



INSECT GALLS OF SÃO TOMÉ DAS LETRAS (MG, BRAZIL)

Valéria Cid Maia – Universidade Federal do Rio de Janeiro, Museu Nacional, Departamento de Entomologia, Rio de Janeiro, RJ. maiavcid@acd.ufrj.br;

INTRODUÇÃO

Although several gall inventories have been developed in State of Minas Gerais (Carneiro *et al.*, 2009; Coelho *et al.*, 2009; Fernandes *et al.* 1988, 1997; Urso-Guimarães *et al.*, 2003; Maia & Fernandes, 2004; Malves & Frieiro-Costa; Maia, 2012 in press), data on insect gall richness is still fragmented and many areas remain not investigated. This is the case of São Tomé das Letras, where the vegetation is classified as sub-deciduous mixed tropical forest. The main objective of this study is to contribute to the knowledge of the richness of insect galls of São Tomé das Letras (MG).

OBJETIVOS

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MATERIAL E MÉTODOS

Insect galls were collected seasonally (from September, 2011 to June, 2012) in São Tomé das Letras (MG). The vegetation was examined in search of galling insects. All plant organs were investigated, except for subterranean roots. Galled plants were pressed for identification and preservation. All gall morphotypes were photographed and characterized by shape, color, presence of trichomes, and plant organ. Samples of each morphotype were collected and transported individually in labeled plastic bags. Immature insects were obtained from the dissection of each gall morphotype under a stereoscopic microscope. This procedure also allowed the determination of the number of internal chambers. The pupal exuviae and adults were obtained from rearing, by keeping samples of each kind of gall individually in covered plastic pots with damp cotton at the bottom. These pots were examined daily for adults' emergence. All insects were preserved in 70% alcohol. The gall midges (Cecidomyiidae, Diptera) were later mounted on microscope slides and identified based on the keys of Gagné (1994). The insects were incorporated in the entomological collection of Museu Nacional (MNRJ). The plant species were identified by Dr. Gracialda Costa Ferreira (Universidade Federal Rural da Amazônia, Brazil), and the dried specimens were incorporated into the herbarium of the Instituto de Ciências Agrárias (Pará, Brazil).

RESULTADOS

A total of 152 gall morphotypes were found in 94 plant species (74 genera and 37 families). The medium number of gall morphotypes per plant species was 1.62. Fabaceae, Melastomataceae, Myrtaceae, and Asteraceae were the plant families with the greatest richness of galls. The super host genera were *Copaifera* L. (Fabaceae), *Myrcia* DC. ex. Guill. (Myrtaceae), and *Miconia* Ruiz & Pav. (Melastomataceae). The super host species were *Copaifera langsdorfii* Desf. (Fabaceae), *Myrcia sylvatica* (G. Mey) DC. (Myrtaceae), and *Calophyllum brasiliense* Cambéss (Calophyllaceae). Galls were found on leaves, stems, buds, and aerial roots. Leaves were the most galled plant

organ, followed by stems. The inducers are represented by Diptera, Lepidoptera, Hemiptera, Thysanoptera, Coleoptera, and Hymenoptera, being Cecidomyiidae (Diptera) the most frequent and diversified gallers. Concerning gall morphology, globoid and fusiform galls predominate, as well as glabrous and one-chambered galls. The associated fauna included parasitoids (Hymenoptera), inquilines (Lepidoptera and Thysanoptera), successors (Formicidae, Hymenoptera), and predators (pseudoscorpion).

DISCUSSÃO

In other inventories of Minas Gerais (Fernandes *et al.*, 1988; Fernandes *et al.*, 1997; Fernandes *et al.*, 2001; Urso-Guimarães *et al.*, 2003; Maia & Fernandes, 2004; Fernandes & Negreiros, 2006; Carneiro *et al.*, 2009; Coelho *et al.*, 2009; Malves, K. & Frieiro-Costa, 2012; Maia, in press.), the gall richness varies from 22 to 273, and the medium number from 1.15 to 1.96. São Tomé das Letras is the fourth richest investigated area of Minas Gerais. Fabaceae, Melastomataceae, Myrtaceae, and Asteraceae have been pointed in other Minas Gerais inventories as the richest plant families in number of gall morphotypes. So, the present study corroborates the previous knowledge about super host families. Copaifera, Myrcia, and Miconia were already indicated in other gall inventories as super host genera (Fernandes *et al.*, 1988; Coelho *et al.*, 2009; Maia & Fernandes, 2004; Maia, in press), as well as *C. langsdorfii* as a super host species (Fernandes *et al.*, 1988, and Maia & Fernandes, 2004), although, *Myrcia sylvatica*, and *Calophyllum brasiliense* are indicated for the first time. Leaves are the most galled plant organ throughout the world. It is a widespread pattern pointed by Felt (1940) and confirmed in this study. In Brazil, a single different result was found in Espinhaço Range, where stems were the most galled plant organ (Carneiro *et al.*, 2009). Cecidomyiidae (Diptera) were pointed out as the major galling group, what is true for all other gall inventories of Minas Gerais, Brazil and throughout the world. The predominance of globoid and fusiform galls was found in other Brazilian inventories (Carneiro *et al.* 2009, Santos *et al.* 2011, Bregonci *et al.*, 2010, and Maia, in press), suggesting that these are the most common gall shapes in Brazil. The presence of parasitoids is very frequent in Brazilian surveys, being Hymenoptera the most important natural enemies of the gall midges (Maia, 2001).

CONCLUSÃO

The present study corroborates the patterns of insect galls already known from Brazil, and for the first time indicates *Myrcia sylvatica*, and *Calophyllum brasiliense* as super host plants.

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