

## SYSTEMATICS, MORPHOLOGY AND PHYSIOLOGY

*Euglossa anodorhynchi* sp. n. (Hymenoptera: Apidae), a New Orchid Bee from Southern Brazil

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*Neotropical Entomology* 35(2):206-209 (2006)

*Euglossa anodorhynchi* sp. n. (Hymenoptera: Apidae), uma Nova Espécie de Euglossina do Sul do Brasil

RESUMO - *Euglossa anodorhynchi* sp. n. (Hymenoptera: Apidae) é descrita da região de Joinville, Santa Catarina, Sul do Brasil.

PALAVRAS-CHAVE: Insecta, Apini, Euglossina, taxonomia

ABSTRACT - *Euglossa anodorhynchi* sp. n. (Hymenoptera: Apidae) is described from Joinville, Santa Catarina, southern Brazil.

KEY WORDS: Insecta, Apini, Euglossina, euglossine, new species, taxonomy

*Euglossa* Latreille (Hymenoptera: Apidae: Apini: Euglossina) is the largest genus of Euglossina, including more than a hundred species (Ramirez *et al.* 2002, Bembé 2004). It comprises medium-sized bees (from 8 to 20 mm), showing predominantly metallic colors, generally green, red, and blue. Several new species were described after the 1970's, when the aromatic compounds that attract males of these bees (Dodson *et al.* 1969) became commonly available to researchers. Nevertheless, new species are still being described (e. g. Roubik 2004).

The Atlantic Rain Forest domain has been sampled for orchid bees in the last decades (works prior to 1999 reviewed by Peruquetti *et al.* 1999; see also Bezerra & Martins 2001; Tonhasca *et al.* 2002; Nemésio 2003, 2004; Nemésio & Silveira 2004). However, with the exception of the work by Wittmann *et al.* (1988), virtually no study of the orchid bee fauna of southern Brazil has been carried out. Both in studies conducted in the Atlantic Forest (see Peruquetti *et al.* 1999, for instance) and in southern Brazil (Wittmann *et al.* 1988), unidentified *Euglossa* species are listed. It may be a consequence of the uneasy task of identifying some specimens to specific level and, also, of the existence of yet undescribed species among them. After examining all the identification keys available (e. g. Dressler 1982 a, b, c; Nates-Parra & Bonilla-Gómez 1991; Rebêlo & Garófalo 1995; Roubik & Hanson 2004), and after comparison with several *Euglossa* species identified by other experts and deposited at the entomological collections of Universidade Federal de Minas Gerais and Universidade Federal de Viçosa, a species from southern Brazil remained without specific identification. This bee was also compared to several

*Euglossa* species interchanged with Dr. Robert Dressler (University of Florida Herbarium), Dr. David Roubik (Smithsonian Institution), and Dr. Benjamim Bembé (Zoologische Staatssammlung München).

In this paper this unidentified species of *Euglossa*, from southern Brazil, is described as new.

### Material and Methods

The studied specimens belong to the Entomological Collection of the Taxonomic Collections of the Universidade Federal de Minas Gerais (UFMG). Two paratypes were donated to other Brazilian collections. The holotype (male) and one paratype (female) will be deposited at UFMG. Acronyms of the depository institutions are as follows: UFMG (Universidade Federal de Minas Gerais, Brazil); UFPR (Universidade Federal do Paraná, Brazil); UFV (Universidade Federal de Viçosa, Brazil). Terga and sterna are referred to as T1, T2, T3, etc, and S1, S2, S3, etc.

### *Euglossa anodorhynchi* Nemésio sp. n.

Fig. 1

**Diagnosis.** This species can be readily distinguished from other *Euglossa* species by a combination of the following characters: integumentary color, shape and color of the hind tibia, shape of the mid tibial tufts.

### Male

**Color and vestiture** (Plate 1, upper left). Uniformly blue; clypeus violet. Wings pale brown. Pubescence very sparse,



Fig. 1. Upper left: overall view of the scutellum and metasoma; upper right: frontal view of the head; bottom left: velvet area and tufts of the mid tibia; bottom right: hind tibia (All pictures of the holotype *E. anodorhynchi* sp. n.).

black and fulvous hairs evenly distributed on thorax; only fulvous hairs in the posterior part of the scutellum, on abdomen, antennal sockets, scape and on ventral side of metasoma. Ivory paraocular markings well developed, reaching the malar area; forward side of antennal scape with white stripe occupying two thirds of its length.

**Head** (Plate 1, upper right). Width 4.6 mm; inferior and superior interorbital distance 2.1 mm; maximum interorbital distance 3.0 mm; scape 0.9 mm; eye length 3.0 mm

**Body.** Body length ca. 10 mm; anterior wing ca. 8.5 mm; tongue in repose reaching S7; scutellum 2.6 mm wide and 1.2 mm long; abdominal width 4.4 mm

**Legs** (Plate 1, bottom pictures). Foretibia and forebasitarsus fringed with long, dense, fulvous and black hairs; velvet area occupying all the ventral side of mid tibia, posterior mid-tibial tuft small, oblong; anterior mid-tibial tuft with two lobes, forming an angle of about 90°, upper lobe much larger and wider, lower lobe paler than upper lobe; hind tibia oblong-rhomboid, inflated, post-glandular area fringed with medium-sized hairs (0.47 mm).

**Abdomen.** Punctuation on basal part of T1 sparse, with large, elongated punctures; on distal part of T1 and T2-T4 dense, compound by small and rounded punctures; on T5-T7 dense, with large, elongated punctures. T5 with non-punctate longitudinal stripe. S2 with small, widely separated tufts.

**Etymology.** The specific epithet refers to the parrot genus *Anodorhynchus* Spix (Aves: Psittaciformes), which comprises the largest of all psittacines, *A. hyacinthinus* (Latham), besides *A. leari* Bonaparte, and *A. glaucus* (Vieillot) – this latter species formerly endemic to Southern Brazil, as *Euglossa anodorhynchi* sp. n., and now extinct (Sick 1997). All the three species of *Anodorhynchus* are entirely blue-colored macaws, as *Euglossa anodorhynchi* sp. n. The complete ivory paraocular markings of *E. anodorhynchi* sp. n. resemble the yellow naked areas around the beak and eyes of all *Anodorhynchus* species.

**Female.** Similar to male, but front of clypeus greenish; scutellar tuft about one third of scutellar length.

**Type locality.** Joinville, Santa Catarina state, southern Brazil

**Type material.** Holotype: male, with the following data: “10372-30262” and “Joinville, SC, Brasil, 17/06/1989, A. A. Soares” (UFMG). Paratypes: “10372-30263” and “Joinville, SC, Brasil, 17/06/1989, A. A. Soares”, one female (UFMG); idem, “10372-30264”, one male (UFV); idem, “10372-30265”, one male (UFPR)

### Discussion

Dressler (1982c) characterized orchid bees of the *Euglossa cordata* L. group as having the anterior mid-tibial tuft deeply notched, with subequal lobes, or the lower lobe larger, and the hind tibia rhomboid, but less strongly inflated than is usual in the *Euglossa purpurea* group. Dressler did not characterize this latter group. For exclusion, *E. amazonica* Dressler, *E. gibbosa* Dressler, *E. magnipes* Dressler, *E. mourei* Dressler, and *E. pleosticta* Dressler must be considered the “*E. purpurea* group” in his paper (Dressler 1982c). *Euglossa anodorhynchi* sp. n. shows strong affinities with this latter group, and due to its subtriangular, not deeply notched anterior mid-tibial tufts and hind tibia oblong-rhomboid, inflated, it is here included in *E. purpurea* group (subgenus *Euglossa*).

This species is morphologically very similar to *Euglossa pleosticta* Dressler, from which it can be readily distinguished for its overall blue coloration. *E. pleosticta* has much more inflated, golden (almost red in some specimens) hind tibia; the hairs on post-glandular fringe of hind tibia of *E. pleosticta* shorter than those of *E. anodorhynchi* sp. n. There are two other bluish *Euglossa* that may occur sympatrically with *E. anodorhynchi* sp. n.: *Euglossa mandibularis* Friese and *Euglossa melanotricha* Moure. *E. mandibularis* belongs to subgenus *Euglossella* Moure. Besides the subgeneric diagnostic characters (as tridentate mandibles in the males), *E. mandibularis* can be readily distinguished from *E. anodorhynchi* sp. n. because it is larger, its head is entirely green with shorter paraocular ivory markings, its thorax and abdomen are deeper blue (almost purple in some specimens), its anterior mid-tibial tufts are larger, with a single lobe. *E. melanotricha*, on the other hand, is greenish-

blue overall, has an entirely black scape, green head, and the anterior mid-tibial tuft has a deeper emargination and is not subtriangular (see Rebêlo & Moure 1995: 456). Although the types of both *E. mandibularis* and *E. melanotricha* were not compared to the specimens of *E. anodorhynchi*, due to the specific characters of the former species mentioned above, there is no doubt that the latter one is a distinct taxon.

### Acknowledgments

To Frederico M. Queiroz for the photographs and to Fernando A. Silveira for comments on an earlier version of this manuscript. Eduardo A. B. Almeida discussed some details on Latin in order to achieve the best spelling of the specific epithet.

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Received 28/VII/05. Accepted 11/IX/05.

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