Entomofauna

ZEITSCHRIFT FÜR ENTOMOLOGIE

Band 25, Heft 11: 165-180 ISSN 0250-4413 Ansfelden, 10. August 2004

Ten new Palaearctic species of Platygastrinae
(Hymenoptera, Platygastridae)

Peter Neerup BUHL

Abstract

The following ten species new to science are described: *Platygaster biroi* **sp. nov.** (Hungary), *P. brachyptera* **sp. nov.** (Hungary), *P. estonica* **sp. nov.** (Estonia, Hungary and Armenia), *P. pedestris* **sp. nov.** (Estonia), *Synopeas chica* **sp. nov.** (Denmark), *S. dravedensis* **sp. nov.** (Denmark), *S. marttii* **sp. nov.** (Estonia), *S. robustus* **sp. nov.** (Denmark), *S. spinulus* **sp. nov.** (Denmark), and *S. zomborii* **sp. nov.** (Hungary). The work is illustrated by 41 text-figues.

Zusammenfassung

Zehn für die Wissenschaft neue Arten werden beschrieben: *Platygaster biroi* **sp. nov.** (Ungarn), *P. brachyptera* **sp. nov.** (Ungarn), *P. estonica* **sp. nov.** (Estland, Ungarn und Armenien), *P. pedestris* **sp. nov.** (Estland), *Synopeas chica* **sp. nov.** (Dänemark), *S. dravedensis* **sp. nov.** (Dänemark), *S. marttii* **sp. nov.** (Estland), *S. robustus* **sp. nov.** (Dänemark), *S. spinulus* **sp. nov.** (Dänemark), und *S. zomborii* **sp. nov.** (Ungarn). Die Arbeit ist mit 41 Abbildungen versehen.

Introduction

Among two loans from the Hungarian Natural History Museum, Budapest (Hungary) (courtesy Sandor CSOSZ) and the Department of Applied Biology, University of Helsinki (Finland) (courtesy Martti KOPONEN) some of the new species described below were

present. The other new species are due to my own recent collections in Denmark. Mainly due to my own descriptive work on platygastrids during the last ten years, it seems now rather difficult to discover further new Palaeartic species of this family (though no doubt many - mostly rare or sibling - species remain to be described).

Platygaster biroi sp. nov. (figs 1-4)

Female: Length 1.5 mm. Blackish brown, A1-A3 and legs light brown.

Head from above (fig. 1) 1.6 x as wide as long, 1.4 x as wide as mesosoma, distinctly and rather evenly reticulate-coriaceous, not transversely so; OOL:LOL = 2:3. Antenna (fig. 2).

Mesosoma 1.8 x as long as wide, 1.4 x as high as wide. Sides of pronotum reticulate-coriaceous in upper and anterior half, rest smooth. Mesoscutum distinctly reticulate-coriaceous, almost bare; notauli complete; mid lobe in posterior 0.4 smooth, slightly blunt, reaching base of scutellum; scuto-scutellar grooves narrow and bare. Mesopleuron smooth. Scutellum (fig. 3) at level of mesoscutum, reticulate-coriaceous anteriorly, rest smooth, disc almost bare. Metapleuron with pilosity all over. Propodeal carinae very short, slightly diverging, transverse area between them smooth.

Fore wing clear, fully 3 x as long as wide, reaching apex of T5. Hind wing 6.6 x as long as wide; marginal cilia 0.25 width of wing.

Metasoma (fig. 4) 2.1 x as long as head and mesosoma combined, as wide as head. T1 with two longitudinal carinae. T2 with two short basal foveae, without striae; T3-T6 smooth, virtually bare, in lateral view slightly swollen at joints. Sternite 2 without hump.

Material examined: Holotype female, Hungary, Tihany, 25.IX.1930, L. BIRÓ leg. Preserved at the Hungarian Natural History Museum, Budapest (Hungary).

Named after the collector. A very characteristic species on account of narrow mesosoma, and of relatively wide, long and smooth metasoma.

Platygaster brachyptera sp. nov. (figs 5-8)

Female: Length 1.2 mm. Black; antennae and legs dark brown; A2-A3, fore tibiae, basal half of mid and hind tibiae, and most of tarsi light brown.

Head from above (fig. 5) 1.6 x as wide as long, 1.4 x as wide as mesosoma, distinctly but finely and evenly reticulate-coriaceous, not transversely so. OOL and LOL about equal. Antenna (fig. 6).

Mesosoma one and two-thirds as long as wide, very slightly higher than wide (15:14). Sides of pronotum reticulate-coriaceous, smooth along hind margin. Mesoscutum with very few hairs, uniformly reticulate-coriaceous all over; notauli complete, meeting in a fine point which is hardly surpassing hind margin of disc; scuto-scutellar grooves rather narrow and almost bare. Mesopleuron smooth. Scutellum (fig. 7) at level of mesoscutum, with sparse hairs, finely reticulate-coriaceous in anterior half, smoother posteriorly. Metapleuron with pilosity all over. Propodeal carinae diverging; area between them smooth and shiny, about as long as posteriorly wide.

Fore wing reaching to middle of T1, whitish, 3.4 x as long as wide. Hind wing longer, reaching to 0.25 of T2, about 8.5 x as long as wide.

Metasoma (fig. 8) hardly as long as head and mesosoma combined, 1.4 x as wide as mesosoma. T1 with two somewhat doubled longitudinal carinae medially. T2 faintly striated in basal foveae to 0.25, rest of tergite smooth. T3-T6 smooth and bare (but rather telescoped in unique specimen).

Material examined: Holotype female, Hungary, Tihany, 25.IX.1930, L. BIRÓ leg. Preserved at the Hungarian Natural History Museum, Budapest (Hungary).

Aberrant in the genus on account of shortened wings, which are indeed "natural" in this species; the narrow thorax is an indication of this, cf. also about *P. pedestris* sp. nov. below. *P. brachyptera* differs from *P. pedestris* e.g. in having a more dull sculpture of head and mesosoma, more slender antennae, darker body appendages, and in conformation of wings.

Platygaster estonica sp. nov. (figs 9-12)

Female: Length 1.1 - 1.4 mm. Shiny black, antennae and legs hardly lighter; most of fore tibia, base of middle and hind tibiae, and segments 1-4 of all tarsi brown.

Head from above (fig. 9) 1.7 - 1.9 x as wide as long, 1.1 x as wide as mesosoma; occiput finely and densely, more or less transversely reticulate-coriaceous, sometimes almost striated; vertex finely reticulate-coriaceous; frons rather sharply reticulate with meshes slightly fan-like arranged. Head from in front 1.3 x as wide as high. Antenna (fig. 10) with A1 shorter than height of head (32:35).

Mesosoma 1.4 x as long as wide. Sides of pronotum with a band of reticulation at about middle, above and below smooth. Mesoscutum with few hairs, weakly reticulate-coriaceous on lateral lobes and in about anterior two-fifths on mid lobe, rest smooth or with longitudinal wrinkles. Notauli missing in about anterior 0.2 - 0.3; mid lobe blunt posteriorly, hardly prolonged. Scuto-scutellar grooves narrow, hardly hairy. Mesopleuron smooth, below tegula with fine longitudinal striae in upper third. Scutellum (fig. 11) smooth at least medially, moderately hairy. Propodeal carinae almost parallel, area between them smooth and shiny, hardly as long as wide.

Fore wing 0.9 x as long as entire body, hardly 2.5 x as long as wide, with faint yellowish tint. Hind wing 6.3 x as long as wide, with two hamuli; marginal cilia at most one-third the width of wing.

Metasoma (fig. 12) hardly as long as head and mesosoma combined, as wide as mesosoma. T1 with two strong longitudinal keels. T2 striated in basal foveae to about half of length, medially slightly shorter. T3-T5 smooth, T4 with a few superficially implanted hairs laterally, T5 with a complete transverse row of such hairs; T6 faintly reticulate, with a few long hairs.

Material examined: Holotype female, Estonia, Saaremaa, Salme, Kaugatuma, 11.VI. 1996, M. KOPONEN leg. Paratypes: 1 female same data; 1 female, Hungary, Aggtelek, Bacsó-nyak, 25.VIII.1989, J. PAPP leg.; 1 female, Armenia, Dilizhan, 1.400 m, 6.VI.1980, J. PAPP leg. Estonian types preserved at the Department of Applied Biology, University of Helsinki (Finland). Two paratypes preserved at the Hungarian Natural History Museum, Budapest (Hungary).

The two Estonian specimens differ from the two other paratypes e.g. in being slightly smaller and more shiny, but all differences seem to be only of degree, not justifying two

different species. *P. estonica* differs from *P. splendidula* RUTHE, 1859, *P. picipes* FÖERSTER, 1861 and related species e.g. in shape and sculpture of head and in having T1 not crenulated.

Platygaster pedestris sp. nov. (figs 13-16)

Female: Length 1.3 mm. Shiny black; A1-A3, tegulae and legs brownish yellow; A4-A6 darkened, A7-A10 almost black; metasoma with brownish tint.

Head from above (fig. 13) 1.5 x as wide as long, 1.2 x as wide as mesosoma, rather evenly reticulate-coriaceous, not transversely so; vertex smooth just behind anterior ocellus, frons smooth medially from anterior ocellus to antennal insertions. OOL:LOL = 4:3. Head in frontal view 1.1 x as wide as high. Antenna (fig. 14) with A1 shorter than height of head (16:17).

Mesosoma 1.5 x as long as wide, 1.2 x as high as wide. Sides of pronotum reticulate in upper 0.4, rest smooth. Mesoscutum with very few hairs, finely reticulate-coriaceous, mid lobe becoming smooth in posterior half; notauli complete, meeting in an acute point in front of scutellum; scuto-scutellar grooves moderately wide, almost bare. Mesopleuron smooth. Scutellum (fig. 15) moderately hairy, at level of mesoscutum, reticulate and dull in anterior half, smoother in posterior half. Metapleuron with pilosity all over. Propodeal carinae diverging, transverse area between them smooth and shiny.

Fore wing reaching to basal 0.25 of T2, almost clear, 3.0 x as long as wide. Hind wing slightly shorter, 5.7 x as long as wide.

Metasoma (fig. 16) 1.2 x as long as head and mesosoma combined, almost 1.2 x as wide as mesosoma. T1 with two weak longitudinal carinae. T2 striated in basal foveae to 0.4, rest of tergite smooth. T3-T6 smooth; T3-T5 each with a transverse line of superficially implanted fine hairs, T6 with a few hairs.

Material examined: Holotype female, Estonia, Saaremaa, Lihulinna, 2.VI.1990, M. KOPONEN leg. Preserved at the Department of Applied Biology, University of Helsinki (Finland).

Together with *P. brachyptera* sp. nov. described above aberrant in the genus on account of shortened wings. (Wings are frequently "bitten off" in *Platygaster*, but in these two species they are definitely "naturally" short). Apart from the shortened wings, *P. pedestris* is similar to *P. gracilipes* HUGGERT, 1975 and, less so, to *P. abia* WALKER, 1835, but it is somewhat differently sculptured and has more pointed metasoma than these species, cf. HUGGERT (1975) and VLUG (1985).

Synopeas chica sp. nov. (figs 17-20)

Female: Length 1.0 mm. Black, A1-A6 and legs reddish brown; A7-A10, coxae, most of all femora, apical half of hind tibia, and last segment of tarsi darker brown.

Head from above (fig. 17) 1.8 x as wide as long, very slightly wider than mesosoma, finely and uniformly reticulate-coriaceous, with a weak occipital carina. Posterior ocelli separated from eye by their diameter; OOL:LOL = 2:7. Head in frontal view 1.1 x as wide as high. Antenna (fig. 18) with A1 0.9 x as long as height of head, A9 almost 1.5 x as long as wide.

Mesosoma 1.5 x as long as wide, 1.1 x as high as wide. Sides of pronotum weakly reticulate-coriaceous, smooth in slightly less than lower half. Mesoscutum uniformly reticulate-coriaceous, slightly weaker than head, without notauli, with numerous evenly scattered hairs; hind margin medially not prolonged, hardly convex; scuto-scutellar grooves triangular, each with about five strong hairs. Mesopleuron smooth. Scutellum (fig. 19) mostly smooth, bare along middle, laterally rather densely hairy; spine distinct, blunt, slightly brownish, hardly with a lamella below. Metapleuron smooth and bare in slightly more than anterior half, rest with white pilosity. Propodeal carinae almost straight, slightly semitransparent, fused.

Fore wing almost clear, 1.1 x as long as body, 2.8 x as long as wide; marginal cilia less than 0.1 width of wing. Hind wing 6.4 x as long as wide; marginal cilia 0.4 width of wing.

Metasoma (fig. 20) as long as mesosoma, slightly narrower than this, about 1.5 x as wide as high. T2 smooth except for microsculpture along hind margin. T3-T6 with microsculpture over most of surface.

Material examined: Holotype female, Denmark, North East Zealand, Nejede Vesterskov, 20.IX.2003, P.N. BUHL leg. Preserved at the Zoological Museum, University of Copenhagen (Denmark).

S. chica has shorter preapical antennal segments than *S. suomiana* BUHL, 2003, but longer than in most other Palaearctic species of the genus. *S. chica* differs from *S. trebius* (WALKER, 1835) e.g. in having head less narrowed behind eyes, hind margin of mesoscutum not prolonged medially, and junction of T1-T2 without carinae, cf. also VLUG (1985) and BUHL (2003).

Synopeas dravedensis sp. nov. (figs 21-24)

Female: Length 1.2 mm. Black, antennae and legs dark brown; both ends of fore tibiae, base of middle and hind tibiae, and segments 1-4 of all tarsi light brown.

Head from above (fig. 21) 1.8 x as wide as long, 1.1 x as wide as mesosoma, distinctly but finely reticulate-coriaceous; occiput rounded, without carina. Lateral ocelli separated from eye by slightly more than their own diameter; OOL:LOL = 1:2. Head in frontal view about one and a third times as wide as high. Antenna (fig. 22) with A1 hardly shorter than height of head.

Mesosoma hardly 1.4 x as long as wide, slightly higher than wide (18:17). Sides of pronotum reticulate-coriaceous, smooth in about lower two-fifths. Mesoscutum weakly and uniformly reticulate-coriaceous, rather sparsely and evenly hairy, with faint indications of notauli over most of length; posteriorly between notauli with a distinct, blunt, dark , somewhat smoother (not swollen) prolongation covering base of scutellum; scuti-scutellar grooves wide, densely covered by white setae. Mesopleuron smooth. Scutellum (fig. 23) at level of mesoscutum, laterally sculptured as this but with much denser hairs, medially smooth and bare, posteriorly with a dark tooth and a narrow semitransparent lamella below. Metapleuron smooth and bare in about anterior two-fifths, rest slightly sculptured and with whitish pilosity. Propodeal carinae high, dark, fused, in posterior half slightly diverging.

Fore wing clear, slightly overreaching tip of metasoma, without marginal cilia; hind wing with marginal cilia 0.25 width of wing.

Metasoma (fig. 24) 1.3 x as long as head and mesosoma combined, 0.9 x as wide as mesosoma, as high as wide. Hind margin of T2, most of T3-T5 and entire T6 with distinct reticulate microsculpture.

Material examined: Holotype female, Denmark, South Jutland, Draved, 16.-21.VIII. 2003, P.N. BUHL leg. Preserved at the Zoological Museum, University of Copenhagen (Denmark).

Differs from somewhat similar species, *S. hyllus* (WALKER, 1835), *S. rhanis* (WALKER, 1835), *S. compressiventris* (SZABÓ, 1981), *S. dentiscutellaris* (SZABÓ, 1979), and *S. dentiscutum* (SZABÓ, 1981), e.g. in having scutellum at same level as mesoscutum, and metasoma only as high as wide. *S. dravedensis* differs from *S. convexus* THOMSON, 1859 and from the perhaps most similar species, *S. opacus* THOMSON, 1859, e.g. in having rounded occiput, differently sculptured mesosoma, and metasoma as high as wide. Cf. also BUHL (1998b, 2000).

Synopeas marttii sp. nov. (figs 25-28)

Male: Length 1.2 mm. Black; A1-A6, fore legs, both ends of mid tibiae, base of hind tibiae, and segments 1-4 of all tarsi light brown; A7-A10 and rest of legs including coxae dark brown.

Head from above (fig. 25) 1.8 x as wide as long, about as wide as mesosoma across tegulae, finely and evenly reticulate-coriaceous; occiput without carina but slightly angled; lateral ocelli separated from eye by slightly less than their diameter; LOL = 4 OOL. Head in frontal view 1.1 x as wide as high; antenna (fig. 26) with A1 0.8 x as long as height of head.

Mesosoma 1.4 x as long as wide, hardly higher than wide. Sides of pronotum distinctly and evenly reticulate-coriaceous except for a narrow hind margin. Mesoscutum evenly and somewhat finer reticulate-coriaceous than head, with sparse and inconspicuous hairs, without notauli; hind margin medially somewhat triangularly prolonged, rather smooth and semitransparent (but not swollen); scuto-scutellar grooves wide, each with about 4 long hairs. Mesopleuron with faint, longitudinal sculpture in upper third, rest smooth. Scutellum (fig. 27) sculptured as mesoscutum, with somewhat denser hairs, posteriorly with a small, dark tooth with a narrow lamella below. Metapleuron smooth and bare in anterior 0.3, rest with dense pilosity. Propodeal carinae low, slightly curved and brownish.

Fore wing almost clear, 0.9 as long as body, 2.5 x as long as wide, without marginal cilia. Hind wing 5.2 x as long as wide; marginal cilia 0.25 width of wing.

Metasoma (fig. 28) about as long as and as wide as mesosoma, 1.4 x as wide as high. Hind margins of T2-T7 finely reticulate, apical tergites hardly hairy.

Material examined: Holotype male, Estonia, Pärnu r., Orajöe, 4.VI.1990. M. KOPONEN leg. Paratype: 1 male same data. Preserved at the Department of Applied Biology, University of Helsinki (Finland).

Named after the collector. Differs from *S. spinulus* sp. nov. described below e.g. in lacking occipital carina, in more extensive sculpture on sides of pronotum, and darker body appendages. Among the species treated by KIEFFER (1926) *S. marttii* seems to be most similar to *S. gallicola* KIEFFER, 1916 (only female known), but this species has mesoscutum in front of scutellum yellowish and swollen.

Synopeas robustus sp. nov. (figs 29-33)

Female: Length 2.0 mm. Black, A1 dark brown; fore femur ventrally, most of fore tibia, basal half of middle and hind tibiae, and segments 1-4 of all tarsi light brown.

Head from above (fig. 29) twice as wide as long, hardly as wide as mesosoma across tegulae, evenly and finely reticulate-coriaceous; occiput distinctly but not sharply angled. Lateral ocelli separated from eye by their diameter; OOL:LOL = 3:11. Head in frontal view 1.1 x as wide as high. Antenna (fig. 30) with A1 0.95 x as long as height of head.

Mesosoma 1.5 x as long as wide, 1.15 x as high as wide. Sides of pronotum reticulate-coriaceous, in lower third smooth. Mesoscutum evenly sculptured as head, moderately and evenly covered with downcurved hairs, without notauli; posteriorly with a medial, narrow, shiny (but not swollen) prolongation to base of scutellum; scuto-scutellar grooves covered by dense, whitish hairs. Mesopleuron smooth. Scutellum (fig. 31) sculptured almost as mesoscutum but with much denser hairs, medially with a smooth and bare weak elevation which ends in a very narrow, semitransparent lamella. Metapleuron smooth and bare in about anterior 0.3, rest with whitish pilosity. Propodeal carinae high, dark, very slightly semitransparent, fused.

Fore wing clear, 2.4 x as long as wide, slightly overreaching tip of metasoma; without marginal cilia. Hind wing 5.5 x as long as wide; marginal cilia about 0.25 width of wing.

Metasoma (fig. 32) 1.25 x as long as head and mesosoma combined, slightly narrower than mesosoma, fully 1.2 x as wide as high. T2 smooth except for rough reticulation in front of hind margin. T3-T5 medially with rough reticulation over whole width, T6 with rough reticulation all over. Apical tergites with a few incon-spicuous hairs.

Male: Length 1.7 mm. Antenna (fig. 33) with A1-A6 light brown, flagellar pubescence 0.3 the width of segments. Metasoma aboout as long as head and mesosoma combined. Otherwise as female.

Material examined: Holotype female, Denmark, South Jutland, Draved, 16.-21.VIII. 2003, P.N. BUHL leg. Paratype: 1 male, South Jutland, the woods around Aabenraa, 19.VIII.2003, P.N. BUHL leg. Preserved at the Zoological Museum, University of Copenhagen (Denmark).

A relatively large species. Differs from *S. gracilicornis* KIEFFER, 1916, *S. nervicola* KIEFFER, 1916 and *S. neuroteri* KIEFFER, 1916 e.g. in having more slender antennal club and longer metasoma; from *S. salicicola* (KIEFFER, 1913) e.g. in having more slender A4, and from *S. acuminatus* KIEFFER, 1916 e.g. in shorter OOL and more slender antennae, cf. KIEFFER (1926).

Synopeas spinulus sp. nov. (figs 34-37)

Female: Length 1.2 mm. Black, A1-A6 and legs pale reddish yellow (fore tibia, basal half of mid and hind tibiae, and segments 1-4 of all tarsi slightly paler than rest of legs); A7-A10 and coxae brown.

Head from above (fig. 34) 1.9 x as wide as long, hardly 1.1 x as wide as mesosoma, slightly shiny, finely and almost evenly reticulate-coriaceous, frons just above antennae with weak transverse wrinkles; occiput with a weak carina; lateral ocelli separated from eye by their diameter; OOL : LOL = 1:3. Head in frontal view 1.1 x as wide as high;

antenna (fig. 35) with A1 slightly shorter than height of head (17:18).

Mesosoma 1.4 x as long as wide, higher than wide (20:19). Sides of pronotum finely reticulate-coriaceous in upper 0.4, smoother below and along hind margin. Mesoscutum uniformly reticulate-coriaceous as head, with scattered hairs, without notauli; hind margin straight, medially with a short and narrow (not swollen) prolongation; scuto-scutellar grooves broadly triangular, with a few hairs. Mesopleuron smooth. Scutellum (fig. 36) rather densely hairy, somewhat weaker sculptured than mesoscutum, medially almost smooth and slightly raised, posteriorly with a fine tooth and a narrow, hardly semitransparent lamella below. Metapleuron with only a narrow anterior margin without long, whitish pilosity. Propodeal carinae dark, rather long and straight.

Fore wing clear, as long as body, 2.5 x as long as wide; marginal cilia very short. Hind wing 5.1 x as long as wide; marginal cilia 0.4 the width of wing.

Metasoma (fig. 37) slightly longer than mesosoma (28:27), hardly as wide as this (18:19), 1.5 x as wide as high. T1 with three longitudinal carinae. Posterior margin of T2 and most of T3-T6 with distinct reticulation, apical tergites with a few inconspicuous hairs.

Material examined: Holotype female, Denmark, LFM, Rødbyhavn, 9.VII.2002. P.N. BUHL leg. Preserved at the Zoological Museum, University of Copenhagen (Denmark).

Runs to *S. gallicola* KIEFFER, 1916 in KIEFFER's (1926) key, but *S. gallicola* has mesoscutum swollen and yellowish in front of scutellum, fore wing without marginal cilia, metasoma as long as head and mesosoma combined, and antennae and legs darker than in *S. spinulus*. Runs to *S. brevis* BUHL, 1998 in BUHL's (1999) key, but this species has has shorter A4, stronger scutellar spine, and longer marginal cilia of fore wings than in *S. spinulus*, cf. BUHL (1998a). *S. spinulus* differs from *S. trebius* (WALKER, 1835) e.g. in sculpture and shape of head (*S. spinulus* is especially more rounded behind eyes), in having much smaller scutellar spine, clear wings, and in having lighter body appendages, cf. KIEFFER (1926) and VLUG (1985).

Synopeas zomborii sp. nov. (figs 38-41)

Female: Length: 1.1 mm. Black, antennae and legs light brownish; A7-A10, coxae, and last segment of tarsi dark brown.

Head from above (fig. 38) 1.8 x as wide as long, slightly wider than mesosoma (16:15), distinctly and rather evenly reticulate-coriaceous, somewhat transversely so on occiput which is without carina, smoothly angled. Lateral ocelli separated from eye by their diameter; OOL:LOL = 3:7. Head in frontal view 1.1 x as wide as high. Antenna (fig. 39) with A1 hardly 0.9 x as long as height of head.

Mesosoma 1.6 x as long as wide, fully 1.1 x as high as wide. Sides of pronotum reticulate-coriaceous over most of surface. Mesoscutum finely reticulate-coriaceous, medially smoother, with scattered hairs, without notauli, medially slightly prolonged posteriorly (not swollen); scuto-scutellar grooves with numerous hairs. Mesopleuron smooth. Scutellum (fig. 40) sculptured as mesoscutum, slightly more hairy than this, with a distinct, slightly brownish spine with a narrow, semitransparent lamella below. Propodeal carinae long and straight, slightly brownish.

Fore wing 0.8 x as long as body, clear, 2.3 x as long as wide; marginal cilia extremely

short, almost absent. Hind wing 5.6 x as long as wide; marginal cilia 0.5 width of wing.

Metasoma (fig. 41) fully 1.1 x as long and as wide as mesosoma, 1.4 x as wide as high. T2 smooth, T3-T5 each with reticulation along hind margin, T6 with reticulation all over; apical tergites with a few hairs.

Material examined: Holotype female, Hungary, Nagyvisnyó, 14.IX.1983, L. ZOMBORI leg. Preserved at the Hungarian Natural History Museum, Budapest (Hungary).

Named after the collector. Runs to *S. sosis* (WALKER, 1835) in VLUG's (1985) key, but this species has head 2.5 x as wide as long, and darker legs than in *S. zomborii*; according to KIEFFER (1926) *S. sosis* has female antenna with preapical antennal segment not wider than long. *S. zomborii* runs to *S. gallicola* KIEFFER, 1916 in KIEFFER's (1926) key, but *S. gallicola* has longer metasoma than *S. zomborii* and darker body appendages.

Acknowledgements

Thanks are due to S. CSOSZ and M. KOPONEN for loan of material.

Legends to Figures

Figs 1-4 *Platygaster biroi* sp. nov. female: 1 head; 2 antenna; 3 posterior part of mesoscutum, scutellum and propodeum; 4 metasoma. Scale bar = 0.2 mm.

Figs 5-8 *Platygaster brachyptera* sp. nov. female: 5 head; 6 antenna; 7 posterior part of mesoscutum, scutellum and propodeum; 8 metasoma. Scale bar = 0.2 mm.

Figs 9-12 *Platygaster estonica* sp. nov. female: 9 head; 10 antenna; 11 posterior part of mesoscutum, scutellum and propodeum; 12 metasoma. Scale bar = 0.1 mm.

Figs 13-16 *Platygaster pedestris* sp. nov. female: 13 head; 14 antenna; 15 posterior part of mesoscutum, scutellum and propodeum; 16 metasoma. Scale bar = 0.2 mm.

Figs 17- 20 *Synopeas chica* sp. nov. female: 17 head; 18 antenna; 19 posterior part of mesoscutum, scutellum and propodeum; 20 metasoma. Scale bar = 0.1 mm.

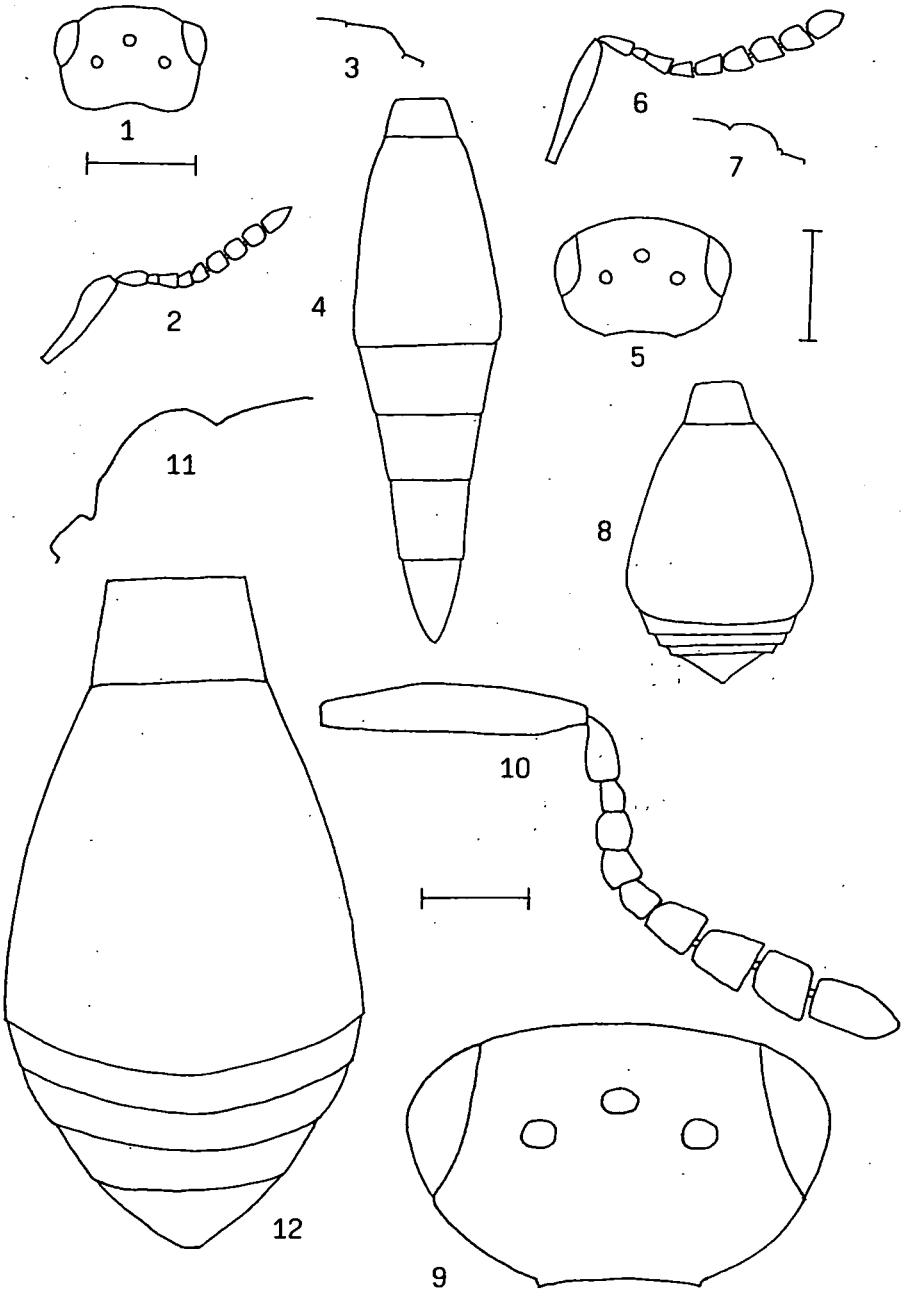
Figs 21-24 *Synopeas dravedensis* sp. nov. female: 21 head; 22 antenna; 23 posterior part of mesoscutum, scutellum and propodeum; 24 metasoma. Scale bar = 0.1 mm.

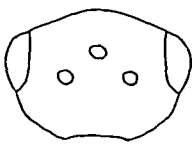
Figs 25-28 *Synopeas marttii* sp. nov. male: 25 head; 26 antenna; 27 posterior part of mesoscutum, scutellum and propodeum; 28 metasoma. Scale bar = 0.2 mm.

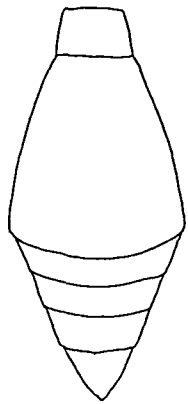
Figs 29-33 *Synopeas robustus* sp. nov. female (except 33): 29 head; 30 antenna; 31 posterior part of mesoscutum, scutellum and propodeum; 32 metasoma; 33 male antenna. Scale bar = 0.1 mm except fig. 32 for which it is 0.2 mm.

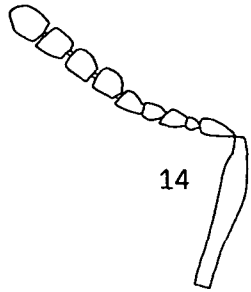
Figs 34-37 *Synopeas spinulus* sp. nov. female: 34 head; 35 antenna; 36 posterior part of mesoscutum, scutellum and propodeum; 37 metasoma. Scale bar = 0.1 mm.

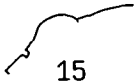
Figs 38-41 *Synopeas zomborii* sp. nov. female: 38 head; 39 antenna; 40 posterior part of mesoscutum, scutellum and propodeum; 41 metasoma. Scale bar = 0.2 mm.

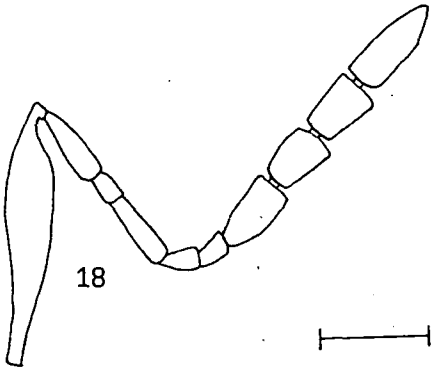


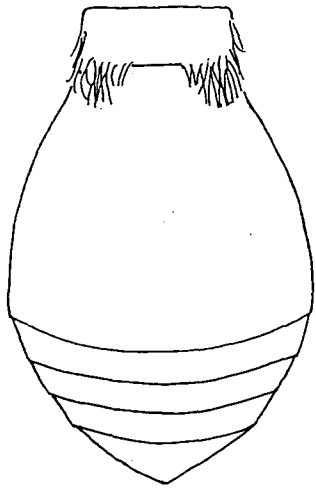


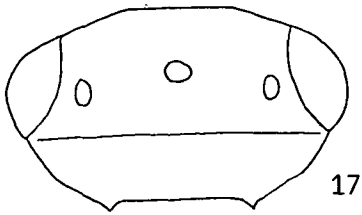


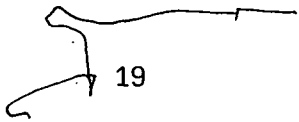


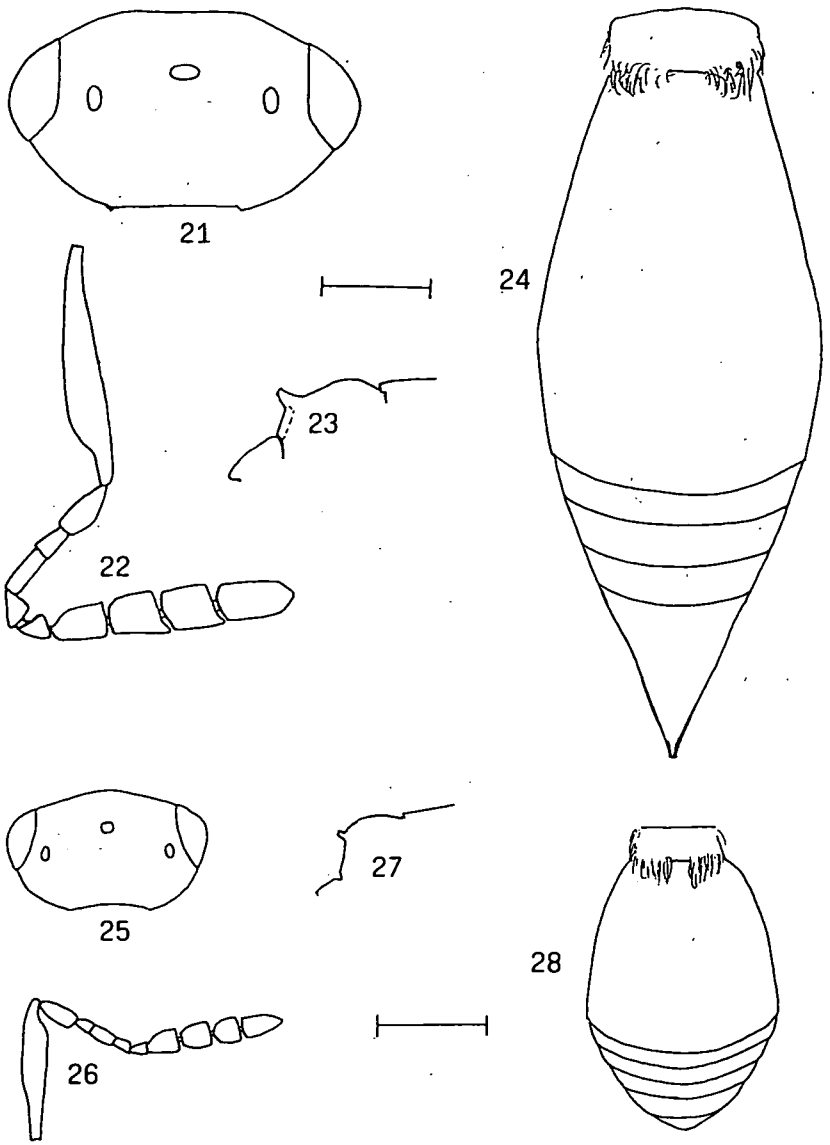


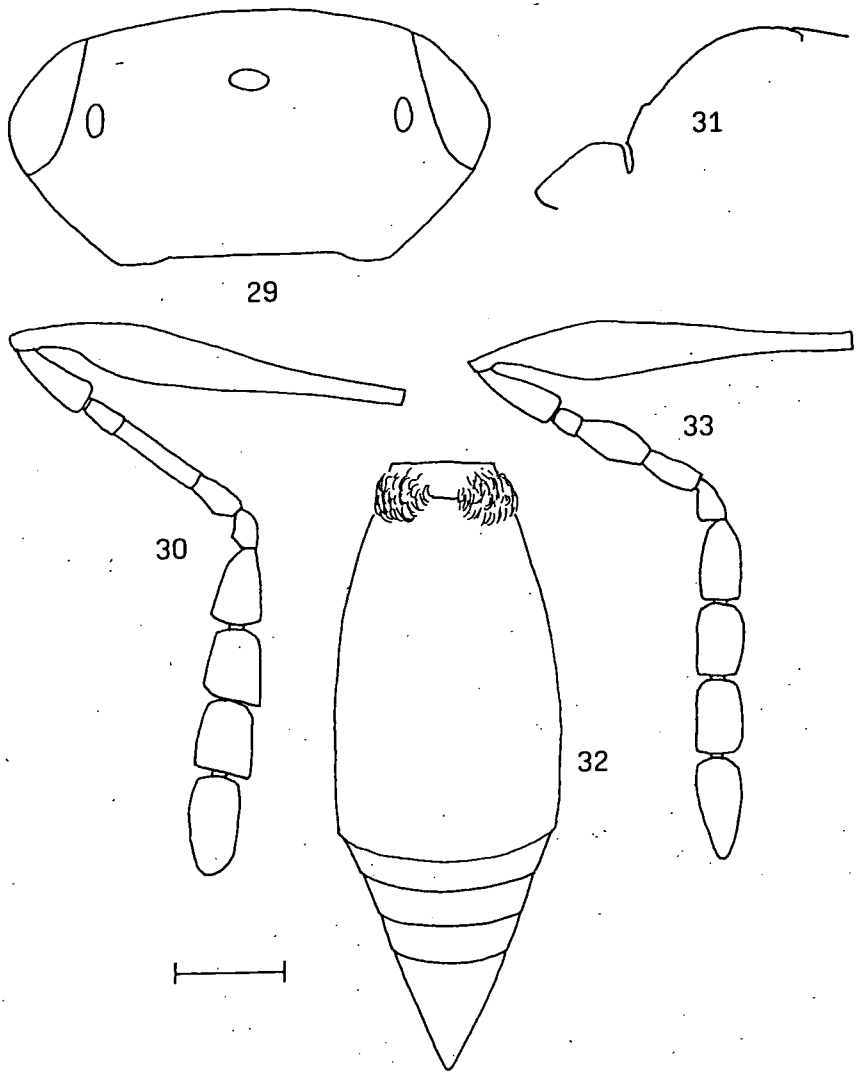


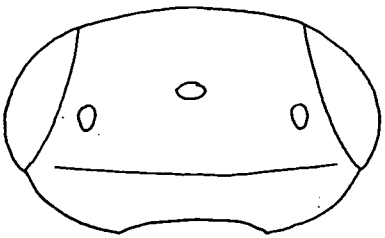


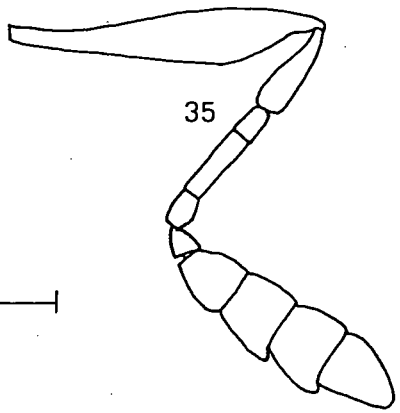


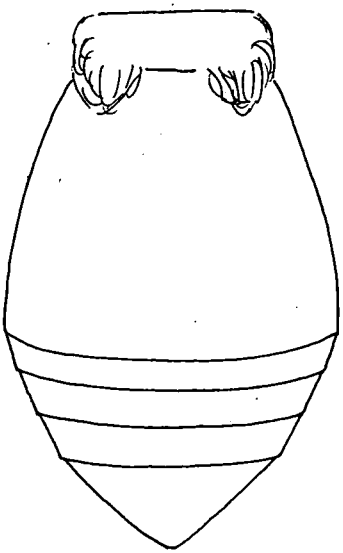


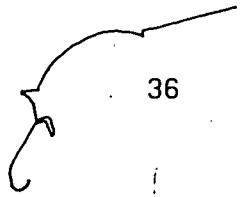


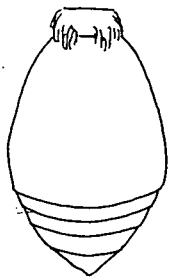


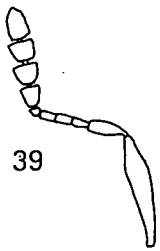


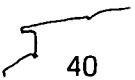












Literature

BUHL, P.N. - 1998a. Five new species of Platygastroidea from Norway (Hymeno-ptera). - Entomol. Fennica 8: 197-204.

BUHL, P.N. - 1998b. On some new or little known NW European species of Platygastridae (Hymenoptera, Proctotrupoidea). - Fragmenta ent. 30: 295-334.

BUHL, P.N. - 1999. A synopsis of the Platygastridae of Fennoscandia and Denmark (Hymenoptera, Platygastroidea). - Entomofauna 20: 17-52.

BUHL, P.N. - 2000. *Haustagaster* SZABÓ, 1979 new synonym of *Synopeas* FÖRSTER, 1856, with redescriptions of four species (Insecta: Hymenoptera: Proctotrupoi-dea: Platygastridae). - Reichenbachia 33: 415-419.

BUHL, P.N. - 2003. New or little known Palaearctic species of Platygastrinae (Hymenoptera: Platygastridae). - Entomol. Fennica 14: 109-117.

HUGGERT, L. - 1975. Descriptions of Platygastrinae from Sweden (Hymenoptera: Platygastridae). - Ent. Scand. 6: 61-66.

KIEFFER, J.J. - 1926. Scelionidae. In: Das Tierreich, vol. 48. Walter de Gruyter & Co. Berlin, 885 pp.

VLUG, H.J. - 1985. The types of Platygastridae (Hymenoptera, Scelionoidea) des-cribed by HALIDAY and WALKER and preserved in the National Museum of Ireland and in the British Museum (Natural History). 2. Keys to species, redes-criptions, synonymy. - Tijdschr. Ent. 127: 179-224.

Author's address:
Peter Neerup BUHL
Troldhøjvej 3
DK-3310 Ølsted
Denmark
E-mail: pnbuhl@zmuc.ku.dk

Literaturbesprechung

LAMPRECHT, J., LANGLET, J. & SCHRÖDER, E. 2002/03: Verhaltensbiologie im Unterricht. Neue Ergebnisse - Neue Konzepte. Band 1: Verhaltensökologie. 114 S. **Band 2: Verhaltensontogenese und Verhaltensmechanismen.** 142 S. - Aulis Verlag Deubner, Köln.

Ziel dieser beiden Bände ist es, eine minimale inhaltliche Basis zu schaffen, über die Lehrende ein Bild von der aktuellen Forschungsrichtung der Verhaltensbiologie gewinnen können. Nachdem im Jahre 1973 Konrad LORENZ, Nicolaas TINBERGEN und Karl von.FRISCH mit dem Nobelpreis ausgezeichnet wurden, fand die Verhaltensbiologie in Forschung und

Unterricht einen enormen Auftrieb. Erstaunlich schnell waren bestimmte Vorstellungen überholt oder wurden in ein anderes Licht gerückt. Ursprünglich zentrale Begriffe wie Trieb, aktionsspezifische Energie, Erbkoordination und Modellvorstellungen wie das "psychohydraulische Modell" spielen seit vielen Jahren keine Rolle mehr.

Der Aufbau der Bände folgt nicht dem sonst im Unterricht angestrebten Weg vom Einfachen zum Komplizierten, der oft vom Vorurteil begleitet ist, Sozialverhalten sei notwendigerweise viel komplizierter als etwa der Nahrungserwerb. Er geht vielmehr von der Gewinnung der nach Erklärungen rufenden Phänomene aus, und dann folgen die zwei voneinander unabhängigen Erklärungsweisen, die im Idealfall beide bearbeitet werden sollten, wenn man einen Zusammenhang im Verhalten "rundherum" verstehen möchte. Der Aspekt der Angepasstheit, der Funktion, d.h. der ultimaten Ursachen, wird zeitlich vorgezogen, damit man später bei den Mechanismen kompetent auch immer wieder mal die Frage nach der biologischen Zweckmäßigkeit gefundener Mechanismen stellen kann.

Die Einführung sollte also nicht unnötig theoretisch ausfallen. Nicht Erkenntnistheorie und Begriffsdefinitionen stehen im Vordergrund, sondern die Anregung zu eigenem Beobachten und die Präsentation einprägsamer Forschungsbeispiele, an denen sich theoretische Konzepte festmachen, einüben und diskutieren lassen.

Beide Bände sind in jeweils zwei Module gegliedert: Modul I beinhaltet "Phänomene, Ziele und Methoden der Verhaltensbiologie" und stellt einen ebenso idealen wie genialen Einstieg für Schüler in die "Welt des Verhaltens" dar. Modul II behandelt die "Angepasstheit des Verhaltens"; hier steht sich die Frage nach der biologischen Funktion von Verhaltensmerkmalen im Zentrum. Untersucht wird, inwieweit Verhaltensmerkmale als Angepasstheiten an bestimmte Faktoren zu verstehen sind und den messbaren Lebenszeit-Fortpflanzungserfolg der Individuen erhöhen bzw. senken. Modul III "Die Entwicklung des Verhaltens (Ontogenese)" analysiert genetische und hormonelle Mechanismen der Verhaltenskontrolle. Modul IV "Mechanismen des Verhaltens" stellt Bewegungskoordination, Orientierung und Kommunikation, Verhaltensphysiologie und die Lernvorgänge vor.

Beide Bände bieten, anhand aktueller Konzepte, eine an den Belangen der Schule orientierte Übersicht über die moderne Verhaltensbiologie. Die zahlreichen, kopierfähigen Materialvorschläge sind eine hervorragende Grundlage, diese Konzepte kennen zu lernen, einzuüben und zu beurteilen. Erfreulich, dass hier auch die entsprechenden Lösungsvorschläge (für Lehrer) dazugehören.

Eine moderne, praxisorientierte und damit sehr empfehlenswerte Einführung in die Verhaltensbiologie.

R. GERSTMEIER

Druck, Eigentümer, Herausgeber, Verleger und für den Inhalt verantwortlich:
Maximilian SCHWARZ, Konsulent für Wissenschaft der O.Ö. Landesregierung,
Eibenweg 6, A-4052 Ansfelden, e-mail: maxschwarz@everyday.com
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
Emma SCHWARZ, Eibenweg 6, A-4052 Ansfelden
Thomas WITT, Tengstrasse 33, D-80796 München, e-mail: witt-thomas@t-online.de
Postadresse: Entomofauna (ZSM), Münchhausenstrasse 21, D-81247 München, Tel.(089) 8107-0,
Fax (089) 8107-300, e-mail: erich.diller@zsm.mwn.de oder: wolfgang.schacht@zsm.mwn.de