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Species of Braconidae (Hymenoptera) collected in French Guiana with descriptions of two new species*

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Abstract

Among the Braconids collected during the sea turtles 96 program (WWF-France) in French Guiana, we point out the presence of two new species: *Dentigaster warana* sp.n., *Chelonus pseudoscrobiculatus* sp.n. (Cheloninae). Moreover, *Bentonia longicornis* VAN ACHTERBERG, 1992 (Orgilinae), *Alabagrus pachamama* SHARKEY, 1988 and *A. waiwai* SHARKEY, 1988 (Agathidinae) are recorded for the first time for the French Guiana.

Keywords: Braconidae, Agathidinae, Cheloninae, Orgilinae, *Alabagrus*, *Bentonia*, *Chelonus*, *Dentigaster*, French Guiana.

Résumé

Parmi les Braconides récoltés durant la campagne tortues marines 96 (WWF-France) en Guyane française, nous mettons en évidence la présence de deux espèces nouvelles pour la Science: *Dentigaster warana* sp.n., *Chelonus pseudoscrobiculatus* sp.n. (Cheloninae). De plus, *Bentonia longicornis* VAN ACHTERBERG, 1992 (Orgilinae), *Alabagrus pachamama* SHARKEY, 1988 et *A. waiwai* SHARKEY, 1988 (Agathidinae) sont cités pour la première fois en Guyane française.

Introduction

The Basse-Mana area (approximately 35.000 ha) includes the region between the mouth of the Maroni and the Mana rivers, and the coastal part

* Received: 1.IX.1997.

up to the Organabo river (Fig.1). This region has an equatorial climate with an annual average of temperatures and precipitations around 27°C and 2261 mm, respectively (ANONYMOUS, 1988). The landscape show an irregular patchwork of coastal and river mangrove, sandy offshore bar, briny and fresh marsh, and various soaked forests (FRETEY, 1993). Another point of interest in this region was the very fast and important cyclic modifications of the littoral coast under the influence of a strong S-E/N-W stream. Therefore the structures of the related biotopes were always modified. To estimate the region's entomological wealth for the young natural reserve of "Amana", we erected three Malaise traps.

One trap was installed to the end of May 1996 until the end of July 1996 near the hatchery, used by the World Wildlife Fund-France program (KAWANA 96) for the preservation of *Dermochelys coriacea* and their nesting sites, in the Kaliña Tiliwuyu village (Yalimapo-Les Hattes, 5°44'30"N/53°56'49"W). It was situated in small grassland (*Cyperaceae* sp. and *Poaceae* spp.), near a secondary forest and isolated from the beach by some trees (*Rhizophora mangle*), shrub and *Ipomea* sp. The second and third traps were installed from the beginning of June 1996 to the middle of July 1996 on the atlantic coast near two other WWF camps: Warana and Azteque (5°42'59"N/53°46'54"W and 5°41'20"N/53°44'10"W, respectively). This part of littoral habitat was characterized by the presence of a high sandy bar with some dead trees and sparse forest (*Avicennia germi-*

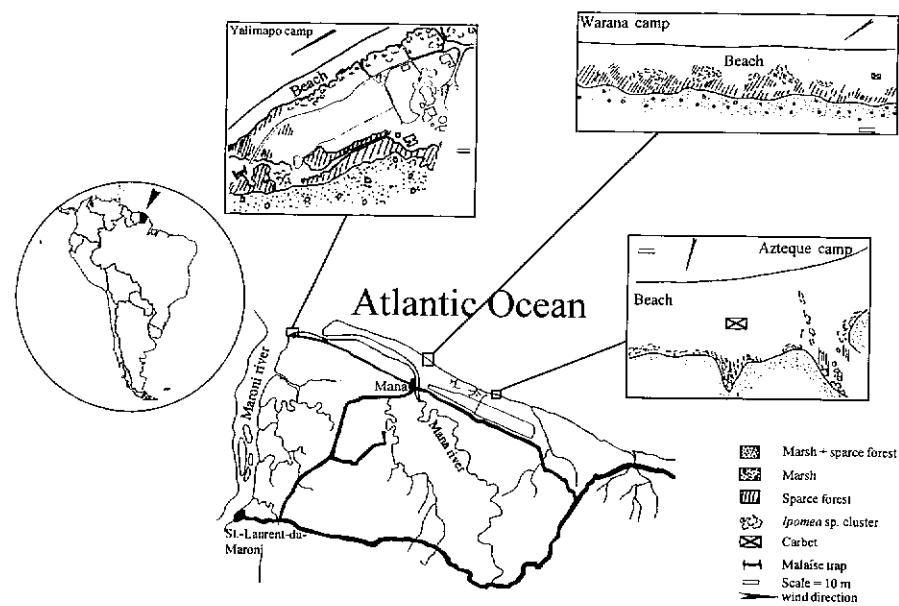


Fig. 1. Distribution map of the Basse-Mana area with localisation of the three Malaise traps.

nans) which makes a separation between the ocean and the briny marshes showing different *Cyperaceae*, Pteridophytes and other bush species such as *Chrysobalanus* sp. and *Pterocarpus officinalis* (FRETEY, 1993). At Warana, the trap was installed in the middle of the sparse forest which was also the territory of an important colony of *Stictia ? maculata* (FABRICIUS) (Hymenoptera, Sphecidae). At Azteque, the trap was installed in the middle of free sand near a small recolonization by *Ipomea* sp. All traps were checked and weekly recorded. A net was also used to collect insects around the traps, especially at Warana.

Among the braconid material collected at these sites, several specimens were identified as new.

Abbreviations and used equipment

The following acronyms are used in this paper: IRSNB: Institut royal des Sciences naturelles de Belgique, Bruxelles, Belgium; FUSAGx: Faculté Universitaire des Sciences agronomiques de Gembloux, Belgium; MHNP: Muséum national d'Histoire naturelle de Paris, Paris, France; OC: own collection.

Insects were kept in alcohol (70%) and prepared after our return to Europe. All unprepared specimens were deposited in MHNP. Scanning electronic microscopic slides of uncoated specimens were realized on a PHILIPS XL 30CP model at 0.4 mBar.

Systematic account

For the identification of the Braconidae subfamilies, see ACHTERBERG (1990, 1993) and for the terminology used in this paper, see ACHTERBERG (1988, 1994a). The number of specimens collected is indicate after the corresponding date into brackets.

Subfamily of Agathidinae

The *Alabagrus* species were revised and keyed by SHARKEY (1988). This genus is closely related to *Pharpa* SHARKEY, 1986 [its sister-group sensus SHARKEY (1992)] from which it can be easily distinguished by the presence of an anterior median ridge on mesoscutum bounded laterally by longitudinal depressions. Some species were interesting for the biological control of pest, i.e. all hosts of *A. texanus* (CRESSON, 1872) and *A. stigma* (BRULLÉ, 1846) are pyralid leaf rollers or leaf tiers and pyralid stem borers in rice, corn and sugar cane, respectively (SHARKEY, 1988).

Alabagrus nigrititus (SZÉPLIGETI, 1902)

Material examined: Four females (OC), French Guiana, Yalimapo-les Hattes, Hatchery of sea turtles, 12.VI-19.VI.1996 (1), 30.VI-6.VII.1996

(1), 7.VII-25.VII.1996 (2) (Malaise trap in meadow near forest, after the cemetery, towards "Vigie", 5°45'N/53°55'W) (BRAET Yves & BABIN Régis leg.).

These specimens share the characters previously described by SHARKEY (1988) for the type species but variation was observed. The number of antennal segments were 42 for all specimens. The colors varied with the propodeum totally or only distally orange to brown; metapleuron and metasoma (except apically) orange to orange-red; hind coxa orange; inner face of fore coxa orange-red; hind femur orange-red to black except basally and apically; mesosoma black to red. Two specimens have a small central yellow patch on the marginal cell of fore wings. This species is widespread in the neotropics.

A. pachamama SHARKEY, 1988

Material examined: One female (OC), French Guiana, Saint-Laurent-du-Maroni, 25.VII.1993 (conifer forest, between 9h and 13 h).

This specimen has 44 flagellomeres; a black body except yellow fore tarsus and white-yellowish mid tarsus that are infuscate apically; hind coxa, hind femur and metasoma, except apically, orange. This is a new record for the French Guiana but the species is widespread in South America through the Amazon Basin.

A. waiwai SHARKEY, 1988

Material examined: One female (OC), French Guiana, Kaw road, 27.VII.1993 (in foot-path).

Antenna broken apically. This is a new record for the French Guiana but the species was previously only recorded from the Guianas and the Para (Brazil).

Subfamily of Orgilinae

For the identification of the Orgilinae genera and *Bentonia* species, see ACHTERBERG (1987, 1992, 1994b).

Bentonia longicornis VAN ACHTERBERG, 1992

Material examined: One male (MHNP), French Guiana, Cayenne, IX-X.1914 (R. BENOIST leg.). 9 females (OC, FUSAGx), French Guiana, Yalimapo, les Hattes, Hatchery of sea turtles, 22.VI-29.VI.1996 (1), 30.VI-6.VII.1996 (1), 7.VII-25.VII.1996 (7) and 5 males, 16.VI-21.VI.1996 (1), 22.VI-29.VI.1996 (1), 7.VII-25.VII.1996 (3) (rec.: BABIN Régis & BRAET Yves) (Malaise trap in meadow near forest, after the cemetery, towards "Vigie", 5°45'N/53°55'W).

The number of antennal segments varied from respectively 55 (2 specimens) - 56 (3 specimens) - 57 (1 specimen) in the males and 55 (2 specimens) - 56 (3 specimens) - 57 (3 specimens) in the females. The apical

patch of the propodeum is either united or divided into three small patches, the patch of apex of hind femur either narrowed or divided into two narrow patches and the depression of scutellum can sometimes be weakly carinated laterally.

Subfamily of Cheloninae

For the identification of the genera Cheloninae, see ZETTEL (1990). *Dentigaster* species were keyed by ZETTEL (1992) and the *Chelonus scrobiculatus* group-species by HUDDLESTON & WALKER (1994).

Dentigaster warana sp. n. (Figs 2-8)

Etymology: From the name "warana" of *Lepidochelys olivacea* (Olive Ridley Turtle) in surinamese language, and also named after a watching camp for sea turtles protection.

Material examined: Holotype, 1 female (MHNP): "F.[rance], Guyane française, Yalimapo, les Hattes, Ecloserie du WWF, 16.VI-21.VI.1996" "Piège Malaise dans prairie en bordure de forêt. Après le cimetière, vers Vigie, 5°45'N/53°55'W (rec.: BRAET Yves & BABIN Régis)".

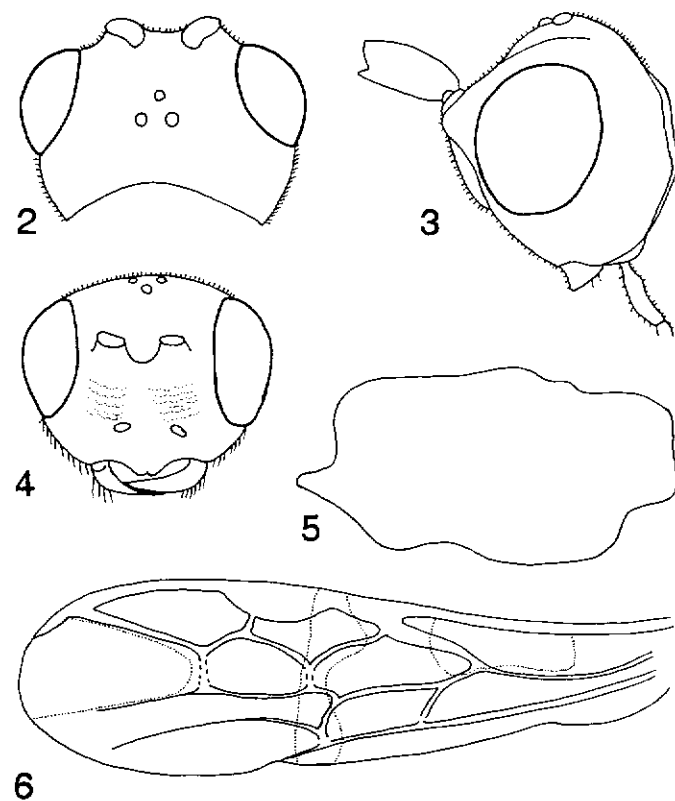
Holotype, female, body length 6 mm, fore wing 4 mm.

Head. 37 antennal segments, length of antenna 1 x the fore wing; length of two basal segments 3 and 2.5 x their width, respectively, length of third segment 1.2 x the length of the fourth, apical segment very small; length of maxillary palp 1.3 x height of head; eyes glabrous; length of eyes 1.2 x temple in dorsal view (Fig. 2); occipital carina angulate posteriorly (Fig. 3); OOL:diameter of ocellus: POL = 3 : 3 : 10; frons coarsely punctate with a small medial carina, weakly indented between the antennal sockets; face convex, sparsely punctuated with long yellow setae; clypeus finely punctuated with two weak apical dentations (Fig. 3); length of malar space 2 x basal width of mandible.

Mesosoma. Mesosoma flattened in lateral view, its length 2 x its height (Fig. 5); pronotum, mesoscutum, metapleuron, mesosternum, scutellum and propodeum coarsely foveolated; mesoscutum anteriorly with two short parallel areas without any punctuations, areas dull; sides of scutellum posteriorly smooth and shiny; propodeum with a median longitudinal carina and two shorter longitudinal carinae posteriorly.

Wings. Fore wing: r:SR1 = 1 : 7; r-m weakly sclerotized; 1-SR+M sinuated; CU1a sclerotized basally and reaching the border of wing; 3-Cu1 2.5 times longer than CU1b (Fig. 6).

Legs. Hind tibia club-like and very narrowed basally; length of femur, tibia, basitarsus of hind leg 3.5, 6, 6.2 x their width, respectively; length of tibial spurs 0.3 and 0.2 x the length of the basitarsus.

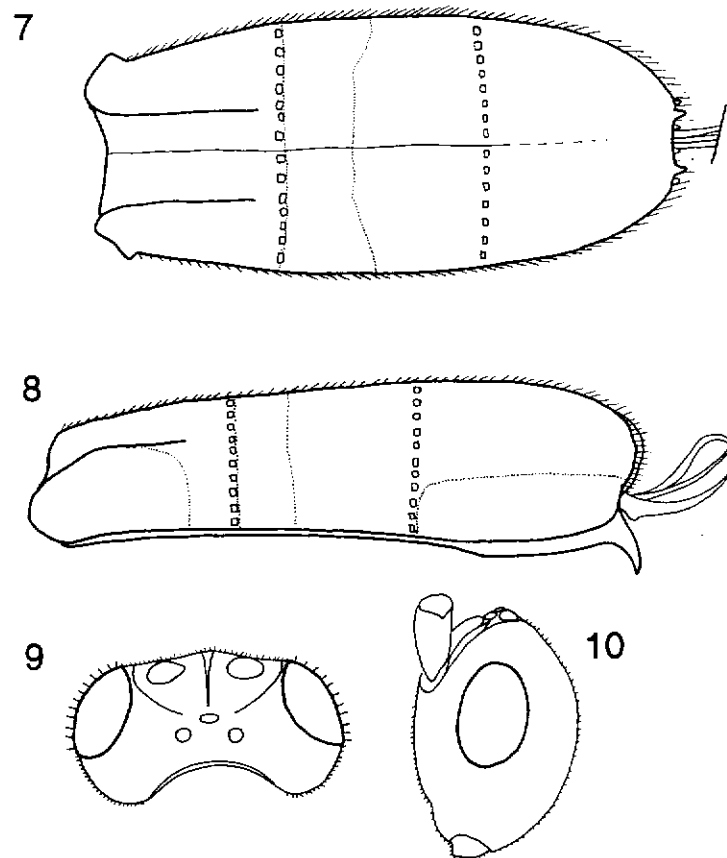


Figs 2-6. *Dentigaster warana* sp.n. 2-4: head in dorsal, lateral and frontal views respectively; 5: lateral view of mesosoma; 6: fore wings. The dashed lines show the area with colour differences.

Carapace. Length of carapace 2.3 x its width, straight to weakly convex sided with a weak dorso-median carina reaching the middle of the third tergite; first and second tergites coarsely longitudinally reticulated; first and second sutures strongly crenulated; first tergite with two strong little carina basally (Fig. 7); third tergite striate-punctate with long setae apically, two strong carina and four smaller carina apically; expansion of postero-ventral rim one third shorter than the length of the third tergite (Fig. 8); ovipositor short and robust.

Colour. Orange-brownish; middle coxa, trochanter, trochantellus, basal ring of hind tibia pale whitish; basal band on second tergite pale yellow; pedicellus, third and fourth flagellomers yellow; head, scapus, pronotum, anterior part of lateral lobe and middle lobe of mesoscutum, mesopleuron, lateral part of propodeum, hind femurs, fore and middle tarsus orange; two latero-basal patches on first tergite, second and third tergites laterally,

ventral rim and apical dents of carapace orange infuscated; middle femurs and hind legs brown; the remainder flagellomers, middle and hind tibiae, hind tarsus, middle penultimate tarsus, middle telotarsus and fore tarsus dark-brownish; two apical dentations of clypeus, occipital carina, mesosternum ventrally, tegulae, lateral lobe of mesoscutum posteriorly, scutellum, propodeum medio-dorsally, first tergite, the remainder of the second tergite, third tergite medio-dorsally, ovipositor sheath blackish. Presence of a pale patch extending to the middle of basal cell on fore wing, a large white transversal band in the middle of fore wing, third submarginal cell weakly infuscated; remainder of fore wing strongly infuscated.



Figs 7-10. 7-8: *Dentigaster warana* sp.n, metasoma in dorsal and lateral views respectively; 9-10: *Chelonus pseudoscrobiculatus* sp.n., head in dorsal and frontal view respectively.

This species is closely related to *D. barbarella* ZETTEL, 1990 from which it can be distinguished by the presence of a long postero-ventral rim, the colours and the posterior carina of carapace. After modification of the third couplet it run in the key of ZETTEL (1992) as follow:

- 3 Humeral plate yellow or white, head completely or partially black 4 (see ZETTEL)
 - Humeral plate brown to black, head completely orange 5
 5 Postero ventral-rim reaching the two third posterior of the third tergite.
 Presence of four posterior-apical carina on the third tergite *D. warana* sp. n.
 - Shorter postero-ventral rim and no carina posteriorly on the third tergite
 *D. barbarella* ZETTEL

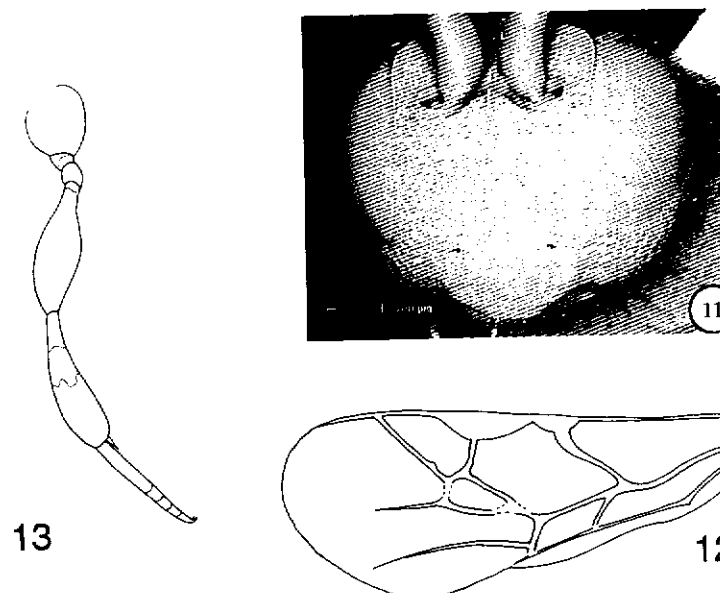
Chelonus pseudoscrobiculatus sp. n. (Fig. 8-17)

Erymology: Because its very strong likeness with *C. scrobiculatus* SZÉPLI-GETI, 1900.

Material examined: Holotype, male (IRSNB): "F.[rance], Guyane française, Yalimapo, les Hattes, Ecloserie du WWF, 16.VI-21.VI.1996" "Piège Malaise dans prairie en bordure de forêt. Après le cimetière, vers Vigie, 5°44'30"N/53°56'49"W" (rec.: BRAET Yves & BABIN Régis)". Paratypes, 9 females (OC, MHNP), topotypic but collected: 28.V-1.VI.1996 (1), 22.VI-29.VI.1996 (3), 16.VI-21.VI.1996 (1), 7.VI-11.VI.1996 (2), 7.VII-25.VII.1996 (2) and 1 female "F.[rance], Guyane française, côte atlantique, camp WARANA-WWF, 6.VII-12.VII.1996" "Piège Malaise dans sous-bois mangrove littorale, 5°42'59N/53°46'54W, UTM: 191835E/632030N" (rec.: BRAET Yves & BABIN Régis)".

Holotype, male, body length 5.2 mm, fore wing 3.2 mm.

Head. Antennal segments 26; length of third segment 1 x the fourth, apical segment 2 x its length, two basal segments of flagellum 3.2, 3.4 x their width; length of maxillar palp 1.6 x height of head; head roundly contracted in dorsal view (Fig. 9); length of eyes 1.4 x temple in dorsal view; temples rounded posteriorly; OOL: diameter of ocellus: POL = 8 : 2 : 10; vertex striate posteriorly and punctuated laterally near the carina; frons strongly depressed, striate near the ocellus and the remainder smooth, the depressed area bordered by a strong carina running from the front of the lateral ocelli around underneath the antennal sockets and then medially almost to the anterior ocellus; ocelli on the corner of a short height triangle; face weakly convex (Fig. 10), about twice as broad as high, completely finely reticulate-rugose, dorsally produced between the antennal socket as a weak triangular projection (Fig. 11); clypeus finely punctuated, apical margin convex; length of malar space 2 x basal width of mandible; gena finely striate.



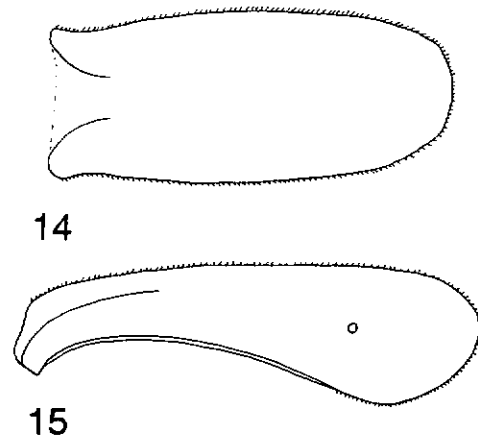
Figs 11-13. *Chelonus pseudoscrobiculatus* sp. n. 11: head in facial view; 12: Fore wing; 13: hind leg. The dashed lines show the area with colour differences.

Mesosoma. Pronotum, mesonotum, mesopleuron, propodeum dorsally coarsely reticulate-foveolated with a strong transverse carina produced into large median and lateral dentate projections; notauli absent; mesonotum coarsely sculptured; precoxal sulcus indistinguishable; mesopleuron coarsely reticulated.

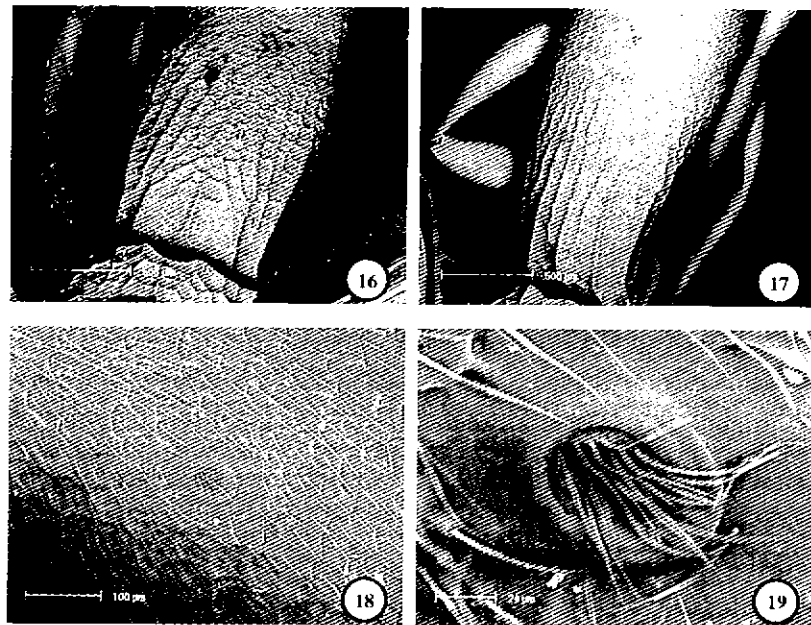
Wings (Fig. 12). Fore wing: r:SR1 = 6 : 22; SR1 with a small spine sub-basally; CU1a sclerotized 1/5 basally; 3-Cul 3.5 x longer than CU1b.

Legs (Fig. 13). Hind tibia club-like and very narrowed basally; length of femur, tibia, basitarsus of hind leg 2.3, 3.6, 5 times their width, respectively; length of tibial spurs 0.5 and 0.4 times basitarsus.

Carapace. Length of carapace 2.2 x its width and 3.1 x its maximal height, straight sided and weakly expanded medially in dorsal view (Fig. 14); not strongly clavate in lateral view, the ventral opening at most four fifths the length of the carapace (Fig. 15); basally with three short carina (Fig. 16); longitudinally striate-reticulated from the basal to the middle, completely punctate after; with ventro-lateral glands showing long setae (Fig. 18-19) and surrounded by a smooth disk.



Figs 14-15. *Chelonus pseudoscrobiculatus* sp. n. Metasoma in dorsal and lateral views respectively



Figs 16-19. *Chelonus pseudoscrobiculatus* sp. n. 16-17: sculptures of the metasoma for the male and female respectively; 18-19: detail of the ventro-lateral gland of the male.

Colour. Black; sub-basal patch on hind and middle tibia, middle tarsus except telotarsus, hind spurs whitish; maxillo-labial palps whitish-brown; hind trochanter, hind basitarsus, middle coxa and trochanter, fore legs yellow; fore coxa and femur, two small proximal ventro-basal patches on carapace yellow-brownish; middle tibia, middle femur, middle and fore

telotarsus brown; middle femur apically, scapus orange-brown; wings completely infusate.

Females: Same as the male except antenna 16 segmented; wings basally white, infusate medially and pale apically, with a small sub-basal spine on SR1 vein (sometimes missing) and a small pale patch on parastigma; carapace with three small carina continuing as slender reticulations (Fig. 17) and two white proximal spots sometimes quasi-united in one transversal pale band; ovipositor sheath weakly protruding.

Remarks:

All the proposed characters by HUDDLESTON & WALKER (1994) for the *C. scrobiculatus* group-species are shared by these specimens. Structure of the aperture and the setae of the ventro-lateral glands, the lack of pale distal patch on carapace, the carapace not so strongly clavate and the small sub-basal spine on SR1 separate this new species which belongs to the *C. scrobiculatus* group. This is the first record of the presence of this group-species in Neotropic.

We have chosen females specimens as paratypes because they have the same characters as the male (the same shape of head, the structure of wing and the proportions of metasoma). But the male has additional sexual characters such as the ventro-lateral glands, the different shape of carapace sculptures (Fig. 16 versus Fig. 17) and the size of ventro-lateral patches.

Despite a strong likeness with *C. scrobiculatus* the two species can be distinguished after the following modifications of the HUDDLESTON & WALKER key (1994):

- 2 Frons deeply excavate and bordered by strong carinae running from the antennal socket to the lateral ocelli 6
- As in the HUDDLESTON & WALKER key (1994) 3
- 6 Carapace strongly clavate in lateral view; ventro-lateral glands quasi-glabrous; legs always predominantly dark, at most fore leg pale marked and, rarely, a pale band on hind tibia; Oriental and Australian *C. scrobiculatus* SZÉPLIGETI
- Carapace weakly clavate in lateral view; ventro-lateral glands distinctly with long setae; legs always with a pale band at the basis of mid and hind tibia; French Guiana *C. pseudoscrobiculatus* sp. n.

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New *Paramedetera* GROOTAERT & MEUFFELS, 1997 from South Asia (Diptera, Dolichopodidae, Medeterinae)

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Summary

The riparian genus *Paramedetera* GROOTAERT & MEUFFELS, 1997, appears to be common and widely distributed in South Asia. Five new species are described: *P. borneensis*, *P. bruneiensis* both from Borneo, *P. horrorifera*, *P. ankarum* and *P. turschi* from Thailand. Additional records are given of *P. papuensis* from Papua New Guinea.

Key words: Diptera, Dolichopodidae, new species.

Résumé

Le genre *Paramedetera* GROOTAERT & MEUFFELS, 1997 est ripicole, il semble être assez commun et avoir une large distribution en Asie du sud. Cinq espèces nouvelles sont décrites: *P. borneensis*, *P. bruneiensis* de Bornéo, *P. horrorifera*, *P. ankarum* et *P. turschi* de Thaïlande. Des données sur *P. papuensis* de Papouasie Nouvelle-Guinée sont fournies.

Introduction

Recently we described the genus *Paramedetera* GROOTAERT & MEUFFELS, 1997 based on a limited number of specimens from Sumatra and Papua New Guinea. We found respectively two species in Sumatra and a single species in Papua New Guinea. New collections in Thailand, however, show that the genus is in fact very common in South Asia. Numerous specimens, belonging to three new species were collected by sweeping along the banks of small rivers in the rainforest of Thailand. So, instead of being arboricolous like most other Medeterinae, *Paramedetera* is riparian. In addition, two new species are described from Borneo. Hence, the genus *Paramedetera* now hosts eight species.