

New Brazilian records of *Leptodactylus chaquensis* CEI, 1950, at the species' southern range limit

The Neotropical genus *Leptodactylus* FITZINGER, 1826, currently includes 89 recognized species and is widely distributed from southern North America to central Argentina, throughout most of South America (FROST 2013). The genus is divided in five species groups: *L. fuscus*, *L. latrans*, *L. marmoratus*, *L. melanonotus*, and *L. pentadactylus* (HEYER 1969; FROST 2013). Belonging to the *L. latrans* group, Cei's White-lipped Frog *Leptodactylus chaquensis* CEI, 1950, is a mid-sized species (males and females reaching 71 mm snout-vent length) that inhabits both permanent and temporary aquatic habitats (UETANABARO et al. 2008).

The geographic distribution of *Leptodactylus chaquensis* encompasses northern Argentina (Catamarca, Chaco, Córdoba, Corrientes, Entre Ríos, Formosa, Jujuy, La Rioja, Misiones, Mendoza, Salta, San Juan, San Luis, Santiago del Estero, Santa Fe, Tucumán), the Chaco and western oriental region of Paraguay, northern Uruguay (Artigas and Salto), lowland Bolivia, and Brazil (HEYER et al. 2004; ACOSTA et al. 2005; VAIRA et al. 2012; FROST 2013). In the latter country, this species was reported to occur in the states of Acre (SOUZA 2009), Mato Grosso (HEYER & MUÑOZ 1999; STRÜSSMANN 2000; CAMPOS FILHO 2009; PASONATO et al. 2011; SANTOS et al. 2011), Mato Grosso do Sul (STRÜSSMANN et al. 2000; ÁVILA & FERREIRA 2004; GORDO & CAMPOS 2004; PRADO & HADDAD 2003, 2005; PRADO et al. 2000, 2005; UETANABARO et al. 2007; PIATTI et al. 2010; SOUZA et al. 2010), Minas Gerais (SILVEIRA 2006; GIARETTA et al. 2008), Rondônia (CALDERON et al. 2009), Rio Grande do Sul (GARCIA & VINCIPROVA 1998; SANTOS & CECHIN 2008; TRINDADE et al. 2010), and São Paulo (VASCONCELOS & ROSSA-FERES 2005; SANTOS et al. 2007, 2009; BRASSALOTI et al. 2010). Herein after, the authors report on the presence of *L. chaquensis* in the state of Paraná and provide a distribution map including literature records for this species in Brazil. Localities listed in Table 1 are those for which identification of *L. chaquensis* is

unequivocal and associated to precise coordinates. Photographs of live specimens from the three new localities (Figs. 1a, 1b, 1c) were taken in the field and used to confirm species identity, together with voucher specimens (collected under the permits IBAMA / SISBIO #25916-1 and IAP #278.10). The specimens were euthanized with 5 % lidocaine gel, preserved in 10 % formalin, and stored in alcohol 70 %. Fourteen vouchers were subsequently deposited at the Coleção Zoológica da Universidade Federal de Goiás (ZUFG; Goiânia, state of Goiás, Brazil), under the assessment numbers ZUFG 7146, 7195-7200, 7202-7206, 7492, 7493.

The authors recorded specimens of *Leptodactylus chaquensis* in three localities in the northwestern portion of the state of Paraná, near the borders with the Brazilian state of Mato Grosso do Sul and with Paraguay. In the municipality of Diamante do Norte, this species was recorded during fieldwork carried out between April 2011 and January 2013 at Estação Ecológica do Caiuá ($22^{\circ}37'17"S$, $52^{\circ}50'17"W$, 268 m a.s.l.) and surrounding areas. At this location, specimens of *L. chaquensis* were found in both permanent and temporary ponds within pasture area, sugar cane and cassava plantations, as well as in permanent impoundments in two small tributaries of the Paranapanema River (Água Mole and Maria Koss streams) and in the margins of the Paranapanema and Corvo Rivers, both belonging to the upper Paraná River basin. More than 50 individuals (12 of which were collected: 10 adult males and two adult females) were recorded, following sampling efforts of around 110 hours/observer.

In the municipality of Icaraimá, approximately 40 specimens were recorded on 07 February 2013, in the margins of a permanent pond surrounded by pasture ($23^{\circ}23'06"S$, $53^{\circ}45'55"W$, 255 m a.s.l.). In the municipality of Guairá, two specimens were collected on 16 February 2013, also in a permanent pond surrounded by pasture ($24^{\circ}14'22"S$, $54^{\circ}14'30"W$, 327 m a.s.l.).

Records of *Leptodactylus chaquensis* in northwestern Paraná represent the first state record and fill a gap of ca. 850 km between the municipalities of Teodoro Sampaio, in the state São Paulo (SANTOS et

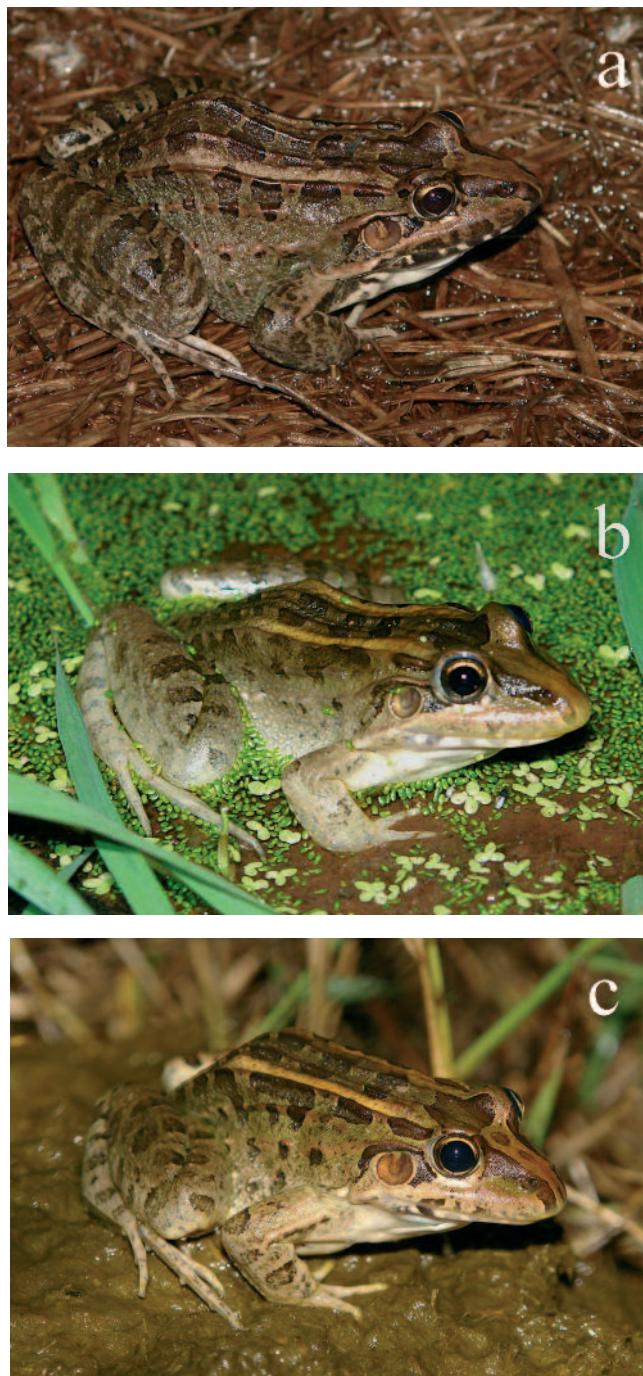


Fig. 1: Adult specimens of *Leptodactylus chaquensis* Cei, 1950, recorded in the municipalities of:
a - Diamante do Norte, b - Icaraíma, and c - Guaira, state of Paraná, southern Brazil.

Table 1: Selected localities in Brazil, with records of *Leptodactylus chaquensis* CEI, 1950.

State (capitalized) and locality (numbered)	Ecoregion	Geographic coordinates	Source
ACRE			
1 Parque Nacional da Serra do Divisor	Amazon rainforest	08°15'S, 73°15'W	SOUZA (2009)
RONDÔNIA			
2 Porto Velho	Amazon rainforest	08°43'S, 63°53'W	CALDERON et al. (2009)
MATO GROSSO			
3 Cáceres	Pantanal	16°27'S, 58°09'W	PASONATO et al. (2011)
4 Chapada dos Guimarães	Cerrado	14°57'S, 55°41'W	STRÜSSMANN (2000)
5 Nobres	Cerrado	14°41'S, 56°13'W	SANTOS et al. (2011)
6 Poconé	Pantanal	16°15'S, 56°22'W	VALÉRIO-BRUN et al. (2010)
6 Poconé	Pantanal	16° 34'S, 57°01'W	DORADO-RODRIGUES et al. (2012)
MATO GROSSO DO SUL			
7 Corumbá	Pantanal	19°34'S, 57°00'W	PRADO et al. (2000)
7 Corumbá	Pantanal	19°34'S, 57°00'W	PRADO & HADDAD (2003)
7 Corumbá	Pantanal	19°34'S, 57°00'W	PRADO & HADDAD (2005)
7 Corumbá	Pantanal	19°34'S, 57°00'W	PRADO et al. (2005)
7 Corumbá	Pantanal	18°58'S, 57°39'W	ÁVILA & FERREIRA (2004)
8 Parque Nacional da Serra da Bodoquena	Pantanal	21°08' to 20°38'S 56°48' to 56°44'W	UETANABARO et al. (2007)
9 Porto Murtinho	Pantanal	21°40' to 21°56'S 57°54' to 57°34'W	SOUZA et al. (2010)
10 Miranda	Pantanal	20°05'S, 56°36'W	PIATTI et al. (2010)
MINAS GERAIS			
11 João Pinheiro	Cerrado	17°44'S, 46°10'W	SILVEIRA (2006)
12 Araguari	Cerrado	18°33'S, 48°03'W	GIARETTA et al. (2008)
13 Uberlândia	Cerrado	18°55'S, 48°17'W	GIARETTA et al. (2008)
14 Perdizes	Cerrado	19°12'S, 47°10'W	GIARETTA et al. (2008)
SÃO PAULO			
15 Nova Itapirema	Atlantic rainforest and Cerrado	21°04'S, 49°32'W	VASCONCELOS & ROSSA-FERES (2005)
16 Santa Fé do Sul	Atlantic rainforest	20°11'S, 50°53'W	SANTOS et al. (2007)
17 Teodoro Sampaio	Atlantic rainforest and Cerrado	22°27' to 22°40'S 52°10' to 52°22'W	SANTOS et al. (2009)
18 Gália and Alvilândia	Atlantic rainforest	22°24'S, 49°42'W	BRASSALOTI et al. (2010)
RIO GRANDE DO SUL			
19 Bossoroca	Pampa	28°43'S, 54°54'W	GARCIA & VINCIPROVA (1998)
20 São Vicente do Sul	Pampa	29°41'S, 54°40'W	GARCIA & VINCIPROVA (1998)
21 Uruguaiana	Pampa	29°45'S, 57°05'W	GARCIA & VINCIPROVA (1998)
22 São Sepé	Pampa	30°15'S, 53°35'W	SANTOS & CECHIN (2008)
22 São Sepé	Pampa	30°15'S, 53°34'W	SANTOS & CECHIN (2008)
23 Caçapava do Sul	Pampa	30°31'S, 53° 29'W	TRINDADE et al. (2010)
PARANÁ			
24 Diamante do Norte	Atlantic rainforest	22°37'S, 52°50'W	New record; this study
25 Icaraima	Atlantic rainforest	23°23'S, 53°45'W	New record; this study
26 Guaira	Atlantic rainforest	24°14'S, 54°14'W	New record; this study

al. 2009), and São Sepé, in the state of Rio Grande do Sul (SANTOS & CECHIN 2008) (Fig. 2, Table 1). Originally covered by Seasonally Semi-deciduous Forest (MAACK 1981), the northwestern region of Paraná since the early 60's has been subjected to intense logging, agriculture and livestock activities. Total area of remnants of the original vegetation in the region, nearly two

decades ago, was estimated to not surpass 1 % (CAMPOS 1999). The massive and permanent loss of native vegetation might have resulted in changes in community composition, and in a successful colonization of the area by more generalist species, well adapted to open and disturbed areas. Individuals of species belonging to the *L. latrans* group (which presently includes *L.*

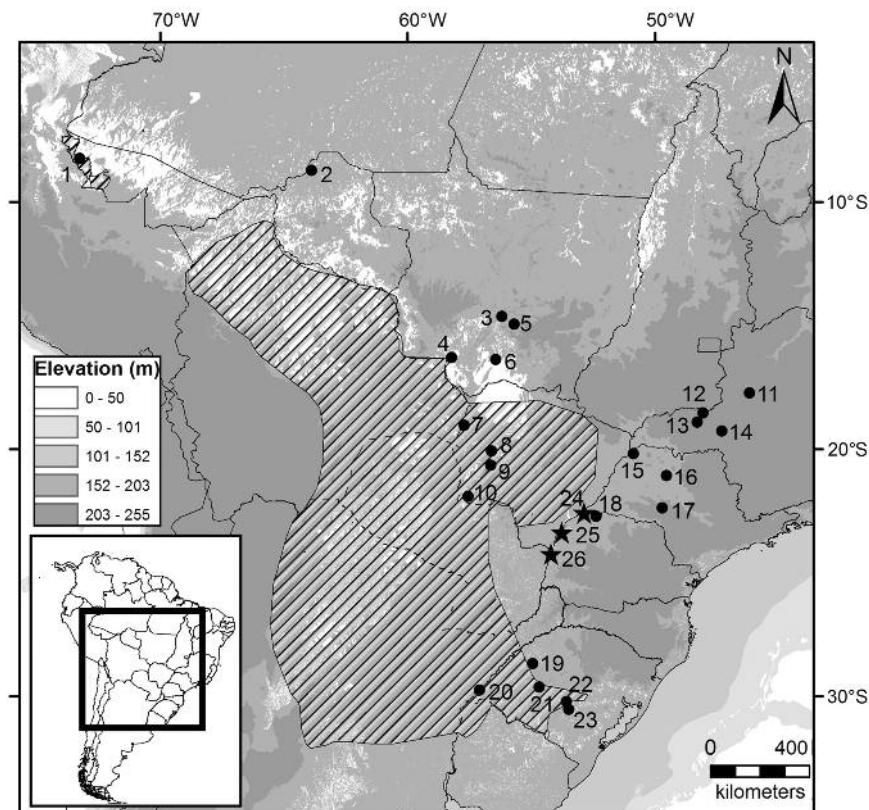


Fig. 2: Distribution map of *Leptodactylus chaquensis* CEI, 1950. Black dots - records from literature (see Table 1 for locality numbers and literature sources); shaded area - geographic distribution according to IUCN (HEYER et al. 2004); black stars - new records in the State of Paraná, Southern Brazil.

bolivianus BOULENGER, 1898, *L. chaquensis* CEI, 1950, *L. latrans* (STEFFEN, 1815), and *L. macrosternum* MIRANDA-RIBEIRO, 1926; HEYER & DE SÁ 2011; FROST 2013) typically live in open habitats, including highly disturbed areas, and seldom occupy pristine habitats, even when occurring in forested areas (as already reported, e.g., for *L. latrans* – as *L. ocellatus* – in southeastern Brazil, by ALMEIDA-GOMES et al. 2010, and in southern Brazil, by LUCAS & MAROCCHI 2011; and for *L. macrosternum* in Brazilian Amazonia, by PINHEIRO et al. 2012).

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KEY WORDS: Amphibia: Anura, Leptodactylidae, *Leptodactylus latrans* group, *Leptodactylus chaquensis*, new record, Paraná, Brazil

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