

New species of the genera *Foenomorphia* Szépligeti (Cenocoeliinae) and *Chelonus* Panzer (Cheloninae) (Hymenoptera: Braconidae), from French Guiana, Suriname, and Brazil

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Two new species of the genus *Foenomorphia* Szépligeti, 1904, are described (*F. rufa* spec. nov. from Brazil and *F. senlura* spec. nov. from French Guiana). A key to the known species is added and notes on the other two species are added. *Foenomorphia filicornis* (Cameron, 1887) is a new combination for *Cenocoelius filicornis* Cameron. An aberrant group of *Chelonus* with very slender antennal segments and a protuberant scutellum from French Guiana and Suriname is described and included in the new subgenus *Baculonus* (type species: *C. pachytellus* spec. nov.). *Epsilogaster palenque* Whitfield & Mason, 1994, is reported for the first time from Costa Rica.

Introduction

Our knowledge of Braconidae of South America is very poor despite several projects in e.g., Guyana (BDG project), Costa Rica (by INBIO), and Nicaragua (by Museo Entomologico León). The first author has been collecting parasitoid Hymenoptera in French Guiana for several years. French Guiana is located at the South-East of the Guiana shield, a precambrian massif running from Venezuela through the Guianas and northern Brazil. The vegetation of French Guiana is related to the dense Amazonian rainforests of Brazil. In addition, some savannas, marshy areas and mangroves exist along the coast. Up to now the Braconidae of French Guiana have not been studied and it is not surprising we found among the specimens collected in 1998 and 1999 several new taxa.

In this paper revisionary notes on the genus *Foenomorphia* Szépligeti, 1904, are given, and two new species are described. In addition an aberrant *Chelonus* species group with long and slender antennal segments is described and included in the new subgenus *Baculonus*, and for the first time *Epsilogaster palenque* Whitfield & Mason, 1994, is reported from Costa Rica. An asterisk indicates a new record for the country.

For identification of the subfamilies of Braconidae, see van Achterberg (1990, 1993) and Wharton et al. (1997). The terminology used in this paper, especially for wing venation, is according to van Achterberg (1988, 1994a).

The examined specimens are housed in the following institutes: Canadian National Collections of Insects, Arachnids and Nematodes, Ottawa, Canada (CNC); Faculté Universitaire des Sciences Agronomiques de Gembloux, Gembloux, Belgium (FUSAGx); Instituto Nacional de Biodiversidad, Heredia, Costa Rica (INBIO); Institut

Royal des Sciences naturelles de Belgique, Brussels, Belgium (IRSNB); Nationaal Natuurhistorisch Museum, Leiden, Netherlands (RMNH); University of Wyoming, Laramie, USA (UWIM); and Zoologisches Museum der Humboldt-Universität, Berlin, Germany (ZMHUB).

Subfamily Cenocoeliinae Szépligeti, 1901
Genus *Foenomorpha* Szépligeti, 1904
(figs 1-3, 5-8)

Type-species (by monotypy): *Foenomorpha bicolor* Szépligeti, 1904.

This genus belongs to the tribe Cenocoeliini Szépligeti, 1901 (van Achterberg, 1994b) and is only known from the Neotropical region. Two new species were found and a new combination is proposed, resulting in four valid species. The biology is unknown but some species of this subfamily have been reported as endoparasitoids of coleopterous larvae belonging to the families Cerambycidae, Curculionidae and less commonly Buprestidae and Scolytidae (Shaw & Huddleston, 1991; van Achterberg, 1994b).

For identification of the genus *Foenomorpha* see the key by van Achterberg (1994b), of which couplet 2 should be modified as follows:

- 2. Clypeus with 3 minute medio-ventral tubercles; transverse groove of metapleuron far below level of episternal scrobe; length of first tergite 3-4 times its apical width, rarely 2.5 times; hind coxa of ♀ usually without depression at inner side; tarsal claws simple; anterior part of pronotum protruding dorsad; middle lobe of mesoscutum short; middle trochanter distinctly longer than hind trochanter; frontal cavity usually without strong lateral carinae and frons usually distinctly convex laterally *Foenomorpha* Szépligeti
- Clypeus with at most a small medio-ventral tubercle; transverse groove of metapleuron (if developed) near level of episternal scrobe or situated above it; length of first tergite less than 2.8 times its apical width; hind coxa of ♀ usually with depression at inner side; tarsal claws usually with a lobe or lamella; anterior part of pronotum usually hardly or not protruding dorsad; shape of middle lobe of mesoscutum and middle trochanter variable; usually at least half of frontal cavity with strong lateral carinae and laterally slightly convex 3

Key to species of the genus *Foenomorpha* Szépligeti

- 1. Basal and first discal cells of fore wing fully setose near the junction of 1-M and M+CU1; first tergite with longitudinal rugae; metapleuron smooth with sparse punctures anteriorly; head blackish, body rufous (fig. 1); wings banded *F. rufa* spec. nov.
- Basal and first discal cells of fore wing sparsely setose near the junction of 1-M and M+CU1; first tergite smooth, at most with some weak punctures latero-basally; metapleuron completely areolate; colour of body variable; wings not banded 2
- 2. Vein 2-SR+M of fore wing absent to weakly present; frontal cavity with strong lateral carina along its edge; frons laterally slightly convex; middle lobe of mesoscu-



Fig. 1, *Foenomorpha rufa* spec. nov., ♀, holotype; fig. 2, *F. senlura* spec. nov., ♀, holotype; fig. 3, *F. bicolor* Szépligeti, ♀, Peru, Vilcenota; fig. 4, *Chelonus (Baculonus) pachytellus* spec. nov., ♀, holotype. 1-4, habitus, lateral aspect.

- tum anteriorly (its vertical side) with several small parallel and transversal grooves; metasoma yellowish *F. filicornis* (Cameron, 1887) comb. nov.
- Vein 2-SR+M of fore wing clearly present and comparatively long (fig. 8); frontal cavity with lateral carina weakly developed anteriorly; frons laterally strongly convex; middle lobe of mesoscutum anteriorly smooth; metasoma largely or completely black 3
- 3. Length of first tergite about 3 times its apical width, latero-basally with some weak punctures (fig. 5); head black; middle and hind coxae, hind femur and first metasomal tergite yellowish; head black (fig. 2) *F. senlura* spec. nov.
- Length of first tergite about 4 times its apical width, smooth basally (fig. 7); head yellowish; middle and hind coxae, hind femur and first tergite blackish (fig. 3)
..... *F. bicolor* Szépligeti, 1904

Foenomorpha rufa Braet, spec. nov.
(figs 1, 6)

Material.— Holotype, ♀ (IRSNB): “[Brazil], Brasilia, Bahia”. Paratypes (ZMHUB): 2 ♀♀, “[Brazil], Espirito-Santo, ex coll. Fruhstorfer”, “Zool. Mus. Berlin”.

Etymology.— “Rufa” because of the reddish colour of the body.

Holotype, ♀, length of body 9.9 mm, of fore wing 9.0 mm.

Head.— Antenna broken, remaining antennal segments 35, length of third segment equal to the fourth segment, length of third and fourth segments 3.0 times their width; length of maxillary palp 1.1 times height of head, its third segment not widened; in dorsal view length of eye 2.1 times temple; temple smooth with long setae and sparse punctures; POL:OD:OOL = 7:3:5; anterior ocellus as large as lateral ocellus, and situated in a depression; vertex rather convex, smooth; frons convex laterally in dorsal view; medial depression of frons with short lamella medio-anteriorly; face and clypeus coarsely punctate; face with numerous yellowish setae; clypeus punctate with three small blunt tubercles ventrally.

Mesosoma.— Length of mesosoma 1.5 its maximum height; pronotum strongly protruding antero-dorsally because of high curved lamella; side of pronotum largely reticulate medially and posteriorly, smooth and sparsely punctate elsewhere; propleuron coarsely punctate anteriorly, sparsely punctate posteriorly; metapleuron largely smooth medio-anteriorly, and remainder reticulate, with numerous long setae; propodeum reticulate; notauli wide; lobes of mesoscutum smooth; middle lobe of mesoscutum truncate antero-medially; scutellum smooth.

Wings.— Fore wing: r:3-SR:SR1 = 7:8:60; 2-SR+M present; 2-SR+M:m-cu:2-M:r-m = 3:12:17:8; vein 3-CU1 4 times vein CU1b; cu-a interstitial; basal cell completely setose; subbasal cell glabrous baso-anteriorly. Hind wing: M+CU:1-M:1r-m = 34:14:13; cu-a straight.

Legs.— Length of hind femur, tibia and basitarsus 4.3, 12.4 and 9.0 times their width, respectively; length of hind spurs 0.18 and 0.14 times hind basitarsus; hind coxa without depression at inner side.

Metasoma.— Length of first tergite 3.0 times its apical width (fig. 6), posterior half of its surface smooth, remainder largely coarsely reticulate-punctate (fig. 6); combined

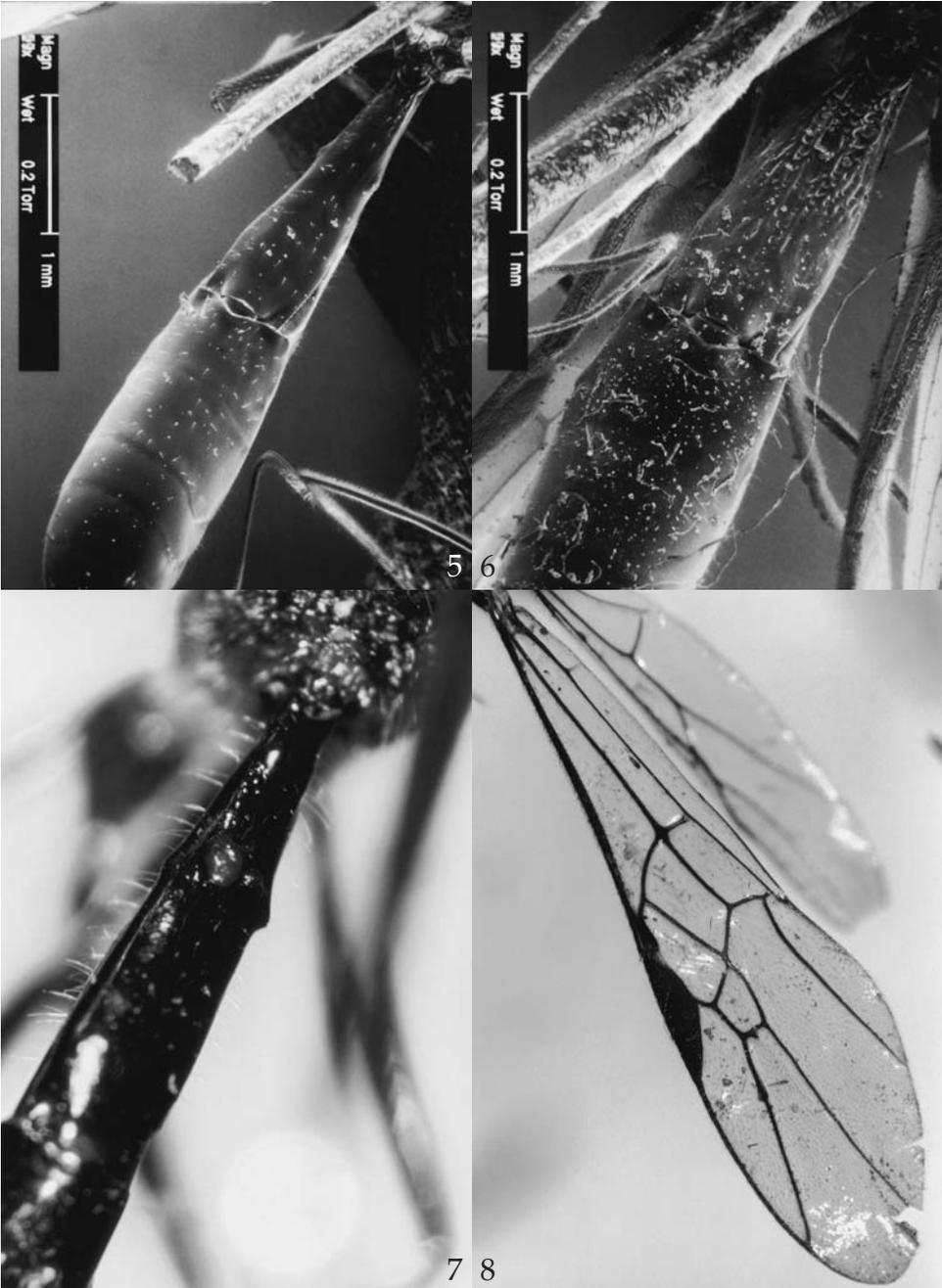


Fig. 5, *Foenomorpha senlura* spec. nov., ♀, holotype; fig. 6, *F. rufa* spec. nov., ♀, holotype; fig. 7-8, *F. bicolor* Szépligeti, ♀, Peru, Vilcenota. 5-7, first metasomal tergite, dorsal aspect; 8, wings.

length of second and third tergites 1.4 times their maximum width; posterior margins of third-fifth tergites concave; length of ovipositor sheath 2.0 times fore wing.

Colour.— Brownish-red (fig. 1); head (except yellowish clypeus), antenna, propleuron, and ovipositor sheath black; middle and hind coxae dark brownish; clypeus, fore and middle legs (except dark brownish middle coxa and fore and middle telotarsi) orange-yellowish; fore wing brown with a large yellow band below pterostigma and basally (fig. 1); pterostigma yellow.

Distribution.— Brazil.

Host.— Unknown.

Remarks.— The two paratypes have the sculpture of first tergite more developed. The paratypes have 37 antennal segments, and length of penultimate and ultimate segments 3.0 times their maximal width.

Foenomorpha senlura Braet & van Achterberg, spec. nov.
(figs 2, 5)

Material.— Holotype, ♀ (FUSAGx): "F., Guyane française, Degrad Laurens, Crique Sapokai, 24-30.x. 1998, 95 m, Piège Malaise, A.E.I. guyane".

Etymology.— The species name is an anagram of the name 'Laurens', one of the wharfs on the river Sapokai.

Holotype, ♀, length of body 8.7 mm, of fore wing 6.2 mm.

Head.— Antennal segments 37, length of third segment equal to fourth segment, length of third, fourth, penultimate and ultimate segments 4.5, 4.5, 2.0 and 2.0 times their width, respectively; length of maxillary palp 1.1 times height of head; length of eye in dorsal view 5.3 times temple; temple smooth, punctate ventrally and with long white setae; POL:OD:OOL = 9:3:9; anterior ocellus similar in size to lateral ocellus, situated in a depression; vertex rather convex, smooth, sparsely punctate with sparse setae; frons convex laterally in dorsal view; medial depression of frons with short lamella anteriorly on its edge; face and clypeus coarsely punctate with long white setae; clypeus with three small blunt tubercles ventrally.

Mesosoma.— Length of mesosoma 1.4 times its maximum height; pronotum strongly protruding antero-dorsally because of high curved lamella; side of pronotum largely reticulate medially, and remainder strongly punctate; propleuron coarsely punctate; metapleuron largely reticulate, with numerous long setae; precoxal sulcus complete and reticulate; propodeum reticulate; notauli wide; lobes of mesoscutum smooth; middle lobe of mesoscutum truncate antero-medially; scutellum smooth and sparsely punctate.

Wings.— Fore wing: r:3-SR:SR1 = 4:9:45; 2-SR+M present; 2-SR:m-cu:2-M:r-m = 2:9:14:5; vein 3-CU1 3.5 times vein CU1b; cu-a interstitial; basal cell posteriorly and subbasal cell anteriorly largely glabrous. Hind wing: M+CU:1-M:1r-m = 28:12:10; cu-a weakly reclivous.

Legs.— Length of hind femur, tibia and basitarsus 4.75, 15 and 10 times their width, respectively; length of both hind tibial spurs 0.1 times hind basitarsus; hind coxa without depression at inner side.

Metasoma.— Length of first tergite 3.1 times its apical width, its surface smooth with some weak punctures antero-laterally, dorsal carinae absent (fig. 5); combined

length of second and third tergites 1.2 times their maximum width; third-fifth tergites concave posteriorly; length of ovipositor sheath 2.7 times fore wing.

Colour.— Black; palpi, and fore coxa infusate; middle and hind coxae and femora, first tergite, and base of second tergite orange-yellowish; remainder of legs (except blackish middle and hind tibiae and tarsi) brownish-yellow; wings hyaline.

Distribution.— French Guiana.

Host.— Unknown.

Remarks.— “A.E.I. guyane” stands for “Association Entomologique des Inselbergs, Guyane”, a small group of entomologists from French Guiana, and not for the American Entomological Institute, Gainesville, Florida.

Foenomorpha bicolor Szépligeti, 1904
(figs 3, 7-8)

Material.— 2 ♀♀ (ZMHUB), “Peru, Vilcanota, V. Staudinger”. One specimen has an identification label probably written by Dr G. Enderlein.

Foenomorpha filicornis (Cameron, 1887) comb. nov.

Material.— 1 ♀ (INBIO), “Costa Rica, Est. Hitoy Cerere, 100 m, R. Cerere, Res. Biol. Hitoy Cerere, Prov. Limon, ix.1992, G. Carballo, L-N 184200-643300”, “Cenocoelini, *Foenomorpha filicornis* (Cameron), det. L.J. v/d Ent 1998”.

The new combination for *Cenocoelius filicornis* Cameron, 1887, was established by Mr L.J. van der Ent. The examined specimen differs from the description of *F. bicolor* as follows:

♀, length of body 9.3 mm, of fore wing 7.2 mm.

Head.— Remaining antennal segments 35, length of third segment equal to fourth segment, length of third and fourth segments 5 and 5 times their width, respectively; length of maxillary palp 1.2 times height of head, its third segment not widened; length of eye in dorsal view 1.7 times temple; temple smooth with long setae; POL:OD:OOL = 5:2:5; anterior ocellus similar in size to lateral ocellus, situated in a depression; vertex rather convex, smooth; medial depression of frons with long lamella on its edges, nearly meeting lateral ocellus; face and clypeus sparsely punctate; face with numerous setae; clypeus smooth, with three small blunt tubercles ventrally.

Mesosoma.— Length of mesosoma equal to its height; pronotum strongly protruding antero-dorsally because of high curved lamella; side of pronotum largely reticulate medially, and remainder punctate; propleuron punctate; metapleuron largely reticulate, with numerous long setae; propodeum reticulate; notauli wide; lateral lobe of mesoscutum smooth; middle lobe of mesoscutum reticulate and truncate antero-medially; scutellum smooth.

Wings.— Fore wing: r:3-SR :SR1 = 5:10:52; 2-SR+M absent or nearly so; m-cu:2-M:r-m = 12:17:6; vein 3-CU1 3.5 times vein CU1b; cu-a shortly postfurcal. Hind wing: M+CU:1-M:1r-m = 28:12:9; cu-a weakly reclivous.

Legs.— Hind coxa with a long horizontal depression at inner side directed posteriorly; length of hind femur, tibia and basitarsus 5.3, 13.8 and 12.5 times their width,

respectively; length of hind tibial spurs 0.2 and 0.1 times hind basitarsus.

Metasoma.— Length of first tergite 4 times its apical width, its surface smooth, dorsal carinae absent; combined length of second and third tergites 1.6 times their maximum width; third-fifth tergites concave posteriorly; length of ovipositor sheath 2.3 times fore wing.

Colour.— Mesosoma and ovipositor sheath black; head, scapus, palpi, metasoma, and legs (except tarsi) yellow; tarsi light brown to brown; antennal segments dark brown.

Distribution.— Costa Rica*, Panama (type).

Host.— Unknown.

Remarks.— The holotype is housed in the Natural History Museum (London) and has been examined by Mr van der Ent. This specimen differs from the original diagnosis of the genus *Foenomorpha* by its long lamella on the edges of the frontal depression, the frons less convex laterally and the presence of a depression on the inner side of the hind coxa. The generic diagnosis of *Foenomorpha* should be amended as follows: frontal cavity at least with short lamella on both edges anteriorly (the lamella nearly reaching the stemmaticum in *F. filicornis*); frons distinctly convex laterally (flattened in *F. filicornis*); and the depression at inner side of the hind coxa of ♀ usually absent (but present and horizontal in *F. filicornis*).

Subfamily Cheloninae Foerster, 1862

Genus *Chelonus* Panzer, 1806

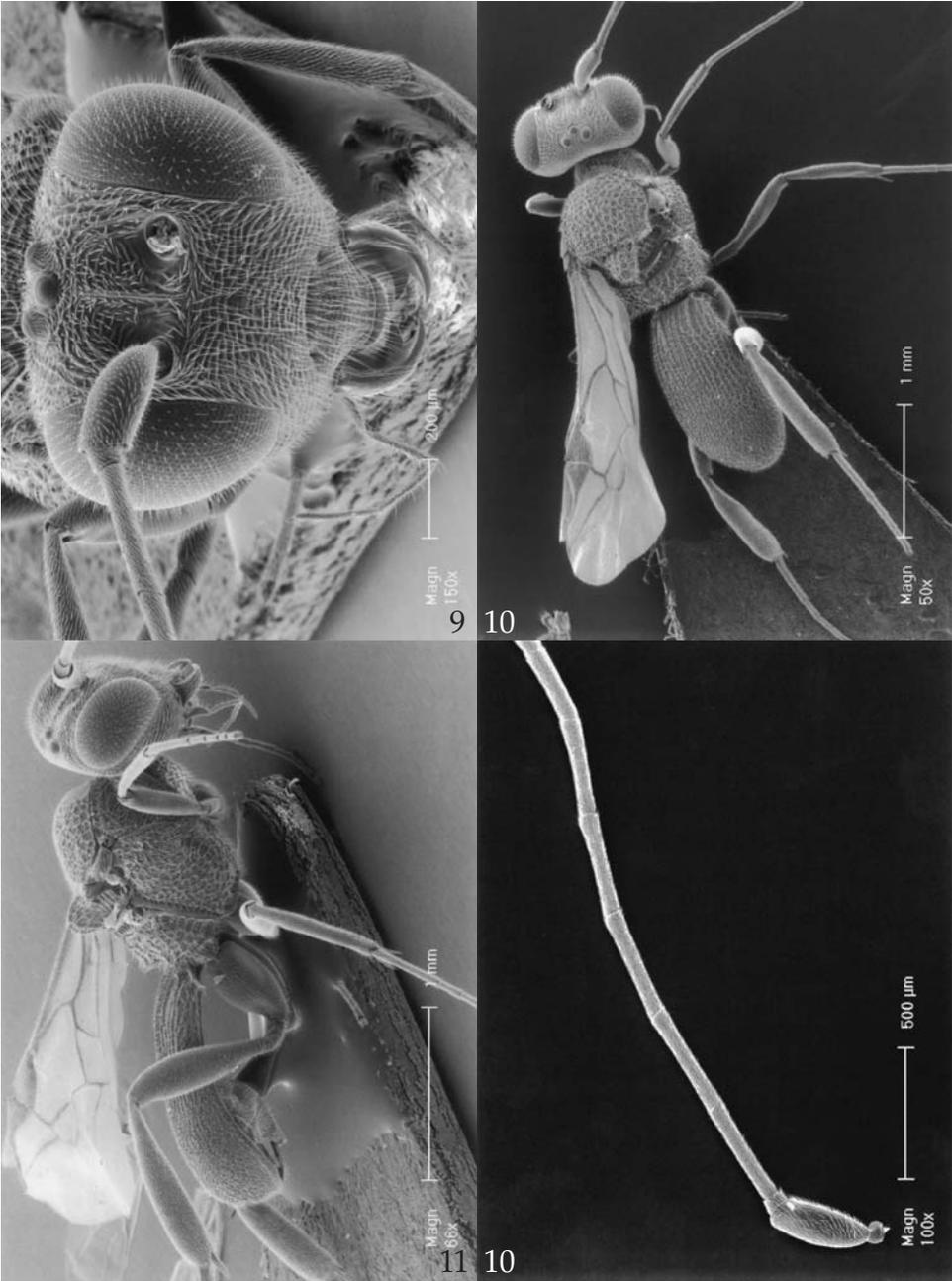
Subgenus *Baculonus* Braet & van Achterberg nov.

(figs 4, 9-27)

Type species: *Chelonus (Baculonus) pachytellus* spec. nov.

Etymology.— From the combination of “baculum” (Latin for “stick”) because of the elongate antenna and the generic name *Chelonus*. Gender: masculine.

Diagnosis.— Head in dorsal view roundly contracted behind eyes; antenna of female with 18 segments, third-fifth segments very long (6-7 times their width; usually less than 3 times in other *Chelonus* species, if about 5 times then frons with distinct curved lateral carina), antenna weakly dilated distally; ocelli small and in equilateral triangle; eyes setose and not protuberant; frons at most slightly depressed with a median longitudinal carina nearly reaching anterior ocellus and without distinct curved lateral carina (figs 9-10); occipital carina complete and thin, reaching base of mandible; face rather flat in lateral view (fig. 11), transversally strigose, about twice as broad as high; genae in frontal view rounded; clypeus narrower than face (fig. 9), weakly convex, weakly strigose transversally; mandible strongly twisted and bidentate, second tooth about as large as first one (fig. 17); mesosoma coarsely reticulate-rugose; notauli absent; scutellum more or less raised in lateral view (figs 18, 19, 27); precoxal sulcus absent; propodeum weakly divided into a dorsal and a posterior face by a median transversal carina which is weakly produced into four weak dentate flanges; second submarginal cell of fore wing short (figs 15, 22, 24); vein SR1 of fore wing more or less widened subbasally (figs 15, 22; but sometimes slender: fig. 24); vein 1-M of fore wing comparatively close to vein C+SC+R (figs 15, 22, 24); vein 1-SR+M absent; 2-CU1 about twice longer than 1-CU1 (figs 15, 22, 24); carapace narrow



Figs 9-12, *Chelonus (Baculonius) pachytellus* spec. nov., ♀, paratype. 9, head, frontal aspect; 10, habitus, dorsal aspect; 11, habitus, lateral aspect; 12, basal half of antenna.

elliptical in dorsal view (figs 10, 13, 14), completely coarsely-rugose, with two weak dorsal carinae basally, its ventral opening large and reaching the apex; carapace in lateral view clavate and posteriorly straight; ovipositor sheath short. Body black, antenna with or without pale yellowish band, metasoma usually with whitish transversal band submedially (figs 4,14). The male carapace has a small nearly round posterior opening of carapace.

Distribution.— Neotropical: Ecuador, French Guiana, Suriname.

Biology.— Unknown, but the Cheloninae are considered to be ovo-larval parasitoids of Lepidoptera (Shaw & Huddleston, 1991).

Remarks.— Other not closely related species of the genus *Chelonus* may have the same colour pattern, but have vein 1-M of fore wing more removed from vein C+SC+R, the basal antennal segments are usually not elongate, or the frons has a curved lateral carina.

Key to recognised subgenera of the genus *Chelonus*

- 1. Temple strongly swollen and with 3 distinct ridge-like rugae; Oriental *Scabrichelonus* Chen & van Achterberg, 1997
- Temple hardly or not swollen and without distinct ridge-like rugae 2
- 2. Carapace ending in a spine-like protuberance dorso-apically; vein SR1 of fore wing incomplete; Oriental *Areselonus* Braet, 1999
- Carapace rounded dorso-apically, if with protuberance then it is situated ventro-apically; vein SR1 of fore wing complete 3
- 3. Third-fifth antennal segments of ♀ 6-7 times as long as wide (figs 12, 16, 20, 23); frons without distinct curved laterel carina (figs 9, 10); scutellum more or less protuberant (figs 18, 19, 27), above level of mesoscutum; vein 1-M comparatively close to vein C+SC+R (figs 11, 15, 22, 24); Neotropical ... *Baculonus* subgenus nov.
- Third-fifth antennal segments of ♀ distinctly less than 5 times as long as wide, if about 5 times as long as wide then frons with distinct curved lateral carina; scutellum not protuberant, about at level of mesoscutum; vein 1-M more removed from vein C+SC+R; cosmopolitan *Chelonus* Panzer, 1806

Note.— Traditionally the subgenus *Microchelonus* Szépligeti, 1906, is separated from *Chelonus* to accomodate the species whose males have an apical opening of the carapace. However, this subgenus is most likely untenable (van Achterberg & Polaszek, 1996: 52).

Key to species of the subgenus *Baculonus* nov.

- 1. Vertex coarsely rugose (fig, 21); base of hind coxa ivory; scutellum distinctly protruding dorsally (figs 4, 11, 18, 19); carapace with coarsely costate-like longitudinal striation basally; base of pterostigma more or less whitish 2
- Vertex finely rugose-striate (fig, 26); base of hind coxa dark brown or blackish; scutellum weakly protruding dorsally (fig. 27); basal half of carapace (except for pair of strong dorsal carinae) comparatively sparsely and weakly longitudinally striate; base of pterostigma dark brown *C. minytellus* spec. nov.



Figs 13-14, *Chelonus (Baculonius) minytellus* spec. nov., ♀, paratype. 13-14, habitus, dorsal aspect.

- 2. Antenna with subbasal white ring (fig. 4); scutellum steeply protruding posteriorly (figs 11, 18); anterior half of side of pronotum ivory or yellowish; base of pterostigma largely dark brown (figs 4, 15) *C. pachytellus* spec. nov.
- Antenna without subbasal white ring; scutellum convexly protruding posteriorly (fig. 19); anterior half of side of pronotum black; base of pterostigma distinctly whitish (fig. 22) *C. mesotellus* spec. nov.

Chelonus (Baculonius) pachytellus Braet, spec. nov.
(figs 4, 9-12, 15-18)

Material.— Holotype, ♀ (FUSAGx): “Guyane française, Montagne de Kaw, Relais Patawa, ii.1999 (Malaise), A.E.I.guyane-J.Cerda”. Paratypes (FUSAGx, RMNH): 3 ♀♀, topotypic but ii. 1999, iii.1999 and v.1999 and 1 ♂, with data as holotype. One female paratype has been coated for SEM photography.

Etymology.— From the prefix “pachy”, meaning thick, and “scutellum”, because of its very protruding scutellum.

Holotype, ♀, length of body 3.7 mm, of fore wing 2.9 mm.

Head.— Antennal segments 16; third segment as long as fourth segment, length of third, fourth and apical antennal segments 6.7, 6.7, and 3.0 times their width, respectively, third-eighth segments of antenna strongly elongate (fig. 12); length of maxillary palp 0.7 times height of head; head in dorsal view roundly contracted behind eyes; length of eyes 3.7 times temple in dorsal view; temples rounded posteriorly; OOL:OD:POL = 4:1:3; area between posterior ocellus and eye coarsely irregular-

ly rugose (cf. fig. 21); vertex reticulate-strigose; frons longitudinally strigose laterally and transversally strigose medially, with a median carina (fig. 9); ocelli rather small, in an equilateral triangle; eye densely short setose; face transversally strigose (fig. 9); genae in frontal view rounded; temple longitudinally strigose in lateral view; clypeus weakly transversally striate and smooth apically, with a straight apical border; length of malar space subequal to basal width of mandible.

Mesosoma.— Pronotum moderately protruding in front of mesonotum (fig. 10), laterally reticulate-rugose and crenulate antero-dorsally; mesosoma coarsely reticulate and setose; scutellum strongly protruding in lateral view, steep posteriorly (figs 4, 11, 18); propodeum completely reticulate-rugose with a weak transversal median carina and 4 minute teeth (fig. 11); mesosoma completely setose.

Wings.— Fore wing: SR1 complete, its basal third strong, apically thinner (fig. 15); r:3-SR:SR1 = 3:2:14; length of vein 3-CU1 twice as long as CU1b; cu-a inclivous and far postfurcal (fig. 15).

Legs.— Hind coxa completely smooth and setose; length of femur, tibia, basitarsus of hind leg 4.0, 4.8 and 6.5 times their maximum width, respectively; length of both tibial spurs 0.3 times hind basitarsus.

Metasoma.— Carapace setose, in dorsal view slender elliptical (fig. 10), with many costate-like longitudinal striae, reticulately connected by weaker transverse rugae and basally with two somewhat stronger dorsal carinae, its length 1.9 times its width in dorsal view, 3.4 times its maximal height in lateral view; carapace clavate in lateral view, and posteriorly straight; length of the ventral opening 0.9 its total length; carapace medially reticulate and apically rather granulate; hypopygium small; length of ovipositor sheath 0.1 times fore wing, straight and weakly spatulate apically, with some setae apically.

Colour.— Black; base of hind coxa, hind femur, hind tibia (except for a small patch) subbasally, tibial spurs, submedial transversal band of metasoma (fig. 4), base of pterostigma narrowly (fig. 15) and parastigma whitish; base of scapus, third and fourth antennal segments, pronotum largely, and fore tibia yellowish; apex of scapus, fore and middle femora infusate to brownish; veins of fore wing brownish; fore wing (except for a whitish transverse band) strongly infusate (fig. 4), hind wing hyaline.

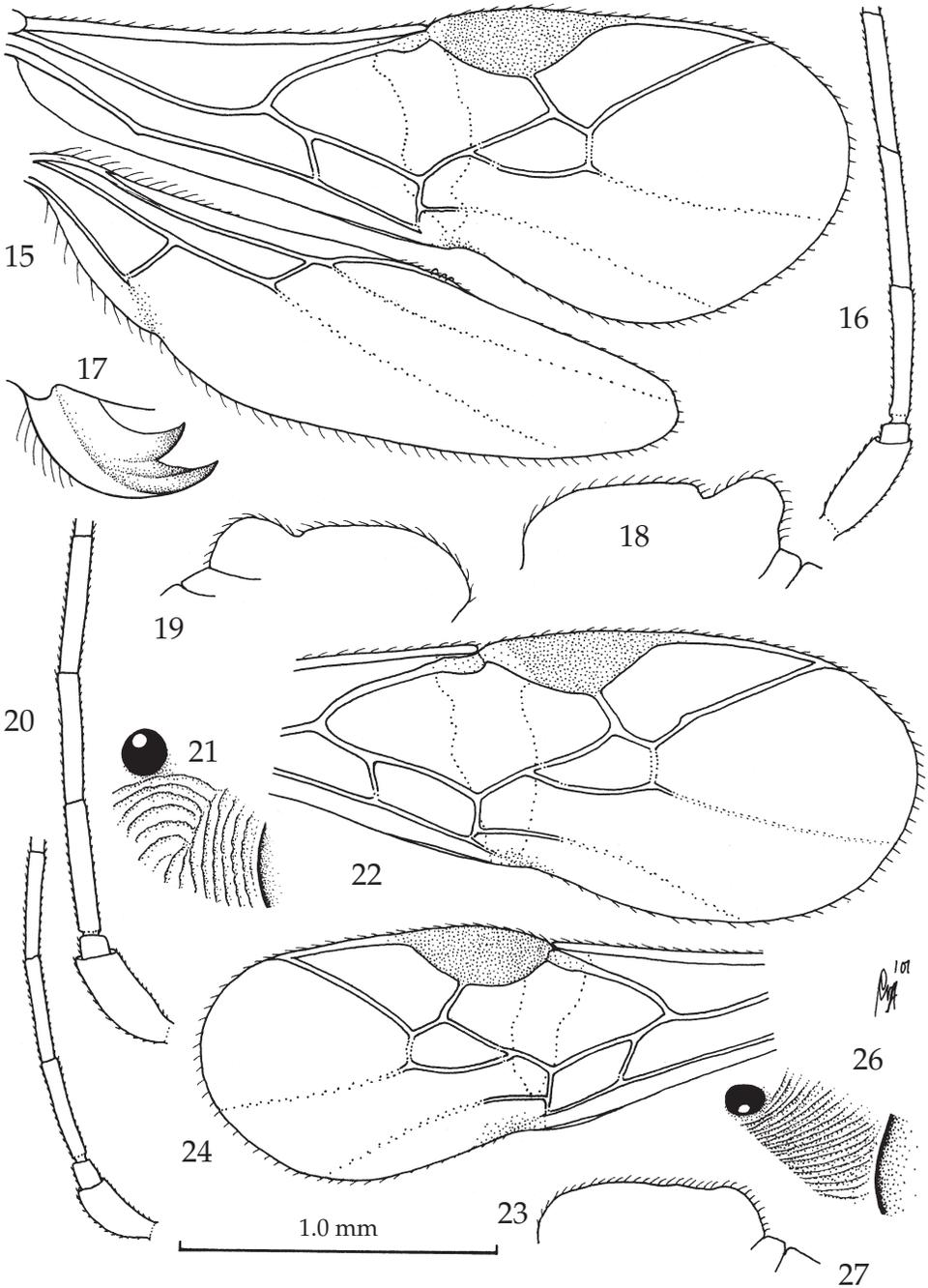
Male.— Similar to female but with 24 antennal segments, and apex of metasoma with a small nearly round opening. Pronotum faintly brownish, hind leg brownish rather than blackish, fore wings weakly infusate, flagellum and metasoma completely blackish.

Chelonus (Baculonius) mesotellus van Achterberg, spec. nov.
(figs 19-22)

Material.— Holotype, ♀ (RMNH): "Museum Leiden, Surinam[e], Phedra, 1-7.xi.1964, rainforest in hilly interior, D.C. Geijskes". Paratypes (RMNH, FUSAGx): 4 ♀♀, topotypic, but 1 ♀ 21-28.xii.1964 and 1 ♀ 28.xi-7.xii.1994.

Etymology.— From the prefix "meso", Greek for "middle", and "scutellum", because of its moderately protruding scutellum.

Holotype, ♀, length of body 3.4 mm, of fore wing 2.7 mm. Similar to *C. pachytellus* spec. nov. if not mentioned.



Figs 15-18, *Chelonus (Baculonius) pachytellus* spec. nov., ♀, paratype; figs 19-22, *C. (B.) mesotellus* spec. nov., ♀, holotype; figs 23-27, *C. (B.) minytellus* spec. nov., ♀, holotype. 15, wings; 16, 20, 23, base of antenna; 17, mandible, dorsal aspect; 18, 19, 27, scutellum, lateral aspect; 21, 26, area between posterior ocellus and eye; 22, 24, fore wing. 15, 16, 18-20, 22, 23-25, 27: 1.0 × scale-line; 17, 26: 2.0 ×; 21: 1.7 ×.

Head.— Antennal segments 16, third antennal segment as long as fourth segment, length of third, fourth, and penultimate segments 6.2, 6.2 and 2.7 times their width, respectively; vertex coarsely rugose between posterior ocellus and eye (fig. 21); length of maxillary palp 0.8 times height of head; length of eye in dorsal view 2.4 times temple; OOL:OD:POL = 11:5:7; temple obliquely strigose; clypeus very finely punctate; length of malar space 1.3 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.1 times its height; scutellum moderately strongly protruding, rather convexly so posteriorly (fig. 19).

Wings.— Fore wing: r:3-SR:SR1:2-SR = 8:8:36:15; r comparatively robust (fig. 22, variable in type series).

Legs.— Length of femur, tibia and basitarsus of hind leg 3.8, 5.2 and 6.2 times its width, respectively; length of both hind tibial spurs 0.35 times hind basitarsus.

Metasoma.— Length of carapace in dorsal view 2.1 times its width, and 3.2 times its height in lateral view, parallel-sided and slender; basally with almost costae-like longitudinal striation, and without transverse rugae, no reticulation, medially and posteriorly very densely and finely reticulate.

Colour.— Black; parastigma, base of pterostigma (fig. 22), tibial spurs, basal third of hind tibia (except basal dark ring), hind femur narrowly basally, base of hind coxa, middle coxa and trochanter, and medially widened submedial band of metasoma ivory; fore tibia and tarsus pale yellowish; palpi yellowish-brown; remainder of legs, remainder of pterostigma and most veins dark brown; antenna dark brown, but scapus largely yellowish and fourth-seventh segments slightly paler than other segments; membrane of fore wing rather dark brown, but a whitish band below base of pterostigma and parastigma, and basally membrane subhyaline, and apically weakly infusate.

Variation.— Paratypes are very similar to holotype; the submedial ivory band of metasoma may be strongly protruding posteriorly and vein r of fore wing may be slender.

Chelonus (Baculonus) minytellus van Achterberg & Braet, spec. nov.
(figs 13, 14, 23-27)

Material.— Holotype, ♀ (FUSAGx): “F. Guyane [française], Cayenne, Pointe Mahury, week 49, 1977, M. Thouvenot, PM [= Malaise trap], beginning of rain season”. Paratypes (FUSAGx, RMNH): 2 ♀♀, Guyane française, Montagne de Kaw, Relais Patawa, iii.2000, Malaise trap, AEI guyane, J. Cerda”.

Etymology.— From the prefix “minys”, Greek for “small, short”, and “scutellum”, because of its weakly protruding scutellum.

Holotype, ♀, length of body 2.9 mm, of fore wing 2.2 mm. Similar to *C. pachytellus* spec. nov., if not mentioned.

Head.— Antennal segments 16, length of third, fourth, and penultimate segments 6.3, 6.3 and 3.3 times their width, respectively; vertex comparatively finely rugose-striate between posterior ocellus and eye (fig. 26); length of maxillary palp 0.9 times height of head; length of eye in dorsal view 2.7 times temple; OOL:OD:POL = 11:4:7; temple obliquely striate; face finely transverse strigose; clypeus densely rather finely punctate; length of malar space 1.3 times basal width of mandible.

Mesosoma.— Length of mesosoma 1.2 times its height; scutellum weakly protruding (fig. 27).

Wings.— Fore wing: r:3-SR:SR1:2-SR = 8:6:30:15; r moderately slender (fig. 24).

Legs.— Length of femur, tibia and basitarsus of hind leg 4.1, 4.9 and 5.5 times its width, respectively; length of both hind tibial spurs 0.4 times hind basitarsus.

Metasoma.— Length of carapace in dorsal view 2.1 times its width, and 3.4 times its height in lateral view, parallel-sided and slender; its dorsal carinae strong, and surface of carapace sparsely and comparatively weakly longitudinally striate, basally with almost costate-like longitudinal striation, and without transverse rugae, no reticulation, posterior half of carapace very densely and finely reticulate.

Colour.— Black; parastigma, base of fore wing narrowly, tibial spurs, basal third of hind tibia (but basally dark brown), hind femur basally, middle and fore coxae and trochanters, and medially slightly widened submedial band of metasoma ivory; fore tibia pale yellowish; fore tarsus rather dark brown; palpi yellowish-brown, but infusate basally; remainder of legs, pterostigma and most veins dark brown; antenna dark brown, but scapus and pedicellus largely yellowish; membrane of fore wing rather dark brown, with whitish band below parastigma and base of pterostigma (fig. 24), basally subhyaline, and apically weakly infusate.

Remarks.— Three females (Ecuador, Napo, Limoncocha, 250 m, 15-28.vi.1976, S. & J. Peck; CNC) probably belong to a fourth species very similar to this species. It differs by the lack of the whitish submedial band of the carapace.

Subfamily Mendesellinae Whitfield & Mason, 1994

Genus *Epsilogaster* Whitfield & Mason, 1994

Epsilogaster palenque Whitfield & Mason, 1994

Material.— 1 ♀, (UWIM), “Costa Rica, Guanacaste Prov., Cerro el Hacha, NW Volcan Orosi, 1988, 300 m”; 1 ♀ (UWIM), “Costa Rica, Puntar.[enas], Golfo Dulce, 24 km W Piedras Blancas, xii.[19]89-iii.1990, 200 m, Paul Hanson”.

Distribution.— Costa Rica*, Ecuador (Whitfield & Mason, 1994).

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