



## Cecidomyiidae (Diptera, Insecta): richness of species and distribution in Brazil

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**Abstract:** Most Neotropical species of Cecidomyiidae (Diptera) have been described from Brazil, but a list of species with occurrence in the country has never been published. Little is known about their distribution and richness in the Brazilian phytogeographic domains. Additionally, a list of host plant species has never been gathered. The present study aims to fill these knowledge gaps and provides an overview of this family in Brazil. For this, data were obtained mainly from the literature, but also from the Cecidomyiidae collection of Museu Nacional and two herbaria (RB and R). Based on the site “Flora do Brasil 2020”, botanical names were updated and plant species origin and distribution were verified. A total of 265 gall midge species have been recorded in Brazil, most from the Atlantic Forest (183), followed by Cerrado (60), and Amazon Forest (29). The other phytogeographic domains shelter from five to ten species. Phytophagous gall midges occur on 128 plant species of 52 families, almost all native, being 43 endemic to Brazil (21 endemic to Atlantic Forest, five to Cerrado, and one to Amazon). Although, the taxonomical knowledge is focused on the Atlantic Forest, each domain has its own fauna composition and these informations can be useful for environmental conservational purposes. About 58% of the Brazilian fauna are known only from the type-locality. In order to fill these gaps, it is necessary and important to collect in uninvestigated areas.  
**Keywords:** *Phytogeographic domains; host plants; endemism; taxonomical knowledge.*

## Cecidomyiidae (Diptera, Insecta): riqueza de espécies e distribuição no Brasil

**Resumo:** A maioria das espécies neotropicals de Cecidomyiidae (Diptera) foi descrita do Brasil, mas uma lista das espécies com ocorrência no país nunca foi publicada. Pouco se sabe sobre sua distribuição e riqueza nos domínios fitogeográficos brasileiros. Adicionalmente, uma lista das espécies de plantas hospedeiras nunca foi elaborada. O presente estudo visa preencher estas lacunas de informação e fornecer um panorama geral desta família no Brasil. Para tal, dados foram obtidos principalmente da literatura, mas também da coleção de Cecidomyiidae do Museu Nacional e de dois herbários (RB e R). Com base no site “Flora do Brasil 2020”, os nomes botânicos foram atualizados e a origem e distribuição das espécies vegetais foram verificadas. Um total de 265 espécies de cecidomídeos é assinalado para o Brasil, a maioria da Mata Atlântica (183), seguida pelo Cerrado (60) e Floresta Amazônica (29). Os outros domínios fitogeográficos abrigam de cinco a dez espécies. Os cecidomídeos fitófagos estão associados a 128 espécies de plantas de 52 famílias, quase todas nativas, sendo 43 endêmicas do Brasil (21 endêmicas da Mata Atlântica, cinco do Cerrado e uma da Floresta Amazônica). Embora o conhecimento taxonômico se concentre na Mata Atlântica, cada domínio tem sua própria composição faunística e estas informações podem ser úteis para a conservação ambiental. Cerca de 58% da fauna brasileira é conhecida apenas da localidade-tipo. Para preencher estas lacunas, é necessário e importante coletar em áreas não investigadas.

**Palavras-chave:** *Domínios fitogeográficos; plantas hospedeiras; endemismo; conhecimento taxonômico.*

## Introduction

Cecidomyiidae are one of the most speciose families of Diptera, with more than 6,500 species. They are cosmopolitan and known mainly as gall-inducers (Gagné & Jaschoff 2017). Most species have been described from the Holarctic Region, while the Neotropical fauna comprises less than 10% of the known species. This low richness reflects the scarcity of taxonomic studies in this region. Most species have been described from Brazil. Nevertheless, a list of Brazilian species has never been published.

Brazil comprises six phytogeographic domains: Amazon Forest, Atlantic Forest, Caatinga, Cerrado, Pampa, and Pantanal, which greatly differ from each other in flora composition, and consequently they shelter different assemblages of gall-inducing species. The richness of cecidomyiid species by domain is still unknown, as well as the number of gall-inducing, predaceous, inquiline, fungivorous, and free-living phytophagous species. Most of them appear to have a restricted distribution, but there are several locality records scattered in the literature.

Additionally, a list of host plant species has never been elaborated and many botanical names need to be updated. The main goals of the this study are: 1) to present a general overview of the richness of this family in Brazil, 2) to provide for the first time a list of gall midges species with occurrence in Brazil as well as in each phytogeographic domain, 3) to fill a knowledge gap about the distribution of this group, and 4) to provide for the first time a list of host plant species in Brazil.

## Materials and Methods

The last version of the world catalog of Cecidomyiidae written by Gagné & Jaschoff 2017 was used as starting point. Using the find tool, all species with records in Brazil were retrieved. Papers with the original description of each species were consulted to obtain more detailed data on its occurrence localities. Furthermore, a literature survey was performed on the database “Web of Science” using “Cecidomyiidae” and “Brazil/Brasil” as key words in order to verify the gall midge species described after 2017. Based on the site “Flora do Brasil 2020”, botanical names were updated and plant species origin and distribution were verified. Synonyms were provided in brackets after the correct names to allow linking of retrieved data to the original publications. Additionally, all insect gall inventories of Brazil were also consulted to recover information about locality records of the gall midge species, based on host plant species and gall morphology, whenever possible, or on gall-inducer identification. Data on phytogeographic domains were obtained using maps of IBGE 2004 or directly from the literature. In some cases, domains were not determined because data on localities were insufficient. When gall midge species were recorded in localities occupied by two different domains, both were considered as part of their distributional area.

Besides, the Collection of Cecidomyiidae (Diptera) of Museu Nacional, Universidade Federal do Rio de Janeiro (MNRJ) was examined to aggregate unpublished data of species occurrence. Simultaneously, the Jardim Botânico do Rio de Janeiro herbarium (RB) and the Museu Nacional herbarium (R) were consulted in a search of galled exsiccates. This procedure was adopted since galls are extended phenotypes of the gall-inducing insects (Stone & Schönrogge 2003), so their presence on the host plants indicates the gall-inducing species’ presence. Data on localities were retrieved from labels and new records were established

by comparison with the literature. The geographic distribution of all gall-inducing species was updated. Data on Brazilian localities were detailed, including states and municipalities. To discriminating Rio de Janeiro and São Paulo states from Rio de Janeiro and São Paulo municipalities, the word “state” was used whenever necessary.

## Results

In Brazil, 265 species of Cecidomyiidae of 93 genera have been recorded. It corresponds to about 43% of the Neotropical fauna richness; 226 are gall-inducing (about 85%), 15 are predaceous, 11 are fungivorous, nine are inquiline, three are free-living species, and one is kleptoparasite in spider webs. Phytophagous gall midges are collectively associated with 52 plant families, 105 genera, and 128 determined species. Among these hosts, only five are exotic, one is naturalized and all others are native to Brazil (Table 1). Furthermore, ten gall midge species are associated with hosts identified only in family, totaling six families, and 37 with hosts identified only in genus, totaling 35 genera. Additionally, host plants of six cecidomyiid species are unknown. Besides, the identification of some hosts are doubtful, e.g.: “*Mikania* cf. *biformis*”, “? *Smilax* sp.”, “*Guarea* sp. poss. *guidonia* (L.)”, “*Guapira pernambucensis* (Casar.) Lundell (possibly *Guapira opposita* (Vell.) Reitz”, “poss *Smilax* sp.”, and the record of *Youngomyia pouteriae* on *Pouteria torta* (Mart.) Radlk. (Sapotaceae) corresponds to a misidentification of the gall-inducing species.

Three incongruities were also observed between the host plant and gall-inducing species geographic distributions, namely: 1) *Kielmeyera rosea* Mart. & Zucc. (Calophyllaceae) x *Arcivena kielmeyerae* Gagné, 1984, 2) *Guapira pernambucensis* (Casar.) Lundell (Nyctaginaceae) x *Bruggmannia chapadensis* Proença & Maia, 2018 and 3) *Urvillea uniloba* Radlk. (Sapindaceae) x *Neolasioptera urvilleae* (Tavares, 1909). Finally, 27 botanical names were updated.

Most gall-inducing species are monophagous (about 90%), but oligophagous and polyphagous species have been reported. Oligophagous species are represented by at least 15 gall midge species, 11 of them occur on two or three plant species of the same genus and four on two or three genera of the same family. The number of hosts of some gall midge species could not be determined, since the level of plant identification does not allow it. This is the case of five gall midge species, four of them have been associated with an identified plant species plus a non identified congeneric host, and the other with an identified species plus a morphospecies of the same plant family. A single cecidomyiid species is polyphagous, occurring in plants of different families.

Fabaceae, Asteraceae, and Myrtaceae are the plant families with the greatest richness of gall midge species (28, 26 and 25), followed by Nyctaginaceae (16). They together host about 36% of the Brazilian fauna richness. Among these families, Myrtaceae exhibit the highest average of gall midge species by host plant species, 1.8, while Fabaceae have a similar value to Asteraceae (1.2 and 1.3, respectively). The average number in Nyctaginaceae was not established, because most plants were not identified in species (Table 2). All other families shelter from nine to one gall midge species, but most of them (23) (about 44%) shelter a single gall-inducer. The average of gall midge species by host plant species was 1.0 in 33 families. This is the most frequent value (Table 2). *Eugenia* L. (Myrtaceae) and *Mikania* Wild. (Asteraceae) host 13 and 12 gall midge species, respectively, followed by *Guapira*

**Table 1.** List of host plant species (organized by family), their origin and richness of gall midges (Diptera, Cecidomyiidae) by species in Brazil.

Family	Species	Origin	Number of gall midge species
Amaranthaceae	<i>Alternanthera philoxeroides</i> (Mart.) Griseb. + <i>A. aquatica</i> (D. Parodi) Chodat	native to Brazil native to Brazil	1
Anacardiaceae	<i>Mangifera indica</i> L.	exotic (cultivated plant)	1
Annonaceae	<i>Duguetia furfuraceae</i> (A.St.-Hil.) Saff.	native to Brazil	1
Araliaceae	<i>Didymopanax morototoni</i> (Aubl.) Decne. & Planch	native to Brazil	1
Asclepiadaceae	<i>Peplonia asteria</i> (Vell.) Fontella & E. A. Schwarz	endemic to Atlantic Forest	1
Asteraceae	<i>Ageratum conyzoides</i> L.	native to Brazil	1
	<i>Baccharis lateralis</i> Baker (= <i>B. schultzi</i> Baker) + <i>B. dracunculifolia</i> DC. + <i>B. trinervis</i> Pers.	endemic to Brazil native to Brazil Brazil native to Brazil	1
	<i>Baccharis pseudomyriocephala</i> Malag.	endemic to Atlantic Forest	1
	<i>Baccharis crispa</i> Spreng. (= <i>B. trimera</i> (Less.) DC. )	native to Brazil	1
	<i>Chromolaena odorata</i> (L.) R. M. King & H. Rob. + <i>Eupatorium</i> spp.	native to Brazil	2
	<i>Conyza canadensis</i> (L.) Cronquist + <i>Erigeron strigosus</i> Muhl. ex Willd.	native to Brazil exotic	1
	<i>Eremanthus erythropappus</i> (DC.) MacLeish (= <i>Vanillosmopsis erythropappa</i> (DC.) Sch. Bip.)	endemic to Brazil	1
	<i>Eupatorium</i> sp.	-	1
	<i>Hypochaeris chillensis</i> (Kunth) Britton	native to Brazil	1
	<i>Lessingianthus warmingianus</i> (Baker) H. Rob.	endemic to Cerrado	1
	<i>Mikania guaco</i> Kunth + <i>M. glomerata</i> Spreng. + <i>Mikania cf biformis</i>	native to Brazil native to Brazil	1
	<i>Mikania glomerata</i> Spreng.	native to Brazil	1
	<i>Mikania glomerata</i> Spreng. + <i>Mikania cf biformis</i> DC	native to Brazil	6
	<i>Mikania glomerata</i> Spreng. + <i>Mikania trinervis</i> Hook. & Arn. + <i>Mikania cf biformis</i>	native to Brazil endemic to Atlantic Forest	1
	<i>Mikania micrantha</i> Kunth + <i>M. cordifolia</i> (L.f.) Willd.	native to Brazil native to Brazil	1
	<i>Mikania</i> sp.	-	2
	<i>Moquiniastrum polymorphum</i> (Less.) G. Sancho (= <i>Gochnatia polymorpha</i> (Less.) Cabrera)	native to Brazil	1
	<i>Porophyllum</i> sp.	-	1
	undetermined	-	2
Bignoniaceae	<i>Fridericia conjugata</i> (Vell.) L. G. Lohmann (= <i>Arrabidaea conjugata</i> )	native to Brazil	1
Boraginaceae	<i>Varronia curassavica</i> Jacq. (= <i>Cordia verbenacea</i> DC. = <i>Cordia curassavica</i> (Jacq.) Roem. & Schult.)	native to Brazil	1
	<i>Heliotropium angustiflorum</i> (Ruiz & Pav.) Govaerts (= <i>Tournefortia angustiflora</i> Ruiz & Pav.) + <i>Myriopus volubilis</i> Small (= <i>Tournefortia volubilis</i> L. (Boraginaceae))	native to Brazil native to Brazil	1
Burseraceae	<i>Protium brasiliense</i> (Spreng.) Engl.	endemic to Brazil	1
	<i>Protium heptaphyllum</i> (Aubl.) Marchand	native to Brazil	4
	<i>Protium icariba</i> (DC.) Marchand	endemic to Atlantic Forest	2
Cactaceae	<i>Hylocereus setaceus</i> (Salm-Dyck) R. Bauer (= <i>Selenicereus setaceus</i> (Salm-Dyck) Berg)	native to Brazil	1
Calophyllaceae	<i>Calophyllum brasiliense</i> Cambess.	native to Brazil	5
	<i>Kielmeyera rosea</i> Mart. & Zucc.	endemic to Cerrado	1

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Caryocaraceae	<i>Caryocar brasiliense</i> Cambess.	native to Brazil	1
Celastraceae	<i>Monteverdia obtusifolia</i> (Mart.) Biral (= <i>Maytenus obtusifolia</i> Mart.)	endemic to Brazil	2
Chrysobalanaceae	<i>Couepia ovalifolia</i> (Schott) Benth. ex Hook.f.	endemic to Atlantic Forest	2
Clusiaceae	<i>Clusia fluminensis</i> Planch. & Triana	endemic to Atlantic Forest	1
	<i>Clusia hilariana</i> Schltld.	endemic to Atlantic Forest	1
	<i>Clusia lanceolata</i> Cambess.	endemic to Atlantic Forest	1
	<i>Clusia</i> sp.	-	1
Combretaceae	<i>Combretum leprosum</i> Mart.	native to Brazil	1
Convolvulaceae	<i>Jacquemontia holosericea</i> (Weinm.) O' Donell	native to Brazil	1
Dilleniaceae	<i>Davilla rugosa</i> Poir	native to Brazil	1
	<i>Doliocarpus dentatus</i> (Aubl.) Standl.	native to Brazil	1
Erythroxylaceae	<i>Erythroxylum ovalifolium</i> Peyr.	endemic to Atlantic Forest	3
	<i>Erythroxylum suberosum</i> A. St.-Hil.	native to Brazil	1
Euphorbiaceae	<i>Croton floribundus</i> Spreng	native to Brazil	2
	<i>Croton hemiargyreus</i> Müll. Arg.	endemic to Atlantic Forest	1
	<i>Dalechampia ficifolia</i> Lam.	endemic to Brazil	1
	<i>Manihot esculenta</i> Crantz (= <i>Manihot utilissima</i> Pohl.) + <i>Manihot caerulescens</i> + <i>Manihot</i> sp.	native to Brazil	1
	<i>Manihot esculenta</i> Crantz (= <i>Manihot utilissima</i> Pohl.)	native to Brazil	1
	<i>Microstachys corniculata</i> (Vahl) Griseb. (= <i>Sebastiania glandulosa</i> (Mart.) Pax.)	native to Brazil	2
Fabaceae	<i>Aeschynomene denticulata</i> Rudd.	native to Brazil	1
	<i>Aldina heterophylla</i> Spruce ex Benth.	endemic to Amazon Forest	1
	<i>Andira fraxinifolia</i> Benth	endemic to Brazil	1
	<i>Andira humilis</i> Mart. ex Benth.	endemic to Brazil	1
	<i>Andira vermifuga</i> (Mart.) Benth.	native to Brazil	1
	<i>Andira</i> sp.	-	1
	<i>Bauhinia brevipes</i> Vogel	native to Brazil	2
	<i>Bauhinia cupulata</i> Benth.	native to Brazil)	1
	<i>Bauhinia rufa</i> (Bong.) Steud.	native to Brazil	1
	<i>Dalbergia ecastophyllum</i> (L.) Taub. + <i>Dalbergia frutescens</i> (Vell.) Britton	native to Brazil native to Brazil	1
	<i>Dalbergia</i> sp.	=	1
	<i>Inga edulis</i> Mart.	native to Brazil	2
	<i>Inga vera</i> Will. (= <i>Inga spuria</i> Humb. & Bonpl. ex Willd.) + <i>Inga punctata</i> Will. (= <i>Inga leptoloba</i> Schltld.)	native to Brazil native to Brazil	1
	<i>Machaerium hirtum</i> (Vell.) Stellfeld + <i>Machaerium</i> sp. +	native to Brazil	1
	<i>Machaerium macaense</i> C. V. Mendonça, A. M. G. Azevedo & H. C. Lima	endemic to Atlantic Forest)	1
	<i>Machaerium</i> sp.	-	2
	<i>Mimosa caesalpinifolia</i> Benth.	endemic to Brazil	1
	<i>Mimosa tenuiflora</i> (Willd.) Poir. (= <i>Mimosa hostilis</i> Benth.)	native to Brazil	2
	<i>Parkia pendula</i> (Willd.) Benth. ex Walp.	native to Brazil	1
	<i>Senna bicapsularis</i> (L.) Roxb.	exotic	1
	<i>Swartzia langsdorffii</i> Raddi	endemic to Atlantic Forest	1
	Undetermined	-	3
Lamiaceae	<i>Hyptis</i> sp.	-	1
	<i>Melissa officinalis</i> L.	exotic	1
Lauraceae	<i>Ocotea pulchella</i> (Nees & Mart) Mez	native to Brazil	1
	undetermined	-	1
Loranthaceae	<i>Psittacanthus dichroos</i> (Mart.) Mart.	endemic to Brazil	1

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## Cecidomyiidae (Diptera, Insecta) in Brazil

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	<i>Struthanthus taubatensis</i> Eichler (= <i>S. maricensis</i> Rizzini ex Profice)	endemic to Brazil	1
	<i>Struthanthus</i> sp.	-	1
Lythraceae	<i>Cuphea carthagenensis</i> (Jacq.) J. F. Macbr	native to Brazil	1
Malpighiaceae	<i>Banisteriopsis membranifolia</i> (A. Juss.) B. Gates	endemic to Brazil	1
	<i>Byrsonima sericea</i> DC.	native to Brazil	2
	<i>Diplopteryx pubipetala</i> (A. Juss.) W. R. Anderson & C. C. Davis	native to Brazil	1
	<i>Heteropterys nitida</i> (Lam.) DC.	native to Brazil	1
	<i>Heteropterys</i> sp.	-	1
	<i>Pterandra pyroidea</i> A. Juss.	endemic to Cerrado	1
	<i>Tetrapteryx phlomoides</i> (Spreng.) Nied.	native to Brazil	1
	Undetermined	-	1
Malvaceae	Undetermined	-	1
Melastomataceae	<i>Clidemia</i> sp.	-	1
	<i>Leandra ionopogon</i> (Mart.) Cogn.	native to Brazil	1
	<i>Marcetia</i> sp.	-	1
	<i>Miconia cinnamomifolia</i> (DC.) Naudin	endemic to Atlantic Forest	1
	<i>Miconia</i> cf. <i>cinnamomifolia</i>	-	1
	<i>Miconia theaezans</i> (Bonpl.) Cogn.	native to Brazil	1
	<i>Ossaea</i> sp.	-	1
	<i>Pleroma candolleanum</i> (Mart. ex DC.) Triana (= <i>Tibouchina candolleana</i> (Mart. ex DC.) Cogn.)	endemic to Cerrado	1
	<i>Tibouchina</i> sp.	-	1
Meliaceae	<i>Guarea macrophylla</i> Vahl	native to Brazil	2
	<i>Guarea</i> sp. poss. <i>guidonia</i> (L.) Sleumer (= <i>Guarea trichilioides</i> L.)	-	1
Moraceae	<i>Coussapoa</i> sp.	-	1
	<i>Ficus</i> sp.	-	2
	<i>Maclura tinctoria</i> (L.) D. Don ex Steud. (= <i>Chlorophora tinctoria</i> (L.) Gaudich. ex B.D. Jackson) (Moraceae)	native to Brazil	1
	<i>Sorocea bonplandii</i> (Baill.) W. C. Burger et al. (= <i>Sorocea ilicifolia</i> Miq.)	native to Brazil	1
Myrsinaceae	<i>Myrsine</i> sp.	-	1
Myrtaceae	<i>Eugenia astringens</i> Cambess (= <i>E. rotundifolia</i> Casar = <i>Eugenia umbelliflora</i> O. Berg.) (Myrtaceae)	endemic to Atlantic Forest	4
	<i>Eugenia copacabanensis</i> Kiaersk.	endemic to Atlantic Forest	3
	<i>Eugenia hiemalis</i> Cambess. (= <i>Eugenia multiflora</i> Cambess.) + undetermined Myrtaceae	native to Brazil	1
	<i>Eugenia puniceifolia</i> (Kunth.) DC. (= ( <i>E. ovalifolia</i> Cambess.) + <i>Eugenia</i> sp.)	endemic to Brazil	1
	<i>Eugenia uniflora</i> L.	native to Brazil	4
	<i>Myrcia ovata</i> Cambess.	endemic to Atlantic Forest)	1
	<i>Myrcia retorta</i> Cambess	endemic to Brazil	1
	<i>Myrciaria delicatula</i> (DC.) O. Berg	native to Brazil	1
	<i>Myrciaria floribunda</i> (H. West ex Willd.)	native to Brazil	2
	<i>Myrciaria tenella</i> (DC.) O. Berg	native to Brazil	1
	<i>Neomitranthes obscura</i> (DC.) N. Silveira	endemic to Atlantic Forest	3
	<i>Psidium cattleyanum</i> Sabine	endemic to Brazil	2
	Undetermined	-	1
Nyctaginaceae	<i>Guapira opposita</i> (Vell.) Reitz	native to Brazil	7
	<i>Guapira pernambucensis</i> (Casar.) Lundell (possibly <i>Guapira opposita</i> (Vell.) Reitz)	endemic to Brazil	1

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	<i>Guapira</i> sp.	-	1
	<i>Neea</i> spp.	-	7
Ochnaceae	<i>Ouratea spectabilis</i> (Mart) Engl.	endemic to Cerrado	1
Olacaceae	<i>Heisteria acuminata</i> (Humb. & Bonpl.) Engl. (= <i>Heisteria cyanocarpa</i> Poepp.)	native to Brazil	1
	<i>Ximenia americana</i> L.	native to Brazil	1
Onagraceae	<i>Ludwigia</i> sp.	-	1
Orchidaceae	<i>Cattleya</i> spp. + <i>Epidendrum</i> spp. + <i>Laelia</i> spp.	-	1
Piperaceae	<i>Piper</i> sp.	-	3
Poaceae	<i>Paspalum conjugatum</i> P. J. Bergius	native to Brazil	1
Polypodiaceae	<i>Microgramma vacciniifolia</i> (Langsd. & Fisch.) Copel.	native to Brazil	1
Pontederiaceae Q	<i>Eichhornia azurea</i> (Sw.) Kunth	native to Brazil	1
Ranunculaceae	<i>Clematis</i> sp.	=	1
Rosaceae	<i>Spiraea salicifolia</i> L.	exotic	1
Rubiaceae	<i>Borreria palustris</i> (Cham. & Schltld.) Bacigalupo & E.L.Cabral (= <i>Diodia gymnocephala</i> (DC.) K.Schum.)	native to Brazil	1
	<i>B. verticillata</i> (L.) G.Mey + <i>Borreria</i> sp.	native to Brazil	1
	<i>Psychotria</i> sp.	-	1
	<i>Rubia</i> sp.	-	1
	Undetermined	-	3
Rutaceae	<i>Citrus</i> sp.	-	1
Sapindaceae	<i>Matayba guianensis</i> Aubl.	native to Brazil	1
	<i>Paullinia weinmanniifolia</i> Mart.	endemic to Atlantic Forest	1
	<i>Paullinia weinmanniifolia</i> Mart. + <i>Matayba guianensis</i> Aubl.	endemic to Atlantic Forest native to Brazil	1
	<i>Serjania</i> sp.	-	1
	<i>Urvillea uniloba</i> Radlk.	native to Brazil	1
Sapotaceae	<i>Manilkara subsericea</i> (Mart.) Dubard	endemic to Atlantic Forest	1
	<i>Pouteria caimito</i> (Ruiz & Pav.) Radlk (= <i>Pouteria caimito</i> var. <i>laurifolia</i> (Gomes) Baehni)	native to Brazil	2
	<i>Pouteria torta</i> (Mart.) Radlk.	native to Brazil	1
	<i>Pouteria venosa</i> (Mart.) Baehni	native to Brazil	1
	<i>Sideroxylon obtusifolium</i> (Roem. and Schult.) T. D. Penn	native to Brazil	1
Smilacaceae	<i>Smilax oblongifolia</i> Pohl ex Griseb	endemic to Brazil	1
	Poss on <i>Smilax</i> sp.	-	1
	<i>Smilax rufescens</i> Griseb.	endemic to Brazil)	1
	? <i>Smilax</i> sp	-	1
Solanaceae	<i>Physalis angulata</i> L.	native to Brazil	1
	<i>Solanum</i> sp.	-	1
Sterculiaceae	<i>Waltheria indica</i> L.	native to Brazil	1
	<i>Sterculia</i> sp.	-	1
Styracaceae	<i>Styrax</i> sp.	-	5
Urticaceae	<i>Cecropiae</i> sp	-	1
Verbenaceae	<i>Aegiphila integrifolia</i> (Jacq.) Moldenke (= <i>Aegiphila arborescens</i> (Aubl.) J. F. Gmel.)	native to Brazil	1
	<i>Lantana camara</i> L.	naturalized	1
	<i>Lantana</i> sp.	-	3
	<i>Stachytarpheta cayennensis</i> (Rich.) Vahl. + <i>Stachytarpheta</i> sp.	native to Brazil	1
Unknown	-	-	6

**Table 2.** Richness of host plant species and gall midge species (Diptera, Cecidomyiidae) by vegetable family, and average of gall midge species by host plant in each family in Brazil.

Family	Number of host species	Number of gall midge species	Average number
Amaranthaceae	2	1	0.5
Anacardiaceae	2	2	1.0
Annonaceae	1	1	1.0
Araliaceae	1	1	1.0
Asclepiadaceae	1	1	1.0
Asteraceae	21	26	1.3
Bignoniaceae	1	1	1.0
Boraginaceae	3	2	0.7
Bursaceae	3	7	2.3
Cactaceae	1	1	1.0
Calophyllaceae	2	6	3.0
Caryocaraceae	1	1	1.0
Celastraceae	1	2	2.0
Clusiaceae	4	4	1.0
Chrysobalanaceae	2	2	2.0
Combretaceae	1	1	1.0
Convolvulaceae	1	1	1.0
Dilleniaceae	2	2	1.0
Erythroxylaceae	2	4	2.0
Euphorbiaceae	7	8	1.1
Fabaceae	24	28	1.2
Lamiaceae	2	2	1.0
Lauraceae	2	2	1.0
Lythraceae	1	1	1.0
Loranthaceae	3	3	1.0
Malpighiaceae	?	8	?
Malvaceae	1	1	1.0
Melastomataceae	9	9	1.0
Meliaceae	2	3	1.5
Moraceae	4	5	1.2
Myrsinaceae	1	1	1.0
Myrtaceae	14	25	1.8
Nyctaginaceae	?	16	?
Ochnaceae	1	1	1.0
Olacaceae	2	2	1.0
Onagraceae	1	1	1.0
Orchidaceae	?	1	?
Piperaceae	1	1	1.0
Poaceae	1	1	1.0
Polypodiaceae	1	1	1.0
Ponteridaceae	1	1	1.0
Ranunculaceae	1	1	1.0
Rosaceae	1	1	1.0
Rubiaceae	6	7	1.2
Rutaceae	1	1	1.0
Sapindaceae	4	5	1.2
Sapotaceae	5	6	1.2
Smilacaceae	4	4	1.0
Solanaceae	2	2	1.0
Sterculiaceae	2	2	1.0
Styracaceae	?	5	?
Urticaceae	1	1	1.0
Verbenaceae	5	6	1.2

Aubl. (Nyctaginaceae) with 9. *Guapira opposita* (Vell.) Reitz, *Mikania glomerata* Spreng., and *Calophyllum brasiliense* Cambess (Calophyllaceae) highlight as plant species with the greatest number of gall midge species (seven, six and five, respectively).

The gall-inducers are represented by 80 genera. Among them, *Lopesia Rübsaamen*, 1909, *Asphondylia* Loew, 1850, and *Clinodiplosis* Kieffer 1895 are the most speciose, with 25, 23 and 20 species, respectively (Table 3). Predators are represented by four genera, *Aphidoletes* Kieffer, 1904, *Diadiplosis* Felt 1911, *Feltiella Rübsaamen*, 1910, and *Lestodiplosis* Kieffer, 1894, being *Diadiplosis* the most speciose, with ten species, while the others comprise three (*Lestodiplosis*) or one species (*Aphidoletes* and *Feltiella*). The first genus feeds on aphids, the second on scale insects (Coccoidea), the third on mites and the fourth mostly on other cecidomyiids, but also on mites. They have been used as biological control agents of some plant pests. Fungivorous species are represented by five genera, *Dichodiplosis* Rübsaamen, 1910, *Haplusia* Karsch, 1877, *Mycodiplosis Rübsaamen*, 1895, *Stomatosema* Kieffer, 1904, and *Termitomastus* Silvestri, 1901. Three of them comprise a single species, while *Haplusia* comprises two and *Stomatosema* six. Inquilines are represented by six genera, *Clinodiplosis* Kieffer, 1894, *Contarinia* Rondani, 1860, *Dialeria* Tavares 1918, *Meunieriella* Kieffer, 1909, *Neolasioptera* Felt, 1908 and *Trotteria* Kieffer, 1902. Among them, *Dialeria* and *Trotteria* include exclusively inquilinous species. Five of them comprise a single inquilinous species in Brazil, while *Meunieriella* comprises four. All were recorded in galls of other Cecidomyiidae. Although these cecidomyiids have been reported as inquilines, they are probably kleptoparasites, according to Luz and Mendonça-Júnior (2019). Free-living species are less common, being represented by three genera, *Clinodiplosis*, *Lopesia*, and *Prodiplosis* Felt, 1908, each with a single species. Their larvae feed on plant reproductive organs. And only one species, *Didactylomyia longimana* (Felt, 1908), is reported as the kleptoparasite in literature.

Most species of gall midges (about 90%) have been recorded exclusively in Brazil, while only 26 (about 10%) occur in other countries. The Atlantic Forest is the phytogeographic domain with the greatest richness of species, 183, followed by Cerrado (60 species), Amazon (29 species), Pampa (10 species), Caatinga (8 species), and Pantanal (5 species) (Table 3). These values correspond to about 69%, 23%, 11%, 4%, 3%, and 2% of the Brazilian fauna of Cecidomyiidae. Forty-one cecidomyiid species are associated with 43 endemic Brazilian plant species. Among them, 21 hosts are endemic to Atlantic Forest, five to Cerrado, and one to Amazon. No hosts were endemic to Caatinga, Pampa and Pantanal (Table 4). Two-hundred thirty five gall midge species (235) are known from a single domain: 157 from Atlantic Forest, 35 from Cerrado, 17 from Amazon Forest, 8 from Pampa, 4 from Caatinga, and 3 from Pantanal. The others have been reported in two (23 species) or three domains (seven species). One-hundred and thirty-seven species (about 52% of the Brazilian fauna) are known only from the type-locality.

A list of gall midge species with occurrence in Brazil is presented below in alphabetical order. Data on their food habit, geographic distribution and host plant are added. Botanical names were updated (synonyms found in publications are given in brackets). The origin of each host plant and its occurrence in Brazilian phytogeographic domains are also provided. These last two informations are restricted to hosts identified at specific level. References are added in chronological order.

**Table 3.** Richness of gall midge species (Diptera, Cecidomyiidae) by Brazilian phytogeographic domain.

Genera (n=93)	Number of gall midge species						
	Brazil	Amazon	Atlantic Forest	Caatinga	Cerrado	Pampa	Pantanal
<i>Alexomyia</i>	1	1	0	0	0	0	0
<i>Alycaulus</i>	4	1	2	0	1	0	0
<i>Anadiplosis</i>	4	0	4	1	0	0	0
<i>Anasphondylia</i>	1	0	1	0	0	0	0
<i>Andirodiplosis</i>	1	0	1	0	1	0	0
<i>Anisodiplosis</i>	1	0	1	0	1	0	0
<i>Aphidoletes</i>	1	0	0	0	0	0	0
<i>Apodiplosis</i>	1	0	1	0	0	0	0
<i>Arcivena</i>	1	0	0	0	1	0	0
<i>Arrabidaemyia</i>	1	0	1	0	0	0	0
<i>Asphondylia</i>	23	2	15	0	7	2	0
<i>Asteromyia</i>	1	0	1	0	0	0	0
<i>Autodiplosis</i>	1	0	1	0	0	0	0
<i>Baccharomyia</i>	2	0	2	0	0	0	0
<i>Brethesiamyia</i>	1	0	0	0	1	0	0
<i>Brugmannia</i>	14	2	11	0	1	1	0
<i>Bruggmanniella</i>	11	0	8	0	4	1	0
<i>Burseramyia</i>	1	0	1	0	0	0	0
<i>Cerciplanus</i>	2	0	0	0	2	0	0
<i>Cleitodiplosis</i>	1	0	1	0	0	0	0
<i>Clinodiplosis</i>	20	2	14	0	3	0	0
<i>Clusiamyia</i>	2	0	2	0	0	0	0
<i>Compsodiplosis</i>	2	0	1	0	0	1	0
<i>Contarinia</i>	2	1	2	0	1	0	0
<i>Contodiplosis</i>	3	0	3	0	0	0	0
<i>Cordiamyia</i>	1	0	1	0	0	0	0
<i>Costadiplosis</i>	1	0	1	0	0	0	0
<i>Couridiplosis</i>	1	0	1	0	1	0	0
<i>Dactylodiplosis</i>	4	1	3	0	0	0	0
<i>Dasineura</i>	11	0	9	0	2	0	0
<i>Diadiplosis</i>	10	0	7	0	1	0	0
<i>Dialeria</i>	1	0	1	1	0	0	0
<i>Dichodiplosis</i>	1	0	1	0	0	0	0
<i>Didactylomyia</i>	1	0	0	0	1	0	0
<i>Elachypalpus</i>	1	0	0	0	0	1	0
<i>Epihormomyia</i>	1	0	1	0	0	0	0
<i>Eugeniamyia</i>	2	0	2	0	0	1	0
<i>Feltiella</i>	1	0	0	1	0	0	0
<i>Fernandesia</i>	1	0	1	0	0	0	0
<i>Frauenfeldiella</i>	1	1	1	0	0	0	0
<i>Geraldesia</i>	1	0	1	0	0	0	0
<i>Gnesiodiplosis</i>	1	0	1	0	0	0	0
<i>Guareamyia</i>	1	0	1	0	0	0	0
<i>Guarephila</i>	1	0	0	0	0	1	0
<i>Haplopalpus</i>	1	1	0	0	0	0	0
<i>Haplusia*</i>	2	1	0	0	0	0	0

Continue...



## Cecidomyiidae (Diptera, Insecta) in Brazil

Continuation...

<i>Houardodiplosis</i>	1	0	1	1	0	0	0
<i>Iatrophobia</i>	1	1	1	0	0	0	0
<i>Jorgenseniella</i>	1	0	1	0	0	0	0
<i>Lestodiplosis</i>	3	0	3	0	0	0	0
<i>Liodiplosis</i>	3	0	3	0	0	0	0
<i>Lopesia</i>	26	7	18	2	14	0	0
<i>Machaerobia</i>	2	0	2	0	1	0	0
<i>Macroporpa</i>	2	2	0	0	0	0	0
<i>Manilkaramyia</i>	1	0	1	0	0	0	0
<i>Mayteniella</i>	1	0	1	0	0	0	0
<i>Megaulus</i>	1	1	0	0	0	0	0
<i>Metasphondylia</i>	1	0	1	0	0	0	0
<i>Meunieriella</i>	4	0	3	0	1	0	0
<i>Mikaniadiplosis</i>	1	0	1	0	0	0	0
<i>Mycodiplosis</i>	1	0	0	0	0	0	0
<i>Myrciamyia</i>	2	0	1	0	1	0	0
<i>Myrciariamyia</i>	3	0	1	0	2	0	0
<i>Neolasioptera</i>	9	0	7	0	0	1	1
<i>Neomitranthella</i>	1	0	1	0	0	0	0
<i>Novocalmonia</i>	2	0	2	0	0	0	0
<i>Ouradiplosis</i>	1	1	0	0	0	0	0
<i>Parametasphondylia</i>	1	0	0	0	1	0	0
<i>Parazalepidota</i>	1	0	1	0	0	0	0
<i>Parkiamyia</i>	1	1	0	0	0	0	0
<i>Paulliniamyia</i>	1	0	1	0	0	0	0
<i>Perasphondylia</i>	2	1	1	0	0	0	0
<i>Pisphondylia</i>	1	0	1	0	0	0	0
<i>Primadiplosis</i>	1	0	1	0	0	0	0
<i>Proasphondylia</i>	3	0	3	0	0	0	0
<i>Procontarinia</i>	1	0	1	0	0	0	0
<i>Prodiplosis</i>	1	0	0	0	0	0	0
<i>Rhoasphondylia</i>	1	0	1	0	0	0	0
<i>Rochadiplosis</i>	1	0	1	0	1	0	0
<i>Schismatodiplosis</i>	1	1	1	0	0	0	0
<i>Schizomyia</i>	8	0	3	1	4	0	0
<i>Smilasioptera</i>	1	0	1	0	0	0	0
<i>Sphaeramyia</i>	1	0	1	0	0	0	0
<i>Sphaerodiplosis</i>	1	0	0	0	0	0	0
<i>Stephomyia</i>	6	0	6	0	1	0	0
<i>Stomatosema</i>	6	0	0	0	4	0	4
<i>Styraxdiplosis</i>	2	0	2	1	0	0	0
<i>Termitomastus</i>	1	0	0	0	1	0	0
<i>Trotteria</i>	1	0	1	0	0	0	0
<i>Uleella</i>	1	0	1	0	0	0	0
<i>Uleia</i>	1	1	0	0	0	0	0
<i>Youngomyia</i>	2	0	1	0	1	0	0
<i>Zalepidota</i>	3	0	2	0	0	1	0
Total	261	29	178	8	57	10	5

**Table 4.** Richness of gall midge species (Diptera: Cecidomyiidae) by endemic plant species in Brazilian phytogeographic domains. There is no endemic host plants in the Caatinga, Pampa and Pantanal until the current moment.

Host Plant Species	Endemic to Brazil	Endemic to Amazon Forest	Endemic to Atlantic Forest	Endemic to Cerrado	Number of gall midge species
<i>Aldina heterophylla</i>	X	X	-	-	1
<i>Andira humilis</i>	X	-	-	-	1
<i>Andira fraxinifolia</i>	X	-	-	-	1
<i>Baccharis lateralis</i>	X	-	-	-	1
<i>Baccharis pseudomyriocephala</i>	X	-	X	-	1
<i>Banisteriopsis membranifolia</i>	X	-	-	-	1
<i>Clusia fluminensis</i>	X	-	X	-	1
<i>Clusia hilariana</i>	X	-	X	-	1
<i>Clusia lanceolata</i>	X	-	-	-	1
<i>Couepia ovalifolia</i>	X	-	X	-	2
<i>Croton hemiargyreus</i>	X	-	X	-	1
<i>Dalechampia ficifolia</i>	X	-	-	-	1
<i>Eremanthus erythropappus</i>	X	-	-	-	1
<i>Erythroxylum ovalifolium</i>	X	-	X	-	3
<i>Eugenia astringens</i>	X	-	X	-	4
<i>Eugenia copacabanensis</i>	X	-	X	-	3
<i>Eugenia puniceifolia</i>	X	-	-	-	1
<i>Guapira pernambucensis</i>	X	-	X	-	1
<i>Kielmeyera rosea</i>	X	-	-	X	1
<i>Lessingianthus warmingianus</i>	X	-	-	X	1
<i>Machaerobia machaeri</i>	X	-	X	-	1
<i>Manilkara subsericea</i>	X	-	X	-	1
<i>Miconia cinnamomifolia</i>	X	-	X	-	1
<i>Mikania trinervis</i>	X	-	X	-	1
<i>Mimosa caesalpiniifolia</i>	X	-	-	-	1
<i>Monteverdia obtusifolia</i>	X	-	-	-	2
<i>Myrcia ovata</i>	X	-	X	-	1
<i>Myrcia retorta</i>	X	-	-	-	1
<i>Neomitranthes obscura</i>	X	-	X	-	3
<i>Ocotea notata</i>	X	-	-	-	1
<i>Ouratea spectabilis</i>	X	-	-	X	1
<i>Peplonia asteria</i>	X	-	X	-	1
<i>Paullinia weinmanniifolia</i>	X	-	X	-	2
<i>Pleroma candolleanum</i>	X	-	-	x	1
<i>Protium brasiliense</i>	X	-	-	-	1
<i>Protium icicariba</i>	X	-	X	-	2
<i>Psidium cattleyanum</i>	X	-	-	-	2
<i>Psittacanthus dichroos</i>	X	-	-	-	1
<i>Pterandra pyroidea</i>	X	-	-	x	1
<i>Smilax oblongifolia</i>	X	-	-	-	1
<i>Smilax rufescens</i>	X	-	-	-	1
<i>Struthanthus taubatensis</i>	X	-	-	-	-
<i>Swartzia langsdorffii</i>	X	-	X	-	1

**Table 5.** Richness of gall midge species (Diptera, Cecidomyiidae) by vegetable family in Brazilian phylogeographic domains.

Family	Number of gall midge species					
	Amazon Forest	Atlantic Forest	Caatinga	Cerrado	Pampa	Pantanal
Amaranthaceae	0	0	0	0	0	0
Anacardiaceae	0	2	0	0	0	0
Annonaceae	0	0	0	1	0	0
Araliaceae	0	0	0	1	0	0
Asclepiadaceae	0	1	0	0	0	0
Asteraceae	3	19	0	6	1	0
Bignoniaceae	0	1	0	0	0	0
Boraginaceae	1	2	0	1	0	0
Burseraceae	2	4	0	4	0	0
Cactaceae	0	1	0	0	0	0
Calophyllaceae	5	5	0	6	0	0
Caryocaraceae	0	0	0	0	0	0
Celastraceae	0	2	0	0	0	0
Chrysobalanaceae	0	2	0	0	0	0
Clusiaceae	1	3	0	0	0	0
Combretaceae	0	1	1	0	0	0
Convolvulaceae	0	1	0	0	0	0
Dilleniaceae	0	1	0	1	0	0
Erythroxylaceae	0	4	0	1	0	0
Euphorbiaceae	1	4	0	2	0	0
Fabaceae	2	15	4	10	0	1
Lamiaceae	0	2	0	1	0	0
Lauraceae	1	2	0	0	0	0
Loranthaceae	0	3	0	0	0	0
Lythraceae	0	1	0	0	0	0
Malpighiaceae	1	4	0	5	0	0
Malvaceae	0	2	0	0	0	0
Melastomataceae	0	7	0	3	0	0
Meliaceae	0	2	0	0	1	0
Moraceae	1	3	0	0	1	0
Myrsinaceae	0	0	0	0	1	0
Myrtaceae	0	21	0	3	1	0
Nyctaginaceae	1	14	0	2	0	0
Ochnaceae	0	0	0	1	0	0
Olacaceae	1	1	0	0	0	0
Onagraceae	0	1	0	0	0	0
Orchidaceae	0	0	0	0	0	0
Piperaceae	0	1	0	1	1	0
Poaceae	0	1	0	0	0	0
Polypodiaceae	0	1	0	0	0	0
Pontederiaceae	0	0	0	1	0	0
Ranunculaceae	0	0	0	0	0	0
Rosaceae	0	0	0	0	0	0
Rubiaceae	0	8	0	0	0	0
Rutaceae	0	0	0	0	0	0
Sapindaceae	1	2	0	1	1	0
Sapotaceae	0	5	0	1	0	0
Smilacaceae	0	1	0	1	1	0
Solanaceae	1	0	0	0	0	0
Sterculiaceae	1	0	0	1	0	0
Styracaceae	0	2	1	0	0	0
Urticaceae	1	0	0	0	0	0
Verbenaceae	1	5	0	0	9	0

New records are indicated by an asterisk. The number in brackets after the locality represents the voucher number of the plant species.

1. *Alexomyia ciliata* Felt, 1921a (gall-inducer). Distribution: Brazil: Pará (Amazon Forest). Host plant: unknown. Refs.: Felt 1921a, Gagné 1994, Gagné & Jaschhof 2017.

2. *Alycaulus globulus* Gagné, 2001 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Poço das Antas, Rio de Janeiro (Grumari), Parque Nacional do Itatiaia, Reserva Biológica União; São Paulo state: Bertioga (Atlantic Forest). Host plant: *Mikania glomerata* Spreng. (native to Brazil) (Cerrado and Atlantic Forest) and *Mikania cf. bififormis* DC. (Asteraceae). Refs.: Gagné et al. 2001, Oliveira & Maia 2005, Maia et al. 2008, Gagné & Jaschhof 2017, Maia & Mascarenhas 2017, Maia & Siqueira 2020.

3. *Alycaulus hexadentatus* Urso-Guimarães, 2018a (gall-inducer). Distribution: Brazil: São Paulo state: Altinópolis (Cerrado). Host plant: *Smilax oblongifolia* Pohl ex Griseb (Smilacaceae) (endemic to Brazil) (Caatinga and Cerrado). Refs.: Urso-Guimarães 2018a, Ribeiro et al. 2019.

4. *Alycaulus mikaniae* Rübsaamen, 1915 (gall-inducer). Distribution: Brazil: Amazon (Amazon Forest). Host plant: *Mikania* sp. (Asteraceae). Refs.: Rübsaamen 1915, Gagné 1994, Gagné & Jaschhof 2017.

5. *Alycaulus trilobatus* Möhn, 1964a (gall-inducer). Distribution: El Salvador; Colombia; Brazil: São Paulo state: Bertioga (Atlantic Forest). Host plants: *Mikania micrantha* Kunth (native to Brazil) (Amazon Forest, Cerrado, Atlantic Forest, and Pampa) and *M. cordifolia* (L.f.) Willd. (native to Brazil) (Amazon Forest, Caatinga, Cerrado, Atlantic Forest, and Pampa) (Asteraceae). Refs.: Möhn 1964a, Gagné 1994, Maia et al. 2008, Gagné & Jaschhof 2017.

6. *Anadiplosis caetetensis* Tavares, 1920a (gall-inducer). Distribution: Brazil: Bahia: Caetitê (Atlantic Forest, Caatinga). Host plant: undetermined Fabaceae. Refs.: Tavares 1920a, Gagné 1994, Gagné & Jaschhof 2017.

7. *Anadiplosis procera* Tavares, 1920a (gall-inducer). Distribution: Brazil: Bahia: Salvador (Itaparica) (Atlantic Forest). Host plant: undetermined Fabaceae. Refs.: Tavares 1920a, Gagné 1994, Gagné & Jaschhof 2017.

8. *Anadiplosis pulchra* Tavares, 1916 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Nova Friburgo (Atlantic Forest). Host plant: *Machaerium* sp. (Fabaceae). Refs.: Tavares 1916, Gagné 1994, Gagné & Jaschhof 2017.

9. *Anadiplosis venusta* Tavares, 1916 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Nova Friburgo (Atlantic Forest). Host plant: *Machaerium* sp. (Fabaceae). Refs.: Tavares 1916, Gagné 1994, Gagné & Jaschhof 2017.

10. *Anasphondylia myrtacea* Tavares, 1920b (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Nova Friburgo (Atlantic Forest). Host plant: undetermined Myrtaceae. Refs.: Tavares 1920b, Gagné 1994, Gagné & Jaschhof 2017.

11. *Andirodiplosis bahiensis* Tavares, 1920c (gall-inducer). Distribution: Brazil: Bahia: Salvador (Atlantic Forest); São Paulo state: Luiz Antônio (Cerrado). Host plant: *Andira* sp. (Fabaceae). Refs.: Tavares 1920c, Gagné 1994, Saito & Urso-Guimarães 2012, Gagné & Jaschhof 2017.

12. *Anisodiplosis waltheriae* Maia, 2005 (gall-inducer). Distribution: Brazil: Minas Gerais: Aimorés (Atlantic Forest); Mato Grosso: Chapada dos Guimarães (Cerrado). Host plant: *Waltheria indica* L.

(Sterculiaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, Atlantic Forest, and Pantanal). Refs.: Maia & Fernandes, 2005a, Almeida et al. 2006, Gagné & Jaschhof 2017, Proença & Maia 2020.

13. *Aphidoletes aphidimyza* (Rondani, 1847) (predator of aphids: Hemiptera). Distribution: Widespread Palearctic, Hawaii, widespread Nearctic, Chile, New Zealand, and Brazil (unstated locality). Refs.: Gagné & Jaschhof 2017.

14. *Apodiplosis praecox* Tavares, 1922 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Nova Friburgo (Atlantic Forest). Host plant: *Psychotria* sp. (Rubiaceae). Refs.: Tavares 1922, Gagné 1994, Gagné & Jaschhof 2017.

15. *Arcivena kielmeyerae* Gagné, 1984 (gall-inducer). Distribution: Brazil: São Paulo state: Mogi Guaçu (Cerrado). Host plant: *Kielmeyera rosea* Mart. & Zucc. (Calophyllaceae) (endemic to Cerrado). Refs.: Gagné 1984, 1994, Gagné & Jaschhof 2017.

16. *Arrabiadaemyia serrata* Maia, 2001a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Mangaratiba, Rio de Janeiro (Grumari, Mangaratiba), Reserva Biológica União, Maricá, Araruama, Arraial do Cabo, São João da Barra (Atlantic Forest). Host plant: *Fridericia conjugata* (Vell.) L. G. Lohmann (Bignoniaceae) (= *Arrabiadaea conjugata* Mart.) (native to Brazil) (Amazon Forest, Cerrado, Atlantic Forest, and Pantanal). Refs.: Monteiro et al. 1994, Maia 2001a, b, Oliveira & Maia 2005, Rodrigues et al. 2014, Carvalho-Fernandes et al. 2016, Maia & Silva 2016, Gagné & Jaschhof 2017, Maia & Siqueira 2020.

17. *Asphondylia bahiensis* Tavares, 1917a (gall-inducer). Distribution: Brazil: Bahia: Salvador (Atlantic Forest). Host plant: undetermined Rubiaceae. Refs.: Tavares 1917a, Gagné 1994, Gagné & Jaschhof 2017.

18. *Asphondylia borrieriae* Rübsaamen, 1905a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Mangaratiba, Rio de Janeiro, Maricá, Saquarema, Cabo Frio, Carapebus, Arraial do Cabo (Atlantic Forest). Host plants: *Borrieria* sp. and *B. verticillata* (L.) G. Mey. (Rubiaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Rübsaamen 1905a, Gagné 1994, Monteiro et al. 1994, Maia 2001b, Rodrigues et al. 2014, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017.

19. *Asphondylia canastrae* Urso-Guimarães & Amorim, 2002 (gall-inducer). Distribution: Brazil: Minas Gerais: Delfinópolis (Cerrado). Host plant: *Hyptis* sp. (Lamiaceae). Refs.: Urso-Guimarães & Amorim 2002, Urso-Guimarães et al. 2003, Gagné & Jaschhof 2017.

20. *Asphondylia cipo* Urso-Guimarães, 2018b (gall-inducer). Distribution: Brazil: Minas Gerais: Santana do Riacho (Cerrado). Host plant: *Lessingianthus warmingianus* (Baker) H. Rob. (Asteraceae) (endemic to Cerrado). Refs.: Urso-Guimarães, 2018b

21. *Asphondylia communis* Maia & Couri, 1992 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Mangaratiba, Maricá, Arraial do Cabo (Ilha do Cabo Frio), São João da Barra (Atlantic Forest). Host plant: *Ximenia americana* L. (Olacaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia & Couri 1992, Monteiro et al. 1994, Maia 1999a, Maia 2001b, Maia & Souza 2013, Rodrigues et al. 2014, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017.

22. *Asphondylia cordiae* Möhn, 1959 (gall-inducer). Distribution: El Salvador and Brazil: Minas Gerais: Lagoa Santa (Cerrado); Espírito Santo: Anchieta-Piúma (Atlantic Forest) Rio de Janeiro state: Rio de

Janeiro, Maricá, Reserva Biológica União, Saquarema, Araruama, Arraial do Cabo, Quissamã, Carapebus, Campos de Goitacazes, São João da Barra (Atlantic Forest); São Paulo state: Bertioga, Ubatuba (Atlantic Forest); Santa Catarina: Babitonga (Atlantic Forest); Rio Grande do Sul: Porto Alegre (Atlantic Forest). Host plant: *Cordia dentata* Poir. (exotic) (no records in Brazil), *C. alba* (Jacq.) Roem. & Schult. (exotic) (no records in Brazil), and *Varronia curassavica* Jacq. (= *Cordia verbenacea* DC. = *Cordia curassavica* (Jacq.) Roem. & Schult.) (Boraginaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, Atlantic Forest, and Pampa). Refs.: Möhn 1959, Gagné 1994, Maia 2001b, Maia et al. 2008, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017, Melo-Júnior et al. 2018, Maia & Siqueira 2020, Maia & Flor 2020.

23. *Asphondylia fructicola* Maia, 2009 (gall-inducer). Distribution: Brazil: Pará: Oriximiná (Porto Trombetas) (Amazon Forest). Host plant: *Solanum* sp. (Solanaceae). Refs.: Maia et al. 2009, Gagné & Jaschhof 2017.

24. *Asphondylia glomeratae* Gagné, 2001 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Rio de Janeiro, Parque Nacional do Itatiaia, Valença (Atlantic Forest); Minas Gerais: Viçosa (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest). Host plants: *Mikania glomerata* Spreng. (native to Brazil) (Cerrado and Atlantic Forest) and *Mikania cf. biformis* (Asteraceae). Refs.: Gagné et al. 2001, Maia et al. 2008, Proença & Maia 2012, Maia & Proença 2016, Maia & Mascarenhas 2017, Gagné & Jaschhof 2017.

25. *Asphondylia gochnatiae* Maia, 2008 (gall-inducer). Distribution: Brazil: Minas Gerais: Luz (Cerrado). Host plant: *Moquiniastrum polymorphum* (Less.) G. Sancho (= *Gochnatia polymorpha* (Less.) Cabrera) (Asteraceae) (native to Brazil) (Cerrado and Atlantic Forest). Refs.: Maia et al. 2008, Gagné & Jaschhof 2017.

26. *Asphondylia maricensis* Maia & Couri, 1992 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá (Atlantic Forest). Host plant: *Struthanthus taubatensis* Eichler (= *S. maricensis* Rizzini ex Profice) (Loranthaceae) (endemic to Brazil) (Cerrado and Atlantic Forest). Refs.: Maia & Couri 1992, Maia 2001b, Gagné & Jaschhof 2017.

27. *Asphondylia microcapillata* Maia, 2005 (gall-inducer). Distribution: Brazil: Minas Gerais: Três Marias (Cerrado). Host plant: *Bauhinia brevipes* Vogel (Fabaceae) (native to Brazil) (Amazon Forest, Cerrado, and Atlantic Forest). Refs.: Maia & Fernandes, 2005b, Gagné & Jaschhof 2017.

28. *Asphondylia moehni* Skuhřavá, 1989 (gall-inducer). Distribution: Brazil: Rio Grande do Sul: São Leopoldo (Pampa), Canela, Santa Tereza (Atlantic Forest); São Paulo state: Ubatuba, Bertioga (Atlantic Forest); Rio de Janeiro state: Rio de Janeiro (Grumari), Parque Nacional do Itatiaia (Atlantic Forest). Host plants: *Mikania guaco* Kunth (native to Brazil) (Amazon), *M. glomerata* Spreng. (native to Brazil) (Cerrado and Atlantic Forest), and *Mikania cf. biformis* (Asteraceae). Refs.: Möhn 1973, Gagné 1994, Oliveira & Maia 2005, Maia et al. 2008, Maia & Mascarenhas 2017, Gagné & Jaschhof 2017, Goetz et al. 2018.

29. *Asphondylia parva* Tavares, 1917a (gall-inducer). Distribution: Brazil: Bahia: Madre de Deus (Atlantic Forest). Host plant: undetermined Rubiaceae. Refs.: Tavares 1917a, Gagné 1994, Gagné & Jaschhof 2017.

30. *Asphondylia peploniae* Maia, 2001a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Carapebus (Atlantic Forest). Host plant: *Peplonia asteria* (Vell.) Fontella & E. A. Schwarz (Asclepiadaceae) (endemic to Atlantic Forest). Refs.: Maia 2001a, Gagné & Jaschhof 2017.

31. *Asphondylia rochae* Tavares, 1918a (gall-inducer). Distribution: Brazil: Ceará: Fortaleza (Atlantic Forest). Host plant: *Ludwigia* sp. (Onagraceae). Refs.: Tavares 1918a, Gagné 1994, Gagné & Jaschhof 2017.

32. *Asphondylia sanctipetri* Urso-Guimarães & Amorim, 2002 (gall-inducer). Distribution: Brazil: São Paulo state: Ribeirão Preto (Cerrado); Minas Gerais: Delfinópolis (Cerrado). Host plant: *Didymopanax morototoni* (Aubl.) Decne. & Planch (Araliaceae) (native to Brazil) (all Brazilian biomes). Refs.: Urso-Guimarães & Amorim 2002, Gagné & Jaschhof 2017., Proença & Maia in print.

33. *Asphondylia sennae* Maia & Couri, 1992 (gall-inducer). Distribution: Brazil: Rio de Janeiro state, Maricá (Atlantic Forest). Host plant: *Senna bicapsularis* (L.) Roxb. (Fabaceae) (exotic). Refs.: Maia & Couri 1992, Maia 2001b, Gagné & Jaschhof 2017.

34. *Asphondylia serrata* Maia, 2004a (gall-inducer). Distribution: Brazil: Minas Gerais: Tiradentes (Cerrado), Serra do Ibitipoca (Atlantic Forest), Serra Azul de Minas (Cerrado), Serra do Cabral (Cerrado), São Tomé das Letras (Atlantic Forest and Cerrado), Serra do Caparaó (Atlantic Forest); Espírito Santo: Santa Teresa (Atlantic Forest); Rio de Janeiro state: Petrópolis, Nova Friburgo (Atlantic Forest). Host plant: *Eremanthus erythropappus* (DC.) MacLeish (= *Vanillosmopsis erythropappa* (DC.) Sch. Bip.) (Asteraceae) (endemic to Brazil) (Cerrado and Atlantic Forest). Refs.: Maia 2004a, Maia 2011, 2013, Coelho et al. 2013, Gagné & Jaschhof 2017, Maia & Flor 2020.

35. *Asphondylia stachytarpheta* Barnes, 1932 (gall-inducer). Distribution: Trinidad and Brazil: Rio de Janeiro state: Mangaratiba (Atlantic Forest). Host plants: *Stachytarpheta cayennensis* (Rich.) Vahl. (native to Brazil) (Amazon Forest, Caatinga, Cerrado, Atlantic Forest, Pampa, and Pantanal) and *Stachytarpheta* sp. (Verbenaceae). Refs.: Barnes 1932, Gagné 1994, Rodrigues et al. 2014, Gagné & Jaschhof 2017.

36. *Asphondylia struthanthi* Rübsaamen, 1915 (gall-inducer). Distribution: Brazil: Ceará: Serra do Baturité (Atlantic Forest). Host plant: *Struthanthus* sp. (Loranthaceae). Refs.: Rübsaamen 1915, Möhn 1973, Gagné 1994, Gagné & Jaschhof 2017.

37. *Asphondylia sulphurea* Tavares, 1909 (gall-inducer). Distribution: Brazil: Rio Grande do Sul: São Leopoldo (Pampa). Host plant: Poss on *Smilax* sp. (Smilacaceae). Refs.: Tavares 1909, Gagné 1994, Gagné & Jaschhof 2017.

38. *Asphondylia tournefortiae* Rübsaamen, 1915 (gall-inducer). Distribution: El Salvador; Brazil: Amazonas: Auristela and São Francisco on Acre River (Amazon Forest). Host plants: *Heliotropium angustiflorum* (Ruiz & Pav.) Govaerts (= *Tournefortia angustiflora* Ruiz & Pav.) (native to Brazil) (Amazon Forest) and *Myriopus volubilis* Small (= *Tournefortia volubilis* L.) (Boraginaceae) (native) (Atlantic Forest). Refs.: Rübsaamen 1915, Gagné 1994, Gagné & Jaschhof 2017.

39. *Asphondylia ulei* Rübsaamen, 1908a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Palmeiras (Atlantic Forest). Host plant: *Mikania* sp. (Asteraceae). Refs.: Rübsaamen 1908a, Möhn 1973, Gagné 1994, Gagné & Jaschhof 2017.

40. *Asteromyia modesta* (Felt, 1907a) (gall-inducer). Distribution: Widespread eastern Nearctic, Argentina, and Brazil: Minas Gerais (unstated municipality), Rio de Janeiro state (Atlantic Forest). Host plants: *Conyza canadensis* (L.) Cronquist (native to Brazil) (Amazon Forest, Caatinga, Cerrado, Atlantic Forest, Pampa, and Pantanal) and *Erigeron strigosus* Muhl. ex Willd. (Asteraceae) (exotic). Refs.: Felt 1907a, Gagné 1968, 1994, Gagné & Jaschhof 2017.

41. *Autodiplosis parva* (Tavares, 1916) (gall-inducer). Distribution: Brazil: Bahia: Salvador (Atlantic Forest). Host plant: undetermined Fabaceae. Refs.: Tavares 1916, Gagné 1994, Gagné & Jaschhof 2017.
42. *Baccharomyia magna* Maia, 2012 (gall-inducer). Distribution: Brazil: Minas Gerais: Parque Estadual do Itacolomi (Atlantic Forest). Host plant: *Baccharis pseudomyriocephala* Malag. (Asteraceae) (endemic to Atlantic Forest); HT; ♂; MNRJ. Distr.: Brazil (Minas Gerais). Refs.: Maia 2012, Gagné & Jaschhof 2017.
43. *Baccharomyia ramosina* Tavares, 1917a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Nova Friburgo (Atlantic Forest). Host plant: *Baccharis crispa* Spreng. (= *B. trimeria* (Less.) DC. (Asteraceae) (native to Brazil) (Caatinga, Cerrado, Atlantic Forest, and Pampa). Refs.: Tavares 1917a, Gagné 1994, Gagné & Jaschhof 2017.
44. *Brethesiamyia retorta* Maia, 2009 (gall-inducer). Distribution: Brazil: Minas Gerais: Três Marias (Cerrado). Host plant: *Myrcia retorta* Cambess (Myrtaceae) (endemic to Brazil) (Cerrado and Atlantic Forest). Refs.: Maia et al. 2009, 2010a, Gagné & Jaschhof 2017.
45. *Bruggmannia acaudata* Maia, 2004b (gall-inducer). Distribution: Brazil: Espírito Santo: Santa Teresa (Atlantic Forest); Rio de Janeiro state: Angra dos Reis (Ilha Grande), Mangaratiba, Maricá, Carapebus, Arraial do Cabo; São Francisco de Itabapoana (Atlantic Forest); Bahia: Porto Seguro-Trancoso (Atlantic Forest). Host plant: *Guapira opposita* (Vell.) Reitz (Nyctaginaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Monteiro et al. 1994, Maia 2001b, 2004b, 2014, Maia & Oliveira 2010, Maia et al. 2014, Rodrigues & Maia 2014, Maia & Carvalho-Fernandes 2016, Gagné & Jaschhof 2017.
46. *Bruggmannia braziliensis* Tavares, 1906 (gall-inducer). Distribution: Brazil: Rio Grande do Sul: São Leopoldo (Pampa). Host plant: *Myrsine* sp. (Myrsinaceae). Refs.: Tavares 1906, Möhn 1962, Gagné & Jaschhof 2017.
47. *Bruggmannia chapadensis* Proença & Maia, 2018 (gall-inducer). Distribution: Brazil: Mato Grosso: Parque Nacional da Chapada dos Guimarães (Cerrado). Host plant: *Guapira pernambucensis* (Casar.) Lundell (Nyctaginaceae) (endemic to Atlantic Forest). Refs.: Proença & Maia 2018
48. *Bruggmannia depressa* (Kieffer, 1913) (gall-inducer). Distribution: Brazil: Pará: Belém; Acre: Juruá Mirim (Amazon Forest); Rio de Janeiro state: Teresópolis, Rio de Janeiro (Floresta da Tijuca) (Atlantic Forest); Santa Catarina (unstated municipality); Minas Gerais (unstated municipality). Host plant: *Neea* sp. (Nyctaginaceae). Refs.: Kieffer 1913, Gagné 1994, Gagné & Jaschhof 2017.
49. *Bruggmannia elongata* Maia & Couri, 1993 (gall-inducer). Distribution: Brazil: Bahia: Porto Seguro-Trancoso (Atlantic Forest); Espírito Santo: Conceição da Barra, Guarapari (Atlantic Forest); Rio de Janeiro state: Angra dos Reis (Ilha Grande), Mangaratiba, Rio de Janeiro (Marambaia), Maricá, Saquarema, Araruama, Carapebus, Arraial do Cabo (Ilha do Cabo Frio), Cabo Frio, São João da Barra, São Francisco de Itabapoana (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest); Santa Catarina: Babitonga (Atlantic Forest); Rio Grande do Sul: Canela (Atlantic Forest). Host plant: *Guapira opposita* (Vell.) Reitz (Nyctaginaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia & Couri 1993, Monteiro et al. 1994, Maia 2001b, 2014, Maia et al. 2008, Maia & Oliveira 2010, Maia & Souza 2013, Rodrigues & Maia 2014, Arriola et al. 2015, Carvalho-Fernandes et al. 2016, Maia & Carvalho-Fernandes 2016, Maia & Silva 2016, Goetz et al. 2018, Melo-Júnior et al. 2018, Maia 2020a.
50. *Bruggmannia globulifex* (Kieffer, 1913) (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Serra dos Órgãos (Atlantic Forest). Host plant: *Neea* sp. (Nyctaginaceae). Refs.: Kieffer 1913, Gagné 1994, Gagné & Jaschhof 2017.
51. *Bruggmannia lignicola* (Kieffer, 1913) (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Serra do Macaé (Atlantic Forest). Host plant: *Neea* sp. (Nyctaginaceae). Refs.: Kieffer 1913, Gagné 1994, Gagné & Jaschhof 2017.
52. *Bruggmannia longicauda* (Kieffer, 1913) (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Rio de Janeiro (Atlantic Forest). Host plant: *Neea* sp. (Nyctaginaceae). Refs.: Kieffer 1913, Gagné 1994, Gagné & Jaschhof 2017.
53. *Bruggmannia longiseta* (Kieffer, 1913) (gall-inducer). Distribution: Brazil: Amazonas: Barcelos (Marari), Juruá (Amazon Forest). Host plant: *Neea* sp. (Nyctaginaceae). Refs.: Kieffer 1913, Gagné 1994, Gagné & Jaschhof 2017.
54. *Bruggmannia micrura* (Kieffer, 1913) (gall-inducer). Distribution: Brazil: Santa Catarina (unstated municipality) (Atlantic Forest). Host plant: *Neea* sp. (Nyctaginaceae). Refs.: Kieffer 1913, Gagné 1994, Gagné & Jaschhof 2017.
55. *Bruggmannia montei* Maia & Couri, 1993 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá (Atlantic Forest). Host plant: *Guapira opposita* (Vell.) Reitz (Nyctaginaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia & Couri 1993, Gagné & Jaschhof 2017.
57. *Bruggmannia robusta* Maia & Couri, 1993 (gall-inducer). Distribution: Brazil: São Paulo state: Bertioga (Atlantic Forest); Rio de Janeiro state: Angra dos Reis (Ilha Grande), Mangaratiba, Reserva Biológica União, Maricá, Saquarema, Araruama, Arraial do Cabo, Cabo Frio, Carapebus, São João da Barra, São Francisco de Itabapoana (Atlantic Forest); Espírito Santo: Santa Tereza, Conceição da Barra (Atlantic Forest); Bahia: Porto Seguro-Trancoso (Atlantic Forest); Rio Grande do Sul: Canela (Atlantic Forest). Host plant: *Guapira opposita* (Vell.) Reitz (Nyctaginaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia & Couri 1993, Monteiro et al. 1994, Maia 2001b, 2014, Maia et al. 2008, Maia & Oliveira 2010, Maia et al. 2014, Rodrigues & Maia 2014, Maia & Carvalho-Fernandes 2016, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017, Goetz et al. 2018, Maia & Siqueira 2020, Maia 2020a.
58. *Bruggmannia ruebsaameni* (Kieffer, 1913) (gall-inducer). Distribution: Brazil: Santa Catarina: Pedras Grandes (Atlantic Forest). Host plant: *Neea* sp. (Nyctaginaceae). Refs.: Kieffer 1913, Gagné 1994, Gagné & Jaschhof 2017.
59. *Bruggmanniella braziliensis* Tavares, 1909 (gall-inducer). Distribution: Brazil: Rio Grande do Sul: São Leopoldo (Pampa). Host plant: *Sorocea bonplandii* (Baill.) W. C. Burger et al. (= *Sorocea ilicifolia* Miq.) (Moraceae) (native to Brazil) (Cerrado, Atlantic Forest, and Pantanal). Refs.: Tavares 1909, Möhn 1963, Gagné 1994, Gagné & Jaschhof 2017.
60. *Bruggmanniella byrsonimae* (Maia & Couri, 1992) (gall-inducer). Distribution: Brazil: Bahia: Viçosa (Atlantic Forest); Espírito Santo: Linhares (Atlantic Forest); Rio de Janeiro state: Mangaratiba, Rio de Janeiro (Marambaia), Maricá, Araruama, Arraial do Cabo, Carapebus, São João da Barra (Atlantic Forest). Host plant: *Byrsonima sericea* DC. (Malpighiaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia & Couri 1992, Maia 1999a, Maia

2001b, Rodrigues et al. 2014, Carvalho-Fernandes et al. 2016, Maia & Silva 2016, Gagné & Jaschhof 2017, Maia & Flor 2020.

61. *Bruggmanniella doliocarpi* Maia, 2010 (gall-inducer). Distribution: Venezuela: Santa Lucia; Brazil: Pernambuco: Recife (Atlantic Forest); D.F.: Planaltina (Cerrado); Minas Gerais: Dores do Indaiá (Cerrado). Host plant: *Doliocarpus dentatus* (Aubl.) Standl. (Dilleniaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, Atlantic Forest, and Pantanal). Refs.: Maia et al. 2010a, Gagné & Jaschhof 2017, Maia & Flor 2020.

62. *Bruggmanniella duguetiae* Urso-Guimarães & Amorim, 2005 (gall-inducer). Distribution: Brazil: São Paulo state: São Carlos, Luiz Antônio (Cerrado). Host plant: *Duguetia furfuraceae* (A. St.-Hil.) Saff. (Annonaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Urso-Guimarães & Amorim 2005, Saito & Urso-Guimarães 2012, Gagné & Jaschhof 2017.

63. *Bruggmanniella ingae* Urso-Guimarães & Amorim, 2005 (gall-inducer). Distribution: Brazil: São Paulo state: between São José do Rio Preto (Atlantic Forest and Cerrado) and Tapiratiba (Atlantic Forest). Host plant: *Inga edulis* Mart. (Fabaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Urso-Guimarães & Amorim 2005, Gagné & Jaschhof 2017.

64. *Bruggmanniella maytenuse* (Maia & Couri, 1992) (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá, São João da Barra, São Francisco de Itabapoana (Atlantic Forest). Host plant: *Monteverdia obtusifolia* (Mart.) Biral (= *Maytenus obtusifolia* Mart.) (Celastraceae) (endemic to Brazil) (Amazon Forest and Atlantic Forest). Refs.: Maia & Couri 1992, Maia 1999a, Maia 2001b, Carvalho-Fernandes et al. 2016, Maia & Carvalho-Fernandes 2016, Gagné & Jaschhof 2017.

65. *Bruggmanniella miconiae* Carvalho-Fernandes, Maia & Rodrigues, 2020 (gall-inducer). Distribution: Brazil: Minas Gerais: Dores do Indaiá (Cerrado). Host plant: *Miconia theaezans* (Bonpl.) Cogn. (Melastomataceae) (native to Brazil) (Cerrado and Atlantic Forest). Refs.: Rodrigues et al. 2020

66. *Bruggmanniella miconia* Garcia, Lamas and Urso-Guimarães, 2020 (gall-inducer). Distribution: Brazil: São Paulo state: Sorocaba (Atlantic Forest). Host plant: *Miconia* cf. *cinnamomifolia* (Melastomataceae). Refs.: Garcia et al. 2020.

67. *Bruggmanniella notatae* Rodrigues & Maia, 2020 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Mangaratiba (Ilha da Marambaia) (Atlantic Forest). Host plant: *Ocotea notata* (Nees and Mart.) Mez (Lauraceae) (endemic to Brazil) (Cerrado and Atlantic Forest). Refs.: Rodrigues et al. 2020.

68. *Bruggmanniella oblita* Tavares, 1920d (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Nova Friburgo (Atlantic Forest). Host plant: *Schinus* sp. (Anacardiaceae). Refs.: Tavares 1920d, Gagné 1994, Gagné & Jaschhof 2017.

69. *Bruggmanniella sideroxyli* Rodrigues & Maia, 2020 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Mangaratiba (Ilha da Marambaia) (Atlantic Forest). Host plant: *Sideroxylon obtusifolium* (Roem. and Schult.) T. D. Penn. (Sapotaceae) (native to Brazil) (Caatinga, Cerrado, Atlantic Forest, and Pantanal). Refs.: Rodrigues & Maia 2020.

70. *Burseramyia braziliensis* Maia & Fonseca, 2012 (gall-inducer). Distribution: Brazil: São Paulo state: Bertioga (Atlantic Forest); Espírito Santo: Santa Teresa (Atlantic Forest). Host plant: *Swartzia langsdorffii* Raddi (Fabaceae) (endemic to Atlantic Forest). Refs.: Maia et al. 2008, Maia & Fonseca 2012, Maia 2014, Gagné & Jaschhof 2017.

71. *Cercioplanus cipo* Garcia & Urso-Guimarães, 2020 (gall-inducer). Distribution: Brazil: Minas Gerais: Serra do Cipó (Cerrado). Host plant: *Heteropterys* sp. (Malpighiaceae). Ref: Garcia et al. 2020.

72. *Cercioplanus tocantinensis* Garcia & Urso-Guimarães, 2020 (gall-inducer). Distribution: Brazil: Tocantins: Araguaína (Cerrado). Host plant: *Ouratea spectabilis* (Mart.) Engl. (Ochnaceae) (endemic to Cerrado). Ref.: Garcia et al. 2020.

73. *Cleitodiplosis graminis* (Tavares, 1916) (gall-inducer). Distribution: Brazil: Bahia (unstated municipality); Rio de Janeiro state (unstated municipality) (Atlantic Forest). Host plant: *Paspalum conjugatum* P. J. Bergius (Poaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, Atlantic Forest, Pampa, and Pantanal). Refs.: Tavares 1916, 1921, Gagné 1994, Gagné & Jaschhof 2017.

74. *Clinodiplosis agerati* Maia, 2016 (gall-inducer). Distribution: Brazil: Minas Gerais: Dores do Indaiá (Cerrado). Host plant: *Ageratum conyzoides* L. (Asteraceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, Atlantic Forest, Pampa, and Pantanal). Refs.: Maia & Oliveira 2016, Gagné & Jaschhof 2017.

75. *Clinodiplosis alternantherae* Gagné, 2004 (gall-inducer). Distribution: Uruguay, Argentina and Brazil (unstated locality), Host plant: *Alternanthera philoxeroides* (Mart.) Griseb. (native to Brazil) (Amazon Forest, Caatinga, Cerrado, Atlantic Forest, Pampa, and Pantanal) and *A. aquaticum* (D. Parodi) Chodat (Amaranthaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, Atlantic Forest, and Pantanal). Refs.: Gagné et al. 2004, Gagné & Jaschhof 2017.

76. *Clinodiplosis bahiensis* (Tavares, 1917a) (gall-inducer). Distribution: Brazil: Bahia: Salvador, Madre de Deus (Atlantic Forest). Host plant: undetermined Asteraceae. Refs.: Tavares 1917a, Gagné 2004, Gagné & Jaschhof 2017.

77. *Clinodiplosis bellum* Urso-Guimarães & Carmo-Neto, 2015 (gall-inducer). Distribution: Brazil: São Paulo state: Altinópolis (Cerrado). Host plant: *Diplopteryx pubipetala* (A. Juss.) W. R. Anderson & C. C. Davis (Malpighiaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Urso-Guimarães & Carmo-Neto 2015, Gagné & Jaschhof 2017, Ribeiro et al. 2019.

78. *Clinodiplosis cattleyae* Felt, 1908 (gall-inducer). Distribution: Western Europe, immigr: Hawaii, USA, Mexico, Jamaica, Ecuador, and Brazil (unstated locality). Host plants: *Cattleya* spp., *Epidendrum* spp., and *Laelia* spp. (Orchidaceae). Refs.: Felt 1908, Gagné 1994, Gagné & Jaschhof 2017.

79. *Clinodiplosis cearensis* (Tavares, 1917a) (gall-inducer). Distribution: Brazil: Ceará: Fortaleza (Atlantic Forest). Host plant: undetermined Asteraceae. Refs.: Tavares 1917a, Gagné 1994, Gagné & Jaschhof 2017.

80. *Clinodiplosis cecropiae* Proença & Maia, 2020 (gall-inducer). Distribution: Brazil: Rondônia: Monte Negro (Amazon Forest). Host plant: *Cecropiae* sp. (Urticaceae). Refs.: Proença & Maia 2020.

81. *Clinodiplosis chlorophorae* Rübssaamen, 1905a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Fábrica (Atlantic Forest). Host plant: *Maclura tinctoria* (L.) D. Don ex Steud. (= *Chlorophora tinctoria* (L.) Gaudich. ex B.D. Jackson) (Moraceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, Atlantic Forest, Pampa, and Pantanal). Refs.: Rübssaamen 1905a, Gagné 1994, Gagné & Jaschhof 2017.

82. *Clinodiplosis conica* Oliveira & Maia, 2008 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá, Carapebus, Arraial do Cabo (Atlantic Forest). Host plant: *Microstachys corniculata* (Vahl)

Griseb. (= *Sebastiania glandulosa* (Mart.) Pax.) (Euphorbiaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia 2001b, Oliveira & Maia 2008, Gagné & Jaschhof 2017.

83. *Clinodiplosis costai* Maia, 2005 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá, Carapebus, Arraial do Cabo (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest). Host plant: *Paullinia weinmanniifolia* Mart. (Sapindaceae) (endemic to Atlantic Forest). Refs.: Maia 2001b, 2005, Maia et al. 2008, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017.

84. *Clinodiplosis diodiae* Maia, 2001a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Carapebus, Arraial do Cabo (Atlantic Forest). Host plant: *Borreria palustris* (Cham. & Schldl.) Bacigalupo & E. L. Cabral (= *Diodia gymnocephala* (DC.) K. Schum.) (Rubiaceae) (native to Brazil) (Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia 2001a,b, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017.

85. *Clinodiplosis eupatorii* (Felt, 1911a) (gall-inducer). Distribution: St. Vincent, Trinidad, Costa Rica, Brazil: Pará (unstated locality) (Amazon Forest). Host plant: *Chromolaena odorata* (L.) R. M. King & H. Rob. (native to Brazil) (all phytogeographic domains) and *Eupatorium* spp. (Asteraceae). Refs.: Felt 1911a, Gagné 1994, Gagné & Jaschhof 2017.

86. *Clinodiplosis floricola* Novo-Guedes & Maia, 2008 (free living phytophagous). Distribution: Brazil: Rio de Janeiro state: Maricá, Rio de Janeiro (Marambaia) (Atlantic Forest). Host plant: *Heteropterys nitida* (Lam.) DC. (Malpighiaceae) (native to Brazil) (Cerrado and Atlantic Forest). Refs.: Maia 2001b, Novo-Guedes & Maia 2008, Maia & Silva 2016, Gagné & Jaschhof 2017.

87. *Clinodiplosis iheringi* (Tavares, 1925) (gall-inducer). Distribution: Brazil: Santa Catarina: Joinville (Atlantic Forest). Host plant: *Aegiphila integrifolia* (Jacq.) Moldenke (= *Aegiphila arborescens* (Aubl.) J. F. Gmel.) (Verbenaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Tavares 1925, Gagné 1994, Gagné & Jaschhof 2017.

88. *Clinodiplosis marcetiae* (Tavares, 1917b) (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Nova Friburgo (Atlantic Forest). Host plant: *Marcetia* sp. (Melastomataceae). Refs.: Tavares 1917b, Gagné 1994, Gagné & Jaschhof 2017.

89. *Clinodiplosis maricaensis* Fernandes & Maia, 2011 (inquiline). Distribution: Brazil: Rio de Janeiro state: Maricá, Carapebus (Atlantic Forest). Host plant: *Erythroxylum ovalifolium* Peyr. (Erythroxylaceae) (endemic to Atlantic Forest). Refs.: Maia 2001b, Maia & Fernandes 2011, Gagné & Jaschhof 2017.

90. *Clinodiplosis melissae* Maia, 1993a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá (Atlantic Forest). Host plant: *Melissa officinalis* L. (Lamiaceae) (exotic) (cultivated plant). Refs.: Maia 1993a, Gagné & Jaschhof 2017.

91. *Clinodiplosis profusa* Maia, 2001a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Mangaratiba, Rio de Janeiro (Marambaia, Grumari), Maricá, Saquarema, Araruama, Cabo Frio, Arraial do Cabo (Ilha do Cabo Frio), São João da Barra (Atlantic Forest); Rio Grande do Sul: Santa Tereza (Atlantic Forest). Host plant: *Eugenia uniflora* L. (Myrtaceae) (native to Brazil) (Cerrado, Atlantic Forest, and Pampa). Refs.: Monteiro et al. 1994, Maia 2001a, b, Oliveira & Maia 2005, Maia 2008, Silva & Rodrigues 2011, Rodrigues & Maia 2014, Carvalho-Fernandes et al. 2016, Maia & Silva, 2016, Gagné & Jaschhof 2017, Goetz et al. 2018.

92. *Clinodiplosis pulchra* (Tavares, 1917a) (gall-inducer). Distribution: Brazil: Bahia: Salvador, Madre de Deus (Atlantic Forest).

Host plant: *Lantana* sp. (Verbenaceae). Refs.: Tavares 1917a, Gagné 1994, Gagné & Jaschhof 2017.

93. *Clinodiplosis quartelensis* Maia & Oliveira 2019 (gall-inducer). Distribution: Brazil: Minas Gerais: Quartel São João (Cerrado). Host plant: *Banisteriopsis membranifolia* (A. Juss.) B. Gates (Malpighiaceae) (endemic to Brazil) (Amazon and Atlantic Forests). Ref.: Maia & Oliveira 2019

94. *Clinodiplosis rubiae* (Tavares, 1918a) (gall-inducer). Rio de Janeiro state: Nova Friburgo (Atlantic Forest). Host plant: *Rubia* sp. (Rubiaceae). Refs.: Tavares 1918a, Gagné 1994, Gagné & Jaschhof 2017.

95. *Clusiamyia granulosa* Maia, 2001a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Casimiro de Abreu, Carapebus, Arraial do Cabo (Atlantic Forest); Espírito Santo: Guarapari (Atlantic Forest). Host plant: *Clusia hilariana* Schldl. (Clusiaceae) (endemic to Atlantic Forest). Refs.: Maia 2001a, b, Bregonci et al. 2010, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017.

96. *Clusiamyia nitida* Maia, 1997 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Paraty, Rio de Janeiro, Maricá, Silva Jardim, Quissamã, Macaé, Arraial do Cabo (Atlantic Forest). Host plant: *Clusia lanceolata* Cambess. (Clusiaceae) (endemic to Atlantic Forest). Refs.: Maia 1997, 2001b, Gagné & Jaschhof 2017.

97. *Compsodiplosis itaparicana* Tavares, 1922 (gall-inducer). Distribution: Brazil: Bahia: Salvador (Itaparica) (Atlantic Forest). Host plant: unknown. Refs.: Tavares 1922, Gagné 1994, Gagné & Jaschhof 2017.

98. *Compsodiplosis luteoalbida* (Tavares, 1909) (gall-inducer). Distribution: Brazil: Rio Grande do Sul: São Leopoldo (Pampa). Host plant: ?*Smilax* sp. (Smilacaceae). Refs.: Tavares 1909, Gagné 1994, Gagné & Jaschhof 2017.

99. *Contarinia gemmae* Maia, 2003 (gall-inducer). Distribution: Brazil: Amazonas: Amanã (Amazon Forest); Bahia: Sebastião Laranjeiras (Cerrado); Goiás: Pirenópolis, Teresina de Goiás, Cavalcante (Cerrado); Minas Gerais: Januária (Cerrado), São Tomé das Letras (Atlantic Forest, Cerrado); Rio de Janeiro state: Carapebus (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest). Host plant: *Calophyllum brasiliense* Cambess. (Calophyllaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Madeira et al. 2003, Maia et al. 2008, Arriola et al. 2015, Proença & Maia 2015, Gagné & Jaschhof 2017, Maia 2019a.

100. *Contarinia ubiquita* Gagné, 2001 (inquiline). Distribution: Brazil: Rio de Janeiro state: Reserva Biológica de Poço das Antas (Atlantic Forest). Host plant: *Mikania glomerata* Spreng. (Asteraceae) (native to Brazil) (Cerrado and Atlantic Forest). Refs.: Gagné et al. 2001, Gagné & Jaschhof 2017.

101. *Contodiplosis friburgensis* (Tavares, 1915) (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Nova Friburgo (Atlantic Forest). Host plant: *Styrax* sp. (Styracaceae). Refs.: Tavares 1915, Gagné 1994, Gagné & Jaschhof 2017.

102. *Contodiplosis humilis* (Tavares, 1915) (gall-inducer). Distribution: Rio de Janeiro state: Nova Friburgo (Atlantic Forest). Host plant: *Styrax* sp. (Styracaceae). Refs.: Tavares 1915, Gagné 1994, Gagné & Jaschhof 2017.

103. *Contodiplosis tristis* (Tavares, 1915) (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Nova Friburgo (Atlantic Forest). Host plant: *Styrax* sp. (Styracaceae). Refs.: Tavares 1915, Gagné 1994, Gagné & Jaschhof 2017.

104. *Cordiamyia globosa* Maia, 1996a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá, Reserva Biológica União,



Squarema, Cabo Frio, Arraial do Cabo, São João da Barra, São Francisco de Itabapoana (Atlantic Forest); Espírito Santo: Guarapari, Conceição da Barra, Itaúnas (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest); Santa Catarina: Babitonga (Atlantic Forest). Host plant: *Varronia curassavica* Jacq. (= *Cordia verbenacea* DC.) (= *Cordia curassavica* (Jacq.) Roem. & Schult.) (Boraginaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, Atlantic Forest, and Pampa). Refs.: Monteiro et al. 1994, Maia 1996a, 2001b, Maia et al. 2008, Bregonci et al. 2010, Arriola et al. 2015, Carvalho-Fernandes et al. 2016, Maia & Carvalho-Fernandes 2016, Gagné & Jaschhof 2017, Melo-Júnior et al. 2018, Maia & Siqueira 2020, Maia 2020a.

105. *Costadiplosis maricaensis* Viceconte & Maia, 2009 (gall-inducer). Distribution: Brazil: Bahia\*: Porto Seguro (RB557173) (Atlantic Forest); Rio de Janeiro state: Maricá (Atlantic Forest). Host plant: *Psittacanthus dichroos* (Mart.) Mart. (Loranthaceae) (endemic to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia 2001b, Viceconte & Maia 2009, Gagné & Jaschhof 2017.

106. *Couridiplosis vena* Maia, 2004a (gall-inducer). Distribution: Bahia\*: Ilhéus (RB732206) (Atlantic Forest); Espírito Santo\*: Santa Leopoldina (RB440351) (Atlantic Forest); Minas Gerais: Tiradentes (Cerrado); São Paulo state\*: Bananal (RB511509) (Atlantic Forest); Paraná\*: Diamante do Norte (RB460265) (Atlantic Forest). Host plant: *Croton floribundus* Spreng (Euphorbiaceae) (native) (Atlantic Forest). Refs.: Maia 2004a, Maia & Fernandes 2004, Gagné & Jaschhof 2017.

107. *Dactylodiplosis heisteriae* Rübsaamen, 1915a (gall-inducer). Distribution: Brazil: Acre: Auristela, São Francisco (Amazon Forest). Host plant: *Heisteria acuminata* (Humb. & Bonpl.) Engl. (= *Heisteria cyanocarpa* Poepp.) (Olacaceae) (native) (Amazon Forest). Refs.: Rübsaamen 1915a, Gagné 1994, Gagné & Jaschhof 2017.

108. *Dactylodiplosis heptaphylli* Maia, 2004 (gall-inducer). Distribution: Brazil: Bahia\*: Conde (RB37968), Caravelas (RB507605) (Atlantic Forest); Espírito Santo\*: Linhares (RB252596, RB34113), Guarapari (RB535217) (Atlantic Forest); Rio de Janeiro state, Carapebus, Macaé\* (RB393518), São João da Barra, São Francisco de Itabapoana (Atlantic Forest); Minas Gerais: São Tomé das Letras (Atlantic Forest). Host plant: *Protium heptaphyllum* (Aubl.) Marchand (Burseraceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Narahara et al. 2004, Maia 2001b, 2013, Carvalho-Fernandes et al. 2016, Maia & Carvalho-Fernandes 2016, Gagné & Jaschhof 2017.

109. *Dactylodiplosis icicaribae* Maia, 2002 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Mangaratiba, Carapebus (Atlantic Forest). Host plant: *Protium icicariba* (DC.) Marchand (Burseraceae) (endemic to Atlantic Forest). Refs.: Maia et al. 2002, Rodrigues et al. 2014, Gagné & Jaschhof 2017.

110. *Dactylodiplosis petibaurum* Maia, 2021 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Parque Nacional da Restinga de Jurubatiba (Atlantic Forest). Host plant: *Ocotea pulchella* (Nees & Mez) Mez (Lauraceae) (native) (Atlantic Forest, Cerrado, and Pampa).

111. *Dasineura braziliensis* (Tavares, 1922) (gall-inducer). Distribution: Brazil: Mato Grosso\*: Fazenda Palmeiras (RB 314383) (Cerrado); Piauí: Piracuruca (Parque Nacional das Sete Cidades) (RB181551) (Cerrado); Bahia (unstated); MG\*: Carrancas (RB560635) (Cerrado). Host plant: *Protium heptaphyllum* (Aubl.) Marchand (Burseraceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Tavares 1922, Gagné 1994, Gagné & Jaschhof 2017.

112. *Dasineura byrsonimae* Maia, 2010b (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Mangaratiba, Rio de Janeiro (Marambaia), Reserva Biológica União, Maricá, Squarema, Carapebus, Araruama, Arraial do Cabo, Cabo Frio, São João da Barra, São Francisco de Itabapoana (Atlantic Forest); Espírito Santo: Conceição da Barra (Atlantic Forest). Host plant: *Byrsonima sericea* DC. (Malpighiaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia 2001b, Maia 2008, 2010b, Rodrigues et al. 2014, Carvalho-Fernandes et al. 2016, Maia & Carvalho-Fernandes 2016, Maia & Silva 2016, Gagné & Jaschhof 2017, Maia & Siqueira 2020, Maia 2020a.

113. *Dasineura copacabanensis* Maia, 1993b (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Squarema, Araruama, Arraial do Cabo, Cabo Frio, São João da Barra (Atlantic Forest). Host plant: *Eugenia copacabanensis* Kiaersk. (Myrtaceae) (endemic to Atlantic Forest). Refs.: Maia 1993b, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017.

114. *Dasineura couepiae* Maia, 2001a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Rio de Janeiro, Maricá, Araruama, Arraial do Cabo, Cabo Frio (Atlantic Forest); Espírito Santo: Guarapari, São Mateus (Atlantic Forest); Bahia: Caravelas, Conde, Porto Seguro (Atlantic Forest). Host plant: *Couepia ovalifolia* (Schott) Benth. ex Hook.f. (Chrysobalanaceae) (endemic to Atlantic Forest). Refs.: Monteiro et al. 1994, Maia 2001a, b, Bregonci et al. 2010, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017, Maia & Cruz, 2020.

115. *Dasineura gigantea* Angelo & Maia, 1999 (gall-inducer). Distribution: Brazil: Paraná: Piraquara, Pontal do Paraná (Atlantic Forest); Santa Catarina: Babitonga, Itapoá (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest); Host plant: *Psidium cattleianum* Sabine (Myrtaceae) (endemic to Brazil) (Caatinga, Cerrado, and Atlantic Forest). Refs.: Angelo & Maia 1999, Maia et al. 2008, Gagné & Jaschhof 2017, Melo-Júnior et al. 2018.

116. *Dasineura globosa* Maia, 1996b (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Mangaratiba, Rio de Janeiro (Grumari, Marambaia), Maricá, Squarema, Araruama, Arraial do Cabo, Cabo Frio, São João da Barra (Atlantic Forest). Host plant: *Eugenia astringens* Cambess. (= *Eugenia rotundifolia* Casar) (Myrtaceae) (endemic to Atlantic Forest). Refs.: Maia 1996b, 2001b, Oliveira & Maia 2005, Rodrigues et al. 2014, Carvalho-Fernandes et al. 2016, Maia & Silva 2016, Gagné & Jaschhof 2017.

117. *Dasineura marginalis* Maia, 2005 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Mangaratiba, Squarema, Macaé, Araruama, Arraial do Cabo, Cabo Frio (Atlantic Forest). Host plant: *Eugenia astringens* Cambess (= *Eugenia umbelliflora* O. Berg., *E. rotundifolia* Casar) (Myrtaceae) (endemic to Atlantic Forest). Refs.: Maia 2001b, Maia et al. 2005, Rodrigues et al. 2014, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017.

118. *Dasineura myrciariae* Maia, 1996b (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Rio de Janeiro (Marambaia), Maricá, Carapebus, São Francisco de Itabapoana (Atlantic Forest); Espírito Santo: Guarapari, Santa Teresa (Atlantic Forest). Host plant: *Myrciaria floribunda* (H. West ex Willd.) O. Berg (Myrtaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia 1996b, Bregonci et al. 2010, Maia 2001b, Maia et al. 2014, Maia & Carvalho-Fernandes 2016, Maia & Silva 2016, Gagné & Jaschhof 2017.

119. *Dasineura occulta* Pereira-Colavite & Urso-Guimarães, 2013 (gall-inducer). Distribution: Brazil: São Paulo state: São Carlos

(Atlantic Forest). Host plant: *Hypochoeris chillensis* (Kunth) Britton (Asteraceae) (native to Brazil) (Atlantic Forest and Pampa). Refs.: Pereira-Colavite & Urso-Guimarães 2013, Gagné & Jaschhof 2017.

120. *Dasineura ovalifoliae* Fernandes & Maia, 2011 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Rio de Janeiro (Grumari, Marambaia), Maricá, Saquarema, Araruama, Arraial do Cabo, Cabo Frio, Carapebus (Atlantic Forest); Espírito Santo: Santa Teresa (Atlantic Forest). Host plant: *Erythroxylum ovalifolium* Peyr. (Erythroxylaceae) (endemic to Atlantic Forest). Refs.: Maia 2001b, Maia & Fernandes 2011, Maia et al. 2014, Carvalho-Fernandes et al. 2016, Maia & Silva 2016, Gagné & Jaschhof 2017.

121. *Dasineura tavaresi* Maia, 1996b (gall-inducer). Distribution: Brazil: State of de Janeiro: Maricá, Araruama, Carapebus, Arraial do Cabo, Cabo Frio, São João da Barra (Atlantic Forest). Host plant: *Neomitranthes obscura* (DC.) N. Silveira (Myrtaceae) (endemic to Atlantic Forest). Refs.: Maia 1996b, 2001b, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017.

122. *Diadiplosis abacaxii* Culik & Ventura, 2013a (predator of *Dysmicoccus brevipes* Cockerell, 1893 Hemiptera: Pseudococcidae). Distribution: Brazil: Espírito Santo: Cachoeiro de Itapemirim (Atlantic Forest). Refs.: Culik & Ventura 2013a, Gagné & Jaschhof 2017.

123. *Diadiplosis bellingeri* Culik & Ventura, 2012 (predator of Pseudococcidae and Coccidae: Hemiptera). Distribution: Brazil: Espírito Santo: Domingos Martins (Atlantic Forest). Refs.: Culik & Ventura 2012, Gagné & Jaschhof 2017.

124. *Diadiplosis coccidivora* (Felt, 1911b) (predator of *Pulvinaria urbicola* (Cockerell, 1893) (Hemiptera: Coccidae), *Alichtensia* sp., *Coccus* sp., *Pulvinaria* spp., *Saissetia* spp. (Hemiptera: Coccidae), and *Eriococcus* sp. (Hemiptera: Eriococcidae). Distribution: USA (Florida); Bermuda; Jamaica; Guadeloupe, Panama, Guyana, Argentina, Brazil: São Paulo state (unstated municipality). Refs.: Felt 1911b, Borgmeier 1931, Gagné & Jaschhof 2017.

125. *Diadiplosis floridana* (Felt, 1915a) (predator of Pseudococcidae). Distribution: USA (Florida), Cuba, Paraguay, Brazil: Espírito Santo\*: Domingos Martins, Sooretama, Cachoeiro de Itapemirim (material of MNRJ) (Atlantic Forest). Refs.: Felt 1915a, Gagné & Jaschhof 2017.

126. *Diadiplosis jamboi* Culik & Ventura, 2013b (predator of *Planococcus halli* Ezzat & McConnell, 1956 (Hemiptera: Pseudococcidae). Distribution: Brazil: Espírito Santo: Vitória (Atlantic Forest). Refs.: Culik & Ventura 2013b, Gagné & Jaschhof 2017.

127. *Diadiplosis martinsensis* Culik & Ventura, 2013b (predator of *Pseudococcus* cf. *jackbeardsleyi* (Hemiptera: Pseudococcidae). Distribution: Brazil: Espírito Santo: Domingos Martins (Atlantic Forest). Refs.: Culik & Ventura 2013b, Gagné & Jaschhof 2017.

128. *Diadiplosis multifila* (Felt, 1907b) (predator of scale insects; *Ferrisia* sp., *Planococcus citri* Risso, 1813, *Phenacoccus solani* Ferris, 1918 (Hemiptera: Pseudococcidae) and *Icerya montserratensis* Riley & Howard, 1890 (Hemiptera: Margarodidae). Distribution: West Indies (Dominican Republic to Trinidad), Brazil: Espírito Santo\*: Vitória (material of MNRJ) (Atlantic Forest), Fiji, Israel. Refs.: Felt 1907b, Gagné & Jaschhof 2017.

129. *Diadiplosis pseudococci* Felt, 1921b (predator of *Pseudococcus bromeliae* Hempel 1912; *Dysmicoccus brevipes* Cockerell 1893 and *D. neobrevipes* Beardsley 1959 (Hemiptera: Pseudococcidae). Distribution: Hawaii, Mexico, Guatemala, Honduras, Jamaica, Guyana, and Brazil (unstated locality). Refs.: Felt 1921b, Gagné & Jaschhof 2017.

130. *Diadiplosis saccharum* Urso-Guimarães, 2020 (predator of *Saccharicoccus sacchari* (Cockrell, 1895) (Hemiptera, Pseudococcidae). Distribution: Brazil: Jaboticabal, São Carlos (Cerrado). Ref.: Urso-Guimarães et al. 2020.

131. *Diadiplosis vaupedis* (Harris, 1968) (predator of undetermined coccoid; *Planococcus* sp. (Hemiptera: Pseudococcidae). Distribution: Colombia, Guadeloupe, Brazil: Espírito Santo\*: Domingos Martins (material of MNRJ) (Atlantic Forest). Refs.: Harris 1968, Gagné & Jaschhof 2017.

132. *Dialeria styracis* Tavares, 1918a (inquiline). Distribution: Brazil: Bahia: Caetitê (Atlantic Forest, Caatinga). Host plant: *Styrax* sp. (Styracaceae). Refs.: Tavares 1918a, Gagné 1994, Gagné & Jaschhof 2017.

133. *Dichodiplosis triangularis* (Felt, 1908) (fungivorous). Distribution: USA (widespread), Costa Rica, and Brazil: Bahia: Salvador (Atlantic Forest). Refs.: Felt 1908, Gagné & Jaschhof 2017.

134. *Didactylomyia longimana* (Felt, 1908) (kleptoparasite in spider web). Distribution: Sri Lanka, USA, Colombia, Dominican Republic, Mexico, and Brazil: Mato Grosso do Sul: Aquidauana (Cerrado). Refs.: Felt, 1908, Gagné & Jaschhof 2017, Carmo-Neto et al. 2019.

135. *Elachypalpus psidii* Maia & Nava, 2011 (gall-inducer). Distribution: Brazil: Rio Grande do Sul: Pelotas (Pampa) (cultivated area). Host plant: *Psidium cattleianum* Sabine (Myrtaceae) (endemic to Brazil) (Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia & Nava 2011, Gagné & Jaschhof 2017.

136. *Epihormomyia miconiae* Maia, 2001a (gall-inducer). Distribution: Brazil: Espírito Santo\*: Santa Teresa (RB493591) (Atlantic Forest); Rio de Janeiro state: Carapebus (Atlantic Forest). Host plant: *Miconia cinnamomifolia* (DC.) Naudin (Melastomataceae) (endemic to Atlantic Forest). Refs.: Maia 2001a, b, Gagné & Jaschhof 2017.

137. *Eugeniamyia dispar* Maia, Mendonça & Romanowski, 1997 (gall-inducer). Distribution: Brazil: Rio Grande do Sul: Pelotas (Pampa), Porto Alegre (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest). Host plant: *Eugenia uniflora* L. (Myrtaceae) (native to Brazil) (Cerrado, Atlantic Forest, and Pampa). Refs.: Maia, Mendonça & Romanowski 1997, Maia et al. 1997, 2008, Bierhals et al. 2012, Mendonça & Romanowski 2012, Gagné & Jaschhof 2017.

138. *Eugeniamyia triangularis* Maia & Nava, 2011 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá (Atlantic Forest). Host plant: *Eugenia uniflora* L. (Myrtaceae) (native to Brazil) (Cerrado, Atlantic Forest, and Pampa). Refs.: Maia & Nava 2011, Gagné & Jaschhof 2017.

139. *Feltiella curtistylus* Gagné, 1984 (predator of *Tetranychus evansi* Baker & Pritchard, 1960 (Acarina: Tetranychidae). Distribution: Brazil: Pernambuco: Petrolina (Caatinga); USA: Florida. Refs.: Gagné 1984, 1994, Gagné & Jaschhof 2017.

140. *Fernandesia meridionalis* Rodrigues & Maia, 2013 (gall-inducer). Distribution: Brazil: Rio Grande do Sul: São Francisco de Paula (Atlantic Forest). Host plant: *Myrciaria delicatula* (DC.) O.Berg (Myrtaceae) (native to Brazil) (Cerrado, Atlantic Forest, and Pampa). Refs.: Rodrigues et al. 2013, Gagné & Jaschhof 2017.

141. *Frauenfeldtiella coussapoe* Rübsaamen, 1905b (gall-inducer). Distribution: Brazil: Acre: Jurua Mirim (Amazon Forest); Rio de Janeiro state: Rio de Janeiro (Gávea) (Atlantic Forest). Host plant: *Coussapoa* sp. (Moraceae). Refs.: Rübsaamen 1905b, Gagné 1994, Gagné & Jaschhof 2017.

142. *Geraldiesia eupatorii* Tavares, 1917a (gall-inducer). Distribution: Brazil: Rio de Janeiro state (Atlantic Forest). Host

plant: *Eupatorium* sp. (Asteraceae). Refs.: Tavares 1917a, Gagné 1994, Gagné & Jaschhof 2017.

143. *Gnesiodiplosis itaparicae* Tavares, 1917a (gall-inducer). Distribution: Brazil: Bahia: Salvador (Atlantic Forest). Host plant: undetermined Rubiaceae. Refs.: Tavares, 1917a, Gagné 1994, Gagné & Jaschhof 2017.

144. *Guareamyia purpura* Maia, 2007a (gall-inducer). Distribution: Brazil: São Paulo state: Bertioga (Atlantic Forest). Host plant: *Guarea macrophylla* Vahl (Meliaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia 2007a, Maia et al. 2008, Gagné & Jaschhof 2017.

145. *Guarephila albida* Tavares, 1909 (gall-inducer). Distribution: Brazil: Rio Grande do Sul: São Leopoldo (Pampa). Host plant: *Guarea* sp. poss. *guidonia* (L.) Sleumer (Meliaceae) (*Guarea guidonia* = *G. trichilioides* L.) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Tavares 1909, Gagné 1994, Gagné & Jaschhof 2017.

146. *Haplopalpus serjaneae* Rübsaamen, 1915a (gall-inducer). Distribution: Brazil: Acre, Auristela (Amazon Forest). Host plant: *Serjania* sp. (Sapindaceae). Refs.: Rübsaamen 1915a, Gagné 1994, Gagné & Jaschhof 2017.

147. *Haplusia braziliensis* (Felt, 1915b) (Fungivorous species). Distribution: Brazil: Pará, Igarapé Açu (Amazon Forest). Refs.: Felt 1915b, Gagné 1994, Gagné & Jaschhof 2017.

148. *Haplusia plumipes* Karsch, 1877 (Fungivorous species). Distribution: Brazil: Bahia (unstated locality). Refs.: Karsch 1877, Gagné 1994, Gagné & Jaschhof 2017.

149. *Houardiplosis rochae* Tavares, 1925 (gall-inducer). Distribution: Brazil: Ceará: Fortaleza (Atlantic Forest, Caatinga), Aracati (Caatinga). Host plant: *Combretum leprosum* Mart. (Combretaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Tavares 1925, Gagné 1994, Maia 2002, Gagné & Jaschhof 2017.

150. *Iatrophobia brasiliensis* (Rübsaamen, 1908a) (gall-inducer). Distribution: Costa Rica, Guadeloupe, St. Vincent, Trinidad and Tobago, Guyana, Surinam, and Brazil: Amazonas: Fortaleza, Juruá Mirim (Amazon Forest); Rio de Janeiro state: Mauá, Palmeiras, São Francisco do Itabapoana (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest); Santa Catarina: Tubarão (Atlantic Forest). Host plants: *Manihot esculenta* Crantz (= *Manihot utilissima* Pohl.) (native to Brazil) (Amazon Forest and Cerrado), *Manihot caerulescens* (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest) and *Manihot* sp. (Euphorbiaceae). Refs.: Rübsaamen 1908a, Gagné 1994, Maia et al. 2008, Maia & Carvalho-Fernandes 2016, Gagné & Jaschhof 2017.

151. *Jorgensiella eugeniae* Maia, 2005 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Arraial do Cabo (Atlantic Forest). Host plant: *Eugenia astringens* Cambess. (= *E. umbelliflora* O. Berg. = *E. rotundifolia* Casar) (Myrtaceae) (endemic to Atlantic Forest). Refs.: Maia et al. 2005, Gagné & Jaschhof 2017.

152. *Lestodiplosis braziliensis* (Tavares, 1920b) (predator). Distribution: Brazil: Rio de Janeiro state: Nova Friburgo (Atlantic Forest). Refs.: Tavares 1920b, Gagné 1994, Gagné & Jaschhof 2017.

153. *Lestodiplosis floricola* (Rodrigues & Maia, 2010a) (predator). Distribution: Brazil: Rio de Janeiro state: Maricá (Atlantic Forest). On *Jacquemonita holosericea* (Weinm) O'Donell (Convolvulaceae). Refs.: Rodrigues & Maia 2010a, Gagné & Jaschhof 2017.

154. *Lestodiplosis maricaensis* Santos & Maia, 2009 (predator). Distribution: Rio de Janeiro state: Mangaratiba, Maricá, Carapebus (Atlantic Forest). On *Stylosanthes guianensis* (Aubl.) Sw. (Fabaceae) (native to Brazil) (all phytogeographic domains). Refs.: Maia 2001b, Santos & Maia 2009, Rodrigues et al. 2014, Gagné & Jaschhof 2017.

155. *Lioidiplosis conica* Gagné, 2001 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Angra dos Reis (Ilha Grande), Silva Jardim, Reserva Biológica União, Rio de Janeiro (Parque Nacional da Tijuca, Grumari), Valença, Angra dos Reis (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest); Rio Grande do Sul: Canela (Atlantic Forest). Host plants: *Mikania glomerata* Spreng. (native to Brazil) (Cerrado and Atlantic Forest) and *Mikania cf. biformis* (Asteraceae). Refs.: Gagné et al. 2001, Oliveira & Maia 2005, Maia et al. 2008, Maia & Oliveira 2010, Proença & Maia 2012, Gagné & Jaschhof 2017, Maia & Mascarenhas 2017, Goetz et al. 2018, Maia & Siqueira 2020.

156. *Lioidiplosis cylindrica* Gagné, 2001 (gall-inducer). Distribution: Distr.: Brazil: Rio de Janeiro state: Angra dos Reis (Ilha Grande), Paraty, Mangaratiba, Silva Jardim, Valença, Parque Nacional do Itatiaia (Atlantic Forest); Minas Gerais: Viçosa (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest); Santa Catarina: Babitonga (Atlantic Forest); Rio Grande do Sul: Canela (Atlantic Forest). Host plants: *Mikania glomerata* Spreng. (native to Brazil) (Cerrado and Atlantic Forest), *Mikania cf. biformis*, *Mikania trinervis* Hook. & Arn. (endemic to Atlantic Forest) (Asteraceae). Refs.: Gagné et al. 2001, Maia et al. 2008, Maia & Oliveira 2010, Carvalho-Fernandes & Maia 2011, Proença & Maia 2012, Rodrigues et al. 2014, Maia & Proença 2016, Gagné & Jaschhof 2017, Maia & Mascarenhas 2017, Melo-Júnior et al. 2018, Goetz et al. 2018.

157. *Lioidiplosis spherica* Gagné, 2001 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Angra dos Reis (Ilha Grande), Paraty, Mangaratiba, Valença, Parque Nacional do Itatiaia, Poço das Antas (Atlantic Forest); Minas Gerais: Viçosa (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest); Rio Grande do Sul: Canela (Atlantic Forest). Host plants: *Mikania glomerata* Spreng. (native to Brazil) (Cerrado and Atlantic Forest) and *Mikania cf. biformis* (Asteraceae). Refs.: Gagné et al. 2001, Maia et al. 2008, Maia & Oliveira 2010, Carvalho-Fernandes & Maia 2011, Proença & Maia 2012, Rodrigues et al. 2014, Maia & Proença 2016, Gagné & Jaschhof 2017, Maia & Mascarenhas 2017, Goetz et al. 2018.

158. *Lopesia aldinae* Fernandes & Maia, 2010 (gall-inducer). Distribution: Brazil: Amazonas: Manaus (Amazon Forest). Host plant: *Aldina heterophylla* Spruce ex Benth. (Fabaceae) (endemic to Amazon Forest). Refs.: Fernandes et al. 2010, Gagné & Jaschhof 2017.

159. *Lopesia andirae* Garcia, Lima, Calado & Urso-Guimarães, 2017 (gall-inducer). Distribution: Mato Grosso: Chapada dos Guimarães (Cerrado); Bahia: Barreiras (Cerrado); São Paulo state: Luiz Antônio (Cerrado). Host plant: *Andira humilis* Mart. ex Benth. (Fabaceae) (endemic to Brazil) (Amazon Forest, Caatinga, and Cerrado). Refs.: Garcia et al. 2017, Lima & Calado 2018.

160. *Lopesia bilobata* Maia, 2004a (gall-inducer). Distribution: Brazil: Minas Gerais: Tiradentes (Cerrado). Host plant: *Guapira* sp. (Nyctaginaceae). Refs.: Maia 2004a, Maia & Fernandes 2004, Gagné & Jaschhof 2017.

161. *Lopesia brasiliensis* Rübsaamen, 1908b (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Fábrica (Atlantic Forest); Santa Catarina: Tubarão (Atlantic Forest). Host plant: *Ossaea* sp. (Melastomataceae). Refs.: Rübsaamen 1908b, Gagné 1994, Maia 2007b, Gagné & Jaschhof 2017.

162. *Lopesia caulinaris* Maia, 2003 (gall-inducer). Distribution: Brazil: Amazonas: Amanã; Amapá: Oiapoque (Amazon Forest);

Bahia: São Sebastião (Atlantic Forest); Rio de Janeiro state: Angra dos Reis, Carapebus (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest); Minas Gerais: São Tomé das Letras (Atlantic Forest) Januária (Atlantic Forest, Cerrado); Goiás: Pirenópolis, Cavalcante (Cerrado); Santa Catarina: Babitonga (Atlantic Forest). Host plant: *Calophyllum brasiliense* Cambess. (Calophyllaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Madeira et al. 2003, Maia 2013, 2008, Arriola et al. 2015, Proença & Maia 2015, Gagné & Jaschhof 2017, Melo-Júnior et al. 2018, Maia 2019a.

163. *Lopesia chapadensis* Garcia & Urso-Guimarães, 2018 (gall-inducer). Distribution: Brazil: Mato Grosso: Chapada dos Guimarães (Cerrado). Host plant: *Andira vermifuga* (Mart.) Benth. (Fabaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Ref.: Garcia & Urso-Guimarães 2018.

164. *Lopesia conspicua* Maia, 2003 (gall-inducer). Distribution: Brazil: Amazonas: Amaná (Amazon Forest); Amapá: Oiapoque (Amazon Forest); Goiás: Pirenópolis (Cerrado); Rio Grande do Norte: Canguaretama (Atlantic Forest); Bahia: Sebastião Laranjeiras (Caatinga, Cerrado); Minas Gerais: São Tomé das Letras (Atlantic Forest, Cerrado); Januária (Atlantic Forest, Cerrado); Rio de Janeiro state: Carapebus (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest); Santa Catarina: São Francisco do Sul (Atlantic Forest); Paraná: Paranaguá (Atlantic Forest). Host plant: *Calophyllum brasiliense* Cambess. (Calophyllaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Madeira et al. 2003, Maia 2013, Arriola et al. 2015, Proença & Maia 2015, Gagné & Jaschhof 2017.

165. *Lopesia davillae* Maia & Monteiro, 2017 (free living phytophagous). Distribution: Brazil: Rio de Janeiro state: Teresópolis (Atlantic Forest). Host plant: *Davilla rugosa* Poir (Dilleniaceae) (native to Brazil) (Amazon Forest and Atlantic Forest). Ref.: Maia & Monteiro 2017.

166. *Lopesia eichhorniae* Urso-Guimarães, 2015 (gall-inducer). Distribution: Brazil: São Paulo state: Luiz Antônio (Cerrado). Host plant: *Eichhornia azurea* (Sw.) Kunth (Pontederiaceae) (native to Brazil) (all Brazilian phytogeographic domains). Refs.: Urso-Guimarães et al. 2015, Gagné & Jaschhof 2017.

167. *Lopesia elliptica* Maia, 2003 (gall-inducer). Distribution: Mexico, Guatemala, Costa Rica, Dominican Republic, Cuba, Bolivia, Guyana, Peru, and Brazil: Amazonas: Amanã (Amazon Forest); Amapá: Oiapoque (Amazon Forest); Pará: Moju (Amazon Forest); Tocantins: Formoso do Araguaia (Cerrado); Rondônia: Chupinguaia (Amazon Forest); Goiás: Pirenópolis (Cerrado); Mato Grosso: Santa Terezinha (Cerrado); Rio Grande do Norte: Canguaretama (Atlantic Forest); Maranhão: São Luís (Amazon Forest); Pernambuco: Rio Preto (Cerrado); Bahia: Sebastião Laranjeiras (Caatinga, Cerrado); Rio de Janeiro state: Carapebus (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest); Minas Gerais: São Tomé das Letras (Atlantic Forest, Cerrado); Santa Catarina: Babitonga (Atlantic Forest); Paraná: Paranaguá (Atlantic Forest). Host plant: *Calophyllum brasiliense* Cambess. (Calophyllaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Madeira et al. 2003, Maia et al. 2008, Maia 2013, Arriola et al. 2015, Proença & Maia 2015, Gagné & Jaschhof 2017, Melo-Júnior et al. 2018.

168. *Lopesia erythroxyli* Rodrigues & Maia, 2010b (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Angra dos Reis (Ilha Grande), Mangaratiba, Rio de Janeiro (Grumari, Marambaia), Maricá, Carapebus, Saquarema, Araruama, Arraial do Cabo, Cabo Frio, São

João da Barra (Atlantic Forest); Espírito Santo: Santa Teresa (Atlantic Forest); São Paulo state: Itanhaém (Atlantic Forest). Host plant: *Erythroxylum ovalifolium* Peyr. (Erythroxylaceae) (endemic to Atlantic Forest). Refs.: Monteiro et al. 1994, Maia 2001b, Rodrigues & Maia 2010b, Fernandes & Maia 2011, Maia et al. 2014, Maia & Silva 2016, Gagné & Jaschhof 2017, Maia 2021.

169. *Lopesia grandis* Maia, 2001a (gall-inducer). Distribution: Brazil: Paraíba: Mataraca (Atlantic Forest); Bahia: Camamu, Porto Seguro-Trancoso, Santa Cruz de Cabrália, Itacaré, Nova Viçosa, Uma, Ilhéus, Valença, Belmonte (Atlantic Forest); Espírito Santo: Aracruz, Conceição da Barra, Guarapari; Presidente Kennedy, São Mateus (Atlantic Forest); Rio de Janeiro state: Angra dos Reis (Ilha Grande), Paraty, Mangaratiba, Rio de Janeiro (Marambaia), Carapebus, Maricá, Araruama, Arraial do Cabo, São Francisco de Itabapoana (Atlantic Forest); São Paulo state: Bertioga, Ubatuba, Cananea (Atlantic Forest); Santa Catarina: Babitonga (Atlantic Forest). Host plants: *Dalbergia ecastophyllum* (L.) Taub. (native to Brazil) (Amazon Forest and Atlantic Forest) and *Dalbergia frutescens* (Vell.) Britton (native to Brazil) (Amazon Forest, Atlantic Forest, Caatinga, and Cerrado) (Fabaceae). Refs.: Maia 2001a, b, 2015, Maia et al. 2008, Maia & Oliveira 2010, Rodrigues et al. 2014, Carvalho-Fernandes et al. 2016, Maia & Silva 2016, Gagné & Jaschhof 2017, Melo-Júnior et al. 2018, Maia 2020<sup>a</sup>, Maia 2021.

170. *Lopesia indaiensis* Maia & Oliveira, 2018 (gall-inducer). Distribution: Brazil: Pernambuco: Tamandaré; Rio de Janeiro state: Mangaratiba (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest); Minas Gerais: Dores do Indaiá (Cerrado). Host plant: *Andira fraxinifolia* Benth (Fabaceae) (endemic to Brazil) (Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia et al. 2008, Santos et al. 2012, Rodrigues et al. 2014, Maia & Oliveira 2018.

171. *Lopesia leandrae* Maia, 2019b (gall-inducer). Distribution: Brazil: São Paulo state: Bertioga (Atlantic Forest). Host plant: *Leandra ionopogon* (Mart.) Cogn. (Melastomataceae) (native to Brazil) (Cerrado and Atlantic Forest). Refs.: Maia et al. 2008, Maia, 2019b.

172. *Lopesia linearis* Maia 2003 (gall-inducer). Distribution: Mexico, Costa Rica, Trinidad and Tobago, Cuba, Colombia, Guyana, Peru, Bolivia, Paraguay, Brazil: Amazonas: Amanã (Amazon Forest); Pará: Moju (Amazon Forest); Rondônia: Chupinguaia (Amazon Forest); Roraima: Caracará (Amazon Forest); Rio Grande do Norte: Canguaretama (Atlantic Forest); Mato Grosso: Santa Terezinha (Amazon Forest and Cerrado), Corumbá (Cerrado); Minas Gerais: São Tomé das Letras (Atlantic Forest); Espírito Santo: Linhares (Atlantic Forest); Rio de Janeiro state: Carapebus (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest); Santa Catarina: Babitonga (Atlantic Forest); Paraná: Paranaguá (Atlantic Forest). Host plant: *Calophyllum brasiliense* Cambess. (Calophyllaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Madeira et al. 2003, Maia et al. 2008, Maia 2013, Arriola et al. 2015, Gagné & Jaschhof 2017, Melo-Júnior et al. 2018.

173. *Lopesia marginalis* Maia, 2001a (gall-inducer). Distribution: Brazil: Bahia: Caravelas, Conde (Atlantic Forest); Espírito Santo: Alto Limoeiro, São Mateus, Linhares, Itaguaçu, Itarana (Atlantic Forest); Rio de Janeiro state: Rio de Janeiro, Niterói, Casimiro de Abreu, Araruama, Carapebus, Cabo Frio, Arraial do Cabo (Atlantic Forest). Host plant: *Couepia ovalifolia* (Schott) Benth. ex Hook.f. (Chrysobalanaceae) (endemic to Atlantic Forest). Refs.: Monteiro et al. 1994, Maia 2001a, b, Gagné & Jaschhof 2017, Maia & Cruz 2020, Maia 2021.

174. *Lopesia maricaensis* Rodrigues & Maia, 2010b (gall-inducer). Distribution: Peru: Iquitos (Amazon Forest); Brazil:

Amazonas (Amazon Forest), Paraíba: Caaporã (Atlantic Forest); Minas Gerais: Diamantina, Lagoa Santa, Serra do Cipó, Santa Rita do Riacho, Jaboticatubas (Cerrado); Rio de Janeiro state: Rio de Janeiro, Mangaratiba, Niterói, Maricá, Casimiro de Abreu, Cabo Frio; Carapebus (Atlantic Forest). Host plant: *Protium brasiliense* (Spreng.) Engl. (Burseraceae) (endemic to Brazil) (Cerrado and Atlantic Forest). Refs.: Maia 2001b, Rodrigues & Maia 2010b, Rodrigues et al. 2014, Gagné & Jaschhof 2017, Maia 2021.

175. *Lopesia mataybae* Garcia & Urso-Guimarães, 2018 (gall-inducer). Distribution: Brazil: Mato Grosso: Chapada dos Guimarães (Cerrado). Host plant: *Matayba guianensis* Aubl. (Sapindaceae) (native to Brazil) (Amazon Forest, Cerrado, Atlantic Forest, and Pantanal). Ref.: Garcia & Urso-Guimarães 2018.

176. *Lopesia mimosae* Maia, 2010 (gall-inducer). Distribution: Brazil: Pernambuco, Parnamirim (Caatinga). Host plant: *Mimosa tenuiflora* (Willd.) Poir. (= *Mimosa hostilis* Benth. (Mimosaceae) (native to Brazil) (Caatinga and Cerrado). Refs.: Maia et al. 2010b, Gagné & Jaschhof 2017.

177. *Lopesia pernambucensis* Maia, 2010 (gall-inducer). Distribution: Brazil: Pernambuco, Parnamirim (Caatinga), Garanhuns\* (RB376469) (Caatinga); Bahia: Ibiassucê (Caatinga). Host plant: *Mimosa tenuiflora* (Willd.) Poir. (= *Mimosa hostilis* (Fabaceae) (native to Brazil) (Caatinga and Cerrado). Refs.: Maia et al. 2010b, Gagné & Jaschhof 2017, Brito et al. 2018.

178. *Lopesia similis* Maia, 2004 (gall-inducer). Distribution: Brazil: Pará: Serra do Cachimbo, Ponta da Pedra (Amazon Forest); Paraíba: João Pessoa (Atlantic Forest); Distrito Federal: Brasília (Cerrado); Alagoas: Maceió (Atlantic Forest); Sergipe: Itaporanga d'Ajuda (Atlantic Forest); Bahia: Conde, Porto Seguro (Atlantic Forest); Espírito Santo: Conceição da Barra (Atlantic Forest); Rio de Janeiro state: Quissamã, Macaé, Arraial do Cabo (Ilha do Cabo Frio), Macaé, São João da Barra (Atlantic Forest); Minas Gerais: Perdizes (Cerrado), Itamonte (Atlantic Forest), São Tomé das Letras (Atlantic Forest, Cerrado); Mato Grosso: Cocalino (Cerrado); Mato Grosso do Sul: Aquidauana (Cerrado). Host plant: *Protium heptaphyllum* (Aubl.) Marchand (Burseraceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Narahara et al. 2004, Maia 2013, Maia & Souza 2013, Maia 2014, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017, Maia 2020, Maia 2021.

179. *Lopesia simplex* Maia, 2002 (gall-inducer). Distribution: Brazil: Minas Gerais: Belo Horizonte (Cerrado), Ouro Preto (Cerrado-Atlantic Forest transition); Rio de Janeiro state: Mangaratiba, Rio de Janeiro, Maricá, Carapebus, Macaé, Quissamã, Arraial do Cabo, São João da Barra (Atlantic Forest); Espírito Santo: Guarapari, Vila Velha (Atlantic Forest). Host plant: *Protium icicariba* (DC.) Marchand (Burseraceae) (endemic to Atlantic Forest). Refs.: Maia 2001b, Maia et al. 2002, Bregonci et al. 2010, Rodrigues et al. 2014, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017.

180. *Lopesia singularis* Maia, 2001a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Mangaratiba, Maricá, Rio de Janeiro (Grumari, Marambaia), Arraial do Cabo (Atlantic Forest); São Paulo state: Bertiooga (Atlantic Forest). Host plant: *Pouteria venosa* (Mart.) Baehni (Sapotaceae) (native to Brazil) (Amazon and Atlantic Forest). Refs.: Monteiro et al. 1994, Maia 2001a, b, Oliveira & Maia 2005, Maia et al. 2008, Rodrigues & Maia 2014, Maia & Silva 2016, Gagné & Jaschhof 2017.

181. *Lopesia spinosa* Maia, 2004a (gall-inducer). Distribution: Brazil: Minas Gerais: Tiradentes and Delfinópolis (Cerrado), São Paulo

state: Altinópolis and Jundiá (Serra do Japi) (Atlantic Forest). Host plant: *Croton floribundus* Spreng (Euphorbiaceae) (native to Brazil) (Atlantic Forest). Refs.: Maia 2004a, Maia & Fernandes 2004, Gagné & Jaschhof 2017, Ribeiro et al. 2019, Urso-Guimarães 2019a.

182. *Lopesia tibouchinae* Maia, 2004a (gall-inducer). Distribution: Brazil: Minas Gerais: Tiradentes, Patrocínio (Cerrado); Rio de Janeiro state: Santa Maria Madalena (Atlantic Forest). Host plant: *Pleroma candolleum* (Mart. ex DC.) Triana (= *Tibouchina candolleana* (Mart. ex DC.) Cogn.) (Melastomataceae) (endemic to Cerrado). Refs.: Maia 2004a, Gagné & Jaschhof 2017, Maia 2021.

183. *Lopesia ubatubensis* Garcia & Urso-Guimarães, 2018 (gall-inducer). Distribution: Brazil: São Paulo state: Ubatuba (Atlantic Forest). Host plant: *Clidemia* sp. (Melastomataceae). Ref.: Garcia & Urso-Guimarães, 2018.

184. *Machaerobia gemmae* Maia, 2016 (gall-inducer). Distribution: Rio de Janeiro state: Parque Nacional da Serra de Órgãos (Atlantic Forest). Host plant: *Machaerium macaense* C. V. Mendonça, A. M. G. Azevedo & H. C. Lima (Fabaceae) (endemic to Atlantic Forest). Refs.: Maia et al. 2016, Gagné & Jaschhof 2017.

185. *Machaerobia machaerii* (Kieffer, 1913) (gall-inducer). Distribution: Brazil: São Paulo state: Ribeirão Preto (Cerrado); Santa Catarina: Tubarão (Atlantic Forest). Host plants: *Machaerium* sp. and *Machaerium hirtum* (Vell.) Stelfeld (Fabaceae) (native to Brazil) (Amazon, Caatinga, Cerrado, Atlantic Forest, and Pantanal). Refs.: Kieffer 1913, Gagné 1994, Gagné & Jaschhof 2017.

186. *Macroporpa peruviana* Rübssaamen, 1915a (gall-inducer). Distribution: Brazil: Acre: Auristela (Amazon Forest). Host plant: undetermined Malpighiaceae. Refs.: Rübssaamen 1915, Möhn 1962, Gagné 1994, Gagné & Jaschhof 2017.

187. *Macroporpa ulei* Rübssaamen, 1915a (gall-inducer). Distribution: Brazil: Acre: São Francisco (Amazon Forest). Host plant: undetermined Lauraceae. Refs.: Rübssaamen 1915a, Möhn 1962, Gagné 1994, Gagné & Jaschhof 2017.

188. *Manilkaramyia notabilis* Maia, 2001a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Carapebus, Maricá (Atlantic Forest); Espírito Santo: Guarapari (Atlantic Forest). Host plant: *Manilkara subsericea* (Mart.) Dubard (Sapotaceae) (endemic to Atlantic Forest). Refs.: Maia 2001a, b, Bregonci et al. 2010, Maia & Silva 2016, Gagné & Jaschhof 2017.

189. *Mayteniella distincta* Maia, 2001a (gall-inducer). Distribution: Brazil: Espírito Santo: Guarapari, Presidente Kennedy\* (RB311268, RB311270) (Atlantic Forest); Rio de Janeiro state: Mangaratiba, Rio de Janeiro (Marambaia, Grumari, Ilha das Folhas\* R145329, Copacabana\* R74076, Jacarepaguá\* RB159930, Cagarras), Maricá, Carapebus, Macaé\* (R209511, RB565802), Saquarema, Araruama, Arraial do Cabo, Cabo Frio, São João da Barra, São Francisco de Itabapoana (Atlantic Forest); Santa Catarina: Babitonga (Atlantic Forest). Host plant: *Monteverdia obtusifolia* (Mart.) Biral (= *Maytenus obtusifolia* Mart.) (Celastraceae) (endemic to Brazil) (Amazon and Atlantic Forests). Refs.: Monteiro et al. 1994, Maia 2001a, b, Oliveira & Maia 2005, Rodrigues et al. 2014, Maia & Carvalho-Fernandes 2016, Carvalho-Fernandes et al. 2016, Maia & Silva 2016, Gagné & Jaschhof 2017, Melo-Júnior et al. 2018, Maia 2020a.

190. *Megaulus sterculiae* Rübssaamen, 1915a (gall-inducer). Distribution: Bolívia and Brazil: Acre: São Francisco (Amazon Forest). Host plant: *Sterculia* sp. (Sterculiaceae). Refs.: Rübssaamen 1915a, Gagné 1994, Gagné & Jaschhof 2017.

191. *Metasphondylia squamosa* Tavares, 1918b (gall-inducer). Distribution: Brazil: Bahia: Salvador (Atlantic Forest). Host plant: undetermined Malvaceae. Refs.: Tavares 1918b, Gagné 1994, Gagné & Jaschhof 2017.
192. *Meunieriella dalechampiae* Rübsaamen, 1905b (inquiline). Distribution: Brazil: Rio de Janeiro state: Palmeiras (Atlantic Forest). Host plant: *Dalechampia ficifolia* Lam. (Euphorbiaceae) (endemic to Brazil) (Cerrado and Atlantic Forest). Refs.: Rübsaamen 1905b, Gagné 1994, Gagné & Jaschhof 2017.
193. *Meunieriella insignis* (Tavares, 1922) (inquiline). Distribution: Brazil: Bahia: Salvador (Atlantic Forest). Host plant: *Protium heptaphyllum* (Aubl.) Marchand (Burseraceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Tavares 1922, Gagné 1994, Gagné & Jaschhof 2017.
194. *Meunieriella lantanae* (Tavares, 1918a) (inquiline). Distribution: Brazil: Rio de Janeiro state: Nova Friburgo (Atlantic Forest). Host plant: *Lantana* sp. (Verbenaceae). Refs.: Tavares 1918a, Gagné 1994, Gagné & Jaschhof 2017.
195. *Meunieriella spinosa* Urso-Guimarães, 2018b (inquiline). Distribution: Brazil: Minas Gerais: Delfinópolis (Cerrado). Host plant: *Inga edulis* Mart. (Fabaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Urso-Guimarães 2018b.
196. *Mikaniadiplosis annulipes* Gagné, 2001 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Angra dos Reis (Ilha Grande), Rio de Janeiro (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest); Rio Grande do Sul: Santa Tereza (Atlantic Forest). Host plants: *Mikania glomerata* Spreng. (Asteraceae) (native to Brazil) (Cerrado and Atlantic Forest) and *Mikania cf. biformis* Refs.: Gagné et al. 2001, Maia et al. 2008, Maia & Oliveira 2010, Gagné & Jaschhof 2017, Goetz et al. 2018.
197. *Mycodiplosis rubida* (Felt, 1911c) (fungivorous). Distribution: Jamaica, St. Vincent, Hawaii, and Brazil (unstated locality). Host plants: *Uromyces pisi* (DC.) G.H. Otth (native to Brazil) (Rio Grande do Sul) and *Puccinia* sp. (Pucciniales). Refs.: Felt 1911c, Gagné 1994, Gagné & Jaschhof 2017.
198. *Myrciamyia maricaensis* Maia, 1996c (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá, Carapebus, Cabo Frio, Arraial do Cabo (Atlantic Forest). Host plant: *Myrcia ovata* Cambess. (Myrtaceae) (endemic to Atlantic Forest). Refs.: Monteiro et al. 1994, Maia 1996c, 2001b, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017.
199. *Myrciamyia pterandrae* Maia & Flor, 2018 (gall-inducer). Distribution: Brazil: Minas Gerais: Quartel São João (Cerrado). Host plant: *Pterandra pyroidea* A. Juss. (Malpighiaceae) (endemic to Cerrado). Refs.: Maia et al. 2018.
200. *Myrciamyia admirabilis* Maia, 2007 (gall-inducer). Distribution: Brazil: Minas Gerais: Tiradentes, São Tomé das Letras (Cerrado); São Paulo state: Ingá (Cerrado); Goiás: Floresta Nacional de Silvânia (Cerrado), Hidrolândia (Cerrado). Host plant: *Erythroxylum suberosum* A. St.-Hil. (Erythroxylaceae) (native to Brazil) (Amazon Forest and Cerrado). Refs.: Maia & Fernandes 2007, Malves & Frieiro-Costa 2012, Maia 2013, Bergamini et al. 2017, Gagné & Jaschhof 2017, Silva et al. 2018.
201. *Myrciamyia bivalva* Maia, 1995 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá, Carapebus (Atlantic Forest). Host plant: *Myrciaria floribunda* (H. West ex Willd.) (Myrtaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia 1995, 2001b, Gagné & Jaschhof 2017.
202. *Myrciamyia fernandesii* Maia, 2004a (gall-inducer). Distribution: Minas Gerais: Tiradentes (Cerrado). Host plant: *Myrciaria tenella* (DC.) O.Berg (Myrtaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia 2004a, Maia & Fernandes 2004, Gagné & Jaschhof 2017.
203. *Neolasioptera cerei* (Rübsaamen, 1905a) (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Angra dos Reis (Ilha Grande), Mangaratiba, Maricá, Cabo Frio, Arraial do Cabo (Ilha do Cabo Frio), São João da Barra (Atlantic Forest); Espírito Santo: Conceição da Barra (Atlantic Forest). Host plant: *Hylocereus setaceus* (Salm-Dyck) R. Bauer (= *Selenicereus setaceus* (Salm-Dyck) Berg (Cactaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Rübsaamen 1905a, Gagné 1994, Maia 1999b, Maia 2001b, Maia & Oliveira 2010, Maia & Souza 2013, Rodrigues et al. 2014, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017, Maia 2020a.
204. *Neolasioptera cupheae* Gagné, 1998 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Silva Jardim (Atlantic Forest). Host plant: *Cuphea carthagenensis* (Jacq.) J.F. Macbr. (Lythraceae) (native to Brazil) (all Brazilian phytogeographic domains). Refs.: Gagné et al. 1998, Gagné & Jaschhof 2017.
205. *Neolasioptera eugeniae* Maia, 1993b (gall-inducer). Distribution: Brazil: Espírito Santo: Conceição da Barra, Guarapari (Atlantic Forest); Rio de Janeiro state: Angra dos Reis (Ilha Grande), Paraty, Mangaratiba, Parque Nacional do Itatiaia, Rio de Janeiro (Marambaia, Grumari), Maricá, Saquarema, Araruama, Cabo Frio, Arraial do Cabo (Ilha do Cabo Frio), São João da Barra (Atlantic Forest); Minas Gerais: Itamonte (Atlantic Forest). Host plant: *Eugenia uniflora* L. (Myrtaceae) (native to Brazil) (Cerrado, Atlantic Forest, and Pampa). Refs.: Maia 1993b, Monteiro et al. 1994, Oliveira & Maia 2005, Maia & Oliveira 2010, Silva & Rodrigues 2011, Carvalho-Fernandes & Maia 2011, Maia & Souza 2013, Maia 2014, Rodrigues & Maia 2014, Carvalho-Fernandes et al. 2016, Maia & Silva 2016, Maia & Mascarenhas 2017, Gagné & Jaschhof 2017, Maia 2020a.
206. *Neolasioptera fariae* (Tavares, 1922) (inquiline). Distribution: Brazil: Bahia: Salvador (Atlantic Forest). Host plant: unknown. Refs.: Tavares 1922, Gagné 1994, Gagné & Jaschhof 2017.
207. *Neolasioptera ingae* Möhn, 1964b (gall-inducer). Distribution: El Salvador and Brazil: Rio de Janeiro state: Rio de Janeiro (Marambaia) (Atlantic Forest). Host plants: *Inga vera* Will. (= *Inga spuria* Humb. & Bonpl. ex Willd.) (native to Brazil) (Amazon Forest, Cerrado, Atlantic Forest, and Pantanal) and *Inga punctata* Will. (= *Inga leptoloba* Schldtl. (Fabaceae) (native to Brazil) (Amazon Forest). Refs.: Möhn 1964b, Gagné 1994, Gagné & Jaschhof 2017, Maia & Silva 2016.
208. *Neolasioptera lantanae* (Tavares, 1922) (gall-inducer). Distribution: Brazil: Bahia: Salvador (Atlantic Forest). Host plant: *Lantana* sp. (Verbenaceae). Refs.: Tavares 1922, Gagné 1994, Gagné & Jaschhof 2017.
209. *Neolasioptera pantaneira* Maia, 2017 (gall-inducer). Distribution: Brazil: Mato Grosso do Sul: Corumbá (Pantanal). Host plant: *Aeschynomene denticulata* Rudd. (Fabaceae) (native to Brazil) (all Brazilian phytogeographic domains). Ref.: Maia et al. 2017.
210. *Neolasioptera ramicola* Maia, 2009 (gall-inducer). Distribution: Brazil: Rio Grande do Sul: Bento Gonçalves (Atlantic Forest). Host plant: *Physalis angulata* L. (Solanaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, Atlantic Forest, and Pantanal). Refs.: Maia Maia et al. 2009, Gagné & Jaschhof 2017.
211. *Neolasioptera urvilleae* (Tavares, 1909) (gall-inducer). Distribution: Brazil: Rio Grande do Sul: São Leopoldo (Pampa). Host

plant: *Urvillea uniloba* Radlk. (Sapindaceae) (native to Brazil) (Atlantic Forest). Refs.: Tavares 1909, Gagné 1994, Gagné & Jaschhof 2017.

212. *Neomitranthella robusta* Maia, 1996c (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá, Saquarema, Araruama, Arraial do Cabo, Cabo Frio, Carapebus (Atlantic Forest). Host plant: *Neomitranthes obscura* (DC.) N. Silveira (Myrtaceae) (endemic to Atlantic Forest). Refs.: Maia 1996c, 2001b, Gagné & Jaschhof 2017.

213. *Novocalmonia fici* Ozdikmen, 2009 (gall-inducer). Distribution: Brazil: Bahia: Itaparica and Santo Antonio da Barra (Atlantic Forest). Host plant: *Ficus* sp. (Moraceae). Refs.: Tavares 1917a, Gagné 1994, Gagné & Jaschhof 2017.

214. *Novocalmonia urostigmatis* (Tavares, 1917a) (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Nova Friburgo (Atlantic Forest). Host plant: *Ficus* sp. (Moraceae). Refs.: Tavares 1917a, Gagné & Jaschhof 2017.

215. *Ouradiplosis aurata* Felt, 1915b (gall-inducer). Distribution: Brazil: Pará: Igarapé-Açú (Amazon Forest). Host plant: unknown. Refs.: Felt 1915b, Gagné & Jaschhof 2017.

216. *Parametaspiondylia piperis* Maia & Santos 2007 (gall-inducer). Distribution: Brazil: Minas Gerais: Tiradentes (Cerrado). Host plant: *Piper* sp. (Piperaceae). Refs.: Maia & Fernandes 2004, Maia & Santos 2007, Gagné & Jaschhof 2017.

217. *Parazalepidota clusiae* Maia, 2001a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Rio de Janeiro (Grumari), São Gonçalo, Maricá, Saquarema, Araruama, Arraial do Cabo, Cabo Frio, Quissamã, Macaé, Petrópolis, Mauá (Atlantic Forest). Host plant: *Clusia fluminensis* Planch. & Triana (Clusiaceae) (endemic to Atlantic Forest). Refs.: Monteiro et al. 1994, Maia 2001a, b, Oliveira & Maia 2005, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017, Maia 2020b.

218. *Parkiamyia paraensis* Maia, 2006 (gall-inducer). Distribution: Brazil: Pará: Oriximiná (Amazon Forest). Host plant: *Parkia pendula* (Willd.) Benth. ex Walp. (Fabaceae) (native to Brazil) (Amazon and Atlantic Forests). Refs.: Maia & Fernandes 2006, Gagné & Jaschhof 2017.

219. *Paulliniomyia ampla* Maia, 2001a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá, Saquarema, Araruama, Arraial do Cabo, Cabo Frio, Carapebus, São João da Barra, São Francisco de Itabapoana (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest). Host plants: *Paullinia weinmanniifolia* Mart. (endemic to Atlantic Forest) and *Matayba guianensis* Aubl. (Sapindaceae) (native to Brazil) (Amazon Forest, Cerrado, Atlantic Forest, and Pantanal). Refs.: Maia 2001a, b, Maia et al. 2008, Maia & Carvalho-Fernandes 2016, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017.

220. *Peraspiondylia mikaniae* Gagné, 2001 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Paraty, Parque Nacional do Itatiaia, Silva Jardim (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest). Host plants: *Mikania glomerata* Spreng. (native to Brazil) (Cerrado and Atlantic Forest) and *Mikania cf. biformis* (Asteraceae). Refs.: Gagné et al. 2001, Maia et al. 2008, Carvalho-Fernandes & Maia 2011, Gagné & Jaschhof 2017, Maia & Mascarenhas 2017.

221. *Peraspiondylia reticulata* Möhn, 1960 (gall-inducer). Distribution: Mexico, El Salvador, Trinidad, Bolivia, and Brazil: Pará (Amazon Forest). Host plants: *Chromolaena odorata* (L.) R. M. King & H. Rob. (native to Brazil) (all phytogeographic domains) and *Eupatorium* sp. (Asteraceae). Refs.: Möhn 1960, Gagné 1994, Gagné & Jaschhof 2017.

222. *Pispiondylia brasiliensis* Couri & Maia, 1992 (gall-inducer). Distribution: Brazil: São Paulo state: Bertioga; Rio de Janeiro state:

Maricá, Arraial do Cabo (Ilha do Cabo Frio), São João da Barra (Atlantic Forest); Espírito Santo: Santa Teresa (Atlantic Forest); Minas Gerais: Brumadinho (Atlantic Forest); Bahia: Porto Seguro-Trancoso (Atlantic Forest); Santa Catarina: Babitonga, São Francisco do Sul (Atlantic Forest); Rio Grande do Sul: Porto Alegre (Atlantic Forest). Host plant: *Guapira opposita* (Vell.) Reitz. (Nyctaginaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Couri & Maia 1992, Maia 2001b, 2014, Maia et al. 2008, Maia 2010, Maia et al. 2010, Maia & Souza 2013, Arriola et al. 2015, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017, Melo-Júnior et al. 2018.

223. *Primadiplosis microgramma* Maia, 2011 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá (Atlantic Forest). Host plant: *Microgramma vacciniifolia* (Langsd. & Fisch.) Copel. (Polypodiaceae) (native to Brazil) (Cerrado and Atlantic Forest). Refs.: Maia & Santos 2011, Gagné & Jaschhof 2017.

224. *Proaspiondylia brasiliensis* Felt, 1915c (gall-inducer). Distribution: Brazil: Pernambuco: Bonito (Atlantic Forest). Host plant: unknown. Refs.: Felt 1915c, Gagné & Jaschhof 2017.

225. *Proaspiondylia formosa* Maia, 1994 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá (Atlantic Forest); Santa Catarina: Babitonga (Atlantic Forest). Host plant: *Guapira opposita* (Vell.) Reitz. (Nyctaginaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia 1994, Gagné & Jaschhof 2017, Melo-Júnior et al. 2018.

226. *Proaspiondylia guapirae* Maia, 1994 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Angra dos Reis (Ilha Grande), Mangaratiba, Rio de Janeiro (Marambaia), Maricá, Carapebus, Arraial do Cabo (Ilha do Cabo Frio) (Atlantic Forest); Espírito Santo: Santa Teresa (Atlantic Forest); São Paulo state: Bertioga (Atlantic Forest); Santa Catarina: Babitonga (Atlantic Forest). Host plant: *Guapira opposita* (Vell.) Reitz. (Nyctaginaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia 1994, 1999, 2001b, Maia et al. 2008, Maia & Oliveira 2010, Maia & Souza 2013, Maia 2014, Rodrigues & Maia 2014, Arriola et al. 2015, Maia & Silva 2016, Melo-Júnior et al. 2018.

227. *Procontarinia mangiferae* (Felt, 1911d) (gall-inducer). Distribution: India, China, Reunion, Iran, Guadeloupe, St. Vincent, Trinidad, and Brazil: Bahia: Salvador (Atlantic Forest). Host plant: *Mangifera indica* L. (Anacardiaceae) (exotic) (cultivated plant in all Brazilian domains). Refs.: Felt 1911d, Gagné & Jaschhof 2017.

228. *Prodiplosis floricola* Felt, 1907b (free living phytophagous). Distribution: USA, Colombia, and Brazil: São Paulo state (unstated locality). Host plants: *Spiraea salicifolia* L. (Rosaceae) (native to the temperate Northern Hemisphere), *Clematis* sp. (Ranunculaceae), *Caryocar brasiliense* Cambess. (Caryocaraceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest), and *Citrus* sp. (Rutaceae). Refs.: Felt 1907b, Gagné 1994, Gagné & Jaschhof 2017.

229. *Rhoaspiondylia friburgensis* (Tavares, 1917a) (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Nova Friburgo (Atlantic Forest). Host plants: *Baccharis lateralis* Baker (= *B. schultzi* Baker) (endemic to Brazil) (Atlantic Forest and Cerrado), *B. dracunculifolia* DC. (native to Brazil) (Cerrado, Atlantic Forest, and Pampa), and *B. trinervis* Pers. (Asteraceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, Atlantic Forest, and Pampa). Refs.: Tavares 1917a, Gagné 1994, Gagné & Jaschhof 2017.

230. *Rochadiplosis tibouchinae* Tavares, 1917b (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Petrópolis, Tijuca, and Nova

Friburgo (Atlantic Forest); São Paulo state: Altinópolis (Cerrado). Host plant: *Tibouchina* sp. (Melastomataceae). Refs.: Tavares 1917b, Gagné 1994, Gagné & Jaschhof 2017, Ribeiro et al. 2019.

231. *Schizmatodiplosis lantanae* (Rübsaamen, 1908a) (gall-inducer). Distribution: Mexico, Veracruz, Tabasco, Quintana Roo, Trinidad, and Brazil: Pará: Oriximiná (Amazon Forest); Rondônia: Campo Novo de Rondônia (Amazon Forest); Minas Gerais: Aimorés (Atlantic Forest), Vale do Rio Doce (Atlantic Forest, Cerrado); Rio de Janeiro state: Parque Nacional do Itatiaia, Valença, Mangaratiba, Casimiro de Abreu, Reserva Biológica União, Maricá, Saquarema, Araruama, Cabo Frio, Arraial do Cabo (Ilha do Cabo Frio), Rio das Ostras, São João da Barra (Atlantic Forest); Santa Catarina: Tubarão (Atlantic Forest). Host plants: *Lantana camara* L. (naturalized) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest), *Lantana hispida* (no records in Brazil) and *L. urticifolia* (Verbenaceae) (no records in Brazil). Refs.: Rübsaamen 1908a, Gagné 1994, Maia 2001b, Maia & Souza 2013, Proença & Maia 2014, Rodrigues & Maia 2014, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017, Maia & Mascarenhas 2017, Maia & Siqueira 2020.

232. *Schizomyia barreirensis* Santos, Maia & Calado, 2019 (gall-inducer). Distribution: Brazil: Bahia: Barreiras (Cerrado). Host plant: *Bauhinia cupulata* Benth. (Fabaceae) (native to Brazil) (Amazon Forest, Caatinga, and Cerrado). Refs.: Santos et al. 2019.

233. *Schizomyia macrocapillata* Maia, 2005 (gall-inducer). Distribution: Brazil: Goiás\*: Hidrolândia (RB308777), Monte Alegre (RB357341), Cavalcante (RB 466730) (Cerrado); Mato Grosso\*: Selvíria (RB295665) (Cerrado); Bahia: Barreiras (Cerrado) and Caetitê (Caatinga); Minas Gerais: Três Marias (Cerrado). Host plant: *Bauhinia brevipes* Vogel (Fabaceae) (native to Brazil) (Amazon Forest, Cerrado, and Atlantic Forest). Refs.: Maia & Fernandes 2005b, Costa et al. 2014, Gagné & Jaschhof 2017, Lima & Calado 2018.

234. *Schizomyia manihoti* Tavares, 1925 (gall-inducer). Distribution: Colombia and Brazil: Ceará (unstated locality). Host plant: *Manihot esculenta* Crantz (= *Manihot utilissima* Pohl.) (Euphorbiaceae) (native to Brazil) (Amazon Forest and Cerrado). Refs.: Tavares 1925, Gagné 1994, Gagné & Jaschhof 2017.

235. *Schizomyia maricaensis* Sousa & Maia, 2007 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá (Atlantic Forest); São Paulo state: Ribeirão Preto (Cerrado). Host plant: *Tetrapterys phlomoides* (Spreng.) Nied. (Malpighiaceae) (native to Brazil) (Cerrado, Atlantic Forest, and Pantanal). Refs.: Sousa & Maia 2007, Gagné & Jaschhof 2017, Urso-Guimarães 2019b.

236. *Schizomyia mimosae* Tavares, 1925 (gall-inducer). Distribution: Brazil: Ceará (unstated locality). Host plant: *Mimosa caesalpinifolia* Benth. (Fabaceae) (endemic to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Tavares 1925, Gagné 1994, Gagné & Jaschhof 2017.

237. *Schizomyia santosi* Maia & Araújo, 2009 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Rio de Janeiro (Marambaia) and Maricá (Atlantic Forest). Host plant: *Jacquemontia holosericea* (Weinm.) O' Donell (Convolvulaceae) (native to Brazil) (all Brazilian phytogeographic domains). Refs.: Maia 2001b, Maia & Araújo 2009, Maia & Silva 2016. Gagné & Jaschhof 2017.

238. *Schizomyia spherica* Maia & Oliveira, 2007 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá, Carapebus, Arraial do Cabo (Atlantic Forest). Host plant: *Microstachys corniculata* (Vahl) Griseb. (= *Sebastiania glandulosa* (Mart.) Pax.) (Euphorbiaceae)

(native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Monteiro et al. 1994, Maia 2001b, Maia & Oliveira 2007, Gagné & Jaschhof 2017.

239. *Schizomyia tuiuiu* Urso-Guimarães & Amorim, 2002 (gall-inducer). Distribution: Mato Grosso: Cuiabá (Cerrado); São Paulo state: Ribeirão Preto (Cerrado). Host plant: *Bauhinia holophylla* (Fabaceae) (as *B. rufa* (Bong.) Steud. in Urso-Guimarães & Amorim, 2002) (native to Brazil) (endemic to Cerrado). Refs.: Urso-Guimarães & Amorim 2002, Gagné & Jaschhof 2017, Urso-Guimarães 2019b.

240. *Smilasioptera candelariae* Möhn, 1975 (gall-inducer). Distribution: El Salvador, Brazil: Rio de Janeiro state: Mangaratiba, Rio de Janeiro (Grumari, Marambaia), Maricá, Saquarema, Araruama, Arraial do Cabo, Cabo Frio, Carapebus, São João da Barra (Atlantic Forest). Host plants: *Smilax spinosa* Mill. (= *Smilax mexicana* Griseb. ex Kunth.) (no records in Brazil) and *Smilax rufescens* Griseb. (Smilacaceae) (endemic to Brazil) (Amazon Forest, Cerrado, and Atlantic Forest). Refs.: Möhn 1975, Gagné 1994, Maia 2001b, Oliveira & Maia 2005, Rodrigues & Maia 2014, Carvalho-Fernandes et al. 2016, Maia & Silva 2016, Gagné & Jaschhof 2017.

241. *Sphaeromyia flava* Maia, 2007a (gall-inducer). Distribution: Brazil: São Paulo state: Bertioga (Atlantic Forest); Santa Catarina: São Francisco do Sul (Atlantic Forest). Host plant: *Guarea macrophylla* Vahl (Meliaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Maia 2007a, Maia et al. 2008, Melo-Júnior et al. 2018.

242. *Sphaerodiplosis dubia* Rübsaamen, 1915 (gall-inducer). Distribution: Brazil (locality unstated). Host plant: unknown. Refs.: Rübsaamen 1915, Gagné 1994, Gagné & Jaschhof 2017.

243. *Stephomyia clavata* (Tavares, 1920b) (gall-inducer). Distribution: Brazil: Bahia: Madre de Deus (Atlantic Forest). Host plant: undetermined Myrtaceae. Refs.: Tavares 1920b, Gagné 1994, Gagné & Jaschhof 2017.

Comments: Maia 2001b and Silva & Maia 2014 recorded *Stephomyia cf. clavata* on *Eugenia hiemalis* Cambess. (= *Eugenia multiflora* Cambess.) (native to Brazil) (Cerrado, Atlantic Forest) in the Rio de Janeiro state: Rio de Janeiro (Marambaia) and Carapebus.

244. *Stephomyia epeugeniae* Gagné, 1994 (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Rio de Janeiro (Botanical Garden) (Atlantic Forest); Minas Gerais: Belo Horizonte (Cerrado); Host plants: *Eugenia* sp. and *Eugenia puniceifolia* (Kunth.) DC. (= *Eugenia ovalifolia* Cambess.) (Myrtaceae) (endemic to Brazil) (Amazon Forest, Atlantic Forest, Caatinga, and Cerrado). Refs.: Tavares 1916, Möhn 1962, Gagné 1994, Fernandes et al. 1988, Gagné & Jaschhof 2017.

245. *Stephomyia espiralis* Maia, 1993c (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Mangaratiba, Maricá, Araruama, Arraial do Cabo, Cabo Frio (Atlantic Forest). Host plant: *Eugenia copacabanensis* Kiaersk. (Myrtaceae) (endemic to Atlantic Forest). Refs.: Maia 1993c, 1999a, 2001b, Rodrigues et al. 2014, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017.

246. *Stephomyia mina* Maia, 1993c (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá, Araruama, Carapebus, Arraial do Cabo (Atlantic Forest). Host plant: *Neomitranthes obscura* (DC.) N. Silveira (Myrtaceae) (endemic to Atlantic Forest). Refs.: Maia 1993c, 2001b, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017.

247. *Stephomyia rotundifoliorum* Maia, 1993c (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá (Atlantic Forest); Espírito Santo: Conceição da Barra (Atlantic Forest). Host plant: *Eugenia astringens* Cambess. (= *Eugenia rotundifolia* Casar) (Myrtaceae) (endemic to Atlantic Forest). Refs.: Maia 1993c, 2001b, Gagné & Jaschhof 2017, Maia 2020a.



248. *Stephomyia tetralobae* Maia, 1993c (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Maricá, Arraial do Cabo (Atlantic Forest). Host plant: *Eugenia capocabanensis* Kiaersk. (Myrtaceae) (endemic to Atlantic Forest). Refs.: Maia 1993c, 2001b, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017.

249. *Stomatosema camilae* Carmo-Neto, Lamas & Urso-Guimarães, 2019 (fungivorous). Distribution: Brazil: Mato Grosso do Sul: Corumbá (Pantanal). Refs.: Carmo-Neto et al. 2019.

250. *Stomatosema paratudo* Carmo-Neto, Lamas & Urso-Guimarães, 2019 (fungivorous). Distribution: Brazil: Mato Grosso do Sul: Corumbá (Pantanal). Refs.: Carmo-Neto et al. 2019.

251. *Stomatosema pantaneirum* Carmo-Neto, Lamas & Urso-Guimarães, 2019 (fungivorous). Distribution: Brazil: Mato Grosso do Sul: Corumbá (Pantanal), Bodoquena (Cerrado). Refs.: Carmo-Neto et al. 2019.

252. *Stomatosema sisbiota* Carmo-Neto, Lamas & Urso-Guimarães, 2019 (fungivorous). Distribution: Brazil: Mato Grosso do Sul: Corumbá (Pantanal), Bodoquena (Cerrado), Aquidauana (Cerrado). Refs.: Carmo-Neto et al. 2019.

253. *Stomatosema terena* Carmo-Neto, Lamas & Urso-Guimarães, 2019 (fungivorous). Distribution: Brazil: Mato Grosso do Sul: Aquidauana (Cerrado). Refs.: Carmo-Neto et al. 2019.

254. *Stomatosema terere* Carmo-Neto, Lamas & Urso-Guimarães, 2019 (fungivorous). Distribution: Brazil: Mato Grosso do Sul: Aquidauana (Cerrado). Refs.: Carmo-Neto et al. 2019.

255. *Styraxdiplosis caetitensis* Tavares, 1915 (gall-inducer). Distribution: Brazil: Bahia: Caetité (Atlantic Forest, Caatinga). Host plant: *Styrax* sp. (Styracaceae). Refs.: Tavares 1915, Gagné 1994, Gagné & Jaschhof 2017.

256. *Styraxdiplosis cearensis* Tavares, 1925 (gall-inducer). Distribution: Brazil: Ceará (unstated locality) (Atlantic Forest). Host plant: *Croton hemiargyreus* Müll. Arg. (Euphorbiaceae) (endemic to Atlantic Forest). Refs.: Tavares 1925, Gagné 1994, Gagné & Jaschhof 2017.

257. *Termitomastus leptoproctus* Silvestri, 1901 (fungivorous). Distribution: Argentina and Brazil: Mato Grosso: Cuiabá (Cerrado). Refs.: Silvestri 1901, Gagné 1994, Gagné & Jaschhof 2017.

258. *Trotereria quadridenata* Maia, 2001c (inquiline). Distribution: Brazil: Rio de Janeiro state: Maricá, Arraial do Cabo (Atlantic Forest). Host plant: *Pouteria caimito* (Ruiz & Pav.) Radlk (= *Pouteria caimito* var. *laurifolia* (Gomes) Baehni (Sapotaceae) (native to Brazil) (Amazon Forest, Cerrado, and Atlantic Forest). Refs.: Monteiro et al. 1994, Maia 2001b, c, Gagné & Jaschhof 2017.

259. *Uleella dalbergiae* Rübsaamen, 1908a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Rio de Janeiro (Jacarepaguá) (Atlantic Forest). Host plant: *Dalbergia* sp. (Fabaceae). Refs.: Rübsaamen, 1908a, Gagné 1994, Gagné & Jaschhof 2017.

260. *Uleia clusiae* Rübsaamen, 1905a (gall-inducer). Distribution: Brazil: Amazonas: Santa Clara and Bonfim on Juruá River (Amazon Forest). Host plant: *Clusia* sp. (Clusiaceae). Refs.: Rübsaamen 1908a, Gagné 1994, Gagné & Jaschhof 2017.

261. *Youngomyia matogrossensis* Proença & Maia, 2019 (gall-inducer). Distribution: Brazil: Mato Grosso: Chapada dos Guimarães (Cerrado); São Paulo state: Luiz Antônio and Santa Rita do Passa Quatro (Cerrado). Host plant: *Pouteria torta* (Mart.) Radlk. (Sapotaceae) (native to Brazil) (Amazon Forest, Caatinga, Cerrado, and Atlantic Forest). Refs.: Urso-Guimarães & Scareli-Santos 2006, Saito & Urso-Guimarães 2012, Urso-Guimarães et al. 2016, Proença & Maia 2019.

262. *Youngomyia pouteriae* Maia 2001c (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Mangaratiba, Rio de Janeiro (Grumari), Maricá, Saquarema, Araruama, Arraial do Cabo, Cabo Frio, São João da Barra (Atlantic

Forest). Host plant: *Pouteria caimito* (Ruiz & Pav.) Radlk (= *Pouteria caimito* var. *laurifolia*) (Sapotaceae) (native to Brazil) (Amazon Forest, Cerrado, and Atlantic Forest). Refs.: Monteiro et al. 1994, Maia 2001b, c, Rodrigues & Maia 2014, Carvalho-Fernandes et al. 2016, Gagné & Jaschhof 2017.

263. *Zalepidota ituensis* (Tavares, 1917a) (gall-inducer). Distribution: Brazil: São Paulo state: Salto de Itú (Atlantic Forest). Host plant: *Porophyllum* sp. (Asteraceae). Refs.: Tavares 1917a, Gagné 1994, Gagné & Jaschhof 2017.

264. *Zalepidota piperis* Rübsaamen, 1908a (gall-inducer). Distribution: Brazil: Rio de Janeiro state: Rio de Janeiro (Tijuca) (Atlantic Forest). Host plant: *Piper* sp. (Piperaceae). Refs.: Rübsaamen 1908a, Gagné 1994, Gagné & Jaschhof 2017.

265. *Zalepidota tavaresi* (Kieffer, 1913) (gall-inducer). Distribution: Brazil: Rio Grande do Sul: São Leopoldo (Pampa). Host plant: *Piper* sp. (Piperaceae). Refs.: Kieffer 1913, Gagné 1994, Gagné & Jaschhof 2017.

In order to provide the state of the art of the Cecidomyiidae fauna in each Brazilian phytogeographic domain, data are presented separately.

## AMAZON FOREST

Twenty-nine species of Cecidomyiidae of 19 genera have been reported in the Amazon Forest, being 28 gall-inducers and one fungivorous species. Among the former, 23 are monophagous, while five are oligophagous species: *Asphondylia tournefortiae* Rübsaamen, 1915, *Clinodiplosis eupatorii* (Felt, 1911a), *Iatrophobia brasiliensis* (Rübsaamen, 1908a), *Perasphondylia reticulata* Möhn, 1960, and *Schismatodiplosis lantanae* (Rübsaamen, 1908a).

Gall-inducers are associated with 17 plant families, 20 genera and 12 determined species. Calophylaceae is the plant families with the greatest richness of gall midge species (five), followed by Asteraceae with three, and Asteraceae and Burseraceae, both with two. All other families (13) shelter a single gall midge species (Table 5). Nine gall midge species are associated with host plants identified only in genus: *Cecropia* sp., *Clusia* sp., *Coussapoa* sp., *Mikania* sp., *Neea* sp., *Serjania* sp., *Solanum* sp., and *Sterculia* sp., and two gall midge species were obtained from host plants identified only in family, one from Malpighiaceae and the other from Lauraceae. Two cecidomyiids, *Lopesia maricaensis* and *Lopesia aldinae* induce galls on Brazilian endemic plants, *Protium brasiliense* (Burseraceae) and *Aldina heterophylla* (Fabaceae), being the last endemic to Amazon Forest (Table 4). The remainder plants are native to Brazil, except *Lantana camara*, a naturalized species.

The Amazonian fauna comprises 19 genera of Cecidomyiidae, 14 represented by one species, three (*Asphondylia*, *Bruggmannia* and *Clinodiplosis*) by two species, and one, *Lopesia*, by five species, being the most speciose genera (Table 3).

Nineteen gall midge species are known only from the Amazon Forest, while eight species occur in other domains. Twenty-two species have been recorded only in Brazil, while seven occur in other countries too: *Clinodiplosis eupatorii*, *Iatrophobia brasiliensis*, *Perasphondylia reticulata*, *Schismatodiplosis lantanae*, *Lopesia conspicua*, *Lopesia elliptica*, and *Lopesia linearis*.

### List of Cecidomyiidae (Diptera) with occurrence in the Amazon Forest (Brazil)

1. *Alexomyia ciliata* Felt, 1921
2. *Alycaulus mikaniae* Rübsaamen, 1915
3. *Asphondylia fructicola* Maia, 2009
4. *Asphondylia tournefortiae* Rübsaamen, 1915

5. *Bruggmannia depressa* (Kieffer, 1913)
6. *Bruggmannia longiseta* (Kieffer, 1913)
7. *Clinodiplosis cecropiae* Proença & Maia, 2020
8. *Clinodiplosis eupatorii* (Felt, 1911)
9. *Contarinia gemmae* Maia, 2003
10. *Dactylodiplosis heisteriae* Rübbsaamen, 1915
11. *Frauenfeldiella coussapoae* Rübbsaamen, 1905
12. *Haplopalpus serjaneae* Rübbsaamen, 1915
13. *Haplusia braziliensis* (Felt, 1915)
14. *Iatrophobia brasiliensis* (Rübbsaamen, 1908)
15. *Lopesia aldinae* Fernandes & Maia, 2010
16. *Lopesia caulinaris* Maia, 2003
17. *Lopesia conspicua* Maia, 2003
18. *Lopesia elliptica* Maia, 2003
19. *Lopesia linearis* Maia, 2003
20. *Lopesia maricaensis* Rodrigues & Maia, 2010
21. *Lopesia similis* Maia, 2004
22. *Macroporpa peruviana* Rübbsaamen, 1915
23. *Macroporpa ulei* Rübbsaamen, 1915
24. *Megaulus sterculiae* Rübbsaamen, 1915
25. *Ouradiplosis aurata* Felt, 1915
26. *Parkiamyia paraensis* Maia, 2006
27. *Perasphondylia reticulata* Möhn, 1960
28. *Schismatodiplosis lantanae* (Rübbsaamen, 1908)
29. *Uleia clusiae* Rübbsaamen, 1905

## ATLANTIC FOREST

A total of 183 species of Cecidomyiidae of 71 genera have been recorded in the Atlantic Forest, 162 of them are gall-inducers, ten are predators (*Diadiplosis abacaxi*, *D. bellingeri*, *D. floridana*, *D. jamboi*, *D. martinensis*, *D. multifila*, *D. vaupedis*, *Lestodiplosis braziliensis*, *L. floricola*, and *L. maricaensis*), eight are probably kleptoparasites (*Clinodiplosis maricaensis*, *Contarinia ubiquita*, *Dialeria styracis*, *Meunieriella dalechampiae*, *M. insignis*, *M. lantanae*, *N. fariae*, and *Trotteria quadridentata*), two are free-living species (*Clinodiplosis floricola* and *Lopesia davillae*), and a single one has fungivorous larvae (*Dichodiplosis triangularis*).

Sixteen gall-inducing species are oligophagous, while the others are monophagous. Phytophagous species have been recorded on 38 plant families, 73 genera and 82 determined species. Myrtaceae, Asteraceae, Nyctaginaceae, and Fabaceae are the superhost families, which together shelter 69 of the gall midge species (22, 19, 14, and 14, respectively). This value corresponds to about 39% of the gall-inducing species richness (Table 5). Thirty-eight gall midge species, when described, were recorded on 21 host plants identified only in genus. Later, two of them, *Asphondylia stachytarpheta* Barnes, 1932 and *Machaerobia machaerii* (Kieffer, 1913) were obtained from identified plant species.

Eleven gall midge species have been recorded on five host plants identified only in family (Asteraceae: 2, Fabaceae: 3, Malvaceae: 1, Myrtaceae: 2, and Rubiaceae: 3). Forty-eight gall midge species induce galls on endemic plants to Brazil, 36 of them on endemic plants to the Atlantic Forest (Table 4). The remainders are associated with native plants, except *Schismatodiplosis lantanae*, *Asphondylia sennae*, and *Clinodiplosis melissae*, inducers of galls on *Lantana camara* (a naturalized plant), *Senna bicapsularis* and *Melissa officinalis*, both exotic.

The most speciose genera in the Atlantic Forest are *Lopesia* (with 18 species), *Asphondylia* (with 15), *Clinodiplosis* (with 14), and *Bruggmannia* (with 11). They together shelter about 32% of the species richness. The other genera comprise from nine to one species, being the majority (44 genera) represented by a single species (Table 3).

## List of Cecidomyiidae (Diptera) with occurrence in the Atlantic Forest (Brazil)

1. *Alycaulus globulus* Gagné, 2001
2. *Alycaulus trilobatus* Möhn, 1964
3. *Anadiplosis caetetensis* Tavares, 1920
4. *Anadiplosis procera* Tavares, 1920
5. *Anadiplosis pulchra* Tavares, 1916
6. *Anadiplosis venusta* Tavares, 1916
7. *Anasphondylia myrtacea* Tavares, 1920
8. *Andirodiplosis bahiensis* Tavares, 1920
9. *Anisodiplosis waltheriae* Maia, 2005
10. *Apodiplosis praecox* Tavares, 1922
11. *Arrabiadaemyia serrata* Maia, 2001
12. *Asphondylia bahiensis* Tavares, 1917
13. *Asphondylia borrieriae* Rübbsaamen, 1905
14. *Asphondylia communis* Maia & Couri, 1992
15. *Asphondylia cordiae* Möhn, 1959
16. *Asphondylia glomeratae* Gagné, 2001
17. *Asphondylia maricensis* Maia & Couri, 1992
18. *Asphondylia moehni* Skuhrová, 1989
19. *Asphondylia parva* Tavares, 1917
20. *Asphondylia peploniae* Maia, 2001
21. *Asphondylia rochae* Tavares, 1918
22. *Asphondylia sennae* Maia & Couri, 1992
23. *Asphondylia serrata* Maia, 2004
24. *Asphondylia stachytarpheta* Barnes, 1932
25. *Asphondylia struthanthi* Rübbsaamen, 1915
26. *Asphondylia ulei* Rübbsaamen, 1908
27. *Asteromyia modesta* (Felt, 1907)
28. *Autodiplosis parva* (Tavares, 1916)
29. *Baccharomyia magna* Maia, 2012
30. *Baccharomyia ramosina* Tavares, 1917
31. *Bruggmannia acaudata* Maia, 2004
32. *Bruggmannia depressa* (Kieffer, 1913)
33. *Bruggmannia elongata* Maia & Couri, 1993
34. *Bruggmannia globulifex* (Kieffer, 1913)
35. *Bruggmannia lignicola* (Kieffer, 1913)
36. *Bruggmannia longicauda* (Kieffer, 1913)
37. *Bruggmannia micrura* (Kieffer, 1913)
38. *Bruggmannia monteiroi* Maia & Couri, 1993
39. *Bruggmannia neeana* (Kieffer, 1913)
40. *Bruggmannia robusta* Maia & Couri, 1993
41. *Bruggmannia ruebsaameni* (Kieffer, 1913)
42. *Bruggmanniella byrsonimae* (Maia & Couri, 1992)
43. *Bruggmanniella doliocarpi* Maia, 2010
44. *Bruggmanniella ingae* Urso-Guimarães & Amorim, 2005
45. *Bruggmanniella maytenuse* (Maia & Couri, 1992)
46. *Bruggmanniella miconia* Garcia, Lamas and Urso-Guimarães, 2020
47. *Bruggmanniella notatae* Rodrigues & Maia, 2020

## Cecidomyiidae (Diptera, Insecta) in Brazil

48. *Bruggmanniella oblita* Tavares, 1920
49. *Bruggmanniella sideroxyli* Rodrigues & Maia, 2020
50. *Burseramyia braziliensis* Maia & Fonseca, 2012
51. *Cleitodiplosis graminis* (Tavares, 1916)
52. *Clinodiplosis bahiensis* (Tavares, 1917)
53. *Clinodiplosis cearensis* (Tavares, 1917)
54. *Clinodiplosis chlorophorae* Rübсаamen, 1905
55. *Clinodiplosis conica* Oliveira & Maia, 2008
56. *Clinodiplosis costai* Maia, 2005
57. *Clinodiplosis diodiae* Maia, 2001
58. *Clinodiplosis floricola* Novo-Guedes & Maia, 2008
59. *Clinodiplosis iheringi* (Tavares, 1925)
60. *Clinodiplosis marcetiae* (Tavares, 1917)
61. *Clinodiplosis maricaensis* Fernandes & Maia, 2011
62. *Clinodiplosis melissae* Maia, 1993
63. *Clinodiplosis profusa* Maia, 2001
64. *Clinodiplosis pulchra* (Tavares, 1917)
65. *Clinodiplosis rubiae* (Tavares, 1918)
66. *Clusiamyia granulosa* Maia, 2001
67. *Clusiamyia nitida* Maia, 1997
68. *Compsodiplosis itaparicana* Tavares, 1922
69. *Contarinia gemmae* Maia, 2003
70. *Contarinia ubiquita* Gagné, 2001
71. *Contodiplosis friburgensis* (Tavares, 1915)
72. *Contodiplosis humilis* (Tavares, 1915)
73. *Contodiplosis tristis* (Tavares, 1915)
74. *Cordiamyia globosa* Maia, 1996
75. *Costadiplosis maricaensis* Viceconte & Maia, 2009
76. *Couridiplosis vena* Maia, 2004
77. *Dactylodiplosis heptaphylli* Maia, 2004
78. *Dactylodiplosis icicaribae* Maia, 2002
79. *Dactylodiplosis petibaurum* Maia, 2021
80. *Dasineura byrsonimae* Maia, 2010
81. *Dasineura copacabanensis* Maia, 1993
82. *Dasineura couepiae* Maia, 2001
83. *Dasineura gigantea* Angelo & Maia, 1999
84. *Dasineura globosa* Maia, 1996
85. *Dasineura marginalis* Maia, 2005
86. *Dasineura myrciariae* Maia, 1996
87. *Dasineura ovalifoliae* Fernandes & Maia, 2011
88. *Dasineura tavaresi* Maia, 1996
89. *Diadiplosis abacaxii* Culik & Ventura, 2013
90. *Diadiplosis bellingeri* Culik & Ventura, 2012
91. *Diadiplosis floridana* (Felt, 1915)
92. *Diadiplosis jamboi* Culik & Ventura, 2013
93. *Diadiplosis martinsensis* Culik & Ventura, 2013
94. *Diadiplosis multifila* (Felt, 1907)
95. *Diadiplosis vaupedis* (Harris, 1968)
96. *Dialeria styracis* Tavares, 1918
97. *Dichodiplosis triangularis* (Felt, 1908)
98. *Epihormomyia miconiae* Maia, 2001
99. *Eugeniomyia dispar* Maia, Mendonça & Romanowski, 1997
100. *Eugeniomyia triangularis* Maia & Nava, 2011
101. *Fernandesia meridionalis* Rodrigues & Maia, 2013
102. *Frauenfeldiella coussapoe* Rübсаamen, 1905
103. *Geraldesia eupatorii* Tavares, 1917
104. *Gnesiodiplosis itaparicae* Tavares, 1917
105. *Guareamyia purpura* Maia, 2007
106. *Houardodiplosis rochae* Tavares, 1925
107. *Iatrophobia brasiliensis* (Rübсаamen, 1908)
108. *Jorgensiella eugeniae* Maia, 2005
109. *Lestodiplosis braziliensis* (Tavares, 1920)
110. *Lestodiplosis floricola* (Rodrigues & Maia, 2010)
111. *Lestodiplosis maricaensis* Santos & Maia, 2009
112. *Liodiplosis conica* Gagné, 2001
113. *Liodiplosis cylindrica* Gagné, 2001
114. *Liodiplosis spherica* Gagné, 2001
115. *Lopesia brasiliensis* Rübсаamen, 1908
116. *Lopesia caulinaris* Maia, 2003
117. *Lopesia conspicua* Maia, 2003
118. *Lopesia davillae* Maia & Monteiro, 2017
119. *Lopesia elliptica* Maia, 2003
120. *Lopesia erythroxyli* Rodrigues & Maia, 2010
121. *Lopesia grandis* Maia, 2001
122. *Lopesia indaiensis* Maia & Araújo, 2018
123. *Lopesia leandrae* Maia, 2019
124. *Lopesia linearis* Maia, 2003
125. *Lopesia marginalis* Maia, 2001
126. *Lopesia maricaensis* Rodrigues & Maia, 2010
127. *Lopesia similis* Maia, 2004
128. *Lopesia simplex* Maia, 2002
129. *Lopesia singularis* Maia, 2001
130. *Lopesia spinosa* Maia, 2004
131. *Lopesia tibouchinae* Maia, 2004
132. *Lopesia ubatubensis* Garcia & Urso-Guimarães, 2018
133. *Machaerobia gemmae* Maia, 2016
134. *Machaerobia machaerii* (Kieffer, 1913)
135. *Manilkaramyia notabilis* Maia, 2001
136. *Mayteniella distincta* Maia, 2001
137. *Metasphondylia squamosa* Tavares, 1918
138. *Meunieriella dalechampiae* Rübсаamen, 1905
139. *Meunieriella insignis* (Tavares, 1922)
140. *Meunieriella lantanae* (Tavares, 1918)
141. *Mikaniadiplosis annulipes* Gagné, 2001
142. *Myrciamyia maricaensis* Maia, 1996
143. *Myrciariamyia bivalva* Maia, 1995
144. *Neolasioptera cerei* (Rübсаamen, 1905)
145. *Neolasioptera cupheae* Gagné, 1998
146. *Neolasioptera eugeniae* Maia, 1993
147. *Neolasioptera fariae* (Tavares, 1922)
148. *Neolasioptera ingae* Möhn, 1964
149. *Neolasioptera lantanae* (Tavares, 1922)
150. *Neolasioptera ramicola* Maia, 2009
151. *Neomitranthella robusta* Maia, 1996
152. *Novocalmonia fici* Ozdikmen, 2009
153. *Novocalmonia urostigmatis* (Tavares, 1917)
154. *Parazalepidota clusiae* Maia, 2001
155. *Paulliniamyia ampla* Maia, 2001
156. *Perasphondylia mikaniae* Gagné, 2001
157. *Pisphondylia brasiliensis* Couri & Maia, 1992
158. *Primadiplosis microgramma* Maia, 2011
159. *Proasphondylia brasiliensis* Felt, 1915

160. *Proasphondylia formosa* Maia, 1994
161. *Proasphondylia guapirae* Maia, 1994
162. *Procontarinia mangiferae* (Felt, 1911)
163. *Rhoasphondylia friburgensis* (Tavares, 1917)
164. *Rochadiplosis tibouchinae* Tavares, 1917
165. *Schismatodiplosis lantanae* (Rübsaamen, 1908)
166. *Schizomyia maricaensis* Sousa & Maia, 2007
167. *Schizomyia santosi* Maia & Araújo, 2009
168. *Schizomyia spherica* Maia & Oliveira, 2007
169. *Smilasioptera candelariae* Möhn, 1975
170. *Sphaeromyia flava* Maia, 2007
171. *Stephomyia clavata* (Tavares, 1920)
172. *Stephomyia epeugeniae* Gagné, 1994
173. *Stephomyia espiralis* Maia, 1993
174. *Stephomyia mina* Maia, 1993
175. *Stephomyia rotundifoliorum* Maia, 1993
176. *Stephomyia tetralobae* Maia, 1993
177. *Styraxdiplosis caetitensis* Tavares, 1915
178. *Styraxdiplosis cearensis* Tavares, 1925
179. *Trotteria quadridentata* Maia, 2001
180. *Uleella dalbergiae* Rübsaamen, 1908
181. *Youngomyia pouteriae* Maia 2001
182. *Zalepidota ituensis* (Tavares, 1917)
183. *Zalepidota piperis* Rübsaamen, 1908

## CAATINGA

Only eight gall midge species of seven genera have been reported in the Caatinga, six of them are gall-inducers, one is predator, *Feltiella curtistylus*, and one is probably kleptoparasite, *Dialeria styracis*. All inducers are monophagous. The phytophagous species are associated with three plant families, Combretaceae, Fabaceae, and Styracaceae, four genera, *Bauhinia* L., *Combretum* Loefl., *Mimosa* L., and *Styrax* L., and three determined species, *Combretum leprosum*, *Mimosa tenuiflora*, and *Bauhinia brevipes*. Fabaceae shelter the great richness of gall midge species, four (Table 4). Three gall midge species occur on a host plant identified only in genus, *Styrax* sp., and a single species occur in a plant identified only in family (Fabaceae). All host plant species are native to Brasil. None of them is endemic. All gall midge genera are represented by a single species, except *Lopesia*, with two species (Table 3).

### List of Cecidomyiidae (Diptera) with occurrence in the Caatinga (Brazil)

1. *Anadiplosis caetetensis* Tavares, 1920
2. *Dialeria styracis* Tavares, 1918
3. *Feltiella curtistylus* Gagné, 1984
4. *Houardodiplosis rochae* Tavares, 1925
5. *Lopesia mimosae* Maia, 2010
6. *Lopesia pernambucensis* Maia, 2010
7. *Schizomyia macrocapillata* Maia, 2005
8. *Styraxdiplosis caetitensis* Tavares, 1915 (possibly)

## CERRADO

A total of 60 gall midge species of 25 genera have been recorded in the Cerrado, 52 of them are gall-inducers, six are fungivorous,

*Didactylomyia longimana*, *Stomatosema pantaneira*, *S. sisbiota*, *S. terena*, *S. terere*, and *Termitomastus leptoproctus*, one is inquiline, *Meunieriella spinosa*, and one is predator, *Diadiplosis saccharum*.

All phytophagous species are monophagous. Phytophagous gall midges have been recorded on 21 plant families, 37 genera and 37 determined species. Fabaceae, Asteraceae and Calophyllaceae comprise the greatest richness of cecidomyiid species, ten, six and six, respectively (Table 5). Seven gall midge species occur on host plants identified only in genus, totaling seven plant genera. All host species are native. Among them, eleven are endemic to Brazil, two being endemic to Cerrado (Table 4). *Lopesia*, *Asphondylia*, and *Bruggmanniella* are the best represented genera of Cecidomyiidae, with 14, 7, and 4 species, respectively (Table 3).

### List of Cecidomyiidae (Diptera) with occurrence in the Cerrado (Brazil)

1. *Alycaulus hexadentatus* Urso-Guimarães, 2018
2. *Andriodiplosis bahiensis* Tavares, 1920
3. *Arcivena kielmeyerae* Gagné, 1984
4. *Asphondylia canastrae* Urso-Guimarães & Amorim, 2002
5. *Asphondylia cipo* Urso-Guimarães, 2018
6. *Asphondylia cordiae* Möhn, 1959
7. *Asphondylia gochnatae* Maia, 2008
8. *Asphondylia microcapillata* Maia, 2005
9. *Asphondylia sanctipetri* Urso-Guimarães & Amorim, 2002
10. *Asphondylia serrata* Maia, 2004
11. *Asphondylia stachytarpheta* Barnes, 1932
12. *Brethesiamyia retorta* Maia, 2009
13. *Bruggmannia chapadensis* Proença & Maia, 2018
14. *Bruggmanniella doliocarpi* Maia, 2010
15. *Bruggmanniella duguetiae* Urso-Guimarães & Amorim, 2005
16. *Bruggmanniella ingae* Urso-Guimarães & Amorim, 2005
17. *Bruggmanniella miconiae* Carvalho-Fernandes, Maia & Rodrigues, 2020
18. *Cerciplanus cipo* Garcia & Urso-Guimarães, 2020
19. *Cerciplanus tocantinensis* Garcia & Urso-Guimarães 2020
20. *Clinodiplosis agerati* Maia, 2016
21. *Clinodiplosis bellum* Urso-Guimarães & Carmo-Neto, 2015
22. *Clinodiplosis quartelensis* Maia & Oliveira 2019
23. *Contarinia gemmae* Maia 2003
24. *Couridiplosis vena* Maia, 2004
25. *Dasineura braziliensis* (Tavares, 1922)
26. *Dasineura occulta* Pereira-Colavite & Urso-Guimarães, 2013
27. *Diadiplosis saccharum* Urso-Guimarães, 2020
28. *Didactylomyia longimana* (Felt, 1908)
29. *Lopesia andirae* Garcia, Lima, Calado & Urso-Guimarães, 2017
30. *Lopesia bilobata* Maia, 2004
31. *Lopesia caulinaris* Maia, 2003
32. *Lopesia chapadensis* Garcia & Urso-Guimarães, 2018
33. *Lopesia conspicua* Maia, 2003
34. *Lopesia eichhorniae* Urso-Guimarães, 2015
35. *Lopesia elliptica* Maia, 2003
36. *Lopesia linearis* Maia, 2003
37. *Lopesia maricaensis* Rodrigues & Maia, 2010
38. *Lopesia mataybae* Garcia & Urso-Guimarães, 2018

39. *Lopesia similis* Maia, 2004
40. *Lopesia simplex* Maia, 2002
41. *Lopesia spinosa* Maia, 2004
42. *Lopesia tibouchinae* Maia, 2004
43. *Machaerobia machaerii* (Kieffer, 1913)
44. *Meunieriella spinosa* Urso-Guimarães, 2018
45. *Myrciomyia pterandrae* Maia & Flor, 2018
46. *Myrciomyia admirabilis* Maia, 2007
47. *Myrciomyia fernandesi* Maia, 2004
48. *Parametaspiondylia piperis* Maia & Santos 2007
49. *Rochadiplosis tibouchinae* Tavares, 1917
50. *Schizomyia barreirensis* Santos, Maia & Calado, 2019
51. *Schizomyia macrocapillata* Maia, 2005
52. *Schizomyia maricaensis* Sousa & Maia, 2007
53. *Schizomyia tuiuiu* Urso-Guimarães & Amorim, 2002
54. *Stephomyia epeugeniae* Gagné, 1994
55. *Stomatosema pantaneirum* Carmo-Neto, Lamas & Urso-Guimarães, 2019
56. *Stomatosema sisbiota* Carmo-Neto, Lamas & Urso-Guimarães, 2019
57. *Stomatosema terena* Carmo-Neto, Lamas & Urso-Guimarães, 2019
58. *Stomatosema terere* Carmo-Neto, Lamas & Urso-Guimarães, 2019
59. *Termitomastus leptoproctus* Silvestri, 1901
60. *Youngomyia matogrossensis* Proença & Maia, 2019

## PAMPA

Only ten species of gall midges of nine genera have been recorded in the Pampa (List 5), nine of them are gall-inducers and one was caught in flight. One species is oligophagous, *Asphondylia moehni*, the other inducers are monophagous. They are associated with eight plant families distributed in eight genera and six determined species. All families shelter a single gall midge species, and there are two doubtful records on Smilacaceae (Table 4). Three gall midge species occur on host plants identified only in genus, totaling three plant genera. All host plants are native, one of them being endemic to Brazil (Table 5).

### List of Cecidomyiidae (Diptera) with occurrence in the Pampa (Brazil)

1. *Asphondylia moehni* Skuhravá, 1989
2. *Asphondylia sulphurea* Tavares, 1909
3. *Bruggmannia braziliensis* Tavares, 1906
4. *Bruggmanniella braziliensis* Tavares, 1909
5. *Compsodiplosis luteoalbida* (Tavares, 1909)
6. *Elachypalpus psidii* Maia & Nava, 2011
7. *Eugeniomyia dispar* Maia, Mendonça & Romanowski, 1997
8. *Guarephila albida* Tavares, 1909
9. *Neolasioptera urvilleae* (Tavares, 1909)
10. *Zalepidota tavaresi* (Kieffer, 1913)

## PANTANAL

Only five species of Cecidomyiidae of two genera have been reported in the Pantanal, one is gall-inducers and the others are

fungivorous. The single gall-inducing species is monophagous and occurs on a native, non endemic plant.

### List of Cecidomyiidae (Diptera) with occurrence in the Pantanal (Brazil)

1. *Neolasioptera pantaneira* Maia, 2017
2. *Stomatosema camilae* Carmo-Neto, Lamas & Urso-Guimarães, 2019
3. *Stomatosema paratudo* Carmo-Neto, Lamas & Urso-Guimarães, 2019
4. *Stomatosema pantaneirum* Carmo-Neto, Lamas & Urso-Guimarães, 2019
5. *Stomatosema sisbiota* Carmo-Neto, Lamas & Urso-Guimarães, 2019

The phytogeographic domain of occurrence of ten species (*Aphidoletes aphidimyza*, *Clinodiplosis alternantherae*, *C. cattleyae*, *Diadiplosis coccidivora*, *Diadiplosis pseudococci*, *Mycodiplosis rubida*, *Prodidiplosis floricola*, *Schizomyia manihoti*, *Schizomyia mimosa*, and *Sphaerodiplosis dubia*) was not determined, since data on its locality was not enough detailed.

## Discussion

Brazil shelters 265 gall midge species, about 43% of the diversity of the Neotropical fauna. Brazil is the largest country in the Neotropics, with 8, 515, 767. 049 km<sup>2</sup> of extension (IBGE, 2012), has a peculiar and diverse flora, with 46, 4922 species (Flora do Brasil, 2020), and also its Cecidomyiidae fauna is the most taxonomically studied. These facts together explained this high percentage.

Most species induce galls, since this is the predominant habit in this family (Gagné 1994). The majority of the host plants are identified in species, but 52 hosts are identified at supraespecific categories, what difficult the establishment of the right number of host species.

Most hosts are native, but few are exotic, being represented by introduced useful plants, as *Melissa officinalis* L. (Lamiaceae), a medicinal herb, *Mangifera indica* L. (Anacardiaceae) with edible fruits, *Senna bicapsularis* (L.) Roxb. (Fabaceae), *Spiraea salicifolia* L. (Rosaceae), and *Erigeron strigosus* Muhl. ex Willd. (Asteraceae), ornamental plants. The gall midges associated with *M. indica*, *S. salicifolia*, and *E. strigosus* are also exotic, but those associated with *M. officinalis* and *S. bicapsularis* were described from Brazil and they have never been reported in other countries, suggesting that these hosts were colonized by Brazilian gall midges.

*Lantana camara* is naturalized and its gall-inducing species was described from Brazil, but it occurs in several Latin American countries. Probably the midge was introduced together with its host.

Incongruities between the host plant and gall-inducing species distributions were observed, suggesting a plant misidentification. In this case, plant vouchers should be examined, but unfortunately the number of vouchers are rare in the literature.

Twenty-seven botanical names were updated, but synonyms were cited in brackets to allow their association with the original references. This procedure is important to gather data on the same species, even if under different names.

Most gall-inducing species are monophagous (about 90%), what was expected, as most gall-inducing insects exhibit a high degree of

host-plant specificity (Abrahamson et al. 1998, Carneiro et al. 2009). Fabaceae, Asteraceae, and Myrtaceae are the plant families with the greatest richness of gall midge species, as in several inventories of insect galls in Brazil (e. g. Almada & Fernandes 2011, Maia 2013, Araújo et al. 2015, Maia & Mascarenhas 2017, Ascendino & Maia 2018, Maia & Siqueira 2020). Among them, Myrtaceae exhibit the highest average of gall midge species by host plant species, probably because this family is one of the most diverse in the Atlantic Forest, the most investigated biome, and their gall-inducing species are the most studied (e. g. Oliveira & Maia 2005, Rodrigues et al. 2014, Carvalho-Fernandes et al. 2016). *Eugenia* (Myrtaceae) and *Mikania* (Asteraceae) highlight among all other plant genera by sheltering the highest richness of gall midges. Similarly, *Guapira opposita*, *Mikania glomerata*, and *Calophyllum brasiliense* highlight among all other plant species. Their richness has also been pointed out by other authors (Maia 2001b, Maia & Mascarenhas 2017, Melo-Júnior et al. 2018).

The best represented gall midge genera are *Lopesia*, *Asphondylia*, and *Clinodiplosis*. The first is predominantly Neotropical while the others are cosmopolitan, but well represented in the Neotropics (Gagné & Jaschhof 2017). Species of *Clinodiplosis*, *Contarinia*, *Dialeria*, *Meunieriella*, *Neolasioptera* and *Trotteria* have been reported as inquiline species in galls. But in fact, according to the ecological concept, they should be considered kleptoparasites, since they do not promote the production of new tissues, as inquiline do (Luz & Mendonça-Júnior 2019).

Several gall midge species are associated with endemic hosts. This information is very important, because it shows the peculiarities of the Brazilian fauna, revealing species with exclusive occurrence in the country. The high number of species known only from the type-locality indicates how the geographic distribution of Brazilian fauna is still poor. This scarcity of data is reinforced by the high number of species which have never been collected again since their description.

Concerning phytogeographic domains, Atlantic Forest shelters the highest richness of gall midge species, followed by Cerrado, Amazon Forest, Pampa, Caatinga, and Pampa. Amazon Forest and Cerrado are the largest, with an area of 2,196,943 and 2,036,448 Km<sup>2</sup>, respectively, followed by Atlantic Forest with 1,110,182 Km<sup>2</sup> and Caatinga with 844.453 Km<sup>2</sup>. The two others are the smallest, Pampa with 176,469 and Pantanal with 150,355 Km<sup>2</sup>. They also differ in richness of flora. Amazon Forest shelters about 50,000 plant species of Angiospermae, Atlantic Forest 20,000, Cerrado 11,600, Caatinga 3,500, Pampa 3,000 and Pantanal only 900 (MMA, 2020). Considering these data, we should expect the highest richness of gall midge species in the Amazon Forest, according to the plant richness hypothesis (Southwood 1960, 1961), since this domain offers quantitatively and qualitatively the greatest amount of resources for the gall-inducers. Nevertheless, the highest richness is reported in the Atlantic Forest, the most investigated domain. This result is an effect of the strong sampling efforts in Atlantic Forest areas, the poor knowledge of the Cecidomyiidae fauna of other Brazilian biomes and the lack of taxonomists in our country.

Most gall midge species occur in a single domain, differing from their host plants which can be found in more than one domain. This suggests that the distribution of gall-inducing species can be wider than that which we know today. Arriola et al. 2016 argued that the distribution of the galling-insects is similar to that of the host plant.

So, collections in uninvestigated or poorly investigated localities are necessary to fill these geographic distribution gaps.

Nevertheless, several gall midge species are associated with plants endemic of a specific phytogeographic domain, as Amazon Forest, Atlantic Forest, and Cerrado. These data reveal the peculiarities of each one and can be useful for the establishment of environmental preservation areas.

## Conclusion

This study is the first dataset of gall midge species with occurrence in Brazil. It totalize 265 species (43% of the Neotropical fauna); 85.6% are gall-inducers. Phytophagous gall midges are associated with at least 128 host plant species. Fabaceae, Asteraceae and Myrtaceae shelter the greatest richness of gall-inducing species. *Lopesia*, *Asphondylia* and *Clinodiplosis* are the best represented cecidomyiid genera. Most species (about 90%) are known only from Brazil. The Atlantic Forest as the most investigated domain comprises the highest species richness. Several gall midge species induce galls on plants endemic to Brazil. Each Brazilian phytogeographic domain has its own species composition. There is a high number of cecidomyiid species which are known only from the type-locality. Data indicate that the Brazilian fauna is the most studied in the Neotropical Region, confirm the greatest richness of gall midges on plant families which are well represented in Brazil, reveal the most diverse genera in the country, show the peculiarities of each domain and highlight how the geographic distribution of most species is still poor.

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## Conflicts of Interest

The author declares that she has no conflict of interest related to the publication of this manuscript.

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