

Scientific Note

New record of the chewing louse *Myrsidea dissimilis* (Kellogg, 1896) (Phthiraptera: Menoponidae) parasitizing a Purple Martin, *Progne subis* (Linnaeus, 1758) (Passeriformes: Hirundinidae) in Amazonas, Brazil

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Abstract. The chewing lice are obligatory ectoparasites of birds and mammals distributed worldwide. From an expedition to Comaru Island, Brazilian Amazon, a chewing louse parasitizing a Purple Martin [*Progne subis* (Linnaeus, 1758)], a Neotropical migrant, was collected. The specimen was slide-mounted and identified as a male of *Myrsidea dissimilis* (Kellogg, 1896) (Phthiraptera: Menoponidae). It represents the first record of this species in the Amazonas State and in Central Amazon.

Keywords: lice, ectoparasites, swallows, migratory birds, Central Amazon.

Chewing lice (Phthiraptera: Amblycera and Ischnocera) are hemimetabolous insects that are obligatory ectoparasites of birds and mammals (Guimarães et al. 2001; Johnson & Clayton 2003; Linardi 2012). The family Menoponidae Mjöberg, 1910 (Phthiraptera: Amblycera) has more than 1,000 species divided into 60 valid genera (Price et al. 2003) parasites of birds. The most speciose genus in this family is *Myrsidea* Waterston, 1915, having more than 200 species associated with birds of the orders Apodiformes, Passeriformes, and Piciformes (Price et al. 2003; Price & Dalgleish 2006; Kolencik et al. 2018).

In Brazil, 35 species have already been recorded for this genus (Valim & Kuabara 2023), including *Myrsidea dissimilis* (Kellogg, 1896) that has been found parasitizing the Grey-breasted Martin, *Progne chalybea* (Gmelin, 1789) (Passeriformes: Hirundinidae), near the Ivinhema River, Mato Grosso do Sul (53°30' W, 22°31' S) (Kolencik et al. 2016), the Araguaia River, Aragarças, Goiás (52°15' W, 15°53' S), and in the Alto Tapajós, confluence with Teles Pires, Mato Grosso (58°03' W, 07°21' S) (Kuabara & Valim 2017). This species was also recorded parasitizing the White-winged Swallow, *Tachycineta albiventer* (Boddaert, 1783) (Passeriformes: Hirundinidae), near the Araguaia River, Goiás (Kuabara & Valim 2017). This present study aims to increase knowledge about this chewing louse in Brazil, including a new locality record for the State of Amazonas.

The material herein examined was originated in an expedition to the Comaru Island, Iranduba Municipality, Amazonas State, Brazil (3°04'25" S, 60°17'54" W), to monitor a wintering roost of Purple Martins. The roost comprises individuals belonging to the subspecies *Progne subis subis* (L., 1812) (Passeriformes: Hirundinidae), known to breed in the eastern coast of the United States. In the Comaru island, thousands of Purple Martins share the roost with other resident and migratory species of Hirundinidae, such as *Progne tapera* (L., 1766), *P. chalybea*, and *Hirundo rustica* Linnaeus, 1758, every year, from January to April (Santos et al. 2021). This study was approved by the SISBIO (n° 73608) and is titled "Andorinha Azul (Purple Martin)".

We slide-mounted the chewing louse, and in order to confirm the identification, we used the keys to genera provided by Price et al. (2003) and to confirm the species, we used all the original descriptions for the identified genus (*Myrsidea*), as well as other species of lice

associated with *Progne subis* (L., 1758) (Passeriformes: Hirundinidae).

The material presented here is deposited in the Entomological Collection of the Butantan Institute (IBSP), São Paulo municipality, State of São Paulo, Brazil, under the number IBSP-Ent 14621. Images were taken using a Leica DFC 500 digital camera coupled to a Leica DM4000B optical microscope. Extended focal range images were composed using Leica Application Suite version 2.5.0. The figures were prepared using Adobe Photoshop v. 13.0 software.

The chewing lice *M. dissimilis* was described as parasitizing the Purple Martin, *P. subis* in the city of Lawrence, Kansas State, USA, where the bird species breeds before the migration to Brazil. The Purple Martin populations that breed in Kansas are the same subspecies of the bird parasitized by the louse described here, and biogeography data indicates that this subspecies of swallow overwinters exclusively in Amazon (Fraser et al. 2012; Abdulle & Fraser 2018).

As stated above, this species was already found in Brazil, in the states of Goiás, Mato Grosso (Kuabara & Valim 2017), and Mato Grosso do Sul (Kolencik et al. 2016), parasitizing two other swallow species, *P. chalybea* and *T. albiventer*. These three species of swallows have different phenology and distributions. Purple Martins, *P. subis*, are Neotropical migrants that breed exclusively in the Northern Hemisphere and migrate long distances to Brazil (Allen & Nice 1952; Santos et al. 2021). Grey-breasted Martin, *P. chalybea*, occurs from Mexico to central Argentina and are resident throughout most of its distribution (Howell & Webb 1995), and the southern populations migrate to Amazon during the Austral winter (Eisenmann & Haverschmidt 1970; Sick 1993). The White-winged Swallow, *T. albiventer*, is broadly distributed in South America, and although most of the populations are considered resident, Belton (1985) noted that in Southern Brazil they are absent between mid-April and mid-September. The nonbreeding distribution is unknown (Turner & Rose 1989). However, these swallow species are known to share roosts with Purple Martins, occupy a similar habitat and share the same habits, all being aerial insectivores associated with rivers (Winkler et al. 2020). Given the fact that these three swallow species may congregate in different regions during different times of the year, it is expected that they share the same ectoparasite species.

It is worth noting that Purple Martins have already been found associated with three other species of chewing lice, *Brueelia subis*

(Carriker, 1963) (Ischnocera: Philopteridae) in Oklahoma State, USA; *Machaerilaemus americanus* (Ewing, 1930) (Amblycera: Menoponidae) in New Mexico State, USA; and *Philopterus domesticus* Kellogg, 1896 (Ischnocera: Philopteridae) in Kansas State, USA (Kellogg 1896; Ewing 1930; Carriker 1963).

No morphological differences were observed in the louse when compared with the original description and the male redescription by Kellogg (1896) and Kolencik et al. (2016). In order to help the identification of future collected materials, Fig. 1 highlights the diagnostic characteristics of the male of *M. dissimilis*, which are the presence of more than 30 setae on the ventral surface of the femur of the leg III, more than 8 setae on the metasternal plate, three to five spines on the sternite II, unique shape of the metasternal plate and the male genitalia. The Fig. 2 highlights the head shape, an easy character to diagnosis species of the genus *Myrsidea*.

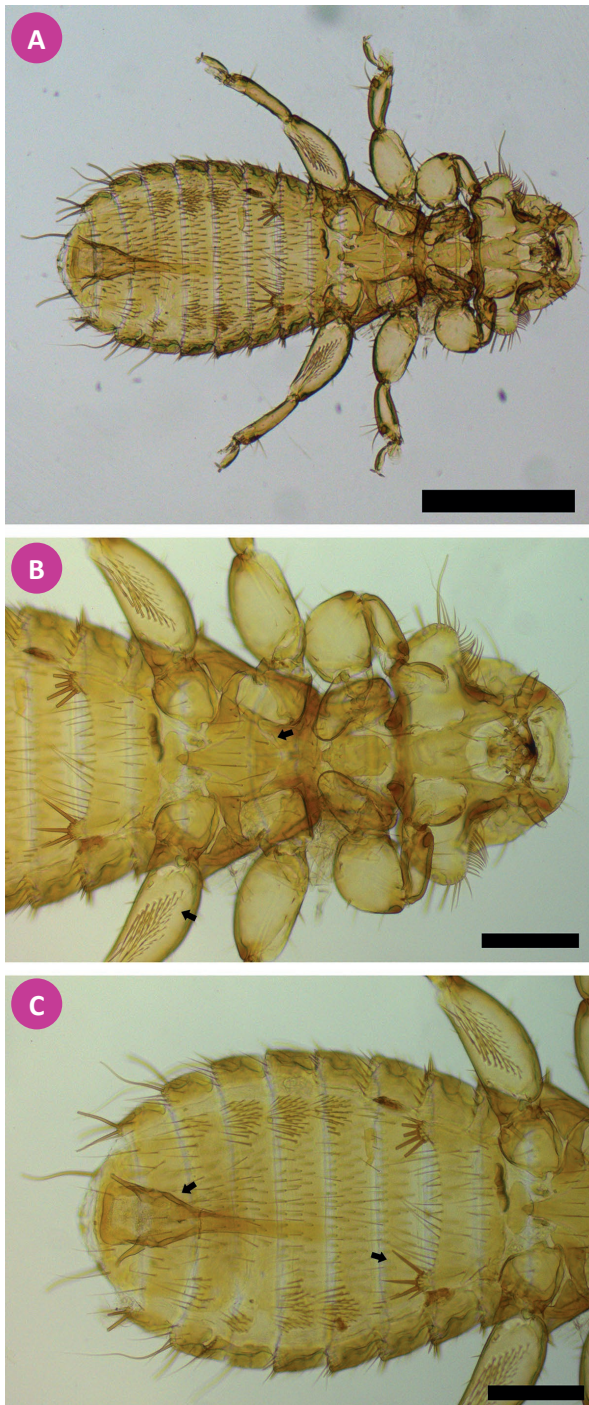


Figure 1. Morphological details of the male of *Myrsidea dissimilis* (Kellogg, 1896) collected on Comaru Island, Iranduba Municipality, Amazonas State, Brazil. **A** - General view; **B** - Ventral view of the head and thorax, and the black arrows pointed out the metasternal plate and the setae on the ventral surface of the coxa III; **C** - Ventral view of the abdomen, and the black arrows pointed out the sternite II and the male genitalia. Scale bars: A = 500 μ m; B and C = 200 μ m.

No other record was made for this louse species until the present study. Here, we are recording for the first time, *M. dissimilis* in Central Amazon, northern Brazil, parasitizing the same species in which it was first described (*P. subis*), but this time on the wintering grounds. These records show the strong specificity relationship between *M. dissimilis* and Hirundinidae bird species that can share the same roost in the Amazon and other riverine habitats in Brazil.

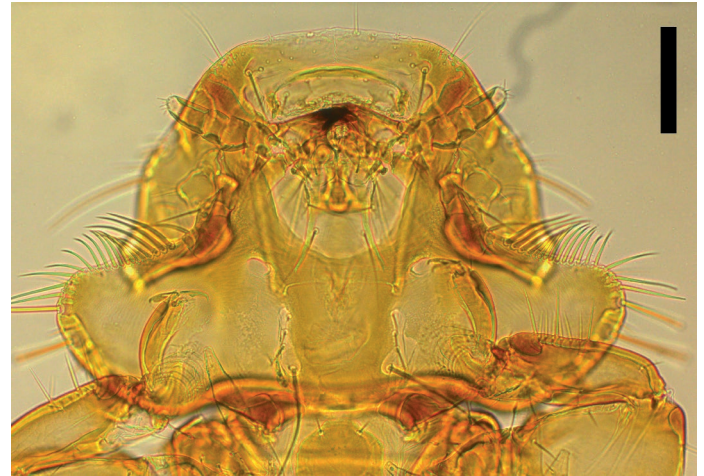


Figure 2. Close-up of the head of the male of *Myrsidea dissimilis* (Kellogg, 1896) collected in Comaru Island, Iranduba Municipality, Amazonas State, Brazil. Scale: 100 μ m.

Material examined. 1 σ (IBSP-Ent 14621); Comaru Island, Iranduba Municipality, Amazonas State, Brazil (3°04'25" S, 60°17' 54" W); 7 Mar 2022; ex. *Progne subis* (L., 1758) (Passeriformes: Hirundinidae); R. D. Melinski coll.

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Authors' Contributions

RDM, COS, and EH-Z collected the lice in association with the host and performed the record. RB-S, IPP, and FCJ conducted the lice's preparations and confirmed the identification of the lice. EH-Z confirmed the identification of the host. RB-S, IPP, DMB-B, and FCJ wrote the manuscript with input from all authors.

Conflict of Interest Statement

The authors declare that they have no conflict of interest.

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