24) metasoma.



**Figs 25-28:** *Synopeas basifurcatum* nov.sp. female: (25) head, (26) antenna, (27) scutellum and propodeum, (28) metasoma.

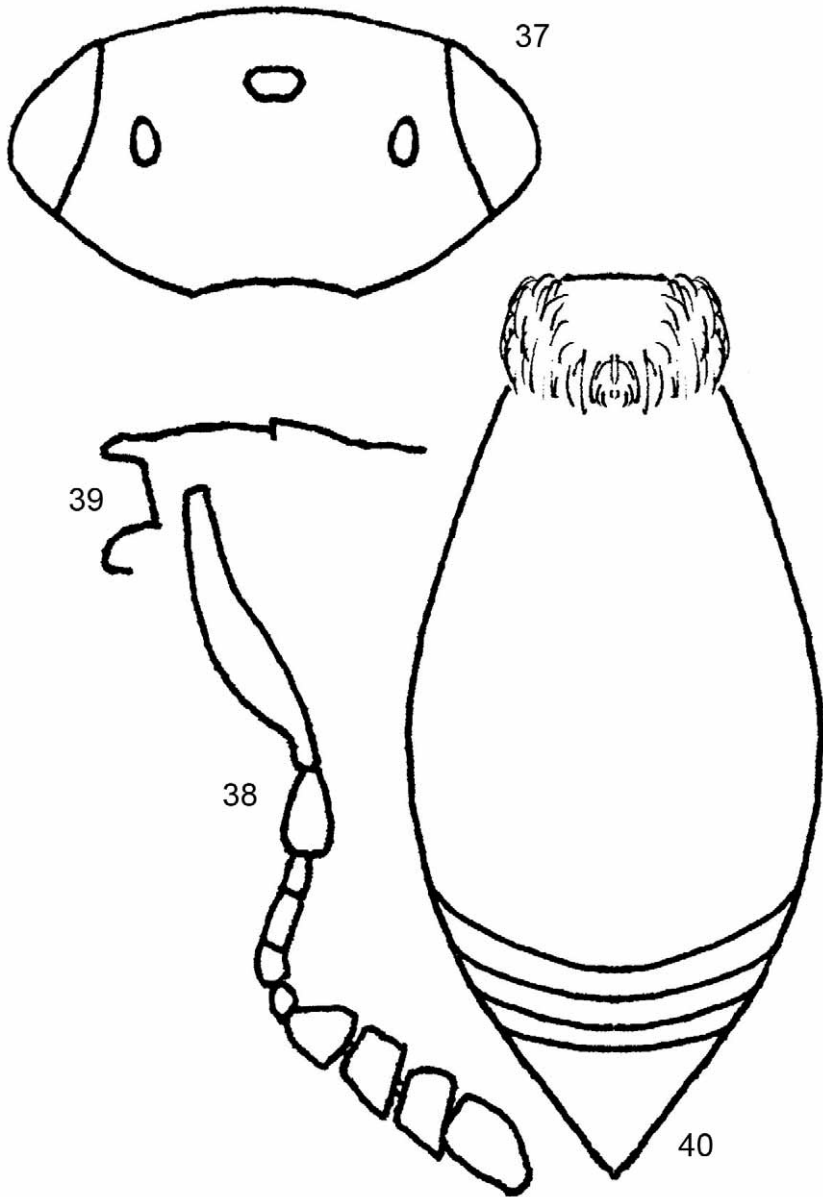


**Figs 29-32:** *Synopeas densum* nov.sp. female: (29) head, (30) antenna, (31) scutellum and propodeum, (32) metasoma.

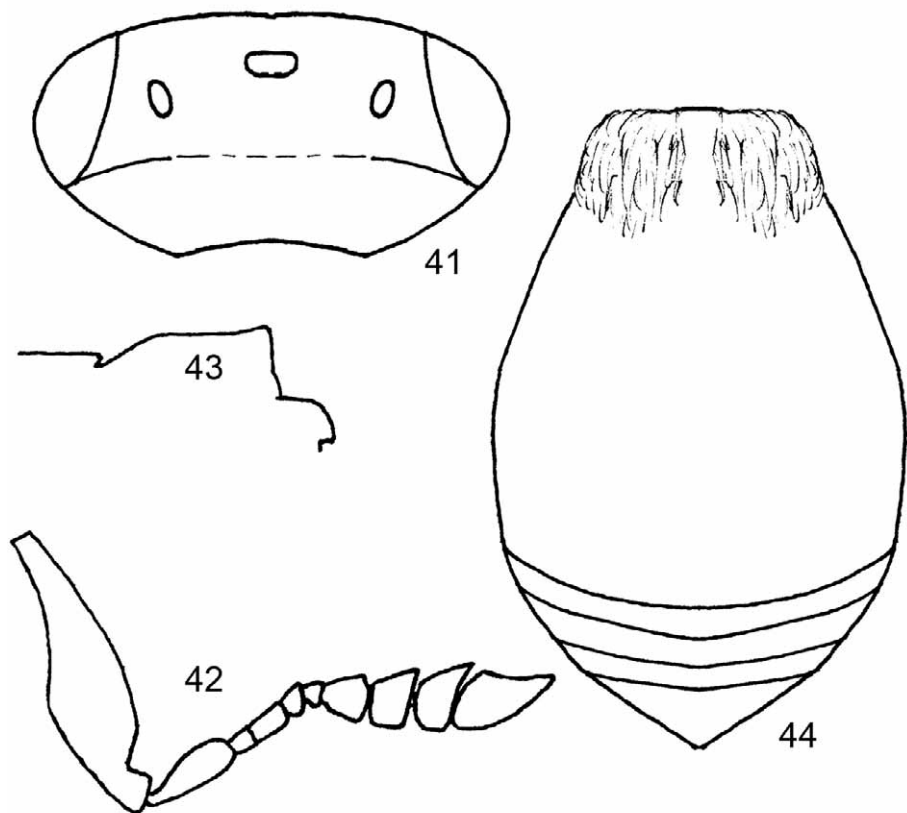


**Figs 33-36:** *Synopeas fibigeri* nov.sp. female: (33) head, (34) antenna, (35) scutellum and propodeum, (36) metasoma.

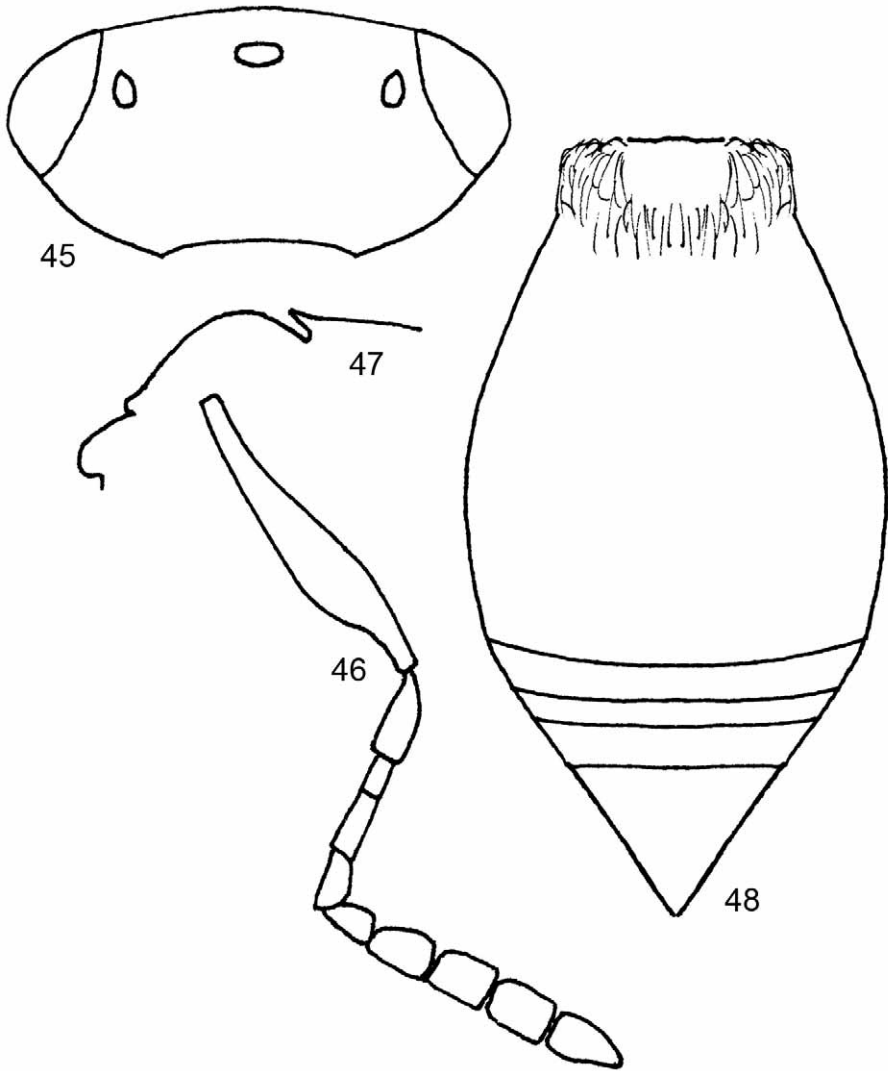




**Figs 37-40:** *Synopeas meulengrachi* nov.sp. female: (37) head, (38) antenna, (39) scutellum and propodeum, (40) metasoma.



**Figs 41-44:** *Synopeas nigrochantericum* nov.sp. female: (41) head, (42) antenna, (43) scutellum and propodeum, (44) metasoma.



**Figs 45-48:** *Synopeas scharffi* nov.sp. female: (45) head, (46) antenna, (47) scutellum and propodeum, (48) metasoma.

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Maximilian SCHWARZ, Konsulent f. Wissenschaft der Oberösterreichischen Landesregierung, Eibenweg 6, A-4052 Ansfelden, E-Mail: [maximilian.schwarz@liwest.at](mailto:maximilian.schwarz@liwest.at).

Redaktion: Erich DILLER, ZSM, Münchhausenstraße 21, D-81247 München;  
Roland GERSTMEIER, Lehrstuhl f. Tierökologie, H.-C.-v.-Carlowitz-Pl. 2, D-85350 Freising  
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Thomas WITT, Tengstraße 33, D-80796 München.

Adresse: Entomofauna, Redaktion und Schriftentausch c/o Museum Witt, Tengstr. 33, 80796 München, Deutschland, E-Mail: [thomas@witt-thomas.com](mailto:thomas@witt-thomas.com); Entomofauna, Redaktion c/o Fritz Gusenleitner, Lungitzerstr. 51, 4222 St. Georgen/Gusen, Austria, E-Mail: [f.gusenleitner@landesmuseum.at](mailto:f.gusenleitner@landesmuseum.at)

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