NEW GEOGRAPHIC RECORDS OF *Lopesia* RÜBSAAMEN, 1908 (INSECTA, DIPTERA, CECIDOMYIIDAE) IN BRAZIL

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INTRODUCTION

Lopesia Rübsaamen, 1908 (Diptera, Cecidomyiidae) is known from 29 species, 24 Neotropical. All are gall-inducers and monophagous, except *Lopesia davillae* Maia, 2017. Each species induces a peculiar gall on the host plant. Due to this specificity, gall morphotype plus host plant identification are used to indicate the galler's presence (Gagné & Jaschhof, 2017, Maia & Monteiro, 2017, Garcia & Urso-Guimarães, 2019). Most galling-species are known from few localities and the examination of galled exsiccates can add new geographic records.

OBJECTIVES

The objective of the present study is to contribute to the knowledge on geographic distribution of Brazilian species of *Lopesia*.

MATERIAL AND METHODS

A list of Brazilian species of *Lopesia* with their respective host plants was organized based on Gagné & Jaschhof (2017). Then, the gall morphology was verified in the original descriptions. From this list, three species of *Lopesia* were chosen to be investigated - *Lopesia erythroxylii* Rodrigues & Maia, 2010, *L. grandis* Maia, 2001, and *L. tibouchinae* Maia, 2004 - due to their easily recognizable galls.

Samples of their host plants were investigated from June, 2018 to February, 2019 in two herbaria: Museu Nacional (R) and Jardim Botânico do Rio de Janeiro (RB). Galled exsiccates were photographed as well as their labels and gall morphotypes. New geographic records were established by comparison with literature data. Phytogeographic domains were verified based on maps of biomes and vegetation of Brazil (IBGE, 2004). The valid of the botanic names were checked in Flora do Brasil (2019).

RESULTS AND DISCUSSION

A total of 43 galled exsiccates were found. The geographic limits of all studied gallers were widened. Four new state and 15 new municipality records are reported.

Lopesia erythroxyli Rodrigues & Maia, 2010; Host plant: *Erythroxylum ovalifolium* Peyr. (Erythroxylaceae); Gall: conical bud galls; Previous records: RJ – São João da Barra, Parque Nacional da Restinga de Jurubatiba, Carapebus, Arraial do Cabo, Cabo Frio, Araruama, Saquarema, Maricá, Grumari (in Rio de Janeiro City), and Ilha Grande (in Angra dos Reis City); ES – Santa Teresa. Herbarium data: RB –15 exsiccates with galls; New state record: SP – Itanhaém; New municipality record: RJ – Mangaratiba. Other records (already known): RJ – Carapebus, Cabo Frio, Saquarema, Maricá, and Grumari (in Rio de Janeiro City).

Lopesia grandis Maia, 2001; Host plant: *Dalbergia ecastophyllum* L. Taub. (Fabaceae); Gall: discoid leaf galls; Previous records: RJ – Ilha Grande (in Angra dos Reis City), Parque Nacional da Restinga de Jurubatiba, Camboinhas (in Niterói City), Parque Ecológico Chico Mendes (in Rio de Janeiro City), Araruama, and Arraial do Cabo; SP – Bertioga; BA – Porto Seguro. Herbarium data: RB – 26 exsiccates with galls. New state records: PB – Mataraca; ES – Conceição da Barra, Praia das Neves (in Presidente Kennedy City), Aracruz, Estação Biológica da Marinha Mello Leitão, and São Mateus. New municipality records: BA – Santa Cruz de Cabrália, Camamu, Itacaré, Nova Viçosa, Una, Ilhéus, Valença, and Belmonte; RJ – São Francisco de Itabapoana, Ilha da Marambaia (in Mangaratiba City), and Paraty (in Área de Proteção Ambiental de Cairuçu; SP – Ubatuba and Ilha do Cardoso (in Cananéia City). Other records (already known): RJ – Arraial do Cabo and Ilha Grande (in Angra dos Reis City).

Lopesia tibouchinae Maia, 2004; Host Plant: *Pleroma candolleanum* (Mart. ex DC.) Triana (= *Tibouchina candolleana* (DC.) Cogn. (Melastomataceae); Gall: leaf vein and petiole swellings; Previous record: MG – Tiradentes (Cerrado). Herbarium data: RB – 2 exsiccates with galls; New state record: RJ – Santa Maria Madalena (Parque Estadual do Desengano) (Atlantic Forest – new record of biome); New municipality record: MG – Patrocínio (Cerrado).

Lopesia grandis is distributed in the Northeast and Southeast regions, but exclusively in areas of Atlantic Forest. The other species, *L. erythroxyli* and *L. tibouchinae* are restricted to the Southeast Region, at least until this moment, the former with records only in Atlantic Forest and the latter occurring in Atlantic Forest and Cerrado.

Comparing the distribution of the gall-inducing species with that of the host plant species, we can verify that the distributional area of all plants is wider than that of their gallers, indicating that the latter can have a wider distribution than the known. The only exception was *Erythroxylum ovalifolium* whose occurrence area is restricted to Rio de Janeiro state, but in the herbarium of Jardim Botânico do Rio de Janeiro, one exsiccate from São Paulo was found. Other inconsistencies in relation to plant distribution were observed. Exsiccates of *Pleroma candolleanum* from Rio de Janeiro were found, but the known distributional area of these species does not include these states, indicating new locality records or a misidentification of the host plants.

CONCLUSIONS

The distributional area of *Lopesia erythroxylii* Rodrigues & Maia, 2010, *L. grandis* Maia, 2001, and *L. tibouchinae* Maia, 2004 were widened. The great amount of new records indicates that herbaria can contribute to the knowledge of the geographic distribution of gall-inducing species.

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