

Scientific Note

Contributing to the knowledge of Brazilian Sphingidae diversity: the first record of *Adhemarius daphne daphne* Boisduval, 1785 and *Amphimoea walkeri* Boisduval, 1785 in South Brazil

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Abstract. Three individuals (two males and one female) of *Adhemarius daphne daphne* Boisduval, 1785 and an exemplar of *Amphimoea walkeri* Boisduval, 1785, were caught in Maquiné and Cerro Largo municipalities, respectively, indicating the first occurrence of these two taxa in the Rio Grande do Sul state, South Brazil.

Keywords: Atlantic Rain Forest, Lepidoptera, Pampa, Rio Grande do Sul, Sphingidae.

Hawkmoths (Lepidoptera, Sphingidae) are one of the most recognized moth groups, widely distributed around the world (Kitching & Cadiou 2000). There about 1400 species occurring mainly in the Tropics. This macrolepidoptera group has a crucial role in the pollination of several plant species (Johnson et al. 2016). However, we observed a prevalence of hawkmoth records in temperate regions (GBIF) and this fact could be associated with undersampling of tropical and subtropical areas. To contribute to a better understanding of Sphingidae of subtropical Brazil, we have made samples from the Atlantic Rain Forest and Pampa Biomes of Brazil since 2011. Brazil has approximately 210 species (Duarte et al. 2008) of which 85 are registered in the Rio Grande do Sul (R. S. Avila Jr, data not published).

Adhemarius Oiticica, 1939 (Smerinthinae, Ambulycini) comprehends six species occurring in all Brazilian regions, all from the Ambulycini tribe, which is the only tribe of this group occurring in Brazil. Some species of this sub-family may have a vestigial or reduced proboscis (Fleming 1968). *Adhemarius daphne daphne* was considered as an *Adhemarius gannascus* synonym until the Vaglia & Haxaire (2005) taxonomic genus revision indicating four different subspecies within the “*daphne*” complex. The southern range of *Adhemarius daphne daphne* was in the Atlantic Rain Forest in Santa Catarina state (Mielke & Haxaire 2020). Data on the larval and pupal stages of *A. daphne* are scarce or absent, yet it is known that it has Lauraceae plants as hosts and flies over the year (Mielke & Haxaire 2020). We caught individuals (two males and one female) (Fig. 1A, B) of this species in Maquiné municipality (29°31'39.0"S, 50°14'33.7"W) (November, 2019) utilizing light traps. This was the first record of this species in the Rio Grande do Sul state. The individuals were deposited in the insect collection of Laboratório de Pesquisas em Interações Ecológicas at Universidade Federal do Pampa. It is reasonable to speculate that *A. daphne* was previously collected in the state of Rio Grande do Sul and misidentified as *Adhemarius gannascus*, because both species are even considered synonyms prior to the revision of Vaglia & Haxaire (2005). Nevertheless, we reiterate that this is the first record of *Adhemarius daphne* and *Amphimoea walkeri* for the Rio Grande do Sul.

Amphimoea is a monospecific genus and it belongs to the subfamily Sphinginae in which the species are recognized by their long proboscis (it can be longer than 200 mm). *Amphimoea walkeri* Boisduval, 1875 was registered in São Paulo state until now (Avila Jr et al. 2009). However, its most southern distribution was a register from Paraguai

until our first record in Cerro Largo municipality, the Rio Grande do Sul state. We collected only one individual (Fig. 1C) with a light trap at the Universidade Federal da Fronteira Sul campus (28°08'27.6"S, 54°45'23.0"W). The life cycle of *A. walkeri* is well studied and there is data on all its life stages when larvae have *Anaxagora crassipetala* (Annonaceae) as a host plant. As for the flight period of the species, there are records for February, March, June, and July (Duarte & Schindwein 2008; Duarte et al. 2008; Lourido et al. 2018).

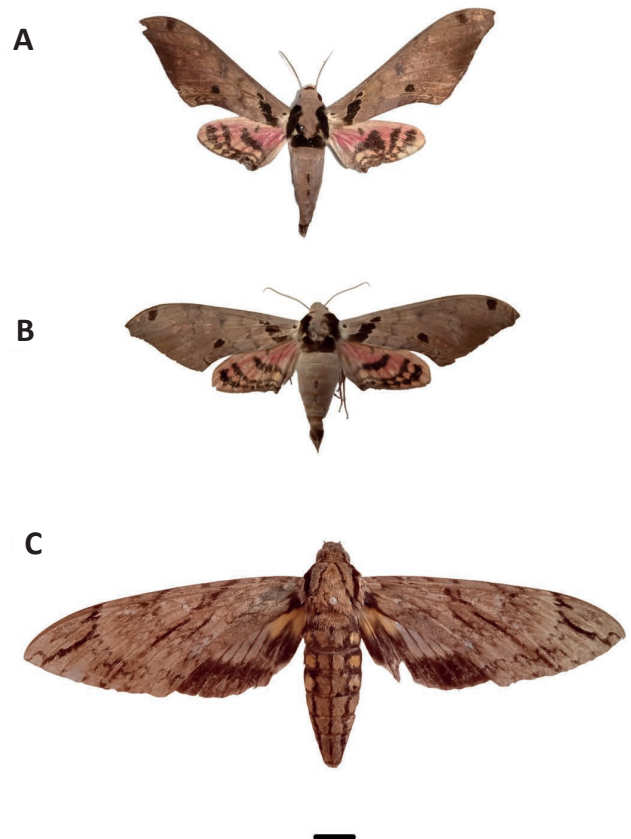


Figure 1. Individuals of *Adhemarius daphne daphne* species (A: male and B: female) and *Amphimoea walkeri* species (C) from Brazil, Rio Grande do Sul state. Scale bar 1 cm.

We did not have records of these two hawkmoth species from Uruguay (Bentancur-Viglione 2010) which led us to infer that the Rio Grande do Sul state is the most austral region of their geographical distribution.

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Authors' Contributions

RSAJr and JPM performed the data collection, reviewed the literature and RSAJr wrote all stages of the manuscript.

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