

New species of *Pambolus* Haliday and *Phaenocarpa* Foerster (Hymenoptera: Braconidae: Pambolinae, Alysiinae) from French Guyana, Suriname and Panama

Y. Braet & C. van Achterberg

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Zool. Med. Leiden 77 (7), 29.viii.2003: 153-179, figs 1-62.— ISSN 0024-0672.

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Key words: Braconidae; Alysiinae; Pambolinae; Hormiinae; *Pambolus*; *Phaenocarpa*; Neotropical; French Guyana; Suriname; Panama; new genus; new species; keys.

Ten new species of Braconidae (Hymenoptera) from French Guyana, Suriname and Panama are described and illustrated. Seven species of the genus *Pambolus* Haliday, 1836, (Pambolinae: *P. pappi* spec. nov., and *P. rufus* spec. nov. from French Guyana, *P. granulatus* spec. nov. from Suriname, *P. duplotae-niatus* spec. nov., *P. hemitaeniatus* spec. nov., *P. micropennis* spec. nov., and *P. microstriatus* spec. nov. from Panama) and three species of the genus *Phaenocarpa* Foerster, 1862 (Alysiinae: *P. acarinata* spec. nov. and *P. insolita* spec. nov. from French Guyana, and *P. areolata* spec. nov. from Panama). Keys to the Neotropical species of both genera are given. Some data on the distribution of other Neotropical species of the genera *Phaenocarpa*, *Idiasta* Foerster and *Gnathopleura* Wharton are added.

Introduction

French Guyana is located at the south-east of Guyana-shield, a Precambrian massif running from Venezuela through the Guyana's and the North of Brazil. The vegetation of French Guyana is related to the dense Amazonian rainforests of Brazil. Some savannas, marshy areas and mangroves exist along the coast. Until now, the entomological fauna has been hardly studied and especially the Braconidae have been neglected. Some of the new species collected during the last three years are described in this paper.

The genus *Pambolus* Haliday has been included either in the subfamily Hormiinae Foerster, 1862 s.l. (e.g., Whitfield & Wharton, 1997) or in the separate subfamily Pambolinae Marshall, 1885 (e.g., van Achterberg, 1995). We prefer to use the latter option because the first results of DNA analysis indicate that the Pambolinae are a more derived group than the group of the subfamilies Hormiinae, Lysiterminae Tobias, 1968, and Betylobraconinae Tobias, 1979 (Belshaw et al., 2000). The hosts of the species described in this paper are unknown.

For identification of the subfamilies of Braconidae, we refer to van Achterberg (1990, 1993, 1997) and Wharton et al. (1997). For the terminology used in this paper, especially for the wing venation, see van Achterberg (1988, 1994). The examined specimens are deposited in the following collections: Faculté Universitaire des Sciences Agronomiques, Gembloux, Belgium (FUSAGx) and Nationaal Natuurhistorisch Museum, Leiden, The Netherlands (RMNH). New records for a country are shown by an asterisk.

Systematic account
Pambolinae Marshall, 1885

***Pambolus* Haliday, 1836**

Notes.— A small and nearly cosmopolitan genus that is particularly diverse in the Neotropics (Whitfield & Wharton, 1997). It is characterized by the presence of a pair of propodeal spines, the apically oblique scapus, the apically strongly widened first metasomal tergite, the largely flat labrum, the presence of the postpectal carina and the lack of the malar suture. Little is known about the biology: it has been reared infrequently from beetle-infested wood, but there are some indications that Chrysomelidae may be their host (Shaw & Huddleston, 1991). The following key is partly after Papp (2000).

Key to Neotropical species of the genus *Pambolus* Haliday

1. Wings rudimentary and without distinct venation; antenna somewhat longer than body and with 20-22 segments; precoxal sulcus smooth; vertex coriaceous-rugulose; antenna yellowish, without white band; (subgenus *Pambolus* Haliday, 1836); (Argentina) *P. hebes* Papp, 1996
- Wings fully developed and with distinct venation; antenna at least one-and-a-half times as long as body and with 25 segments or more; precoxal sulcus distinctly crenulate medially; vertex largely smooth or striate or granulate, rarely rugulose; antenna with white band; (subgenus *Phaenodus* Foerster, 1862) 2
2. Antenna with a basal white band (at least third-fifth segments white) in addition to a subapical white band; area of vertex around stemmaticum sculptured; apical quarter of hind femur dark brown, distinctly contrasting with remainder of femur 3
- Antenna without a basal white band (third-fifth segments brownish-yellow or brown), but a subapical white band present; area of vertex around stemmaticum smooth or nearly so (but often faintly coriaceous and striate in *P. oblongispina*); apical quarter of hind femur usually somewhat infusate, weakly or not contrasting with remainder of femur 5
3. Vertex and mesoscutum coarsely vermiculate-rugose; occipital carina meeting hypostomal carina ventrally; subbasal band of antenna consists of 7-8 white segments (excluding scapus and pedicellus); vein 3-SR of fore wing widened basally (fig. 1); mesoscutum with pair of very coarse parallel rugae medio-posteriorly; fore wing with pale submedial band; (Panama) *P. duplotaeniatus* spec. nov.
- Vertex finely striate and mesoscutum granulate; occipital carina absent ventrally, no meeting of hypostomal carina; subbasal band of antenna consists of 3-6 white segments (excluding scapus and pedicellus); vein 3-SR of fore wing slender basally (fig. 5); mesoscutum with V-shaped carina medio-posteriorly; fore wing without pale submedial band 4
4. Subbasal band of antenna consists of about 6 white segments (excluding scapus and pedicellus); vertex coriaceous-granulate; elevated area of first metasomal tergite rather robust (fig. 7); postpectal carina comparatively strongly developed; vertex with narrow smooth depression, without median carina; 12th-14th antennal

- segments dark brown; (Suriname) *P. granulatus* spec. nov.
- Subbasal band of antenna consists of about 3 white segments (excluding scapus and pedicellus); vertex finely striate; elevated area of first tergite slender (fig. 22); postpectal carina comparatively weakly developed; 12th-14th antennal segments white; vertex with fine median carina and no depression; (Panama)
..... *P. microstriatus* spec. nov.
5. Spines of propodeum as long as basitarsus of fore leg; area of vertex around stemmaticum circularly striate; length of fore wing about 2.7 mm; mesoscutum rugose-rugulose; metasomas dark brown posteriorly; medial areola of propodeum narrow and subparallel-sided (fig. 15 in Papp, 2000); (Honduras)
..... *P. oblongispina* Papp, 2000
 - Spines of propodeum 0.4-0.8 times as long as basitarsus of fore leg; area of vertex around stemmaticum smooth, if superficially coriaceous then length of fore wing about 1.5 mm; mesoscutum more or less granulate, but rugose in *P. rufus*, which has metasoma reddish-orange posteriorly; medial areola of propodeum wider and narrowed posteriorly 6
 6. Second submarginal cell of fore wing somewhat smaller (figs 9, 14); white antennal band situated more basally, 15th or 16th-20th antennal segments white; length of fore wing 1.3-1.6 mm 7
 - Marginal cell of fore wing somewhat larger (figs 26, 36); white antennal band situated more distally, 15th-20th antennal segments brownish-yellow or dark brown; length of fore wing 2-4 mm 8
 7. Apical (16th-25th) segments of antenna white; area around stemmaticum superficially coriaceous; dark brown apex of hind femur contrasting with remainder of femur; mesoscutum distinctly granulate; ocelli medium-sized (fig. 11); Panama
..... *P. hemitaeniatus* spec. nov.
 - Apical (from 21st onward) segments of antenna dark brown, with 15th-20th segments white; area around stemmaticum smooth; apex of hind femur brownish, hardly contrasting with remainder of femur; mesoscutum superficially granulate and partly smooth; ocelli comparatively small (fig. 16); Panama
..... *P. micropennis* spec. nov.
 8. Surface of propodeum nearly smooth between carinae; second metasomal tergite often more or less weakly striate basally; metasoma more or less darkened posteriorly; in dorsal view length of eye about twice as long as temple; (Brazil; Honduras) *P. longicornis* (Enderlein, 1920)
 - Surface of propodeum between carinae coarsely reticulate-rugose (figs 24, 33); second tergite smooth basally; metasoma largely dark chestnut brown or yellowish-orange posteriorly; in dorsal view length of eye 4.0-6.8 times as long as temple 9
 9. Mesoscutum largely and distinctly transversely rugose (fig. 33); white antennal band consists of about 12 segments; metasoma largely yellowish-orange; vein r of fore wing comparatively long and slender (fig. 36); body about 4.5 mm; vein cu-a of fore wing distinctly postfurcal (fig. 36); (French Guyana) *P. rufus* spec. nov.
 - Mesoscutum mainly granulate (fig. 24); white antennal band consists of about 5 segments; metasoma dark chestnut brown; vein r of fore wing comparatively short and robust (fig. 26); length of body about 2.5 mm; vein cu-a of fore wing just postfurcal (fig. 26); (French Guyana) *P. pappi* spec. nov.

Pambolus duplotaeniatus van Achterberg, spec. nov.
(figs 1-4)

Material.— Holotype, ♀ (RMNH), "Museum Leiden, M. **Panama**, Barro Colorado Isl[and], 9°9'30"N-79°51'W, level [?], 16-22.v.1978, at light, H. Wolda". Paratype, 1 ♀ (RMNH), same data.

Holotype, ♀, length of body 3.6 mm, of fore wing 2.5 mm, of ovipositor sheath 0.6 mm.

Head.— Antenna with 31 segments, third segment about as long as fourth segment, length of third, fourth and penultimate segments 3.2, 3.1 and 2.8 times their maximum width, respectively (fig. 4); length of maxillary palp 1.3 times height of head; in dorsal view length of eyes 5.4 times temple; POL:OD:OOL = 1:1:2; in dorsal view width of head 1.8 times its maximum length; face rather flattened and clypeus weakly convex in lateral view; face densely setose, densely and obliquely rugulose; clypeus largely smooth, with some punctures and with some setae dorsally; labrum micro-sculptured and ventral margin hardly upcurved; frons flattened, coarsely transversely rugose, becoming irregular near stemmaticum; vertex coarsely vermiculate-rugose; temple smooth, but crenulate near occipital carina; malar space 1.8 times basal width of mandible; occipital carina complete, strongly developed, meeting hypostomal carina ventrally.

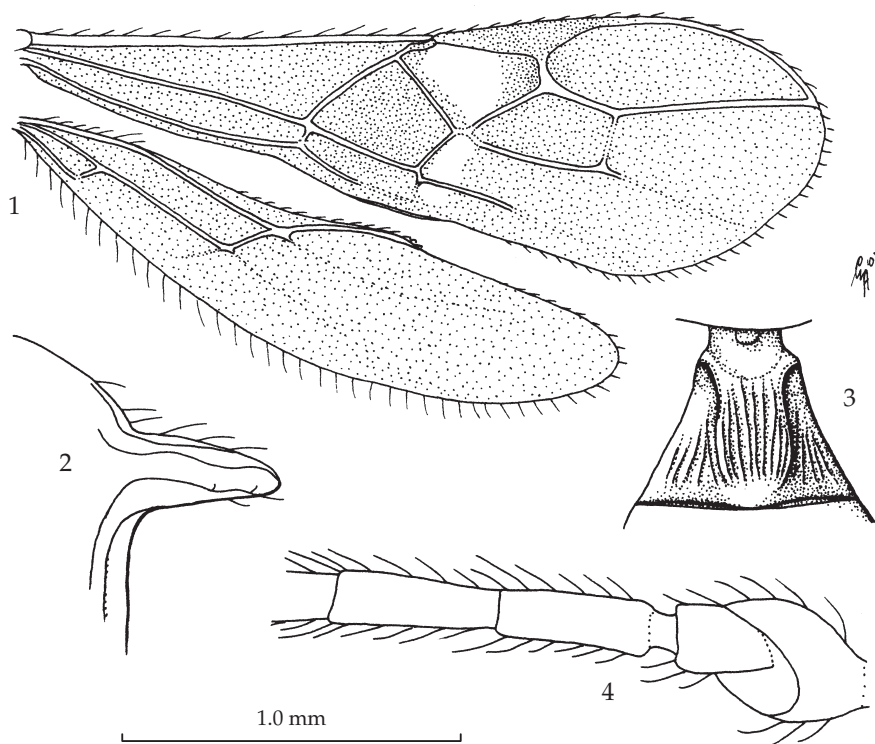
Mesosoma.— Length of mesosoma 1.4 times its maximum height; mesosoma setose; pronotum transversely and obliquely rugose, but coriaceous ventrally; propleuron convex and weakly rugulose; mesopleuron coarsely vermiculate rugose antero-dorsally, and remainder largely smooth; precoxal sulcus wide and coarsely crenulate, absent posteriorly; metapleural flange long and rather wide; metapleuron coarsely and irregularly rugose; postpectal carina strongly developed; medially metanotum with distinctly protruding carina in lateral view; mesoscutum largely coarsely vermiculate-rugose, laterally granulate; notauli wide and crenulate anteriorly; scutellum smooth but crenulate posteriorly; scutellar sulcus with five coarse and oblique carinae, 0.8 times as long as scutellum; propodeum very coarsely reticulate, with moderately differentiated areola medially, spines of propodeum robust (fig. 2), 0.8 times as long as fore basitarsus.

Wings (fig. 1).— Wings densely setose. Fore wing: marginal cell rather large; veins r and 3-SR basally widened; r:3-SR:SR1 = 5:14:34; 2-SR:2-M:r-m = 14:23:9; veins 2-SR+M and 3-M unpigmented; vein 1-SR+M straight; vein cu-a just postfurcal; first subdiscal cell open, vein CU1b partly present as pigmented trace. Hind wing: vein cu-a vertical; M+CU:1-M = 1:2.

Legs.— Hind coxa largely finely striate dorsally; femur, tibia and basitarsus of hind leg 3.7, 9.4 and 7.0 times their width, respectively; length of hind spurs 0.30 and 0.25 times hind basitarsus; hind femur distinctly granulate.

Metasoma.— Length of first tergite 0.8 times its apical width, its median area wide and coarsely longitudinally striate, lateral areas with some rugae (fig. 3); second tergite smooth; combined length of second and third tergites 1.1 times their maximum width; length of ovipositor sheath 0.23 times fore wing.

Colour.— Dark chestnut brown; mesosoma (but mesoscutum, scutellum and mesopleuron antero-dorsally dark orange-brown) and first tergite black; palpi, 1st-10th and 14th-20th antennal segments, legs (but fore and middle femora with dark brown streak, apical quarter of hind femur dark brown and tarsi pale yellowish-



Figs 1-4, *Pambolus duplotaeniatus* spec. nov., ♀, holotype. 1, wings; 2, propodeal tubercle, lateral aspect; 3, first metasomal tergite, dorsal aspect; 4, four basal segments of antenna. 1, 3: scale-line (= 1.0 ×); 2, 4: 2.3 ×.

brown) whitish or white; apex of metasoma brownish-yellow; tegulae, pterostigma (but basally pale yellowish) and parastigma brownish; 11th-13th and 21st-31st antennal segments dark brown; frons and orbita dark orange brown; face dorsally and spines of propodeum yellowish-brown; wing membrane distinctly infusate, but with pale band below base of pterostigma (fig. 1).

Distribution.— Panama.

Variation.— The paratype is very similar to the holotype: it has 29 antennal segments with 1st-9th and 14th-21st segments white and remainder of antenna dark brown; first tergite largely smooth; pronotum largely dark orange brown; length of fore wing 2.1 mm and length of ovipositor sheath 0.24 times fore wing.

Etymology.— Named "*duplotaeniatus*" because of the double white bands of the antenna.

Pambolus granulatus van Achterberg, spec. nov.
(figs 5-8)

Material.— Holotype, ♀ (RMNH), "Suriname, Kabo Forest Res[erve], line 391, Mal. trap, 22-25.viii.1978, E. Neering, RMNH'79".

Holotype, ♀, length of body 2.6 mm, of fore wing 1.9 mm, of ovipositor sheath 0.45 mm.

Head.— Remaining antennal segments 24, third segment 1.1 times as long as fourth segment, length of third and fourth segments 4.0 and 3.8 times their maximum width, respectively (fig. 8); length of maxillary palp 1.4 times height of head; in dorsal view length of eyes 8.5 times temple; POL:OD:OOL = 3:3:5; in dorsal view width of head 1.9 times its maximum height; face flattened in lateral view; face moderately setose, smooth laterally and medially but submedially transversely rugulose; clypeus rather flat, smooth and with some long setae dorsally; labrum micro-sculptured and ventral margin upcurved; frons flattened, finely rugulose-coriaceous; vertex coriaceous-granulate, medio-posteriorly with shallow depression and some fine longitudinal rugae; temple smooth, also near occipital carina; malar space 2.2 times basal width of mandible; occipital carina present but absent ventrally, not meeting hypostomal carina.

Mesosoma.— Length of mesosoma 1.5 times its maximum height; mesosoma rather sparsely setose; pronotum crenulate anteriorly, medially and posteriorly largely obliquely rugose and remainder largely smooth; propleuron convex and largely smooth; mesopleuron largely smooth but antero-dorsally coarsely rugose; precoxal sulcus wide and coarsely crenulate, but absent posteriorly; postpectal carina rather strongly developed, somewhat less than prepectal carina; medially metanotum with weakly protruding carina in lateral view; metapleural flange rather long and wide; metapleuron coarsely and irregularly rugose; mesoscutum shiny and granulate; notauli wide and mainly smooth, at inner side bordered by large V-shaped carina posteriorly; scutellum smooth, posteriorly with short median carina; scutellar sulcus with four carinae, 0.6 times as long as scutellum; medial areola of propodeum medium-sized, propodeum smooth anteriorly, remainder rugose and spines of propodeum rather slender (fig. 6), 0.5 times as long as fore basitarsus.

Wings (fig. 5).— Wings densely setose. Fore wing: vein r and base of vein 3-SR more or less widened; marginal cell rather large (fig. 5); r:3-SR:SR1 = 5:14:34; 2-SR:2-M:r-m = 13:22:9; veins 2-SR+M and 3-M unpigmented; vein 1-SR+M straight; vein cu-a just postfurcal; first subdiscal cell open, vein CU1b largely absent. Hind wing: vein cu-a vertical; M+CU:1-M = 5:11.

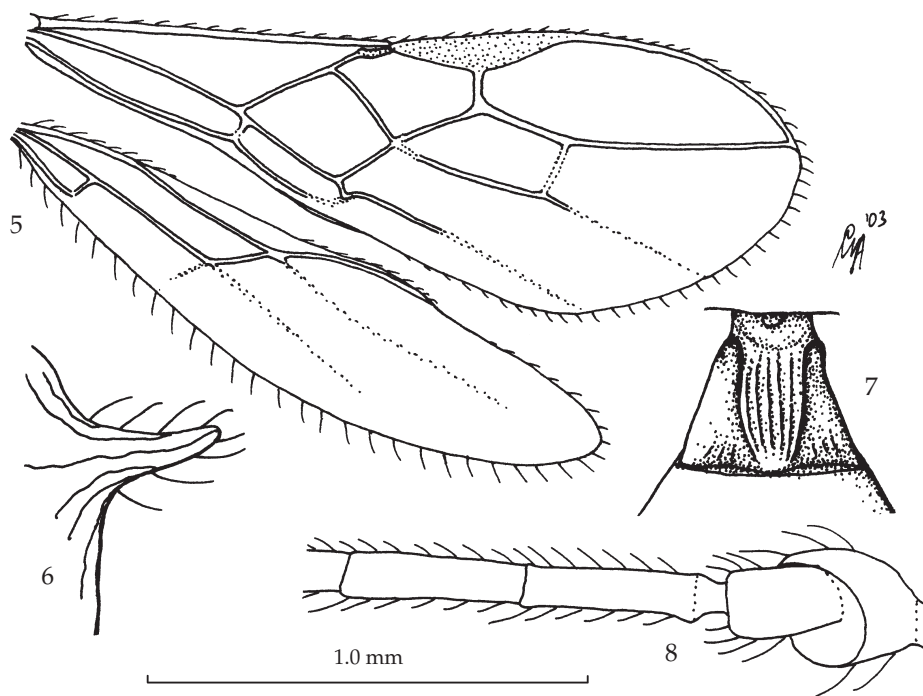
Legs.— Hind coxa superficially rugose baso-dorsally; femur, tibia and basitarsus of hind leg 4.2, 9.8 and 7.0 times their width, respectively; length of hind spurs 0.25 and 0.30 times hind basitarsus; hind femur distinctly granulate.

Metasoma.— Length of first tergite 0.9 times its apical width, its surface largely smooth, but median area moderately wide and distinctly longitudinally striate (fig. 7); second tergite smooth; combined length of second and third tergites equal to their maximum width; length of ovipositor sheath 0.24 times fore wing.

Colour.— Chestnut brown; palpi, 1st-8th and 15th-19th (also partly 20th) antennal segments, coxae, trochanters and trochantelli, fore and middle femora basally, and hind femur (except dark brown apex) whitish or white; head dorsally, mesopleuron medially, metapleuron and propodeum dark chestnut brown; apical half of metasoma yellowish-brown; tegulae rather dark brown; pterostigma and parastigma and remainder of legs brown; 9th-14th and at least 21st-24th antennal segments and apical quarter of hind femur dark brown.

Distribution.— Suriname.

Etymology.— Named "*granulatus*" after the coriaceous-granulate vertex.



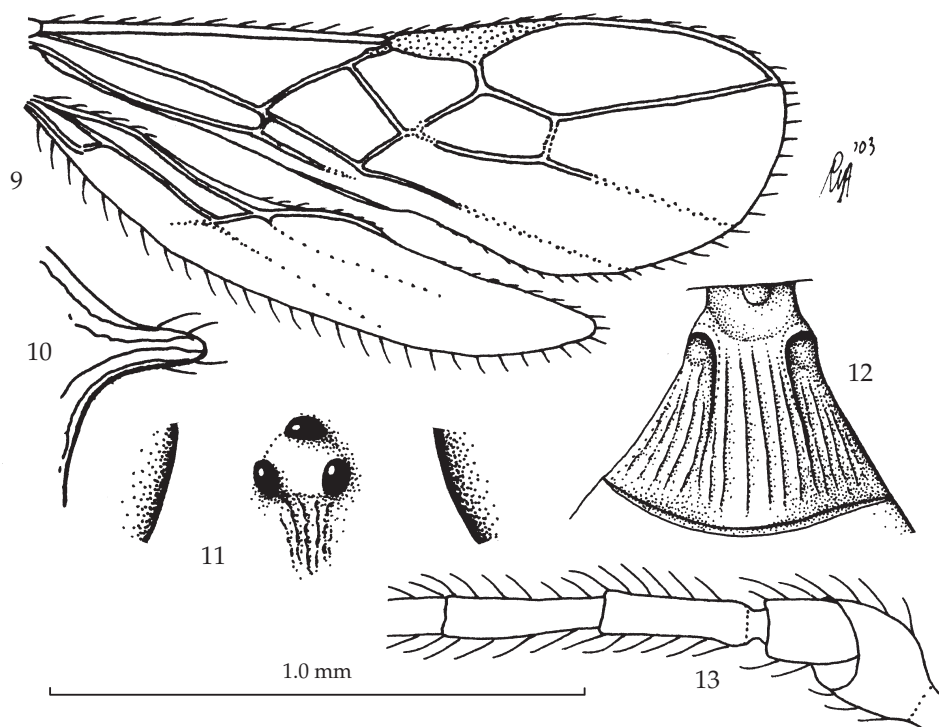
Figs 5-8, *Pambolus granulatus* spec. nov., ♀, holotype. 5, wings; 6, propodeal tubercle, lateral aspect; 7, first metasomal tergite, dorsal aspect; 8, four basal segments of antenna. 5, 7: scale-line (= 1.0 ×); 6: 2.3 ×; 8: 2.0 ×.

Pambolus hemitaeniatus van Achterberg, spec. nov.
(figs 9-13)

Material.— Holotype, ♀ (RMNH), "Museum Leiden, M. **Panama**, Barro Colorado Isl[and], 9°9'30"N-79°51'W, level I, 6-12.vi.1978, at light, H. Wolda".

Holotype, ♀, length of body 1.5 mm, of fore wing 1.4 mm, of ovipositor sheath 0.22 mm.

Head.— Antenna with 25 segments, third segment about as long as fourth segment, length of third, fourth and penultimate segments 4.1, 3.9 and 2.7 times their maximum width, respectively (fig. 13); length of maxillary palp 1.2 times height of head; in dorsal view length of eyes 6.6 times temple; POL:OD:OOL = 3:2:5 (fig. 11); in dorsal view width of head 1.7 times its maximum length; face and clypeus smooth, and rather flattened; face moderately setose, medially indistinctly coriaceous; labrum mainly smooth and ventral margin hardly upcurved; frons flattened, smooth with some micro-sculpture medially; vertex largely smooth, but partly (especially near stemmaticum) superficially coriaceous-rugulose; temple smooth, also near occipital carina; malar space 1.8 times basal width of mandible; occipital carina weakly developed dorsally and laterally but absent ventrally, not meeting hypostomal carina.



Figs 9-13, *Pambolus hemitaeniatus* spec. nov., ♀, holotype. 9, wings; 10, propodeal tubercle, lateral aspect; 11, detail of ocelli and stemmaticum, dorsal aspect; 12, first metasomal tergite, dorsal aspect; 13, four basal segments of antenna. 9: scale-line (= 1.0 ×); 10: 2.3 ×; 11, 13: 1.9 ×; 12: 1.5 ×.

Mesosoma.— Length of mesosoma 1.4 times its maximum height; mesosoma moderately setose; pronotum coarsely crenulate-rugose, but antero-ventrally coriaceous; propleuron convex and largely smooth; mesopleuron largely smooth except some rugae antero-dorsally; precoxal sulcus wide and coarsely crenulate, absent posteriorly; postpectal carina distinctly developed, somewhat weaker developed than prepectal carina; dorsally metanotum hardly protruding in lateral view; metapleural flange medium-sized and rather wide; metapleuron coarsely and irregularly reticulate; mesoscutum shiny and mainly granulate; notauli wide and crenulate anteriorly, narrow and largely smooth posteriorly, with strong V-shaped carina; scutellum smooth, posteriorly indistinctly crenulate; scutellar sulcus with three carinae, 0.6 times as long as scutellum; propodeum between carinae smooth, with distinct medial areola and (except anteriorly) reticulate, spine of propodeum moderately robust (fig. 10), 0.6 times as long as fore basitarsus.

Wings (fig. 9).— Wings completely setose. Fore wing: vein r somewhat widened; base of vein 3-SR slender; marginal and second submarginal cell comparatively small (fig. 9); $r:3-SR:SR1 = 2:4:15$; $2-SR:2-M:r-m = 11:17:6$; veins 2-SR+M and 3-M unpigmented; vein 1-SR+M straight; vein cu-a just postfurcal, minute; first subdiscal cell open, vein CU1b largely absent. Hind wing: vein cu-a short, vertical; $M+CU:1-M = 9:20$.

Legs.— Hind coxa smooth except some rugulae baso-dorsally; femur, tibia and

basitarsus of hind leg 4.0, 9.0 and 5.3 times their width, respectively; length of hind spurs 0.25 and 0.30 times hind basitarsus; hind femur coarctate.

Metasoma.— Length of first tergite 0.8 times its apical width, its median area wide and longitudinally striate, lateral parts with a few weak striae (fig. 12); second tergite smooth; combined length of second and third tergites 0.7 times their maximum width; length of ovipositor sheath 0.16 times fore wing.

Colour.— Dark chestnut brown; metasoma brown (including first tergite), but sublaterally darkened and apex narrowly ivory; pronotum dorsally and mesoscutum yellowish-brown; palpi, 16th–25th antennal segments, humeral plate, coxae, trochanters and trochantelli, femora (but apically somewhat darkened) and hind tibia basally, ivory or white; scapus, pedicellus, pterostigma, parastigma and remainder of legs rather pale brown; 4th–15th antennal segments dark brown; tegula dark brown; wing membrane subhyaline.

Distribution.— Panama.

Etymology.— Named "*hemitaeniatus*" because about half of its antenna consists of a white band.

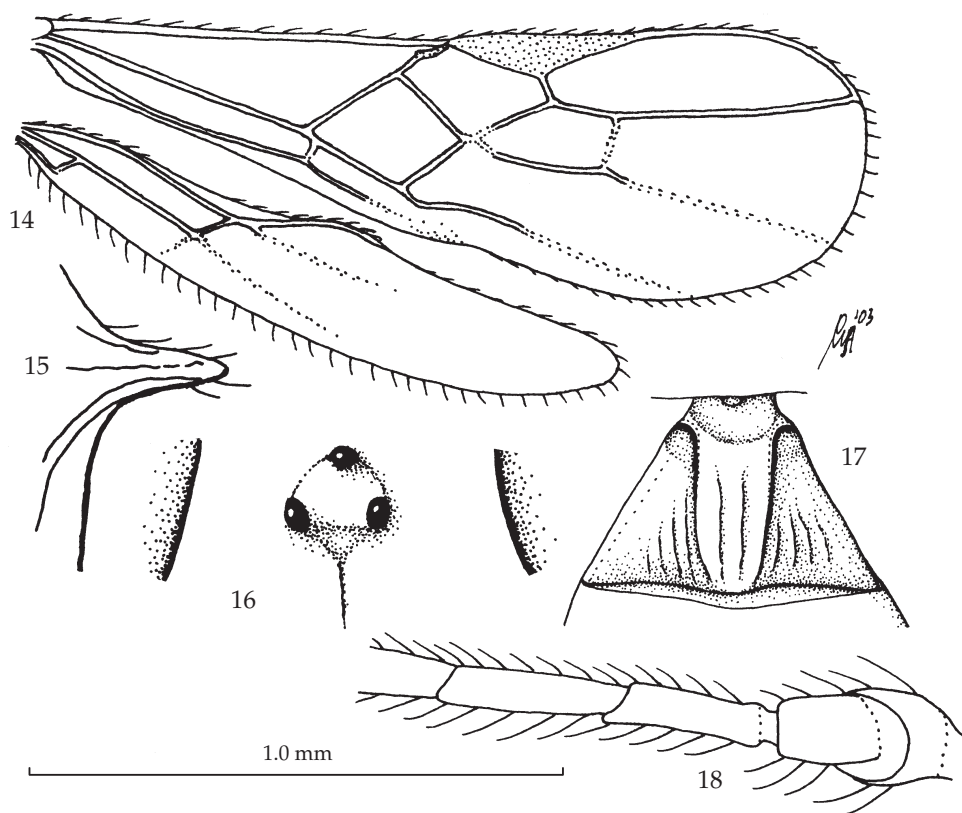
Pambolus micropennis van Achterberg, spec. nov.
(figs 14–18)

Material.— Holotype, ♀ (RMNH), "Museum Leiden, M. Panama, Barro Colorado Isl[and], 9°9'30"N-79°51'W, level [?], 29.viii-4.ix.1978, at light, H. Wolda".

Holotype, ♀, length of body 1.8 mm, of fore wing 1.6 mm, of ovipositor sheath 0.34 mm.

Head.— Remaining antennal segments 22, third segment as long as fourth segment, length of third and fourth segments 3.7 times their maximum width, respectively (fig. 14); length of maxillary palp 1.2 times height of head; in dorsal view length of eyes 3.4 times temple; POL:OD:OOL = 2:1:3 (fig. 16); in dorsal view width of head twice its maximum length; face and clypeus smooth and rather flat; face rather sparsely setose; clypeus dorsally with some setae; labrum micro-sculptured and ventral margin upcurved; frons slightly concave, smooth; vertex smooth, medio-posteriorly with weak median ruga; temple smooth, also near occipital carina; malar space 2.1 times basal width of mandible; occipital carina present dorsally and laterally but absent ventrally, not meeting hypostomal carina.

Mesosoma.— Length of mesosoma 1.3 times its maximum height; mesosoma rather sparsely setose; pronotum coarsely crenulate, but ventrally rugulose; propleuron convex and largely smooth; mesopleuron largely smooth antero-dorsally coarsely reticulate-rugose; precoxal sulcus wide and medially coarsely crenulate, absent posteriorly; postpectal carina distinctly developed, somewhat weaker developed than prepectal carina; dorsally metanotum hardly protruding; metapleural flange medium-sized and rather wide; metapleuron coarsely reticulate; mesoscutum strongly shiny and partly superficially granulate; notauli wide and crenulate anteriorly, shallow and smooth posteriorly, with a strong V-shaped carina, enclosing a somewhat depressed area; scutellum smooth, posteriorly distinctly crenulate; scutellar sulcus with five carinae, 0.7 times as long as scutellum; propodeum smooth anteriorly, remainder coarsely



Figs 14-18, *Pambolus micropennis* spec. nov., ♀, holotype. 14, wings; 15, propodeal tubercle, lateral aspect; 16, detail of ocelli and stemmaticum, dorsal aspect; 17, first metasomal tergite, dorsal aspect; 18, four basal segments of antenna. 14: scale-line (= 1.0 ×); 15: 2.3 ×; 16, 18: 1.9 ×; 17: 1.5 ×.

reticulate, with wide and strong areola medially, spine of propodeum rather slender (fig. 15), 0.4 times as long as fore basitarsus.

Wings (fig. 14).— Wings completely setose. Fore wing: marginal cell rather small; vein r slightly widened and vein 3-SR slender basally (fig. 14); $r:3\text{-SR}:SR1 = 5:11:36$; $2\text{-SR}:2\text{-M}:r\text{-m} = 10:15:6$; veins 2-SR+M and 3-M unpigmented; vein 1-SR+M straight; vein cu-a just postfurcal, minute; first subdiscal cell open, vein CU1b absent. Hind wing: vein cu-a vertical, short; $M+CU:1\text{-M} = 3:7$.

Legs.— Hind coxa largely smooth, with some rugae baso-dorsally; femur, tibia and basitarsus of hind leg 3.3, 8.4 and 5.3 times their width, respectively; length of hind spurs 0.25 and 0.30 times hind basitarsus; hind femur rugulose-coriaceous.

Metasoma.— Length of first tergite 0.7 times its apical width, its median area rather narrow and longitudinally striate, its lateral areas wide and distinctly striate (fig. 17); second tergite smooth; combined length of second and third tergites equal to their maximum width; length of ovipositor sheath 0.22 times fore wing.

Colour.— Dark chestnut brown or blackish; scapus and pedicellus ivory; 3rd-6th antennal segments brownish-yellow, 7th-14th and at least 21st-22nd antennal segments

more or less dark brown; 15th-20th antennal segments white; face largely, clypeus and metasoma brown; palpi, fore coxa, trochanter and trochantellus whitish; apical third of hind femur somewhat infusate, remainder of legs and tegulae brownish-yellow; pterostigma, parastigma and veins pale brown; wing membrane subhyaline.

Distribution.— Panama.

Etymology.— Named "*micropennis*" because of the small wings.

Pambolus microstriatus van Achterberg, spec. nov.
(figs 19-22)

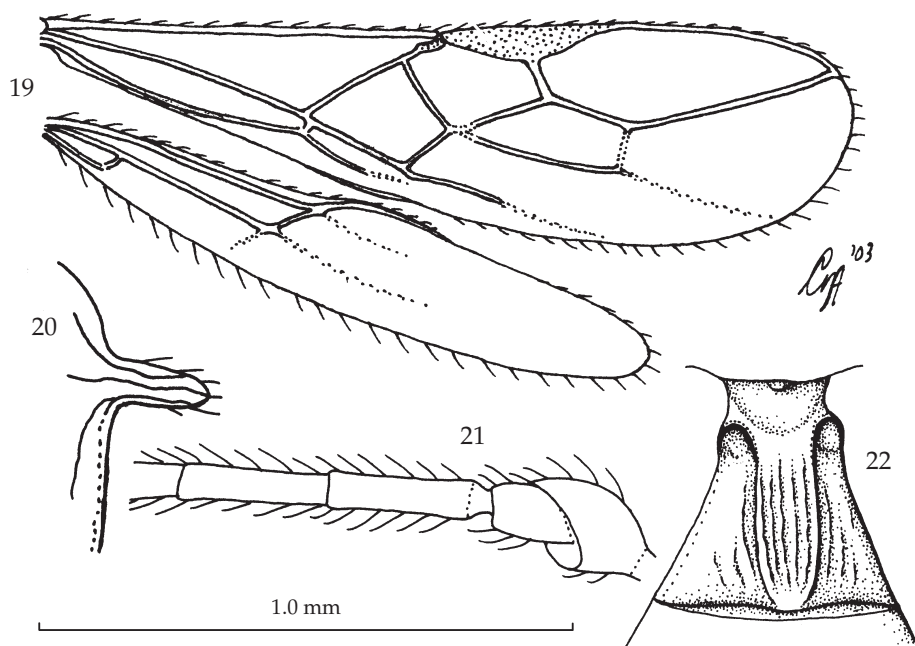
Material.— Holotype, ♀ (RMNH), "Museum Leiden, M. **Panama**, Barro Colorado Isl[and], 9°9'30"N-79°51'W, level [?], 29.viii-4.ix.1978, at light, H. Wolda".

Holotype, ♀, length of body 1.8 mm, of fore wing 1.6 mm, of ovipositor sheath 0.3 mm.

Head.— Remaining antennal segments 16, third segment about as long as fourth segment, length of third and fourth segments 4.2 and 4.0 times their maximum width, respectively (fig. 21); length of maxillary palp 1.4 times height of head; in dorsal view length of eyes 4.8 times temple; POL:OD:OOL = 5:5:9; in dorsal view width of head 1.6 times its maximum length; face flattened in lateral view, sparsely setose and mainly coriaceous-rugulose; clypeus smooth, but dorsally superficially rugulose, slightly convex dorsally and with some setae; labrum micro-sculptured and ventral margin hardly upcurved; frons flat, smooth anteriorly, and obliquely striate posteriorly; vertex (including area near stemmaticum) finely striate, with weak medio-longitudinal carina medio-posteriorly; temple smooth, also near occipital carina; malar space 1.6 times basal width of mandible; occipital carina present dorsally and laterally but absent ventrally, not meeting hypostomal carina.

Mesosoma.— Length of mesosoma 1.4 times its maximum height; mesosoma sparsely setose; pronotum crenulate anteriorly, obliquely striate posteriorly and coriaceous ventrally; propleuron convex and largely smooth; mesopleuron largely smooth but rugose antero-dorsally; precoxal sulcus wide and distinctly crenulate, absent posteriorly; postpectal carina comparatively weakly developed, much weaker than prepectal carina; dorso-medially metanotum rather weakly protruding; metapleural flange rather long and narrow; metapleuron with coarse and irregular rugae; meso-scutum rather mat and distinctly granulate; notauli wide and crenulate anteriorly, narrow and largely smooth and with V-shaped carina posteriorly; scutellum superficially granulate, posteriorly hardly crenulate; scutellar sulcus with five vertical carinae, half as long as scutellum; propodeum mainly smooth anteriorly, medial areola distinct, remainder mainly reticulate, spine of propodeum medium-sized (fig. 20), 0.6 times as long as fore basitarsus.

Wings (fig. 19).— Wings completely setose. Fore wing: marginal and second submarginal cells medium-sized (fig. 19); vein r widened and vein 3-SR slender basally (fig. 19); r:3-SR:SR1 = 5:13:32; 2-SR:2-M:r-m = 12:22:6; veins 2-SR+M and 3-M unpigmented; vein 1-SR+M straight; vein cu-a distinctly postfurcal, short; first subdiscal cell open, vein CU1b largely absent. Hind wing: vein cu-a somewhat reclivous, short; M+CU:1-M = 9:20.



Figs 19-22, *Pambolus microstriatus* spec. nov., ♀, holotype. 19, wings; 20, propodeal tubercle, lateral aspect; 21, four basal segments of antenna; 22, first metasomal tergite, dorsal aspect. 19: scale-line (= 1.0 ×); 20: 2.3 ×; 21: 1.7 ×; 22: 1.5 ×.

Legs.— Hind coxa largely smooth; femur, tibia and basitarsus of hind leg 4.1, 10.4 and 6.3 times their width, respectively; length of hind spurs 0.25 and 0.35 times hind basitarsus; hind femur distinctly coriaceous.

Metasoma.— Length of first tergite 0.8 times its apical width, its median area comparatively slender and longitudinally striate (fig. 22), laterally smooth; second tergite smooth; combined length of second and third tergites 1.2 times their maximum width; length of ovipositor sheath 0.17 times fore wing.

Colour.— Dark chestnut brown; mesoscutum, mesopleuron antero-dorsally and head largely orange-brown; palpi, 3rd-5th and at least 12th-16th antennal segments, basally femora (but apical third dark brown), coxae, trochanters and trochantelli whitish or white; scapus, pedicellus, hind tibia and tarsus brownish-yellow; streak on fore and middle femora rather dark brown; pterostigma, parastigma, veins, remainder of legs and apex of metasoma pale brownish-yellow; 6th-11th antennal segments dark brown; wing membrane slightly infuscate.

Distribution.— Panama.

Etymology.— Named "*microstriatus*" because of the fine striae on the vertex.

Pambolus pappi spec. nov.
(figs 23-30)

Material.— Holotype, ♀ (FUSAGx), "Guyane française, Montagnes de Kaw, Relais Patawa, vi.2000, Malaise trap, AEI guyane - J. Cerdá legs". Paratype, 1 ♀ (RMNH), same data but ii.1999.

Holotype, ♀, length of body 2.5 mm, of fore wing 2.2 mm, of ovipositor sheath 0.45 mm.

Head (figs 23, 24).— Remaining antennal segments 27, third segment as long as fourth segment, length of third and fourth segments 4.7 times their maximum width, respectively (fig. 30); length of maxillary palp 1.5 times height of head; in dorsal view length of eyes 4.0 times temple; POL:OD:OOL = 9:4:16; in dorsal view width of head 1.5 times its maximum height; face and clypeus flattened in lateral view; face densely setose, finely punctate; clypeus smooth and with some setae; labrum micro-sculptured and ventral margin upcurved; frons flattened, smooth with some wrinkles medially; vertex near stemmaticum superficially coriaceous, posteriorly largely smooth and with some longitudinal rugulae medially; temple smooth; malar space 2.5 times basal width of mandible; occipital carina present but absent ventrally, not meeting hypostomal carina.

Mesosoma (fig. 24).— Length of mesosoma 1.4 times its maximum height; mesosoma setose and coarsely sculptured; pronotum transversely rugose, laterally rugose, coriaceous near propleuron; propleuron convex and weakly coriaceous; mesopleuron largely smooth, but irregularly rugose antero-dorsally; precoxal sulcus large and coarsely crenulate, absent posteriorly; medially metanotum with protruding carina in lateral view; metapleural flange long and narrow; metapleuron with coarse and irregular rugae; mesoscutum shiny and more or less granulate; notauli wide and crenulate; scutellum smooth posteriorly and punctate anteriorly; scutellar sulcus with five carinae, half as long as scutellum; propodeum areolate dorsally and laterally, coriaceous anteriorly, with transverse rugae in areola, spine of propodeum rather slender (fig. 28), 0.6 times as long as fore basitarsus.

Wings (fig. 26).— Wings completely setose. Fore wing: $r:3\text{-}SR:SR1 = 3:10:31$; $2\text{-}SR:2\text{-}M:r\text{-}m = 11:18:8$; veins $2\text{-}SR+M$ and $3\text{-}M$ present; vein $1\text{-}SR+M$ weakly sinuate; vein cu-a just postfurcal; first subdiscal cell open, vein CU1b absent. Hind wing: vein cu-a present; $M+CU:1\text{-}M = 7:20$.

Legs (figs 25, 27).— Hind coxa smooth; femur, tibia and basitarsus of hind leg 3.7, 9.0 and 6.6 times their width, respectively; length of hind spurs 0.15 and 0.25 times hind basitarsus.

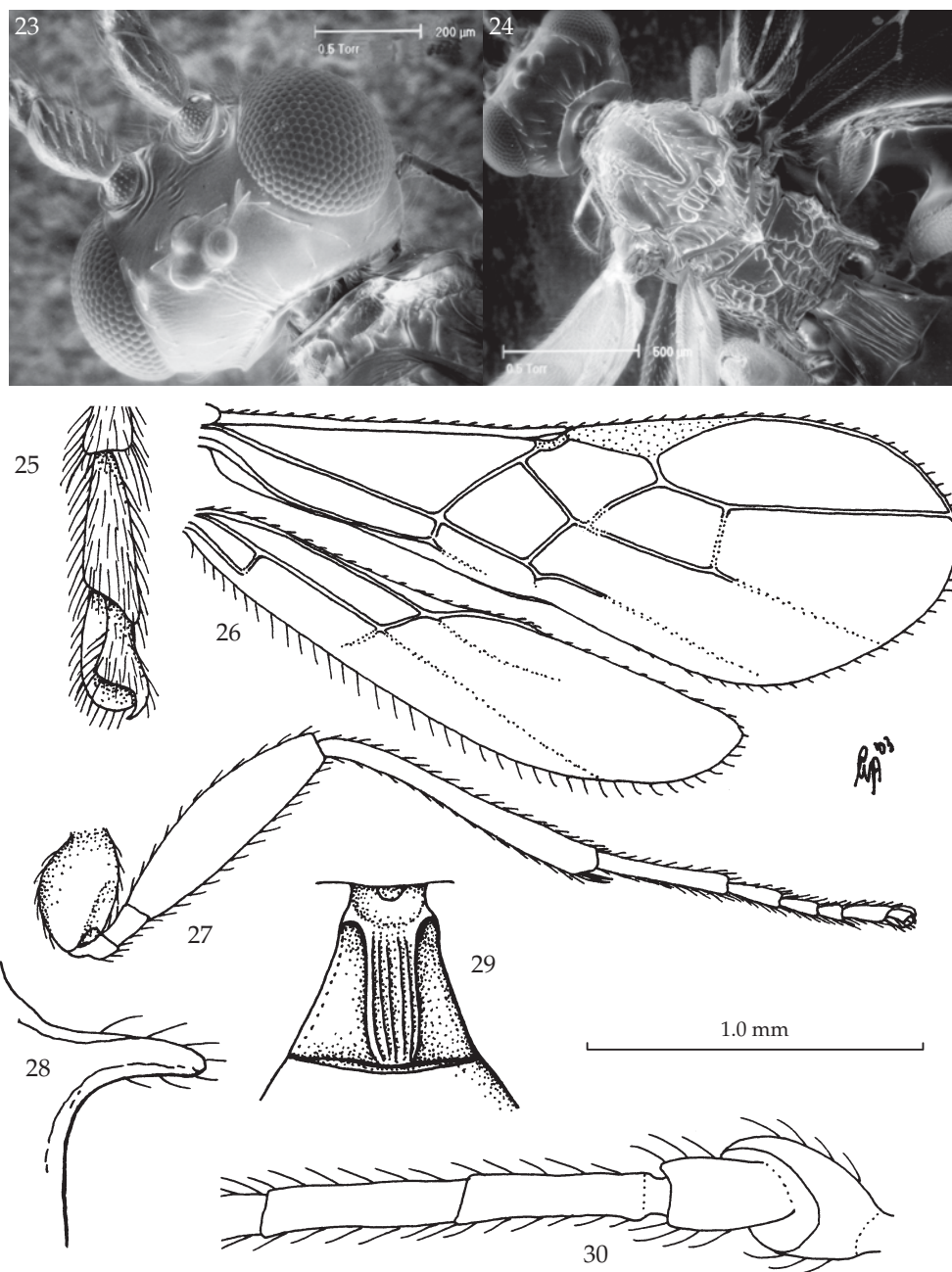
Metasoma.— Length of first tergite 0.6 times its apical width, its surface shiny, with median area longitudinally striate (fig. 29); second and following tergites smooth; combined length of second and third tergites subequal to their maximum width; length of ovipositor sheath 0.21 times fore wing.

Colour.— Dark chestnut brown; pronotum, mesoscutum and apical half of metasoma more or less darkened yellowish-brown; remainder of mesosoma and first tergite rather dark brown or blackish; palpi, 22nd–26th antennal segments, ventrally femora (but apically somewhat darkened), coxae, trochanters and trochantelli whitish or white; scapus, pedicellus, tegulae, pterostigma and parastigma and remainder of legs pale yellowish or yellow; apex of antenna rather darkened.

Distribution.— French Guyana.

Variation.— The paratype has 33 antennal segments with 23rd–27th segments white; antenna (except for both basal segments and the white band) more or less dark brown; apex of hind femur distinctly infuscate.

Etymology.— Named in honour of Dr J. Papp (Budapest) for his extensive work on Braconidae, including the genus *Pambolus*.



Figs 23-30, *Pambolus pappi* spec. nov., ♀, holotype. 23, head and pronotum, dorsal aspect; 24, mesosoma and first metasomal tergite, dorsal aspect; 25, outer hind tarsal claw; 26, wings; 27, hind leg; 28, propodeal tubercle, lateral aspect; 29, first metasomal tergite, dorsal aspect; 30, four basal segments of antenna. 26, 27: scale-line (= 1.0 ×); 25, 28: 3.0 ×; 29: 1.4 ×; 30: 2.6 ×.

Pambolus rufus spec. nov.
(figs 31-39)

Material.— Holotype, ♀ (FUSAGx), “Guyane française, Montagnes de Kaw, Relais Patawa, iv.2000, Malaise trap, AEI guyane - J. Cerda legs”.

Holotype, ♀, length of body 4.5 mm, of fore wing 3.4 mm, of ovipositor sheath 0.85 mm.

Head (figs 31, 32).— Antenna incomplete, remaining 44 segments, length of third segment 1.3 times as long as fourth segment, length of third and fourth segments 5 and 4 times their maximum width, respectively (fig. 39); in dorsal view length of eyes 6.8 times temple; POL:OD:OOL = 4:4:9; in dorsal view width of head twice its maximum height; frons flattened, smooth with some wrinkles medially; vertex near stemmaticum superficially coriaceous, posteriorly with some longitudinal rugulae medially; malar space 2.3 times basal width of mandible.

Mesosoma (fig. 33).— Length of mesosoma 1.3 times its maximum height; mesopleuron coarsely vermiculate-rugose, but smooth near precoxal sulcus; precoxal sulcus wide and coarsely crenulate, but posteriorly absent; metapleural flange long and narrow; metapleuron coarsely reticulate; mesoscutum largely distinctly transversely rugose; scutellar sulcus with five carinae, 0.6 times as long as scutellum; propodeum rather smooth anteriorly, medially distinctly areolate and areolae transversely rugose, spine of propodeum rather slender (fig. 37), 0.6 times as long as fore basitarsus.

Wings (fig. 36).— Wings completely setose. Fore wing: vein r and pterostigma comparatively slender (fig. 36); r:3-SR:SR1 = 5:10:36; 2-SR:2-M:r-m = 13:16:8; vein 2-SR curved; veins 2-SR+M and 3-M unpigmented; vein 1-SR+M straight; vein cu-a distinctly postfurcal; first subdiscal cell open, vein CU1b absent except for a unpigmented trace. Hind wing: vein cu-a vertical; M+CU:1-M = 1:2.

Legs (fig. 34, 35).— Hind coxa largely smooth; femur, tibia and basitarsus of hind leg 3.9, 11.8 and 9.0 times their width, respectively; length of hind spurs 0.2 and 0.3 times hind basitarsus; hind femur superficially coriaceous.

Metasoma.— Length of first tergite 0.8 times its apical width, its surface shiny, with a median raised area longitudinally striate (fig. 38); following tergites smooth; second metasomal suture weakly present; length of ovipositor sheath 0.19 times fore wing.

Colour.— Dark chestnut brown; palpi, coxae, trochanters, trochantelli, bases of femora, base of mandible and 31st-43rd antennal segments whitish; basal half of antenna pale yellowish-brown, but part near pale band dark brown; vertex brownish-yellow; pterostigma pale yellowish, pronotum, mesoscutum and epipleura of first-third metasomal tergites dark reddish-brown; remaining tergites yellowish-orange; wing membrane slightly infusate; veins mainly brownish.

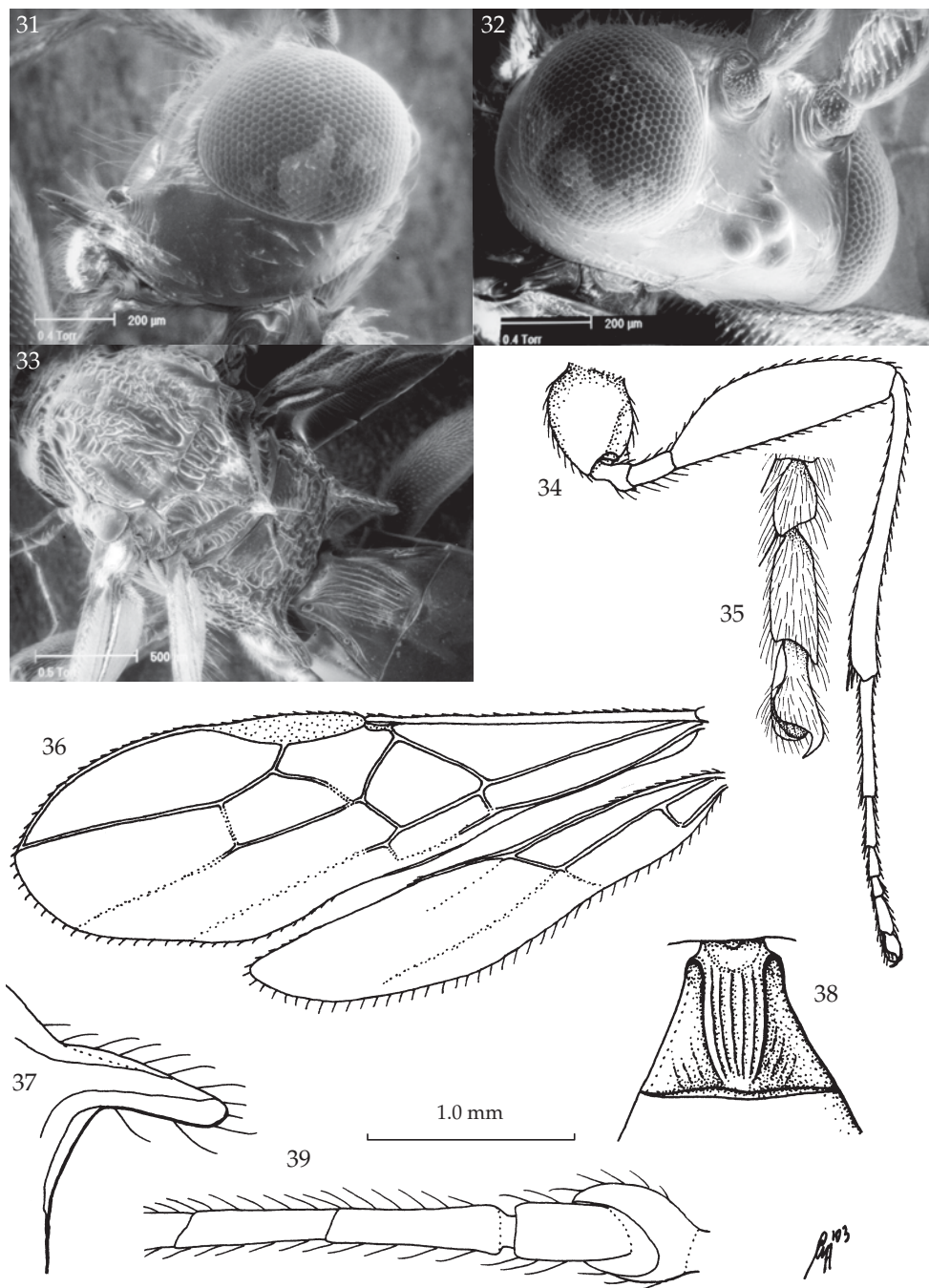
Distribution.— French Guyana.

Etymology.— Named “*rufus*” because of the colour of the body.

Subfamily Alysiinae Leach, 1815

***Phaenocarpa* Foerster, 1862**

Notes.— Large cosmopolitan genus, which is most diverse in the Holarctic region.



Figs 31-39, *Pambolus rufus* spec. nov., ♀, holotype. 31, head, lateral aspect; 32, head, latero-dorsal aspect; 33, mesosoma and first metasomal tergite, dorsal aspect; 34, hind leg; 35, outer hind tarsal claw; 36, wings; 37, propodeal tubercle, lateral aspect; 38, first metasomal tergite, dorsal aspect; 39, four basal segments of antenna. 34, 36: scale-line (= 1.0 ×); 35: 2.9 ×; 37: 4.1 ×; 38: 1.3 ×; 39: 2.4 ×.

members have been reared from nine different families of cyclorrhaphous Diptera, most frequently from Anthomyiidae and Scathophagidae and often associated with decaying organic matter (e.g., dung or fungi; Wharton, 1997). The following key is partly after Trostle et al. (1999).

Key to Neotropical species of the genus *Phaenocarpa* Foerster

1. Fourth antennal segment 1.4-1.7 times as long as third segment (figs 48, 54); 18th antennal segment often white 2
 - Fourth antennal segment at most 1.1 times as long as third segment (fig. 62); 18th antennal segment dark brown or brown 8
2. Second submarginal cell of fore wing short, with vein 3-SR about as long as vein 2-SR or slightly shorter 3
 - Second submarginal cell of fore wing distinctly longer, with vein 3-SR at least 1.2 times longer than vein 2-SR (figs 42, 49) 4
3. Notauli distinct posteriorly; third tooth of mandible ends about at level of apex of first tooth; mesoscutum black; precoxal sulcus impressed anteriorly; (Peru) *P. coxalis* Szépligeti, 1904
 - Notauli absent posteriorly, not reaching medio-posterior pit of mesoscutum; third tooth of mandible extending distinctly distad of level of apex of first tooth; mesoscutum mainly dark brown and near notauli yellowish; precoxal sulcus absent anteriorly; (Mexico) *P. anomala* Wharton, 1994
4. Mandible with a deep cleft between first and second teeth; vein 2-SR+M of fore wing distinctly longer than half length of vein m-cu; (Colombia; Venezuela, *French Guyana) *P. pericarpa* Wharton & Carrejo, 1999
 - First and second teeth of mandible connected by a broad, undulant flange, with out a deep cleft (figs 44, 51); vein 2-SR+M of fore wing short or absent, distinctly shorter than half length of vein m-cu 5
5. Propodeum without a submedial transverse carina (figs 40, 41); second metasomal tergite yellowish-brown (♀) or brown (♂); clypeus oval, strongly protruding (fig. 45); [14th-17th antennal segments dark brown; and 18th-23rd segments white; head comparatively robust (fig. 47)]; (*French Guyana) *P. acarinata* spec. nov.
 - Propodeum with a submedial transverse carina (cf. fig. 56); second tergite dark brown or black; shape of clypeus variable 6
6. Clypeus longer than wide, strongly protruding; first metasomal tergite dark brown and comparatively slender, about 1.5 times longer than its apical width; propodeal areola weakly developed; (Costa Rica; *French Guyana) *P. heynei* Papp, 1969
 - Clypeus more transverse, moderately protruding (fig. 52); first tergite brownish-yellow or orange-yellow and comparatively robust, about 1.2 times longer than its apical width; propodeal areola variable 7
7. Propodeal areola distinctly developed; fourth antennal segment about 1.7 times third segment and slender (fig. 54); exerted ovipositor about 2.5 times as long as mesosoma; 14th-18th antennal segments white; (*Panama) ... *P. areolata* spec. nov.
 - Propodeal areola obsolescent; fourth antennal segment about 1.5 times third seg-

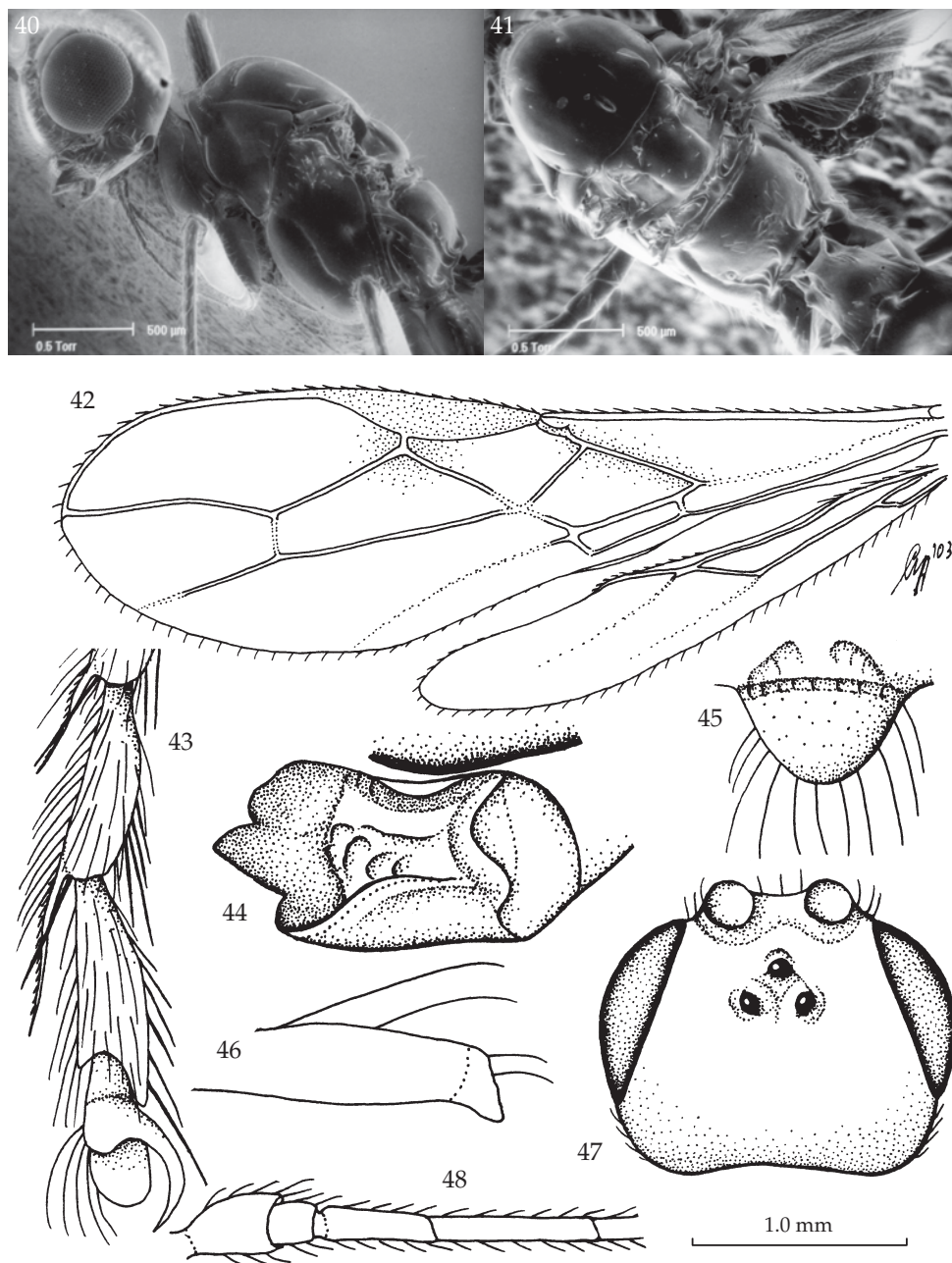
- ment and comparatively robust (fig. 12 in Trostle et al., 1999); exerted ovipositor about 3.3 times as long as mesosoma; 14th-16th antennal segments brown and 17th-18th segments white; (Costa Rica; *French Guyana) *P. subtilistriata* Papp, 1969
8. Spine-like projection on metanotum much longer than wide, curved and apically blunt (fig. 55); notauli complete, deep and finely crenulate, mesoscutum without separate medio-posterior pit (fig. 56); (*French Guyana) *P. insolita* spec. nov.
 - Spine-like projection on metanotum about as long as wide or shorter straight and apically rather acute; posteriorly notauli absent or very shallowly impressed and smooth, and mesoscutum with separate medio-posterior pit 9
 9. Pterostigma of fore wing broad distally, abruptly narrowing basad of junction with r in females, with posterior margin of basal half indistinct; in males part of pterostigma posterior of hyaline region broader than portion along anterior margin of wing; mesopleuron, metapleuron and propodeum dark brown; [third antennal segment of ♀ about 8 times as long as wide; 21st-24th to 27th antennal segments white]; (Brazil) *P. hyalina* Trostle, 1999
 - Pterostigma of fore wing narrow distally and basally, only gradually narrowing basad of junction with r in females, with posterior margin of basal half clearly delineated; in males part of pterostigma posterior of desclerotized hyaline region narrower than part along anterior margin of wing; body colour variable 10
 10. Mesopleuron, metapleuron and propodeum dark brown contrasting with light brown to yellow mesoscutum; metanotum in lateral view with broadly triangular projection (distinctly broader than high); (Mexico) *P. cratomorpha* Wharton, 1994
 - Mesopleuron, metapleuron and propodeum yellow; metanotum in lateral view with short spine-like projection; (Ecuador) *P. sharkeyi* Wharton, 1994

Phaenocarpa acarinata spec. nov.
(figs 40-48)

Material.— Holotype, ♀ (FUSAGx), “Guyane française, Montagnes de Kaw, Relais Patawa, iii.2000, Malaise trap, AEI guyane - J. Cerdá legs”. Paratypes (1 ♂ + 1 ♀): 1 ♂ (FUSAGx), same data; 1 ♀ (RMNH), same data, but 52°09'09"W-4°32'42"N, i.2001.

Holotype, ♀, length of body 4.8 mm, of fore wing 4.2 mm, of ovipositor sheath 6.4 mm.

Head (figs 40, 47).— Remaining antennal segments 25, length of third segment 0.6 times fourth segment, length of third and fourth segments 3.8 and 6.6 times their apical width, respectively; length of maxillary palp 1.3 times height of head; length of eye in dorsal view 2.2 times temple (fig. 47); POL:OD:OOL = 4:2:8; face convex, rather sparsely setose, largely smooth, with a small micro-sculptured parallel-sided area above clypeus; clypeus semi-oval, strongly protruding (fig. 45), with long setae; frons nearly flat, smooth; eye nearly meeting mandible; mandible punctate medially, first tooth wide and truncate, third tooth lobe-shaped and small, ends near level of apex of first tooth and with distinct oblique carina, middle tooth acute and distinctly longer than lateral teeth, without deep cleft between first and second tooth (fig. 44); head comparatively robust and subquadrate in dorsal view (fig. 47; normal-



Figs 40-48, *Phaenocarpa acarinata* spec. nov., ♀, holotype. 40, head and mesosoma, lateral aspect; 41, mesosoma and first metasomal tergite, dorsal aspect; 42, wings; 43, outer hind tarsal claw, 44, mandible, full sight on first tooth; 45, clypeus, dorsal aspect; 46, apex of ovipositor sheath, lateral aspect; 47, head, dorsal aspect; 48, four basal segments of antenna. 42: scale-line (= 1.0 ×); 43, 45, 46, 48: 4.0 ×; 44: 3.0 ×; 47: 2.0 ×.

ly *Phaenocarpa* species have a distinctly transverse head).

Mesosoma (figs 40, 41).— Length of mesosoma 1.7 times its maximum height; mesosoma largely glabrous; pronotum and mesoscutum laterally smooth; mesopleuron smooth; precoxal sulcus narrow, distinctly impressed and with some crenulae medially, smooth and shallow anteriorly and posteriorly; mesoscutum smooth; notauli absent but narrowly impressed and smooth anteriorly; medio-posterior pit of mesoscutum narrow, sublinear and long; scutellar sulcus narrow, with 3 fine carinae and rather shallow; scutellum smooth; metapleural flange obsolescent; metapleuron smooth; metanotum with a small median bump (fig. 41); propodeum smooth except for some rugulae medially (fig. 41).

Wings (fig. 42).— Fore wing: vein r emitted behind middle of pterostigma; $r:3\text{-SR}:SR1 = 3:47:71$; $2\text{-SR}:2\text{-M}:r\text{-m} = 37:79:12$; vein r-m subvertical (fig. 42); vein 2-SR+M short; vein 2-SR slightly sinuate; vein 1-SR+M straight; vein cu-a postfurcal by about its own length; vein CU1b distinct. Hind wing: $M+CU:1\text{-M} = 20:49$.

Legs.— Coxae smooth; femur, tibia and basitarsus of hind leg 5.8, 12.5 and 10.0 times their width, respectively; length of both hind tibial spurs 0.15 and 0.20 times hind basitarsus; tarsal claws slender (fig. 43); hind basitarsus densely bristly setose ventrally and fourth segment with long spiny protuberance (fig. 43).

Metasoma.— Length of first tergite 1.2 times its apical width, its apical width 1.7 times its basal width, its surface mainly smooth, with some striae near dorsal carinae, with dorsal carinae distinct on anterior 0.6 of tergite; second tergite distinctly depressed basally (fig. 41); ovipositor sheath 1.52 times as long as fore wing, narrow and with sparse long and erect setae, apex rather acute but without spine (fig. 46).

Colour.— Black; scapus and pedicellus brown, rather infusate; 3rd-16th antennal and 25th segments blackish; 17th and 24th segments brownish and partly darkened and 18th-23rd segments white; third-sixth metasomal tergites, pterostigma, veins, hind leg (except coxa) and mandible largely dark brown; tegulae brown; coxae, first and second tergites and apex of metasoma brownish-yellow; bases of tibiae pale brown; fore and middle legs (except yellowish coxae) largely brown; wings rather infusate, especially near veins 1-M and r of fore wing.

Distribution.— French Guyana.

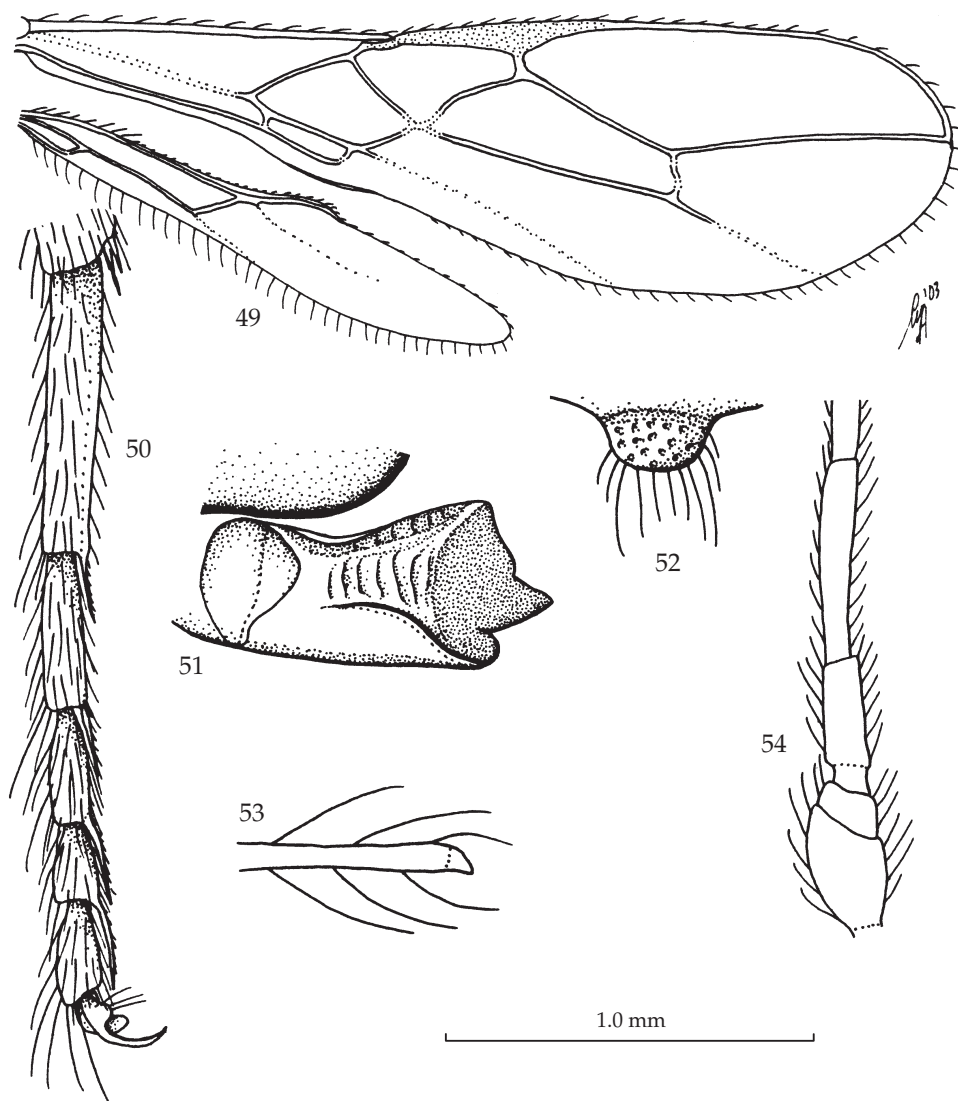
Etymology.— "*Acarinatus*" because of the lack of carinae on the propodeum.

Variation.— The paratypes are very similar to the holotype. The male paratype has the length of the fore wing 4.0 mm and of the body 4.5 mm, the shape of the pterostigma is the same as of the female holotype. The female paratype has the length of the fore wing 4.5 mm, and of the body 5.3 mm; the length of the ovipositor sheath is 1.46 times fore wing; third-17th antennal segments blackish; 18th-24th segments white and 25th-30th segments blackish (incomplete).

Phaenocarpa areolata van Achterberg, spec. nov.
(figs 49-54)

Material.— Holotype, ♀ (RMNH), "Museum Leiden, M. Panama, Barro Colorado Isl[and], 9°9'30"N-79°51'W, level I, 13-19.vii.1977, at light, H. Wolda".

Holotype, ♀, length of body 2.2 mm, of fore wing 2.5 mm, of ovipositor sheath about 1.5 mm.



Figs 49-54, *Phaenocarpa areolata* spec. nov., ♀, holotype. 49, wings; 50, hind tarsus with outer claw, 51, mandible, full sight on first tooth; 52, clypeus, dorsal aspect; 53, apex of ovipositor sheath, lateral aspect; 54, four basal segments of antenna. 49: scale-line (= 1.0 ×); 50, 51, 54: 2.5 ×; 52, 53: 2.6 ×.

Head.— Remaining antennal segments 23, length of third segment 0.65 times fourth segment, length of third and fourth segments 2.8 and 5.0 times their maximum width, respectively (fig. 54); length of maxillary palp 1.2 times height of head; length of eye in dorsal view 3.0 times temple; POL:OD:OOL = 4:4:9; face convex, moderately setose, smooth but narrowly punctate near clypeus; clypeus transverse, moderately protruding (fig. 52), coarsely punctate and with several long setae; frons smooth; malar space obsolescent; mandible with small protuberance between first and second

tooth, without deep cleft, first and third tooth lobe-shaped and ending at same level (fig. 51), third tooth with a longitudinal carina.

Mesosoma.— Length of mesosoma 1.4 times its maximum height; mesosoma largely glabrous; pronotum finely crenulate anteriorly, remainder smooth; mesopleuron smooth; precoxal sulcus narrowly and finely crenulate, anteriorly narrowly absent and posteriorly shallowly impressed and smooth; mesoscutum and scutellum smooth; notauli anteriorly distinctly impressed and crenulate, medially weakly impressed, and posteriorly absent, not reaching medio-posterior pit; medio-posterior pit of mesoscutum deep, elliptical; scutellar sulcus moderately long and deep, with one carina; metapleural flange small; metapleuron smooth, but rugose basally; metanotum without protuberance dorsally; propodeum completely areolate, smooth between carinae.

Wings (fig. 49).— Fore wing: vein r emitted behind middle of pterostigma; $r:3-SR:SR1 = 3:23:38$; $2-SR:2-M:r-m = 16:36:6$; vein r-m distinctly inclivous (fig. 49); vein $2-SR+M$ short; vein 2-SR curved; vein $1-SR+M$ nearly straight; vein cu-a distinctly postfurcal, short; vein CU1b distinct.

Legs.— Coxae smooth; femur, tibia and basitarsus of hind leg 5.4, 9.8 and 7.5 times their width, respectively; length of both hind tibial spurs 0.15 times hind basitarsus; tarsal claws very slender (fig. 50); hind basitarsus densely bristly setose ventrally and fourth segment with long spiny protuberance (fig. 50).

Metasoma.— Length of first tergite 0.9 times its apical width, its apical width twice its basal width, with dorsal carinae distinct up to middle of tergite; its surface longitudinally rugulose, but smooth anteriorly; length of ovipositor sheath about 0.6 times as long as fore wing, sheath narrow and apically obtuse, with sparse long erect setae.

Colour.— Blackish-brown; 14th-19th antennal segments and palpi white; scapus, pedicellus, parastigma, pterostigma and veins brown; telotarsi infuscate; remainder of antennal segments dark brown; first metasomal tergite, remainder of legs, tegulae and apex of metasoma brownish-yellow; wings subhyaline.

Distribution.— Panama.

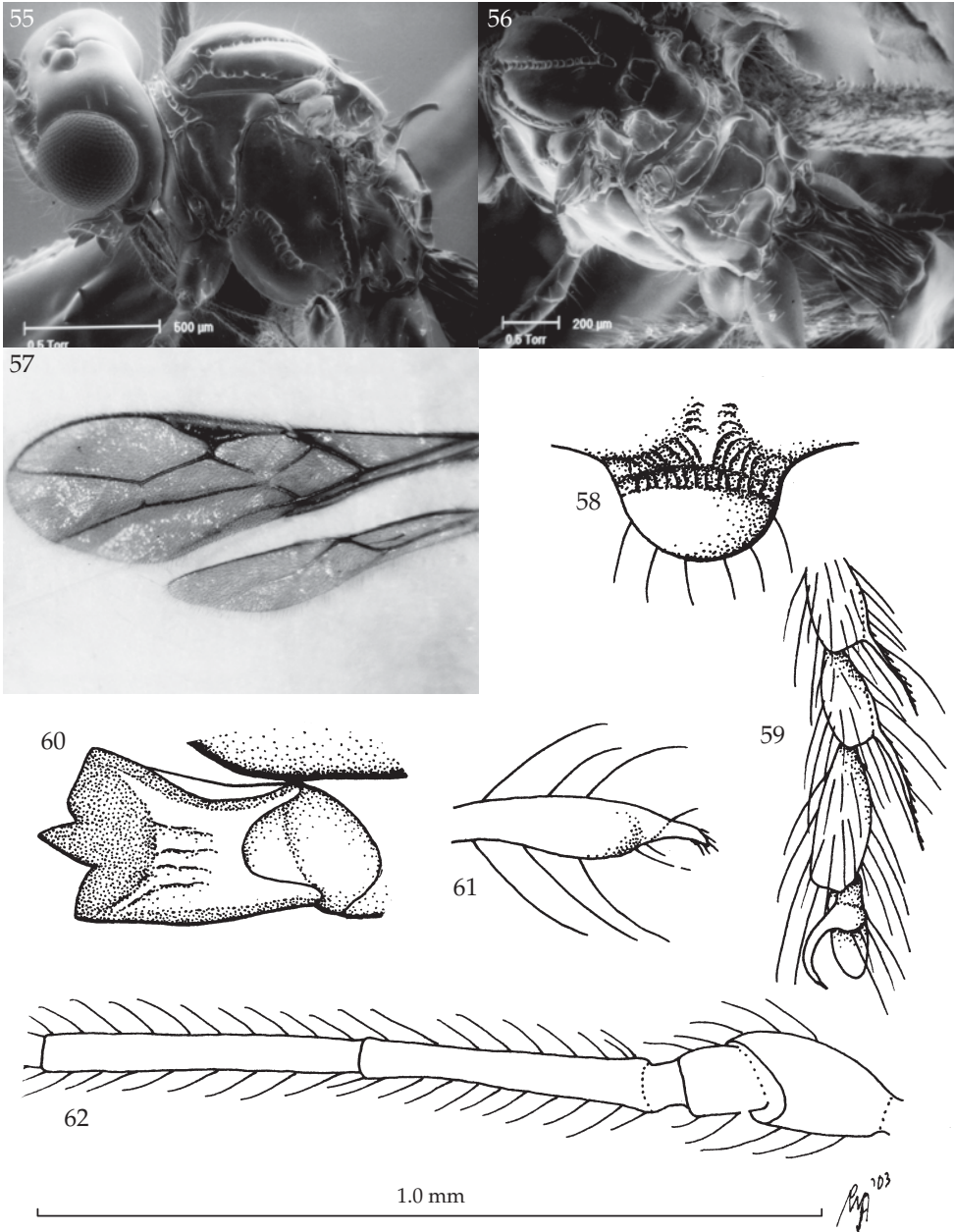
Etymology.— "*Areolatus*" because of the distinct areola on the propodeum.

Phaenocarpa insolita spec. nov.
(figs 55-62)

Material.— Holotype, ♀ (FUSAGx), "*Guyane française*, Montagnes de Kaw, Relais Patawa, vi.1999, Malaise trap, AEI guyane - J. Cerda legs". Paratype, 1 ♀ (RMNH), same data, except $52^{\circ}09'09''W-4^{\circ}32'42''N$, i.2001.

Holotype, ♀, length of body 3.0 mm, of fore wing 3.1 mm, of ovipositor sheath 0.55 mm.

Head (fig. 55).— Remaining antennal segments 25, with erect long setae, third segment as long as fourth segment, length of third and fourth segments 7.7 times their maximum width (fig. 62); length of maxillary palp 1.5 times height of head; length of eye in dorsal view 3.5 times temple; $POL:OD:OOL = 5:3:9$; face moderately setose and largely smooth, with some fine punctulation and incompletely depressed triangular area above clypeus partly finely striate; clypeus transverse (fig. 58), moderately protruding, with long setae; frons rather flat and smooth, impressed near antennal sockets and ocelli; malar space absent; mandible largely smooth, first tooth very widely trun-



Figs 55-62, *Phaenocarpa insolita* spec. nov., ♀, holotype. 55, head and mesosoma, lateral aspect; 56, mesosoma and first metasomal tergite, dorsal aspect; 57, wings; 58, clypeus, dorsal aspect; 59, outer hind tarsal claw, 60, mandible, full sight on first tooth; 61, apex of ovipositor sheath, lateral aspect; 62, four basal segments of antenna. 58-62: scale-line (= 1.0 ×); 57: 0.2 ×.

cate and third tooth lobe-shaped and ending near level of apical margin of first tooth; second tooth comparatively long and slender, distinctly longer than first tooth (fig. 60).

Mesosoma (figs 55, 56).— Length of mesosoma 1.5 times its maximum height; mesosoma with some sparse setae; pronotum largely smooth, antero-laterally and mesoscutum laterally crenulate (fig. 55); mesopleuron smooth; precoxal sulcus complete, rather wide, with some punctures, but smooth posteriorly; mesoscutum smooth and without medio-posterior depression; notauli complete, moderately narrow, deep and densely crenulate; scutellar sulcus long, with one carina; scutellum smooth; metapleural flange rather small, obtuse; medio-dorsally metanotum with long, slender, curved and spine-like protuberance, apically obtuse (fig. 55); metapleuron smooth except a short ventral carina; propodeum coarsely areolate and surface between carinae smooth (fig. 56).

Wings (fig. 57).— Fore wing: vein r emitted from middle of pterostigma; pterostigma slender basally, without subhyaline area; $r:3-SR:SR1 = 4:25:46$; $2-SR:2-M:r-m = 20:42:8$; vein r-m subvertical (fig. 57); vein 2-SR+M short; vein 2-SR nearly straight; vein 1-SR+M weakly sinuate; vein cu-a postfurcal by about its own length; vein CU1b present. Hind wing: $M+CU:1-M = 4:14$.

Legs.— Coxa smooth; femur, tibia and basitarsus of hind leg 5.8, 10.3 and 5.5 times their width, respectively; length of hind tibial spurs 0.2 times hind basitarsus; tarsal claws moderately slender (fig. 59); hind basitarsus densely long bristly setose ventrally and fourth segment with long spiny protuberance (fig. 59).

Metasoma.— Length of first tergite 1.7 times its apical width, apically 1.3 times wider than basally, slender, its surface coarsely longitudinally striate medially; second tergite hardly depressed basally; ovipositor sheath widened, 0.18 times as long as fore wing, with apical elongation (fig. 61).

Colour.— Brownish-yellow; basal half of antenna (but scapus and pedicellus brownish-yellow) brown, and apical half of antenna dark brown (except for a white band); hind tarsus infusate; stemmaticum, metasoma dorsally (except first tergite) and ovipositor sheath largely dark brown; basally and anteriorly pterostigma pale yellowish and remainder dark brown; wings weakly infusate.

Distribution.— French Guyana.

Etymology.— From the latinised French word “insolite”, meaning unusual.

Variation.— The paratype is very similar to the holotype; length of body 2.3 mm, of fore wing 3.1 mm, length of ovipositor sheath 0.21 times fore wing; base of second tergite and apices of third-fifth tergites yellowish; length of first tergite 1.5 times its apical width.

Phaenocarpa ?heynei Papp, 1969

Phaenocarpa heynei Papp, 1969: 384-386; Trostle et al., 1999: 198.

Note.— A female (FUSAGx) examined from Kaw Mt., vii.1999.

Distribution.— Costa Rica; *French Guyana.

Phaenocarpa substillistriata Papp, 1969

Phaenocarpa substillistriata Papp, 1969: 388-389; Trostle et al., 1999: 204-206.

Note.— Three females (FUSAGx; RMNH) examined from Kaw Mt., iii.1999, vi.1999 and iii.2000.

Distribution.— Costa Rica, *French Guyana.

Phaenocarpa pericarpa Wharton & Carrejo, 1999

Phaenocarpa pericarpa Wharton & Carrejo in Trostle et al., 1999: 202-206, figs 7, 8, 11, 14-16, 19.

Note.— A female and a male (FUSAGx) examined from Kaw Mt., ii.1999 (♀) and ii.2000 (♂).

Distribution.— Colombia, *French Guyana, Venezuela.

***Idiasta* Foerster, 1862**

Idiasta delicata (Papp, 1969)

Phaenocarpa delicata Papp, 1969: 381-383.

Idiasta delicata; Wharton, 1980: 48-49; Fischer, 1975: 135-137, figs 8-12.

Note.— Two females (FUSAGx) examined from Kaw Mt., v.1997.

Distribution.— Argentina, Colombia, *French Guyana, Panama, Peru, Venezuela.

***Gnathopleura* Wharton, 1980**

Gnathopleura melanocephala (Cameron, 1887)

Alysia melanocephala Cameron, 1887: 415; Shenefelt, 1974: 949.

Gnathopleura melanocephala; Fischer, 1975: 128-131, figs 1-3; Wharton, 1980: 41.

Note.— Two females (FUSAGx) examined from Kaw Mt., ix. and x.1999.

Distribution.— *French Guyana, Panama.

Gnathopleura semirufa (Brullé, 1846)

Alysia semirufa Brullé, 1846: 516; Shenefelt, 1974: 952.

Gnathopleura semirufa; Fischer, 1975: 131-133, figs 1-7; Wharton, 1980: 42.

Notes.— The examined specimens from French Guyana (FUSAGx: Kaw Mt.) agree well with the redescription by Fischer (1975); they possess the small round depression anteriorly on the propodeum between the longitudinal carinae. Therefore, it is likely that the specimens studied by Penteado-Dias (1995) are not conspecific.

Distribution.— French Guyana, Peru; Trinidad & Tobago.

Acknowledgements

We wish to thank Dr P. Grootaert (Bruxelles) and Prof. C. Gaspar (Gembloux) for their suggestions and their help, Mr J. Cerda and Mrs O. Morvan for their most valuable assistance, Mr J. Cillis for help with making the scanning electron micrographs, Mr J. Bortels and Mr I. Sauvage for help in the search for literature and for the technical support.

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Received: 11.iv.2002

Accepted: 24.vii.2003

Edited: M.J.P. van Oijen

