

First formal records of *Stenocercus doellojuradoi* (Freiberg, 1944) (Squamata, Tropiduridae) from the Paraguayan Chaco

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Localities— Paraguay, Department of Boquerón, Mariscal Estigarribia District, locality of Pirizal (-61.092264; -23.031885, 180 m a.s.l.; Fig. 1). Specimens were collected on July 22 of 2014, processed and deposited in the national herpetological collections of the Museo Nacional de Historia Natural del Paraguay (MNHNP), and the Colección Zoológica de la Facultad de Ciencias Exactas y Naturales (CZ-CEN) according to national regulations (MNHNP 12824, CZ-CEN 1165). Subsequently, a revision of the collection of the Museo Nacional de Historia Natural del Paraguay was made. An additional individual of *Stenocercus*

doellojuradoi (MNHNP 2696) was found, collected on August 19 of 1982, (-22.183333; -59.35) at the Department of Boqueron, Loma Plata District, locality of Estancia Pozo Azul.

Comments— Active diurnal and nocturnal searches were performed on July 2014, to detect amphibians and reptiles on the ground at the edge of an unused road. Two individuals of *Stenocercus doellojuradoi* were found, both in the forest edge near the road. The ecosystem corresponds to xerophytic open forest with an understory of bromeliads near the Pilcomayo basin, in the Dry Chaco ecoregion



Figure 1. Individual of *Stenocercus doellojuradoi* (Freiberg, 1944). Locality of Pirizal, Mariscal Estigarribia District, Department of Boquerón, Paraguay. July 2014.

(Dinerstein *et al.*, 1995). The records provided here increase the species distribution in over 300 km eastward to the nearest known locality in Formosa, Argentina (Fig. 2).

The genus *Stenocercus* Duméril & Bibron (1837) is one of the most speciose and widespread among the Tropiduridae family, occurring from the Andean mountains, adjacent lowlands of Venezuela and Colombia, to central Argentina (Torres-Carvajal, 2000; 2005; 2007). *Stenocercus doellojuradoi* (Freiberg, 1944) was described from La Rioja (Argentina), and was formerly assigned to the genus “*Proctotretus*” (Frost, 1992) with *S. azureus* and *S. pectinatus*. It can be distinguished from other similar species by its dorsal coloration pattern composed of longitudinal cream blotches, pink ventrolateral body edges as well as notched and smooth ventral and gular scales. Also, by not having the mental in contact with the first pair of sublabials and the presence of a small subhorizontal antehumeral fold (Freiberg, 1944; Torres-Carvajal, 2007). The species is currently known from Catamarca, Córdoba, La Rioja, San Juan, San Luis, Santiago del Estero, Chaco, Formosa, and Tucumán Provinces in Argentina (Ávila *et al.*, 2013; Cei, 1993; Laspiur and Acosta, 2006). The presence of *S. doellojuradoi* in the Paraguayan Chaco is mentioned by Trutnau *et al.* (2016), yet a precise

location nor reference material was provided. Herein we present the first Paraguayan records of the species with voucher specimens.

According to Cei (1993), Freiberg (1944) and Torres-Carvajal (2007), the three individuals correspond mostly to *Stenocercus doellojuradoi*. Nevertheless, some differences were found including: the mental scale marginally in contact with the sublabials on the specimens collected in Pirizal. But the most noticeable discrepancy was found on the specimen of the locality of Pozo Azul, that beside presenting mucronate and smooth scales in the ventral region as expected also presents scales with rounded edges and small terminal keels in the gular region. The individuals from both localities present the antehumeral fold, which according to Torres-Carvajal (2007) is not present in this species; however, Freiberg (1944) and Cei (1993) mention that it is, but it might not be obvious since it is covered by scales projected backwards. These divergent characteristics could be related to the fact that the records correspond to the extremes of the species distribution, therefore, deeper morphological and molecular studies are necessary, with a larger number of specimens.

The Paraguayan Chaco is currently a deforestation hotspot with almost a third of its forest surface converted to agriculture and cattle areas (Baumann *et al.*, 2017) and protected areas cover only 9.1% of the distribution of the endemic species of this ecoregion (Nori *et al.*, 2016). As well as the loss of habitat, the lack of knowledge of the actual distribution of the species in Paraguay, the morphological variations found in the specimens and the possible presence of other species of the same genus in the Paraguayan Chaco (Ávila *et al.*, 2013, Torres *et al.*, 2000) demand further studies on the *Stenocercus* principally in regions bordering Argentina and Bolivia.

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Literature cited

Ávila, L.J.; Martínez, L.E. & Morando, M. 2013. Checklist of lizards and amphisbaenians of Argentina: an update. *Zootaxa* 3616: 201-238.

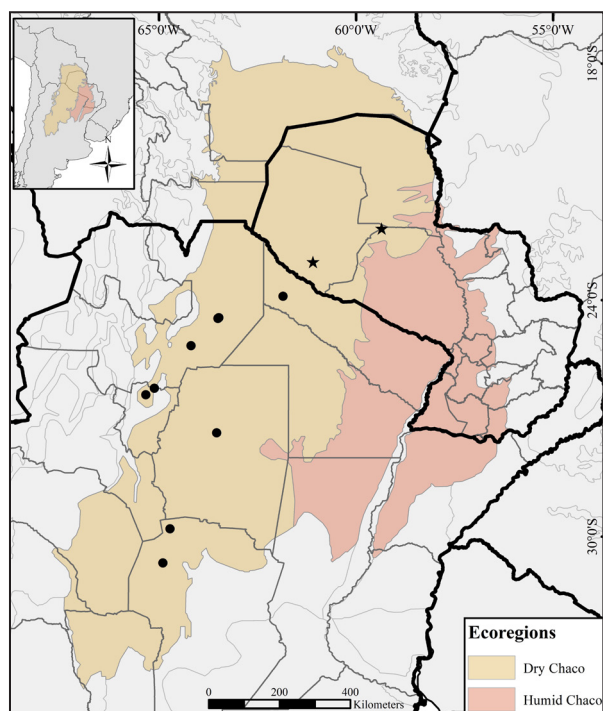


Figure 2. Map showing known distribution points for the species. The stars correspond to the new localities.

- Baumann, M.; Israel, C.; Piquer-Rodríguez, M.; Gavier-Pizarro, G.; Volante, J.N. & Kuemmerle, T. 2017. Deforestation and cattle expansion in the Paraguayan Chaco 1987–2012. *Regional Environmental Change* 1-13.
- Cei, J.M. 1993. Reptiles del noroeste, nordeste y este de la Argentina. Bolletino Museo Regionale di Scienze Naturali, Torino.
- Dinerstein, E.; Olson, D.M.; Graham, D.J.; Webster, A.L.; Primm, S.A.; Bookbinder, M.P. & Ledec, G. 1995. Una evaluación del estado de conservación de las ecorregiones terrestres de América Latina y el Caribe. WMF-Banco Mundial.
- Freiberg, M.A. 1944. Una nueva especie de saurio del género *Proctotretus* Duméril & Bibron. *Physis*, Buenos Aires 19: 473-477
- Frost, D.R. 1992. Phylogenetic analysis and taxonomy of the *Tropidurus* group of lizards (Iguania: Tropiduridae). *American Museum Novitates* 3033: 1-68.
- Laspiur, A. & Acosta, J.C. 2006. *Stenocercus doellojuradoi* (Iguanidae, Tropidurinae): Una nueva especie para la Provincia de San Juan, Argentina. *Cuadernos de Herpetología* 20: 49.
- Nori, J.; Torres, R.; Lescano, J.N.; Cordier, J.M.; Periago, M.E. & Baldo, D. 2016. Protected areas and spatial conservation priorities for endemic vertebrates of the Gran Chaco, one of the most threatened ecoregions of the world. *Diversity and Distributions* 22: 1-8.
- Torres, S.; Scrocchi, G.J; & Harvey, M.B. 2000. The South American tropidurid lizard *Stenocercus marmoratus*: redescription, distribution, and natural history. *Journal of Herpetology* 34: 129-134.
- Torres-Carvajal, O. 2000. Ecuadorian lizards of the genus *Stenocercus* (Squamata: Tropiduridae). *Scientific Papers University of Kansas Museum of Natural History* 15: 1-38.
- Torres-Carvajal, O. 2005. A new species of iguanian lizard (*Stenocercus*) from the western lowlands of southern Ecuador and northern Peru. *Herpetologica* 61: 78-85.
- Torres-Carvajal, O. 2007. A taxonomic revision of South American *Stenocercus* (Squamata: Iguania) lizards. *Herpetological Monographs* 21: 76-178.
- Trutnau, L.; Monzel, M. & Consul, A. 2016. Amphibien und Reptilien des Paraguayischen Chaco. Edition Chimaira. Frankfurt am Main.

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