

**FIRST RECORD OF *Exaerete lepeletieri* OLIVEIRA & NEMÉSIO  
(Hymenoptera: Apidae: Euglossina) IN VENEZUELA AND COMMENTS ON  
THE DISTRIBUTION OF *Eufriesea laniventris* (DUCKE) IN THE AMAZON**

*PRIMEIRO REGISTRO DE Exaerete lepeletieri OLIVEIRA & NEMÉSIO  
(Hymenoptera: Apidae: Euglossina) NA VENEZUELA E COMENTÁRIOS SOBRE A  
DISTRIBUIÇÃO DE Eufriesea laniventris (DUCKE) NA AMAZÔNIA*

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**ABSTRACT:** *Exaerete lepeletieri* Oliveira & Nemésio, 2003 (Hymenoptera: Apidae: Euglossina), a cleptoparasitic bee recently described from the Brazilian Amazon, is here recorded for the first time outside Brazil, through a specimen collected in Mérida Province, Venezuela. On the other hand, *Eufriesea laniventris* (Ducke, 1902) was recently reported to be collected for the first time in the state of Amazonas but this species had already been recorded in the literature for this state almost two decades before. This older record is here reported, as well as a discussion on the role of geographic “first records” or “range extensions” of organisms.

**KEYWORDS:** Bee. Distribuição geográfica. Hymenoptera. Insecta. Orchid bee.

*Exaerete Hoffmannsegg* (Hymenoptera: Apidae: Euglossina) is a genus of cleptoparasitic orchid bees which deposit their eggs in nests of other orchid bees, namely species of the genera *Eufriesea* Cockerell and *Eulaema* Lepelletier (MOURE, 1964; KIMSEY, 1979; ROUBIK; HANSON, 2004; NEMÉSIO; SILVEIRA, 2006).

*Exaerete lepeletieri* Oliveira e Nemésio, 2003 (Hymenoptera: Apidae: Euglossina) was recently described from the Brazilian Amazon (OLIVEIRA; NEMÉSIO, 2003) and has been considered to be closely related to both *E. frontalis* (Guérin-Méneville) and *E. smaragdina* (Guérin-Méneville) (OLIVEIRA, NEMÉSIO, 2003; NEMÉSIO, 2009a). The identification of this species has been somewhat troublesome, because some authors are unable to recognize it from both species mentioned above (see discussion in NEMÉSIO, 2009: 194–196). Although disputed, the status of this taxon as a valid species has been maintained by most authors (e.g. LE GOFF, 2006; MELO, 2006; DIAS, 2007; MOURE et al. 2007; NEMÉSIO, 2009; STORCK-TONON et al. 2009; OLIVEIRA et al. 2010). The known distributional range of this species includes the Brazilian states of Acre (OLIVEIRA; NEMÉSIO 2003; STORCK-TONON et al. 2009), Amapá (MELO, 2006), Amazonas (OLIVEIRA; NEMÉSIO, 2003; DIAS, 2007), Pará (LE GOFF, 2006), Rondônia (OLIVEIRA; NEMÉSIO, 2003), and Roraima (OLIVEIRA; NEMÉSIO, 2003; OLIVEIRA et al. 2010). Until recently only males of this species were known, but LE GOFF (2006) described and

illustrated a female collected in 1998 in Óbidos, state of Pará, Brazil.

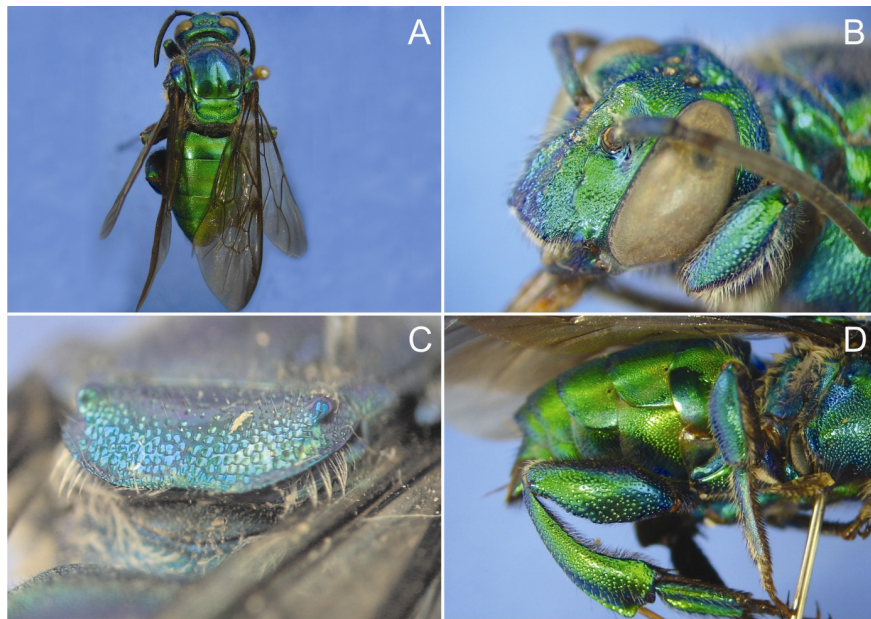
In this paper is reported the first record of female specimen of *Exaerete lepeletieri* outside Brazil. This specimen was collected in 1992 by C. Michalski in the Province of Mérida, Venezuela, and it is currently deposited at the American Museum of Natural History (New York, USA). The female can be readily identified as *E. lepeletieri* by the small tubercle on the frons, and a very slight median tubercle on the scutellum (Figure 1). This record extends the known geographic distribution of this species in ca. 1,000 Km northwestern from the closest site where this species was collected, Serra do Tapirapecó, northern portion of the state of Amazonas, Brazil (DIAS, 2007).

The full label data of the specimen are as follows: “Venezuela: Merida Prv. 10.4 Km N W Barinitas; 8.5 Km NE of rd to Altamira 797 m 25.III.92 C. Michalski” and “*Ex. frontalis* ♀, Det. A. H. Smith-Pardo” and “*Ex. lepeletieri* ♀ Oliveira & Nemésio, A. Nemésio det., 2009”.

Female *Exaerete lepeletieri* can be readily distinguished from *Ex. frontalis* due to the absence of a tubercle on the frons (in some specimens there is a small protuberance, but much smaller than the large tubercle of *Ex. frontalis*), presence of a median longitudinal tubercle on the scutellum (it is absent in *Ex. frontalis*), and scutellum with a straight posterior margin. Besides the above mentioned characters, in males the seventh tergum presents a longitudinal non-punctate stripe, and the seventh sternum is very different in shape (trilobed as in *frontalis*, but the median lobe smaller than the two

lateral lobes and the setae on the median lobe much longer than those of the rest of the apical margin of

the sternum) (see illustrations and detailed comments in NEMÉSIO, 2009a).



**Figure 1.** Female *Exaerete lepeletieri* Oliveira & Nemésio collected in Merida, Venezuela. A. Dorsal view. B. Lateral view of face. C. Posterior view of scutellum. D. Lateral view of metasoma and hind leg.

***Eufriesea laniventris* (Ducke, 1902) record**

Exact geographic distributions of organisms are an important issue in biology, especially those concerning the least known species, since they provide useful knowledge for the conservation of the species themselves and their habitats. Thus, geographic “first records” or “range extensions” of many animal species (*e.g.* FEIO et al. 2003; VASCONCELOS, 2005; SANTOS; VASCONCELOS, 2007; LOPES et al. 2010) are rapidly published and call attention of those dealing with ecology and conservation of each particular species. Alternatively, first records or range extensions can also indicate the dispersion of potentially invasive species, which theoretically may represent a threat to the new environment itself or to the native species living on this environment. As orchid bees (Hymenoptera: Apidae: Euglossina) are mostly forest-dependent insects (see Dressler 1982) with a suggested role as bioindicators (*e.g.* TONHASCA Jr. et al. 2002; NEMÉSIO; SILVEIRA, 2006a), first records or range extensions have been recently reported for some rare species (*e.g.* MORATO, 2001; NEMÉSIO; SILVEIRA, 2004, 2006b; NEMÉSIO 2009a, b, 2011) and even for potentially invasive species (*e.g.* SKOV; WILEY, 2005; PEMBERTON; WHEELER, 2006). But what constitutes (or should constitute) a proper geographic “first record”?

A first record of a particular organism in a given area should, theoretically and obviously, represent the first reported finding of such organism in that locality. This finding may come from direct collection (or any other accepted kind of documentation – such as photographs, sound records, etc) or even from unnoticed (or misidentified) specimens deposited in museums or collections and appropriately labeled as coming from a previously unknown area of occurrence. This finding theoretically should then be compared to the current data on the distribution of the species (*i.e.*, literature) and, if confirmed that it does constitute a new or first record, be included in the known geographic range of the species through appropriate publication.

Storti et al. (2004) claimed to have recorded for the first time the orchid bee *Eufriesea laniventris* (Ducke) in the state of Amazonas, Brazil, particularly in the region of Manaus. Nevertheless, this is not the first record of this species for the state of Amazonas and even not the first record for the region of Manaus. Powell and Powell (1987: 177) had already listed this species to the same area seventeen years before. Interestingly, Storti et al. (2004) cited Powell and Powell’s (1987) work but neither mention the record of *E. laniventris* by those authors, nor their statement that “representative specimens [of all species] were identified by Norris H. Williams and Robert L. Dressler, and voucher

specimens were deposited with INPA in Manaus” (POWELL; POWELL, 1987: 177). There is absolutely no mention by STORTI et al. (2004) to these supposedly deposited specimens at INPA [‘Instituto Nacional de Pesquisas da Amazônia’], or if authors studied them and concluded it was a misidentification. This record and these specimens were simply ignored by Storti et al. (2004: 144) who, thus, incorrectly stated that “no previous work carried out in the region of Manaus had detected the presence of this species” (translated from Portuguese). This is not a matter of arguing whether a first geographic record is important or not. It is an error. It should be noticed that the record of *E. laniventris* by Powell and Powell (1987) in the state of Amazonas was also ignored by Silveira et al. (2002) and Moure et al. (2007).

In Brazil, besides its occurrence in the states of Pará (Ducke) and Amazonas (POWELL; POWELL, 1987; STORTI et al. 2004), this species was more recently collected in the northernmost portion of the state of Amazonas (DIAS, 2007) and in the state of Roraima (OLIVEIRA et al. 2010).

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**RESUMO:** *Exaerete lepeletieri* Oliveira & Nemésio, 2003 (Hymenoptera: Apidae: Euglossina), espécie de abelha cleptoparasita recentemente descrita da região da Amazônia brasileira, é registrada pela primeira vez fora do Brasil, através de um registro de um espécime coletado na Província de Mérida, Venezuela. Por outro lado, *Eufriesea laniventris* (Ducke, 1902) foi recentemente registrada pela primeira vez no estado do Amazonas, mas essa espécie já tinha sido registrada para esse estado mais de duas décadas antes. Esse antigo registro é aqui apresentado, assim como uma discussão do papel dos “primeiros registros geográficos” ou “extensões na área de distribuição” dos organismos.

**PALAVRAS-CHAVE:** Abelha. Abelha-das-orquídeas. Geographic distribution. Hymenoptera, Insecta.

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#### REFERENCES

- DIAS, R. L. **Abelhas Euglossina das serras do norte do estado do Amazonas**. M.Sc. Thesis. Instituto Nacional de Pesquisas da Amazônia, Manaus, 2007, ix + 40 pp.
- DRESSLER, R. L. Biology of the orchid bees (Euglossini). **Annual Review of Ecology and Systematics**, v. 13, n. 2, p. 373–394, 1982.
- DUCKE, A. Beobachtungen über Blütenbesuch, Erscheinungszeit der bei Pará vorkommenden Bienen. **Allgemeine Zeitschrift für Entomologie**, Neudmann, v. 7, n. 1, p. 321–422, 1902.
- FEIO, R.N.; CASSIMIRO, J.; CRUZ, C. A. G. Geographic distribution. *Myersiella microps*. **Herpetological Review**, Clovis, v. 34, n. 1, p. 259, 2003.
- KIMSEY, L. S. An illustrated key to the genus *Exaerete* with descriptions of male genitalia and biology (Hymenoptera: Euglossini, Apidae). **Journal of the Kansas Entomological Society**, Lawrence, v. 52, p. 735–746, 1979.
- LE GOFF, G. Description de la femelle de l’abeille euglossine cleptoparasite *Exaerete lepeletieri* Oliveira & Nemésio, 2003 (Hymenoptera: Apoidea: Apidae: Euglossini). **Le Bulletin d’Arthropoda**, Paris, v. 30, n. 4, p. 33–38, 2006.
- LOPES, L. E.; MALACCO, G. B.; ALTEFF, E. F.; VASCONCELOS, M. F.; HOFFMANN, D.; SILVEIRA, L. F. Range extensions and conservation of some threatened or little known Brazilian grassland birds. **Bird Conservation International**, Cambridge, v. 20, n. 1, p. 84–94, 2010.

- MELO, G. A. R. Apidae (Subtribos Meliponina e Euglossina) da região dos lagos do Amapá. In: COSTA NETO, S. V. (Org), **Inventário Biológico das Áreas do Sucuriju e Região dos Lagos, no Amapá**. Macapá: IEPA. 2006, p. 123–130.
- MORATO, E. F. Ocorrência de *Aglae caerulea* Lepelletier & Serville (Hymenoptera, Apidae, Apini, Euglossina) no estado do Acre, Brasil. **Revista Brasileira de Zoologia**, Curitiba, v. 18, n. 4, p. 1031–1034, 2001.
- MOURE, J. S. A key to the parasitic euglossine bees and a new species of *Exaerete* from Mexico (Hymenoptera: Apoidea). **Revista de Biologia Tropical**, San José, v. 12, p. 15–18, 1964.
- MOURE, J. S.; MELO, G. A. R.; FARIA JR., L. R. R. Euglossini Latreille, 1802. In: MOURE, J.S.; URBAN, D.; MELO, G.A.R. (Eds), **Catalogue of Bees (Hymenoptera, Apoidea) in the Neotropical Region**. Curitiba: Sociedade Brasileira de Entomologia. 2007, p. 214–255.
- NEMÉSIO, A. Orchid bees (Hymenoptera: Apidae) of the Brazilian Atlantic Forest. **Zootaxa**, Auckland, v. 2041, p. 1–242, 2009a.
- NEMÉSIO, A. Taxonomic notes on *Euglossa (Glossuropoda)* with a key to the known species (Hymenoptera: Apidae: Euglossini). **Zootaxa**, Auckland, v. 2142, p. 45–56, 2009b.
- NEMÉSIO, A. Description of the male *Eufriesea theresiae* (Mocsáry, 1908) (Hymenoptera: Apidae: Euglossina), with illustration of the holotype and comments on its geographic distribution, including a new record for the state of Pará, northern Brazil. **Zootaxa**, Auckland, v. 2762, p. 63–68, 2011.
- NEMÉSIO, A.; SILVEIRA, F. A. Biogeographic notes on rare species of Euglossina (Hymenoptera: Apidae: Apini) occurring in the Brazilian Atlantic Rain Forest. **Neotropical Entomology**, Londrina, v. 33, n. 1, p. 117–120, 2004.
- NEMÉSIO, A.; SILVEIRA, F.A. Deriving ecological relationships between host and parasitic species—an example with orchid bees. **Journal of Biogeography**, New Jersey, v. 33, p. 91–97, 2006a.
- NEMÉSIO, A.; SILVEIRA, F. A. First record of *Eulaema helvola* (Hymenoptera: Apidae: Euglossina) for the state of Minas Gerais: biogeographic and taxonomic implications. **Neotropical Entomology**, Londrina, v. 35, n. 3, p. 418–420, 2006b.
- OLIVEIRA, M. L.; NEMÉSIO, A. *Exaerete lepeletieri* (Hymenoptera: Apidae: Apini: Euglossina): a new cleptoparasitic bee from Amazônia. **Lundiana**, Belo Horizonte, v. 4, n. 2, p. 117–120, 2003.
- OLIVEIRA, M. L.; SILVA, S. J. R.; SILVA, M. C.; ARAÚJO, A. C. O.; ALBUQUERQUE, M. I. C.; TAVARES, S. F. Abelhas de Roraima: por que tantas espécies em tão pouco espaço? In: BARBOZA, R. I.; MELO, V. F. (Eds) **Roraima: Homem, Ambiente e Ecologia**. Manaus: INPA. 2010, p. 523–540.
- PEMBERTON, R. W.; WHEELER, G. S. Orchid bees don't need orchids mutualists—evidence from the naturalization of an orchid bee in Florida. **Ecology**, Ithaca, v. 87, n. 9, p. 1995–2001, 2006.
- POWELL, A. H.; POWELL, G. V. N. Population dynamics of male euglossine bees in Amazonian forest fragments. **Biotropica**, New Jersey, v. 19, n. 1, p. 176–179, 1987.
- ROUBIK, D. W.; HANSON, P. E. **Orchid bees of tropical America: biology and field guide**. San Jose: INBIO. 2004, 370p.
- SANTOS, M. P. D.; VASCONCELOS, M. F. Range extension for Kaempfer's Woodpecker *Celeus obrieni* in Brazil, with the first male specimen. **Bulletin of the British Ornithologists' Club**, London, v. 127, n. 2, p. 249–252, 2007.

SILVEIRA, F. A.; MELO, G. A. R.; ALMEIDA, E. A. B. **Abelhas Brasileiras: Sistemática e Identificação**. Belo Horizonte: F. A. Silveira. 2002, 253p.

SKOV, C.; WILEY, J. Establishment of the Neotropical orchid bee *Euglossa viridissima* (Hymenoptera: Apidae) in Florida. **Florida Entomologist**, Tallahassee, v. 88, n. 2, p. 225–227, 2005.

STORCK-TONON, D.; MORATO, E. F.; OLIVEIRA, M. L. Fauna de Euglossina (Hymenoptera: Apidae) da Amazônia Sul-Occidental, Acre, Brasil. **Acta Amazonica**, Manaus, v. 39, p. 693–706, 2009.

STORTI, E. F.; STORTI FILHO, A.; OLIVEIRA, M. L. Primeiro registro de *Eufriesea laniventris* (Ducke, 1902) no Amazonas, Brasil. **Acta Amazonica**, Manaus, v. 34, n. 1, p. 143–144, 2004.

VASCONCELOS, M. F. A range extension for Dusky-tailed Flatbill *Ramphotrigon fuscicauda* in eastern Amazonia. **Bulletin of the British Ornithologists' Club**, London, v. 125, n. 2, p. 314–315, 2005.