



Auchmerina (Hemiptera: Psylloidea), a psyllid genus in Brazil, associated with *Inga* spp. (Fabaceae)

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Index terms:

New geographic records

Inga laurina

Inga marginata

Termos para indexação:

Inga laurina

Inga marginata

Novos registros

Abstract - Distributional records in Brazil are provided for two psyllid species, *Auchmerina limbatipennis* Enderlein, documented for the states of Paraná, Rio de Janeiro, Santa Catarina and São Paulo, and *A. tuthilli* Klimaszewski, for Paraná and Santa Catarina. Host plants for these species are reported for the first time. *A. limbatipennis* develops on *Inga laurina* and *I. marginata* (Fabaceae), and it displays a dimorphism (presence or absence of a distal dark band on the forewing), that is not sexual nor seasonal. *A. tuthilli* probably develops on *Inga* spp. As well. For the first time, the immatures of *Auchmerina* are described.

Auchmerina (Hemiptera: Psylloidea), um gênero de psílídeos no Brasil associado a *Inga* spp. (Fabaceae)

Resumo - Registros de distribuição no Brasil são fornecidos para duas espécies de psílídeos pouco conhecidas, *Auchmerina limbatipennis* Enderlein (Paraná, Rio de Janeiro, Santa Catarina e São Paulo) e *A. tuthilli* Klimaszewski (Paraná e Santa Catarina). As plantas hospedeiras, anteriormente desconhecidas, são relatadas pela primeira vez. *A. limbatipennis* se desenvolve em *Inga laurina* e *I. marginata*, exibindo dimorfismo (presença ou ausência de uma faixa escura na parte distal da asa anterior), que não é sexual nem sazonal. Provavelmente, os hospedeiros de *A. tuthilli* também são *Inga* spp. Os imaturos de *Auchmerina* são aqui descritos pela primeira vez.

Received in 04/12/2020

Accepted in 09/07/2021

Published in 29/11/2021



Auchmerina Enderlein, 1918, is a small neotropical genus of jumping plant lice with three poorly known species (Ouvrard, 2020). *Auchmerina limbatipennis* Enderlein, 1918 was described from a single male collected in Bolivia (province of Sara) (Enderlein, 1918; Klimaszewski, 1962). In their catalogue of neotropical Psylloidea, Hodkinson & White (1981) listed the species erroneously also from Brazil citing Costa Lima (1942) who, however, merely repeated Enderlein's (1918) record from Bolivia (Burckhardt & Queiroz, 2012).

Recently, Costa et al. (2019) listed *A. limbatipennis* from Curitiba (Brazil, Paraná) without further details as a host of a parasitic mite. This record is based on a specimen that we collected and identified but according to Costa et al. (2019) it was subsequently lost. The second species, *A. tuthilli* Klimaszewski, 1962, was described from three specimens collected in Brazil (Santa Catarina) without additional information. *A. hirsuta* Brown & Hodkinson, 1988, finally, was described from five specimens from Panama. Only 10 specimens to date, belonging to three

species, have been recorded in the literature, half of them without precise locality data and none of them with information about their hosts.

In the context of a long term project exploring the psyllid fauna of Brazil, we repeatedly collected samples of *Auchmerina* and discovered the hosts. The psyllids were collected with an entomological net and an aspirator as described by Queiroz et al. (2017). Four species are represented, i.e. *A. limbatipennis*, *A. tuthilli* and two undescribed species. We have studied following material which is deposited in the Naturhistorisches Museum, Basel, Switzerland (NHMB):

Auchmerina limbatipennis Enderlein, 1918

Brazil: Paraná: 17 ♂, 20 ♀, Usina Parigot de Souza, -25.2438 -48.7511, 30 m, 17–20.vii.2017, *Inga marginata* (D. Burckhardt & D.L. Queiroz) #248(2); 2 ♂, 1 ♀, same but 25.2511 -48.7752, 480 m, 19.vii.2017, *Inga laurina* (D. Burckhardt & D. L. Queiroz) #249(4); 2 ♂, 2 ♀, Colombo, Embrapa Forestry, -25.3215 -49.1579, 920 m, 4.iv.2016 (D.L. Queiroz), #766(-); 2 ♂, same but 21.ix.2017 (J.T. Cremonese); 55 ♂, 48 ♀, 5 immatures, same but 1.v.2019, *Inga laurina* (D. Burckhardt & D. L. Queiroz) #339(3); 5 ♂, 11 ♀, same but *Inga laurina* (D. Burckhardt & D. L. Queiroz) #344(2); 2 ♀, 1 immature, same but *Inga laurina* (D. Burckhardt & D. L. Queiroz) #382(8); 6 ♂, 7 ♀, 3 immatures, same but 1.xi.2020, D.L. Queiroz #997(1); unspecified number, Curitiba, Jardim Botânico, -25.4408 -49.2390, 910 m, 2.iv.2013, *Inga marginata* (D. Burckhardt & D. L. Queiroz) #97(1); 16 ♂, 28 ♀, 12 immatures, same but Parque Atuba, -25.3817 -49.2033, 890 m, 12.ii.2013, *Inga marginata* (D. Burckhardt & D. L. Queiroz) #92(2); 1 ♂, same but Parque Bacacheri, -25.3900 -49.2309, 910 m, 7.ix.2019, *Inga laurina* (D. Burckhardt & D. L. Queiroz) #349(7); many ♂, many ♀, many immatures, same but Universidade Federal do Paraná, Centro Politécnico, -25.4474/4485 -49.2312/2383, 890–920 m, 3–7.xii.2012, *Inga marginata* (D. Burckhardt & D. L. Queiroz) #84(15); 2 ♂, same but 1.vii.2015 (D. L. Queiroz) #723; 9 ♂, 10 ♀, same but 5–6.ii.2016, *Inga marginata* (D. Burckhardt & D. L. Queiroz) #192(6); 2 ♂, 3 ♀, same but Londrina, Parque Estadual Mata dos Godoy, -23.4428 -51.2423, 630 m, 12–14.viii.2019, *Inga laurina* (D. Burckhardt & D. L. Queiroz) #343(11); 12 ♂, 15 ♀, same but Matinhos, Rodovia Elisio Pereira Alves Filho, -25.7105/7914 -48.5614/5771, 10 m, 29.xi.2012, *Inga marginata* (D. Burckhardt & D. L. Queiroz) #81(3);

16 ♂, 15 ♀, same but Morretes, Recanto Ferradura PR 410, -25.4528 -48.8794, 40 m, 13.ix.2011, *Inga marginata* (D. Burckhardt & D. L. Queiroz) #3(3). – **Rio de Janeiro:** 6 ♂, 8 ♀, Parque Nacional do Itatiaia, Visitors Centre, -22.4507 -44.6102, 650 m, 13.iv.2019, *Inga laurina* (D. Burckhardt & D. L. Queiroz) #330(1). – **Santa Catarina:** 4 ♂, 3 ♀, Joinville, 27.iv.2013, *Inga marginata* (D. Burckhardt & D. L. Queiroz) #111(1). – **São Paulo:** 1 ♂, Arapeí, -22.6615 -44. 4492, 500 m, 9.iv.2019, *Inga edulis* (D. Burckhardt & D.L. Queiroz) #323(4).

Auchmerina tuthilli Klimaszewski, 1962

Brazil: Paraná: 1 ♂, 1 ♀, Colombo, Embrapa, campus, -25.3215 -49.1579, 920 m, 12.ii.2014 (D. L. Queiroz) #591. – **Santa Catarina:** 1 ♀, Joinville, Estrada Dona Francisca, SC-301, km 100–96, -26.2108 -49.0966, 730 m, 27.iv.2013, *Inga striata* (D. Burckhardt & D.L. Queiroz) #110(3).

Auchmerina species 1

Brazil: Paraná: 1 ♂, 1 ♀, Antonina, Usina Parigot de Souza, -25.2518 -48.7752, 480 m, 19.vii.2017, *Inga laurina* (D. Burckhardt & D. L. Queiroz, #249(4); 1 ♀, Curitiba, Centro Politécnico, -25.4474/4485 -49.2312/2383, 890–920 m, 3–7.xii.2012, *Inga marginata* (D. Burckhardt & D. L. Queiroz) #84(15).

Auchmerina species 2

Brazil: Paraná: 1 ♂, Bocaiuva do Sul, BR-476 km 72, -25.0801 -49.0940, 1140 m, 21.iv.2013 (D. Burckhardt & D. L. Queiroz) #108(0); 1 ♂, Cerro Azul, BR-476 km 69, -25.0685 -49.0877, 1080 m, 18–19.iv.2013, *Inga sessilis* (D. Burckhardt & D. L. Queiroz).

Adults of *A. limbatipennis* are psyllids of 3.4–4.0 mm body length including wings (n = 15). They are characterised by a striking dimorphism affecting the forewing (Figures 1 and 2), i.e. with or without a brown band along the distal margin.

There are no intermediates between the two types of wing pattern. We randomly selected 130 specimens (59 ♂, 71 ♀) and counted the specimens with and without band. Slightly over a quarter of the specimens displayed the dark band without marked differences between the sexes (Figure 3). The dimorphism is not geographically or seasonally influenced and usually both types occur together.



Figures 1 and 2. *Auchmerina limbatipennis*. 1. Female, with dark wing band; 2. Male, without dark wing band.

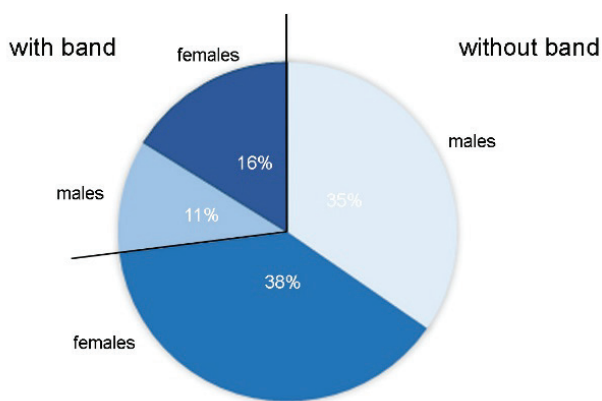
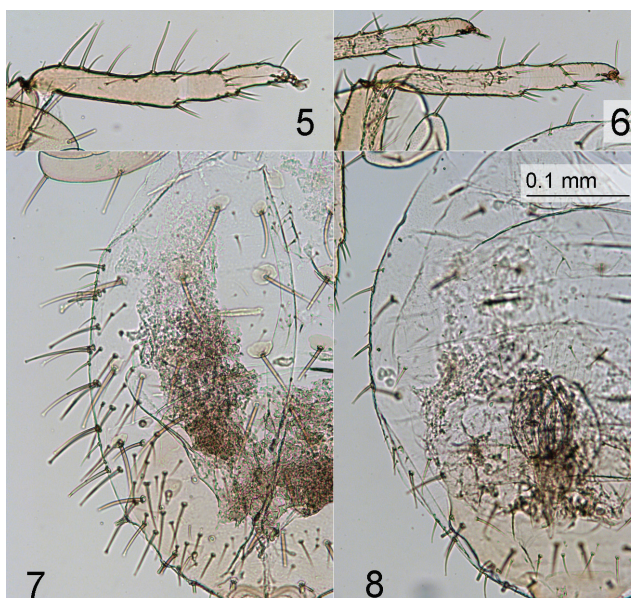


Figure 3. Presence/absence of a dark wing band in males and females in a random sample of 130 specimens of *Auchmerina limbatipennis*.

For the first time, we record immatures of the genus. They are similar to those of *Euceropsylla* (Figure 4), a genus phylogenetically closely related to *Auchmerina*

(Percy et al., 2018). *Auchmerina limbatipennis* shares also the same hosts with an unidentified *Euceropsylla* species. The immatures of the former differ from those of the latter in bearing more capitate setae on the tibiae and at the sides of the abdomen (Figures 5 to 8).

Photos: Dalva Luiz de Queiroz



Photos: Dalva Luiz de Queiroz (4); Daniel Burckhardt (5, 6, 7 and 8)

Figures 4 to 8. Fifth instar of immatures associated with *Inga laurina*. 4. Habitus of *Euceropsylla* sp.; 5. Hind leg of *Auchmerina limbatipennis*; 6. Hind leg of *Euceropsylla* sp.; 7. Left margin of abdomen of *Auchmerina limbatipennis*; 8. Left margin of abdomen of *Euceropsylla* sp.

Auchmerina limbatipennis is widely distributed in Paraná and we report it also from the states of Rio de Janeiro, Santa Catarina and São Paulo. From the other three Brazilian *Auchmerina* species we have only a few specimens from Paraná, and of *A. tuthilli* also from Santa Catarina. The wide distribution of *A. limbatipennis* (Bolivia and Brazil: PR, RJ, SC, SP) reflects, to a certain extent, that of its host species. Adults and immatures of *A. limbatipennis* have been collected on *Inga laurina* (Sw.) Willd. and *I. marginata* Willd. (Fabaceae), thus confirming the two species as hosts. The immatures live on the leaves and secrete droplets of honeydew and wax. They are relatively mobile.

Conclusions

As the citation by Hodkinson & White (1981) is erroneous and the record of Costa et al. (2019) lacks details, we present here precise collecting data for *Auchmerina limbatipennis* and *A. tuthilli* from Brazil. For the first time we also report information on hosts of *Auchmerina* which were previously unknown. *Inga laurina* and *I. marginata* are confirmed hosts of *A. limbatipennis*. Adults of the other three *Auchmerina* species were also collected on *Inga* species, but more collections have to be made in the field to verify them as hosts.

Acknowledgments

We thank M. L. Brotto and J. T. W. Motta (Museu Botânico Municipal, Curitiba, PR) for the identification of plant vouchers. We are also grateful for the collecting and export permits issued by IBAMA/SISBIO (permit numbers: 11832—Permanent license for zoological material collecting; 37053—Permit with scientific purpose: areas outside parks in PR, SC and RS; 44493—Authorization for activities with scientific purpose: Parque Nacional da Serra da Canastra, Parque Nacional da Serra da Bocaina, Parque Nacional do Itatiaia, Parque Nacional da Tijuca; IAP (Authorization for research in protected areas in Paraná, collecting permits numbers 493.1-13 and 029/18), Curitiba City Hall (collections in Curitiba parks) and CNPq (Project ‘Biodiversidade de Psylloidea no Brasil’, process of Scientific Expedition n° 002152/2012).

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