



# Entomofauna

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## On some new or little known species of Platygastriinae (Hymenoptera, Platygasteridae)

Peter Neerup BUHL

### Abstract

35 new species of Platygastriinae are described, viz. *Iphitrachelus masneri* (Philippines) ♀ ♂, *Isostasius ocellaris* (Philippines) ♀, *Platygaster rutilipes* (Norway, Sweden and Denmark) ♀, *P. entwistlei* (United Kingdom) ♀ ♂, *P. lundensis* (Sweden) ♀, *P. imlaci* (Philippines) ♀, *Synopeas gibberosus* (Norway) ♀ ♂, *S. planiscutellum* (Uganda) ♀, *S. pallescens* (Philippines) ♀ ♂, *S. palawanensis* (Philippines) ♀ ♂, *S. luteolipes* (Philippines) ♀ ♂, *S. balabacensis* (Philippines) ♀, *S. crassiceps* (Philippines) ♀, *S. acutiventris* (Philippines) ♀, *S. montanus* (Philippines) ♀, *S. decumbens* (Bismarck archipelago) ♂, *S. lemkaensis* (Bismarck archipelago) ♀ ♂, *S. ventricosus* (Philippines and Bismarck archipelago) ♀, *S. mukerjeei* (Philippines) ♀, *S. solomonensis* (Solomon Islands) ♀, *S. saint-exuperyi* (Bismarck archipelago) ♀, *Piestopleura milnei* (Philippines) ♀ ♂, *Leptacis buchi* (Norway) ♀ ♂, *L. vlugi* (Norway) ♀, *L. kozlovi* (Norway) ♀, *L. philippinensis* (Philippines) ♀, *L. orientalis* (Philippines) ♀, *L. flavus* (Philippines) ♂, *L. antennalis* (Philippines) ♀, *L. bismarckensis* (Bismarck archipelago) ♀, *L. schioedtei* (Bismarck archipelago) ♀ ♂, *L. kierkegaardi* (Bismarck archipelago) ♀, *Amblyaspis peterseni* (Philippines) ♂, *A. cariniceps* (Philippines) ♀ ♂, and *A. bilineatus* (Bismarck archipelago) ♂. *Platygaster signata* (FÖRSTER, 1861) ♂, *P. luteocoxalis* (KOZLOV, 1966) ♂, and *P. molsensis* BUHL, 1995 ♂ are described, an emendation of the description of *P. molsensis* BUHL, 1995 ♀ is given, and *Platygaster rugosiscutellum* BUHL, 1995 is transferred to genus *Trichacoidea* DODD. The work is illustrated by 151 text-figures.

### Zusammenfassung

35 neue Arten von Platygastriinae werden beschrieben: *Iphitrachelus masneri* (Philippinen) ♀ ♂, *Isostasius ocellaris* (Philippinen) ♀, *Platygaster rutilipes* (Norwegen, Schweden und Dänemark) ♀, *P. entwistlei* (Grossbritannien) ♀ ♂, *P. lundensis* (Schweden) ♀, *P. imlaci* (Philippinen) ♀, *Synopeas gibberosus* (Norwegen) ♀ ♂, *S. planiscutellum*

(Uganda) ♀, *S. pallescens* (Philippinen) ♀ ♂, *S. palawanensis* (Philippinen) ♀ ♂, *S. luteolipes* (Philippinen) ♀ ♂, *S. balabacensis* (Philippinen) ♀, *S. crassiceps* (Philippinen) ♀, *S. acutiventris* (Philippinen) ♀, *S. montanus* (Philippinen) ♀, *S. decumbens* (Bismarck Inseln) ♂, *S. lemकिनensis* (Bismarck Inseln) ♀ ♂, *S. ventricosus* (Philippinen und Bismarck Inseln) ♀, *S. mukerjeei* (Philippinen) ♀, *S. solomonensis* (Solomon Inseln) ♀, *S. saint-exuperyi* (Bismarck Inseln) ♀, *Piastopleura milnei* (Philippinen) ♀ ♂, *Leptacis buchi* (Norwegen) ♀ ♂, *L. vlugi* (Norwegen) ♀, *L. kozlovi* (Norwegen) ♀, *L. philippinensis* (Philippinen) ♀, *L. orientalis* (Philippinen) ♀, *L. flavus* (Philippinen) ♂, *L. antennalis* (Philippinen) ♀, *L. bismarckensis* (Bismarck Inseln) ♀, *L. schioedtei* (Bismarck Inseln) ♀ ♂, *L. kierkegaardi* (Bismarck Inseln) ♀, *Amblyaspis peterseni* (Philippinen) ♂, *A. cariniceps* (Philippinen) ♀ ♂, und *A. bilineatus* (Bismarck Inseln) ♂. *Platygaster signata* (FÖRSTER, 1861) ♂, *P. luteocoxalis* (KOZLOV, 1966) ♂ und *P. molsensis* BUHL, 1995 ♂ werden beschrieben, eine ergänzende Beschreibung von *P. molsensis* BUHL, 1995 ♀ wird gegeben, und *Platygaster rugosi-scutellum* BUHL, 1995 wird zu *Trichacoides* DODD transferiert. Die Arbeit ist mit 151 Abbildungen versehen.

### Introduction

The paper treats all species of Platygastrinae collected by the Danish "Noona Dan" expedition 1961-62 to the Philippines, Bismarck archipelago and Solomon Islands, except those treated by BUHL (1995b). Prior to my investigations, only very few species of the subfamily were known from the Philippines, none from the Bismarck archipelago or the Solomon Islands.

In the present paper some NW-European species and a single African species of Platygastrinae are also described.

Apart from material in the Zoological Museum, University of Copenhagen, the following descriptions are based on specimens sent to me by Lars Ove HANSEN (Oslo), Philip F. ENTWISTLE (Oxford) and Roy DANIELSSON (Lund), whom I thank for the loan of the material.

### *Genus Iphitrachelus* HALIDAY, 1835 *Iphitrachelus masneri* sp. nov. (figs 1 - 2)

Material examined: Holotype ♂: Philippines, Palawan, Mantalingajan, Tagembung, 1150 m, 19.IX.1961. Paratype: 1 ♀, Mantalingajan, Pinigisan, 600 m, 23.IX.1961. Both Noona Dan expedition 1961-62 leg. and deposited in the Zoological Museum, University of Copenhagen.

Description of holotype ♂: Body length 0.6 mm. Colour reddish brown; antennae and legs pale yellow.

Head evenly reticulate, from above (fig. 1) 1.8 times wider than long, wider than thorax (9:8). Head from front 1.3 times wider than high. Malar space about half the height of an eye; OOL:POL:LOL = 1:19:8. Antenna (fig. 2) with very long hairs.

Mesosoma wider than high (8:7) and 1.5 times longer than wide. Sides of pronotum reticulate in upper half, smooth in lower half, bare as mesoscutum, this somewhat shiny, faintly reticulate, with complete notauli which are widened and smooth posteriorly, hind margin of mesoscutum straight. Scuto-scutellar groove wide, deep, smooth and bare. Mesopleurae without sculpture. Scutellum faintly reticulate, with a few hairs. Metapleurae and propodeum with foamy scales.

Fore wing with brownish tint, as long as whole body, 2.3 times longer than wide; marginal cilia short. Hind wing 6.5 times longer than wide; marginal cilia two-thirds the width of wing.

Metasoma 0.7 times as wide as mesosoma and hardly as long as this. Foamy scales on T1 confluent except posteriorly; T2 with two long and sharp basal foveae reaching almost half of tergite, rest of metasoma smooth.

Description of paratype ♀: Body length 0.7 mm. Somewhat darker and less shiny than male. Antenna similar to that of *I. gracilis* MASNER, 1957, but clava slightly broader, only 2.0 times as long as wide; A3-A4 each about 1.5 times longer than wide, each slightly shorter than pedicel. Foamy scales on T1 separated except anteriorly.

Affinities: Runs to *I. gracilis* MASNER, 1957 in MASNER'S (1976) key to World species of *Iphitrachelus*, but apart from the difference mentioned above in the female, the foamy scales on T1 of *gracilis* are almost completely confluent, and the male of *I. masneri* has much longer flagellar hairs than the male of *gracilis*. Because of the difference in the structure of the foamy scales on T1 of the male and the female of *masneri* described above I am slightly in doubt that the two types are conspecific, but there seems to be no other distinct characters that separate them.

Etymology: Named for the leading expert of Proctotrupeoidea Dr. Lubomir MASNER.

**Genus *Isostasius* FÖRSTER, 1856**  
***Isostasius ocellaris* sp. nov. (figs 3 - 5)**

Material examined: Holotype ♀: Philippines, Palawan, Mantalingajan, Pinigisan, 600 m, 24.IX.1961. Noona Dan expedition 1961-62 leg. Deposited in the Zoological Museum, University of Copenhagen. Paratype: 1 ♀, same data as holotype.

Description of ♀: Body length 1.2 - 1.3 mm. Colour black; antennae, mandibles and legs brown.

Head from above (fig. 3) hardly 1.7 times wider than long, as wide as thorax; occiput and vertex evenly granulate; frons with strong reticulate rugosity, smoother medially, with a line from anterior ocellus to antennal insertions. Head from front 1.2 times wider than high, ocellar area rather protruding. Malar space one-third the height of an eye; OOL:POL:LOL = 8:19:7. Antenna (fig. 4).

Mesosoma hardly higher than wide and one and a third times longer than wide. Sides of pronotum reticulate-coriaceous and hairy, smooth medially in anterior half. Mesoscutum finely and evenly granulate and rather densely covered with fine hairs, without notauli, hind margin slightly convex, reaching base of scutellum. Scuto-scutellar grooves narrow and finely hairy. Mesopleurae smooth medially, in upper 0.3 and along hind margin with strong longitudinal carinae, in lower 0.3 with fine longitudinal sculpture. Scutellum convex, above level of mesoscutum, sculptured and hairy almost as this, twice as wide as long, along hind margin with small foveae. Metapleurae and sides of propodeum with short yellowish pilosity over most of surface. Propodeal carinae short, almost parallel, wide apart, area in between shiny, posteriorly with traces of a median carina.

Fore wing slightly overreaching gaster, clear, with subcostal vein in basal one-third; marginal cilia short. Hind wing with marginal cilia about one-fourth the width of wing.

Metasoma (fig. 5) 0.8 times as wide as mesosoma and slightly longer than this (11:10), one and a third times wider than high. T1 crenulated; T2 smooth; T3-T4 reticulate, each with a transverse row of long hairs.

Affinities: Differs from the other Oriental species of the genus, *I. poroicus* MUKERJEE, 1981, e.g. in having no notauli; these are complete in *poroicus*, cf. MUKERJEE (1981). Also *I. braesia* (WALKER, 1839) from Australia has notauli, cf. KIEFFER (1926). Smaller in body size than the Palaearctic *I. inserens* (KIRBY, 1800) which also lacks the protuberant ocellar area.

Etymology: The name directs the attention to the characteristic protuberant ocellar area.

Genus *Platygaster* LATREILLE, 1809  
*Platygaster signata* (FÖRSTER, 1861) (figs 6 - 9)

Material examined: 1 ♂: Norway (EIS 19 BØ), Hurum, Mølen, 12.-14.VII.1989, sweep-netting. Lars Ove HANSEN leg. Deposited in the Zoological Museum, University of Oslo.

FÖRSTER (1861) described only the female, redescribed by BUHL (1996).

Description of ♂: Body length 1.4 mm. Colour black; antennae reddish brown, pedicel brightest; mandibles and fore legs reddish yellow; coxae, basal half of femora and last segment of tarsi dark brown; middle and hind legs dark brown; trochanters, basal part of tibiae and segments 1-4 of tarsi reddish.

Head from above (fig. 6) 1.75 times as wide as long, very slightly wider than thorax; whole head finely reticulate, without striae, faintly angled behind ocelli. Head from front 1.2 times as wide as high. Genae as long as an eye; malar space one-third the height of an eye; OOL:POL:LOL = 7:31:13. Antenna (fig. 7) with scape sinuate; pedicel as long as A3-A4 combined; A4 not thickened, twice as long as wide, A6-A9 about equal, each as wide as long; flagellar pubescence short, mixed with longer sensillae.

Mesosoma very slightly higher than wide and 1.4 times longer than wide. Sides of pronotum evenly reticulate except along hind margin. Mesoscutum evenly reticulate and sparsely hairy, without notauli, these indicated as faint lines almost to anterior margin of disc; anterior admedian lines long and distinct. Posterior margin of mesoscutum reaching base of scutellum medially, here without tubercle; scuto-scutellar grooves rather wide, covered with hairs. Mesopleurae faintly longitudinally striated in upper half, rest smooth. Scutellum reticulate, much hairy, above level of mesoscutum, with a fine tooth posteriorly, in lateral view (fig. 8) with margins almost angled. Metapleurae with a smooth and bare area anteriorly, the rest as well as sides of propodeum with dense white pilosity. Propodeal carinae in lateral view straight (fig. 8), in dorsal view slightly diverging, well separated, area in between smooth and shiny, areas lateral of carinae uneven and hairy.

Fore wing overreaching gaster, clear, 2.5 times as long as wide, without marginal cilia. Hind wing almost 5.4 times as long as wide, with 2 frenal hooks; marginal cilia hardly one-fourth the width of wing.

Metasoma (fig. 9) as wide as head, slightly shorter than head and mesosoma combined and almost twice as wide as high. T1 with anterior margin raised, tergite hardly twice as wide as long, strongly crenulated, smooth medially in posterior half, rather hairy except in medial third. T2 with short but deep and hairy basal foveae, without striae but with four rather strong carinae between foveae which are almost as long as T1, rest of tergite smooth except for a strip of microsculpture along hind margin. T3-T7 short, each with a transverse strip of microsculpture and fine hairs.

*Platygaster rutilipes* sp. nov. (figs 10 - 12)

Material examined: Holotype ♀: Norway (EIS 19,BØ), Hurum, Tofteholmen, 1.IX.-26.X.1991, Malaise-trap. Lars Ove HANSEN leg. Deposited in the Zoological Museum, University of Oslo. Paratypes (2 ♀): 1 ♀: Sweden, Västmanland, Kärbo s:n, Solbacken (RN 1552/6600), 9.IX.-20.X.1990, Malaise-trap on the shore of Lake Mälaren, Göran E. NILSSON leg.; 1 ♀: Denmark, East Jutland, Clausholm 12 km. S.E. of Randers, 9.IX.1996, sweep-netting, P.N. BUHL leg. Both paratypes deposited in the Zoological Museum, University of Copenhagen.

Description of holotype ♀: Body length 1.5 mm. Colour blackish; antennae reddish brown, in basal half lighter; mandibles reddish brown; legs yellowish red, coxae slightly darker.

Head from above (fig. 10) 1.75 times as wide as long, slightly wider than thorax (29:35); occiput finely transversely striated medially, finely reticulate laterally; vertex with faint reticulation; frons shiny, distinctly transversely reticulate. Head from front 1.2 times as wide as high. Genae thick, slightly longer than an eye; malar space half the height of an eye; OOL:POL:LOL = 10:22:9. Antenna (fig. 11) with pedicel as long as A3-A4 combined; A4 1.5 times as long as wide; A6-A9 each slightly longer than wide. Flagellar pubescence short.

Mesosoma higher than wide (7:6) and 1.4 times longer than wide. Sides of pronotum with fine longitudinal reticulation except along hind margin. Mesoscutum almost bare, with faint reticulation laterally and anteriorly, smooth between notauli which are indicated in posterior half; mid lobe of mesoscutum reaching base of scutellum; scuto-scutellar grooves narrow, covered with hairs. Mesopleurae almost smooth. Scutellum hardly convex, at level of mesoscutum, almost smooth and moderately hairy. Metapleurae and sides of propodeum with whitish pilosity. Propodeal carinae short, wide apart, area in between rather smooth.

Fore wing reaching apex of gaster, clear, about 2.8 times as long as wide, with rather short marginal cilia. Hind wing with 2 frenal hooks; marginal cilia about 0.3 the width of wing.

Metasoma (fig. 12) slightly wider than mesosoma (13:12), longer than head and mesosoma combined (7:5) and twice as wide as high. T1 virtually bare, twice as wide as long, crenulated. T2 striated in basal foveae to 0.4 of length, mid lobe between foveae with short striae hardly longer than half the length of T1; rest of tergite as well as the following tergites almost smooth; T3-T6 combined slightly longer than T1-T2 combined, each with a few superficially implanted hairs, T5 slightly transverse, T6 slightly longer than basal width (13:11). Sternite 2 with dense white pubescence at base, not prolonged anteriorly.

Affinities: Runs to *P. iolas* in VLUG's (1985) key, but *rutilipes* has antennae and metasoma very differently shaped. In KIEFFER's (1926) key *rutilipes* runs to *Misocyclops subterraneus* KIEFFER, 1916, *M. ruborum* KIEFFER, 1916 or *M. tuberculi* KIEFFER, 1916, but all these have differently shaped gaster; *M. subterraneus* comes closest in shape, but this has very different antennae. In FOUTS' (1924) key to the Nearctic species *rutilipes* runs to *P. longiventris* (ASHMEAD, 1887), but this species has thorax twice as long as wide.

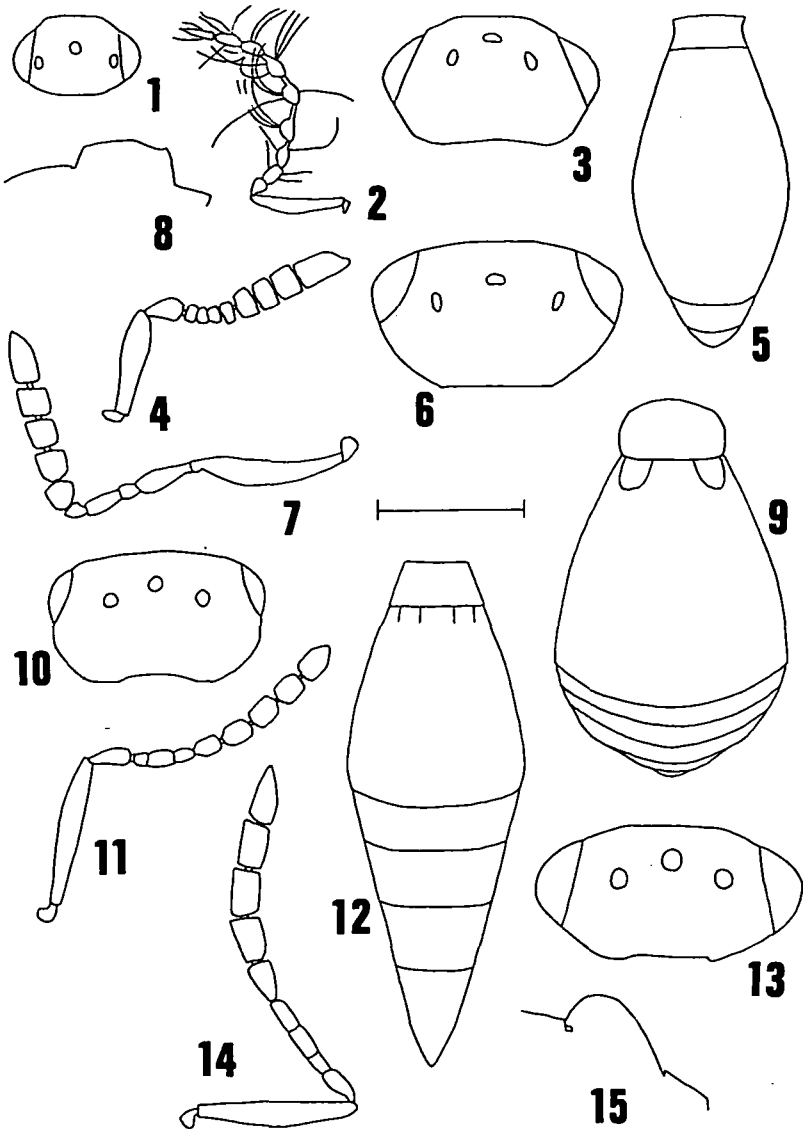
Etymology: The species name refers to the colour of the legs (golden-red).

#### *Platygaster entwistlei* sp. nov. (figs 13 - 17)

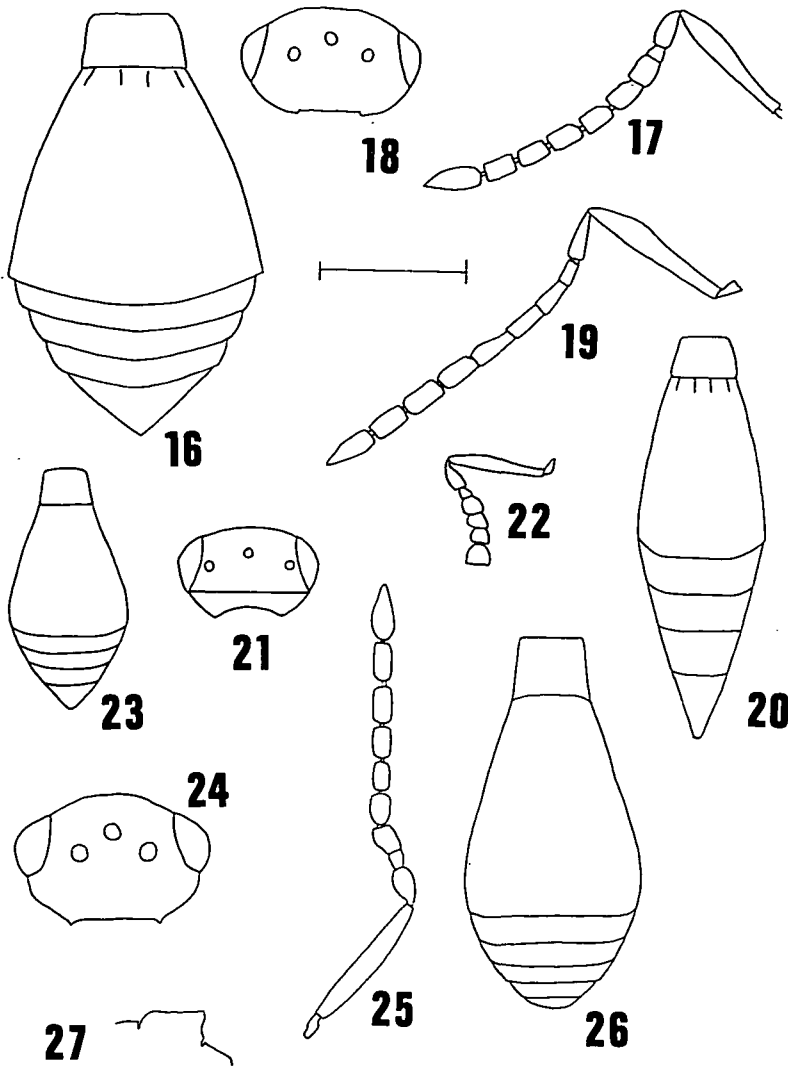
Material examined: Holotype ♀: United Kingdom, N.E. Scotland, Dornoch Firth, Edderton, 27.V.1995. Philip F. ENTWISTLE leg. Reared from galls of *Oligotrophus juniperinus* L. on juniper. Paratypes (17 ♀, 26 ♂): 3 ♂: Same data as holotype; 2 ♂: Edderton, 20.V.1995; 1 ♂: Dornoch Firth, Migdale Wood, 1994; 17 ♀, 20 ♂: Migdale Wood, reared 15.VI.1996. All P.F. ENTWISTLE leg. and all reared from *O. juniperinus* on juniper. Types deposited in the Natural History Museum (London) and 38 paratypes in the Zoological Museum, University of Copenhagen.

Description of holotype ♀: Body length 1.5 mm. Colour shining black; both ends of fore tibiae, middle and hind tibiae basally and segments 1-4 of all tarsi dark brown.

Head from above (fig. 13) twice as wide as long, wider than thorax (19:17); occiput strongly and evenly transversely striated; vertex with fine transverse striations and punctures; frons fan-like transversely striated in lower half, finely transversely reticulate along eyes, medially almost smooth, with traces of reticulation and a weak line from anterior ocellus. Head from front 1.3 times wider than high. Malar space hardly half the height of an eye; OOL:POL:LOL = 2:5:2. Antenna (fig. 14) with A3 1.5 times longer than



**Figs 1-2:** *Iphitrachelus masneri* sp. nov. holotype ♂ - 1) head; 2) antenna. **Figs 3-5:** *Isostasius ocellaris* sp. nov. holotype ♀ - 3) head; 4) antenna; 5) metasoma. **Figs 6-9:** *Platygaster signata* (FÖRSTER, 1861) ♂ - 6) head; 7) antenna; 8) scutellum; 9) metasoma. **Figs 10-12:** *Platygaster rutilipes* sp. nov. holotype ♀ - 10) head; 11) antenna; 12) metasoma. **Figs 13-17:** *Platygaster entwistlei* sp. nov. 13-15: holotype ♀ - 13) head; 14) antenna; 15) scutellum. Scale bar = 0.25 mm.



Figs 13-17: *Platygaster entwistlei* sp. nov. 16: holotype ♀ - 16) metasoma; 17) antenna of paratype ♂. Figs 18-20: *Platygaster lundensis* sp. nov. holotype ♀ - 18) head; 19) antenna; 20) metasoma. Figs 21-23: *Platygaster imlaci* sp. nov. holotype ♀ - 21) head; 22) antenna (A8-A10 missing); 23) metasoma. Figs 24-26: *Platygaster luteocoxalis* (KOZLOV, 1966) ♂ - 24) head; 25) antenna; 26) metasoma. Fig. 27: *Platygaster molsensis* BUHL, 1995 ♀; scutellum. Scale bar = 0.25 mm.

wide, two-thirds the length of A4 which is slightly more than twice as long as wide; A4-A5 about equal; A6-A9 each about 1.7 times longer than wide.

Mesosoma higher than wide (20:17) and 1.4 times longer than wide. Sides of pronotum finely reticulate, longitudinally so in lower half, smooth along hind margin. Mesoscutum weakly reticulate-coriaceous, almost smooth posteriorly, with moderately dense scale-like implantations of hairs, notauli visible in posterior half, mid lobe not elevated, just reaching base of scutellum; triangular scuto-scutellar grooves hardly hairy. Mesopleurae with a few longitudinal striae below tegulae, rest smooth. Scutellum (fig. 15) strongly and evenly convex, above level of mesoscutum, smooth and with sparse hairs. Metapleurae and sides of propodeum reticulate, evenly covered with white pilosity. Propodeal carinae wide apart, area in between smooth and shiny, areas lateral of carinae reticulate.

Fore wing almost clear, overreaching gaster, 2.5 times longer than wide; marginal cilia short. Hind wing with 2 frenal hooks, 5.0 times longer than wide; marginal cilia hardly one-fourth the width of wing.

Metasoma (fig. 16) slightly wider than thorax (18:17), longer than mesosoma (29:24) and twice as wide as high. T1 about twice as wide as long, evenly crenulated, with a few long hairs laterally; T2 slightly transverse, finely striated in basal foveae to half of length, striae between foveae half as long, rest of tergite as well as the following tergites smooth; T3-T6 strongly transverse, each with a row of rather superficially implanted hairs.

Description of ♂: Body length 1.2 - 1.6 mm. Antennae (fig. 17) with A4 weakly modified (from some angles more widened apically than on figure); A5-A9 about equal, each 1.6 times longer than wide; flagellar pubescence about 0.7 width of segments. Metasoma more rounded at apex than in female. Rest of characters much as in female.

Affinities: Runs to *P. ennius* WALKER, 1835 or to *P. manto* WALKER, 1835 in VLUG's (1985) key, but the first differs from *entwistlei* in having notauli nearly complete, midlobe of mesoscutum not quite reaching scutellum, elevated between depressed lateral and hairy parts of mesoscutum, A3 of antennae more elongate, T2 slightly longer than wide and A2-A5 and legs lighter than in *entwistlei*; *P. manto* differs from this in having flagellar segments much thicker, cf. VLUG (1985). *P. entwistlei* is a distinct species on account of the slender flagellar segments of female.

Variability: Only a slight variation in sculpture, length of notauli, and in convexity of scutellum is present.

Etymology: Named for the collector.

### *Platygaster lundensis* sp. nov. (figs 18 - 20)

Material examined: Holotype ♀: Sweden, Lund, 9.VIII. probably around 1857. C.G. THOMSON leg. Deposited in the Museum of Zoology, Lund University (Sweden). Unique.

Description of holotype ♀: Body length 1.2 mm. Colour blackish brown; antennae, mandibles and legs dark brown, both ends of fore tibiae, basal part of middle and hind tibiae and segments 1-4 of all tarsi yellowish.

Head shiny, from above (fig. 18) 1.9 times as wide as long, 1.2 times wider than thorax; occiput rather strongly transversely striated, vertex and frons almost smooth. Head from front slightly wider than high (13:12). Malar space half the height of an eye; OOL:POL:LOL = 8:17:8. Antenna (fig. 19) slender, pedicel 3 times, A3 1.5 times longer than wide; A4-A5 about equal, each fully twice as long as wide; A6-A10 thickened, A6-A9 each about twice as long as wide.

Mesosoma 1.2 times higher than wide and 1.5 times longer than wide. Sides of pronotum almost smooth in upper half, lower half with fine longitudinal striations. Mesoscutum smooth and almost bare, anteriorly with faint rugosity along imaginary courses of notauli, these only distinct in posterior two-thirds; mid lobe much prolonged,



covering base of scutellum; scuto-scutellar grooves wide, with some hairs. Mesopleurae smooth. Scutellum weakly convex, below level of mesoscutum, smooth and almost bare, with a slight hump at posterior margin. Metapleurae and sides of propodeum with short, white pilosity. Propodeal carinae short, parallel, wide apart, area in between smooth.

Fore wing clear, slightly overreaching gaster, 2.5 times as long as wide; marginal cilia short. Hind wing 5.3 times as long as wide, with 2 frenal hooks; marginal cilia about 0.3 width of wing.

Metasoma (fig. 20) narrower than thorax (9:11), longer than head and mesosoma combined (7:6) and 1.8 times as wide as high. T1 1.6 times wider than long, crenulated, almost bare. T2 finely striated in basal foveae to about half of length; area in between and rest of tergite as well as T3-T6 smooth; T3-T6 combined as long as T2, tapering in almost straight lines, with some superficially implanted hairs.

Affinities: Close to *P. sugitama* YOSHIDA & HIRASHIMA, 1979 from Japan, but *P. lundensis* has metasoma distinctly narrower than this. In structure of mid lobe and scutellum exactly as *sugitama*, cf. YOSHIDA & HIRASHIMA (1979). As noted by BUHL (1995c), the holotype of *lundensis* was erroneously designated as lectotype for *Hypocampsis angustula* (THOMSON, 1859) by A. JANSSON.

Etymology: Named after the holotype locality.

#### *Platygaster imlaci* sp. nov. (figs 21 - 23)

Material examined: Holotype ♀: Philippines, Palawan, Mantalingajan, Pinigisan, 600 m, 24.IX.1961. Noona Dan expedition 1961-62 leg. Deposited in the Zoological Museum, University of Copenhagen. Unique.

Description of holotype ♀: Body length 0.9 mm. Colour reddish brown; antennae, mandibles and legs yellowish brown.

Head from above (fig. 21) 1.8 times wider than long, 1.2 times wider than thorax. Occiput with a few faint transverse striae just behind the strong occipital carina, rest of head smooth and shiny. Head from front 1.3 times wider than high. Malar space one-third the height of an eye; OOL:POL:LOL = 2:20:9. Antenna (fig. 22).

Mesosoma 1.2 times higher than wide and 1.5 times longer than wide. Sides of pronotum smooth and bare except for a few hairs and faint rugosity along upper margin. Mesoscutum with a few hairs, shiny and almost smooth; notauli complete, obscured by weak rugosity anteriorly; mid lobe slightly prolonged posteriorly, reaching base of scutellum; scuto-scutellar grooves with a few hairs. Mesopleurae smooth. Scutellum weakly convex, at level of mesoscutum, moderately hairy and almost smooth. Metapleurae and sides of propodeum dull, evenly covered by pilosity. Propodeal carinae short, parallel, wide apart, area in between smooth and shiny.

Fore wing clear, slightly overreaching gaster, with short marginal cilia.

Metasoma (fig. 23) as wide as thorax and slightly shorter than head and mesosoma combined (17:18). T1 crenulated, T2 smooth in and between basal foveae, apical tergites with some rather deeply implanted hairs.

Affinities: Rather similar to *P. noonae* BUHL, 1995, but differs from this species in being less sculptured, in having occipital carina and in having lateral ocelli much closer to inner orbits, cf. BUHL (1995b). Separated from the small Nearctic species, e.g. *P. pentatoma* (ASHMEAD, 1893), in having thick basal flagellar segments and long notauli, cf. FOUTS (1924). It seems that I overlooked the single specimen of *imlaci* when working on the species of *Platygaster* collected by the Noona Dan expedition (BUHL, 1995b).

Etymology: Named after the wise man Imlac in Samuel JOHNSON's tale "The History of Rasselas, Prince of Abissinia" (1759).

*Platygaster luteocoxalis* (KOZLOV, 1966) (figs 24 - 26)

Material examined: 1 ♀, 1 ♂: Norway, Hurum, Tofteholmen, 26.V.-7.VII.1991. Malaise-trap. Lars Ove HANSEN leg. Deposited in the Zoological Museum, University of Oslo.

As KOZLOV (1966) described only the female, and as his description is in Russian, the hitherto unknown male is described below.

Description of ♂: Body length 1.2 mm. Colour black; A1-A3 of antennae, mandibles, and legs entirely, yellowish.

Head from above (fig. 24) 1.6 times wider than long, 1.1 times wider than thorax. Occiput unevenly coriaceous behind, with a few transverse striae anteriorly; occiput weakly reticulate; frons transversely reticulate, with a faint and smoother longitudinal medial impression. Head from front 1.2 times wider than high. Malar space fully half the height of an eye; OOL:POL:LOL = 6:15:7. Antenna (fig. 25) with A5-A10 rather badly cracked on the single specimen examined, the figure being an approximate reconstruction; flagellar pubescence slightly shorter than width of segments.

Mesosoma slightly higher than wide (14:13) and 1.5 times longer than wide. Sides of pronotum hairy on anterior half, with dense and fine rugosity in upper anterior corner, rest smooth. Mesoscutum shiny, sparsely hairy, mid lobe unevenly reticulate-coriaceous, lateral lobes almost smooth, notauli fading out in anterior third; mid lobe slightly prolonged posteriorly, reaching base of scutellum; scuto-scutellar grooves rather wide and deep, hardly hairy. Mesopleurae smooth. Scutellum convex, slightly above level of mesoscutum, sparsely hairy, with longitudinal rugosity anteriorly, reticulate-coriaceous, smooth in posterior half. Metapleurae and sides of propodeum reticulate, with white pilosity all over. Propodeal carinae parallel, wide apart, area in between smooth and shiny.

Fore wing clear, hardly shorter than whole body, 3.0 times longer than wide; marginal cilia short. Hind wing with two frenal hooks, 6.0 times longer than wide; marginal cilia one-third the width of wing.

Metasoma (fig. 26) very slightly narrower than thorax and as long as head and mesosoma combined. T1 with two strong longitudinal keels and weak longitudinal sculpture; T2 striated over whole width to hardly half of length, posteriorly with faint traces of reticulation; T3-T6 with faint reticulation and some superficially implanted hairs.

Description of ♀: Body length hardly 2.0 mm. Rest of characters as described by KOZLOV (1966).

*Platygaster molsensis* BUHL, 1995 (fig. 27)

Material examined: Holotype ♀, cf. BUHL (1995a); 1 ♀, Norway, Aurdal, Opheimsbakken, 750 m, in grassland, 20.VI.1960. Børge PETERSEN leg.; 1 ♂, Denmark, LFM, Ulvshale, 28.VII.1996. P.N. BUHL leg. Deposited in the Zoological Museum, University of Copenhagen.

The newly discovered specimen from Norway has scutellum (fig. 27) somewhat different than in the unique holotype, cf. also BUHL (1995a). Rest of characters as in holotype.

Description of the hitherto unknown ♂: Body length 1.0 mm. A4 as long as A2, curved and rather thick, about twice as long as wide, 1.7 times longer than A5 which is almost 1.8 times longer than wide. A6 1.3 times longer and 1.3 times thicker than A5, 1.8 times longer than wide. A7-A9 about equal, each one and a quarter times longer than A6 but not thicker than this, 2.3 times longer than wide. A10 1.7 times longer than A9. Hairs of flagellum about as long as width of segments. Otherwise very similar to female.

**Genus *Trichacoides* DODD, 1914**  
***Trichacoides rugosiscutellum* (BUHL, 1995) comb. nov.**

Dr. Lubomir MASNER (pers. comm.) has kindly made me aware that *Platygaster rugosiscutellum* BUHL, 1995 described by BUHL (1995b) from the Bismarck archipelago belongs to the closely related genus *Trichacoides*. *T. rugosiscutellum* differs clearly from the other four known species of the genus: Australian *T. scutellaris* DODD, 1914 has shorter metasoma and much different relative measurements of tergites, *T. hirsutus* YAMAGISHI, 1980 from Japan is much more striated on occiput and metasoma and has a distinct hump anteriorly on sternite 2, *T. nikolskayae* KOZLOV, 1989 from eastern USSR has longer flagellar segments and longer striae on T2, and Indian *T. indicus* JACKSON, 1968 is much smaller and has hind margin of scutellum not vertical, cf. KIEFFER (1926), YAMAGISHI (1980), AUSTIN (1984) and KOZLOV (1989).

**Genus *Synopeas* FÖRSTER, 1856**  
***Synopeas gibberosus* sp. nov. (figs 28 - 31)**

Material examined: Holotype ♀: Norway (EIS 26, BØ), Røyken, Kinnartangen, VIII.1993, Malaise-trap. Lars Ove HANSEN leg. Paratype: 1 ♂, same data as holotype. Both types deposited in the Zoological Museum, University of Oslo.

Description of holotype ♀: Body length 1.2 mm. Colour black; antennae and legs reddish yellow; part of pedicel, A7-A10 entirely, mandibles and coxae dark brown.

Head from above (fig. 28) 1.75 times as wide as long, as wide as thorax; whole head strongly and almost evenly reticulate, transversely so above antennal sockets; occipital carina complete and strong. Head from front only slightly wider than high (14:13). Malar space half the height of an eye; OOL:POL:LOL = 5:21:9. Antenna (fig. 29) with A4 1.5 times as long as A3, 3.5 times as long as wide; A8-A9 each slightly longer than wide; flagellar pubescence very inconspicuous, sensillae distinct.

Mesosoma slightly higher than wide (31:28) and 1.4 times longer than wide. Sides of pronotum reticulate except along hind margin. Mesoscutum fainter reticulate than head, moderately hairy, without notauli, with hind margin brownish, prolonged medially above base of scutellum, in lateral view (fig. 30) situated much above level of base of scutellum. Mesopleurae smooth. Scutellum in dorsal view bare and almost smooth medially, ending in a distinct spine which almost reaches hind margin of propodeum, in lateral view (fig. 30) spine high above propodeal carinae. Metapleurae smooth and bare in anterior half, with white pilosity in posterior half. Propodeal carinae slightly curved in lateral view (fig. 30), in dorsal view fused, dull, areas lateral of carinae shiny, faintly reticulate.

Fore wing clear, overreaching gaster, about 2.5 times longer than wide; marginal cilia very short. Hind wing with two frenal hooks; marginal cilia about 0.3 width of wing.

Metasoma (fig. 31) slightly narrower than mesosoma (13:14), longer than this (11:10) and 1.3 times wider than high. Junction of T1 and T2 thickly haired over whole width; T2 smooth except for a transverse strip of rugosity along hind margin; T3-T5 each with such strip and a few inconspicuous hairs; T6 bare, with rugosity except along front margin.

Description of paratype ♂: Antenna with A3 half as long as A4 which is slightly thickened, 1.4 times as long as A5; A6 slightly shorter and thinner than A7; A7-A9 each about twice as long as wide; flagellar pubescence two-thirds the width of segments. Scutellar spine thicker and more blunt than in female. Metasoma only as long as mesosoma. Rest of characters essentially as in female.

Affinities: Close to the other hump-backed *Synopeas*-species: *S. rhanis* (WALKER, 1835), *S. spinifer* KOZLOV, 1978 and *S. decurvatus* (NEES, 1834), but *gibberosus* has the

greatest hump and has scutellar spine very different from the mentioned species, cf. KOZLOV (1978) and VLUG (1985).

Etymology: The species name means hump-backed, referring to the aberrant structure of mesoscutum.

*Synopeas planiscutellum* sp. nov. (figs 32 - 35)

Material examined: Holotype ♀: Uganda, Ruwenzori, Ibanda, 2.VIII.1972. Hans GØNGET leg. Deposited in the Zoological Museum, University of Copenhagen. Unique.

Description of holotype ♀: Body length 1.1 mm. Colour black; A1-A6, mandibles and legs yellowish; apical part of A1, most of A2, thickened parts of middle and hind femora and tibiae, and last segment of all tarsi darker.

Head from above (fig. 32) 2.0 times wider than long, slightly wider than thorax (13:12). Occiput transversely reticulate medially, smooth laterally, with traces of a transverse carina; vertex reticulate; frons almost smooth, with faint reticulation in upper third and along eyes. Head from front 1.2 times wider than high. Malar space 0.4 times the height of an eye; OOL:POL:LOL = 3:28:13. Antenna (fig. 33) with A4 twice as long as A3; A9 slightly transverse; flagellum with sparse hairs about half the width of segments.

Mesosoma 1.2 times higher than wide and 1.7 times longer than wide. Sides of pronotum with faint reticulation and sparse hairs in upper half, rest smooth and bare. Mesoscutum faintly reticulate laterally and anteriorly, smooth medially, sparsely hairy, without notauli, hind margin slightly convex, covering base of scutellum. Mesopleura smooth. Scutellum (Fig. 34) at level of mesoscutum, almost smooth, with sparse punctures and hairs, triangular in dorsal view, posteriorly with a fine tooth above whitish pubescence in lateral view. Metapleura and sides of propodeum smooth and bare in anterior half, covered with long and dense white pubescence in posterior half. Propodeal carinae fused, areas lateral of carinae with long and dense white pilosity.

Fore wing clear, 2.9 times longer than wide; marginal cilia short. Hind wing with two frenal hooks, 6.0 times longer than wide; marginal cilia 0.5 width of wing.

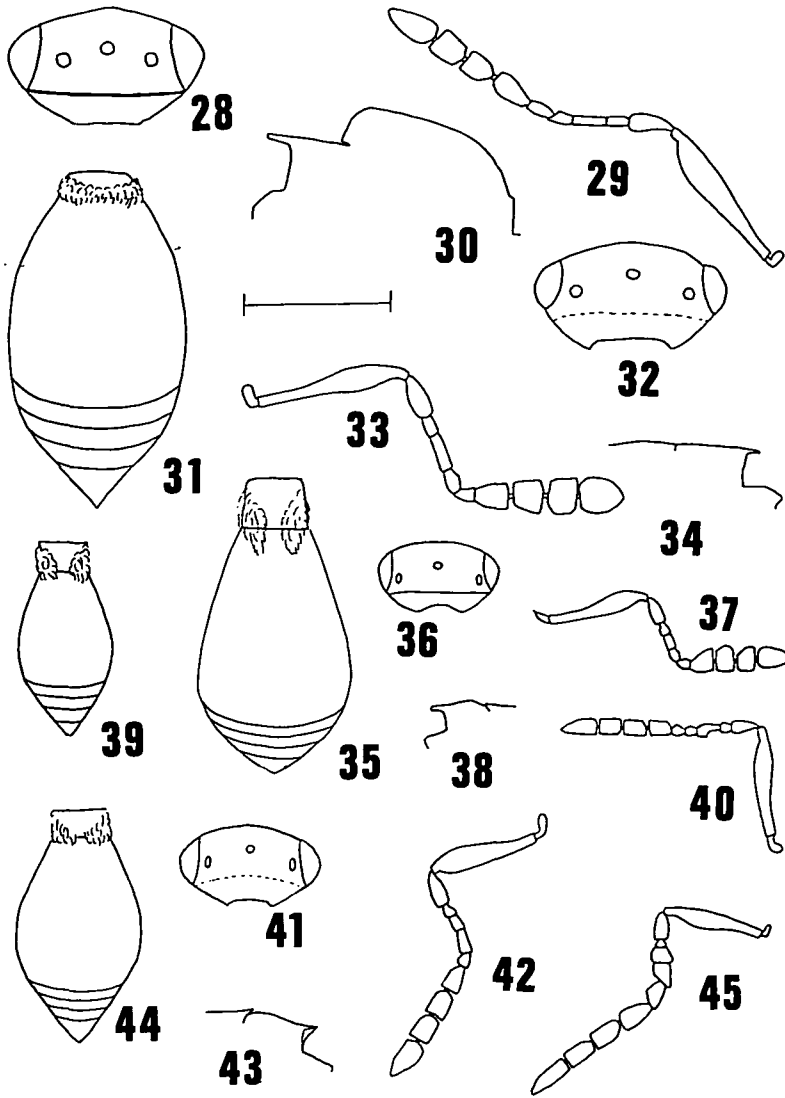
Metasoma (fig. 35) slightly narrower than thorax (11:12), as long as mesosoma and 1.4 times wider than high. T1 slightly transverse, smooth, with four longitudinal keels and laterally with dense pubescence which continues in the short basal foveae of T2, this tergite as well as the following tergites almost smooth, T3-T4 each with a transverse row of very fine hairs.

Affinities: Looks deceptively like an *Amblyaspis*, especially in structure of scutellum, but differs from the members of this genus in having A9 and A10 clearly separated. Differs widely from the other Afrotropical species of *Synopeas*: From *S. congoana* (RISBEC, 1958) clearly in antennal structure, this very similar to *planiscutellum* in *S. tuberosus* SUNDHOLM, 1970 and *S. bicolor* SUNDHOLM, 1970, but A4 is slightly longer in *planiscutellum* and scutellum much different, cf. SUNDHOLM (1970). *S. paolii* FOUTS, 1934 has abdomen strongly convex above and below, cf. FOUTS (1934); *S. monticola* (KIEFFER, 1910) has A4 only 1.5 times longer than A3 and scutellar spine half as long as rest of scutellum, cf. KIEFFER (1926).

Etymology: The species name refers to the characteristic flat scutellum.

*Synopeas pallescens* sp. nov. (figs 36 - 40)

Material examined: Holotype ♀: Philippines, Palawan, Mantalingajan, Pinigisan, 600 m, 24.IX.1961. Paratypes (1♀, 2♂): 1♂, same data as holotype; 1♀, 1♂, Mantalingajan, Tagembung, 1150 m, 19.IX.1961. All types Noona Dan expedition 1961-62 leg. and deposited in the Zoological Museum, University of Copenhagen.



**Figs 28-31:** *Synopeas gibberosus* sp. nov. holotype ♀ - 28) head; 29) antenna; 30) scutellum and mesoscutum; 31) metasoma. **Figs 32-35:** *Synopeas planiscutellum* sp. nov. holotype ♀ - 32) head; 33) antenna; 34) scutellum; 35) metasoma. **Figs 36-39:** *Synopeas pallescens* sp. nov. holotype ♀ - 36) head; 37) antenna; 38) scutellum; 39) metasoma; 40) antenna of paratype ♂. **Figs 41-45:** *Synopeas palawanensis* sp. nov. 41-44: holotype ♀ - 41) head; 42) antenna; 43) scutellum; 44) metasoma; 45) antenna of paratype ♂. Scale bar = 0.25 mm.

Description of holotype ♀: Body length 0.7 mm. Colour rather pale reddish brown; antennae, mandibles and legs yellow.

Head from above (fig. 36) 1.9 times wider than long, 1.1 times wider than thorax. Occiput reticulate, occipital carina strong and complete; vertex finely reticulate-coriaceous, frons almost smooth, only with traces of such sculpture. Head from front 1.1 times wider than high. Malar space about one-fourth the height of an eye; OOL:POL:LOL = 1:20:9. Antenna (fig. 37).

Mesosoma 1.1 times higher than wide and one and a third times longer than wide. Sides of pronotum hairy and finely sculptured in upper half, bare and almost smooth in lower half. Mesoscutum moderately covered with fine hairs, faintly reticulate-coriaceous, notauli hardly indicated posteriorly, hind margin slightly prolonged medially; scuto-scutellar grooves hairy and rather wide. Mesopleurae almost smooth. Scutellum (Fig. 38) densely and evenly hairy. Metapleurae faintly sculptured, with whitish pilosity except anteriorly. Propodeal carinae fused.

Fore wing clear, hardly 3.2 times longer than wide; marginal cilia one-third the width of wing. Hind wing 8.6 times longer than wide; marginal cilia as long as width of wing.

Metasoma (fig. 39) as wide as mesosoma and slightly longer than this (13:12), 1.7 times wider than high. T2 smooth; T3-T6 almost smooth, with fine hairs.

Description of ♂: Body length 0.6 - 0.7 mm. Colour slightly darker than in female. Antenna (fig. 40) with only sparse flagellar hairs hardly half the width of segments. Metasoma narrower than mesosoma (7:8) and slightly shorter than this (12:13). Otherwise much as in female.

Affinities: Among the species mentioned by MANI & SHARMA (1982), much smaller than *S. bengalensis* MUKERJEE, 1978 and *S. indopeninsularis* MANI, 1975, and OOL twice the ocellar diameter in *S. indicus* MANI, 1975. In *S. luzonicum* (ASHMEAD, 1905) metasoma is longer than head and mesosoma combined, and the body colour is shiny black, cf. KIEFFER (1926). *S. procon* AUSTIN, 1984 and *S. mangiferae* AUSTIN, 1984 have different scutellar structure, *S. procon* also much shorter marginal cilia of fore wing, cf. AUSTIN (1984).

Etymology: The name *palescens* means "somewhat pale", referring to the body colour which - as in most of the Platygastriinae described from the region - is characteristically paler than in related species from the Holarctic region. The only species of *Synopeas* hitherto described from the Philippines is *S. luzonicum* (ASHMEAD, 1905), cf. VLUG (1995).

### *Synopeas palawanensis* sp. nov. (figs 41 - 45)

Material examined: Holotype ♀: Philippines, Palawan, Mantalingajan, Pinigisan, 600 m, 24.IX.1961. Noona Dan expedition 1961-62 leg. Deposited in the Zoological Museum, University of Copenhagen. Paratypes: 2 ♂, same data as holotype.

Description of holotype ♀: Body length 0.9 mm. Colour dark reddish brown, head black; legs and antennae yellow, antennal club slightly darker.

Head strongly and evenly reticulate, from above (fig. 41) 2.1 times wider than long, 1.2 times wider than thorax, without occipital carina but occiput somewhat angled. Head from front 1.2 times wider than high. Malar space one-third the height of an eye; OOL:POL:LOL = 1:11:5. Antenna (fig. 42).

Mesosoma higher than wide (10:9) and almost 1.6 times longer than wide. Sides of pronotum reticulate and hairy in upper half, rest bare and with only traces of reticulation. Mesoscutum moderately hairy, faintly reticulate-coriaceous, notauli just indicated posteriorly; mid lobe prolonged, reaching base of scutellum; scuto-scutellar grooves hairy, rather narrow. Mesopleurae with very faint traces of reticulation. Scutellum in dorsal view

almost smooth and bare medially, densely hairy laterally; in lateral view (fig. 43) with a semitransparent lamella below fine tooth. Metapleurae smooth and bare in anterior third, rest with dense white pilosity. Propodeal carinae long, straight and fused.

Fore wing clear, shorter than whole body (6:7), marginal cilia very short. Hind wing with marginal cilia hardly half the width of wing.

Metasoma (fig. 44) as wide as thorax, shorter than head and mesosoma combined (4:5) and 1.6 times wider than high. T2 almost smooth, T3-T6 with faint sculpture.

Description of ♂: Body length 0.7 - 0.8 mm, slightly lighter coloured than female. Antenna (fig. 45) different than in female, with very short pubescence as in female. Metasoma only as long as mesosoma. Rest of characters essentially as in female.

Affinities: Differs from *S. pallescens* sp. nov. in being larger, having a broader head without occipital carina, in having female antenna more slender and basal flagellar segments of male different. Differs from the species compared with *pallescens* in almost the same way as this species.

Etymology: Named after the island of Palawan.

#### *Synopeas luteolipes* sp. nov. (figs 46 - 50)

Material examined: Holotype ♀: Philippines, Mindanao, Sapamoro, Curuan district, 20.XII.1961. Paratypes (1 ♀, 1 ♂): 1 ♀, without label; 1 ♂, same locality as holotype, 22.XII.1961. All types Noona Dan expedition 1961-62 leg. and deposited in the Zoological Museum, University of Copenhagen.

Description of holotype ♀: Body length 0.8 mm. Colour dark reddish brown; antennae, mandibles and legs yellow; A7-A10, middle and hind femora and apical part of hind tibiae slightly darker.

Head shiny, reticulate, from above (fig. 46) 1.9 times wider than long, 1.2 times wider than thorax. Occiput with trace of a carina medially, rather angled. Head from front 1.2 times wider than high. Malar space 0.4 height of an eye; OOL:POL:LOL = 2:17:7. Antenna (fig. 47).

Mesosoma higher than wide (9:8) and 1.6 times longer than wide. Sides of pronotum reticulate and hairy in upper half, rest smooth and bare. Mesoscutum shiny, with sparse hairs, weakly reticulate-coriaceous, notauli indicated in posterior one-fourth, mid lobe prolonged posteriorly, reaching scutellum; scuto-scutellar grooves rather wide, hairy. Mesopleurae smooth. Scutellum (fig. 48) almost smooth and bare medially, laterally hairy and finely sculptured, small lamella below spine semitransparent. Metapleurae smooth and bare in anterior 0.3, rest with white pilosity. Propodeal carinae fused.

Fore wing almost clear, slightly shorter than whole body (26:31), almost 2.7 times longer than wide; marginal cilia absent. Hind wing 7.2 times longer than wide; marginal cilia about two-thirds the width of wing.

Metasoma (fig. 49) 0.9 times as wide as mesosoma and slightly longer than this (14:13), 1.2 times wider than high. T2 almost smooth; T3-T6 with faint sculpture, hardly hairy.

Description of paratype ♀: Body length 0.6 mm. Colour somewhat brighter than in holotype, reddish brown; antennae and legs uniformly yellow, A7-A10 slightly darker. Head from front only 1.1 times wider than high. Hind wing 8.0 times longer than wide. Metasoma 1.2 times longer than mesosoma, weaker sculptured than in holotype. Rest of characters as in holotype.

Description of paratype ♂: Body length 0.7 mm. Colour slightly darker than in females. Antenna (fig. 50) with only sparse and short hairs, this and rest of characters much as in female.

Variability: I can find no distinct characters separating the two female specimens as two distinct species; they differ only in degree.

Affinities: Differs from *S. pallescens* sp. nov. and *S. palawanensis* sp. nov. in structure of occiput, from *pallescens* in shape of scutellum, from *palawanensis* in having less slender female antenna, from both also in shape of male antenna. Differs from the species compared with *pallescens* in almost the same way as this species.

Etymology: The species name refers to the yellowish legs.

*Synopeas balabacensis* sp. nov. (figs 51 - 54)

Material examined: Holotype ♀: Philippines, Balabac, Dalawan Bay, 8.X.1961. Paratypes (2 ♀): 1 ♀, same data as holotype; 1 ♀, Philippines, Palawan, Mantalingajan, Pinigisan, 600 m, 24.IX.1961. All types Noona Dan expedition 1961-62 leg. and deposited in the Zoological Museum, University of Copenhagen.

Description of ♀: Body length 0.9 - 1.1 mm. Colour brownish black; head black; antennae, mandibles and legs yellowish brown, A7-A10 darker.

Head dull, evenly reticulate, from above (fig. 51) 1.7 times wider than long, wider than thorax (11:10), with strong occipital carina. Head from front 1.2 times wider than high. Malar space one-third the height of an eye; OOL:POL:LOL = 1:11:5. Antenna (fig. 52).

Mesosoma slightly higher than wide (11:10) and 1.4 times longer than wide. Sides of pronotum hairy in upper half, reticulate-coriaceous except in lower 0.3. Mesoscutum with sparse hairs, evenly reticulate-coriaceous, without notauli, hind margin slightly prolonged medially, covering base of scutellum. Scuto-scutellar grooves rather deep and wide, hairy. Mesopleurae smooth, with a few punctures medially. Scutellum (fig. 53) smooth and bare medially, densely hairy laterally, at level of mesoscutum, posteriorly with a short tooth, in lateral view with a semitransparent lamella below tooth. Metapleurae and sides of propodeum with long and dense, white pilosity except in anterior 0.3. Propodeal carinae short, parallel, very close together.

Fore wing clear, slightly overreaching gaster, 2.7 times longer than wide, without marginal cilia. Hind wing with two frenal hooks, 6.3 times longer than wide; marginal cilia 0.4 width of wing.

Metasoma (fig. 54) as wide as thorax and slightly longer than head and mesosoma combined (43:38), 0.8 times as high as wide. Junction of T1 and T2 unusually much hairy; T2 smooth except for fine sculpture along hind margin; T3-T6 with extensive reticulate sculpture.

Variability: The specimen from Palawan is somewhat brighter coloured than those from Balabac. The paratype from Balabac has scutellum almost uniformly hairy and evenly downcurved posteriorly.

Affinities: Of the species compared with *S. pallescens* sp. nov. above, *balabacensis* seems closest to *S. mangiferae* AUSTIN, 1984 from India, but this species has lateral ocelli closer to inner orbits, and it is slightly larger than *balabacensis*, cf. AUSTIN (1984).

Etymology: Named after the holotype locality, the small island of Balabac just south of Palawan.

*Synopeas crassiceps* sp. nov. (figs 55 - 58)

Material examined: Holotype ♀: Philippines, Mindanao, Sapamoro, Curuan district, 16.XII.1961. Noona Dan expedition 1961-62 leg. Deposited in the Zoological Museum, University of Copenhagen. Unique.

Description of holotype ♀: Body length 0.9 mm. Colour reddish brown, gaster lightest; antennae (including club) and legs yellowish.



Head finely and evenly reticulate, from above (fig. 55) 1.5 times wider than long, as wide as thorax, without occipital carina. Head from front 1.1 times wider than high. Malar space one-third the height of an eye; OOL:POL:LOL = 5:13:6. Antenna (fig. 56).

Mesosoma 1.1 times higher than wide and 1.4 times longer than wide. Sides of pronotum hairy and weakly reticulate in upper half, almost smooth in lower half. Mesoscutum with a few short hairs, evenly reticulate, notauli faintly indicated in posterior half; scuto-scutellar grooves very wide, distinctly hairy. Mesopleurae with faint traces of reticulation. Scutellum (fig. 57) densely covered with white hairs, with a spine posteriorly. Metapleurae and sides of propodeum densely covered with long white pilosity. Propodeal carinae close but not fused.

Fore wing clear, slightly overreaching gaster, 2.9 times longer than wide, without marginal cilia. Hind wing with two frenal hooks, 5.8 times longer than wide; marginal cilia hardly half the width of wing.

Metasoma (fig. 58) 0.9 times as wide as thorax, hardly as long as head and mesosoma combined, 1.1 times higher than wide. T2 smooth, with faint traces of reticulation posteriorly; T3-T6 evenly reticulate, T3-T4 strongly transverse, T4 about 1.5 times longer than T3; T5 slightly longer than T4, slightly converging towards apex, shorter than wide at base (6:7); T6 twice as long as T5.

Affinities: Belongs to subgenus *Sactogaster* FÖRSTER, 1856. Among the species of this subgenus most distinct on account of the thick head, also on account of small body size, bright colour, and large OOL.

Etymology: The name *crassiceps* means thick head.

#### *Synopeas acutiventris* sp. nov. (figs 59 - 63)

Material examined: Holotype ♀: Philippines, Palawan, Mantalingajan, Pinigisan, 600 m, 24.IX.1961. Noona Dan expedition 1961-62 leg. Deposited in the Zoological Museum, University of Copenhagen. Unique.

Description of holotype ♀: Body length 0.9 mm. Colour dark reddish brown; legs and basal half of scape yellowish.

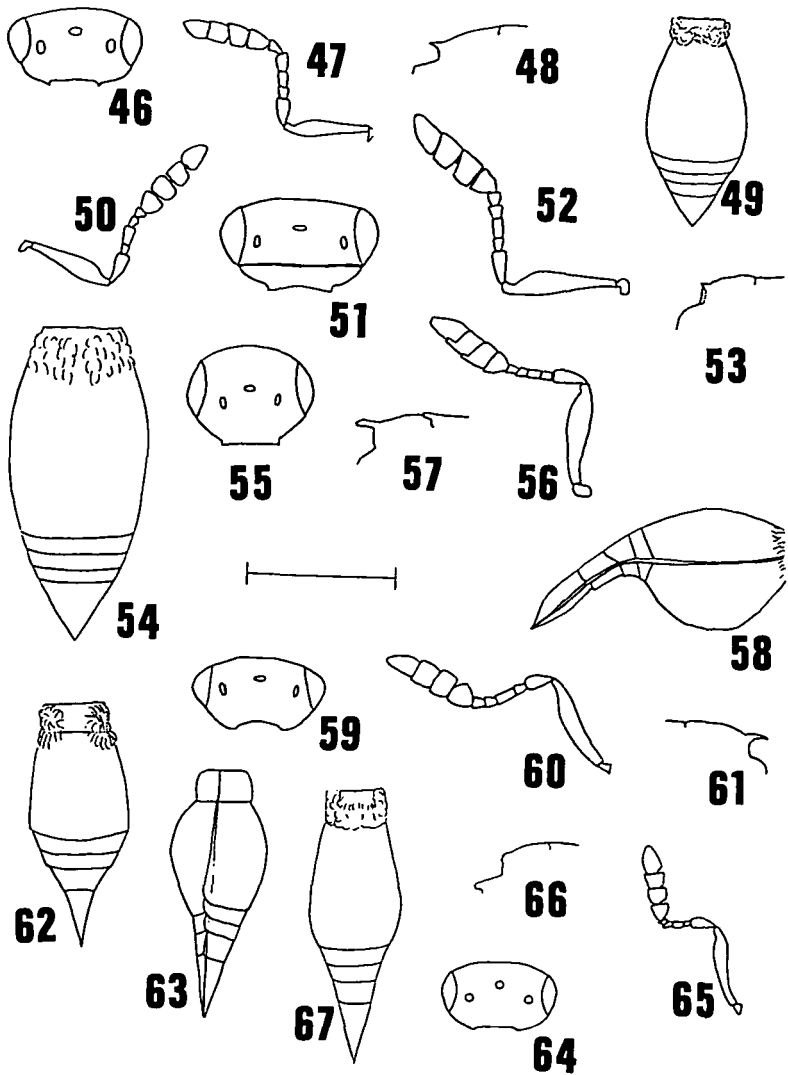
Head evenly reticulate, from above (fig. 59) 1.7 times wider than long, 1.1 times wider than thorax, without occipital carina, but vertex angled. Head from front 1.2 times wider than high. Malar space 0.4 height of an eye; OOL:POL:LOL = 1:9:4. Antenna (fig. 60).

Mesosoma 1.2 times higher than wide and 1.5 times longer than wide. Sides of pronotum hairy and with faint rugosity in upper half, smooth and bare in lower half. Mesoscutum sparsely hairy and with faint rugosity, notauli nearly complete, mid lobe slightly prolonged posteriorly, reaching base of scutellum; scuto-scutellar grooves narrow, hardly hairy. Mesopleurae smooth. Scutellum (fig. 61) sculptured and hairy as mesoscutum, pointed at apex in dorsal view, in lateral view with a slightly curved spine. Metapleurae and sides of propodeum evenly covered with pilosity. Propodeal carinae fused.

Fore wing slightly overreaching gaster, clear, about 2.5 times longer than wide; marginal cilia very short. Hind wing 6.3 times longer than wide; marginal cilia about half the width of wing.

Metasoma (figs 62-63) slightly narrower than thorax (16:17), about as long as head and mesosoma combined and almost as high as wide (7:8). Junction of T1 and T2 with two thick tufts of white pubescence, medial third bare; T2 smooth, with a few hairs in posterior half; T3 smooth and bare; T4-T5 almost smooth but with numerous rather deeply implanted hairs; T6 much pointed, covered with fine rugosity and some hairs.

Affinities: Distinct from the other species described in the present paper on account of shape of scutellar spine and of metasoma, this combination also making it distinct from the



**Figs 46-50:** *Synopeas luteolipes* sp. nov. 46-49: holotype ♀ - 46) head; 47) antenna; 48) scutellum; 49) metasoma; 50) antenna of paratype ♂. **Figs 51-54:** *Synopeas balabacensis* sp. nov. holotype ♀ - 51) head; 52) antenna; 53) scutellum; 54) metasoma. **Figs 55-58:** *Synopeas crassiceps* sp. nov. holotype ♀ - 55) head; 56) antenna; 57) scutellum; 58) metasoma. **Figs 59-63:** *Synopeas acutiventris* sp. nov. holotype ♀ - 59) head; 60) antenna; 61) scutellum; 62-63) metasoma. **Figs 64-67:** *Synopeas montanus* sp. nov. holotype ♀ - 64) head; 65) antenna; 66) scutellum; 67) metasoma. Scale bar = 0.25 mm.

species mentioned by FOUTS (1924). Differs from the species compared with *S. pallescens* sp. nov. above almost in the same way as this species.

**Etymology:** The name refers to the distinct acutely pointed metasoma.

*Synopeas montanus* sp. nov. (figs 64 - 67)

**Material examined:** Holotype ♀: Philippines, Palawan, Mantalingajan, Tagembung, 1150 m, 20.IX.1961. Noona Dan expedition 1961-62 leg. Deposited in the Zoological Museum, University of Copenhagen. Unique.

**Description of holotype ♀:** Body length 0.8 mm. Colour reddish brown; antennae, mandibles and legs yellowish.

Head from above (fig. 64) 1.8 times wider than long, 1.2 times wider than thorax. Occiput without carina, finely transversely reticulate; vertex finely reticulate; frons almost smooth. Head from front 1.2 times wider than high. Malar space hardly 0.4 height of an eye; OOL:POL:LOL = 2:14:7. Antenna (fig. 65).

Mesosoma 1.2 times higher than wide and 1.7 times longer than wide. Sides of pronotum faintly reticulate all over, with fine rugosity in upper anterior corner, hairy in upper 0.4. Mesoscutum with sparse hairs, faintly reticulate-coriaceous, notauli faintly indicated posteriorly; mid lobe posteriorly prolonged, covering base of scutellum; scuto-scutellar grooves hairy. Mesopleurae faintly sculptured as sides of pronotum. Scutellum (fig. 66) almost smooth and bare, hairy laterally, hardly with tooth, semitransparent posteriorly. Metapleurae with white pilosity in posterior two-thirds.

Apical half of wings missing in unique holotype, basal parts clear.

Metasoma (fig. 67) very slightly narrower than thorax, longer than head and mesosoma combined (19:14), one and a third times wider than high. T2-T6 smooth, hardly hairy except base of T2.

**Affinities:** Distinct from the other species described in this paper on account of the shape of scutellum and of metasoma. Runs to *S. ("Leptacis") auripes* (ASHMEAD, 1893) in FOUTS' (1924) key, but *auripes* has T5 twice as long as wide. *S. montanus* differs from the species compared with *S. pallescens* sp. nov. above almost in the same way as this species.

**Etymology:** The name refers to that the unique type was collected at a rather high altitude.

*Synopeas decumbens* sp. nov. (figs 68 - 71)

**Material examined:** Holotype ♂: Bismarck archipelago, New Ireland, Lemkamin, 22.IV.1962. Noona Dan expedition 1961-62 leg. Deposited in the Zoological Museum, University of Copenhagen. Unique.

**Description of holotype ♂:** Body length 0.8 mm. Colour reddish brown, head darker; antennae and legs yellow, A7-A10 darker.

Head from above (fig. 68) 1.7 times wider than long, wider than thorax (10:9); occiput distinctly reticulate; occipital carina complete, lateral ocelli removed from carina by their longer diameter; vertex and frons weakly reticulate-coriaceous. Head from front 1.1 times wider than long. Malar space 0.4 height of an eye; OOL:POL:LOL = 3:18:8. Antenna (fig. 69).

Mesosoma higher than wide (10:9) and 1.4 times longer than wide. Sides of pronotum reticulate-coriaceous and hairy in upper 0.6, rest bare and almost smooth. Mesoscutum with a few hairs, evenly reticulate-coriaceous, without notauli, with a slight depression medially in front of hind margin which is prolonged medially, forming a small tubercle covering base of scutellum. Scuto-scutellar grooves moderately wide, covered by hairs. Mesopleurae almost smooth. Scutellum (fig. 70) below level of mesoscutum, sculptured as

this but denser hairy, ending in a fine tooth. Metapleurae smooth and bare in anterior 0.3, rest with white pilosity. Propodeal carinae very close together but not fused.

Fore wing clear, slightly overreaching gaster, 2.4 times longer than wide; marginal cilia very short. Hind wing with two frenal hooks, 6.5 times longer than wide; marginal cilia half the width of wing.

Metasoma (fig. 71) very slightly narrower than thorax, slightly shorter than head and mesosoma combined. Junction of T1 and T2 thickly hairy except medially; T2 smooth; T3-T7 with fine sculpture and some very fine hairs.

Affinities: In aberrant scutellar shape most similar to *S. luteolipes* sp. nov. and to *S. montanus* sp. nov., but these two lack a stong and complete occipital carina.

Etymology: The name *decumbens* refers to an object "lying down" - here the distinct low scutellum.

### *Synopeas lemjaminensis* sp. nov. (figs 72 - 77)

Material examined: Holotype ♂: Bismarck archipelago, New Ireland, Lemkamin, 22.IV.1962. Paratype: 1 ♀, same data as holotype. Both types Noona Dan expedition 1961-62 leg. and deposited in the Zoological Museum, University of Copenhagen.

Description of holotype ♂: Body length 0.7 mm. Colour bright reddish-brown, head slightly darker; legs yellowish.

Head from above (fig. 72) 1.9 times wider than long, wider than thorax (9:8). Occiput reticulate, without carina but angled; vertex and frons weakly reticulate-coriaceous, frons transversely so in lower half. Head from front 1.1 times wider than high. Malar space 0.3 height of an eye; OOL:POL:LOL = 1:18:8. Antenna (fig. 73) with very short pubescence.

Mesosoma higher than wide (9:8) and 1.5 times longer than wide. Sides of pronotum hairy and faintly reticulate-coriaceous in upper half, rest smooth and bare. Mesoscutum sparsely hairy, weakly reticulate-coriaceous, with notauli in posterior 0.4; mid lobe prolonged, reaching base of scutellum. Scuto-scutellar grooves rather wide, hairy. Mesopleurae smooth. Scutellum (fig. 74) almost smooth, moderately hairy, with a semitransparent lamella below spine. Metapleurae smooth and bare except posteriorly. Propodeal carinae dull, fused.

Fore wing almost clear, overreaching gaster, with short marginal cilia. Hind wing with marginal cilia slightly shorter than width of wing.

Metasoma (fig. 75) narrower than mesosoma (3:4) and hardly as long than this. T2 smooth, T3-T7 with some punctures.

Description of paratype ♀: Head 1.7 times wider than long. Antenna (Fig. 76). Notauli nearly complete. Metasoma (fig. 77) 0.9 times as wide as thorax, as long as head and mesosoma combined and 1.2 times wider than high. T3-T6 faintly sculptured. Rest as characters as in ♂.

Affinities: Male most similar to *S. palawanensis* sp. nov., but this species has a distinctly broader head. Female very different from the female *palawanensis* in shape of metasoma, much closer to *S. acutiventris* sp. nov., but this species has a distinctly longer scutellar spine than *lemjaminensis* and is larger and darker. In lateral view, occiput is distinctly sharper angled in *acutiventris* than in *lemjaminensis*.

Etymology: Named after the type locality.

*Synopeas ventricosus* sp. nov. (figs 78 - 81)

Material examined: Holotype ♀: Bismarck archipelago, New Ireland, Lemkamin, 22.IV.1962. Paratypes (5 ♀): 1 ♀, same data as holotype; 1 ♀, Bismarck archipelago, New Britain, Yalom, 1000 m, 12.V.1962; 1 ♀, Bismarck archipelago, Mussau, Boliu, 7.VI.1962; 1 ♀, Philippines, Balabac, Dalawan Bay, 8.X.1961; 1 ♀, Philippines, Mindanao, Sapamoro, Curuan district, 22.XII.1961. All types Noona Dan expedition 1961-62 leg. and deposited in the Zoological Museum, University of Copenhagen.

Description of ♀: Body length 0.8 - 1.1 mm (holotype 1.0 mm). Colour reddish brown, or reddish brown with head blackish (holotype), or entirely blackish; antennae (except A7-A10) and legs yellowish to brownish.

Head strongly and evenly reticulate, from above (fig. 78) 1.7 - 1.8 times wider than long (holotype 1.8 times), wider than thorax (23:20), without occipital carina. Head from front 1.3 times wider than high. Malar space half the height of an eye; OOL:POL:LOL = 5:19:8. Antenna (fig. 79).

Mesosoma 1.1 times higher than wide and 1.4 times longer than wide. Sides of pronotum reticulate, less strongly so in lower 0.3. Mesoscutum with short and sparse hairs, evenly reticulate, notauli distinct in posterior 0.6. Scuto-scutellar grooves very wide. Mesopleurae weakly reticulate. Scutellum (fig. 80) densely covered with white hairs, with a strong spine. Metapleurae and sides of propodeum weakly reticulate, with long white pilosity. Propodeal carinae short and fused.

Fore wing slightly overreaching gaster, clear, 2.8 times longer than wide, without marginal cilia. Hind wing with two frenal hooks, 6.2 times longer than wide; marginal cilia hardly half the width of wing.

Metasoma (fig. 81) as wide as thorax and as long as head and mesosoma combined, as high as wide. T1 invisible in hairs; T2 smooth; T3-T6 evenly reticulate. T3-T4 strongly transverse, T3 about half as long as T4, this strongly converging towards apex; T5 slightly longer than T4, as long as wide, with almost parallel sides; T6 twice as long as T5, twice as long as wide at base.

Variability: This seems to be a widely distributed species which is rather variable in colour and size. I have failed to find characters separating the specimens at the species level.

Affinities: This species seems rather similar to the Nearctic *S. anomaliventris* (ASHMEAD, 1887), but this species has head twice as wide as long, notauli longer, and metasoma 1.5 times longer than head and mesosoma combined, cf. FOUTS (1924).

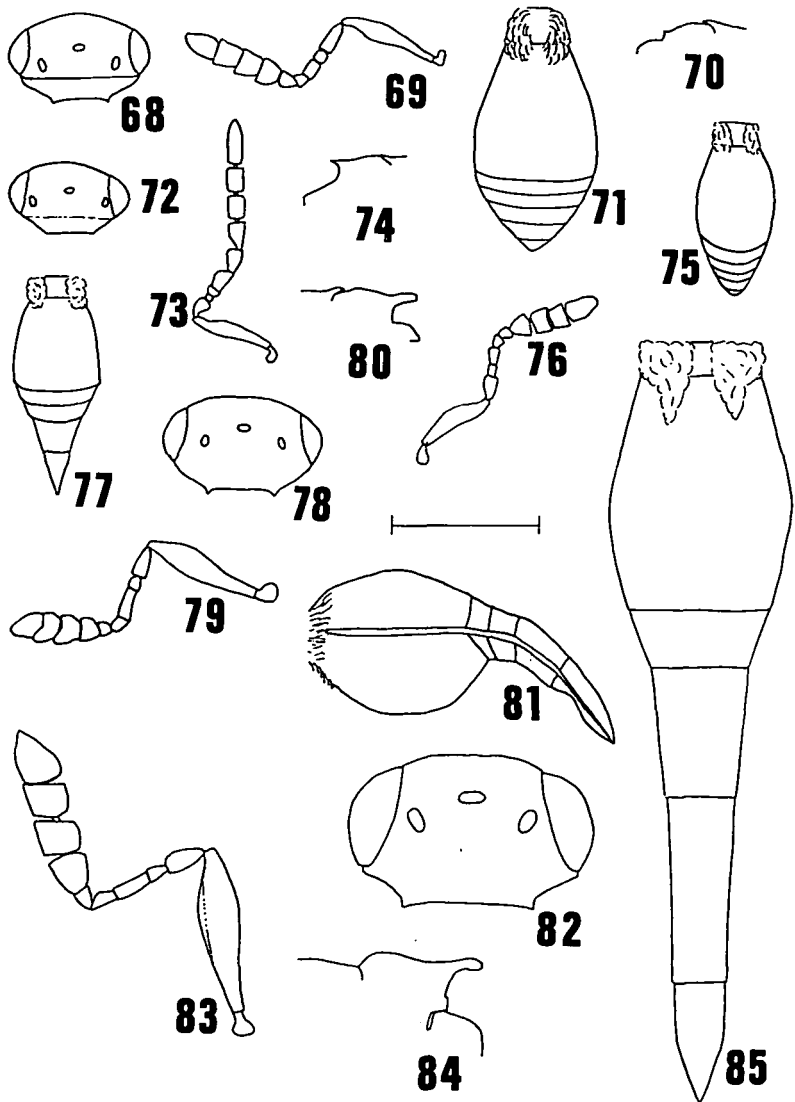
Etyymology: The name of the species means swollen abdomen.

*Synopeas mukerjeei* sp. nov. (figs 82 - 85)

Material examined: Holotype ♀: Philippines, Palawan, Mantalingajan, Pinigisan, 600 m, 24.IX.1961. Paratype: 1 ♀, Mantalingajan, Tagembung, 1150 m, 19.IX.1961. Both types Noona Dan expedition 1961-62 leg. and deposited in the Zoological Museum, University of Copenhagen.

Description of holotype ♀: Body length 2.1 mm. Colour black; antennae, eyes, mandibles, fore tibiae, apical half of middle tibiae, all tarsi and apex of gaster dark brown.

Head dull, evenly reticulate, from above (fig. 82) 1.8 times wider than long, 1.1 times wider than thorax, rather angled behind eyes but without distinct occipital carina. Head



Figs 68-71: *Synopeas decumbens* sp. nov. holotype ♂ - 68) head; 69) antenna; 70) scutellum; 71) metasoma. Figs 72-77: *Synopeas lemkinensis* sp. nov. 72-75: holotype ♂ - 72) head; 73) antenna; 74) scutellum; 75) metasoma; 76-77: paratype ♀ - 76) antenna; 77) metasoma. Figs 78-81: *Synopeas ventricosus* sp. nov. holotype ♀ - 78) head; 79) antenna; 80) scutellum; 81) metasoma. Figs 82-85: *Synopeas mukerjeei* sp. nov. holotype ♀ - 82) head; 83) antenna; 84) scutellum; 85) metasoma. Scale bar = 0.25 mm.

from front 1.2 times wider than high, frons with a fine longitudinal furrow from anterior ocellus half the way to antennal insertions. Malar space 0.2 height of an eye; OOL:POL:LOL = 3:26:11. Antenna (fig. 83).

Mesosoma 1.2 times higher than wide and almost 1.7 times longer than wide. Sides of pronotum hairy in upper half, upper anterior corner reticulate, rest finely and evenly coriaceous. Mesoscutum with very fine and sparse hairs, evenly reticulate-coriaceous, notauli almost complete, mid lobe prolonged posteriorly, reaching scutellum in an acute point; scuto-scutellar grooves hairy, wide and deep. Mesopleurae almost evenly sculptured as sides of pronotum. Scutellum (fig. 84) sculptured as mesoscutum but more hairy, almost longitudinally keeled medially. Metapleurae and sides of propodeum in anterior third bare, sculptured as mesopleurae, in middle third with sparse pilosity, in posterior third with dense white pilosity. Propodeal carinae dull, broad and fused.

Fore wing with faint yellowish tint, hardly reaching hind margin of T5, 2.4 times longer than wide; marginal cilia absent. Hind wing clear, with two frenal hooks, 5.7 times longer than wide; marginal cilia one-fourth the width of wing.

Metasoma (fig. 85) 0.9 times as wide as mesosoma and twice as long as this, 1.4 times wider than high. T2 faintly reticulate-coriaceous laterally and posteriorly, T3 stronger and almost evenly so; T4-T5 rather strongly longitudinally reticulate-coriaceous; T6 evenly dull, finely sculptured.

Description of paratype ♀: Body length 1.7 mm. Antennae except club and legs except coxae yellow. Rest of characters much as in holotype.

Affinities: This species seems to be very similar to *S. zaitama* YOSHIDA & HIRASHIMA, 1979 from Japan, but *zaitama* has much larger OOL and A9 slightly longer than wide, cf. YOSHIDA & HIRASHIMA (1979).

Etymology: Named after Indian entomologist M. K. MUKERJEE.

#### *Synopeas solomonensis* sp. nov. (figs 86 - 89)

Material examined: Holotype ♀: Solomon Islands, Rennell, Niupani, in grassland, 23.VIII.1962. Noona Dan expedition 1961-62 leg. Deposited in the Zoological Museum, University of Copenhagen. Unique.

Description of holotype ♀: Body length 1.2 mm. Colour dark brown; antennae, mandibles and legs yellowish brown, A7-A10 darker.

Head from above (fig. 86) twice as wide as long, 1.2 times wider than thorax. Occiput distinctly reticulate, without carina but rather sharply angled; vertex and frons reticulate. Head from front almost 1.3 times wider than high. Malar space one-third the height of an eye; OOL:POL:LOL = 2:8:3. Antenna (fig. 87).

Mesosoma 1.2 times higher than wide and 1.6 times longer than wide. Sides of pronotum hairy in upper 0.4, faintly reticulate all over. Mesoscutum faintly and unevenly reticulate, moderately hairy; notauli almost complete, sharp; mid lobe prolonged posteriorly, reaching scutellum in an acute point. Scuto-scutellar grooves deep and rather wide, without hairs. Mesopleurae evenly and faintly reticulate-coriaceous. Scutellum (fig. 88) sculptured and hairy almost as mesoscutum, posteriorly slightly semitransparent. Metapleurae and sides of propodeum bare and almost smooth in anterior third, with sparse pilosity in middle third, and with dense white pilosity in posterior third. Propodeal carinae short, very close, converging.

Fore wing clear, reaching base of T6, 2.5 times longer than wide; marginal cilia hardly present. Hind wing with two frenal hooks, almost 6.8 times longer than wide; marginal cilia half the width of wing.

Metasoma (fig. 89) 0.9 times as wide as thorax, 1.5 times as long as head and mesosoma combined and 1.3 times wider than high. T2-T3 rather dull, with very fine sculpture; T4-T6 with stronger sculpture, longitudinally reticulate-coriaceous, hardly hairy.

Affinities: Differs from three similar Neotropical species, viz. *S. insularis* (ASHMEAD, 1894) which has mesosoma twice as long as wide, and *S. macrurus* (ASHMEAD, 1895) and *S. grenadensis* (ASHMEAD, 1895) which both have longer metasoma than *solomonensis*, cf. KIEFFER (1926) (who referred ASHMEAD's species to genus *Ectadius* FÖRSTER, 1856).

Etymology: Named after the Solomon Islands.

*Synopeas saint-exuperyi* sp. nov. (figs 90 - 93)

Material examined: Holotype ♀: Bismarck archipelago, Mussau, Boliu, 7.VI.1962. Noona Dan expedition 1961-62 leg. Deposited in the Zoological Museum, University of Copenhagen. Unique.

Description of holotype ♀: Body length 1.0 mm. Colour reddish brown; antennae and legs yellow, A7-A10 darker.

Head from above (fig. 90) 1.7 times wider than long, 1.2 times wider than thorax. Occiput transversely reticulate, without carina; vertex reticulate, frons weakly so. Head from front 1.25 times wider than high. Malar space 0.3 height of an eye; OOL:POL:LOL = 5:16:7. Antenna (fig. 91).

Mesosoma 1.1 times higher than wide and 1.5 times longer than wide. Sides of pronotum weakly reticulate and hairy in upper 0.4, rest bare and almost smooth. Mesoscutum with sparse hairs, weakly reticulate-coriaceous, notauli nearly complete; mid lobe posteriorly prolonged, reaching scutellum in an acute point; scuto-scutellar grooves rather wide and deep, almost bare. Mesopleurae almost smooth. Scutellum (fig. 92) sculptured almost as mesoscutum, slightly more hairy than this, not semitransparent posteriorly. Metapleurae and sides of propodeum with white pilosity except anteriorly. Propodeal carinae fused.

Fore wing clear, almost reaching apex of gaster, 2.6 times longer than wide; marginal cilia almost absent. Hind wing 6.7 times longer than wide; marginal cilia hardly 0.6 width of wing.

Metasoma (fig. 93) 0.8 times as wide as mesosoma and twice as long as this, 1.1 times wider than high. T2 smooth, with faint traces of reticulation in posterior half; T3-T6 rather strongly reticulate-coriaceous, hardly hairy.

Affinities: This species has head distinctly less transverse than *S. solomonensis* spec. nov. and is differently sculptured than this. Differs from ASHMEAD's species compared with *solomonensis* in the same way as this species.

Etymology: Named in honour the French writer Antoine de SAINT-EXUPÉRY (1900-44).

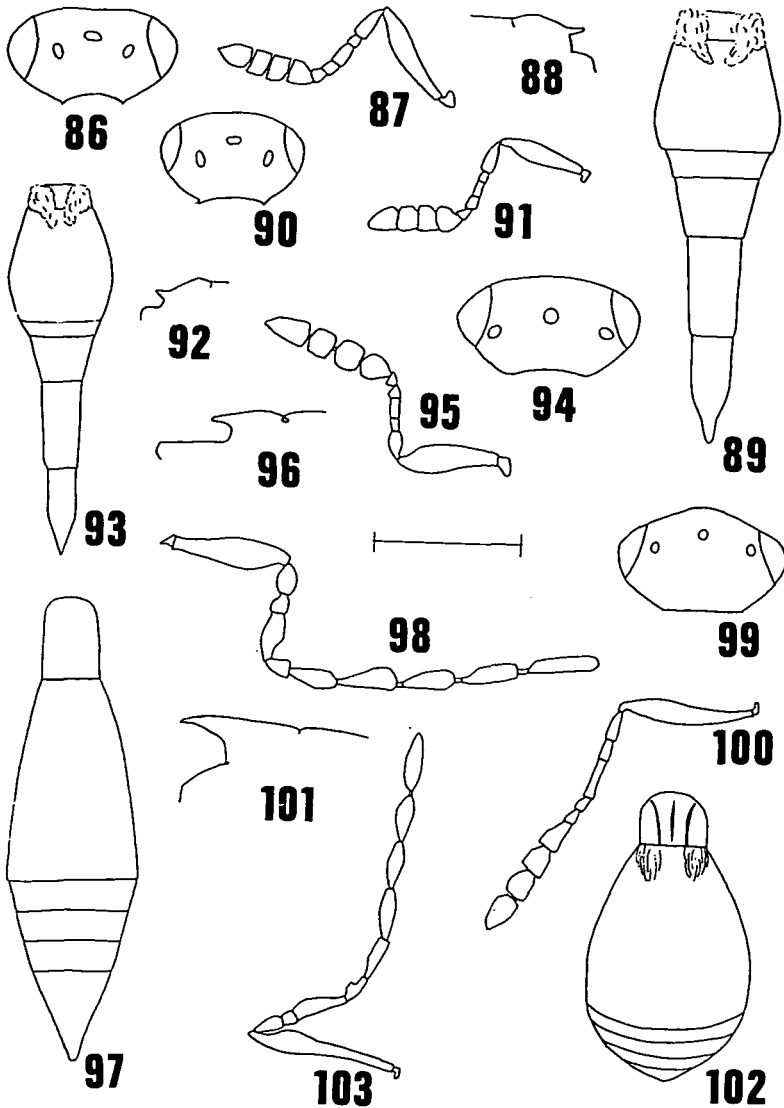
**Genus *Piestopleura* FÖRSTER, 1856**  
*Piestopleura milnei* sp. nov. (figs 94 - 98)

Material examined: Holotype ♀: Philippines, Palawan, Mantalingajan, Tagembung, 1150 m, 20.IX.1961. Paratypes (1 ♀, 1 ♂): 1 ♀, same locality as holotype, 17.IX.1961; 1 ♂, same data as holotype. All types Noona Dan expedition 1961-62 leg. and deposited in the Zoological Museum, University of Copenhagen.

Description of ♀: Body length 1.4 mm. Colour reddish brown; legs except coxae and trochanters yellowish.

Head faintly reticulate, from above (fig. 94) 1.9 times wider than long, almost 1.9 times wider than thorax. Head from front 1.2 times wider than high. Malar space 0.4 height of an eye; OOL:POL:LOL = 1:27:12. Antenna (fig. 95).





**Figs 86-89:** *Synopeas solomonensis* sp. nov. holotype ♀ - 86) head; 87) antenna; 88) scutellum; 89) metasoma. **Figs 90-93:** *Synopeas saint-exuperyi* sp. nov. holotype ♀ - 90) head; 91) antenna; 92) scutellum; 93) metasoma. **Figs 94-97:** *Piestopleura milnei* sp. nov. holotype ♀ - 94) head; 95) antenna; 96) scutellum; 97) metasoma; 98) antenna of paratype ♂. **Figs 99-103:** *Leptacis buchi* sp. nov. 99-102: holotype ♀ - 99) head; 100) antenna; 101) scutellum; 102) metasoma; 103) antenna of paratype ♂. Scale bar = 0.25 mm.

Mesosoma 1.9 times higher than wide and 3 times longer than wide. Sides of pronotum smooth and bare, with scattered fine punctures. Mesoscutum almost bare and smooth, with faint rugosity anteriorly and laterally, with scattered punctures, without notauli, hind margin convex, reaching scutellum. Scuto-scutellar grooves covered with hairs. Mesopleurae smooth, with a few punctures and short longitudinal lines just below tegulae and medially. Scutellum (fig. 96) almost bare and with very fine sculpture, without punctation, paler than mesoscutum. Metapleurae smooth and bare, with white pilosity in posterior one-fourth. Propodeal carinae long, parallel, close together, area in between dull.

Fore wing almost clear, hardly overreaching gaster, 3.1 times longer than wide; marginal cilia 0.2 width of wing. Hind wing with two frenal hooks, 7.2 times longer than wide; marginal cilia 0.6 width of wing.

Metasoma (fig. 97) 1.4 times wider than thorax, longer than head and mesosoma combined (16:13) and 2.4 times wider than high. T1 bare, smooth, with about four weak and irregular longitudinal keels, anterior third elevated and without keels. T2 smooth, with weak basal foveae, hind margin of T2 and the following tergites with fine sculpture, hardly hairy.

Description of ♂: Body length 1.2 mm. Only tibiae and tarsi yellowish. Antenna (fig. 98) long, hairs of flagellum about 1.5 times longer than width of segments. Head only 1.4 times wider than thorax; mesosoma only 1.6 times higher than wide and 2.3 times longer than wide. Scutellar spine longer and sharper than in female. Metasoma hardly as long as head and mesosoma combined, rounded at apex. Rest as in female.

Affinities: This is the first record of genus *Piestopleura* outside the Palaearctic and Nearctic regions, cf. VLUG (1995). *P. milnei* is very similar to *P. catilla* (WALKER, 1835), but this species is larger and darker than *milnei* and slightly less slender built, and it has notauli faintly indicated, cf. VLUG (1985).

Etymology: Named in honour of the English writer Alan A. MILNE (1882-1956).

**Genus *Leptacis* FÖRSTER, 1856**  
***Leptacis buchi* sp. nov. (figs 99 - 103)**

Material examined: Holotype ♀: Norway (EIS 26, BØ), Drammen, Underlia, VI.1994, Malaise-trap. Lars Ove HANSEN leg. Paratype ♂: Norway (EIS 26, TEI), Tinn, Rjukan, VIII.1995, Malaise-trap. Bjørn A. SAGVOLDEN leg. Both types deposited in the Zoological Museum, University of Oslo.

Description of holotype ♀: Body length 1.0 mm. Colour black; antennae, mouthparts, legs and scutellar spine reddish, A7-A10 and thickened part of femora and tibiae on middle and hind legs darker.

Head from above (fig. 99) 1.7 times as wide as long, as wide as thorax; whole head rather strongly and almost evenly reticulate; occipital carina weak and incomplete. Head from front 1.1 times wider than high. Malar space half the height of an eye; OOL:POL:LOL = 2:24:11. Antenna (fig. 100) with A4 about 3.5 times longer than wide, twice as long as A3.

Mesosoma slightly higher than wide (13:12) and 1.5 times longer than wide. Sides of pronotum with fine longitudinal sculpture except along hind margin. Mesoscutum with fainter reticulation than head and moderately hairy, hind margin almost straight, reddish; notauli absent. Mesopleurae with longitudinal striations in upper third, anterior margin and rest smooth. Scutellum (fig. 101) sculptured and hairy as mesoscutum, semi-transparent brown behind, just reaching base of T1. Metapleurae and sides of propodeum smooth and bare in anterior half, with white pilosity in posterior half. Propodeal carinae straight, parallel, rather close together, area in between smooth and shiny, areas lateral of carinae reticulate.

Fore wing as long as whole body, clear, about 2.7 times as long as wide; marginal cilia 0.25 width of wing. Hind wing 5.7 times as long as wide, with one frenal hook; marginal cilia 0.8 width of wing.

Metasoma (fig. 102) slightly narrower than thorax (11:12), slightly longer than this (19:18) and 1.2 times wider than high. T1 slightly transverse, smooth between its two strong keels, hairy lateral of keels, hairs continuing on base of T2, this hardly with basal foveae, smooth and almost bare, with a strip of fine sculpture along hind margin. T3-T6 short, each with a strip of sculpture along hind margin and with fine hairs.

Description of paratype ♂: A1-A3, base of A4 and legs except distal half of hind tibiae reddish yellow. Occipital carina slightly stronger than in female. Antenna (fig. 103) with A4 thickened, 3 times as long as wide, with an emargination covering basal half, this ending in a small tooth; A7-A9 each 2.5 times as long as wide, flagellar pubescence longer than width of segments. Rest of characters much as in female.

Affinities: Similar to *L. tipulae* (KIRBY, 1798), but differs from this species in having lateral ocelli hardly their diameter from eyes, distinctly striated mesopleurae and longer marginal cilia of hind wing, cf. description of the type material of *tipulae* in HUGGERT (1980).

Etymology: Named in honour of Mr. William BUCH, entomological conservator at the Zoological Museum, University of Copenhagen.

#### *Leptacis vlugi* sp. nov. (figs 104 - 107)

Material examined: Holotype ♀: Norway (EIS 26, BØ), Drammen, Underlia, VII.1992, Malaise-trap. Lars Ove HANSEN leg. Deposited in the Zoological Museum, University of Oslo. Paratypes (3 ♀): ♀: same data as holotype; ♀: Norway (EIS 19, BØ), Hurum, Tofteholmen, 7.-31.VII.1991; ♀: same locality, 1.IX.-26.X.1991. All paratypes Malaise-trap and Lars Ove HANSEN leg. Deposited in the Zoological Museum, University of Copenhagen.

Description of holotype ♀: Body length 0.9 mm. Colour black; A1-A3, mandibles and legs brownish-red; rest of antennae, thickened part of middle and hind femora and tibiae, last segment of all tarsi and T1 dark brown.

Head from above (fig. 104) 1.8 times as wide as long, 1.2 times wider than thorax; whole head shiny; occiput and vertex strongly reticulate, occiput transversely so; occipital carina weak and incomplete; frons almost smooth, with traces of reticulation. Head from front only slightly wider than high (11:10). Malar space half the height of an eye; OOL:POL:LOL = 2:23:11. Antenna (fig. 105) with A3 as wide as long; A4-A5 almost equal, each hardly more than 1.7 times as long as wide; A9 as long as wide. Flagellar pubescence short; sensillae in inner apical corner of flagellar segments distinct.

Mesosoma higher than wide (11:9) and almost 1.6 times longer than wide. Sides of pronotum with faint rugosity in upper anterior corner, rest smooth. Mesoscutum faintly reticulate and with sparse white hairs, without notauli; hind margin prolonged medially, reaching base of scutellum; scuto-scutellar grooves rather wide, covered with hairs. Mesopleurae with faint longitudinal striations just below tegulae, rest smooth. Scutellum (fig. 106) almost smooth, moderately hairy, semitransparent brownish behind, spine not reaching posterior margin of propodeum. Metapleurae and sides of propodeum smooth and bare, hairy posteriorly. Propodeal carinae parallel, rather close, area in between shiny and almost smooth, areas lateral of carinae shiny but uneven.

Fore wing hardly shorter than whole body, clear, 2.6 times longer than wide; marginal cilia 0.25 width of wing. Hind wing 7.8 times as long as wide, with 2 frenal hooks; marginal cilia 0.8 width of wing.

Metasoma (fig. 107) as wide as mesosoma, slightly longer than this (8:7) and 1.3 times wider than high. T1 slightly transverse, with two strong keels, area in between smooth and

bare, areas lateral of keels densely covered with short hairs, these continuing on base of T2, this hardly with basal foveae, almost smooth; T2-T6 each with a strip of faint rugosity along posterior margin, T3-T6 bare.

Variability: One paratype has brownish body colour, the other paratype has length of body 1.0 mm, with legs almost uniformly reddish yellow.

Affinities: In shape of scutellum most similar to *L. ozines* (WALKER, 1835) and *L. laodice* (WALKER, 1835), but these species have prolongation of scutellum "massive", not semitransparent brown, and A3-A4 much longer, cf. VLUG (1985) and KIEFFER (1926).

Etymology: Named in honour of the Dutch specialist of platygastriids Henk J. VLUG.

*Leptacis kozlovi* sp. nov. (figs 108 - 111)

Material examined: Holotype ♀: Norway (EIS 19 VE), Sande, Kommersøya, 26.V.-9.VII.1991, Malaise-trap in west-faced shore with limestone. Lars Ove HANSEN leg. Deposited in the Zoological Museum, University of Oslo. Unique.

Description of holotype ♀: Body length 1.4 mm. Colour black; legs reddish yellow, A1-A6 of antennae, mandibles, coxae, thickened part of hind femora and tibiae and last segment of all tarsi slightly darker, A7-A10 of antennae dark brown.

Head from above (fig. 108) 1.8 times as wide as long, as wide as thorax; whole head rather strongly and uniformly reticulate, without occipital carina. Head from front 1.2 times wider than long. Malar space 0.4 times the height of an eye; OOL:POL:LOL = 4:33:15. Antenna (fig. 109) with A3 slightly shorter than pedicel, a little more than twice as long as wide; A4 1.5 times longer than A3, 3 times longer than wide; A9 as wide as long.

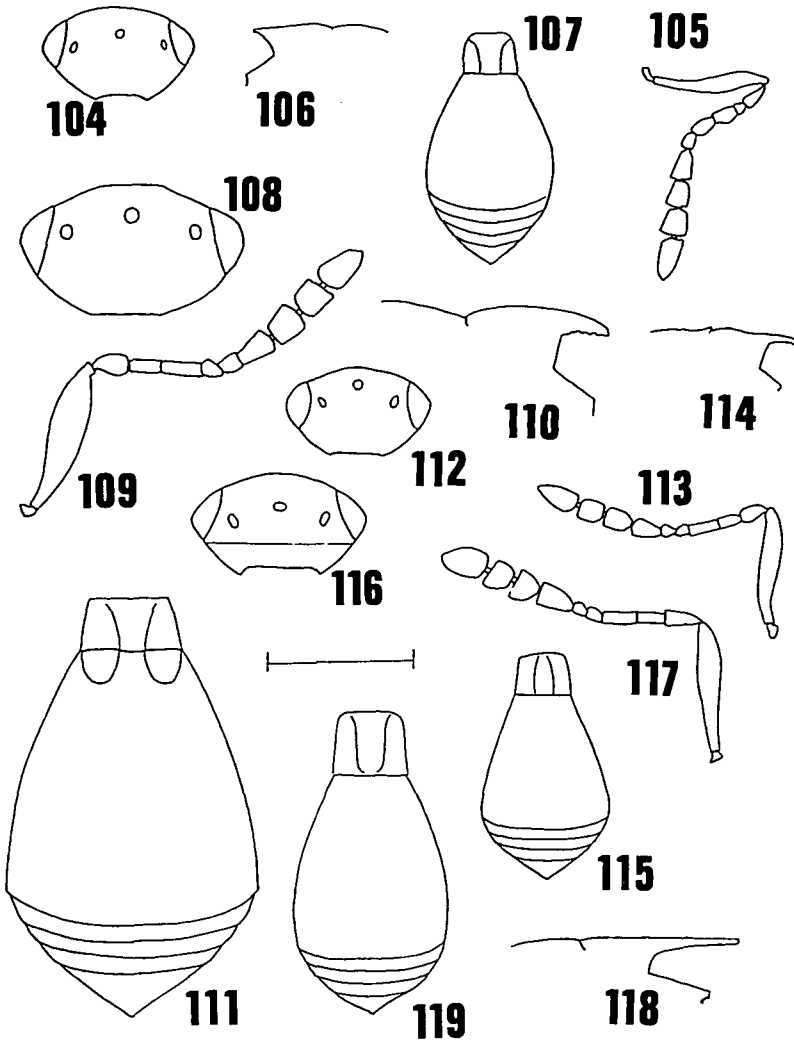
Mesosoma slightly higher than wide (17:16) and hardly 1.5 times longer than wide. Sides of pronotum distinctly and almost evenly reticulate. Mesoscutum with sparse hairs, sculptured as pronotum (weaker reticulate than head), without notauli, hind margin straight; scuto-scutellar grooves narrow, covered by hairs. Mesopleurae with longitudinal striae in upper third, rest smooth. Scutellum (fig. 110) reticulate-coriaceous, sparsely hairy, semitransparent reddish behind, spine just reaching base of T1. Metapleurae and sides of propodeum smooth and bare in anterior half, with white pilosity in posterior half. Propodeal carinae well separated, diverging, area in between smooth and shiny, areas lateral of carinae uneven and hairy.

Fore wing almost clear, shorter than body (25:29), 2.4 times longer than wide; marginal cilia 0.1 width of wing. Hind wing 6.6 times longer than wide, with 2 frenal hooks; marginal cilia about one-third the width of wing.

Metasoma (fig. 111) wider than thorax (9:8), longer than mesosoma (26:23) and 1.8 times as wide as high. T1 about twice as wide as long, with two distinct keels, area in between smooth and bare, areas lateral of keels densely hairy. T2 with short and hairy basal foveae, rest almost smooth, T3-T5 each with a strip of rugosity along hind margin and some fine hairs; T6 with rugosity except along anterior margin, with fine hairs. Sternite 1 and base of sternite 2 with dense whitish pubescence.

Affinities: Rather similar to *L. curvispinus* KOZLOV, 1978 and to *L. nydia* (WALKER, 1835), but the first has A4 twice as long as A3, scutellum entirely black and legs and antennae darker than *kozlovi*; the second has A4 fully 2.5 times longer than A3, cf. KOZLOV (1978), HUGGERT (1980) and VLUG (1985).

Etymology: Named in honour of the leading Russian expert of proctotrupoids, Dr. Michail Alexeevich KOZLOV (St. Petersburg).



**Figs 104-107:** *Leptacis vlugi* sp. nov. holotype ♀ - 104) head; 105) antenna; 106) scutellum; 107) metasoma. **Figs 108-111:** *Leptacis kozlovi* sp. nov. holotype ♀ - 108) head; 109) antenna; 110) scutellum; 111) metasoma. **Figs 112-115:** *Leptacis philippinensis* sp. nov. holotype ♀ - 112) head; 113) antenna; 114) scutellum; 115) metasoma. **Figs 116-119:** *Leptacis orientalis* sp. nov. holotype ♀ - 116) head; 117) antenna; 118) scutellum; 119) metasoma. Scale bar = 0.25 mm.

*Leptacis philippinensis* sp. nov. (figs 112 - 115)

Material examined: Holotype ♀: Philippines, Palawan, Mantalingajan, Pinigisan, 600 m, 24.IX.1961. Noona Dan expedition 1961-62 leg. Deposited in the Zoological Museum, University of Copenhagen. Unique.

Description of holotype ♀: Body length 0.9 mm. Colour dark brown, head blackish; scape, mandibles and legs yellow.

Head shiny, reticulate, without occipital carina, from above (fig. 112) 1.7 times wider than long, wider than thorax (10:9). Head from front 1.1 times wider than high. Malar space 0.3 times the height of an eye; OOL:POL:LOL = 2:18:9. Antenna (fig. 113) with A4 1.4 times longer than A3, almost 3 times longer than wide. A3-A6 with sparse hairs longer than the width of segments; A7-A10 with denser hairs which are slightly more than half as long as the width of segments.

Mesosoma 1.1 times higher than wide and 1.5 times longer than wide. Sides of pronotum reticulate in upper third, rest smooth. Mesoscutum faintly reticulate, with sparse hairs and without notauli, hind margin slightly convex. Mesopleurae with a few short striae below tegulae, rest smooth. Scutellum (fig. 114) sculptured and hairy almost as mesoscutum, reaching anterior margin of T1, spine at apex semitransparent light brown. Metapleurae smooth and bare except for some faint pubescence posteriorly.

Fore wing almost clear, 2.8 times longer than wide; marginal cilia 0.2 width of wing. Hind wing with two frenal hooks, 10.0 times longer than wide; marginal cilia slightly longer than width of wing.

Metasoma (fig. 115) as wide as mesosoma and 1.1 times longer than this, 1.5 times wider than high. T1 slightly transverse, with two longitudinal keels; T2 with weak basal foveae, this tergite as well as the following tergites almost smooth.

Affinities: Rather similar to some of the species described by MUKERJEE (1981), but *philippinensis* differs from *L. atturensis* MUKERJEE, 1981, *L. brachycerus* MUKERJEE, 1981 and *L. maldarensis* MUKERJEE, 1981 e.g. in having no occipital carina, from *brachycerus* also obviously in having A4 longer and marginal cilia of fore wing shorter.

Etymology: Named after the Philippines. Hitherto no species of *Leptacis* have been described from these islands.

*Leptacis orientalis* sp. nov. (figs 116 - 119)

Material examined: Holotype ♀: Philippines, Tawi Tawi, Tarawakan, north of Batu Batu, 13.XI.1961, caught by Mercury-light. Noona Dan expedition 1961-62 leg. Paratypes (2 ♀): 1 ♀, same data as holotype; 1 ♀, same locality but caught 21.X.1961. All types deposited in the Zoological Museum, University of Copenhagen.

Description of ♀: Body length 0.9 - 1.1 mm. Colour dark brown, sides of mesosoma and entire metasoma chestnut brown; A1-A6, mouthparts, scutellar spine and legs yellow.

Head from above (fig. 116) 1.9 times wider than long, 1.1 times wider than thorax. Occiput smooth, with some reticulation in upper half, occipital carina complete but not strong; vertex and frons indistinctly reticulate. Head from front 1.1 times wider than high. Malar space hardly 0.5 times the height of an eye; OOL:POL:LOL = 3:23:10. Antenna (fig. 117) with A4 1.3 times longer than A3; flagellum with sparse hairs hardly half the width of segments; A7-A10 with thick sensillae at inner apical corners.

Mesosoma 1.2 times higher than wide and 1.8 times longer than wide. Sides of pronotum with faint sculpture in upper anterior corner, hairy in upper 0.4, rest smooth and bare. Mesoscutum densely and evenly reticulate and rather densely and evenly hairy, without notauli, hind margin straight. Mesopleurae smooth. Scutellum (fig. 118) sculptured and hairy as mesoscutum, reaching anterior margin of T1. Metapleurae smooth and bare

except posteriorly. Propodeal carinae close together but separate, area in between dull, areas lateral of carinae with long whitish pilosity.

Fore wing 3.1 times longer than wide, almost clear; marginal cilia (at their longest) 0.25 width of wing. Hind wing with two frenal hooks; 8.3 times longer than wide; marginal cilia 0.7 width of wing.

Metasoma (fig. 119) of equal length and width as mesosoma, 1.4 times wider than high. T1 slightly transverse, with two longitudinal keels. T2 with short but rather deep basal foveae, almost smooth, the following tergites smooth, dull along hind margins, without hairs.

Affinities: Differs from *philippinensis* sp. nov. e.g. in having occipital carina, in scutellar structure and in length of marginal cilia of wings; from the species described by MUKERJEE (1981) *orientalis* differs e.g. in having brighter coloured thorax and legs, and it has longer scutellar spine than *L. atturensis* MUKERJEE, 1981 and shorter marginal cilia of wings than *L. brachycerus* MUKERJEE, 1981 and *L. maldarensis* MUKERJEE, 1981.

Etymology: The name refers to that the Philippines belong to the Oriental region.

#### *Leptacis flavus* sp. nov. (figs 120 - 123)

Material examined: Holotype ♂: Philippines, Palawan, Mantalingajan, Tagembung, 1150 m, 19.IX.1961. Noona Dan expedition 1961-62 leg. Deposited in the Zoological Museum, University of Copenhagen. Unique.

Description of holotype ♂: Body length 1.0 mm. Colour pale yellow, flagellum and head slightly darker.

Head from above (fig. 120) 1.7 times wider than long, very slightly wider than thorax. Occiput transversely reticulate, without carina; vertex and frons with faint reticulation. Head from front 1.2 times wider than high. Malar space 0.2 times the height of an eye; OOL:POL:LOL = 1:24:11. Antenna (fig. 121) with flagellar pubescence slightly shorter than width of segments.

Mesosoma 1.2 times higher than wide and 1.8 times longer than wide. Sides of pronotum smooth, bare except in upper third. Mesoscutum finely reticulate-punctate, rather densely covered with fine white hairs, without notauli, hind margin straight medially. Mesopleurae smooth and bare. Scutellum (fig. 122) sculptured and hairy as mesoscutum, not reaching hind margin of propodeum. Metapleurae and sides of propodeum smooth and bare, only posteriorly slightly pubescent. Propodeal carinae high and fused; areas lateral of carinae with long white pilosity.

Fore wing long and narrow, 3.4 times longer than wide, with brownish tint; marginal cilia 0.1 width of wing. Hind wing almost 10 times longer than wide, with two frenal hooks; marginal cilia as long as width of wing.

Metasoma (fig. 123) very slightly narrower than mesosoma, hardly as long as this and 1.4 times wider than high. T1 sparsely hairy laterally, with two longitudinal keels; T2 hardly with basal foveae, with a few short striae medially, rest of tergite as well as the following tergites smooth, apical tergites with a few inconspicuous hairs.

Affinities: An unmistakable species on body colour alone.

Etymology: The name means pale yellow.

#### *Leptacis antennalis* sp. nov. (figs 124 - 127)

Material examined: Holotype ♀: Philippines, Palawan, Mantalingajan, Pinigisan, 600 m, 23.IX.1961. Noona Dan expedition 1961-62 leg. Deposited in the Zoological Museum, University of Copenhagen. Unique.

Description of holotype ♀: Body length 0.7 mm. Colour dark reddish brown; antennae, mandibles and legs yellowish.

Head from above (fig. 124) 1.6 times wider than long, wider than thorax (8:7); occiput transversely striated, without carina; vertex with faint reticulation; frons only with traces of reticulation; eyes with sparse but long hairs. Head from front 1.1 times wider than high. Malar space 0.4 height of an eye; OOL:POL:LOL = 1:16:8. Antenna (fig. 125) slender, A7-A9 each twice as long as wide; flagellum with rather dense hairs about equal to width of segments.

Mesosoma higher than wide (8:7) and 1.6 times longer than wide. Sides of pronotum hairy and faintly sculptured in upper 0.4, rest smooth and bare. Mesoscutum with a few hairs, faintly reticulate-coriaceous, notauli weakly indicated in posterior 0.3, hind margin slightly prolonged medially. Mesopleurae smooth. Scutellum (fig. 126) sculptured and hairy almost as mesoscutum. Metapleurae smooth and bare except posteriorly. Propodeal carinae close together, smooth and shiny as is also area in between.

Fore wing almost clear, slightly shorter than whole body (25:27), 3.1 times longer than wide; marginal cilia 0.3 width of wing. Hind wing about 10 times longer than wide; marginal cilia about equal to width of wing.

Metasoma (fig. 127) narrower than mesosoma (6:7) and slightly longer than this (12:11). T1 rather hairy, with two weak longitudinal keels; T2 with hairs in short basal foveae, rest smooth; T3-T6 with fine sculpture and a few minute hairs.

Affinities: A very distinct species on account of small body size, slender antennae, long hairs on eyes, and lack of occipital carina.

Etymology: The name refers to the characteristic slender antennae.

#### *Leptacis bismarckensis* sp. nov. (figs 128 - 131)

Material examined: Holotype ♀: Bismarck archipelago, New Ireland, Lemkamin, 22.IV.1962. Noona Dan expedition 1961-62 leg. Deposited in the Zoological Museum, University of Copenhagen. Unique.

Description of holotype ♀: Body length 0.8 mm. Colour reddish brown, antennae and legs yellow.

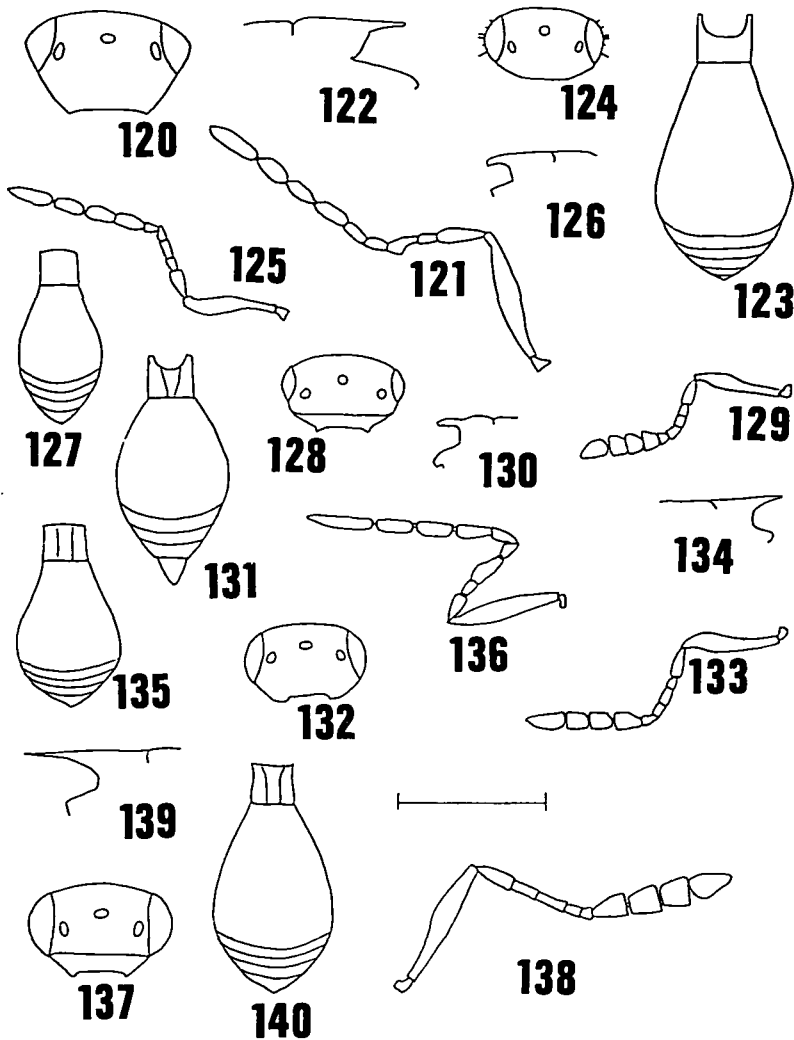
Head shiny, from above (fig. 128) 1.7 times wider than long, very slightly wider than thorax; occiput transversely striated, occipital carina complete; vertex and frons faintly reticulate-coriaceous. Head from front 1.2 times wider than than high. Malar space one-third the height of an eye; OOL:POL:LOL = 1:9:4. Antenna (fig. 129).

Mesosoma higher than wide (9:8) and 1.6 times longer than wide. Sides of pronotum weakly reticulate-coriaceous and hairy in upper half, in lower half bare and almost smooth. Mesoscutum sparsely hairy and weakly reticulate-coriaceous, without notauli, hind margin straight medially. Mesopleurae smooth, with a few faint punctures medially. Scutellum (fig. 130) more sculptured and hairy than mesoscutum, spine semitransparent yellowish. Metapleurae smooth and bare except posteriorly. Propodeal carinae parallel, close together, area in between smooth.

Fore wing clear, shorter than whole body (13:16), 3.2 times longer than wide; marginal cilia 0.4 width of wing. Hind wing with two frenal hooks, 10 times longer than wide; marginal cilia longer than width of wing.

Metasoma (fig. 131) slightly narrower than thorax and slightly shorter than head and mesosoma combined (15:17), 1.3 times wider than high. T1 with two converging keels; T2 smooth, with very small basal foveae and a few punctures; T3-T6 with fine sculpture and punctures and a few very fine hairs.





**Figs 120-123:** *Leptacis flavus* sp. nov. holotype ♂ - 120) head; 121) antenna; 122) scutellum; 123) metasoma. **Figs 124-127:** *Leptacis antennalis* sp. nov. holotype ♀ - 124) head; 125) antenna; 126) scutellum; 127) metasoma. **Figs 128-131:** *Leptacis bismarckensis* sp. nov. holotype ♀ - 128) head; 129) antenna; 130) scutellum; 131) metasoma. **Figs 132-136:** *Leptacis schioedtei* sp. nov. 132-135: holotype ♀ - 132) head; 133) antenna; 134) scutellum; 135) metasoma; 136) antenna of paratype ♂. **Figs 137-140:** *Leptacis kierkegaardii* sp. nov. holotype ♀ - 137) head; 138) antenna; 139) scutellum; 140) metasoma. Scale bar = 0.25 mm.

Affinities: This species seems most similar to *L. brachycerus* MUKERJEE, 1981, but this species is larger and darker, and it has marginal cilia of fore wing even longer than in *bismarckensis*, more than half as long as width of wing, cf. MUKERJEE (1981).

Etymology: Named after the Bismarck archipelago.

*Leptacis schioedtei* sp. nov. (figs 132 - 136)

Material examined: Holotype ♀: Bismarck archipelago, Mussau, Boliu, 7.VI.1962. Noona Dan expedition 1961-62 leg. Deposited in the Zoological Museum, University of Copenhagen. Paratype: 1 ♂, same data as holotype.

Description of holotype ♀: Body length 0.7 mm. Colour dark brown; antennae and legs yellow, A2-A10 and mandibles slightly darker.

Head from above (fig. 132) 1.7 times wider than long, very slightly wider than thorax; occiput transversely striated, without carina but somewhat angled; vertex finely transversely reticulate-striated; frons with faint transverse reticulation. Head from front 1.2 times wider than high. Malar space 0.4 height of an eye; OOL:POL:LOL = 1:17:7. Antenna (fig. 133) with numerous rather long hairs, somewhat longer and shorter than width of segments.

Mesosoma higher than wide (9:8) and 1.5 times longer than wide. Sides of pronotum hairy and faintly sculptured in upper 0.4, rest bare and almost smooth. Mesoscutum with sparse hairs, finely reticulate-coriaceous, notauli hardly indicated posteriorly, hind margin slightly convex medially. Mesopleura smooth. Scutellum (fig. 134) sculptured as mesoscutum, rather densely hairy laterally, posteriorly semitransparent brown. Metapleurae and sides of propodeum smooth and bare except posteriorly. Propodeal carinae well separated, area in between smooth but dull.

Fore wing almost clear, hardly shorter than whole body (26:27), almost 3.3 times longer than wide; marginal cilia one-fourth the width of wing. Hind wing more than 10 times longer than wide; marginal cilia longer than width of wing.

Metasoma (fig. 135) almost as wide as mesosoma and very slightly longer than this (25:24). T1 slightly transverse, with two longitudinal keels; T2 smooth, with short basal foveae; T3-T6 almost smooth, with fine hairs.

Description of paratype ♂: Antenna (Fig. 136) with hairs about 1.5 times the width of segments. Scutellar spine slightly downcurved at apex. Rest of characters as in ♀.

Affinities: This species differ from the somewhat similar species *L. philippinensis* sp. nov. and *L. bismarckensis* sp. nov.; it has shorter A4 than the first mentioned and longer A4 than the last mentioned. It differs also from both in having traces of notauli, from *philippinensis* e.g. in having fore wings narrower, and from *bismarckensis* in lacking occipital carina and in having marginal cilia of fore wing shorter in relation to width of wing.

Etymology: Named after the Danish entomologist J.C. SCHIØDTE (1815-1884).

*Leptacis kierkegaardii* sp. nov. (figs 137 - 140)

Material examined: Holotype ♀: Bismarck archipelago, Mussau, Boliu, 7.VI.1962. Noona Dan expedition 1961-62 leg. Deposited in the Zoological Museum, University of Copenhagen. Paratype: 1 ♀, same data as holotype.

Description of ♀: Body length 0.9 mm. Colour dark brown; antennae, mandibles, scutellar spine and legs yellow, A7-A10 darker.

Head from above (fig. 137) 1.6 times wider than long, 1.1 times wider than thorax; occiput transversely reticulate, with complete carina; vertex and frons finely and faintly reticulate. Head from front 1.2 times wider than high. Malar space 0.3 height of an eye; OOL:POL:LOL = 1:9:4. Antenna (fig. 138).

Mesosoma 1.2 times higher than wide and 1.7 times longer than wide. Sides of pronotum with hairs and faint sculpture in upper 0.4, rest bare and almost smooth. Mesoscutum moderately hairy, finely reticulate-coriaceous, without notauli, hind margin slightly convex, semitransparent yellow. Mesopleurae with a few longitudinal striae just below tegulae, rest almost smooth. Scutellum (fig. 139) hairy and sculptured as mesoscutum, reaching hind margin of T1. Metapleurae and sides of propodeum bare and almost smooth, posteriorly with white pilosity. Propodeal carinae parallel, well separated, area in between smooth and shiny.

Fore wing clear, narrow, almost as long as whole body (35:37), 3.6 times longer than wide; marginal cilia 0.3 width of wing. Hind wing about 10 times longer than wide; marginal cilia almost equal to width of wing.

Metasoma (fig. 140) 0.9 times as wide as mesosoma and as long as this. T1 hardly as long as wide, with two longitudinal keels. T2 smooth, with short basal foveae; T3-T6 with fine reticulation, inconspicuously hairy.

Affinities: Differs from *L. schioedtei* sp. nov. e.g. in having occipital carina, longer basal flagellar segments and longer scutellar spine. More similar to *L. orientalis* sp. nov., but this species has head distinctly more transverse and less sculptured than *kierkegaardi*. Differs from *orientalis* as well as from the rather similar *L. maldarensis* MUKERJEE, 1981 in having much more narrow fore wings.

Etymology: Named after the Danish philosopher Søren KIERKEGAARD (1813-1855).

#### Genus *Amblyaspis* FÖRSTER, 1856

#### *Amblyaspis peterseni* sp. nov. (figs 141 - 144)

Material examined: Holotype ♂: Philippines, Palawan, Mantalingajan, Tagembung, 1150 m, 20.IX.1961. Noona Dan expedition 1961-62 leg. Paratypes (5 ♂): Same locality as holotype, 3 ♂ 19.IX.1961, 2 ♂ 20.IX.1961. All types Noona Dan expedition 1961-62 leg. and deposited in the Zoological Museum, University of Copenhagen.

Description of holotype ♂: Body length 1.4 mm. Colour reddish brown, head dark brown; antennae, mandibles, tegulae and legs yellow, flagellum slightly darker.

Head from above (fig. 141) 1.9 times as wide as long, slightly wider than thorax (15:14); occiput strongly and slightly transversely reticulate, occipital carina weak and incomplete; vertex and frons finely reticulate, transversely so above antennal sockets. Head from front 1.25 times wider than high. Malar space 0.3 times the height of an eye; OOL:POL:LOL = 7:21:10. Head in lateral view (fig. 142) with a rather sharp edge behind ocelli. Antenna (fig. 143) with A4 hardly widened, only 1.25 times longer than A3 and hardly longer than A5; A6-A9 each very slightly longer than wide; flagellar pubescence equal to 0.7 width of segments.

Mesosoma slightly higher than wide (8:7) and 1.5 times longer than wide. Epomia weak; sides of pronotum faintly reticulate and with a few hairs, lower half and hind margin smooth and bare. Mesoscutum faintly reticulate and with a few hairs, without notauli, hind margin somewhat convex, medially reaching base of scutellum, with a few long hairs. Mesopleurae nearly smooth and bare. Scutellum perfectly at level of mesoscutum, reticulate and more dull than this, rather densely covered with white hairs, especially laterally. Metapleurae smooth and bare in anterior 0.4, rest as well as sides of propodeum with white pilosity. Propodeal carinae close to each other but distinctly separated, parallel, area in between as well as areas lateral of carinae dull.

Fore wing with brownish tint, 2.5 times as long as wide; marginal cilia 0.1 width of wing. Hind wing 7.3 times longer than wide, with 2 frenal hooks; marginal cilia 0.5 width of wing.

Metasoma (fig. 144) slightly narrower than thorax (13:14), hardly longer than head and mesosoma combined (29:27) and 1.6 times wider than high. T1 slightly longer than wide, with two weak longitudinal keels and traces of some longitudinal carinae, hairy laterally; T2 bare, without basal foveae, smooth except for a few very short striae basally, front margin with an emargination; T3-T7 each with a few hairs, covered with very fine punctation except along margins. Sternite 1 with dense pubescence, sternite 2 basally with a tuft of very dense white pubescence.

Variability: No variability worth mentioning was observed except that one paratype is brighter coloured than holotype, uniformly pale brownish.

Affinities: A most distinct species on account of the colour, the relatively small A4 and the lack of notauli and of basal foveae on T2. Hitherto no species of *Amblyaspis* have been described from the Philippines, cf. VLUG (1995).

**Eymology:** Named in memory of my kind colleague, the late Dr. Børge PETERSEN (Zoological Museum, Copenhagen) who took part in the Noona Dan expedition 1961-62 which collected the types. He died on January 15, 1996.

*Amblyaspis cariniceps* sp. nov. (figs 145 - 148)

**Material examined:** Holotype ♂: Philippines, Palawan, Mantalingajan, Pinigisan, 600 m, 23.IX.1961. Paratype: 1 ♀, same locality as holotype, 24.IX.1961. Both types Noona Dan expedition 1961-62 leg. and deposited in the Zoological Museum, University of Copenhagen.

**Description of holotype ♂:** Body length 0.9 mm. Colour reddish brown, head black; scape, mandibles and legs yellow.

Head from above (fig. 145) twice as wide as long, 1.2 times wider than thorax. Occiput strongly reticulate, occipital carina strong and complete; vertex and frons weakly reticulate. Head from front 1.3 times wider than high. Malar space one-fourth the height of an eye; OOL:POL:LOL = 6:16:7. Antenna (fig. 146).

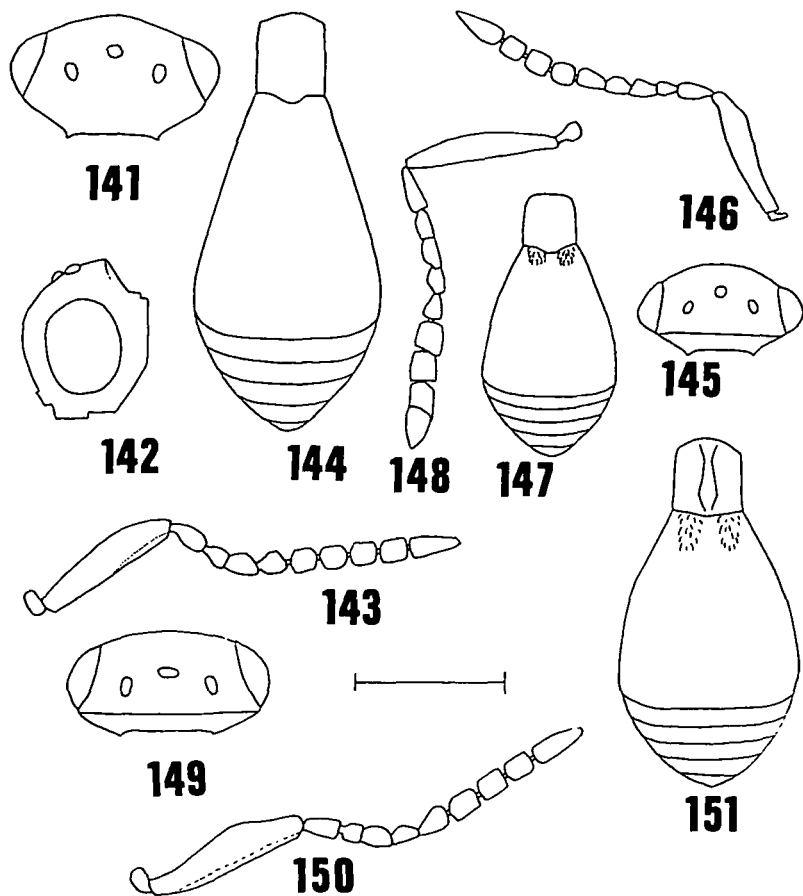
Mesosoma hardly 1.1 times higher than wide and 1.5 times longer than wide. Sides of pronotum sparsely hairy and faintly reticulate, smooth and bare in lower 0.4. Mesoscutum sparsely hairy, weakly and evenly reticulate, without notauli, hind margin convex, forming a flange which covers base of scutellum. Mesopleurae smooth. Scutellum with rugosity, densely hairy especially posteriorly. Metapleurae evenly covered with pilosity. Propodeal carinae almost fused.

Fore wing almost clear, 2.5 times longer than wide; marginal cilia hardly 0.2 width of wing. Hind wing with two frenal hooks, 8.4 times longer than wide; marginal cilia two-thirds the width of wing.

Metasoma (fig. 147) almost as wide as thorax and hardly shorter than head and mesosoma combined. T1 almost smooth, with faint traces of two longitudinal keels; T2 with hairy basal foveae, rest smooth; T3-T6 reticulate and with some short and long hairs.

**Description of paratype ♀:** Body length 1.0 mm. Antenna (fig. 148). Metasoma as wide as thorax and hardly shorter than head and mesosoma combined (21:22). Rest of characters as in male.

**Affinities:** Differs from *A. peterseni* sp. nov. e.g. in having stronger occipital carina and hairy basal foveae on T2. In VLUG's (1985) key it runs to the British species *A. prorsa* (WALKER, 1835), but this species has much larger A4 in the male; in KIEFFER's (1926) key to Palaearctic species it runs to *A. rufithorax* (KIEFFER, 1913) from England, but this species has A3-A4 not longer than wide in the female, and it has traces of notauli. In KIEFFER's (1926) key to Nearctic and Neotropical species *cariniceps* runs to *A. brunnea* (ASHMEAD, 1895), but this species is smaller, at most 0.7 mm, and it has A2 as long as A3-A4 combined, cf. KIEFFER (1926). In KIEFFER's (1926) key to Australian species *cariniceps*



**Figs 141-144:** *Amblyaspis peterseni* sp. nov. holotype ♂ - 141-142) head; 143) antenna; 144) metasoma. **Figs 145-148:** *Amblyaspis cariniceps* sp. nov. 145-147: holotype ♂ - 145) head; 146) antenna; 147) metasoma; 148) antenna of paratype ♀. **Figs 149-151:** *Amblyaspis bilineatus* sp. nov. holotype ♂ - 149) head; 150) antenna; 151) metasoma. Scale bar = 0.25 mm.

is most similar to *A. ctesias* (WALKER, 1839), but this species is much larger (1.6 mm) and much darker than *cariniceps*, and it has brown wings.

**Etymology:** The name means keeled head, referring to the strong occipital carina.

*Amblyaspis bilineatus* sp. nov. (figs 149 - 151)

**Material examined:** Holotype ♂: Bismarck archipelago, New Ireland, Lemkamin, 22.IV.1962. Noona Dan expedition 1961-62 leg. Deposited in the Zoological Museum, University of Copenhagen. Unique.

**Description of holotype ♂:** Body length 1.2 mm. Colour dark reddish brown, metasoma lighter; antennae, mandibles and legs yellowish.

Head from above (fig. 149) twice as wide as long, as wide as thorax. Occiput reticulate, occipital margin complete and strong; vertex and frons reticulate, with smaller and finer meshes than occiput. Head from front 1.2 times wider than high. Malar space 0.3 height of an eye; OOL:POL:LOL = 8:21:8. Antenna (fig. 150) with flagellar pubescence equal to about 0.6 width of segments.

Mesosoma very slightly higher than wide (15:14) and 1.4 times longer than wide. Sides of pronotum reticulate and hairy in upper 0.6, rest bare and almost smooth. Mesoscutum evenly reticulate, sparsely hairy, with two faint and hairy lines in posterior third indicating notauli; hind margin straight, covering base of scutellum, in lateral view upturned. Mesopleurae almost smooth, with very faint traces of reticulation. Scutellum dull and densely hairy. Metapleurae with white pilosity all over. Propodeal carinae straight, parallel, close together, area in between shiny and almost smooth.

Fore wing almost clear, overreaching gaster, with short marginal cilia. Hind wing with two frenal hooks; marginal cilia about half the width of wing.

Metasoma (fig. 151) slightly narrower than mesosoma (13:14) and 1.1 times longer than this. T1 with two weak longitudinal keels, lateral of these hairy; T2 with hairy basal foveae, rest of this tergite rather dull but without distinct sculpture; T3-T7 with fine sculpture and hairs.

**Affinities:** Differs from the two *Amblyaspis*-species described above in having notauli indicated. As *cariniceps* sp. nov., it runs to *A. prorsa* (WALKER, 1835) in VLUG's (1985) key but *prorsa* has much larger A4 than *bilineatus*. As only the male is known, there are several possible determinations in KIEFFER's (1926) keys, but *bilineatus* differ from the most similar (Palearctic and Neotropical) species e.g. in having occipital carina, in size, or in coloration.

**Etymology:** The name refers to the two lines indicating notauli, separating this species from the two species described above.

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Author's address:  
Peter Neerup BUHL  
Parmagade 36, st. tv.  
DK-2300 Copenhagen S  
Denmark

### Literaturbesprechung

ZIMMERMAN, D.A., TURNER, D.A. & PEARSON, D.J. 1996: *Birds of Kenya and Northern Tanzania*. - Christopher Helm, imprint of A&C Black, London. 740 S.

Dieser Band der Reihe "Helm Identification Guides" beschreibt 1114 Vogelarten, die in Kenya und Nord-Tanzania vorkommen, d.h. es ist natürlich ein Großteil aller ostafrikanischen Vogelarten berücksichtigt. Es liegt also die Region zugrunde, die heute touristisch am meisten frequentiert wird, die sie sehr viele Nationalparks und Schutzgebiete enthält. Nichtsdestotrotz liegt ein großer Druck auf den Schutzgebieten und Bücher wie dieses, können zu einem verbesserten Naturschutzgedanken beitragen. Nach einer sehr kurzen Einführung werden anhand von Schwarz-Weiß-Fotos die wichtigsten Landschafts- und Vegetationselemente vorgestellt. Im Anschluß daran finden sich die 124 fantastisch gezeichneten Farbtafeln, die ihresgleichen zu suchen haben. Perfektes Können harmonisiert hier mit langjähriger Felderfahrung der Zeichner, so daß die Vögel äußerst naturgetreu abgebildet sind und auch sicher erkannt werden. Die anschließenden Texte beinhalten Verbreitungskarten, Artbeschreibungen (inkl. Männchen/Weibchen-Unterschiede, Immaturstadien) sowie Angaben zum Gesang, Habitat, ähnlichen Arten, Status und Verbreitung.

Eine überaus gelungene und empfehlenswerte Darstellung. Roland GERSTMEIER

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Redaktion: Erich DILLER, ZSM, Münchhausenstraße 21, D-81247 München, Tel. (089) 8107-159  
Fritz GUSENLEITNER, Lungitzerstrasse 51, A-4222 St. Georgen / Gusen  
Wolfgang SCHACHT, Scherrerstraße 8, D-82296 Schöngeising, Tel. (089) 8107-146  
Erika SCHARNHOP, Himbeerschlag 2, D-80935 München, Tel. (089) 8107-102  
Johannes SCHUBERTH, Bauschingerstr. 7, D-80997 München, Tel. (089) 8107-160  
Emma SCHWARZ, Eibenweg 6, A-4052 Ansfelden  
Thomas WITT, Tengstraße 33, D-80796 München  
Postadresse: Entomofauna (ZSM), Münchhausenstr. 21, D-81247 München;  
Tel. (089) 8107-0, Fax (089) 8107-300



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