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A NEW SPECIES OF GALL MIDGE (DIPTERA, CECIDOMYIIDAE) ASSOCIATED WITH *SEBASTIANIA GLANDULOSA* (EUPHORBIACEAE) [1]

(With 14 figures)

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ABSTRACT: *Clinodiplosis conica* sp.nov., a new cecidomyiid that induces conical bud galls on *Sebastiania glandulosa* (Mart.) Pax (Euphorbiaceae) is described (larva, pupa, adults male and female) based on material from restinga areas of the State of Rio de Janeiro (Brazil).

Key words: Diptera. Cecidomyiidae. *Clinodiplosis conica* sp.nov. Gall. Taxonomy.

RESUMO: Uma nova espécie de mosquito galhador (Diptera, Cecidomyiidae) associado com *Sebastiania glandulosa* (Euphorbiaceae).

Clinodiplosis conica sp.nov., um novo cecidomiídeo que induz galhas cônicas nas gemas de *Sebastiania glandulosa* (Mart.) Pax (Euphorbiaceae) é descrito (larva, pupa, adultos macho e fêmea) com base em material coletado em áreas de restinga do Estado do Rio de Janeiro (Brasil).

Palavras-chave: Diptera. Cecidomyiidae. *Clinodiplosis conica* sp.nov. Galha. Taxonomia.

INTRODUCTION

Three kinds of insect galls have been recorded on *Sebastiania glandulosa* (Mart.) Pax (Euphorbiaceae): conical bud gall, spherical bud gall, and marginal leaf roll (Figs.35-37, respectively, in MAIA, 2001). All of them are induced by not determined species of gall midges (Diptera, Cecidomyiidae). In this paper, the inducer of conical bud gall is identified and described based on material from the restinga areas of the State of Rio de Janeiro.

MATERIAL AND METHODS

Part of the examined specimens was previously incorporated into the Diptera collection of Museu Nacional, Rio de Janeiro (MNRJ) by V.C.Maia as voucher material of previous ecological investigations. As few specimens were deposited, field works were done in order to obtain more material.

Samples of conical galls on *Sebastiania glandulosa* were collected in June and July 2000, August 2002, and July 2003 at the restinga of Barra de Maricá (Maricá, Rio de Janeiro). The samples were carried to the laboratory in plastic bags, where they were transfered to plastic pots in order to obtain adults and pupal exuviae. These pots were checked daily. The material obtained were first preserved in 70% ethanol and then mounted on slides following the methodology of GAGNÉ (1994). All specimens (including the types) are deposited in the Diptera collection of Museu Nacional, Rio de Janeiro (MNRJ). Terminology for adult and immature morphology follows GAGNÉ (1994).

Clinodiplosis conica sp.nov.
(Figs.1-14)

Diagnosis – Spatula with two divergent anterior teeth; prothoracic spiracle digitiform and long (larva); abdominal segments 2-7 with dorsal spines restricted at basal 1/3 and integument sculptured beyond midlength; abdominal segments 8 and 9 without spines (pupa); tarsal claws simple, curved beyond midlength, empodium rudimentary; female tergites 1-7 rectangular with a row of caudal and mesal setae (adult).

DESCRIPTION

Adult - Body length: 2.0-2.3mm (n=4). Head (Fig.1): Eye facets circular, closely approximated.

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Antenna with hemispherical and setose scape, globose and setose pedicel, binodal and tricircumfilar male flagellomeres (circumfila with loops regular in length) (Fig.2), bare necks in both sexes; female with cylindrical and mesally constricted flagellomeres, female circumfila as two interconnected rings (Fig.3). Flagellomere 12 with a setulose apical process in both sexes. Frontoclypeus with 10 setae (n=4). Labrum long-attenuate with three pairs of ventral sensory setae. Hypopharynx of the same shape as labrum, with long, anteriorly directed lateral setulae. Labellae elongate-convex, each with several lateral setae and a pair of short mesal sensory setae. Palpus with four setose crescent cylindrical segments.

Thorax. Anepimeron with 5-10 setae (n=3), other pleural sclerites asetose. Wing (Fig.4) length: 1.75-1.9mm (n=4). Tarsal claws simple, curved beyond midlength; empodium not reaching to the bend of the claw (Fig.5).

Abdomen. ♂ (Fig.6): tergites 1-7 rectangular with a complete row of caudal setae, several lateral setae, two basal trichoid sensilla and elsewhere with scattered scales. Tergite 8 not sclerotized, with two trichoid sensilla. Sternites 2-7 rectangular with setae more abundant mesally, a complete row of caudal setae, several lateral setae and two basal trichoid sensilla; sternite 8 rectangular with a complete row of caudal setae, scattered mesal setae, lateral setae and two basal trichoid sensilla. Female (Fig.7) – tergites 1-7 rectangular with a complete row of caudal setae, a row of mesal setae, lateral setae, two basal trichoid sensilla and elsewhere with scattered scales; tergite 8 not sclerotized with a pair of trichoid sensilla. Sternites 2-7 rectangular with setae more abundant mesally, a complete row of caudal setae and two basal trichoid sensilla. Sternite 8 not sclerotized and with a pair of trichoid sensilla.

♂ terminalia (Fig.8). Gonocoxites wide with a setose mesobasal lobe, gonostylus slightly curve, with 0.78 gonostylus long; cerci secondarily lobed and setose; hypoproct elongate, deeply bilobed (lobes narrow) and longer than cerci; aedeagus long-attenuate, rounded at apex and longer than hypoproct.

Ovipositor (Fig.9). Barely protrusible, cerci elongate ovoid, separate and setose (a pair of apical setae stronger than the others); hypoproct sligthly bilobed and setose. Length from distal margin of sternite 7 to end: 0.42-0.45mm.

Pupa. Color: brownish. Length: 2.2-2.4mm (n=3). Head (Fig.10): antennal horn triangular, simple, short (length: 0.01mm; n=3); cephalic seta 0.04-0.05mm long (n=3); two pairs of setose lower facial papillae: one pair with a seta 0.01mm long (n=3) and the other asetose; three pairs of lateral facial papillae (one pair setose and the others asetose). Upper cephalic margin thickened laterally. Thorax: prothoracic spiracle digitiform and well developed (length: 0.18-0.19mm, n=2) (Fig.11); wing sheath reaching 1/2 of abdominal segment 3; foreleg sheath ending at midlength of abdominal segment 5; midleg sheat ending at 2/3 of abdominal segment 5; hindleg sheath ending at distal 1/3 of abdominal segment 5. Abdomen: segments 2-7 with well developed dorsal spines at basal 1/3, dorsal papillae at midlength and striae near distal 1/3 (Fig.12); segments 8 and 9 without spines.

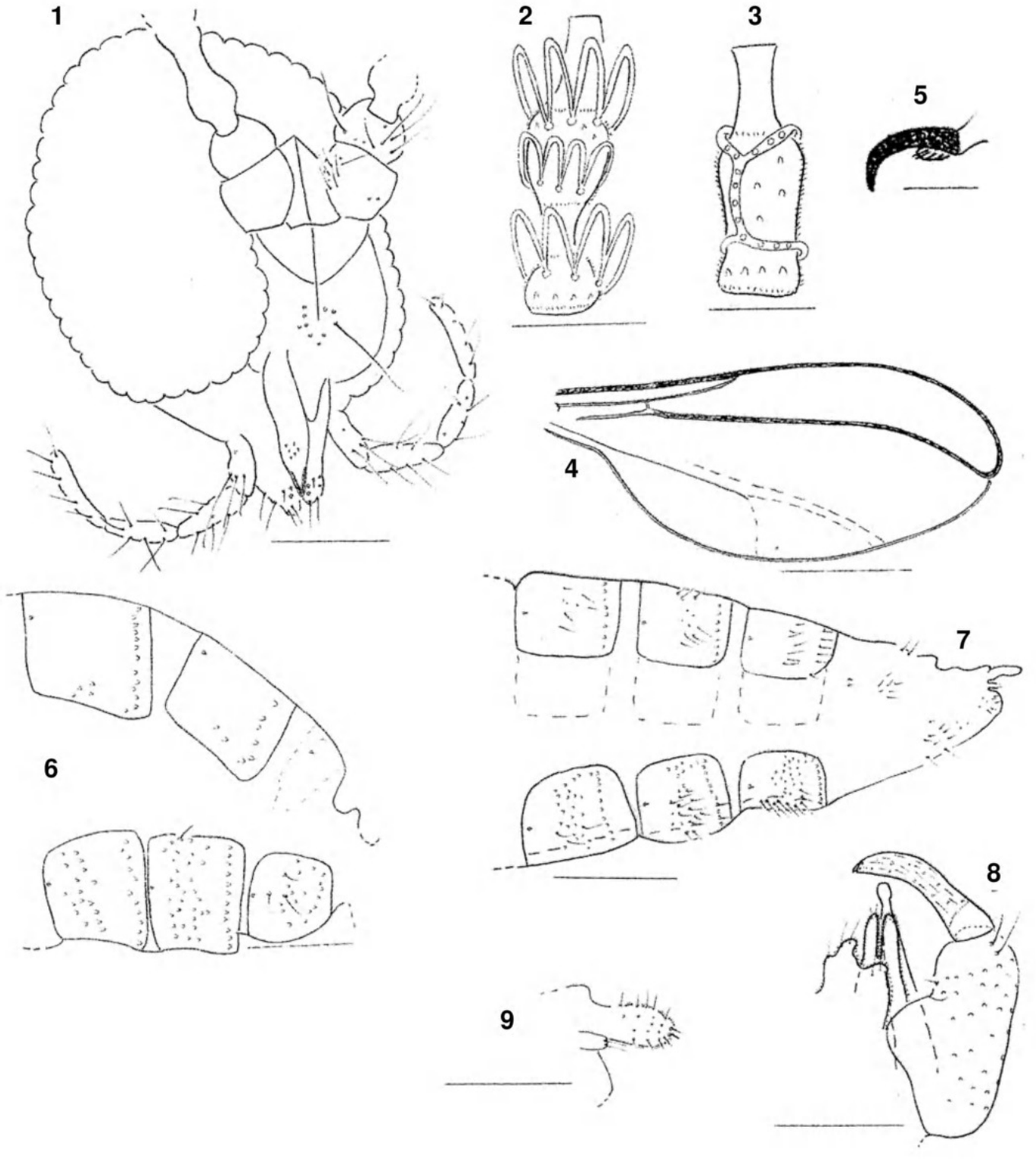
Larva. Body cylindrical and tapered at both ends. Color: yellow. Length: 2.1-2.7mm (n=4). Integument rough. Spatula with two divergent anterior teeth and stalk long (Fig.13). Sternal papillae asetose.Two groups of three lateral papillae on each side of spatula. Ventral papillae asetose, terminal segment with three pairs of corniform papillae (a pair shorter than the others) and a pair of setose papillae (setae 0.025-0.03mm long, n=4) (Fig.14).

Gall (Fig.35 in Maia, 2001). Conical bud gall, reddish or green, one-chambered.

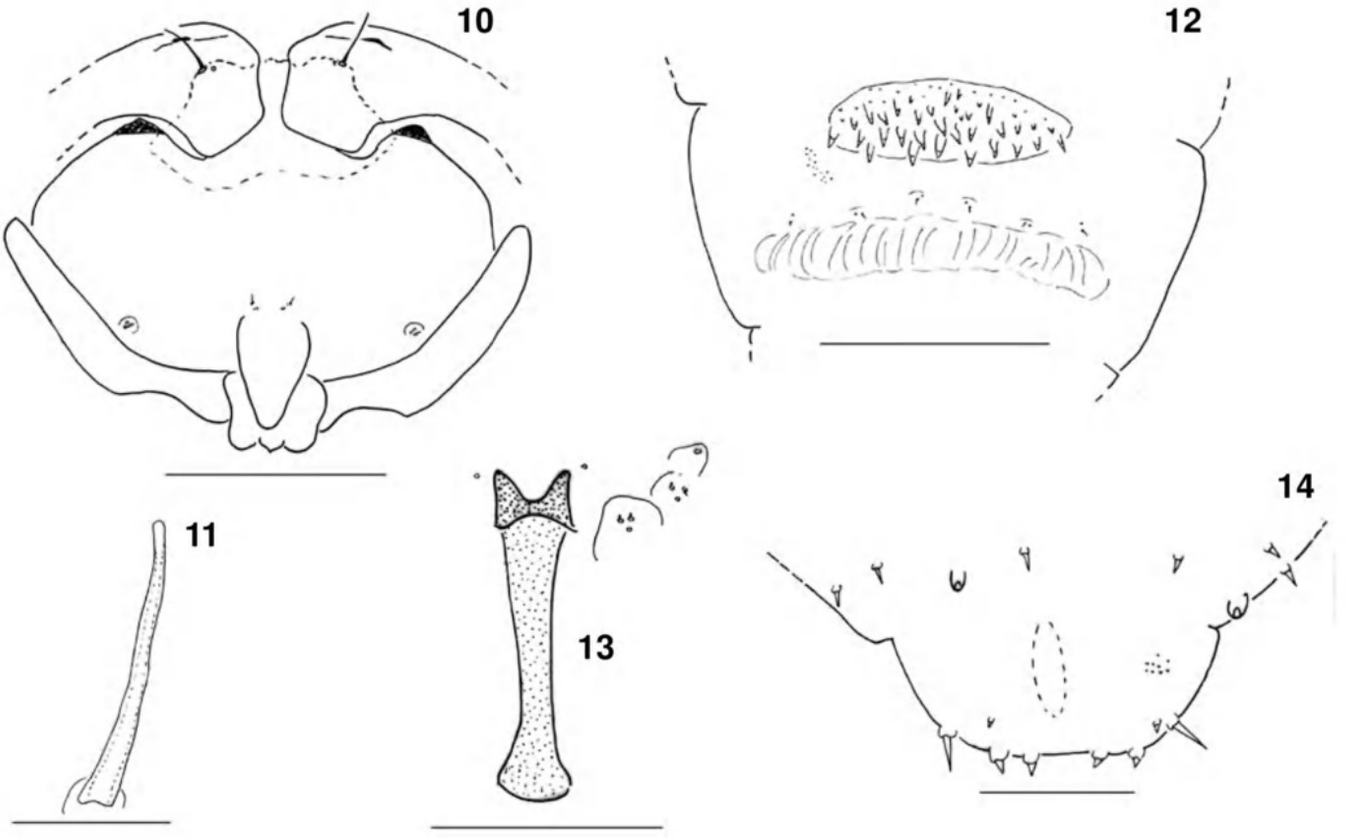
Type-material – BRAZIL, RIO DE JANEIRO: Maricá (Restinga da Barra de Maricá), 13/VIII/2002, V.Maia leg., Holotype ♂. Paratypes: same data – 1♂; same locality and collector – 11/VII/2003, 2 larvae; 18/VII/2003, 2 pupal exuviae and 1♀; 11/III/2005, 2♀. MNRJ.

Other material – BRAZIL, RIO DE JANEIRO: Maricá (Restinga da Barra de Maricá), 12/VI/2001, Maia and Azevedo colls, 2 pupae and 1 pupal exuvia; 18/VII/2003, Costa and Maia colls, 1♂ and 1 pupal exuvia. Carapebus, 29/VI/1998, V.Maia leg., 2 pupal exuviae; same locality and collector, 29/VI/1998, 2 pupal exuviae; 24/VII/1998, 1♀; 26/IX/1998, 1 larva; 28/XI/1998, 1 pupal exuvia. MNRJ.

Etymology – The name *conica* refers to the shape of the gall.



Clinodiplosis conica sp.nov.– fig.1- ♂, head (frontal); fig.2- ♂, antennal flagellomere 5; fig.3- ♀, antennal flagellomere 5; fig.4- ♂, wing; fig.5- ♂, foreleg, tarsal claw and empodium (lateral); fig.6- ♂, abdominal segment 6 to 8 (dorsolateral); fig.7- ♀, abdominal segment 5 to end (dorsolateral); fig.8- ♂, terminalia (lateral); fig.9- ♀, cerci and hypoproct (lateral). Scale bars: 1=0.16mm; 2-3=0.05mm; 4=0.5mm; 5=0.3mm; 6,8-9=0.1mm; 7=0.45mm.



Pupa of *Clinodiplosis conica* sp.nov.– fig.10- head (frontal); fig.11- prothoracic spiracle; fig.12- abdominal segment 7 (dorsal); fig.13- larva, spatula prothoracic and associated papillae (ventral); fig.14- abdominal segments 8 and 9 (dorsal). Scale bars: 10,12=0.2mm; 11,13-14=0.1mm.

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