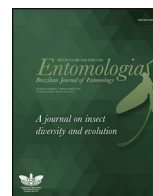




REVISTA BRASILEIRA DE
Entomologia
A Journal on Insect Diversity and Evolution

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Short Communication

New record of *Machaerobia machaerii* (Kieffer, 1913) (Diptera, Cecidomyiidae) in Brazil and association with host-plant species

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ARTICLE INFO

Article history:

Received 15 December 2017

Accepted 6 March 2018

Available online 19 March 2018

Associate Editor: Diana Grisales

Keywords:

Gall maker

Geographical distribution

Neotropical region

Seasonal Semideciduous Forest

ABSTRACT

The geographical distribution of *Machaerobia machaerii* (Kieffer, 1913) (Diptera, Cecidomyiidae), previously known only from Tubarão, Santa Catarina State, Brazil is extended to São Paulo State, Brazil. Illustrations of diagnostic characters of the male, pupa, and larva are provided, and the association with the species of host plant, *Machaerium hirtum* (Vell.) Stelfeld (Fabaceae) is established.

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Introduction

Spherical hairy galls on branches of *Machaerium hirtum* (Vell.) Stelfeld (Fig. 1) were sampled in a remnant of Seasonal Semideciduous Forest in Ribeirão Preto, São Paulo State, Brazil. After rearing, I obtained from these galls the larva, pupa, and male. The specimens belong to the cecidomyiid genus *Machaerobia* Rübsaamen, 1916, in possessing the diagnostic characters of simple tarsal claws, two-segmented palpi (Gagné, 1994), larva without mamelons beneath the lateral papillae, and with the prothoracic spatula present (Tavares, 1920). The host plant was identified as *M. hirtum* (Vell.) Stelfeld (Fabaceae), an endemic species to Brazil reported in rainforest and semideciduous forests of the Atlantic Forest Biome, and which also occupies areas of gallery forest in the Cerrado Biome (Filardi et al., 2013).

Similar galls were described for other species of *Machaerium* Pers. collected in three localities in Brazil. The first record of similar galls was for an unidentified species of *Machaerium* sampled in Tubarão, Santa Catarina State (Rübsaamen, 1908: p. 120, Fig. 2, larva; and p. 155, description of the gall and larva). The cecidomyiid specimens obtained were described as *Uleela machaerii* Kieffer, 1913, based on the larva (Kieffer, 1913); and as *Machaerobia brasiliensis* Rübsaamen, 1916, based on the female, pupa, and larva (Rübsaamen, 1916). Later, *U. machaerii* was synonymized under *M.*

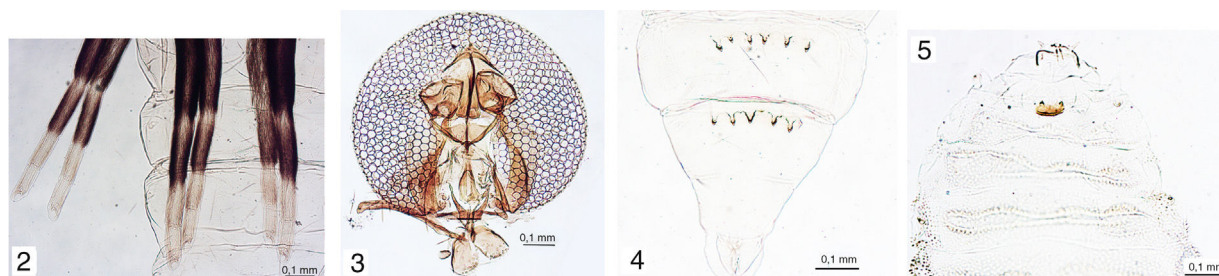


Fig. 1. Branch of *Machaerium hirtum* (Vell.) Stelfeld, host plant of *Machaerobia machaerii* (Kieffer, 1913).

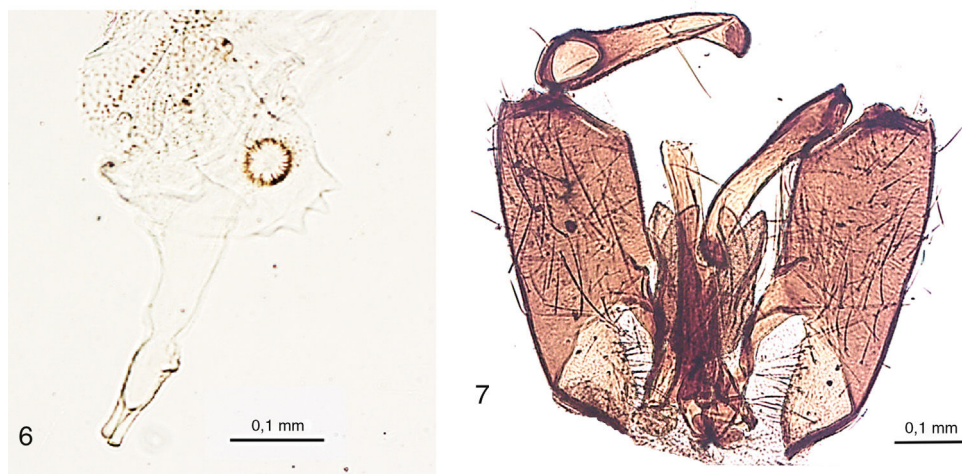
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Figs. 2–5. Diagnostic characters of *Machaerobia machaerii* in the specimens from Ribeirão Preto, São Paulo State. 2. Simple tarsal claws, 3. One-segmented palpus, 4. Bulbous ovipositor of female pupa, 5. Larval thoracic spatula.



Figs. 6 and 7. Distinctive characters of *Machaerobia machaerii* found in the specimens from Ribeirão Preto, São Paulo State. 6. Terminal segment of larva, 7. Male terminalia (dorsal view).

brasiliensis by Gagné (1994) based on the similarities of the larvae. This author also illustrated the male terminalia (Gagné, 1994: p. 112, Fig. 87). The second record was from Belo Horizonte, Minas Gerais State, on leaflets of *Machaerium aculeatum* Raddi (Fernandes et al., 1987: p. 119, illustration of gall; Fernandes et al., 1988: p. 17, description of gall). The specimens obtained from these galls were recognized as a potential new species of *Anadiplosis* Tavares, 1916 (Fernandes et al., 1987, 1988; Gagné, 1994). The third record was from Teresópolis, Rio de Janeiro State, on bud galls of *Machaerium macaense* C.V. Mendonça, A.M.G. Azevedo & H.C. Lima (Maia et al., 2016). The specimens were described as *Machaerobia gemmae* Maia, 2016.

In this contribution I report the association of *Machaerobia machaerii* with *M. hirtum* on spherical hairy galls on branches, and expand the geographical distribution of *M. machaerii* to Ribeirão Preto, São Paulo State.

Material and methods

Branches of *M. hirtum* with spherical hairy galls on leaves, branches, and buds were collected on 26.ix.1996 on the campus of the Universidade de São Paulo, Municipality of Ribeirão Preto, São Paulo State, Brazil (S21°10'12.698", W47°51'31.626"). The sampling area is a remnant of Seasonal Semideciduous Forest. Some galls were opened to obtain immature specimens, and other galls were maintained in plastic pots for rearing of adults. The specimens were preserved in 80% ethanol and later mounted on slides following the methodology described by Gagné (1994). The material is deposited in the Diptera collection of the Museu de Zoologia da Universidade de São Paulo/USP (MZSP).

Results and discussion

I obtained one male, one pupa and one larva of *M. machaerii* from the spherical hairy galls on branches of *M. hirtum* (Fabaceae). This collection expands the geographical distribution of *M. machaerii* to Ribeirão Preto, São Paulo State. The specimens match with the male terminalia, pupa and larva of *M. machaerii* (Kieffer, 1913). The diagnostic characters of *M. machaerii* observed in the specimens are presented in Figs. 2–5. Characters of larvae and male terminalia were also used to recognize the species, and are shown in Figs. 6 and 7.

Examined material: BRAZIL, São Paulo State: Ribeirão Preto (Campus of the Universidade de São Paulo, S21°10'12.698", W47°51'31.626"), 1 larva, 1 pupa, 1♂, col. 26.ix.1996; ♂ emerg. 07.x.1996, Urso-Guimarães, M.V. col. (MZSP, slide-mounted).

Considering the wide distribution of *M. hirtum* in most of Brazil except for Amapá, Roraima, and Rio Grande do Sul (Filardi et al., 2013), *M. machaerii* likely also occurs in these states, on the host plant. Further collections are needed to confirm this supposition.

Conflicts of interest

The author declares no conflict of interest.

Acknowledgements

The author acknowledges support from FAPESP (Proc. #96/11.783-9), Dr. Carlos J.E. Lamas for providing access to the facilities in MZUSP, Dr. Ricardo Barosela (FFCLRP/USP) for identifying

the host–plant genus, and Dr. Ingrid Koch (IB/UNICAMP) for identifying the species of the host plant.

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