

New species of *Aphaereta* Foerster, 1862 (Hymenoptera: Braconidae: Alysiinae) from Brazil

R.G. Arouca, S.A.G. Gomes, M.V. Yamada & A.M. Pentead-Dias

Arouca, R.G., S.A.G. Gomes, M.V. Yamada & A.M. Pentead-Dias. New species of *Aphaereta* Foerster, 1862 (Hymenoptera: Braconidae: Alysiinae) from Brazil.

Zool. Med. Leiden 83 (26), 29.viii.2009: 819-823, figs 1-6.— ISSN 0024-0672.

Raquel Gonçalves Arouca, Silvana Angélica Gama Gomes & Magda V. Yamada, Programa de Pós-graduação em Ecologia e Recursos Naturais, Universidade Federal de São Carlos, Caixa Postal 676, 13565-905, São Carlos, SP, Brazil.

Angelica Maria Pentead-Dias, Universidade Federal de São Carlos, Departamento de Ecologia e Biologia Evolutiva, Rodovia Washington Luiz, km 235, CP 676, CEP 13565-905, São Carlos, SP, Brazil (angelica@ufscar.br)

Key words: Alysiinae; Alysiini; *Aphaereta*; Atlantic forest; Brazil; new species.

Aphaereta atlantica spec. nov. has been described from material collected at the Atlantic forest in Brazil. The species was present during both the dry and rainy seasons. The male and female are described and illustrated.

Introduction

The genus *Aphaereta* Foerster, 1862, is a commonly encountered in New World and is widely distributed throughout both temperate and tropical regions. Members of this genus have been reared and released for the biological control of calliphorids and muscids (Diptera), but without much success (Wharton, 1997). Up to now, *A. confusa* Wharton, 1994 has been reported only from Mexico; it is reported here for first time from Brazil. This species is characterized by the shape and rugose sculpture of the metasomal tergite, the sculptured occiput, and dark body. The males have distinctly inflated maxilla, almost balloon-like (Wharton, 1994).

This study is part of the "Richness and Diversity of Hymenoptera of Atlantic forest" project of the FAPESP/BIOTA PROGRAM, which surveys the biodiversity of the Atlantic forest.

The Alysiinae fauna was surveyed in sixteen different fragments of Atlantic forest at eight Brazilian States (Table 1). The sampling was made during the dry season of 1990 (August and September), 1997 (May), 2000 (July and August), 2001 (October) and 2002 (May, July and September); and during the rainy season of 1990 (January and April), 2000 (March and December), 2001 (April) and 2002 (January, March and April). The species was found in Brazil from 26°13'40"S at Santa Catarina State to north (08°03'14"S) at Pernambuco State.

The specimens were collected using Malaise trap, yellow pan-trap and sweeping the vegetation with an insect net. The specimens were deposited in the collections of Universidade Federal de São Carlos, Departamento de Ecologia e Biologia Evolutiva (DCBU), São Carlos, SP and in the National Museum of Natural History (RMNH), Leiden, The Netherlands.

For description of male and female, the terminology as in Wharton (1980, 1994) and Sharkey & Wharton (1997) is used.

Table 1. Material and distribution of *Aphaereta atlantica* spec. nov. in Brazil.

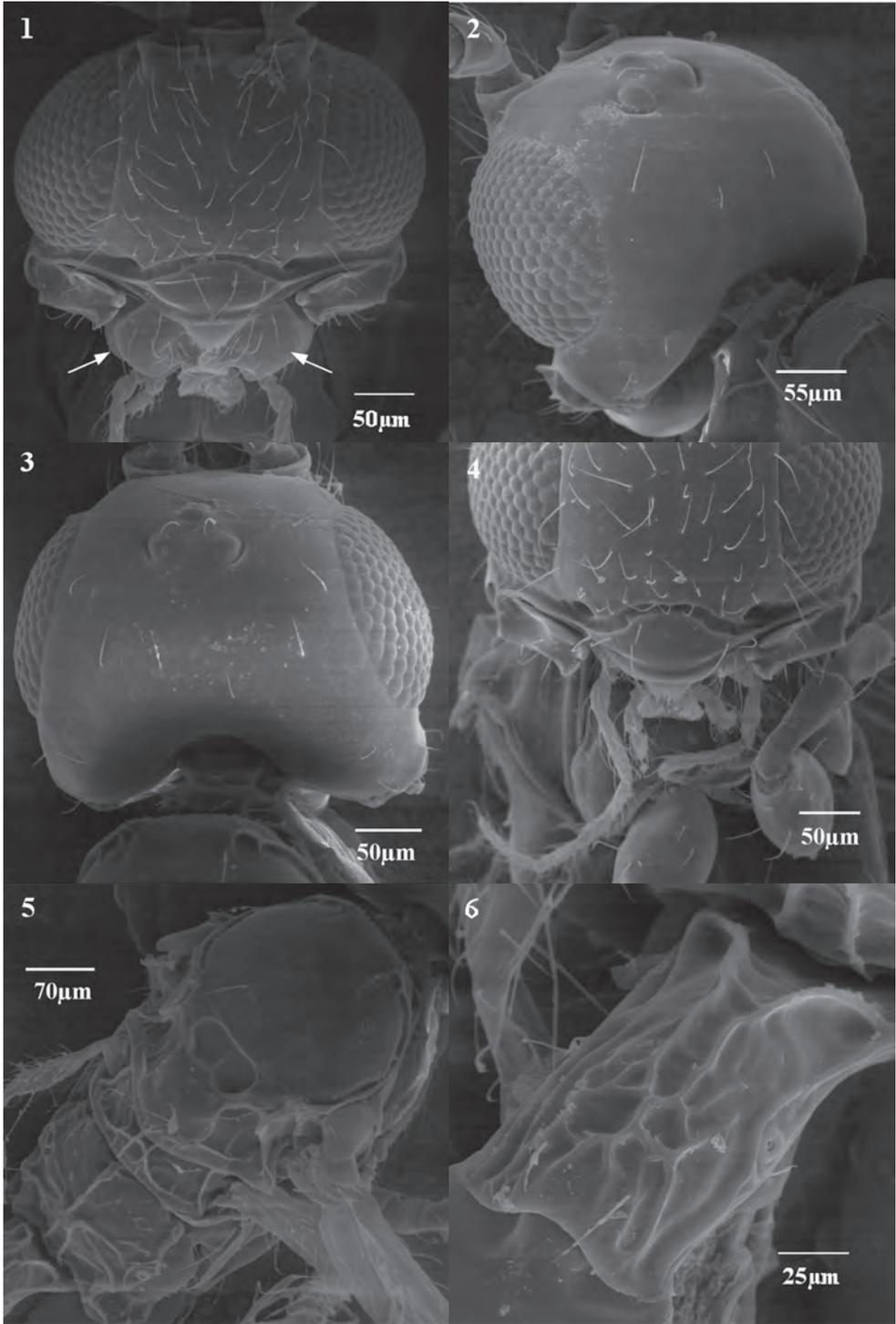
Locality	Stream's coordinates	Altitude	Method of collect	Period	Specimens obtained
Vila da Glória (São Francisco do Sul, SC)	26°13'40"S 48°40'49"W	Low	Malaise	x.2001	01 female
CEPA-Rugendas (São Bento do Sul, SC)	26°19'25"S 49°18'26"W	High	Malaise	x.2001	01 female
Parque Estadual do Pau Oco (Morretes, PR)	25°28'37"S 48°50'04"W	Low	Sweeping vegetation	iv.2002	03 males 01 female
Estação Ecológica da Juréia	24°31'06"S 47°12'06"W	Low	Sweeping vegetation	v.2002	01 male
Parque Estadual de Intervalos (Barra Grande, SP)	24°18'18"S 48°21'55"W	High	Sweeping vegetation	xii.2000	01 female
Ubatuba, SP*	23°26'02"S 45°04'16"W	Low	Yellow pan-trap	i.1990	01 female
Parque Estadual Serra do Mar Núcleo Picinguaba (Ubatuba, SP)	23°20'10"S 44°50'15"W	Low	Sweeping vegetation and Malaise	i.2002	08 males 02 females
Ilha Grande, RJ*	23°11'S 44°11'W	Low	Yellow pan-trap	v.1997	02 females
Reserva Biológica do Tinguá (Nova Iguaçu, RJ)	22°45'33"S 43°27'04"W	Low	Sweeping vegetation	iii.2002	04 males 01 female
Usina Santa Izabel* (Campos do Jordão, SP)	22°43'57"S 45°27'13"W	High	Malaise	iii-iv.2002	01 male
Fazenda Canchim* (São Carlos, SP)	22°02'S 47°55'W	High	Yellow pan-trap	iv.1990	01 female
Estação Biológica Santa Lúcia (Santa Teresa, ES)	19°56'08"S 40°36'01"W	High	Sweeping vegetation	iv.2001	01 male
Reserva Biológica Sooretama (Linhares, ES)	18°42'S 39°51'W	Low	Sweeping vegetation	iii.2002	01 female
Estação Ecológica Pau Brasil (Porto Seguro, BA)	16°23'33"S 39°10'99"W	Low	Sweeping vegetation	v.2002	01 male 01 female
Res. Biol. Pedra Talhada (Quebrangulo, AL)	09°19'S 36°28'W	Low	Sweeping vegetation and yellow pan-trap	ix.2002	01 male 01 female
Horto Dois Irmãos (Recife, PE)	08°03'14"S 34°52'52"W	Low	Sweeping vegetation	vii.2002	04 males 04 females

Low = 0-200 meters high; High = more than 200 meters high.

Aphaereta atlantica spec. nov. Arouca & Pentead-Dias, 2009
(figs 1-6)

Material.— Holotype, ♀ (DCBU), "Brazil, Santa Catarina, São Bento do Sul, malaise trap, x.2001, A.M. Pentead-Dias". Paratypes (3 ♀♀, 4 ♂♂: DCBU, RMNH): 1 ♀ (RMNH), "Brazil, São Paulo, Barra Grande, sweeping vegetation trap, xii.2000, M.T. Tavares"; 1 ♀ (DCBU): "Santa Catarina, São Francisco

Figs 1-6. *Aphaereta atlantica* spec. nov., male (1-2) and female (3-6), Brazil. 1, head, anterior aspect (arrows indicate swollen maxillae near apices of mandibles); 2, 3, head, dorso- posterior aspect; 4, detail of face and clypeus, anterior aspect; 5, mesosoma, dorsal aspect; 6, first metasomal tergite, dorsal aspect. ►



do Sul, malaise trap, x.2001, A.M. Penteado-Dias"; 1 ♀ and 3 ♂♂ (DCBU), "Paraná, Morretes, sweeping vegetation trap, iv.2002, M.T. Tavares"; 1 ♂ (RMNH), "São Paulo, Peruíbe, sweeping vegetation trap, v.2002, N.W. Periotto".

Diagnosis.— This species is a member of the *A. confusa* species group as defined by Wharton (1994). As in other species of this group, *A. atlantica* is characterized by: the loss of fore wing veins RS+Ma and 1-RSb, resulting in a single large cell representing the discal and first two submarginal cells; a long first flagellomere and males with swollen maxillae. *Aphaereta atlantica* differs from other species of this group by having an occiput smooth and polished (fig. 3), light body and antenna terminating with white flagellomeres.

Description.— Holotype, ♀, length of body 1.4-1.7 mm.

Head.— Head moderately transverse in dorsal view, 1.4-1.6 times wider than long (fig. 3). Face smooth, polished, 1.0-1.2 times wider than high (figs 2, 4). Frons smooth, polished and glabrous. Occiput smooth and polished (fig. 3). Clypeus broad, convex, not protruding; anterior tentorial pit large, extending about more than 0.5 times distance from lateral margin of clypeus to eye; mandible about 1.6-1.7 times longer than apical width, smooth; first tooth broader than third tooth; second tooth long and acute, 0.4-0.5 times longer than apical width of mandible; eye large, without setae, 3.0-3.2 times longer than temple; antenna 16 segmented; first flagellomere 1.1-1.4 times longer than second; maxillary palp 1.3-1.4 times longer than height of head.

Mesosoma.— Mesosoma 1.1-1.3 times higher than wide, 1.3-1.5 times longer than high. Pronotum weakly sculptured, crenulate. Mesonotum polished, bare; without mid pit; with a few scattered setae along lateral margin and along transverse ridge delimiting anterior declivity. Prescutellar sulcus about twice broader than long, with single median carina (fig. 5). Metanotum medially dominated by flat, polished, largely triangular boss. Propodeum with narrow areola on posterior half, varying in shape from triangular to rectangular; median longitudinal carina present on anterior half, forming a low but distinct spine at junction with areola. Sternaulus (= precoxal sulcus) short to long, crenulate. Metapleuron unsculptured.

Wings.— Combined fore wing vein r and 3-RSa curved, less than 2.0 times length of 1-M; M+CU unpigmented. Hind wing with M+CU and 1-M long, nearly half as long as of remainder of wing.

Metasoma.— Petiole 1.7-2.3 times longer than apical width, nearly parallel-sided, apex about 1.0-1.6 times wider than base; surface rugose, obscuring dorsal carinae, which are generally discernible only on basal half and parallel-sided; dorsope medium-sized, deep, visible in dorso-posterior view (fig. 6). Ovipositor sheath 0.7-1.0 times longer than mesosoma.

Colour.— Brownish. Scape, pedicel, mandible, clypeus, legs (except all coxae, trochanter and trochantellus) and petiole yellow; coxae, trochanter and trochantellus light yellow; 5th tarsomere infumate; basal flagellomeres gradually darkening from yellow to brown, followed by 1 infumate to light brown flagellomere, and terminating with 4 to 6 white flagellomeres; palps white; wings hyaline.

Variation.— Prescutellar sulcus without median carina; face, propleuron, propodeum and metasoma may be yellow or dark brown.

Male.— Similar to female but with enlarged maxilla (fig. 1) and yellowish. Antenna terminating with 3 to 5 white flagellomeres.

Biology.— Unknown.

Etymology.— The specific name refers to the Atlantic forest where the material has been obtained.

Acknowledgements

We thank the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP), Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) and Instituto Nacional de Ciência e Tecnologia dos Hymenoptera Parasitóides da Região Sudeste Brasileira (INCT – HYMPAR/Sudeste) for their financial support.

References

- Sharkey, M.J. & Wharton, R.A. 1997. Morphology and terminology, p. 19-35, figs 1-12. In: Wharton, R.A., P.M. Marsh & M.J. Sharkey (eds). Manual of the New World genera of the family Braconidae (Hymenoptera).— Spec. Publs Int. Soc. Hym. 1:1-439, figs.
- Wharton, R.A. 1980. Review of the New World Alysini (Hymenoptera: Braconidae) with discussion of generic relationships within the tribe. — University of California Publications in Entomology 88: 1-104.
- Wharton, R.A. 1994. New genera, species, and records of New World Alysinae (Hymenoptera: Braconidae).— Proceedings of the Entomological Society of Washington 96 (4): 630-664.
- Wharton, R.A. 1997. Subfamily Alysinae, p. 84-116, figs 1-88. In: Wharton, R.A., P.M. Marsh & M.J. Sharkey (eds). Manual of the New World genera of the family Braconidae (Hymenoptera).— Spec. Publs Int. Soc. Hym. 1:1-439, figs.

Received: 30.vii.2008

Accepted: 23.vii.2009

Edited: C. van Achterberg

