

**Contribution to the knowledge of Agathidinae
(Hymenoptera Braconidae) from French Guiana
with description of two new species of *Earinus* WESMAEL, 1837**

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Abstract

The genus *Earinus* WESMAEL, 1837 (Braconidae : Agathidinae) is recorded for the first time from French Guiana by two new species : *Earinus bourguignoni* sp. n. and *Earinus hubrechtiae* sp. n. A key for all neotropical species of *Earinus* is included. New data about species of *Alabagrus* and *Marjoriella* recorded in French Guiana are given.

Keywords : *Alabagrus*, *Earinus*, *Marjoriella*, Agathidinae, key.

Introduction

French Guiana is located at the south-east of the Guianas shield, a Precambrian massif running from the Venezuela trough through Guianas and the North of Brazil. The vegetation of French Guiana is related to the dense Amazonian rainforests of Brazil. Some savannas, marsh areas and mangroves exist along the coast. I have undertaken several mission in the field to study from a global point of view the entomological fauna, and especially that of the Braconids. Among the entomological material collected in French Guiana during the last three years, two new species belonging to the genus *Earinus* WESMAEL, 1837 are here described.

The genus *Earinus* was created by WESMAEL (1837) without any indication of type. MUESEBECK and WALKLEY (1951) chose *Microdus nitidulus* NEES VON ESENBECK, 1812 as type-species. This species was recognised as conspecific to *Bassus gloratorius* PANZER, 1890. The position of *Earinus* was uncertain for long years (see MARSHALL, 1885; THOMSON, 1895; ASHMEAD, 1900; SHENEFELT, 1970; BHAT and GUPTA, 1977). In 1992, Sharkey recognized the monophyly of the subfamily Agathidinae and divided it into five tribes. The

tribe of Earinini, to which the genus *Earinus* belongs, is characterized by one autapomorphy : the lack of notauli. The two new species belongs to the group of *Earinus* species which have the vein 1SR+M of fore wing incomplete. To increase our knowledge about Neotropical braconids, new data for the Agathidinae collected in French Guiana are added.

For identification of the Braconidae subfamilies, we refer to VAN ACHTERBERG (1990, 1993) and WHARTON *et al.* (1997). The terminology used in this paper, especially for wing venations, is according to VAN ACHTERBERG (1988, 1994a). The examined specimens are housed in the collections of the 'Faculté Universitaire des Sciences Agronomiques', Gembloux, Belgium (FUSAGx).

Systematic account

Subfamily Agathidinae

Earinus Wesmael, 1837

= *Diatmetus* FOERSTER, 1862

Type species : *Microdus nitidulus* NEES VON ESENBECK, designated by MUESEBECK and WALKLEY, 1951.

Earinus bourguignoni BRAET sp. n. (Figs 1-9, 19)

Material examined : Holotype, ♀ (FUSAGx) : "Guyane française, Crique Sapokai, degrad Laurens, 26.VIII-2.IX.2000 (Malaise), AEI guyane - J. CERDA legs".

Etymology : In honour to L. BOURGUIGNON for his help during the field mission in 2000.

Holotype, F., length of body 11 mm, of fore wing 10 mm, of ovipositor sheath 10 mm.

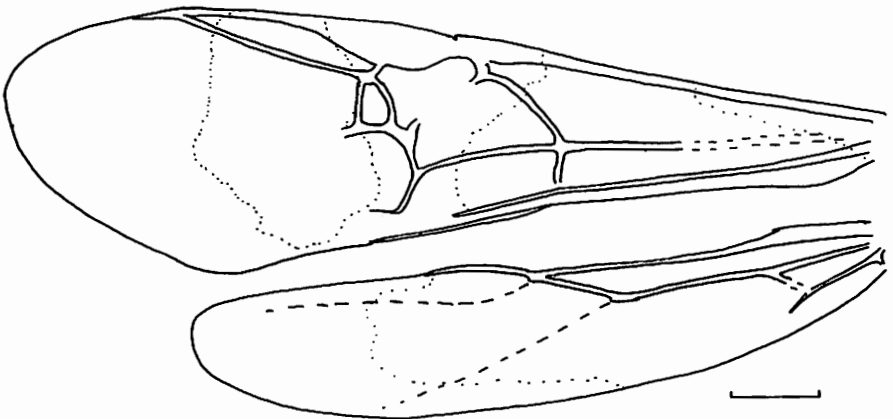
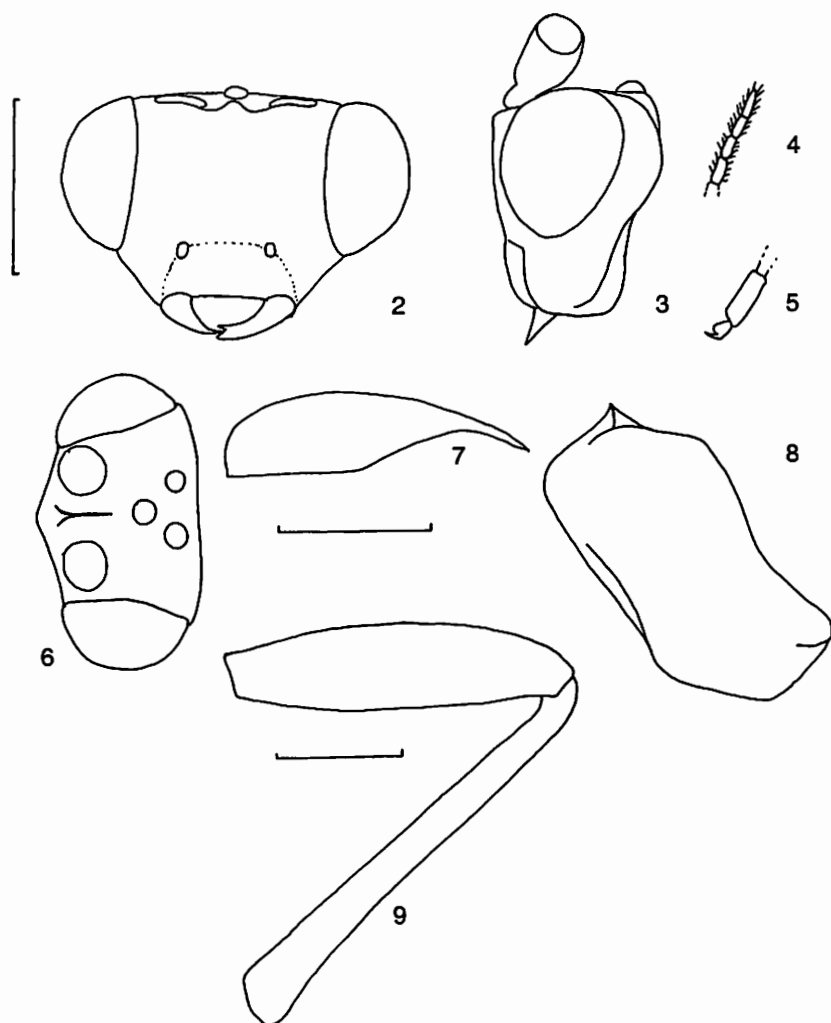


Fig. 1. *Earinus bourguignoni* sp. n., holotype ♀, wings. Scale bar = 1mm.



Figs 2-9. *Earinus bourguignoni* sp. n., holotype ♀. Head in facial (2), lateral (3) and dorsal (6) views; apex of antenna (4); hind tarsal claw (5); mesoscutum in lateral view (7); mesopleuron in lateral view (8); hind femur and tibia (9). Scale bar = 1mm.

Head (Figs 2-4, 6). Antennal segments 45, length of 3rd segment 1.2 times the 4th segment, length of 3rd, 4th, penultimate and ultimate segments 4.25, 3.5, 1.6 and 2.3 times their maximal width, respectively; length of maxillary palps equal to the height of head; length of eyes in dorsal view 6.4 times temple; POL : OD : OOL = 12 : 7 : 12; face and clypeus flattened in lateral view; face with sparse setae, smooth medially; clypeus smooth; frons weakly concave, smooth with a short medio-longitudinal carina; temple smooth; malar suture

absent; malar space 2.4 times basal width of mandibles; occipital carina absent.

Mesosoma (Figs 7-8, 19). Length of mesosoma 1.45 times its maximal height; mesosoma smooth without any carina or rugae, sometimes with sparse setae; precoxal sulcus absent; notauli absent; scutellum smooth; scutellar sulcus without carina.

Wings (Fig. 1). Fore wing : r : 3-SR : SR1 = 4 : 4 : 92; 2-SR : 2-M : r-m = 20 : 18 : 20; vein 3-M absent; vein 1-SR+M incomplete; vein cu-a interstitial; first subdiscal cell open.

Legs (Figs 5, 9). Hind coxa smooth; femur, tibia and basitarsus of hind leg 4.2, 7.8 and 8.6 times their width, respectively; length of hind spurs 0.2 and 0.3 times hind basitarsus; apex of hind tibia with 4 spines; tarsal claws with small lobe.

Metasoma (Fig. 19). Length of first tergite subequal to its apical width, its surface shiny; second and following tergites smooth; T2 with a medio-transversal curved groove; T2-T3 suture straight; hypopygium acute; ovipositor sheath subequal to fore wing.

Colour. Black. Palpi whitish; mid and hind trochantellus yellowish; mesosoma, T1-T5 (excepted apex of T5), fore coxa apically, mid coxa basally, mid femur excepted basally, apical half of hind femur, hind tibia and tibial spurs orange; wings banded (Fig. 1).

Distribution. French Guiana.

Host. Unknown.

Earinus hubrechtiae BRAET sp. n. (Figs 10-18, 20)

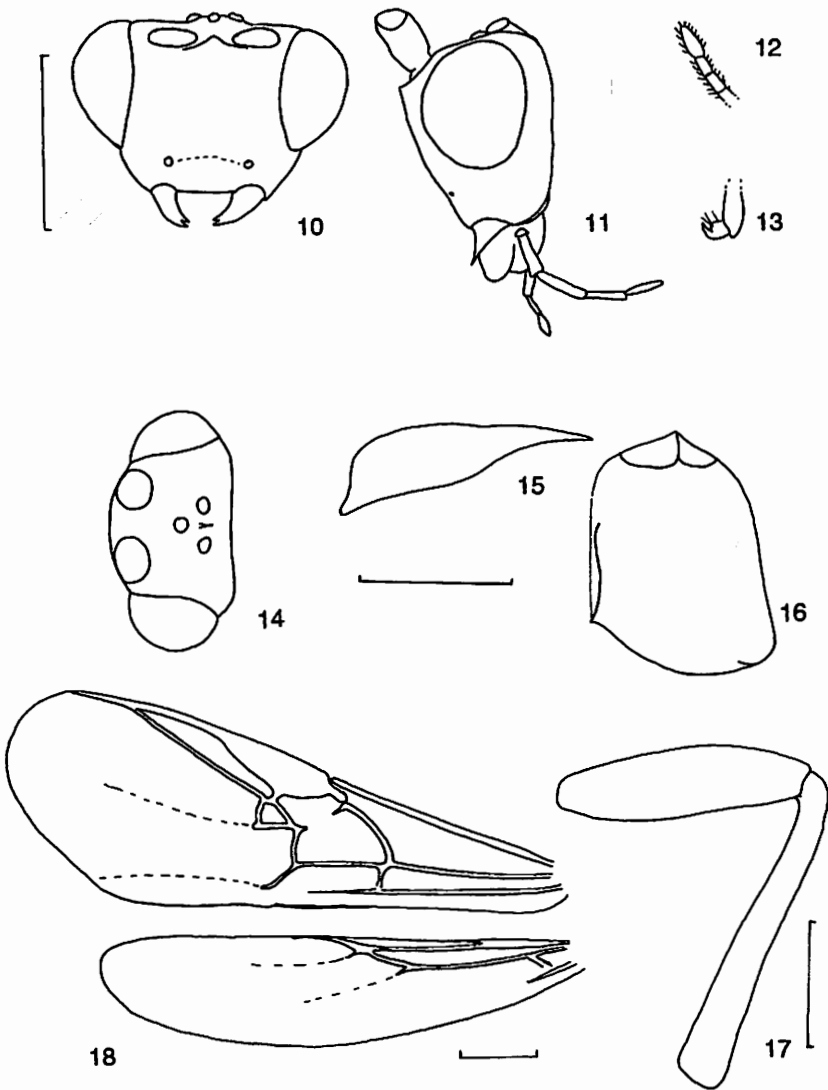
Material examined : Holotype, ♀ (FUSAGx) : "Guyane française, Montagnes de Kaw, Relais Patawa, VIII-IX.1999 (Malaise trap), AEI guyane - J. CERDA legs".

Etymology : In honour to F. HUBRECHT for her help in the field, in 2000.

Holotype, F., length of body 8 mm, of fore wing 7.3 mm, of ovipositor sheath 6.8 mm.

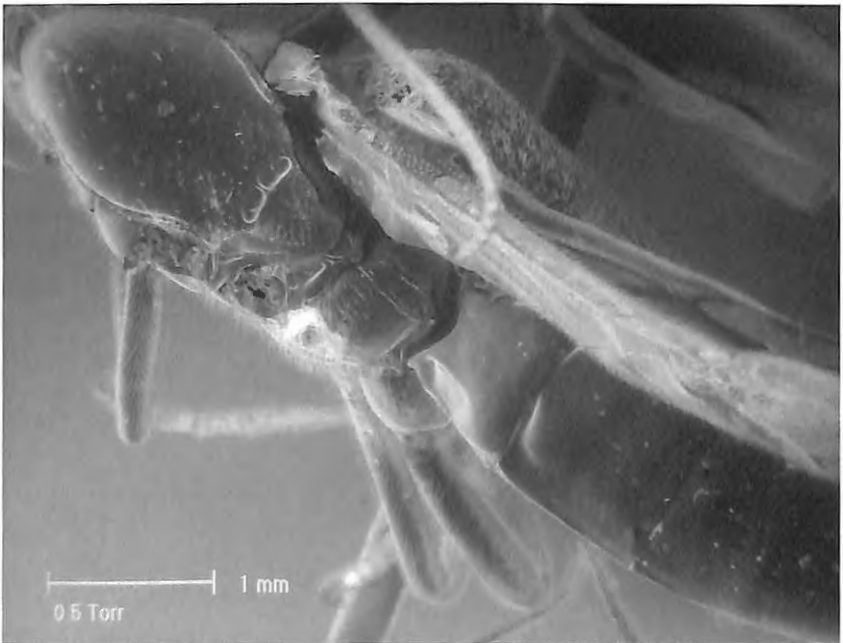
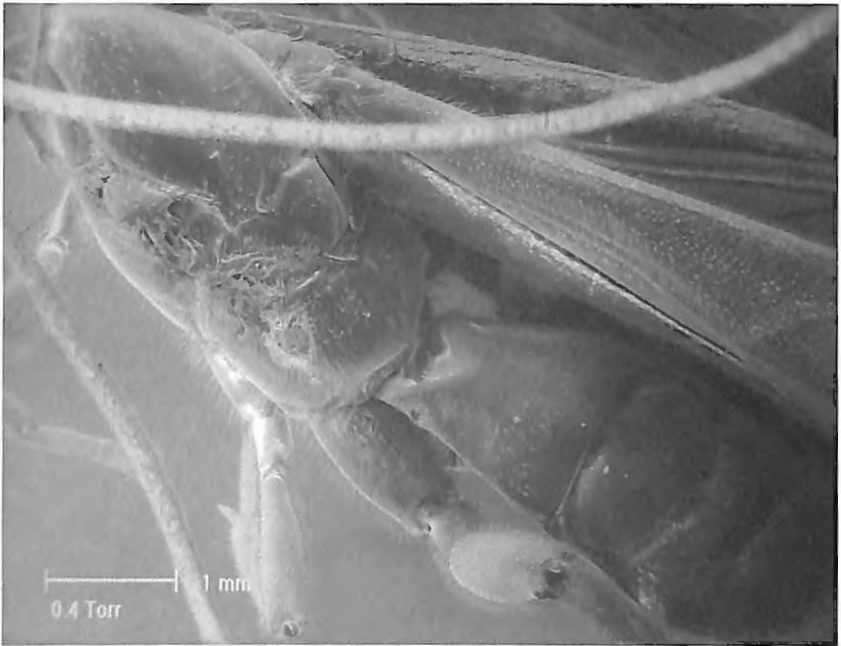
Similar to *E. bourguignoni* sp. n. except for the following characters.

Head (Figs 10-12, 14). Antennal segments 37, length of 3rd segment 1.3 times the 4th segment, length of 3rd, 4th, penultimate and ultimate segments 3.6, 2.8, 2 and 3 times their maximal width, respectively; length of maxillary palps 0.9 times the height of head; length of eyes in dorsal view 5.7 times temple; POL : OD : OOL = 7 : 7 : 17; surface of head smooth; malar space 1.4 times basal width of mandibles.



Figs 10-18. *Earinus hubrechtiae* sp. n., holotype ♀. Head in facial (10), lateral (11) and dorsal (14) views; apex of antenna (12); hind tarsal claw (13); mesoscutum in lateral view (15); mesopleuron in lateral view (16); hind femur and tibia (17); wings (18). Scale bar = 1mm.

Mesosoma (Figs 15-16, 20). Length of mesosoma 1.55 times its maximal height; mesosoma smooth without any carina or rugae, sometimes with sparse setae; precoxal sulcus absent; notauli absent; scutellum smooth; scutellar sulcus with one medio-transversal carina; propodeum with 2 medio-longitudinal carinae enclosing an areola; metapleural flange large.



Figs 19-20. *Earinus bourguignoni* sp. n., holotype ♀. (19), *Earinus hubrechtiae* sp. n., holotype ♀ (20). Mesosoma and three first tergites in dorsal view (19-20).

Wings (Fig. 18). Fore wing : r : SR1 = 4 : 92; 2-SR : 2-M : r-m = 12 : 12 : 10; veins : 3-SR and 3-M absent; vein 1-SR+M incomplete; vein cu-a post-furcal.

Legs (Figs 13, 17). Femur, tibia and basitarsus of hind leg 3.87, 6.81 and 8.2 times their width, respectively; length of hind spurs 0.3 and 0.4 times hind basitarsus; apex of hind tibia with 3 spines.

Metasoma (Fig. 20). Length of first tergite subequal to its apical width, its surface shiny, with 2 carinae basally; T2 without medio-transversal groove; ovipositor sheath 0.93 times fore wing.

Colour. Black. First tergite latero-basally, pleuron if metasoma, margin of sternites whitish; ventral margin of gena, clypeus, palpi, fore legs, mesosoma, mid coxa, trochanters and trochantellus orange; apex of mid femur orange-brown; wings fully infuscate and setose.

Distribution. French Guiana.

Host. Unknown.

All known Neotropical species of *Earinus* could be separated as follow :

1. Vein 1SR+M of fore wing incomplete 2
- Vein 1SR+M of fore wing complete .. (see also the key of BERTA, 2000) 3
2. Scutelar sulcus without any medio-transversal carina; propodeum smooth; mesosoma black; wings banded (French Guiana) *Earinus bourguignoni* sp. n.
- Scutelar sulcus with one medio-transversal carina; propodeum with two medio-longitudinal carinae; mesosoma orange; wings fully infuscate (French Guiana) *Earinus hubrechtiae* sp. n.
3. Scutelar sulcus with 5 carinae; mesoscutum and scutellum coarsely punctate; POL 4 times OD; propodeum with two medio-longitudinal carinae (Mexico) *Earinus erythropoda* CAMERON, 1887
- Scutelar sulcus without carina; mesoscutum and scutellum smooth or weakly punctate; POL 2.5 times OD; propodeum without or with a weak medio-longitudinal carina 4
4. Width of gena, in lateral view, at the level of ventral margin of eye, nearly twice its width dorsally; first tergite as long as its apical width, apical width 2.45 times its basal width; trochantellus carinate (Ecuador) *Earinus scitus* ENDERLEIN, 1918
- Width of gena, in lateral view, at the level of ventral margin of eye, subequal to its width dorsally; first tergite 1.26 times its apical width, apical width 1.5 times its basal width; trochantellus not carinate (Argentina) *Earinus chubuquensis* BERTA, 2000

New data about the Agathidine wasps

New records for a country have been shown with a dash. The following abbreviations for the localities have been used in new data :

- Caym : F., French Guiana, Cayenne, Matoury, Lacs des Américains (Malaise trap);
 Cayt : F., French Guiana, Cayenne, Remire-Montjoly, pointe du Mahury (Malaise trap, M. THOUVENOT leg.);
 Kawl : F., French Guiana, Roura, Montagnes de Kaw, piste de Kaw, dans layon (Y. BRAET leg.);
 Kawp : F., French Guiana, Kaw, Montagnes de Kaw, relais Patawa, 52°09'09.19"W-4°32'42.20"N (Malaise trap, AEI guyane - J. CERDA legs);
 Pcomb : F., French Guiana, Sinnamary, Pointe Combi, 5°18'N-52°57'W (Malaise trap in savanna, P. CERDAN leg. - lab. Hydrobiology);
 Ptsad : F., French Guiana, Sinnamary, Barrage de Petit-Saut, 4°04'-53°03'W (Malaise trap at the edge of forest, P. CERDAN leg. - lab. Hydrobiologie);
 Slaub : F., French Guiana, St-Laurent-du-Maroni, crique Balaté, 54°2'W-5°25'N (Y. BRAET leg.) (there is an error on some labels, the accurate date is 21.X-4.XI.1997 and not 21.X-4.IX.1997);
 Yalim : F., French Guiana, Yalimapo, Les Hattes, Ecloserie du WWF (BABIN régis rec.), Malaise trap in field beside forest, after the churchyard, toward VIGIE, 5°45'N-53°55'W (leg. Y. BRAET).

Alabagrus ENDERLEIN, 1920

- = *Astiria* ENDERLEIN, 1920
 = *Craspedobothrus* ENDERLEIN, 1920
 = *Liyptia* ENDERLEIN, 1920

A. arua SHARKEY, 1988

New localities : Caym : ♀, VII.1998. Kawp : ♀, II.1999; ♀, III.1999. Pcomb : ♀ & ♂, 1-6.IX.2000; 2♂♂, 25-30.VIII.2000; 2♀♀ & ♂, 3-24.VIII.2000; ♂, 18-27.VII.2000; ♂, 2-9.XI.2000. Ptsad : 3♀♀ & ♂, VII-X.2000; ♂, 11-18.VII.2000; ♂, 6-10.X.2000. Slaub : ♀, 21.X-4.XI.1997.

Distribution : Brazil, Colombia, Costa Rica, Ecuador, French Guiana*, Guyana, Panama, Surinam, Trinidad, Venezuela.

A. ?haenschi (ENDERLEIN, 1920)

= *Astiria haenschi* ENDERLEIN, 1920

New localities : Kawp : ♀, III.1999; ♀, V.1999.

Distribution : French Guiana, Guyana*.

A. leptosoma SHARKEY, 1988

New localities : Kawp : ♀, II.1999; ♀, III.1999; ♀, X.1999.

Distribution : French Guiana*, Surinam.

A. masneri SHARKEY, 1988

New localities : Kawp : 3♀♀, V.1999. Ptsad : ♂, 20-28.VII.2000.

Distribution : Belize, Colombia, Costa-Rica, Ecuador, El Salvador, French Guiana*, Guatemala, Panama, Surinam.

A. mojos SHARKEY, 1988

New localities : Caym : ♂, 27.IV-3.V.1998 (= week 18). Kawp : ♂, IX.1999.

Pcomb : ♀, 4-11.VII.2000; ♀, 11-18.VII.2000; ♂, 27.VII-3.VIII.2000.

Ptsad : ♂, 20-22.VI.2000; ♂, VII-X.2000; ♀, 31.VII-7.VIII.2000.

Distribution : Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, French Guiana*, Guatemala, Guyana, Panama, Paraguay, Peru, Surinam, Venezuela.

A. nigrilitus (SZÉPLIGETI, 1902)

= *Microdus nigrilitus* SZÉPLIGETI, 1902

= *Cremnops punctipennis* CAMERON, 1911

New localities : Caym : ♀, 1-7.XII.1997 (= week 49) (beginning of rain season). Pcomb : 2♀♀ & ♂, 14-20.IX.2000; 2♀♀, 10-17.X.2000; ♀ & ♂, 2-9.XI.2000; ♀, 8-15.XI.2000. Ptsad : ♀, VII-X.2000; ♀, 6-10.X.2000. Slaub : ♀ & 2♂♂, 21.X-4.XI.1997. Yalim : ♀, 12-19.VI.1996; ♀, 30.VI-6.VII.1996; 2♀♀, 7.VII-25.VII.1996.

Distribution : Brazil, French Guiana*, Guyana.

A. pachamama SHARKEY, 1988

New localities : Pcomb : ♀, 21-28.IX.2000. Ptsad : ♀, 26-30.VI.2000.

Distribution : Bolivia, Brazil, Colombia, Ecuador, French Guiana*, Guyana, Peru, Surinam, Trinidad, Venezuela.

A. paruyana SHARKEY, 1988

New localities : Kawp : ♂, X.1999.

Distribution : Ecuador, French Guiana*, Panama.

A. tripartitus (BRULLÉ, 1846)

= *Agathis tripartita* BRULLÉ, 1846

New localities : Pcomb : ♀, 25-30.VIII.2000; ♀, 10-17.X.2000.

Distribution : French Guiana*.

Remark : On the original label of *Agathis tripartita*, BRULLÉ wrote " Guyana, La Mana ". Therefore this species has not been collected from Guyana as reported by SHARKEY (1988).

***A. waiwai* SHARKEY, 1988**

New localities : Caym : ♀ & ♂, 6-19.IV.1998 (= week 15-16); ♀ & ♂, VII.1998. Kawl : ♀, 27.VII.1993. Pcomb : ♀, 27.VII-3.VIII.2000; ♀, 25-30.VIII.2000; ♀, 10-17.X.2000. Ptsad : ♀, VII-X.2000.

Distribution : Brazil, French Guiana*, Guyana.

Marjoriella* SHARKEY, 1983**M. ancha* SHARKEY, 1983**

New localities : Kawl : ♀, III.1999; ♀, IX.1999; ♀, X.1999.

Distribution : French Guiana*, Surinam.

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