

ASSOCIATION OF TWO EURYTOMIDAE (HYMENOPTERA) SPECIES WITH FRUITS OF *EUGENIA UNIFLORA* (MYRTACEAE), WITH DESCRIPTION OF A NEW *PRODECATOMA* SPECIES

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ABSTRACT

The female of *Prodecatoma geraldoi* sp. nov., reared from *Eugenia uniflora* (Myrtaceae) seeds, is described, illustrated and compared with related Neotropical species of the same genus, and *Sycophila pitangae* (Bondar, 1930) is registered for the first time in the state of São Paulo, southeastern Brazil.

KEY WORDS: Brazil, Chalcidoidea, phytophagy, parasitoid, *Sycophila*.

RESUMO

ASSOCIAÇÃO ENTRE DUAS ESPÉCIES DE EURYTOMIDAE (HYMENOPTERA) E FRUTOS DE *EUGENIA UNIFLORA* (MYRTACEAE), COM A DESCRIÇÃO DE UMA NOVA ESPÉCIE DE *PRODECATOMA* ASHMEAD. A fêmea de *Prodecatoma geraldoi* sp. nov., que se desenvolve em sementes de pitangueira *Eugenia uniflora* (Myrtaceae), é descrita, ilustrada e comparada com as de outras espécies neotropicais de *Prodecatomae* a ocorrência de *Sycophila pitangae* (Bondar, 1930) é, pela primeira vez, relatada para o Estado de São Paulo, Brasil.

PALAVRAS-CHAVE: Brasil, Chalcidoidea, fitofagia, parasitóide, *Sycophila*.

INTRODUCTION

The genus *Prodecatoma* is eminently pan-tropical, with 45 species (DALMOLIN *et al.*, 2004), twelve of which occur in Brazil (NOYES, 2005). The neotropical species of the genus are scarcely known, and were last studied by ASHMEAD (1904), which did not provide a key to species identification. The larvae of *Prodecatoma* species are mostly phytophagous, attacking at least nine plant families – hosts are discussed in PERIOTO & LARA (2004). DE SANTIS (1980) reported the association of *P. nigra* Ashmead with *Eugenia uniflora*, but neither the original reference nor any other publication supports this information, which might therefore be inaccurate.

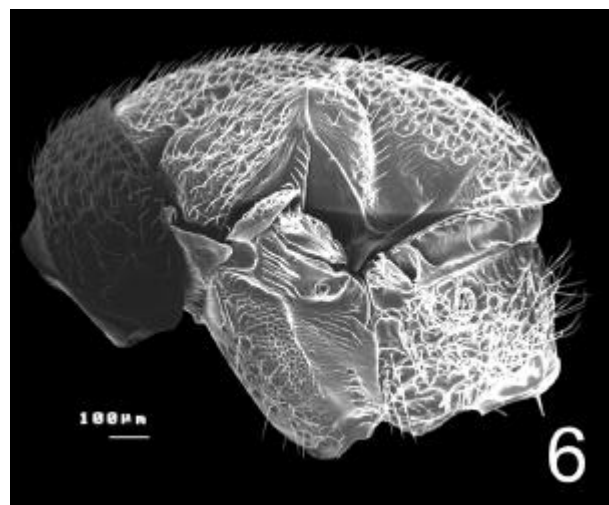
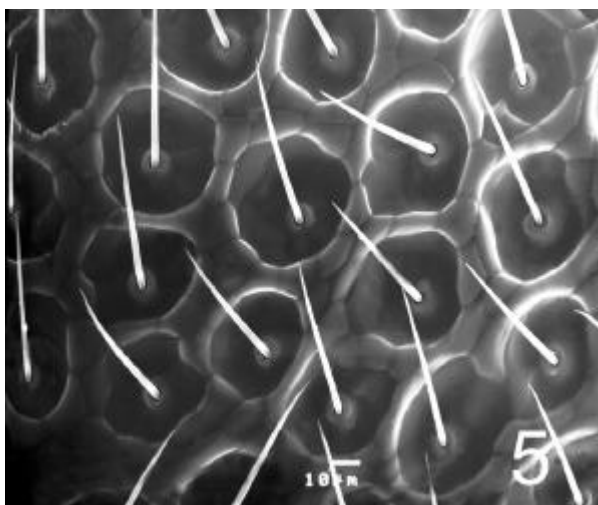
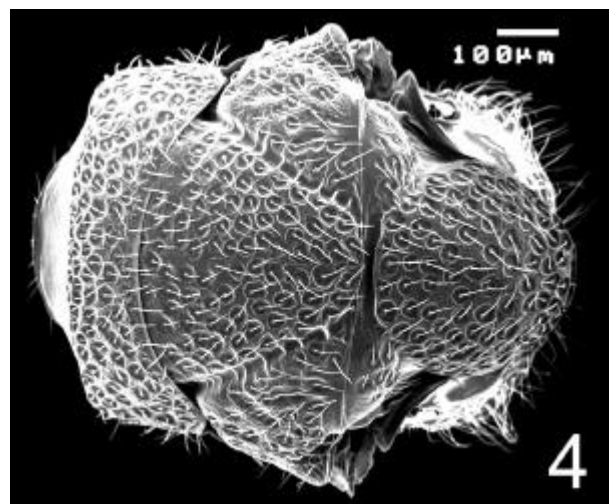
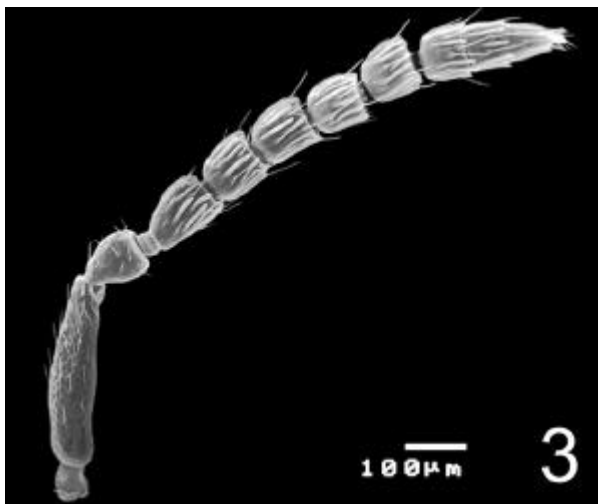
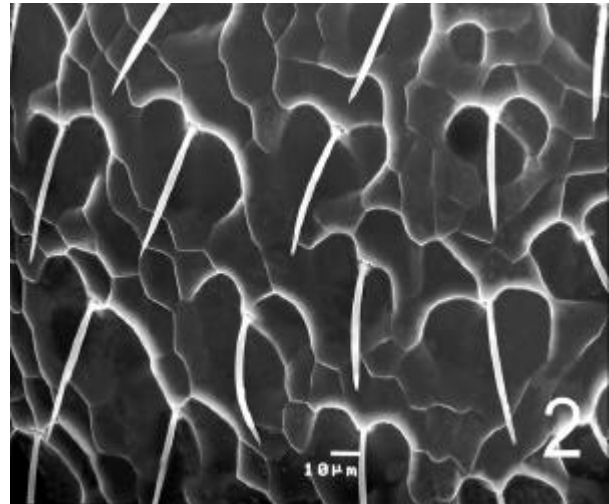
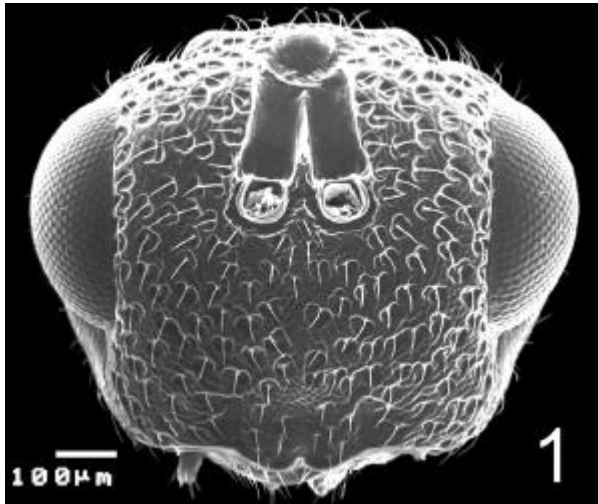
E. uniflora tree stands up to 12 meters. In Brazil, it occurs from the midwest (Minas Gerais State) to the southern part of the country (Rio Grande do Sul State). The fruits are subglobose and sulcate, red to purple dark, ripening between October and January; they are consumed *in natura* or prepared as a sweetened jelly (LORENZI, 1992).

All specimens were reared from *E. uniflora* plants from a plantation in Barretos city (20°33'26"S / 48°34'04"W), State of São Paulo, Brazil. Observations for descriptions were made using a Leica MZ 9.5 stereomicroscope and fluorescent light source. Images of scanning electron micrographs were made with a Jeol JSM5200 SEM of the Departamento de Biologia Celular e Molecular e Bioagentes Patogênicos from the Faculdade de Medicina de Ribeirão Preto / USP. Images were captured on Neopan 100 film and digitized from the negative using a scanner. The figures were prepared using Adobe® Photoshop. Morphological terminology follows GIBSON (1997); sculpturing terminology follows HARRIS (1979). Abbreviations are as follows: Fn, flagellomeres (*n* = number of the flagellomere); IAA = interantennal area; Mtn, metasomal tergites (*n* = number of the metasomal tergite); OOL = ocello-ocular distance; POL = post-ocular distance.

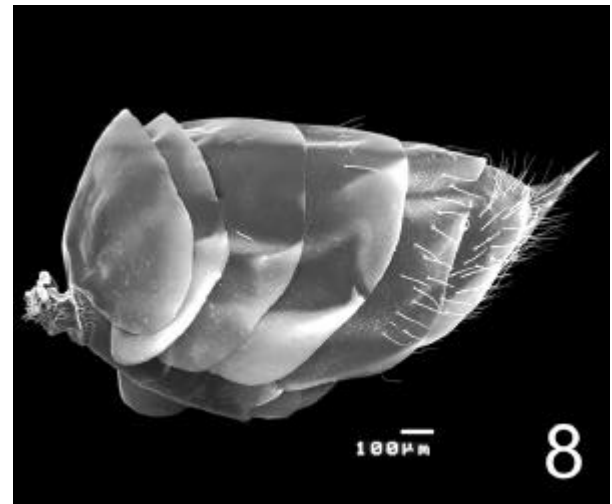
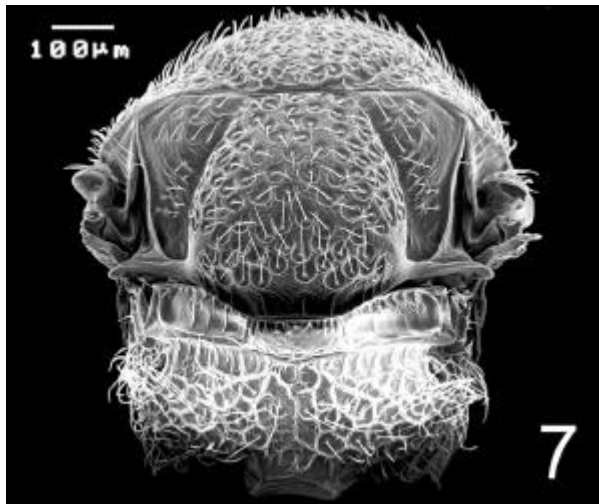
List of repositories

MZSP Museu de Zoologia da Universidade de São Paulo (São Paulo, Brazil). C. R. F. Brandão, curator.

MATERIAL AND METHODS



Figs. 1 a 6 - *P. geraldoi* sp. nov. female. 1. Head, frontal view; 2. Head, detail of sculpturing; 3. Antenna; 4. Mesosoma, dorsal view; 5. Mesosoma, detail of sculpturing; 6. Mesosoma, lateral view.



Figs. 7 a 8 - *P. geraldoi* sp. nov. female. 7. Propodeum; 8. Metasoma, lateral view.

UFES Universidade Federal do Espírito Santo (Vitória, Brazil). C. O. Azevedo, curator.

RESULTS

From *E. uniflora* fruits collected in October 2003 by A.B.G. Martins 13 eurytomid specimens were reared: two *S. pitangae* (Bondar), representing the first record of the species in the State of São Paulo, and 11 *P. geraldoi* sp. nov., described below.

Prodecatoma geraldoi Perito & Lara sp. nov.
(Figs. 1-8)

Diagnosis: mostly dark brown, with yellow marks. Eye 2.3 x malar space and 0.6 x head height in lateral view; face ventrally without striation; metasoma not laterally compressed; propodeum short, rugose-areolate with central area not delimited by carenae, pilose with long hairs.

Female holotype: length 2.8 mm. Mostly dark brown; yellow areas on face, clypeus, gena, mandible, pronotum laterally, tegula and acropleuron; reddish eyes and ocelli, eye margin narrowly dark brown; pedicel, second annular ring and scape (except apical 0.25 dorsally weakly darkened) light yellow; funicle articles grayish with white longitudinal sensillae; wings hyaline, veins and setae light brown; legs yellow except mid and hind coxae light brown and hind femur and tibia infusate; body pilosity white.

Head (Fig. 1): 1.3 x wider than high; frons foveolate, interstitial texture imbricate (Fig. 2); anterior ocellus circular, posterior ocelli elliptical, closer to eye margin than to each other (POL/OOL = 1.7); eye height 2.3 x malar space, 0.6 x head height in lateral view; scrobal depression smooth, almost as high as IAA; malar

space coriaceous, dorsal half glabrous; malar sulcus not reaching base of mandible; ventral margin of the clypeus bilobed.

Antenna (Fig. 3): scape and pedicel 3.5 x and 1.4 x longer than wide, respectively; F1 (1.4 x); F2, F3 and F5 (1.1 x), F4 (1.2 x) and club (3.1 x) longer than wide.

Mesosoma: dorsally (Fig. 4) 1.3 x longer than wide, foveolate, interstices coriaceous (Fig. 5) and slightly wider on scutellum; axilla sculptured as in Figure 7; notaulus complete. Superior mesoepisternum upwardly microimbricate; superior mesoepimeron latero-dorsally with subparallel rugosity (Fig. 6); propodeum (Fig. 7) very short, areolate-rugose, mostly pilose, hairs long, central area not delimited by carenae.

Fore wing: 1.8 x longer than wide; length of submarginal vein 3.3 x length of marginal vein; length of marginal vein 2.2 x length of stigmal vein and 1.1 x length of post-marginal vein.

Metasoma: not compressed, in dorsal view 2.6 x longer than wide, in lateral view 2.4 x longer than high (Fig. 8); Mt3-5 basally and Mt6 dorso-basally microimbricate; Mt4 in lateral view the longer tergite; Mt3-5 centrally with white pilosity.

Variability: length 2.7-2.8 mm; head 1.2-1.3 x wider than high; POL/OOL 1.7-1.9; eye height 2.1-2.3 x malar space and 0.5-0.6 x head height in lateral view; scape and pedicel 3.5-3.9 x and 1.4-1.5 x longer than wide, respectively; F1 (1.4-1.5 x); F2 (1.1-1.2 x); F3 and F5 (1.0-1.1 x) and F4 (1.0-1.2 x) and club 2.9-3.2 x longer than wide. Mesosoma in dorsal view 1.3-1.5 x longer than wide. Fore wing 1.8-2.2 x longer than wide; submarginal vein 3.3-3.9 x length of marginal vein; marginal vein 1.8-2.2 x length of stigmal vein.

Male: unknown.

Distribution: Barretos, São Paulo State, Brazil.

Comments and associations: *Prodecatoma geraldoi*

sp. nov. is similar to *P. carpophaga* DALMOLIN *et al.* (2004) and *P. petrodomoma* DALMOLIN *et al.* (2004), sharing a predominantly castaneous color, clypeus with ventral margin bilobed, head and mesosoma sculpturing, and metasoma not compressed. The new species can be identified by its face ventrally without striation, and by the absence of carinae in the central area of propodeum. All three species were reared from fruits of different species of Myrtaceae, as follows: *P. geraldoi* sp. nov. from *E. uniflora*; *P. carpophaga* from *Psidium cattleianum*, and *P. petrodomoma* from *P. cinereum*.

Material examined: 8 females. Holotype: Brasil, São Paulo, Barretos (20°33'26"S / 48°34'04"O), 1.X.2003, A.B.G. Martins, col. Deposited in MZSP. PARATYPES: MZSP (5) and UFES (2), same label as holotype.

Ethymology: the specific epithet honors Geraldo Perioto, father of the first author.

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REFERENCES

- ASHMEAD, W.H. Classification of the Chalcid flies of the superfamily Chalcidoidea, with descriptions of new species in the Carnegie Museum, collected in South America by Hebert H. Smith. *Memoirs of the Carnegie Museum* v.1, n.4, p.463-464, 1904.
- DALMOLIN, A., MELO, G.A.R.; PERIOTO, N.W. Novas espécies de *Prodecatoma* (Hymenoptera, Eurytomidae) associadas a galhas de duas espécies de *Psidium* L. (Myrtaceae), com comentários sobre *Prodecatoma spermophaga*. *Revista Brasileira de Entomologia*, v.48, n.4, p.519-528, 2004.
- DESANTIS, L. *Catálogo de los Himenópteros Calcidoideos Brasileños de la Serie Parasítica incluyendo Bethyloidea*. Curitiba: Ed. da Universidade Federal do Paraná, 1980. p.244-245.
- GIBSON, G.A.P. Morphology and terminology. In: GIBSON, G.A.P., HUBER, J.T.; WOOLEY, J.B. (Eds.). *Annotated keys to genera of Nearctic Chalcidoidea (Hymenoptera)*. Ottawa: NRC Research Press, 1997. p.16-44.
- HARRIS, R.A. A glossary of surface sculpturing. *Occasional Papers in Entomology*, Gainesville, v.28, p.1-31, 1979.
- LORENZI, H. *Árvores brasileiras: manual de identificação e cultivo de plantas arbóreas nativas do Brasil*. Nova Odessa: Ed. Plantarum, 1992. p.261.
- NOYES, J.S. *Universal Chalcidoidea Database*. London: The Natural History Museum, 2005. Disponível em: <<http://internet.nhm.ac.uk/jdsml/perth/chalcidooids/>>. Acesso em: 7 mai. 2006.
- PERIOTO, N.W.; LARA, R.I.R. Revisão da bibliografia do gênero *Prodecatoma* Ashmead, 1904 (Hymenoptera, Chalcidoidea, Eurytomidae). *Arquivos do Instituto Biológico*, São Paulo, v.71, n.1, p.133-135, 2003. Disponível em: <http://www.biologico.sp.gov.br/ARQUIVOS/V71_1/perioto3.pdf>. Acesso em: 7 mai. 2006.

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