

NOTES ON GEOGRAPHIC DISTRIBUTION

**Mammalia, Chiroptera, Phyllostomidae, *Chiroderma doriae*: First record for the state of Espírito Santo, Brazil, and distribution map**

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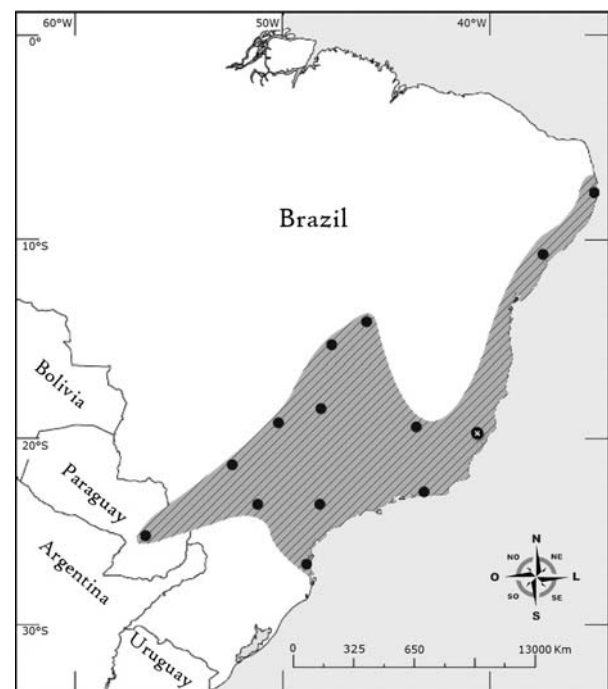
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*Chiroderma* is a genus of leaf-nosed bats with five species: *C. improvisum* Baker & Genoways, 1976; *C. salvini* Dobson, 1878; *C. trinitatum* Goodwin, 1958; *C. villosum* Peters, 1860; and *C. doriae* (Oprea and Wilson 2008). This latter species was initially considered endemic to the southeastern Brazil's Atlantic Forest, in the states of Rio de Janeiro and São Paulo (Marinho-Filho 1996), as well as Minas Gerais (Pedro and Taddei 1998). In consequence, the taxon was classified as Vulnerable in the state of Minas Gerais and Endangered in Brazil (IUCN 1994). Then *C. doriae* was reported for Paraná (Vizotto et al. 1976; Reis and Peracchi 1998; Miretzki and Margarido 1999), Distrito Federal (Coimbra et al. 1982), Mato Grosso do Sul (Gregorin 1998; Bordignon 2005), Pernambuco (Silva and Guerra 2000), and Sergipe (Mikalauskas et al. 2006), with further records for states of São Paulo (Pedro and Taddei 1997) and Minas Gerais (Pedro and Taddei 1998; Aguiar and Pedro 1998). There is also a single record from Paraguay (López-González et al. 1998) (Figure 1). In fact, the distribution of this species is much broader than initially reported, and the threatened status is no longer valid (Chiarello et al. 2008; Oprea and Wilson 2008). Despite the records of *C. doriae* for northeastern Brazil (Silva and Guerra 2000;

Mikalauskas et al. 2006), no specimen has been collected in the state of Espírito Santo until the present record (Figure 1).



**Figure 1.** Geographic distribution of *Chiroderma doriae* according to Oprea and Wilson (2008), and the new record (open circle) in the state of Espírito Santo, southeastern Brazil.

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The region of Alto Misterioso is an area of great biological interest located between the borders of two municipalities, São Roque do Canaã and Itaguaçu, both located in the state of Espírito Santo, Brazil (19°49'23" - 19°45'32" S, 40°47'57" - 40°43'19" W). The area is in the Atlantic Rainforest domain (the *Mata Atlântica*, more properly *Floresta Ombrofila Densa* and *Floresta Estacional Semidecidual*, according to Siqueira et al. (2004)). In this area the remaining Atlantic forest is fragmented by pastures and monocultures of coffee and *Eucalyptus*.

Capture effort was 180 m<sup>2</sup> of mist-nets, six hours per night, during five nights between 11 and 16 November 2007, under IBAMA's license # 12075-1. A female of *C. doriae* was collected on November 16, 2007, at 02:53 h, in the inferior pocket of a mist-net set over a dry brook, coordinates 19°45'62" S, 40°45'64" W. This specimen is fluid-preserved, with the skull removed and housed at *Museu de Biologia Mello Leitão* (collection number MBML 2826).

External and cranial measurements (in mm) of the specimen, according to Kalko and Handley (1994), are (in milimeters): total length 73.0; forearm length 53.5; greatest length of the skull 28.0; condylobasal length 25.25; basal length 21.9; condylocanine length 24.9; upper toothrow length 10.2; lower toothrow length 10.9; mandibular length 18.0; postorbital breadth 6.0; zygomatic breadth 17.2; cingular-canine external breadth 6.25; breadth across molars 12.95; braincase breadth 11.5, and mastoid breadth 13.5.

The measurements are within the species range (total length between 69.0 and 78.5 mm and forearm among 49.5 and 53.5 mm), however some (condylobasal length, mandibular length, braincase breadth and mastoid breadth) are lower than the mean reported for females (Taddei 1979).

In southeastern Brazil, *C. doriae* is easily distinguished from sympatric congeneric species, namely *C. villosum*, by its greatest forearm, usually yellowish-brown fur (not grayish), head with evident white stripes, and large, triangular superior incisors that converge to each other (not conic and fairly separated). For northeastern Brazil, there is a further species to consider, which is in description stage (R. Gregorin, pers. observ.). To distinguish *C. doriae* from this new species is more difficult. The new taxon is also characterized by yellowish-brown fur, evident white stripes on the head, and triangular converging superior incisors. However, both species can be distinguished by their dimensions, since the new taxon is smaller (forearm 49.81 mm and greatest length of the skull 26.47 mm; Gregorin et al. 2008).

The region of Alto Misterioso is listed as one of the foremost areas for biological conservation in state of Espírito Santo (Pinto 2002). The capture of a specimen of *C. doriae* demands the inclusion of this species in the Data Deficient category of the list of threatened species of Espírito Santo (Passamani and Mendes 2007) and supports a recent governmental effort aiming to recognize Alto Misterioso as a protected area.

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### Literature cited

Aguiar, L. M. S. and W. A. Pedro. 1998. *Chiroderma doriae* Thomas, 1891; p. 66-68 In A. B. M. Machado, L. M. S. Aguiar, and L. V. Lins (eds.).

Livro Vermelho das Espécies da Fauna Ameaçada de Extinção do Estado de Minas Gerais. Belo Horizonte: Fundação Biodiversitas.  
Bordignon, M. O. 2005. Geographic distribution's

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- ampliation of *Chiroderma doriae* Thomas (Mammalia, Chiroptera) in Brazil. *Revista Brasileira de Zoologia* 22(4): 1217-1218.
- Chiarello, A. G., L. M. S. Aguiar, R. Cerqueira, F. R. Melo, F. H. G. Rodrigues, and V. M. Silva. 2008. Mamíferos ameaçados de extinção do Brasil; p. 681-702 In A. B. M. Machado, G. M. Drommond, and A. P. Paglia (org.). Livro Vermelho da Fauna Brasileira Ameaçada de Extinção. Belo Horizonte: Ministério do Meio Ambiente - Fundação Biodiversitas.
- Coimbra, C. A. E. Jr., M. M. Borges, D. Q. Guerra, and D. Q. Melo. 1982. Contribuição à zoogeografia e ecologia de morcegos em região de cerrado do Brasil Central. *Boletim Técnico da Revista Brasil Florestal* 7(1): 34-38.
- Gregorin, R. 1998. Extending geographic distribution of *Chiroderma doriae* Thomas, 1891 (Phyllostomidae, Stenodermatinae). *Chiroptera Neotropical* 4(2): 98-99.
- Gregorin, R., A. P. Carmignotto, and A. R. Percequillo. 2008. Quirópteros do Parque Nacional da Serra das Confusões, Piauí, nordeste do Brasil. *Chiroptera Neotropical* 14(1): 366-383.
- IUCN. 1994. IUCN - Red List Categories. Gland: The World Conservation Union, IUCN Species Survival Commission. 21 p.
- Kalko, E. K. V. and C. O. Jr. Handley. 1994. Evolution, biogeography, and description of a new species of fruit-eating bat, genus *Artibeus* Leach (1821), from Panamá. *Zeitschrift für Säugetierkunde* 59: 257-273.
- López-González, C., S. J. Presley, R. D. Owen, M. R. Willig, and I. G. Fox. 1998. Noteworthy records of bats (Chiroptera) from Paraguay. *Mastozoologia Neotropical* 5: 41-45.
- Marinho-Filho, J. 1996. Distribution of bat diversity in the southern and southeastern Brazilian Atlantic Forest. *Chiroptera Neotropical* 2(2): 51-54.
- Mikalauskas, J. S., R. Moratelli, and A. L. Peracchi. 2006. Ocorrência de *Chiroderma doriae* Thomas (Chiroptera, Phyllostomidae) no Estado de Sergipe, Brasil. *Revista Brasileira de Zoologia* 23(3): 877-878.
- Miretzki, M. and T. C. C. Margarido. 1999. Morcegos da Estação Ecológica do Caiuá, Paraná (Sul do Brasil). *Chiroptera Neotropical* 5(1-2): 105-108.
- Oprea, M. and D. E. Wilson. 2008. *Chiroderma doriae* (Chiroptera: Phyllostomidae). *Mammalian Species* 816: 1-7.
- Passamani, M. and S. L. Mendes. 2007. Espécies da fauna ameaçadas da extinção no Estado do Espírito Santo. Vitória: Instituto de Pesquisas da Mata Atlântica. 140 p.
- Pedro, W. A. and V. A. Taddei. 1997. Taxonomic assemblage of bats from Panga Reserve, southeastern Brazil: abundance patterns and trophic relations in the Phyllostomidae (Chiroptera). *Boletim do Museu de Biologia Mello Leitão* 6: 3-21.
- Pedro, W. A. and V. A. Taddei. 1998. Bats from southwestern Minas Gerais, Brazil (Mammalia: Chiroptera). *Chiroptera Neotropical* 4(1): 85-87.
- Pinto, L. P. 2002. Mata Atlântica e Campos Sulinos; p. 215-266 In C. M. Maury (org.). Biodiversidade Brasileira: avaliação e identificação de áreas e ações prioritárias para conservação, utilização sustentável e repartição dos benefícios da biodiversidade dos Biomas Brasileiros. Brasília: Ministério do Meio Ambiente - Secretaria de Biodiversidade e Florestas.
- Reis, N. R. and A. L. Peracchi. 1998. Updated list of the chiropterians of the City of Londrina, Paraná, Brazil. *Chiroptera Neotropical* 4(2): 96-98.
- Silva, L. A. M. and D. Q. Guerra. 2000. Bats from a remnant atlantic forest in northeast Brazil. *Chiroptera Neotropical* 6(1-2): 125-126.
- Siqueira, J. D. P., R. S. Lisboa, A. M. Ferreira, M. F. R. de Souza, E. de Araújo, L. Jr. Lisbão, and M. de M. Siqueira. 2004. Estudo ambiental para os programas de fomento florestal da Aracruz Celulose S. A. e extensão florestal do governo do estado do Espírito Santo. *Floresta (Edição Especial)*: 3-67.
- Taddei, V. A. 1979. Phyllostomidae (Chiroptera) do Norte-Occidental do Estado de São Paulo. III - Stenodermatinae. *Ciência e Cultura* 31(8): 900-914.
- Vizotto, L. D., V. A. Taddei, A. Cais, and O. Renesto. 1976. Nota preliminar sobre morcegos do Sudoeste de São Paulo e norte do Paraná. *Ciência e Cultura* 28(7): 432-433.

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