

New records and distribution of a species vulnerable to extinction: *Euparkerella tridactyla* (Anura, Strabomantidae)

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Abstract. The genus *Euparkerella* is composed of four species endemic to the Atlantic Rainforest biome, ranging from Espírito Santo to Rio de Janeiro, Brazil. Three of them are known only to their type locality. According to the IUCN, the species *Euparkerella tridactyla* is currently classified as Vulnerable to Extinction due to its apparently low population density and restrict geographic distribution. Previously, *E. tridactyla* was known only from the type locality (650 m.a.s.l.), municipality of Santa Teresa, state of Espírito Santo. Herein, we provide new distribution records for *E. tridactyla* that extend its range by 70 kilometers to the south, encompassing four different municipalities, and increase the altitudinal distribution to a range between 550– 700 m.a.s.l.

Keywords. Geographic distribution, Atlantic rainforest, southeastern Brazil

Euparkerella Griffiths, 1959 is a genus composed of four slow-moving leaf-litter species: *Euparkerella brasiliensis* (Parker, 1926), *E. cochranæ* Izecksohn, 1988, *E. robusta* Izecksohn, 1988, and *E. tridactyla* Izecksohn, 1988. All are endemic to the Atlantic Rainforest, from the state of Espírito Santo to the state of Rio de Janeiro in southeastern Brazil (Frost, 2009). Izecksohn (1988) stated that the species diversity of the genus was probably underestimated. However, no new species of *Euparkerella* has been discovered during the last 22 years. *Euparkerella* is a genus poorly represented in scientific collections, and little is known about it, especially aspects involved to its natural history and distribution. *Euparkerella tridactyla* is the largest species of the genus, with females reaching 22.0 mm snout-vent length; has a brownish M-shaped mark on the dorsum, sometimes reduced to a “V”. *Euparkerella*

tridactyla is distinguished from other *Euparkerella* species by having only three digits on both hands and feet. Also, *E. tridactyla* generally has the head larger (especially females) than the other three *Euparkerella* species. In some specimens of *E. tridactyla* the inguinal glands can be observed, although this characteristic is more prominent in *E. cochranæ*.

Silvano and Peixoto (2004) classified *E. tridactyla* as “vulnerable to extinction”, due to the uncertain populational status and its restricted range —known only from the type locality, in the municipality of Santa Teresa in the state of Espírito Santo. In 2007 *E. tridactyla* was listed on the list of threatened fauna of Espírito Santo as of unknown conservation status (Passamani and Mendes, 2007). In the last compilation of data on threatened species of amphibians in the world, *E. tridactyla* remained as vulnerable to extinction (Stuart et al., 2008). In this study we provide new records for *E. tridactyla* that considerably increase the known distributional range of the species. This information should help to reevaluate its conservation status.

Materials and methods

Field work was conducted from May 2007 to April 2008 at Duas Bocas Biological Reserve (DBBR; -40.42S, -20.263889W), municipality of Cariacica, state of Espírito Santo; and from January 2008 to February 2009 at Oiutrem Private Reserve of Natural Patrimony (OTPRNP; -20.330306S, -40.480560W), municipality of Alfredo Chaves, state of Espírito Santo. In both studies pitfall traps were used (see Cechin and Martins, 2000). At the DBBR site, was used a sequence of six 100m transects with 60 buckets in total. At OTPRNP six pitfall-trap stations were implanted in a

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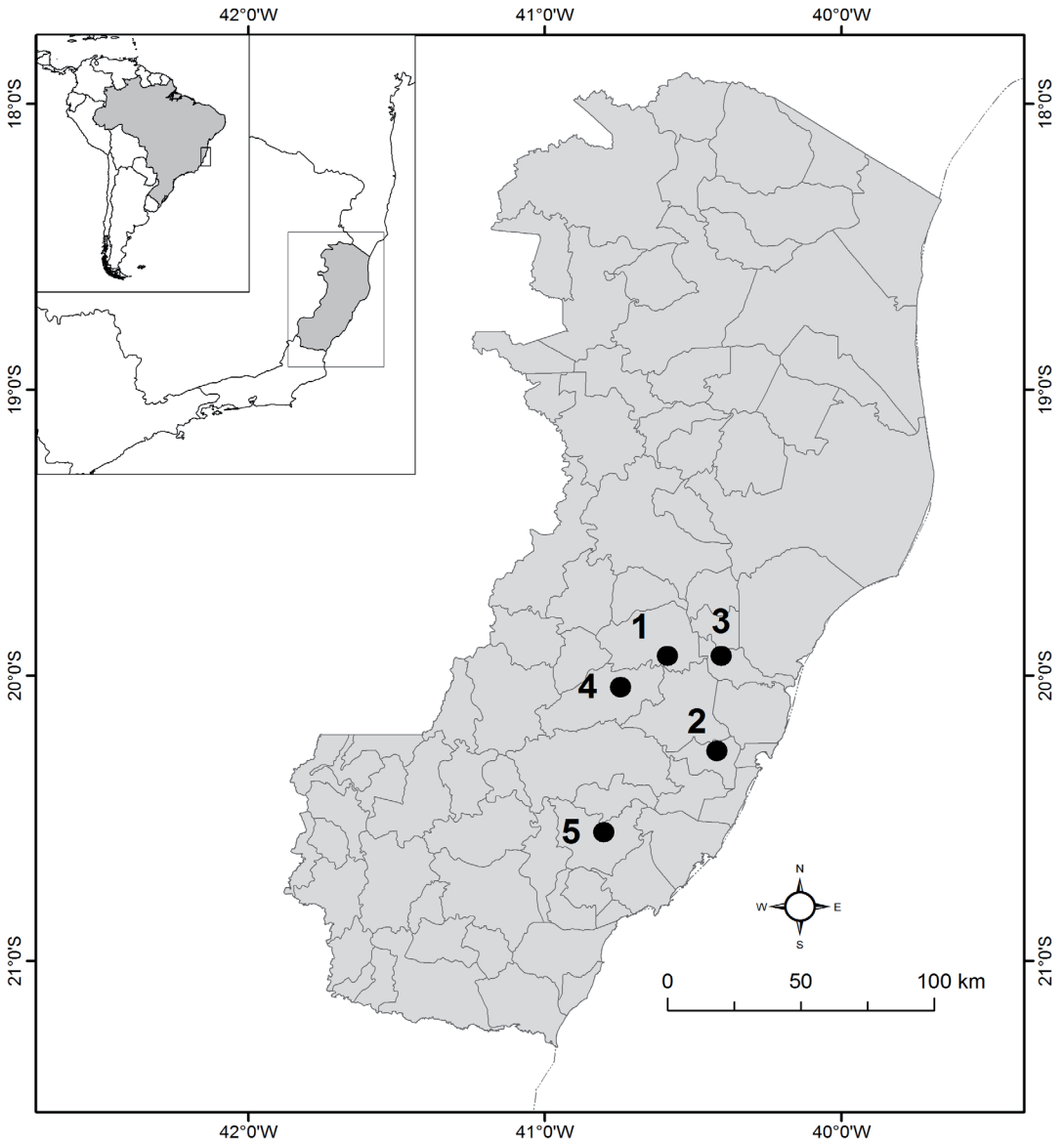


Figure 1. Map of the state of Espírito Santo, southeastern Brazil, showing the localities reported herein for *Euparkerella tridactyla*: (1) type locality, Santa Teresa; (2) Duas Bocas Biological Reserve (DBBR), Cariacica; (3) Goiapaba-Açu Municipal Park, Fundão; (4) forest fragment, Santa Maria de Jetibá; (5) Oitrem Private Reserve of Natural Patrimony (OTPRNP), Alfredo Chaves.

Y configuration, with 24 buckets in total. In addition, frogs were searched in all the suitable habitats. We searched specimens of *E. tridactyla* in nine herpetological collections: Museu de Biologia Professor Mello Leitão (MBML), Santa Teresa, Espírito Santo; Amphibian collection Celio F. B. Haddad (CFBH), Rio Claro, São Paulo; Herpetological collection Alphonse Richard Hoge at Instituto Butantan (IBSP), São Paulo, São Paulo; Capão da Imbuia Museum of Natural History (MHNCL), Curitiba,

Paraná; University of Campinas, Museum of Zoology (ZUEC), Campinas, São Paulo; Londrina State University, Museum of Zoology (MZUEL), Londrina, Paraná; Rural University of Rio de Janeiro, Eugenio Izecksohn Amphibian collection (EI-UFRRJ), Seropédica, Rio de Janeiro; National Museum of Rio de Janeiro (MNRJ), Rio de Janeiro, Rio de Janeiro; Federal University of Rio de Janeiro, Collection of Zoology (ZUF RJ), Rio de Janeiro, Rio de Janeiro.

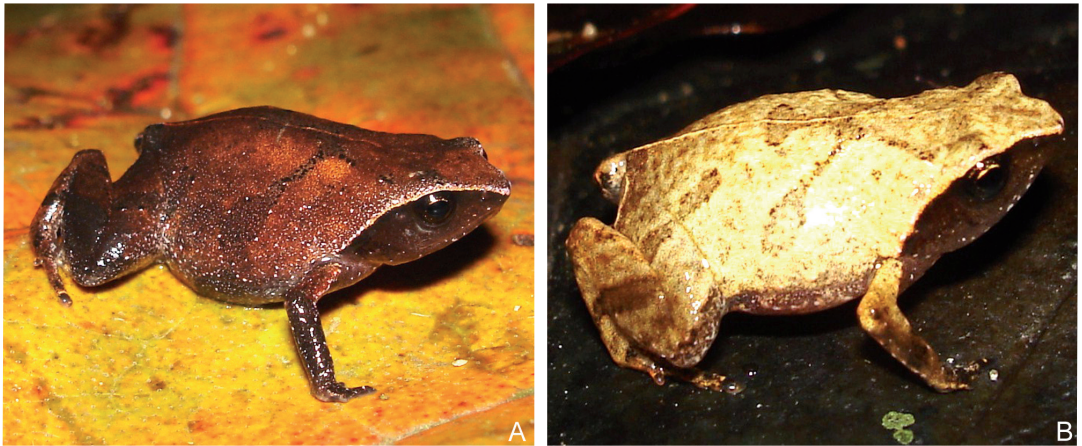


Figure 2. a) Female and b) juvenile of *E. tridactyla* collected from the Duas Bocas Biological Reserve (DBBR), municipality of Cariacica, state of Espírito Santo, southeastern Brazil. Photos: J.F.R. Tonini.

Results and discussion

Twenty nine *E. tridactyla* specimens were located in five collections: one in the CFBH, two in the ZUF RJ, two in the MNRJ, 19 in the EI-UFR RJ, and five in the MBML. MBML, despite being situated at municipality of Santa Teresa (type locality of *E. tridactyla*), had few specimens—probably because most taxonomists working at Santa Teresa belong to research institutions from the state of Rio de Janeiro, and consequently deposit their specimens in their respective state collections.

From these 29 specimens, 22 are paratypes collected in Santa Teresa, and are deposited in ZUF RJ, EI-UFR RJ, and MNRJ. The specimens from MBML and CFBH indicated that the distribution range of *E. tridactyla* extends further than originally thought. The collection records indicate that in 1989 and 1990 four specimens were collected in Cariacica, at the Duas Bocas Biological Reserve (DBBR); one specimen was collected in 1998 from Fundão, at the Goiapaba-Açu Municipal Park (GAMP; -40.406667S, -19.9325W); and another specimen was collected in 2005 from Santa Maria de Jetibá, in a forest fragment (SMJ; -40.746111S, -20.040556W; Fig. 1).

In addition to the information obtained from museum specimens, new field surveys yield additional data. In November 2007 a female and a juvenile were collected from pitfall traps at DBBR (Fig. 2a, b) (collector: J. F. R. Tonini); ~40 Km to south from Santa Teresa. On an expedition to OTPRNP on May 31, 2008, another specimen was collected (collectors: R. B. Ferreira and R. B. Dantas), extending the distribution ~70 Km southward from the type locality and 45 Km from DBBR. These areas are located in the same mountain

region with similar phytoecological characteristics. These recent field surveys show that *E. tridactyla* is still present in the environment and that the total distribution is not completely defined. Thus, we expected that *E. tridactyla* occurs in another municipalities as Domingos Martins, Marechal Floriano, and Santa Leopoldina.

This study extends the range distribution of *E. tridactyla* to include several more municipalities in the state of Espírito Santo; the total habitat range however is still considerably small. In addition, our new records increase the altitudinal range that now is known from 550 m (at DBBR) to 700 m.a.s.l. (at OTPRNP). This study significantly augments the current distributional knowledge regarding *E. tridactyla*, nevertheless future research needs to be conducted to further enhance our understanding of the habitat distribution and illuminate the importance of *E. tridactyla* in the ecosystem. Based on the finding in this study we feel strongly that *Euparkerella tridactyla* should remain classified as Vulnerable to extinction by the IUCN.

Acknowledgements

We thank Gustavo M. Prado and João L. Gasparini for identifying the specimens from our field work. We are grateful to several students from the *Laboratório de Mastozoologia e Biogeografia da UFES* for assistance during the sampling expedition. Jovane and Vania Caus for allowing us to study in their property (RPPN OTPRNP). Luana D. Centoducatte prepared the map. Fabio Hepp, and Chad Keyser for reviewing the manuscript. João F. R. Tonini is grateful to the Fundo de Apoio à Ciência e Tecnologia do Município de Vitória (Facitec) and he and Thiago Silva Soares to the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) for financial support. Collecting permit was issued by IBAMA (process number 13977-1 to RPPNOT and 02009.001798/2006 to DBBR).

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Appendix 1 – Amphibia, Anura, Strabomantidae, *Euparkerella tridactyla* (DBBR) MBML 5386/88, JFT 346*, CFBH 1360, 22526; *E. tridactyla* (GAMP) MBML 853; *E. tridactyla* (SMJ) MBML 5699; *E. tridactyla* (OTPRNP) MBML 6720; *E. tridactyla* (Holotype) EI-UFRRJ 7257; *E. tridactyla* (Paratypes) MNRJ 4172/3; *E. tridactyla* (Paratypes) EI-UFRRJ 7254/6, 7258/72; *E. tridactyla* (Paratypes) ZUFRJ 1928/9.

*JFT means the collector number; this specimen will be deposited in MBML.