

INTRODUCTION

Nests of euglossine bees are rarely found. The nest structure is only known for about 15% of the species (Dressler, 1982).

Here I describe the nest structure of an Amazonian *Euglossa* sp. The species is undescribed, but closely related to *E. charapensis* (Dressler, pers. comm.). A description of the species has to await a collection of males. Bee voucher specimens (JMO #314) are deposited at Dressler, R. L., Florida State Museum, and at The Natural History Museum, Aarhus, DK. Plant specimens (#62340, JMO #137) are deposited at The Herbarium Jutlandicum, Aarhus, DK.

Study Area

The observations were made in the tropical lowland rainforest, 2 km S of añangu at Rio Napo, Yasuní National Park, Ecuador (00°32'S, 76°26'W) about 300 m a.s.l. during April 1986. The nest site was located on a ridge in the non-flooded terra firme forest. The daily temperature fluctuates between 21°C and 28°C, and the air is almost saturated with humidity. The site was described in detail in Balslev *et al.* (1987).

Generally the bee fauna in the area is very poorly known. Besides the undescribed *Euglossa* sp. of this study I observed bees belonging to the *Eulaema bombiformis* complex (Dressler, 1979; Janzen, 1983). During three days males were observed performing their special display behaviour at two young trees (15 cm dbh) both in the terra firme and in the varzea forest. At the tree in the varzea, up to three males were observed at a time. They flew towards the trunk, where they moved up and down. Suddenly they landed on the surface of the trunk, curved their body, lifted the wings above the thorax, grabbed hold of the bark with their mandibles and made a high buzz. This behaviour has been described in detail (Dressler, 1982; Janzen, 1983). They often flew towards me when I approached, hovering for a few seconds in the air 30-40 cm in front of my face. A female was observed twice at a small pond in the forest collecting mud. A colony of *Bombus transversalis* (Olivier) was located (Olesen, in press). Males of *E. ignita* were seen several times at inflorescences on the understory palm, *Geonoma macrostachys* Mart. Species of *Xylocopa* and *Centris* and several minor bee species, e.g. *Trigona*, were observed too.

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RESULTS AND DISCUSSION

A euglossine nest was found inside an old fruit caught in the understory vegetation about 30 cm above ground level. It is unknown whether the fruit had dropped from the tree before or after the nest was established. The fruit belonged to *Theobroma subincanum* Mart. (Sterculiaceae) (Figs. 1, 2), an understory tree about 8 m in height and about 15 cm in dbh. The outer fruit wall was intact.

When the fruit was opened two female euglossines were seen walking around on the cells, a third one escaped, and a dead headless one was found in the nest also.

Description of female: Total length 12.5 mm; head width 4.8 mm; abdominal width 5.3 mm. **Colour:** Paraocular white markings lacking; without white marks on antennal scapes; front of clypeus green with dark carina; paraocular area blue-green; frons blue-green; episternum shiny blue; scutum blue; scutellum blue; abdomen bronze above, green and dark ventrally; hind tibia blue. **Vestiture:** Hairs of thorax dark; white and dark hairs on clypeus; hairs of vertex long and dark; white hairs on abdomen becoming longer posteriorly. **Punctuation:** Coarse and shallow on clypeus; coarse, dense and deep on episternum; on scutum, dense and of varying size; on scutellum, dense and becoming coarser posteriorly; on tergum 2, very small punctuation. Tongue about 11 mm long; mandibles tridentate; labrum wider than long with prominent median keel and shorter lateral keels; clypeus protuberant, with prominent median and lateral keels; scutellum about half as long as wide, posterior margin nearly straight medially.

The dimensions of the fruit were about 9 cm x 5 cm x 4 cm. The fruit was without any of its original content. Its wall was about 1 mm thick. An entrance hole with a diameter of 5.5 mm was found 8-9 mm from the apex of the fruit (Figs. 1a, 2). The entrance pointed downwards and was on its inner side lined with a 3 mm high wall of resin. The fruit was not lined with resin. A twig and a few pieces of leaves were built into the cells. The cell cluster was made of dark resins and had the dimensions 5.0 cm x 4.5 cm x 3.5 cm (Figs. 1a, 2).

Twenty-four old cells and 13 sealed ones were arranged irregularly in three stories in the colony (Figs. 1a, 2), but the long axes of most cells were more or less vertical. Three of the closed brood cells were empty, seven contained a larva and three a pupa. The dimensions of the cells were 15 mm x 15 mm x 11 mm. The walls were shared more or less jointly by neighbouring cells.

On the day after the nest had been removed one bee was observed at 10.15h, and later two bees were observed at 10.48h flying around exactly at the position in the air where the fruit had hung. One of them was caught. So totally the nest contained 3-4 living females and a dead one, probably the foundress.

The species was observed collecting pollen from shrubs of *Bixa orellana* L. (Fig. 1c) along the banks of Rio Napo together with many other bee species.

The Euglossini are the most primitive group of apine bees, and like virtually all other bees they are solitary or parasocial. Although many euglossines are solitary, parasociality is well-known in some species (Sakagami *et al.*, 1967). The species studied here

with more than one female in the same nest may thus be regarded as parasocial.

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SUMMARY

A nest of an undescribed species of *Euglossa* was found inside a fruit of *Theobroma subincanum* (Sterculiaceae) in the Amazonian rainforest, Ecuador. It contained 3-4 living females and one dead and 37 cells in all. Total length of bee 12.5mm; frons blue-green; thorax blue; abdomen bronze above, green and dark ventrally; and hind tibia blue. Tongue about 11 mm long.

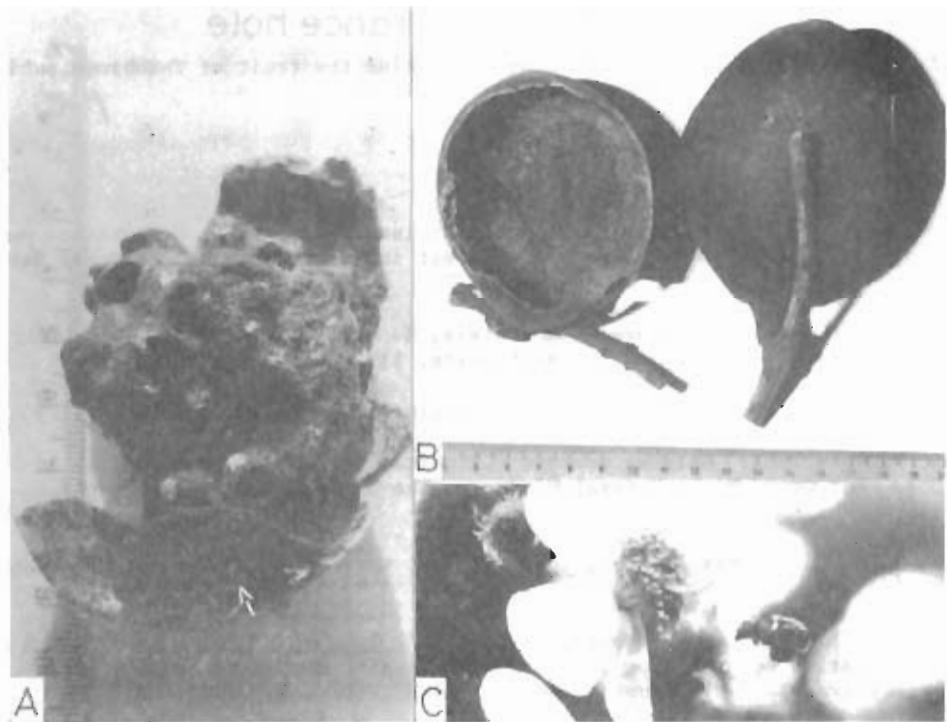


Fig. 1. **A.** Nest of *Euglossa* sp. n. inside a fruit of *Theobroma subincanum*. The arrow indicates the entrance hole. (The white threads on the cells are remains from cotton wool used for transportation). **B.** Two old empty fruits of *Theobroma subincanum* collected from a tree. **C.** A female of the *Euglossa* sp. n. gathering pollen from *Bixa orellana* close to Rio Napo.

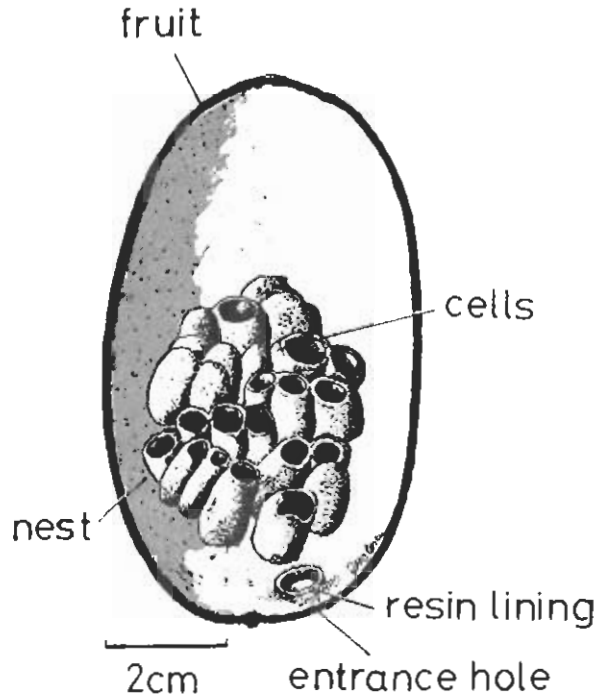


Fig. 2. Brood cells of the *Euglossa* sp. n. inside the fruit of *Theobroma subincanum*.

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