NOTE AND COMMENTS

GALLS IN RHIZOME OF AN AQUATIC MACROPHYTE, *Eichhornia azurea* (Swartz) KUNTH (PONTEDERIACEAE), IN JATAÍ ECOLOGICAL STATION, LUIZ ANTÔNIO, SP, BRAZIL

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(With 12 figures)

There are several reports of galls in plants of most environments throughout the world (Felt, 1994; Mani, 1964; Gagné, 1989, 1994; Fernandes *et al*., 1988, 1997b). On the other hand, few authors have reported gall in aquatic macrophytes (Gagné, 1989; Fernandes & Lara, 1997a).

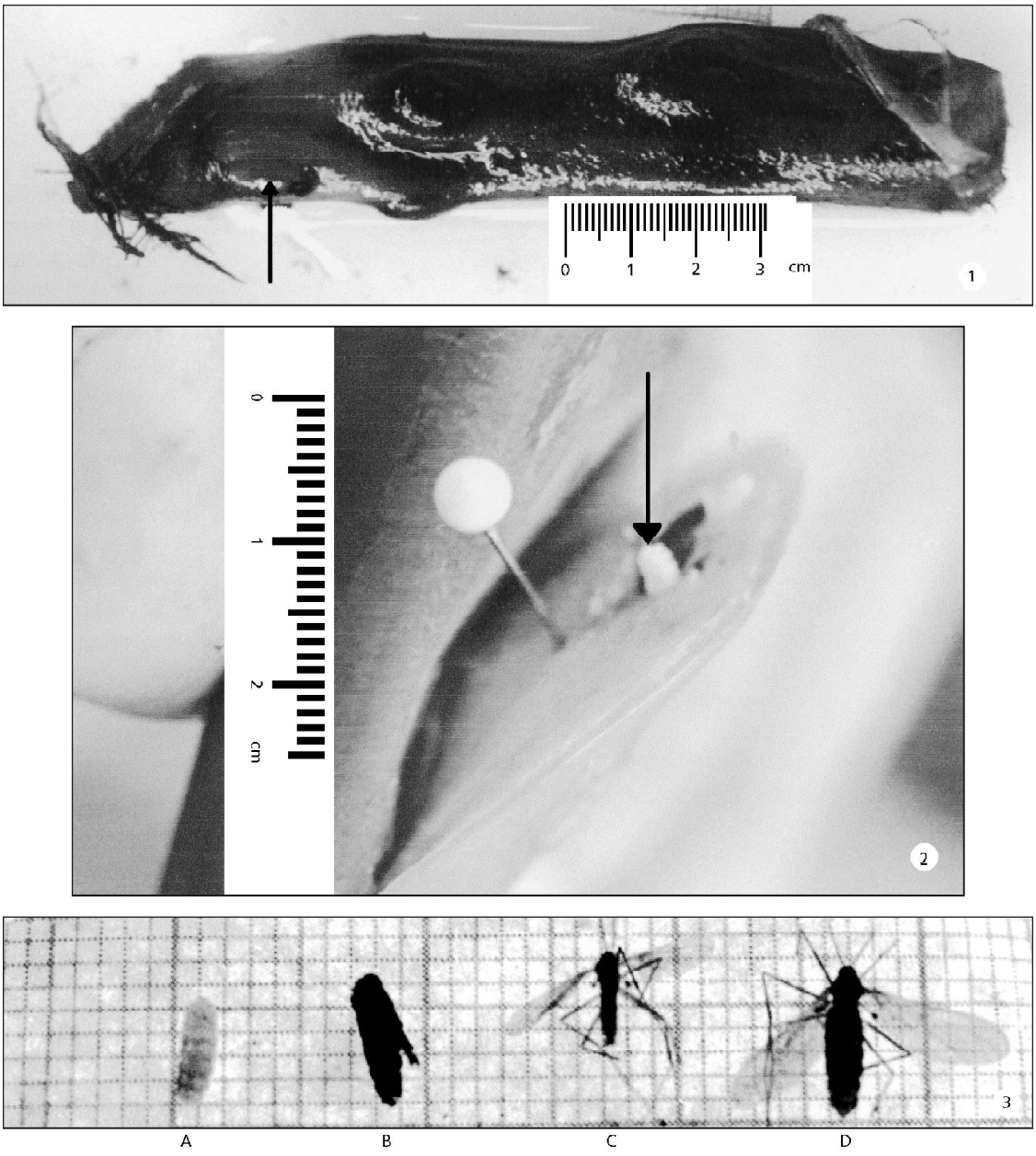
Aquatic macrophytes are an important biotope for many invertebrates, mainly insects. During all or part of their life cycles, a significant number of these insects use macrophytes as habitats for reproduction, for protection against predators, and as food resources (Trivinho-Strixino *et al*., 2000; Stripari & Henry, 2002). *Eichhornia azurea* (Sw.) Kunth (Pontederiaceae), a common macrophyte in floodplain lakes, rivers, and natural or artificial lakes, is largely distributed on the American continent, from south of the United States to Argentina (Pereira da Silva & Segadas-Vianna, 1971). In this note we describe the first gall found in rhizomes of *E. azurea*.

Diogo Lake is situated in Jataí Ecological Station (Luiz Antônio district), in the Mogi-Guaçu River, northeastern São Paulo State. The river presents a sinuous surface in its middle section, associated with numerous typical horseshoe lagoons connected or disconnected from its main channel. Diogo Lake measures 0.69 km^2, 1.35 m in depth, and is permanently linked to the river channel. *E. azurea* is the dominant macrophyte in this lake and in some periods can totally cover the water surface. Most of the year the rhizomes of this plant are submerged, but during the dry season when the water level decreases, the rhizomes of *E. azurea* begin to appear.

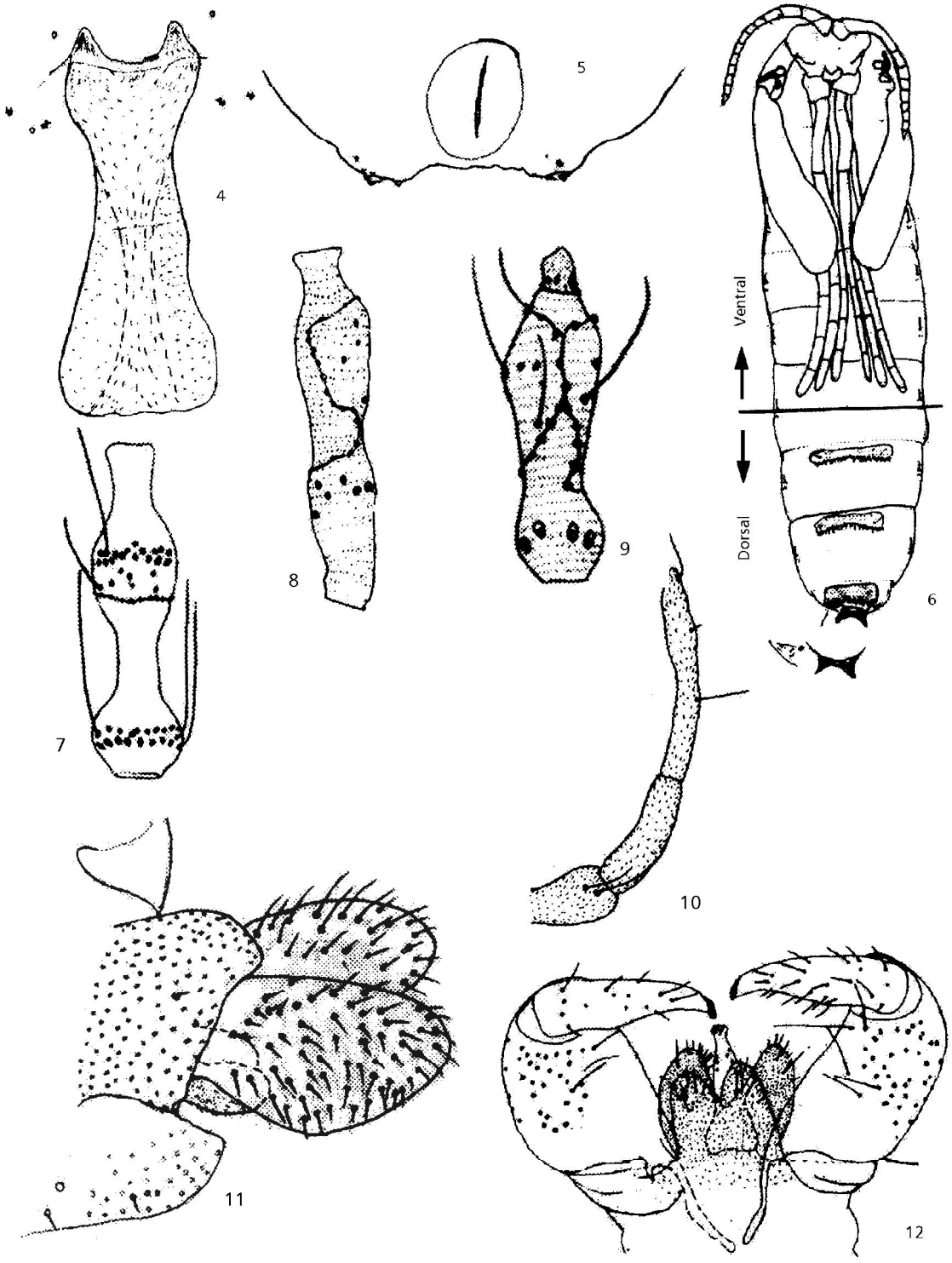
The galls found in the rhizomes of *E. azurea* are induced by a new species of cecidomyiid (Cecidomyiidae: Diptera) illustrated in this paper. Oviposition and larval development cause enlargement of the infected area in the rhizome and a small change of natural color (Fig. 1). The gall maker belongs to a new species of the Lopesiini tribe of Cecidomyiinae subfamily whose identity will be soon determined. Although its life cycle has not been yet totally determined, it is known that oviposition in the rhizome occurs in the dry period (June to September). Fig. 2 shows an opened gall with larva inside. The larva (a), pupa (b), male (c), and female (d) of the new species of Cecidomyiinae is shown in Fig. 3.

Remarkable characters of larva in this new species are: enlarged and long spatula with two strong teeth; thoracic segments with six lateral papillae in three groups: inner group with two setose papillae, one asetose papillae in the middle, and two setose and one asetose papillae in the outer group on each side of spatula (Fig. 4); three stubby papillae on each side of midline in the terminal segment; anus on the ventral side (Fig. 5). In pupa, the main features are a short antennal horn; absence of upper and lower frontal horns; presence of a sclerotized zone with strong spines in the distal margin of tergites; and a sclerotized projection in the terminal segment (Fig. 6). The adult characters of taxonomic value are the antenna with twelve flagellomeres, binodal with three loops of circumfila, the loops having different lengths in males (Fig. 7) and being cylindrical with circumfila

appressed in females (Fig. 8); the apical flagellomere in males and females has a budlike extension (Fig. 9); two-segmented palpi (Fig. 10), absence of first tarsomere spur, tarsal claw simple, bent near base, and longer than empodia; entire abdominal tergites in males and females, ovipositor with separated cerci and hypoproct as in Fig. 11; male terminalia (Fig. 12): gonocoxite larger than longer; gonostyle positioned in the apical portion of gonocoxite, enlarged in proximal portion tapering to apex, apex with entire tooth; hypoproct bilobed; aedeagus longer than hypoproct.



Figs. 1-3 — Fig. 1 — General aspect of gall. **Fig. 2 —** Opened gall with larva inside. **Fig. 3 —** Larva (a), pupa (b), male (c), and female (d).



Figs. 4-12 — Fig. 4 — Spatula and associated papillae of larva (ventral). **Fig. 5 —** Terminal segment of larva (ventral). **Fig. 6 —** Pupa. **Fig. 7 —** Male third antennal flagellomere. **Fig. 8 —** Female third antennal flagellomere. **Fig. 9 —** Apical flagellomere of males and females. **Fig. 10 —** Palpus. **Fig. 11 —** Female postabdomen. **Fig. 12 —** Male genitalia.

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