Vestnik zoologii, **46**(2): 131–136, 2012

UDC 595.77(81)

A NEW SPECIES OF BACCHAROMYIA (DIPTERA, CECIDOMYIIDAE) FROM *BACCHARIS PSEUDOMIRYOCEPHALA* (ASTERACEAE) IN BRAZIL

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Received 8 July 2011
Accepted 10 November 2011

A New Species of *Baccharomyia* (Diptera, Cecidomyiidae) from *Baccharis pseudomiryocephala* (Asteraceae) in Brazil. Maia V. C., Carneiro M. A. A. — *Baccharomyia magna* Maia, sp. n., a gall midge (Lasiopteridi) that induces galls on *Baccharis pseudomiryocephala* (Asteraceae) is described and illustrated based on material from Minas Gerais, Brazil. A key to species is presented.

Key words: Diptera, Cecidomyiidae, Alycaulini, gall midge, Neotropical, new species, *Baccharis.*

Новый вид *Baccharomyia* (Diptera, Cecidomyiidae) с *Baccharis pseudomiryocephala* (Asteraceae) из Бразилии. Майя В. С., Карнейро М. А. А. — На основании материала из Минос Жерайс, Бразилия описана галлица *Baccharomyia magna* Maia, sp. n. (Lasiopteridi), вызывающая образование галлов на *Baccharis pseudomiryocephala* (Asteraceae). Представлены таблицы для определения видов.

Ключевые слова: Diptera, Cecidomyiidae, Alycaulini, галлицы, неотропика, новый вид, *Baccharis.*

Introduction

Baccharis pseudomyriocephala Teodoro (Asteraceae) is a dioecious shrub widespread in Brazil and elsewhere in South America. A survey for galls on plants in Itacolomi State Park (20°22'30"S, 43°32'30"W), Ouro Preto, Minas Gerais, Brazil, was done in 1999–2000 during which eight distinct galls were found on *B. pseudomyriocephala* (Araújo et al., 2003), all formed by Cecidomyiidae that have not previously been identified further. One of the galls is an elliptical, woody stem swelling. Its inducer is described here as a new species of *Baccharomyia*, a Neotropical alycauline genus previously known from four other species, three from Argentina and one from Brazil, all stem gall inducers on other *Baccharis* spp. (Gagné, 2004). The gall of the new species (fig. 24) is multivoltine and was abundant in Itacolomi State Park, although we succeeded in rearing only a short series of adults from the galls brought back to the laboratory.

Baccharomyia species are distinctive for their short palpus, the enlarged antennal pedicel, the widened regions of the flagellomeres subtending the circumfila, the anteriorly produced antennal base and presence of frontal projections of the pupa, and the foreshortened larval spatula (Gagné, 1994). The new species particularly differs from the other four known species of *Baccharomyia* in that the female cerci are not fused together. It is unusual for congeners to differ in that way. *Alycaulus*, itself, the type genus of the Alycaulini, the tribe to which *Baccharomyia* belongs, has one species with free cerci and another with fused cerci (Gagné, 1994). The male of the new species is notable in having dorsal, lateral and ventral cylindrical lobes on all abdominal segments (fig. 12). These lobes are present in both available specimens on the first through seventh segments; the eighth segment bears lobes only laterally. The lobes vary in length, the dorsal lobes longer than the lateral and ventral ones. They are more numerous on abdominal segments 1–7, where there are two lateral lobes at the anterior margin (not visible on the first segment) and four dorsal and one ventral lobe at the posterior margin. The eighth segment has only two lateral lobes, both laterally placed at midlength of the segment. It is not possible at this time to say whether these lobes, unique to this cecidomyiid, are a regular feature of the new species or are teratological.

Material and methods

Stem galls on *Baccharis pseudomyriocephala* were collected from September, 1999 to August, 2000 in Itacolomi State Park (20°22'30"S, 43°32'30"W), in Ouro Preto, Minas Gerais, Brazil. Samples of the galls were transported in plastic bags to the laboratory. Some galls were dissected under a stereoscopic microscope to remove larvae for further study. Adults and their pupal exuvia were obtained by keeping some samples at environmental temperature in glass jars with moist cotton and checking daily for adult emergence. All specimens were preserved in 70% alcohol and later mounted on slides following the methodology of Gagné (1994). The studied material, including the type series, is incorporated in the Diptera collection of Museu Nacional (MNRJ), Rio de Janeiro, Brazil. Terminology of the adults follows McAlpine (1981) and that of the immature stages follows Gagné (1989). The description of the new species and the key to species were done by V. C. Maia, and the field and laboratory work was done by M. A. A. Carneiro.

Baccharomyia magna Maia, **sp. n.** (fig. 1–22)

Material examined. Type. Holotype ♂: Brazil, Minas Gerais, Parque Estadual do Itacolomi, 30.08.2000, Carneiro, M. A. A. leg. (MNRJ). Paratypes 1 ♂, 1 ♀, same data as in the holotype (MNRJ), 5 pupal exuviae; same locality and collector: 14.10.1999, 1 pupal exuvia; 25.02.2000,1 pupal exuvia; 02.05.2000, 2 pupal exuvia; 22.05.2000, 1 pupal exuvium; 30.05.2000, 1 female and 0606.2000, 1 larva, all obtained from stem galls on *Baccharis pseudomiryocephala* (Asteraceae) (MNRJ).

Description. Adult. Body length: male: 4.6–6.5 mm (n = 2); female: 5.6–7.7 mm (n = 2) (ovipositor completely protrusible).

Head (fig. 1). Eye with facets circular, nearly contiguous except at vertex. Male antenna (in holotype): scape obconic, pedicel globose and wider than flagellomeres; 16 flagellomeres without necks; flagellomere 1 with a single circumfilum (fig. 2), flagellomeres 2, 4–11, 13–16 with two (fig. 3), flagellomeres 3 and 12 with three ring like circumfila; flagellomeres 2–15 distinctly widened below circumfila (fig. 3), flagellomere 16 not widened below circumfila (fig. 4). Other male specimen with 20 flagellomeres, all bicircumfilar, last flagelomere not widened below circumfila. Female antennae: scape and pedicel as in male, 22 flagellomeres, all widened below circumfila; flagellomeres 1–21 bicircumfilar (fig. 5), flagellomere 22 tricircumfilar (fig. 6). Frontoclypeus with about 10–15 long setae. Labrum triangular, with three pairs of ventral sensory setae. Hypopharynx with anteriorly directed lateral setulae. Labella subtriangular, each with lateral setae and two short mesal setae. Palpus 0.10–0.13 mm long (n = 3), setose with one cylindrical or claviform segment (fig. 7) or two segments, the first spheroid and the second claviform (fig. 8).

Thorax. Anepisternum with setae, other pleural sclerites bare. Wing length (from arculus to apex): male, 2.6 mm (n = 2); female (fig. 9), 2.70–2.85 mm (n = 2); R5 straight, about 2/3 wing length, joining C before wing apex; Rs absent; M3 present; CuA forked. Legs: tarsal claws robust, simple on all legs, and bent beyond midlength; empodia well developed, longer than bend in tarsal claws (fig. 10–11), pulvilli less than 1/3 length of claws.

Abdomen. Male: segments 1–7 with lobes (fig. 12); tergites 1–7 rectangular, with caudal row of setae, some lateral setae, two anterior trichoid sensilla and elsewhere with scattered scales; tergite 8 less sclerotized than preceding sclerites, with caudal row of setae, some lateral setae, two anterior trichoid sensilla and elsewhere with scattered scales (fig. 13); sternites 2–7 rectangular, longer than wide, with caudal row of setae, some lateral setae, many middle setae, two anterior trichoid sensilla and elsewhere with scattered scales; sternite 8 rectangular, with caudal row of setae, some lateral setae, few middle setae, two anterior trichoid sensilla and elsewhere with scattered scales (fig. 14); terminalia (fig. 15, 16): gonocoxites stout, parallel, 2.2 times as long as wide; mediobasal lobes relatively short; gonostyli relatively short, 0.6 as long as gonocoxite, 2.8 times as long as wide, entirely setulose; hypoproct simple, shorter than cerci; aedeagus with rounded apex, shorter than hypoproct and cerci. Female (fig. 17–19): abdominal lobes absent; tergites 1–7 otherwise as in male; tergite 8 not divided longitudinally, much narrower than tergite 7, caudal and lateral setae and two anterior trichoid sensilla; sternites 2–7 as in male; sternite

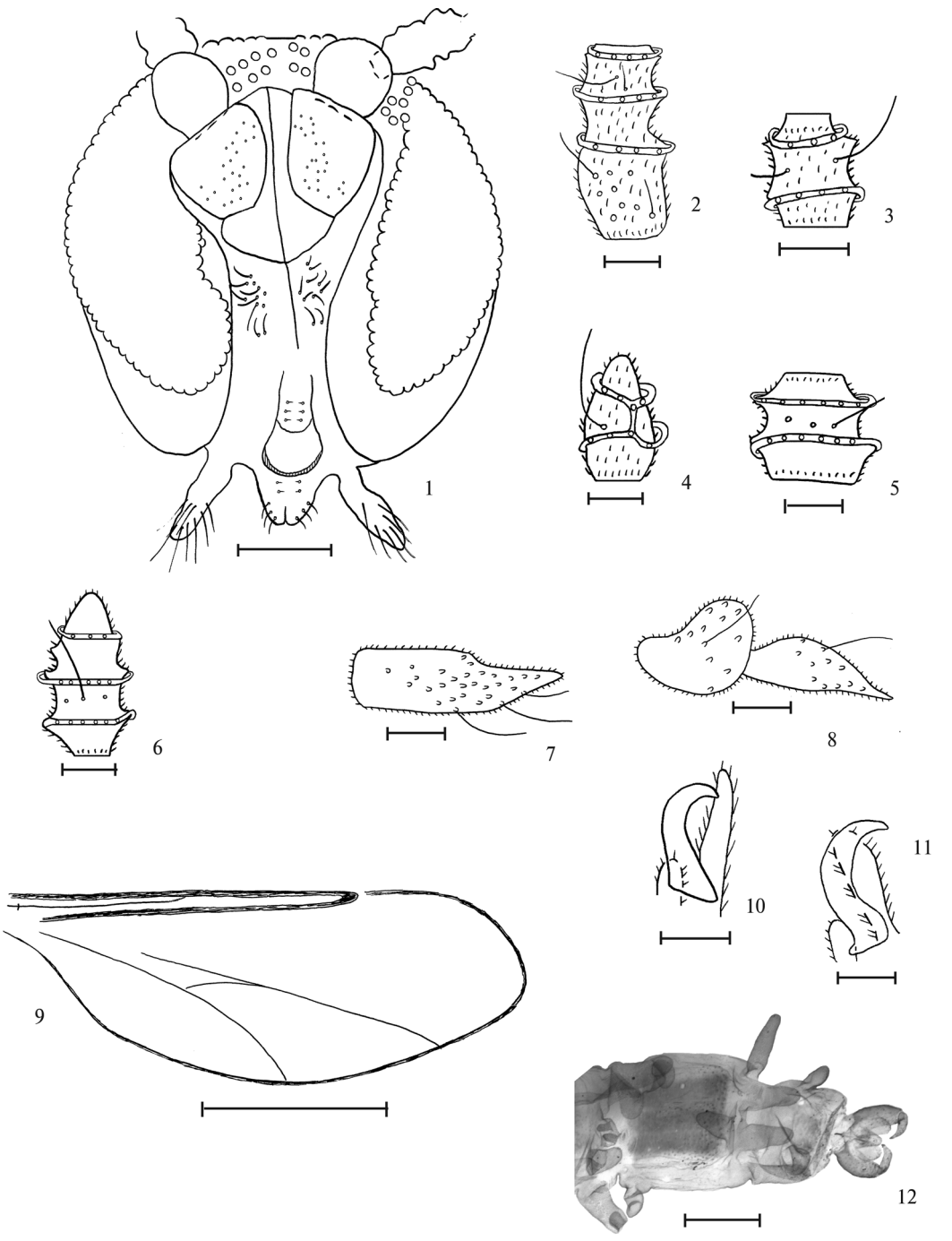

Fig. 1—12. *Baccharomyia magna* (1−11): 1 — female, head, frontal view; 2 — male flagellomeres 1 and 2; 3 — male flagellomere 7; 4 — last male flagellomere; 5 — female flagellomere 7; 6 — last female flagellomere 22; 7 — female, one-segmented palpus; 8 — female, two-segmented palpus; 9 — female, wing; 10 — male, foreleg, tarsal claw and empodium; 11 — female, foreleg apodemes; 12 — *Baccharomyia magna*, male last segments and terminalia, dorsal view. Scale bars: 1 — 0.10 mm; 2−8, 10, 11 — 0.03 mm; 9 — 1.00 mm; 12 — 0.30 mm.

Рис. 1−12. *Baccharomyia magna* (1−11): 1 — самка, голова, вид спереди; 2 — флагелломеры самца 1 и 2; 3 — фагелломер самца 7; 4 — последний флагелломер самца; 5 — флагелломеры самки 7; 6 — последний флагелломер самки 22; 7 — самка, односегментный щупик; 8 — самка, двусегментный щупик; 9 — самка, крыло; 10 — самец, передние ноги, коготок лапки и эмподиум; 11 — самка, аподемы передней ноги; 12 — *Baccharomyia magna*, последние сегменты самца и терминалии, вид сверху. Масштабные линейки: 1 — 0,10 мм; 2−8, 10, 11 — 0,03 мм; 9 — 1,00 мм; 12 — 0,30 мм.

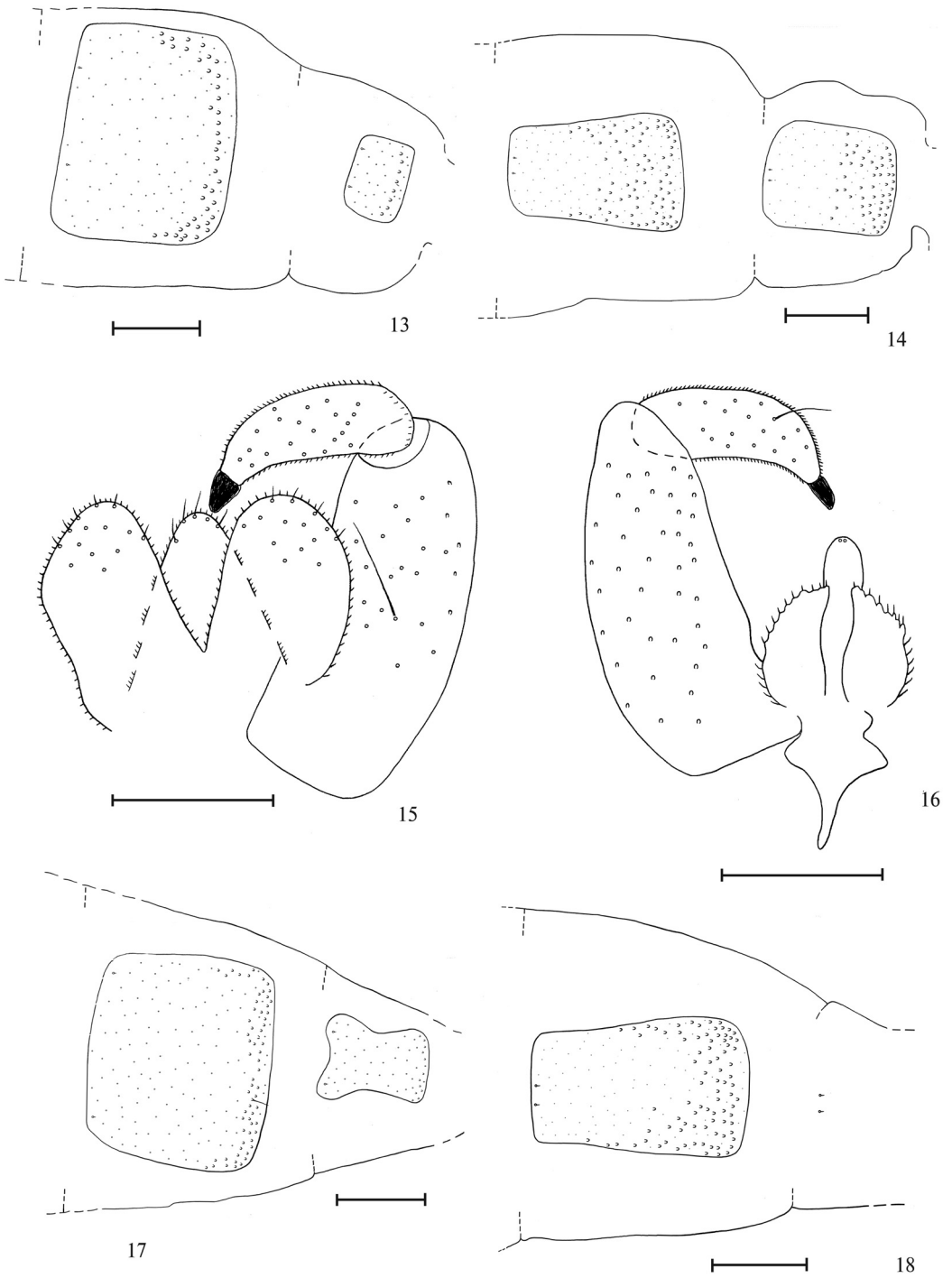

Fig. 13–18. *Baccharomyia magna*: 13 — male abdominal segments 7–8, dorsal (abdominal lobes not drawn); 14 — male abdominal segments 7–8, ventral (abdominal lobes not drawn); 15 — male terminalia, dorsal; 16 — male terminalia, ventral; 17 — female abdominal segments 7–8, dorsal; 18 — female abdominal segments 7–8, ventral. Scale bars: 13, 14, 17, 18 — 0.20 mm; 15, 16 — 0.10 mm.

Рис. 13–18. *Baccharomyia magna*: 13 — брюшные сегменты самца 7–8, дорсально (брюшные лопасти не изображены); 14 — брюшные сегменты самца 7–8, вентрально (брюшные лопасти не изображены); 15 — терминалии самца, дорсально; 16 — терминалии самца, вентрально; 17 — брюшные сегменты самки 7–8, дорсально; 18 — брюшные сегменты самки 7–8, вентрально. Масштабные линейки: 13, 14, 17, 18 — 0,20 мм; 15, 16 — 0,10 мм.

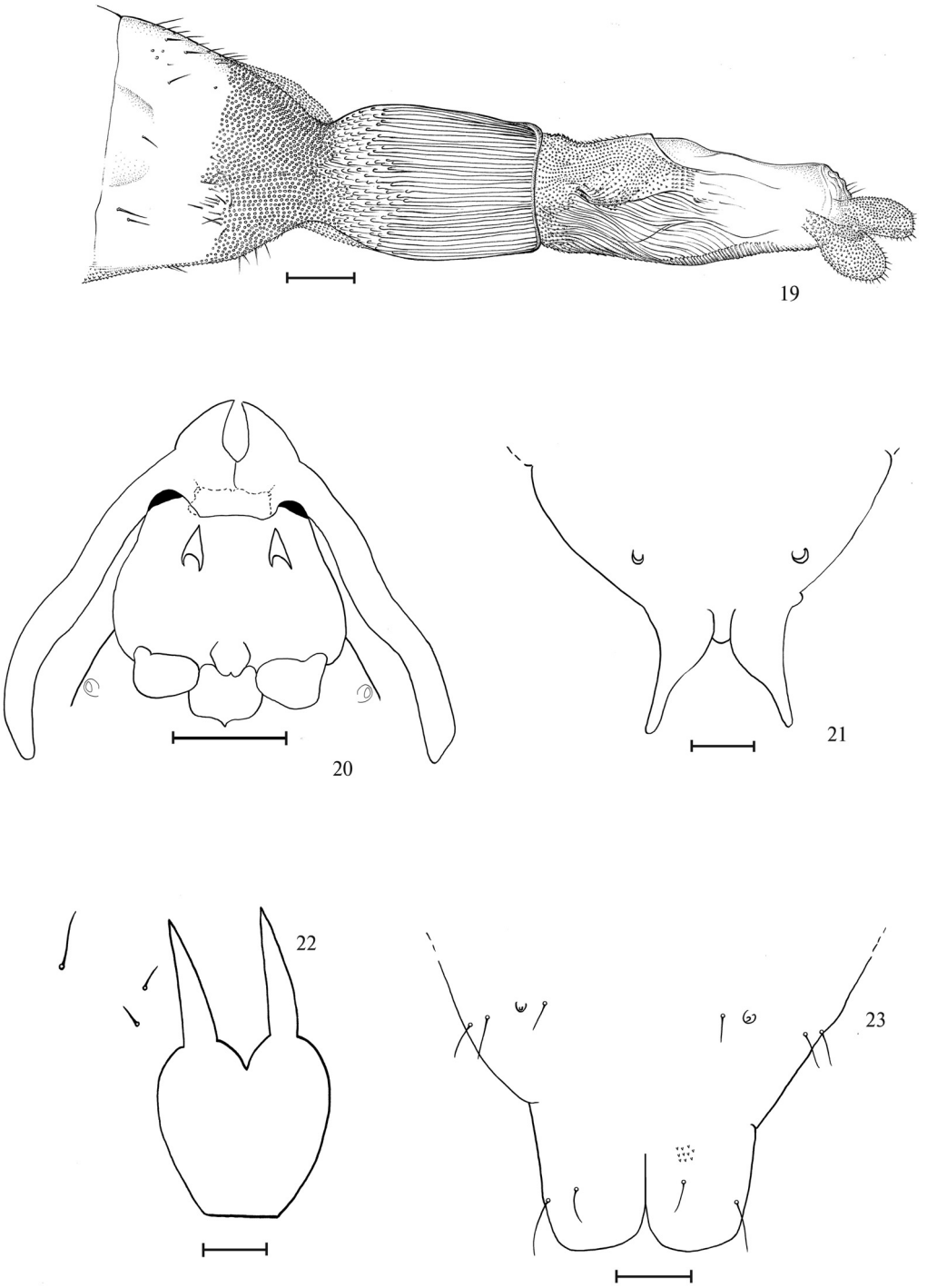

Fig. 19–23. *Baccharomyia magna*: 19 — ovipositor, dorsal; 20 — pupal head, frontal and prothoracic spiracle; 21 — pupal terminal segment, dorsal; 22 — larva, prothoracic spatula, lateral and ventral papillae, ventral view; 23 — larva, terminal segment, dorsal view. Scale bars: 19, 23 — 0.10 mm; 20 — 20 mm; 21 — 0.50 mm; 22 — 0.25 mm.

Рис. 19–23. *Baccharomyia magna*: 19 — овипозитор, дорсально; 20 — голова куколка, фронтальное и переднегрудное дыхальце; 21 — терминальный сегмент куколки, дорсально; 22 — проторакальная лопатка личинки, латеральные и вентральные папиллы, вид снизу; 23 — личинка, терминальный сегмент, вид сверху. Масштабные линейки: 19, 23 — 0,10 мм; 20 — 20 мм; 21 — 0,50 мм; 22 — 0,25 мм.

Fig. 24. *Baccharomyia magna*: gall induced by *Baccharomyia magna*, general aspect.

Рис. 24. *Baccharomyia magna*: галл, индуцированный *Baccharomyia magna*, общий вид.

8 not sclerotized, with only two anterior trichoid sensilla as vestiture; ovipositor long-protrusible; cerci separate and setose (fig. 19).

Pupa. Body length: 4.2–6.0 mm (n = 5). Head (fig. 20): antennal base produced anteriorly, medial margin concave; cephalic seta short; facial papillae absent; one pair of frontal horns present. Prothoracic spiracle reduced (fig. 20). Abdominal tergites 2–8 without spines. Terminal segment bilobed in all specimens (fig. 21).

Larva. Body length: 5.2 mm (n = 1). Spatula (fig. 22): with two elongate apical teeth about as long as reduced shaft. Lateral papillae only two per side of midline of thoracic segments. Terminal segment bilobed, with pair of setose terminal papillae of similar length on each (fig. 23).

Gall (fig. 24). Length 1.0–1.5 cm, elliptical, glabrous, green, one-chambered, with one larva in each chamber. Pupation occurs in the gall.

Etymology. The name *magna* refers to the large body size of the new species.

Remarks. *Baccharomyia magna* differs from all other congeners by its separate female cerci and the undivided eighth female tergite. Other distinctive features that should serve to separate the new species from the four previously described species are the particular shape of the antennal base and the frontal horns of the pupa and the presence of only four papillae on the terminal segment of the larva.

Key to species of *Baccharomyia*

Таблица для определения видов рода *Baccharomyia*

B. cordobensis (Kieffer, Jörgensen, 1910) was not included because it is known from larva only.

1. Female cerci separate, female tergite 8 not divided longitudinally. ..... *Baccharomyia magna* Maia, sp. n.
– Female cerci fused, female tergite 8 divided longitudinally. 2
2. Palpus two-segmented. ..... *Baccharomyia ramosina* Tavares, 1917
– Palpus three-segmented. 3
3. Male antennae with 10 flagellomeres, female antennae with 13 or 14 flagellomeres. ..... *Baccharomyia ornatis* (Kieffer, Jörgensen, 1910)
– Male antennae with 12 flagellomeres, female antennae with 15 to 17 flagellomeres. ..... *Baccharomyia interrupta* (Kieffer, Jörgensen, 1910)

We thank CNPq (Conselho Nacional de Desenvolvimento Científico e Tecnológico, Proc. 472084/2007–0) for financial support and Raymond J. Gagné (United State Department of Agriculture, USA) for his critical review.

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