Entomofauna

ZEITSCHRIFT FÜR ENTOMOLOGIE

Band 27, Heft 16: 193-208 ISSN 0250-4413 Ansfelden, 30. April 2006

New species of Platygastrinae from Canada
(Hymenoptera, Platygastridae)

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Abstract

The following 11 species new to science are described: *Platygaster appropinquata, P. boneti, P. forshagei, P. hovmoelleri, P. leptosoma, P. meduxnekeagensis, P. signe, P. subfilicornis, Synopeas forshagei, S. ruficoxa,* and *S. substrigosus*. The work is illustrated by 47 figures.

Zusammenfassung

11 neue Arten werden beschrieben: *Platygaster appropinquata, P. boneti, P. forshagei, P. hovmoelleri, P. leptosoma, P. meduxnekeagensis, P. signe, P. subfilicornis, Synopeas forshagei, S. ruficoxa* und *S. substrigosus*. Die Arbeit ist mit 47 Abbildungen versehen.

Introduction

In the autumn of 2005 Mr. Mattias FORSHAGE (Dept. of Systematic Zoology, Uppsala, Sweden) offered me a generous gift of some 300 specimens of Platygastridae collected by a single Malaise trap in just five days with the following data: Canada, New Brunswick, Carleton County, Meduxnekeag River (near Belleville), 46,11354N 67,40556W, 10.-15. VII.2005, James BONET, Mattias FORSHAGE and Rasmus HOVMÖLLER leg. Meadow at the river bank. Tall grown grasses and herbs with scattered ashes (*Fraxinus*), with much *Solidago*, bindweed (Convolvulaceae), *Rubus* and other herbs. A lot of dead wood was present around the locality. The meadow is a wide border zone between the clayey/stony river bank and the edge of the forest which is dominated by *Fraxinus* with some butternut (*Juglans cinerea*) and spruce (*Picea*), etc. The Malaise trap was hanging (with the lower

edge 1 meter above ground) between two exposed ashes, with equal distance to the forest edge and to the river bank.

Among the already known platygastrid species caught by the trap should be mentioned *Aceroteta borealis* KOZLOV & MASNER, 1977, *Euxestonotus brevicornis* FOUTS, 1925, *Iphitrachelus lar* HALIDAY, 1835, *Leptacis propodealis* BUHL, 2001, *Platygaster gracilipes* HUGGERT, 1975, *P. rohweri* FOUTS, 1924, *P. tubulosa* BRUES, 1922, and *Synopeas carinator* (FOUTS, 1925).

The rich catch of new species in this single sample from a relatively well investigated region indicates the many discoveries still waiting to be made in this family of parasitoid wasps. It is also interesting to note, that even though the trap was raised above the ground, it caught so many of these supposedly feebly flying insects.

All type material is deposited in the collection of the Zoological Museum, University of Copenhagen (Denmark).

***Platygaster appropinquata* sp. nov.** (figs 1-5)

Female: Length 1.2 mm. Black, fore tibia and segments 1-4 of fore tarsus dark reddish-brown.

Head from above (fig. 1) about twice as wide as long, almost 1.2 x as wide as mesosoma; occiput strongly transversely striated; vertex reticulate-coriaceous; frons laterally faintly transversely reticulate-coriaceous, medially smooth, around antennal insertions transversely striated. OOL and LOL about equal. Head in frontal view (fig. 2) 1.3 x as wide as high, with a short and rounded vertexial projection over dorsal eye margin. Antenna (fig. 3) with A1 fully 0.8 x as long as distance between inner orbits, 0.7 x as long as height of head; A8-A9 each slightly transverse.

Mesosoma one and a third times as long as wide, as high as wide. Sides of pronotum almost uniformly, finely longitudinally reticulate-coriaceous. Mesoscutum sparsely hairy, finely reticulate-coriaceous except medially in about posterior 0.3; notauli distinct in posterior 0.7, mid lobe posteriorly touching scutellum in a rather fine point; scuto-scutellar grooves of moderate size, each with 5-6 long hairs. Mesopleuron smooth except for a few wrinkles just below tegula. Scutellum (fig. 4) evenly convex, smooth except for faint sculpture laterally, sparsely hairy. Metapleuron with pilosity all over. Propodeal carinae short, area between them strongly transverse, smooth.

Forewing 0.7 x as long as body, 2.2 x as long as wide, clear, with rather sparse and long microtrichia; marginal cilia hardly 0.1 width of wing. Hindwing 4.7 x as long as wide, with two hamuli; marginal cilia slightly more than 0.2 width of wing.

Metasoma (fig. 5) hardly 0.9 x as long as head and mesosoma combined, and hardly 0.9 x as wide as mesosoma. T1 evenly crenulated. T2 striated in basal foveae to 0.5 of length. T3-T6 smooth, each with a transverse row of deeply implanted hairs, rows medially interrupted on T3-T4.

Material examined: Holotype female, Canada, New Brunswick, Carleton Co, Meduxnekeag River (near Belleville), 46,11354N 67,40556W, 10.-15.VII.2005, Malaise trap, J. BONET, M. FORSHAGE and R. HOVMÖLLER leg. Paratype: 1 female same data as holotype.

Runs to *P. solidaginis* (ASHMEAD, 1887) in MACGOWN's unpublished key to *Platygaster* of USA, but *P. solidaginis* has more striated frons, less sculptured mesoscutum, smaller T1, and longer striation on T2 than *P. appropinquata*, and it has A7-A9 each as long as wide. A7-A9 of *P. appropinquata* are distinctly shorter than in *P. striaticeps*

(ASHMEAD, 1893). Cf. FOUTS (1924) and MACGOWN (unpublished).

***Platygaster boneti* sp. nov.** (figs 6-9)

Female: Length 1.5-1.8 mm. Black; A1-A3, mandibles, and legs excluding coxae light reddish-brown, A4-A10 and last segment of tarsi dark brown.

Head from above (fig. 6) 1.8 x as wide as long, hardly 1.1 x as wide as mesosoma; occiput rounded, distinctly transversely reticulate-coriaceous, medially behind ocelli with some transverse wrinkles; vertex reticulate-coriaceous; frons more shiny reticulate-coriaceous, almost smooth along middle, sculpture becoming more transverse in lower half. OOL:LOL = 2:3. Head in frontal view 1.25 x as wide as high. Antenna (fig. 7) with A1 fully 0.8 x as long as height of head, about as long as distance between inner orbits; A9 hardly longer than wide.

Mesosoma one and a third times as long as wide, very slightly higher than wide. Sides of pronotum distinctly reticulate-coriaceous (not longitudinally so), smooth in about lower half and along broad hind margin. Mesoscutum with sparse hairs, distinctly and almost uniformly reticulate-coriaceous, with admedian lines in anterior 0.2; notauli distinct and complete; mid lobe ending in a fine point hardly reaching base of scutellum; scuto-scutellar grooves rather wide, each with three long hairs. Mesopleuron in upper 0.4 with about four longitudinal striae in posterior half, rest smooth. Scutellum (fig. 8) evenly convex, sparsely hairy, distinctly and uniformly reticulate-coriaceous. Metapleuron with pilosity all over. Propodeal carinae parallel, area between them slightly transverse, smooth and shiny. Forewing just reaching apex of metasoma, 2.6 x as long as wide, clear, microtrichia moderately dense but rather long; marginal cilia less than 0.1 width of wing. Hindwing 5.6 x as long as wide, with two hamuli; marginal cilia 0.2 width of wing.

Metasoma (fig. 9) one and a third times as long as head and mesosoma combined, 0.9 x as wide as mesosoma. T1 with two strong longitudinal keels among weak crenulation. T2 striated in basal foveae to almost 0.6 of length, medially to almost 0.4 of length. T2-T6 otherwise smooth, with some superficially implanted hairs laterally, on each of T3-T4 arranged in medially interrupted transverse rows.

Material examined: Holotype female, Canada, New Brunswick, Carleton Co, Meduxnekeag River (near Belleville), 46,11354N 67,40556W, 10-15.VII.2005, Malaise trap, J. BONET, M. FORSHAGE and R. HOVMÖLLER leg. Paratype: 1 female same data as holotype.

Named after one of the collectors.

This species seems to be rather similar to *P. alnicola* (ASHMEAD, 1893), but *P. alnicola* has preapical antennal segments distinctly longer than wide, forewings relatively longer, striation of T2 longer, and A1 dark. The somewhat similar Palaearctic species *P. rutilipes* BUHL, 1997 has metasoma diffently shaped as in *P. boneti*. Cf. FOUTS (1924) and BUHL (1997).

***Platygaster forshagei* sp. nov.** (figs 10-13)

Female: Length 1.7 mm. Black; A1-A2 and legs excluding coxae light reddish-brown, flagellum dark brown; last segment of tarsi slightly darkened.

Head from above (fig. 10) 1.8 x as wide as long, almost 1.2 x as wide as mesosoma; occiput strongly transversely striated; vertex reticulate-coriaceous; frons transversely reticulate-coriaceous, almost striated medially in upper half, around antennal insertions

with a few striae. OOL:LOL = 2:5. Head in frontal view fully 1.2 x as wide as high. Antenna (fig. 11) with A1 0.9 x as long as height of head, 1.2 x as long as distance between inner orbits; A9 one and a third times as long as wide.

Mesosoma 1.6 x as long as wide, 1.1 x as high as wide. Sides of pronotum finely reticulate-coriaceous (not longitudinally so), in lower half with dense hair-implantations. Mesoscutum sparsely hairy, distinctly reticulate-coriaceous, mid lobe smooth just on front of scutellum; notauli distinct, missing in about anterior 0.25; mid lobe posteriorly rather bluntly prolonged to base of scutellum; scuto-scutellar grooves wide, triangular, above with numerous rather fine hairs. Mesopleuron smooth except for a few short longitudinal striae below tegula. Scutellum (fig. 12) low, rather smooth except for dense, somewhat raised hair-implantations. Metapleuron with pilosity all over. Propodeal carinae parallel, rather close together, slightly elongate area between them smooth.

Forewing 0.9 x as long as body, 2.7 x as long as wide, clear, with dense microtrichia; marginal cilia 1/16 width of wing. Hindwing 6.1 x as long as wide, with two hamuli; marginal cilia 0.25 width of wing.

Metasoma (fig. 13) hardly shorter than head and mesosoma combined (24:25), slightly wider than mesosoma. T1 smooth, with two rather weak longitudinal carinae. T2 striated over whole width to nearly 0.8 of length. T3 smooth. T4-T5 each with a transverse stripe of rugosity with superficially implanted rather long hairs, about 3 on each side on T4, 5 on each side on T5. T6 almost smooth and with 12-14 hairs.

Material examined: Holotype female, Canada, New Brunswick, Carleton Co, Meduxnekeag River (near Belleville), 46,11354N 67,40556W, 10-15.VII.2005, Malaise trap, J. BONET, M. FORSHAGE and R. HOVMÖLLER leg. Paratypes: 5 females same data as holotype.

Named after one of the collectors.

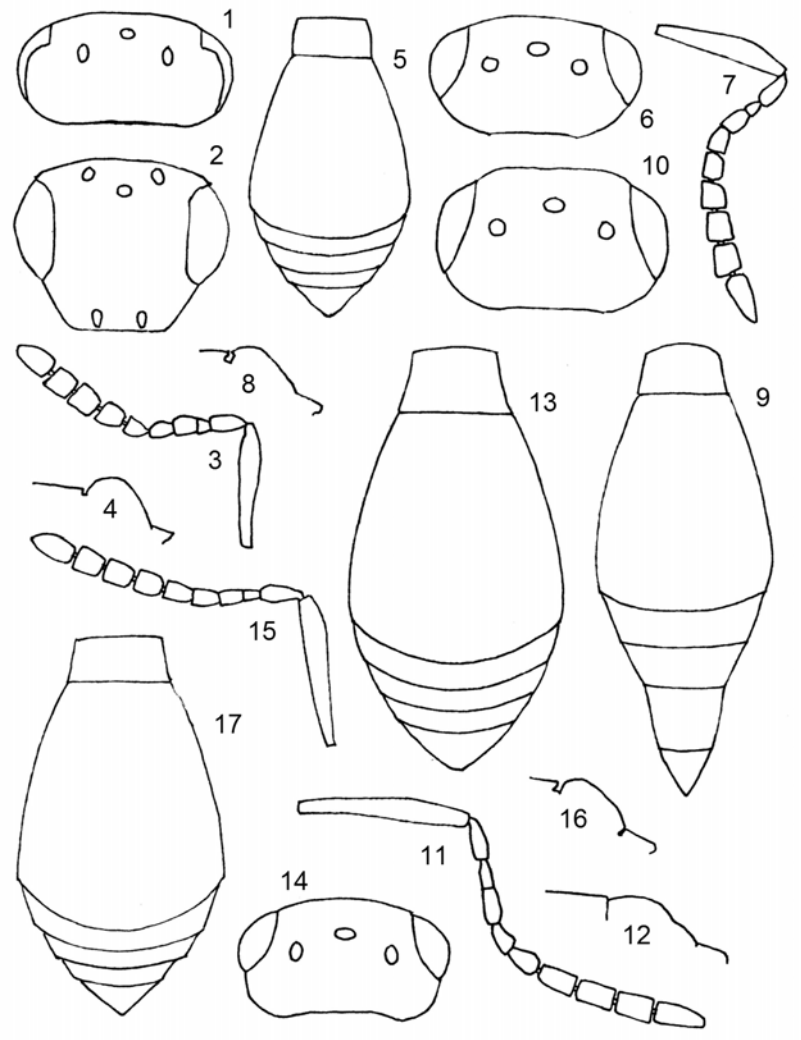
This species seems to be most similiar to *P. caryae* ASHMEAD, 1893 and *P. floridensis* ASHMEAD, 1887, but these species have A6-A9 transverse, cf. FOUTS (1924).

***Platygaster hovmoelleri* sp. nov.** (figs 14-17)

Female: Length 1.4 mm. Black, antennae and legs dark brown; both ends of fore tibia and segments 1-4 of all tarsi lighter brown.

Head dull, from above (fig. 14) 1.8 x as wide as long, 1.2 x as wide as mesosoma; occiput roughly, unevenly reticulate with a few longitudinal elements medially, broadly rounded; vertex reticulate-coriaceous; frons reticulate-coriaceous, in upper half with transverse wrinkles medially, in lower half over whole width. OOL and LOL about equal. Head in frontal view 1.2 x as wide as high. Antenna (fig. 15) with A1 0.8 x as long as height of head, 1.25 x as long as distance between inner orbits; A9 as wide as long.

Mesosoma 1.6 x as long as wide, hardly 1.1 x as high as wide. Sides of pronotum rather dull reticulate-coriaceous (not longitudinally so) all over. Mesosoma sparsely hairy, finely and almost uniformly reticulate-coriaceous; notauli complete and deep; mid lobe posteriorly slightly prolonged to base of scutellum, ending in a fine point; scuto-scutellar grooves wide, each with only a couple of fine hairs. Mesopleuron longitudinally striated in about upper half, along hind margin over most of height, rest smooth. Scutellum (fig. 16) evenly convex, sparsely hairy and reticulate-coriaceous almost as mesoscutum. Metapleuron with pilosity all over. Propodeal carinae parallel, area between them smooth and shiny, about as long as wide.



Figs 1-5 *Platygaster appropinquata* sp. nov. female: 1 head from above, 2 head in frontal view, 3 antenna, 4 scutellum, 5 metasoma. **Figs 6-9** *Platygaster boneti* sp. nov. female: 6 head, 7 antenna, 8 scutellum, 9 metasoma. **Figs 10-13** *Platygaster forshagei* sp. nov. female: 10 head, 11 antenna, 12 scutellum, 13 metasoma. **Figs 14-17** *Platygaster hovmoelleri* sp. nov. female: 14 head, 15 antenna, 16 scutellum, 17 metasoma.

Forewing overreaching tip of metasoma by about the length of T3-T6, with faint brownish tint, almost 2.9 x as long as wide, with dense and moderately long microtrichia; marginal cilia at their longest hardly 0.1 width of wing. Hindwing 5.9 x as long as wide, with two hamuli; marginal cilia 0.3 width of wing.

Metasoma (fig. 17) as long as head and mesosoma combined, almost 1.2 x as wide as mesosoma. T1 in medial third evenly crenulated (about five equally fine, longitudinal carinae), laterally smoother. T2 striated over whole width to slightly more than half of length. T3-T6 smooth; T3 with with two superficially implanted hairs on each side, T4 with three such hairs on each side, T5 with a complete row of 12 such hairs, T6 with about 12 more scattered such hairs.

Material examined: Holotype female, Canada, New Brunswick, Carleton Co, Meduxnekeag River (near Belleville), 46,11354N 67,40556W, 10-15.VII.2005, Malaise trap, J. BONET, M. FORSHAGE and R. HOVMÖLLER leg.

Named after one of the collectors.

This species differs from *P. caryae* ASHMEAD, 1893 in shape of antennae and in having complete notauli, and from *P. alnicola* in having wider and less pointed metasoma with T2 striated also medially. Cf. FOUTS (1924).

Platygaster leptosoma **sp. nov.** (figs 18-21)

Female: Length 1.0 mm. Shiny black, antennae and legs hardly lighter; apical half of fore tibia, base of mid and hind tibiae, and segments 1-4 of all tarsi more or less dark brownish.

Head from above (fig. 18) 2.0 x as wide as long, almost 1.3 x as wide as mesosoma; occiput rounded, finely and distinctly transversely striated; vertex weakly reticulate; frons smooth except for a few wrinkles around antennal insertions. LOL = 1.6 OOL. Head in frontal view almost 1.3 x as wide as high. Antenna (fig. 19) with A1 as long as distance between inner orbits, 0.8 x as long as height of head; A9 1.5 x as long as wide.

Mesosoma hardly 1.4 x as long as wide, 1.1 x as high as wide. Sides of pronotum smooth except for faint reticulation in upper anterior corner. Mesoscutum with very few hairs, smooth, only faintly reticulate-coriaceous antero-laterally; notauli faintly indicated most of their length, obliterated anteriorly; mid lobe posteriorly rather narrowly pointed, touching base of scutellum; scuto-scutellar grooves distinct, triangular, each with only a couple of inconspicuous hairs. Mesopleuron smooth. Scutellum (fig. 20) evenly convex, smooth, with very few hairs. Metapleuron with pilosity all over. Propodeal carinae parallel, area between them smooth and shiny, very slightly transverse.

Forewing hardly reaching apex of metasoma, clear, 2.4 x as long as wide, with moderately dense microtrichia; marginal cilia less than 0.1 width of wing. Hindwing 6.3 x as long as wide, with two hamuli; marginal cilia 0.4 width of wing.

Metasoma (fig. 21) 1.3 x as long as head and mesosoma combined, only two-thirds as wide as mesosoma, unusually flat, at its widest (and highest) 2.4 x as wide as high. T1 crenulated. T2 faintly striated in narrow basal foveae to hardly half of length, rest of tergite as well as following tergites smooth, except slightly microsculptured T6; T3-T5 each with a few superficially implanted hairs laterally at about midlength. Sternite 2 not convex anteriorly.

Material examined: Holotype female, Canada, New Brunswick, Carleton Co, Meduxnekeag River (near Belleville), 46,11354N 67,40556W, 10-15.VII.2005, Malaise trap, J.

BONET, M. FORSHAGE and R. HOVMÖLLER leg.

Approaches *P. linearis* FOUTS, 1924 in shape of metasoma, but *P. leptosoma* has scutellum more convex and metasoma more blunt at apex, cf. MACGOWN (unpublished).

***Platygaster meduxnekeagensis* sp. nov.** (figs 22-25)

Female: Length 1.1-1.2 mm. Black, antennae and legs very dark brown; A1-A2, all trochanters, most of fore tibia, both ends of mid and hind tibiae, and segments 1-4 of all tarsi light brownish.

Head from above (fig. 22) fully twice as wide as long, slightly more than 1.1 x as wide as mesosoma; occiput finely but distinctly and densely transversely striated; vertex reticulate-coriaceous; frons smooth, with weak transverse striation just around antennal insertions. OOL:LOL = 2:3. Head in frontal view 1.25 x as wide as high. Antenna (fig. 23) with A1 as long as distance between inner orbits, fully 0.8 x as long as height of head; A9 one and a third times as long as wide.

Mesosoma 1.4 x as long as wide, 1.1 x as high as wide. Sides of pronotum smooth, in upper half finely reticulate-coriaceous anteriorly, in lower half with longitudinal microsculpture in anterior half. Mesoscutum with very sparse hairs, smooth, weakly reticulate-coriaceous in about anterior 0.3 and along margins of lateral lobes; notauli clearly indicated in posterior two-thirds; mid lobe posteriorly reaching scutellum in a rather narrow point; scuto-scutellar grooves narrow, triangular, covered by numerous inconspicuous hairs. Mesopleuron smooth except for a few weak wrinkles just below tegula. Scutellum (fig. 24) evenly convex, medially smooth and bare, towards sides with sparse hair-implantations and faint microsculpture. Metapleuron with pilosity all over. Propodeal carinae parallel, widely separated; strongly transverse area between them smooth and shiny.

Forewing 0.8 x as long as body, 2.25 x as long as wide, clear, with moderately dense and rather long microtrichia; marginal cilia less than 0.1 with of wing. Hindwing 5.0 x as long as wide, with two hamuli; marginal cilia hardly more than 0.2 width of wing.

Metasoma (fig. 25) hardly 0.9 x as long as head and mesosoma combined, only slightly more than 0.8 x as wide as mesosoma. T1 crenulated. T2 narrowly striated in basal foveae to 0.75 of length, medially striated only to slightly more than one-seventh of length. T3-T5 hardly sculptured, each with a complete, dense row of rather deeply implanted hairs; T6 dull and with numerous more scattered hairs, less deeply implanted.

Material examined: Holotype female, Canada, New Brunswick, Carleton Co, Meduxnekeag River (near Belleville), 46,11354N 67,40556W, 10-15.VII.2005, Malaise trap, J. BONET, M. FORSHAGE and R. HOVMÖLLER leg. Paratypes: 2 females same data as holotype.

Similar in some respects to *P. errans* FOUTS, 1924, but this species has shorter preapical antennal segments and striation of T2 longer. *P. huachucae* (ASHMEAD, 1893) has relatively shorter A4 and relatively longer metasoma with shorter striae on T2, and broader laterotergites than *P. meduxnekeagensis*. Cf. FOUTS (1924).

***Platygaster signe* sp. nov.** (figs 26-29)

Female: Length 1.1 mm. Black, antennae and legs dark brown; base of A1 and of tibiae, and segments 1-4 of tarsi, slightly lighter.

Head from above (fig. 26) 1.9 x as wide as long, 1.2 x as wide as mesosoma; occiput

with weak and dense transverse striation, slightly angled behind ocelli; vertex faintly reticulate-coriaceous, between ocelli with transversal elements; frons smooth, only faintly reticulate-coriaceous along inner orbits and with a little weak transverse sculpture just above antennal insertions. OOL hardly shorter than LOL. Head in frontal view 1.3 x as wide as high. Antenna (fig. 27) with A1 0.75 x as long as height of head, 0.9 x as long as distance between inner orbits; A8-A9 slightly transverse.

Mesosoma 1.5 x as long as wide, very slightly higher than wide. Sides of pronotum finely reticulate-coriaceous, with a broad smooth hind margin and long, scattered hairs. Mesoscutum faintly reticulate-coriaceous, smoother postero-medially, evenly and rather densely hairy; notauli weakly indicated in less than posterior half; mid lobe narrow behind, reaching base of scutellum; scuto-scutellar grooves inconspicuous, with some hairs which are indistinguishable from those on rest of disc. Mesopleuron smooth. Scutellum (fig. 28) smooth medially, finely reticulate-coriaceous towards margins, with numerous hairs. Metapleuron with pilosity all over. Propodeal carinae short, much transverse area between them almost smooth.

Forewing reaching midpoint of T6, clear, with rather dense and long microtrichia, 2.4 x as long as wide; marginal cilia hardly 0.1 width of wing. Hindwing 5.6 x as long as wide, with two hamuli; marginal cilia 0.3 width of wing.

Metasoma (fig. 29) 1.2 x as long as head and mesosoma combined, 0.8 x as wide as mesosoma. T1 evenly crenulated. T2 faintly striated from narrow basal foveae to fully half of length, medially smooth. T3-T6 smooth, with a few hairs; T3-T5 with extensive, dense, longitudinal, deep punctation, punctures arranged in two irregular transverse rows on T2, in three irregular transverse rows on T4.

Material examined: Holotype female, Canada, New Brunswick, Carleton Co, Meduxnekeag River (near Belleville), 46,11354N 67,40556W, 10-15.VII.2005, Malaise trap, J. BONET, M. FORSHAGE and R. HOVMÖLLER leg.

Named after miss Signe PINNE (Latvia).

This species has longer metasoma in the somewhat similar *P. baccharicola* (ASHMEAD, 1893), and it has apical tergites differently punctured than in *P. variabilis* FOUTS, 1924. Cf. FOUTS (1924).

Platygaster subfilicornis **sp. nov.** (figs 30-33)

Female: Length 1.3 mm. Black, antennae and legs dark brown; both ends of all tibiae and segments 1-4 of tarsi dark reddish-brown.

Head from above (fig. 30) 2.0 x as wide as long, fully 1.1 x as wide as mesosoma; occiput distinctly and densely but not strongly transversely striated up to posterior ocelli; vertex finely reticulate-coriaceous (not transversely so); frons medially smooth, towards sides faintly and slightly fan-like reticulate-coriaceous. OOL = 1.1 LOL. Head in frontal view 1.25 x as wide as high. Antenna (fig. 31) with A1 as long as height of head, 1.3 x as long as distance between inner orbits; A9 about twice as long as wide.

Mesosoma 1.5 x as long as wide, 1.1 x as high as wide. Sides of pronotum finely and slightly longitudinally reticulate-coriaceous, in upper 0.3 smooth in posterior half, in lower 0.7 smooth along posterior margin. Mesoscutum with sparse hairs, shiny, finely reticulate-coriaceous, smooth medially in posterior 0.3; notauli distinct in posterior 0.6, anteriorly missing; mid lobe posteriorly broad, just reaching base of scutellum; scuto-scutellar grooves triangular, each with about six long hairs. Mesopleuron smooth. Scutellum (fig.

32) evenly convex, smooth, medially almost bare, towards sides moderately hairy. Metapleuron with pilosity all over. Propodeal carinae parallel, slightly transverse area between them smooth and shiny.

Forewing 2.7 x as long as wide, hardly 0.9 x as long as entire body, almost clear, with rather long and dense microtrichia; marginal cilia less than 0.1 width of wing. Hindwing 5.6 x as long as wide, with two hamuli; marginal cilia 0.3 width of wing.

Metasoma (fig. 33) as long as head and mesosoma combined, as wide as mesosoma. T1 crenulated. T2 slightly striated to hardly half of length, medially to 0.3 of length. T3-T4 smooth, T5-T6 with faint traces of reticulation; T3-T4 each with a medially interrupted transverse row of eight rather superficially implanted hairs, T5 with a transverse row of about ten such hairs, T6 with about eight superficially implanted hairs.

Material examined: Holotype female, Canada, New Brunswick, Carleton Co, Meduxnekeag River (near Belleville), 46,11354N 67,40556W, 10-15.VII.2005, Malaise trap, J. BONET, M. FORSHAGE and R. HOVMÖLLER leg.

This species has antennae more slender and apical tergites shorter than in *P. juniperella* MACGOWN, 1979. *P. subfilicornis* differs from *P. foutsi* HUGGERT, 1973 e.g. in having A6 not shorter than A7-A9, and in having T3-T6 distinctly shorter than T2. *P. subfilicornis* differs from the Palaearctic *P. ennius* WALKER, 1835 e.g. in having frons not striated, notauli shorter, hairs of apical tergites less deeply implanted, and body appendages darker. Cf. FOUTS (1924), MACGOWN (1979), and VLUG (1985).

***Synopeas forshagei* sp. nov.** (figs 34-37)

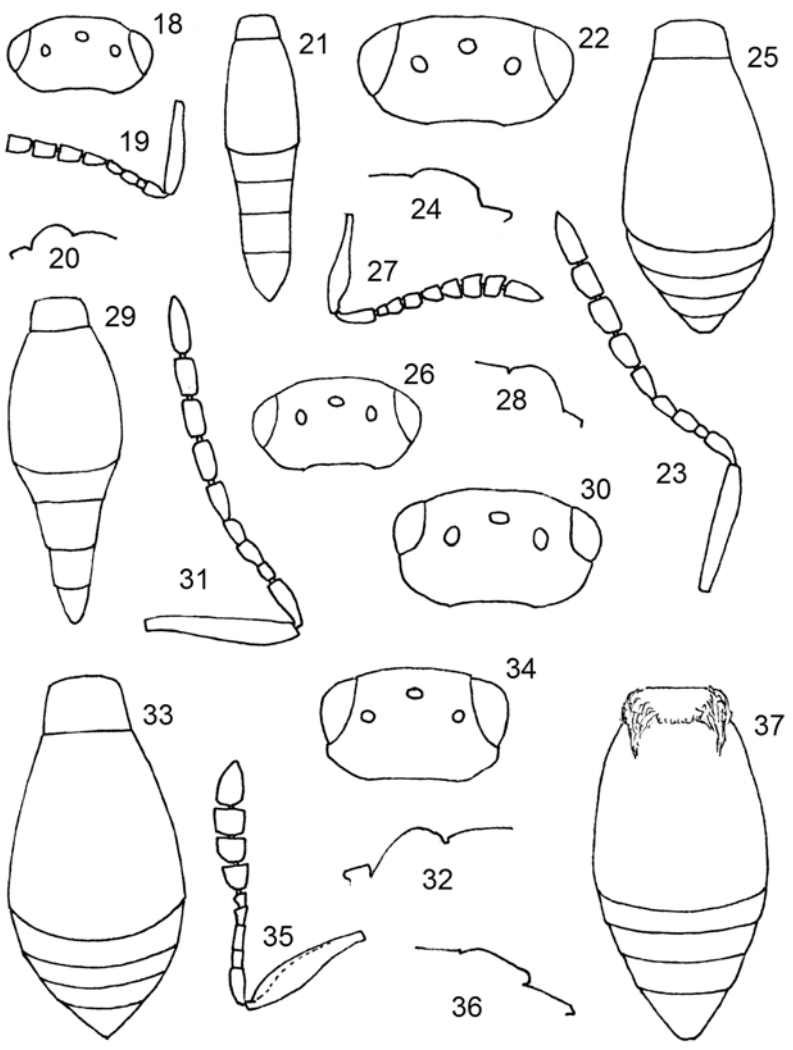
Female: Length 1.3 mm. Dull black, A1-A6 and legs except coxae light reddish-brown; A7-A10, mid and hind femora, apical half of hind tibia, and last segment of all tarsi dark brown.

Head from above (fig. 34) 1.7 x as wide as long, very slightly wider than mesosoma, uniformly and distinctly reticulate-coriaceous (not transversely so); hyperoccipital carina indicated laterally, occiput somewhat angled. Lateral ocelli separated from eye by their diameter. Head in frontal view very slightly wider than high (20:19). Antenna (fig. 35) with A1 0.8 x as long as height of head, almost 1.2 x as long as distance between inner orbits.

Mesosoma 1.5 x as long as wide, almost 1.1 x as high as wide. Sides of pronotum reticulate-coriaceous all over as head. Mesoscutum sparsely hairy, slightly smoother reticulate-coriaceous than head; notauli distinct, obliterated just before reaching anterior margin; mid lobe posteriorly rather finely pointed to base of scutellum; scuto-scutellar grooves distinct, each with six long hairs. Mesopleuron longitudinally striated in upper half, rest smooth. Scutellum (fig. 36) with dense, whitish hairs, postero-medially slightly keeled and pointed but without tooth, dark. Metapleuron with pilosity all over. Propodeal carinae dark, fused, reticulate-coriaceous above.

Forewing 0.9 x as long as body, overreaching metasoma by the length of T3-T6, 2.6 x as long as wide, almost clear, with fine and dense microtrichia; marginal cilia absent. Hindwing 6.3 x as long as wide; marginal cilia one-third the width of wing.

Metasoma (fig. 37) 0.9 x as long as head and mesosoma combined, about as wide as mesosoma, 1.7 x as wide as high. T2-T6 smooth, all with reticulation along broad hind margin (T6 reticulate over most of length), with superficially implanted fine hairs.



Figs 18-21 *Platygaster leptosoma* sp. nov. female: 18 head, 19 antenna, 20 scutellum, 21 metasoma. **Figs 22-25** *Platygaster meduxnekeagensis* sp. nov. female: 22 head, 23 antenna, 24 scutellum, 25 metasoma. **Figs 26-29** *Platygaster signe* sp. nov. female: 26 head, 27 antenna, 28 scutellum, 29 metasoma. **Figs 30-33** *Platygaster subfilicornis* sp. nov. female: 30 head, 31 antenna, 32 scutellum, 33 metasoma. **Figs 34-37** *Synopeas forshagei* sp. nov. female: 34 head, 35 antenna, 36 scutellum, 37 metasoma.

Material examined: Holotype female, Canada, New Brunswick, Carleton Co, Meduxnekeag River (near Belleville), 46,11354N 67,40556W, 10-15.VII.2005, Malaise trap, J. BONET, M. FORSHAGE and R. HOVMÖLLER leg.

Named after one of the collectors.

Has much less slender antennae than *S. incertum* (ASHMEAD, 1887) which also lacks notauli, cf. FOUTS (1924*). S. forshagei* is an easily recognised species on account of distinct notauli and low scutellum without spine.

***Synopeas ruficoxa* sp. nov.** (figs 38-41)

Female: Length 1.5 mm. Black, A1 and legs including coxae bright reddish, A2-A6 dark brown.

Head from above (fig. 38) 1.7 x as wide as long, hardly 1.1 x as wide as mesosoma, rather dull, strongly and uniformly reticulate-coriaceous (nowhere transversely so); hyperoccipital carina absent but occiput bluntly angled. OOL fully as long as longer diameter of lateral ocellus. Head in frontal view hardly 1.2 x as wide as high. Antenna (fig. 39) with A1 0.8 x as long as height of head, 1.1 x as long as distance between inner orbits; A9 slightly transverse.

Mesosoma 1.5 x as long as wide, 1.1 x as high as wide. Sides of pronotum smooth, only at upper anterior corner weakly reticulate-coriaceous. Mesoscutum weakly and almost uniformly reticulate-coriaceous, with fine and sparse hairs; notauli weak but almost complete; mid lobe reaching scutellum in a narrow point; scuto-scutellar grooves wide, almost bare. Mesopleuron smooth. Scutellum (fig. 40) sculptured almost as mesoscutum, with numerous hairs along sides; spine dark, without lamella. Metapleuron with white pilosity, only along narrow anterior margin smooth and bare. Propodeal carinae dark brownish, fused.

Forewing almost reaching hind margin of T5, 2.5 x as long as wide, clear, with rather sparse microtrichia, without marginal cilia. Hindwing 5.9 x as long as wide; marginal cilia fully one-third the width of wing.

Metasoma (fig. 41) 1.5 x as long as head and mesosoma combined, 0.8 x as wide as mesosoma, 1.2 x as wide as high. T2 smooth. T3-T6 reticulate-coriaceous (not longitudinally so), virtually bare.

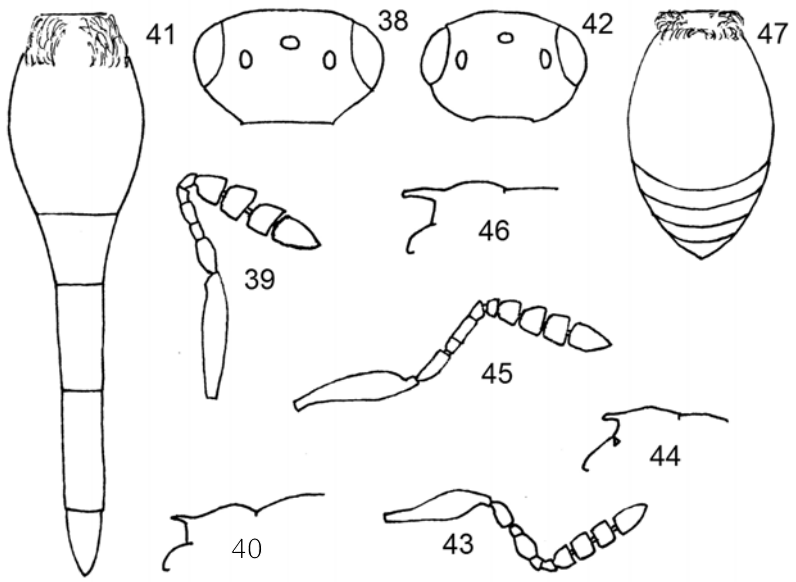
Material examined: Holotype female, Canada, New Brunswick, Carleton Co, Meduxnekeag River (near Belleville), 46,11354N 67,40556W, 10-15.VII.2005, Malaise trap, J. BONET, M. FORSHAGE and R. HOVMÖLLER leg.

Similar to *S. auripes* (ASHMEAD, 1893) but this species is lighter, smaller and with shorter notauli than *S. ruficoxa*. *S. ashmeadii* DALLA TORRE, 1898 differs also from *S. ruficoxa* in having shorter notauli, and in having longer marginal cilia of forewing. Cf. FOUTS (1924).

***Synopeas substrigosus* sp. nov.** (figs 42-47)

Male: Length 0.8-0.9 mm. Black; A1, fore legs and segments 1-4 of all tarsi light reddish brown, A2-A6 darker reddish-brown; all coxae and mid and hind legs dark brownish, trochanters and base of tibiae lighter, reddish-brown.

Head from above (fig. 42) 1.7 x as wide as long, as wide as mesosoma, dull, distinctly reticulate-coriaceous, slightly transversely so medially on frons; hyperoccipital carina in-



Figs 38-41 *Synopeas ruficoxa* sp. nov. female: 38 head, 39 antenna, 40 scutellum, 41 metasoma. **Figs 42-47** *Synopeas substrigosus* sp. nov.: 42 head of male, 43 antenna of male, 44 scutellum of male, 45 antenna of female, 46 scutellum of female, 47 metasoma of female.

dicated laterally; head behind ocelli only moderately angled. OOL hardly as long as shorter diameter of lateral ocellus. Head in frontal view 1.3 x as wide as high. Antenna (fig. 43) with A1 0.8 x as long as height of head, about as long as distance between inner orbits; flagellar pubescence very short.

Mesosoma 1.4 x as long as wide, hardly higher than wide. Sides of pronotum distinctly reticulate-coriaceous (not longitudinally so), almost smooth in lower 0.3. Mesoscutum dull, finely reticulate-coriaceous, sparsely hairy; notauli weak but nearly complete; mid lobe touching base of scutellum in a narrow point; scuto-scutellar grooves wide, smooth, each with about three longer and a few shorter hairs. Mesopleuron distinctly longitudinally striated in most of upper half, anteriorly and below smooth. Scutellum (fig. 44) sculptured almost as mesoscutum, rather densely and evenly hairy; spine black, without lamella. Metapleuron smooth, with pilosity all over (sparse in anterior 0.6). Propodeal carinae dark, fused.

Forewing overreaching tip of metasoma by the length of T2, 2.6 x as long as wide, almost clear, with fine and dense microtrichia; marginal cilia very short. Hindwing 5.9 x as long as wide; marginal cilia fully 0.4 width of wing.

Metasoma hardly 0.9 x as long as mesosoma, slightly more than 0.8 x as wide as this,

1.6 x as wide as high, T2-T6 smooth, all tergites reticulate along hind margin. T7 very small.

Female: Length 1.0 mm. Only tibia of fore leg bright reddish-brown, femur dark as on rest of legs. Sculpture of frons without transverse elements. Antenna (fig. 45). Scutellum (fig. 46) with spine longer than in male. Forewing overreaching tip of metasoma by 0.8 length of metasoma. Metasoma (fig. 47) as long as mesosoma, slightly narrower than this, 1.25 x as wide as high.

Material examined: Holotype male, Canada, New Brunswick, Carleton Co, Meduxnekeag River (near Belleville), 46,11354N 67,40556W, 10-15.VII.2005, Malaise trap, J. BONET, M. FORSHAGE and R. HOVMÖLLER leg. Paratypes: 1 female, 1 male same data as holotype.

This species differs from *S. rugosiceps* (KIEFFER, 1926) in having differently sculptured frons, shorter scutellar spine, more sculptured and slightly longer female metasoma, and darker body appendages. *S. substrigosus* differs from *S. punctatum* (ASHMEAD, 1893) e.g. in having head less strongly margined and shorter scutellar spine. Cf. FOUTS (1924).

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Literaturbesprechung

KAPPELER, P. 2005: Verhaltensbiologie. - Springer-Verlag, Berlin. 570 S.

Sich mit neuen Lehrbüchern auf dem "Markt" der Verhaltensbiologie einzunischen ist nicht leicht; es gibt zwar nicht besonders viele etablierte Werke, aber die sind schon sehr breit konzipiert oder decken ganz spezielle Bereiche ab (z.B. Verhaltensökologie, Verhaltensphysiologie). Im neuen Buch "Verhaltensbiologie" liegt das Hauptaugenmerk auf der evolutionären Ausrichtung und der Autor versucht, größere Zusammenhänge und Grundprinzipien in den Vordergrund zu stellen. Zunächst wird "klassisch" begonnen: was ist Verhalten, welches sind die klassischen Methoden, worin bestehen die modernen Konzepte und welches sind die evolutionären Probleme. Im 2. Kapitel geht es um "life histories", und den Erfolg der Fortpflanzung. Soviel zu den Grundlagen. Unter dem Oberbegriff "Überlebensstrategien" beschäftigen sich die folgenden Kapitel mit "Grundfunktionen und Verhalten", "Orientierung in Zeit und Raum", "Habitat- und Nahrungswahl" sowie "Prädation". Unter dem Punkt "Fortpflanzung" begegnet uns natürlich wieder die "life history", hier als sexuelle Selektion, intrasexuelle Selektion (Konkurrenz der Männchen untereinander) und intersexuelle Selektion (was die Weibchen wollen). "Elterliche Fürsorge" ist das einzige Kapitel unter dem Stichwort "Jungenaufzucht", "Sozialsysteme" finden sich unter dem Überkapitel "Soziale Evolution". Jedes Kapitel endet in einer Zusammenfassung und listet für sich abgeschlossen die zitierte Literatur auf; Abschluss bilden Sach- und Tiernamenverzeichnis.

Der Text ist sehr gut geschrieben, wobei allerdings dem Einsteiger ein Glossar die Sache evt. erleichtern würde; die Abbildungen sind modern (farbig), vielleicht etwas primaten- und Madagaskar-lastig. Schon eine echte und empfehlenswerte Alternative auf dem "Verhaltenssektor". R. GERSTMEIER

BROCKMAN, D.K., VAN SCHAIK, C.P. (eds.) 2005: Seasonality in Primates. Studies of Living and Extinct Human and Non-human Primates. - Cambridge University Press, Cambridge. 590 S.

Tiere müssen überall auf der Welt mit wechselnden Jahreszeiten zurechtkommen. Dies gilt auch für jene Arten, die in den Tropen leben und dort mit deutlichen Fluktuationen in der Verfügbarkeit ihrer bevorzugten Nahrungsquellen konfrontiert werden. Dieses Buch untersucht, wie Primaten durch saisonale Variation in ihrer Nahrungsversorgung beeinflusst werden. Von was ernähren sich Primaten, wo suchen sie danach, wie aktiv sind sie dabei, zu welcher Tageszeit sind sie aktiv und wie wirkt sich das auf ihr Sozialleben, die Zeitabstimmung bei der Reproduktion und die Zusammensetzung ihrer ökologischen Gemeinschaften aus?

Der Inhalt dieses Buches ist in sechs Teile mit insegesamt 19 Kapitel gegliedert und betrifft neben einer generellen Einführung in die Thematik jeweils die Verhältnisse der Saisonalität zur "Verhaltensökologie", "Reproduktion und sozialer Organisation", "Ökologie von Gemeinschaften" und "menschliche Evolution".

Zahlreiche international anerkannte Wissenschaftler konnten für dieses Buch gewonnen werden und so resultiert ein fantastisches Werk, welches die Saisonalität nicht nur in den erwähnten Komplexen analysiert, sondern auch einen Einblick in die Evolution der Primaten (inkl. des Menschen) liefert, der seinesgleichen zu suchen hat. Eine ebenso hochqualitative wie empfehlenswerte Studie für fortgeschrittene Studenten und Wissenschaftler in den Fachbereichen Verhalten, Anthropologie und Ökologie. R. GERSTMEIER

FORBES, S. 2005: A Natural History of Families. - Princeton University Press, Princeton. 231 S.

Warum bringen Haie, Pelikane und Hyänen ihre Geschwister um? Wieso begehen Käfer und Mäuse Infantizid? Warum sind Zwillinge und Geburtsfehler häufiger bei älteren menschlichen Müttern? Scott Forbes stellt in diesem Buch dar, was Verhaltensökologen bis heute über Familiendynamik entdeckt haben und welche Einblicke sich daraus über Biologie und Verhalten des Menschen ableiten lassen.

Folgende 13 Kapitel informieren den Leser über die Verhaltensökologie der Familie: Blame parents - The optimistic parent - Why parents play favorites - How parents play favorites - Family conflict - Selfishness unconstrained - Screening for offspring quality - Why twins? - Fatal sibling rivalry - Family harmony - Cannibalism and infanticide - Brave new worlds - Debunking the family myth.

Ausgewählte wichtige Referenzen zu den einzelnen Kapitel finden sich im Anhang. Forbes schreibt in einem genialen, sehr gut lesbaren Stil, so dass man geneigt ist, dieses Buch in einem Zug durchzulesen. Eine fachlich äußerst informative und sehr empfehlenswerte Leselektüre.

R. GERSTMEIER

SKINNER, J.D., CHIMIMBA, C.T. 2005: The Mammals of the Southern African Subregion. - Cambridge University Press, Cambridge. 3. Aufl., 812 S.

Mit ca. 3,5 kg Gewicht liegt nun die dritte Auflage des "Skinner & Smithers" vor, 43 Seiten umfangreicher und mit den 40 Farbtafeln (dezent gezeichnet und koloriert von Clare Abbott und Dick Findlay) in die Mitte des Buches eingebunden. Als neuer Koautor fungiert Christian Chimimba, Associate Professor an der University of Pretoria, der früheren Herausgeberin dieses Prestigeobjektes. Unter Berücksichtigung der aktuellen Systematik, wurde der gesamte Text revidiert, bei Bedarf erweitert und aktualisiert, wobei zahlreiche Spezialisten zu Rate gezogen wurden. Alle Verbreitungskarten wurden aktualisiert und neu gezeichnet, und auch die Farbtafeln sind teilweise neu angefertigt bzw. neu arrangiert worden.

Die Einleitung beschreibt einige Konventionen und die geographische Abgrenzung; der Inhalt des Buches erstreckt sich somit über Namibia, Botswana, Zimbabwe, Südafrika, Lesotho, Swaziland und Mozambique (südlich des Zambesi-Flusses). Insgesamt werden 354 Arten aus 152 Gattungen erwähnt. Die Einführung beinhaltet auch eine kurze Beschreibung der Biome inklusive geologischer Formationen und Niederschlagsmengen (farbige Grafiken) sowie die Definitionen mammologischer Messwerte und Kennzahlen. Der taxonomische Hauptteil beginnt mit einer kurzen Charakterisierung der jeweiligen Ordnung, Unterordnung und Familie, ein Bestimmungsschlüssel führt zu den Gattungen, ein weiterer zu den einzelnen Arten. Die Beschreibungen der einzelnen Arten sind sehr detailliert und berücksichtigen allgemeines Aussehen, Schädelmerkmale, Zahnformel, Verbreitung, Habitat, Lebensweise, Nahrung und Fortpflanzung. Detailzeichnungen, Tabellen und gelegentliche SW-Fotos ergänzen den Text. Der Anhang enthält eine Arten-Länder-Tabelle mit Bemerkungen zum Rote Liste-Status sowie ein umfangreiches Glossar. Damit bleibt dieses Buch DAS Standardwerk über die Säugetiere des südlichen Afrikas, ein Nachschlagewerk von unschätzbarem Wert - uneingeschränkt empfehlenswert.

R. GERSTMEIER

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