SCIENTIFIC NOTE

Notes on Adults of *Euglossa townsendi* Cockerell (Apidae: Euglossini) Reared from a Trap Nest

RUI C. PERUQUETTI[1]

[1]Departamento de Biologia Geral, Universidade Federal de Viçosa, 36571-000, Viçosa, MG.

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Notas sobre Adultos de *Euglossa townsendi* Cockerell (Apidae: Euglossini) Nascidos em Cativeiro

RESUMO - A partir de um ninho fundado em ninho armadilha e mantido em gaiola de observação em laboratório, estudou-se parâmetros biológicos de *Euglossa townsendi* Cockerell . A razão sexual foi 3 fêmeas: 1 macho; a longevidade foi de 18,0 dias para as fêmeas e 12,6 dias para os machos e o tempo de desenvolvimento foi de 29,3 dias para as fêmeas e de 31,7 dias para machos.

PALAVRAS-CHAVE: Insecta, hábito de nidificação, ninho, comportamento, razão sexual.

The genus *Euglossa* is, within the Euglossini, the largest in number of species. Kimsey & Dressler (1986) list 96 species of this genus, and new species are been discovered constantly. In spite of this, only 20 species of *Euglossa* had their nests described (Garófalo 1994), and even less is known about sex ratio and longevity of euglossine bees (see review by Peruquetti & Campos 1997). Notes on longevity and sex ratio of *Euglossa townsendi* Cockerell are given, as well as some brief observations on these bees in captivity.

Several trap nests (bamboo cane, 20.0 cm long x 1.5 cm in diameter, open at one end) were attached to a building in the Apiário Central of the Universidade Federal de Viçosa (20º45' S, 42º51' W). One nest of *E. townsendi* was obtained. In December 29, 1996 the nest was aprovisioned. After the nest construction in January 13, 1997, the female abandoned it. The nest was taken to the laboratory and put within an observation cage (30 x 30 x 30 cm), until the emergence of adults. The food for emerged bees was a 3:1 honey/water solution, which was dispensed in an open dish filled with cotton, left on the floor of the cage. All bees were individually marked the 1st day of emergency.

There were 12 cells in the nest obtained and all of them produced adult bees. The sex ratio (calculated as # females/total) was 0.75 (Table 1). The sex ratio is highly variable among euglossine bees for which emergence of adults has been observed in nests (Ackerman & Montalvo 1985, Young 1985, Garófalo1992, Garófalo *et al*. 1993, Peruquetti & Campos 1997). Males of Euglossini are used as indicators for ecological, conservational or survey purposes. Since males are collected through the use of aromatic lures, it is important to know what the

Table 1. Sex, emergence date, longevity and estimated development of males and females of *Euglossa townsendi* in captivity. The nest was being aprovisioned on December 29, 1996, and carried to the laboratory on January 13, 1997.

Sex	Emergence Date (dd-mm-yy)	Survival (days)	Estimated Development (days)
Female	17/01/97	28	20
Male	21/01/97	16	24
Female	21/01/97	17	24
Female	21/01/97	20	24
Female	22/01/97	14	25
Female	26/01/97	21	27
Female	29/01/97	1	30
Male	01/02/97	7	31
Female	01/02/97	23	31
Female	08/02/97	14	38
Male	10/02/97	15	40
Female	15/02/97	24	45

census numbers really mean relative to the entire population. Additionally, the factors that affect the differential production of males and females in these bees are poorly known.

Females tended to live longer than males (Table 2). Longer female longevities have been found by others authors (Ackerman & Montalvo 1985, Peruquetti & Campos 1997). Developmental time estimated (Table 2) for males and females was also not statistically significant.

There was no clear order in the sequence of emergence of males vs. females of *E. townsendi* from the nest. Although the cells were arranged in a linear sequence, they did not occupy all the interior cavity of the nest, as occurs, for example, in *Eufriesea violacea* Blanchard. In the latter species, and others of the genus, the nests are built inside cavities and cells are arranged in a linear sequence, and males emerge from the last cells in the sequence, before females (Garófalo *et al*. 1993, Peruquetti & Campos 1997).

Table 2. Mean (± SD) longevities of adult male and female of *Euglossa townsendi* emerged in captivity.

Sex	n	Mean Longevity (days)[1]	Mean Estimated Development Time (days)[2]
Females	9	18,0±7,9	29,3±7,8
Males	3	12,6±4,9	31,7±8,0

[1]Difference not statistically significant (t = -1.377; P = 0.219).
[2]Difference not statistically significant (t = 0.439; P = 0.687).

The nest entrance was constructed by the female of *E. townsendi*. It consisted of a wall of resin with a reduced hole through which

the female could barely pass. This hole was closed while the female was inside the nest, building cells at night, as it occurs in some other species of this genus with described nesting habits (Garófalo *et al*. 1992, Otero 1996). The nest initiated by one female. In the observation cage, days after emergence, some bees were seen within the nest removing resin from the old cells. This behavior observed in *E. townsendi*, suggests that in nature the old nest may be reused by offspring. However, the observation cage must have influenced the behavior of *E. townsendi*, and the bees were not allowed to leave to the field (what prevent the control of bees longevity). This behavior was not possible to confirmed.

Cineole and methyl cinnamate are both strong attractants for males of *E. townsendi* in the study area (Peruquetti, unpublished data). But in captivity males of this species never collected these aromatic substances. This behavior also was observed in *E. violacea* born in observation cages (Peruquetti & Campos 1997). Clearly, males of *E. townsendi* may survive without access to aromatic compounds, confirming the remarks made by Ackerman & Montalvo (1985) and Peruquetti & Campos (1997). In mark-recapture studies, Ackerman & Montalvo (1985), found that longevity of euglossine males in nature, where aromatic compounds are easily accessible, is similar to males kept in captivity in the conditions above mentioned.

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