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SHORT NOTE

New Records, Including a New Species, of Scuttle Flies (Diptera: Phoridae) Associated with Leaf Cutter Ants (Hymenoptera: Formicidae) in Brazil

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Abstract
Among scuttle flies caught at colonies of leaf cutter ants were *Apterophora bragancai* Disney new species, and new host records for other species.

Introduction

During 2012 MALB and his colleagues Cliver Gomes, Leandro Silva, Hendria Martins and Marcos Teixeira collected Diptera attacking or hovering in the vicinity of leaf cutter ants. The scuttle flies (Phoridae) were preserved in 70% ethanol and sent to RHLD for slide mounting and identification. The ants were identified by the Brazilian team. The following species were obtained with the ant hosts indicated. The specimens are deposited in the Collection of the Museu de Zoologia, Universidade de São Paulo, Brazil (MZSP**)** and the University of Cambridge Museum of Zoology (UCMZ).

Genus *Allochaeta* Borgmeier

The genotype is *A. excedens* described from the female only, from Petropolis in Brazil (Borgmeier, 1924). In the same paper *A. metatarsalis* was described from the male only, from Blumenau (Santa Catharina). Later, from Petropolis, *A. longiciliata*, known only from the female and *A. propinqua* known only from the male were then added (Borgmeier, 1926). However, subsequently these two were procured *in copula,* so *A. propinqua* was then synonymised with *A. longiciliata* (Borgmeier, 1928). This served to emphasize the sexual dimorphism in this genus. Subsequently *A. senex,* known from the female only was added from São Paulo State, Campinas (Borgmeier & Prado, 1975) and *A. wallerae* Disney known from the male only was added from Mexico (Disney & Bragança, 2000) along with possible males of *A. excedens* from Viçosa, MG, Brazil. In the present study further examples of these males were obtained (see below). Borgmeier (1928) reported *A. longiciliata* soliciting food from its ant host, *Acromyrmex muticinodus.* Other reported hosts are the same species with *Acromyrmex niger* Smith (Borgmeier, 1928), *A. muticinodus* with *Ac. niger* (Borgmeier, 1928), the putative males of *A. excedens* with *Atta laevigata* Smith and *A. wallerae* with *Atta cephalotes* (Linn.) (Disney & Bragança, 2000); and *A. metatarsalis* from a colony of the termite *Nasutitermes rippertii* (Rambur) (Borgmeier, 1924). In the present study the following further records of the putative males of *A. excedens* were obtained (see below).

Material examined. 3 males, Minas Gerais State, Viçosa, vii.2012, at *Atta sexdens* (Linn.) (Marcos Bragança, TO-137). 4 males, Minas Gerais State, Florestal, x.2012, at *A. sexdens* (Cliver Gomes, TO-128, TO-129).

This species was previously reported with *Atta laevigata* (see above).

Genus *Apterophora* Brues

This genus closely resembles the large genus *Puliciphora.* The flightless females differ only in having a longer proboscis. The males differ in having modified front tibiae. However, the form of these modifications ranges from a clearly distinct excavation of the ventral margin to an apical ventral projection. In the genus *Puliciphora* modifications of the legs are not uncommon. Thus several have swollen front basitarsi or these are otherwise modified (e.g. see *Puliciphora* species B below). This genus may therefore eventually prove to be merely a subset of *Puliciphora.*

The species of *Apterophora* are discussed by Prado (1976), allowing identification of males. In our present state of knowledge, females can only be named when associated with their males.

Apterophora attophila Borgmeier

Material examined. 3 males, Minas Gerais State, Florestal, x.2012, at *Atta sexdens* (Linn.) (Cliver Gomes, TO-126, TO-127, TO-129). 1 male, Minas Gerais State, Viçosa, vii.2012, at *A. sexdens* (Marcos Bragança, TO-137).

The type series was recorded with *A. sexdens* and Prado (1976) added further records with the same ant along with records with *Eciton burchelli* (Westwood) and *Solenopsis geminata (*F.); and also with the termite *Nasutiterms sp.*

Apterophora borgmeieri Prado

Material examined. 1 male, Minas Gerais State, Viçosa, vii.2012, at *Atta sexdens* (Linn.) (Marcos Bragança, TO-136).

Apterophora bragancai Disney new species

The fore tibia closely resembles that of *A. caliginosa* Brues, but the longer anal tube and left hypandrial lobe of the hypopygium immediately distinguish the new species.

Male. Postpedicels brown, tapered, 0.16 mm long and with about a dozen subcutaneous pit sensilla. Palps brown, 0.24 mm long and 0.06 mm wide, with apical bristle 0.07 mm long. Thorax brown. Notopleuron with 3 bristles. Scutellum with and anterior pair of fine hairs and a posterior pair of bristles. Abdomen with brown tergites and paler brown venter. Hypopygium as Fig. 1. Apart from brown patches in mid coaxa the legs are mainly yellow apart from the distal halves of the femora shading to brown. Front tibia as Fig. 2. Front tarsus with posterodorsal hair palisades on segments 1 to 4. Hairs below basal half of hind femur shorter than hairs of anteroventral row of outer half. Wing 2.46 mm long. Costal thicker than vein 3. Costal index 0.65. Costal ratios 0.55 : 1. Haltere knob brown.

Material examined. Holotype male, BRAZIL, Minas Gerais State, Viçosa, vii.2012, at *Atta sexdens* (Linn.) (Marcos Bragança, TO-136) (5-162, MZSP). This fly was captured when it was flying over the ants along the foraging trail.

Genus *Mymosicarius* Borgmeier

The females are keyed by Disney, Elizalde & Folgarait (2006).

Mymosicarius grandicornis Borgmeier

Material examined. 4 females, Minas Gerais State, Viçosa, 14.iv.2012, at *Atta bisphaerica* Forel (M. Bragança, TO-132, TO-133), 1 female, same locality and ant host, 28.vi.2012 (M. Bragança, TO-135), 4 females, same locality and host ant, ix, 2012 (Hendria Martins, TO-140, TO-141); 1 female, (Jalapão) Mateiros, 3.v.2012, at *Atta sexdens* (Linn.) (Leandro Silva, TO-131). 11 females, Minas Gerais State, Florestal, x.2012, at *A. sexdens* (Cliver Gomes, TO-125-128, TO-130).

These records confirm previous records with these two ant hosts, which has also been recorded with *A. laevigata* (Disney, Elizalde & Folgarait (2006).

Genus *Puliciphora* Dahl

More than one hundred species are known in this cosmopolitan genus. Species recognition has been based on the flightless females in the first instance and for most regions keys only exist for the females, those of the Neotropical Region being keyed by Disney (2003). The boundaries of the genus are still not settled. The males of the following two species were obtained. These flies were captured when they were flying over the ants in a disturbed nest.

Puliciphora species A

Male. Frons much wider than long and with 10 bristles level with or below anterior ocellus (4 supra antennals and 2-4 bristles). Postpedicels brown, 1.0-1.1 mm wide and lacking SPS vesicles. Palps brown, 1.4 mm long, 0.3 mm wide and the longest bristles 0.9 mm long. Thorax brown, but tending to be paler on sides. Notopleuron with 3 bristles. Scutellum with and anterior pair of small hairs and a posterior pair of bristles. Abdomial tergites brown and venter gray. Hypopygium as Fig. 3, notably with a long anal tube relative to the length of the epandrium. Legs pale dusky yellow. Front tarsus with a posterodorsal hair palisade on segments 1-4. The 3 hairs

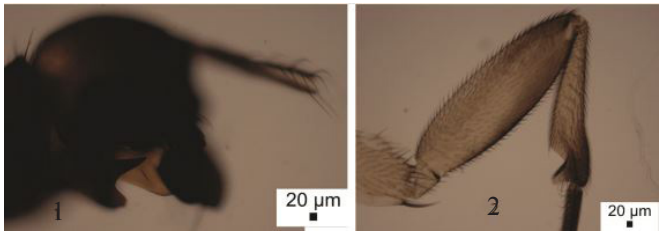
below basal half of hind femur about as long as those of anteroventral row of outer half but clearly more robust. Wings 1.1 mm long. Costa about as wide as vein 3. Costal index 0.6. Costal ratios 0.37 : 1. Haltere knob brownish gray.

Material examined.1 male, Minas Gerais State, Viçosa, vi.2012, at *Atta sexdens* (Linn.) (M. Bragança, TO-138, MZSP).

Puliciphora species B

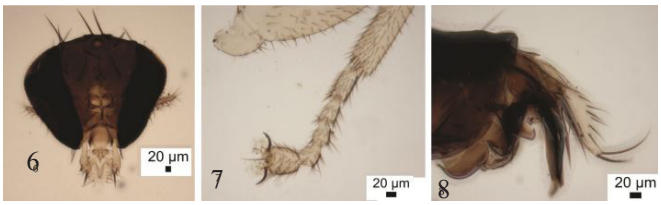
Male. Frons brown, clearly wider than long and with 10 bristles below anterior ocellus. Subglobose postpedicels light brown, 0.1 mm wide, with numerous SPS vesicles. Palps yellowish gray, 0.1-0.12 mm long, 0.04 mm wide and longest bristle 0.06-0.07 mm long. Thorax brown, but paler at sides, with 3 bristles on notopleuron. Scutellum with an anterior pair of small hairs and a posterior pair of bristles. Abdominal terrgites brown and venter gray. Hypopygium as Fig 4. Legs with slightly dusky but pale yellow femora and tibiae but tarsi all pale. Front tarsus with posterodorsal hair palisades on segments 1-4 and basitarsus as Fig. 5. Hind femur with hairs below basal half shorter than those of anteroventral row of outer half. Wings 1.5 mm long. Costa about as wide as vein 3. Costal index 0.55. Costal ratios 0.7 : 1. Haltere with pale stem and brown knob.

Material examined.1 male, Minas Gerais State, Viçosa, vi.2012, at *Atta sexdens* (Linn.) (M. Bragança, TO-138, MZSP).



Figs 1-2. *Apterophora bragancai* male.1, left face of hypopygium; 2, front tibia.

Figs 3-5. *Puliciphora* males. 3, species A, left face of hypopygium; 4-5, species B; 4, left face of hypopygium; 5, front basitarsus.



Figs 6-8. Problem damaged specimen, male. 6, frontal view of head; 7, front tarsus; 8, left face of hypopygium.

A damaged specimen

A distinctive male that has lost both its wings appears to be an undescribed species of the poorly defined genus *Macrocerides* Borgmeier or a similar genus subsequently distinguished from this genus. An intact specimen will be required to settle thee identity of this species.

Male. Frons as Fig. 6. Postpedicels yellowish gray brown, 0.14 mm long and 0.25 mm greatest breadth. Palps yellow, 0.12 mm long, 0.03 mm wide and longest bristle 0.05 mm long. Thorax brown. Notopleuron with 2 bristles. Mesopleuron bare. Scutellum with an anterior pair of small hairs and a posterior pair of bristles. Abdominal tergites and venter brown. Hypopygium as Fig. 7. Legs apart from brown on mid coxae yellow. Front tarsus as Fig. 8. Hairs below basal half of hind femur shorter and finer than those of anteroventral row of outer half.

Material examined. 1 male, Minas Gerais State, Florestal, x.2012, at *Trachymyrex* sp. (Cliver Gomes, TO-124, MZSP). This fly was captured when it was flying over the ants.

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