

Diversity of psyllids and their host plants (Hemiptera: Psylloidea) from the “Parque Estadual Caminho dos Gerais” and surroundings, Minas Gerais, Brazil

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Abstract

The psyllid fauna of the “Parque Estadual Caminho dos Gerais” and its surroundings is described based on a recent survey. We record twenty three species from the municipalities of Gameleiras, Mamonas, and Monte Azul from where no previous records are known. Ten of the species are described, three are referred to described species with doubts due to insufficient material and ten constitute undescribed taxa. One species is reported for the first time for the state of Mato Grosso do Sul and another for Minas Gerais. Almost half of the species are widely distributed, but two species appear to be endemic to the region. Fifteen species use Fabaceae as host, a pattern that reflects a general pattern in Psylloidea.

Keywords: Endemics. Jumping plant lice. New state records. Rock vegetation.

Diversidade de psilídeos e suas plantas hospedeiras (Insecta, Hemiptera, Psylloidea) no Parque Estadual Caminho dos Gerais e arredores, MG, Brasil

Resumo

A fauna de psilídeos do Parque Estadual Caminho dos Gerais e seus arredores é descrita com base em um levantamento recente. Vinte e três espécies foram registradas nos municípios de Gameleiras, Mamonas e Monte Azul, de onde nenhum registro anterior é conhecido. Dez das espécies são conhecidas, três são provisoriamente referidas como espécies descritas devido ao material insuficiente e dez constituem táxons não descritos. Uma das espécies é relatada pela primeira vez para o estados de Mato Grosso do Sul e outra para Minas Gerais. Quase metade das espécies estão amplamente distribuídas, mas duas espécies parecem ser endêmicas da região. Quinze espécies estão associadas a Fabaceae, um padrão que reflete um padrão geral em Psylloidea.

Palavras-chave: Endemismo. Psilídeos. Novos registros. Vegetação rupestre.

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Introduction

Psyllids or jumping plant lice (Hemiptera: Psylloidea) constitute a small group of phloem-feeding insects rich in species mainly in the tropics and south temperate regions. Currently, over 4000 species have been described worldwide but it is estimated that there are as many still undescribed (Burckhardt & Queiroz, 2020). Adults are always winged and range from 1 to 10 mm in body length, including the wings when folded over the body. There are five instars of immatures which usually develop on one or a few related host plant species (Hollis, 2004; Burckhardt *et al.*, 2014). Often related psyllid species develop on related plant species, with preference for some plant families or orders (e.g. Fabaceae, Myrtaceae, Asteraceae or Sapindales) whereas others are not or hardly used (Orchidaceae, Poaceae, Rubiaceae or Lamiaceae) (Ouvrard *et al.*, 2015). Some psyllids are serious pests of agricultural or forestry crop plants (Burckhardt, 1994; Hollis, 2004; Hodkinson, 2009) for which a lot of literature is available but very little is known about the biology, phenology or distribution of a vast number of species. This is particularly true for the Brazilian psyllids where only around 150 species have been reported of a 1000 estimated (Burckhardt & Queiroz, 2012, 2020; Rendón-Mera *et al.*, 2020; Burckhardt, 2021).

The “Parque Estadual Caminho dos Gerais” was created in the state of Minas Gerais, Brazil in 2007, with an area of over 56 thousand hectares, belonging to the municipalities of Espinosa, Gameleiras, Mamonas and Monte Azul. A major reason to create the park was that the “Serra Geral” (a mountain range), where the State Park is located, contains areas of extreme biological importance, with the presence of rare, endemic or endangered species and a high species richness in various groups of organisms. This unique biodiversity was threatened by the increased human activities. A strong pressure on the natural park environment, especially in the plateau areas, put some animal and plant species in danger of extinction and even caused the disappearance of water courses. Thanks to the protection, many disturbed areas are recovering now and other areas are protected from further destruction (Maioambiente.MG, 2007).

Since its creation, no faunistic surveys have been carried out in the park, and no psyllids have been reported from the three municipalities. Inventories are an important base for further scientific research and constitute a useful tool in management decisions. Here we report on a study of the psyllid fauna of the “Parque Estadual Caminho dos Gerais” and its surroundings.

Material and methods

Following localities were visited at following dates:

#1. Monte Azul, “Parque Estadual Caminho dos Gerais”, S15.1534° W43.0222°, 1040 m, 27 April 2021,

Caatinga, Cerrado and rock vegetation; – #2. same but S15.1632° W43.0277°, 1010 m, 27 April 2021, Cerrado vegetation; – #3. same but S15.1532° W43.0302°, 1090 m, 27 April 2021, Cerrado vegetation; – #4. same but S15.1004° W43.0213°, 1150 m, 27 April 2021, Cerrado vegetation; – #5. Monte Azul, Maromba, S15.1441° W42.7904°, 1060 m, 28 April 2021, transition from Cerrado to Caatinga and rock vegetation; – #6. Monte Azul, Sitio Serra Azul, S15.1568° W42.7845°, 1130 m, 28 April 2021, Cerrado vegetation; – #7. Monte Azul, ca. 10 km West of Monte Azul, S15.1497° W42.7904°, 1140 m, 28 April 2021, Cerrado vegetation; – #8. Mamonas, “Parque Estadual Caminho dos Gerais”, near Sapé entrance, S15.00152° W43.01910°, 1050 m, 29 April 2021, Cerrado and Caatinga vegetation; – #9. Mamonas, Parque Estadual Caminho dos Gerais, road to “Morro do Chapéu”, S14.9670° W43.0094°, 1060 m, 29 April 2021, Cerrado vegetation; – #10. Gameleiras, Parque Estadual Caminho dos Gerais, Vereda das Piranhas, S14.9360° W43.0105°, 1030 m, 29 April 2021, Cerrado vegetation and gallery forest.

Qualitative sampling was carried out during three full days with the aim to cover best the plant and habitat diversity as well as the altitudinal range of the Park. The psyllids were collected using a sweep net and aspirator as described by Queiroz *et al.* (2017). The collected specimens are conserved dry mounted or stored in 70% ethanol. Psyllids and plant vouchers are deposited in the Naturhistorisches Museum Basel, Switzerland (NHMB). The classification and nomenclature of Psylloidea follows Burckhardt *et al.* (2021) and Ouvrard (2021). Plant names are cited according to the Flora do Brasil (2021). Unpublished data based on material from previous collections by D. Burckhardt and D. L. Queiroz which is mostly deposited in the NHMB is referred to as “unpublished NHMB data”

Results

Twenty three species of Psylloidea were collected in and around the “Parque Estadual Caminho dos Gerais”. Ten of the species belong to described species, three are referred to described species only provisionally for the lack of sufficient material and 10 species represent undescribed taxa.

List of species

Apsylloopsis mexicana (Crawford, 1914) (Psyllidae, Macrocorsinae). Material examined: Monte Azul: #2: 2 ♂, 4 ♀, 2 immatures on *Hymenaea* sp.; #3: 1 ♂, 2 ♀, 1 immature on *Hymenaea* sp. – Mamonas: #8: 1 ♂ on *Hymenaea* sp.; #9: 1 ♂ on *Hymenaea* sp. – Gameleiras: #10: 1 ♂, 1 ♀ on *Hymenaea* sp.

Reported from Brazil (CE, GO, MA, MG, MS, MT, PA, PI, PR, SP), Mexico (Guerrero) and Panama. Confir-

med hosts are *Hymenaea* spp. (Fabaceae) on whose leaves the immatures often induce roll galls and produce lots of flocculent wax. The psyllid is found in Cerrado vegetation, transitional Cerrado–Amazon forests and gallery forests (Burckhardt & Queiroz, 2020). *Apsyllopsis mexicana* is widely distributed and one of three species listed here which also occurs outside Brazil. We found only relatively few specimens suggesting a low population level at the time of our survey of this usually common species.

***Calophya* sp.** (Calophyidae, Calophyinae). Material examined: Monte Azul: #6: 21 ♂, 31 ♀, 85 immatures, *Kielmeyera* sp.; #7: 2 ♂.

Figures 1, 2 – Galls of *Calophya* sp. on leaves of *Kielmeyera* sp. (Calophyllaceae). – 1: Detail of abaxial face (left); 2: infested sapling in locality #6 (right).



Caradocia longiantennata White & Hodkinson, 1980 (Psyllidae, Ciriacreminae). Material examined: Monte Azul: #5: 1 ♂, 1 ♀, *Tapirira guianensis*. – Gameleiras: #10: 6 ♂, 8 ♀, *Tapirira guianensis*.

Reported from Brazil (BA) (Burckhardt & Queiroz, 2012); new record for MG. Recent collections made in Brazil (unpublished NHMB data) suggest that the species has a much wider distributed in Brazil but a taxonomic revision is necessary to separate it accurately from several morphologically similar, undescribed species. Immatures are free living on new flush and leaves of *Tapirira guianensis* (Anacardiaceae) in Cerrado vegetation and gallery forests (unpublished NHMB data).

***Caradocia* sp.** (Psyllidae, Ciriacreminae). Material examined: Monte Azul: #5: 1 ♂, 1 ♀, *Tapirira obtusum*.

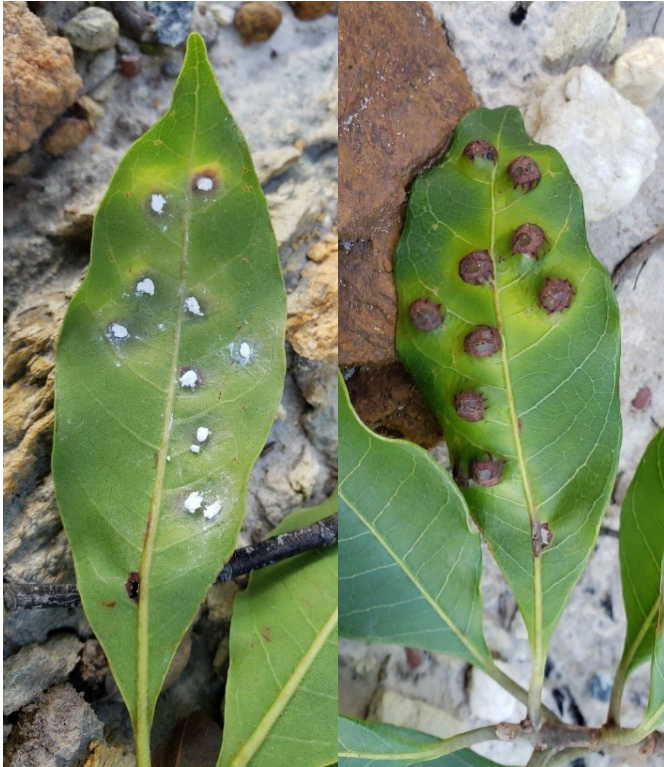
This species was collected also in other localities in MG and RJ (unpublished NHMB data) in Cerrado vegetation and Atlantic forest. Immatures develop in shallow pit galls usually on the abaxial leaf surface (Figure 1). In locality #6, a sapling of about 3 m height, lacking flowers or fruits, was heavily infested. Most leaves were densely covered in the psyllid galls (Figure 2). *Kielmeyera* (Calophyllaceae) is an atypical host as the majority of *Calophya* species develops on members of the Sapindales (Burckhardt & Basset, 2000; Mendez *et al.*, 2016).

This is one of several undescribed *Caradocia* species recently found in Brazil (unpublished NHMB data). Immatures develop on new flush and leaves of *Tapirira obtusa* (Anacardiaceae) in the same habitats as *Caradocia longiantennata*.

Ceropsylla pouteriae Burckhardt, in Oliveira *et al.*, 2019 (Triozidae). Material examined: Monte Azul: #7: 74 immatures, *Pouteria ramiflora*.

Reported from Brazil (MG) (Oliveira *et al.*, 2019). The species was previously known only from Uberlândia, the material from Monte Azul representing the second record. Immatures induce deep pit galls on the leaves of *Pouteria ramiflora* (Sapotaceae) (Figures 3, 4) in Cerrado vegetation (Oliveira *et al.*, 2019).

Figures 3, 4 – Galls of *Ceropsylla pouteriae* on leaves of *Pouteria ramiflora* (Sapotaceae). – 3: abaxial face (left); 4: adaxial face (right).



***Colophorina tupi* Burckhardt & Queiroz, 2020** (Psyllidae, Macrocorsinae).

Material examined: Monte Azul: #5: 1 ♂, 1 ♀, *Copaifera* sp.

Reported from Brazil (BA, GO, MG, MS, MT, PR, SP) (Burckhardt & Queiroz, 2020). Immatures induce rolls on the leaves of *Copaifera langsdorffii* (Fabaceae) in which they develop. The species can be found in a variety of habitats such as Cerrado vegetation, transitional Atlantic/Cerrado forests or gallery forests.

***Heteropsylla* cf. *caldwelli* Burckhardt, 1987** (Psyllidae, Ciriacreminae). Material examined: Monte Azul: #5: 1 ♀. – Mamonas: #8: 1 ♀.

Reported from Argentina, Brazil (GO, MG, MT, PR, RS, SP), Colombia, Costa Rica, Panama, Paraguay and Trinidad (Muddiman *et al.*, 1992, Machado *et al.*, 2017, Barreto *et al.*, 2020). *Heteropsylla caldwelli* is widely distributed also outside Brazil. Immatures develop on new growth of *Albizia* spp., *Anadenanthera colubrina*, *A. peregrina* var. *falcata*, *Enterolobium contortisiliquum*, *E. cyclocarpum* and *Senegalia polyphylla* (Fabaceae) in a variety of habitats (Muddiman *et al.*, 1992).

The two females at hand are referred to *Heteropsylla caldwelli* with doubts as males are required for a correct species identification.

***Heteropsylla* sp.** (Psyllidae, Ciriacreminae). Material examined: Monte Azul: #5: 9 ♂, 4 ♀, *Calliandra mucugeana*.

This is an undescribed *Heteropsylla* species resembling *H. boquetensis* (Brown & Hodkinson, 1988) in the presence of short genal processes and the digitiform paramere. Only adults were found on *Calliandra mucugeana* (Fabaceae) suggesting this is a host, though immatures are necessary for confirmation. Adults and immatures of the same species were found in the Parque Estadual Rio Preto (MG, São Gonçalo do Rio Preto) on *Calliandra fasciculata* (unpublished NHMB data). Despite intensive search on various *Calliandra* species also in other localities, we could not find the species elsewhere. The species seems endemic to northeastern Minas Gerais and restricted to rock habitats.

***Isogonoceraia* sp.** (Psyllidae, Ciriacreminae). Material examined: Monte Azul: #1: 15 ♂, 13 ♀, 22 immatures, *Chamaecrista brachystachya*; #4: 45 ♂, 61 ♀, 9 immatures, *Chamaecrista brachystachya*; #5: 1 ♀, 1 immatures.

This is an undescribed species differing from its congeners in the dark forewings. It has been collected also in BA (Mucugê) and MG (Diamantina, São Gonçalo do Rio Preto) (unpublished NHMB data). Immatures develop on the flower buds and new flush of *Chamaecrista brachystachya* (Fabaceae) (Figure 5) and other *Chamaecrista* species. It is restricted to rocky habitats and probably endemic to the mountains of southwestern Bahia and north-eastern Minas Gerais.

Figure 5 – Immatures and adults of *Isogonoceraia* sp. on flowers and pedicels of *Chamaecrista stachya* (Fabaceae).



***Jataiba uncigera* Burckhardt & Queiroz, 2020** (Psyllidae, Ciriacreminae). Material examined: Monte Azul: #5: 1 ♂, 1 ♀, *Copaifera* sp. Reported from Brazil (MG, MS, PR, SP) (Burckhardt & Queiroz, 2020). Immatures develop on the leaves of *Copaifera langsdorffii* (Fabaceae). The species can be found in a variety of habitats

such as Cerrado vegetation, transitional Atlantic/Cerrado forests or gallery forests.

***Leurolophus oriformae* Burckhardt & Basset, 2000** (Aphalaridae, Rhinocolinae). Material examined: Monte Azul: #6: 1 ♂, *Lithraea brasiliensis*. Reported from Argentina, Brazil (MG, PR, RS, SC, SP) (Burckhardt & Queiroz, 2012; Marsaro *et al.*, 2021) and Uruguay. The species was also found in Mato Grosso do Sul (municipios Bandeirantes, Campo Grande, Jardim, Rochedo, Sidrolândia) (unpublished NHMB data) representing a new state record. Immatures develop on the leaves of *Lithraea* spp. (Anacardiaceae) in Cerrado vegetation, Atlantic forests or gallery forests.

***Mitropsylla copaiiferae* Burckhardt & Queiroz, 2020** (Psyllidae, Ciriacreminae). Material examined: Monte Azul: #3: 1 ♂, unidentified Fabaceae; #5: 1 ♂, 1 ♀, *Copaiifera* sp.; #6: 1 ♀; #7: 1 ♂. Reported from Brazil (GO, MG, MS, MT, SP) (Burckhardt & Queiroz, 2020). Immatures develop on the leaflets of *Copaiifera* spp. (Fabaceae) in Cerrado vegetation and Atlantic forests.

***Mitropsylla gloriae* Burckhardt & Queiroz, 2020** (Psyllidae, Ciriacreminae). Material examined: Monte Azul: #1: 56 ♂, 48 ♀, unidentified Fabaceae; #2: 1 ♀; #3: 27 ♂, 18 ♀, unidentified Fabaceae; #4: 10 ♂, 18 ♀, *Copaiifera* sp.; #5: 8 ♂, 9 ♀, *Copaiifera* sp.; #7: 8 ♂, 13 ♀. – Mamonas: #8: 2 ♂, 2 ♀; #9: 1 ♂. – Gameleiras: #10: 4 ♂, 3 ♀, *Copaiifera* sp. Reported from Brazil (DF, GO, MG, MS, MT, PR, RJ, SC, SP) (Burckhardt & Queiroz, 2020). Immatures develop on the leaflets of *Copaiifera* spp. (Fabaceae) in Cerrado vegetation, Atlantic, *Araucaria* and gallery forests. This is one of the most common psyllid species in this area and adults are often found on non-host plants.

***Mitropsylla periandrae* Rendón-Mera *et al.*, 2020** (Psyllidae, Ciriacreminae). Material examined: Monte Azul: #5: 1 ♂. Reported from Brazil (GO, MG, PR, SP) (Rendón-Mera *et al.*, 2020). Immatures develop on new flush of *Periandra mediterranea* (Fabaceae) in a variety of habitats such as Cerrado vegetation and Atlantic, *Araucaria* and gallery forests.

***Mitropsylla pterodontis* Rendón-Mera *et al.* 2020** (Psyllidae, Ciriacreminae). Material examined: Monte Azul: #1: 10 ♂, 7 ♀, unidentified, Fabaceae; #5: 1 ♂; #7: 1 ♀. – Gameleiras: #10: 1 ♀. Reported from Brazil (BA, DF, GO, MG, MS, MT, PR, SC, SP) (Rendón-Mera *et al.*, 2020). *Pterodon emarginatus* (Fabaceae) is a likely host but needs confirmation. The species occurs in Cerrado vegetation and Atlantic forest.

***Platycorypha* cf. *scalprata* Burckhardt & Queiroz, 2020** (Psyllidae, Platycoryphinae). Material examined: Mamonas: #9: 1 ♀, *Hymenaea* sp. Reported from Brazil

(CE, GO, MG) (Burckhardt & Queiroz, 2020). Immatures develop on leaves of *Hymenaea* species (Fabaceae) in Cerrado vegetation. The single female at hand is referred to *Platycorypha scalprata* with some doubt as males are required for a correct identification.

***Platycorypha* sp.** (Psyllidae, Platycoryphinae). Material examined: Monte Azul: #1: 1 ♂, *Tachigali subvelutina*; #3: 1 ♂, *Tachigali subvelutina*; #4: 1 ♂, 1 ♀. – Mamonas: #8: 1 ♂, *Tachigali subvelutina*; #9: 2 ♀, *Tachigali subvelutina*. This is an undescribed species associated with *Tachigali subvelutina* (Fabaceae) which probably occurs also in other places in MG (unpublished NHMB data). The new species belongs to a complex of morphologically similar species developing on *Tachigali* species. A taxonomic revision of the group is needed to define the species, their distribution and host ranges. Immatures are free-living on the leaves of their host and occur in Cerrado vegetation.

***Queiroziella* sp. 1** (Psyllidae, Ciriacreminae). Material examined: Monte Azul: #5: 10 ♂, 24 ♀, 9 immatures, *Mimosa* sp.; #7: 21 ♂, 31 ♀, 3 immatures, *Mimosa* sp. – Mamonas: #8: 3 ♂, 8 ♀, 3 immatures, *Mimosa* sp.

Queiroziella was erected for five species from southern Brazil on *Mimosa scabrella* (Fabaceae) and one species from Paraguay on an unidentified *Mimosa* species (Burckhardt, 2021). Apart from the six described species, there are many undescribed species in Brazil developing mostly on *Mimosa* species. This and the following two species represent undescribed taxa, each morphologically distinct and associated with different *Mimosa* species. *Queiroziella* sp. 1 resembles *Q. borealis* (Burckhardt, 1987) in the falcate paramere but differs in details of the male and female terminalia (Figure 6) and the host association.

***Queiroziella* sp. 2** (Psyllidae, Ciriacreminae). Material examined: Mamonas: #8: 15 ♂, 10 ♀, 5 immatures, *Mimosa* sp.; #9: 13 ♂, 45 ♀, 8 immatures, *Mimosa* sp. See comment under *Queiroziella* sp. 1. *Queiroziella* sp. 2 differs from congeners in the apically incised paramere (Figure 7) and the host association.

***Queiroziella* species 3** (Psyllidae, Ciriacreminae). Material examined: Monte Azul: #1: 21 ♂, 19 ♀, *Mimosa* sp.; #3: 42 ♂, 57 ♀, 3 immatures, *Mimosa* sp.; #4: 4 ♀; #5: 20 ♂, 25 ♀; *Mimosa* sp. – Mamonas: #8: 1 ♂, 3 ♀, *Mimosa* sp.; #9: 30 ♂, 28 ♀, 1 immatures, *Mimosa* sp. – Gameleiras: #10: 1 ♂, 3 ♀. See comment under *Queiroziella* species 1. *Queiroziella* species 3 differs from congeners in the digitiform paramere, the short, apically truncate female subgenital plate and the very short capitate setae on the caudal plate of immatures (Figure 8) and the host association.

Figures 6–8 – *Queiroziella* spp., male (up), female (down and last instar immature (right) from *Mimosa* spp. (Fabaceae). – 6: *Queiroziella* sp. 1 (left); 7: *Queiroziella* sp. 2 (centre); 8: *Queiroziella* sp. 3 (right).



***Trioza* sp.** (Trioziidae). Material examined: Gameleiras: #10: 10 ♂, 10 ♀, 2 immatures, *Calophyllum brasiliense*. This is an undescribed species of the large, polyphyletic genus *Trioza*. Immatures live on the leaves of *Calophyllum brasiliense* (Calophyllaceae) without inducing any visible deformation. So far, no Brazilian triozids have been reported from *Calophyllum* (Calophyllaceae) (Burckhardt & Queiroz, 2012).

Triozioida* cf. *ingens Burckhardt, 1988 (Trioziidae). Material examined: Monte Azul: #7: 1 ♀. Reported from Brazil (MG), Panama and Paraguay (Burckhardt & Queiroz, 2012). Adults have been collected on *Pimenta* species (Myrtaceae) which is a possible host. The single female at hand is referred to *Triozioida ingens* with some doubt as males are required for a correct identification.

Genus sp. (Psyllidae, Platycoryphinae). Material examined: Monte Azul: #1: 1 ♀, *Duguetia furfuracea*; #3: 1 ♂, 2 ♀, *Duguetia furfuracea*; #4: 1 ♀; #7: 1 ♂, 5 ♀, *Duguetia furfuracea*. – Mamonas: #9: 10 ♂, 15 ♀, *Duguetia furfuracea*. – Gameleiras: #10: 1 ♂, 2 ♀, *Duguetia furfuracea*.

This is an undescribed genus of Platycoryphinae with one undescribed species developing on *Duguetia furfuracea* (Annonaceae). The immatures are free-living on the leaves and secrete sticky honeydew. The species has also been found in other localities in MG as well as in GO, MS and MT in Cerrado vegetation (unpublished NHMB data).

Discussion and conclusion

With 161 reported species (Burckhardt & Queiroz, 2012, 2020, 2021; Rendón-Mera *et al.*, 2020; Burckhardt, 2021), the psyllid fauna of Brazil is poorly known. The large percentage of undescribed species (43%) found in the “Parque Estadual Caminho dos Gerais” and surroun-

dings confirms this. Of the 23 species, 11 (*Apsyllopsis mexicana*, *Colophorina tupi*, *Heteropsylla* cf. *caldwelli*, *Jataiba uncigera*, *Leurolophus oriformae*, *Mitropsylla copai-ferae*, *M. gloriae*, *M. perianthrae*, *M. pterodontis*, *Triozioida* cf. *ingens* and genus species) are widely distributed, i.e. they have been reported also from outside Brazil or from more than three states in Brazil. All these species are described taxa, except for a one developing on *Duguetia furfuracea*, representing an undescribed genus and species of Platycoryphinae. Of six undescribed species (*Caradocia* sp., *Platycorypha* sp., *Queiroziella* spp. 1–3 and *Trioza* sp.) and *Caradocia longiantennata*, all in need of taxonomic revision, not much is known about the distribution. One species is moderately widely (*Platycorypha* cf. *scalprata*: reported from three states) and of two narrowly distributed (*Calophya* sp. and *Ceropsylla pouteriae*: reported from one state); two of the three species represent described taxa. Two species (*Heteropsylla* sp. and *Isogonoceraia* sp.) appear to be endemic to the mountains of northeastern Minas Gerais and adjacent areas in Bahia, reflecting the narrow distribution of their hosts.

Fourteen species are monophagous, one is widely and eight species are narrowly oligophagous. Host plants of 15 species are Fabaceae, of three species Anacardiaceae, of two Calophyllaceae and of each one species Annonaceae, Myrtaceae and Sapotaceae, respectively. According to an analysis of Ouvrard *et al.* (2015), the Fabaceae represents the family with the largest number of psyllid hosts, followed by Myrtaceae and Asteraceae. The almost total absence of psyllids associated with the last two families in the material at hand is, therefore, somewhat surprising.

Considering the very limited time of our survey, it is hardly representative for the existing psyllid fauna of the park. Even though, the presence of two possibly endemic species present in rocky habitats is interesting

to note and emphasises the important role of the park in conserving highly specialised and threatened phytophages. More surveys will be necessary to document and understand better the local psyllid fauna.

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