

## Catalogue of American Amphibians and Reptiles.

Heyer, W. R., and M. M. Heyer. 2004. *Leptodactylus furnarius*.

***Leptodactylus furnarius* Sazima and Bokermann**  
Cerrado Oven Frog

*Leptodactylus furnarius* Sazima and Bokermann 1978:899. Type locality, "Campo Grande, (900M) Paranapiacaba, São Paulo, Brasil." Holotype, Museu de Zoologia da Universidade de São Paulo (MZUSP) 73678 (formerly WCAB 47949), adult male, collected by W.C.A. Bokermann and I. Sazima on 20 December 1973 (examined by WRH).

*Leptodactylus laurae* Heyer 1978:59.

• **CONTENT.** The species is monotypic.

• **DEFINITION.** Adult *Leptodactylus furnarius* males are of small to moderate size, females are small, the head is longer than wide, and the hind limbs are long (see **Table**; Heyer and Thompson 2000 provided definitions of adult size and leg length categories for *Leptodactylus*). Male vocal sacs are either median and moderately expanded or moderately expanded laterally and either lightly pigmented or unpigmented. Neither males nor females have spatulate snouts. Male forearms are not hypertrophied. Males lack asperities on the thumbs and chest. Six well-defined dorsolateral folds are present. Toe tips are narrow. Toes lack fringes and may or may not have a very weak lateral ridge basally and vestigial web between toes I–II–III–IV. The upper shank is smooth (tubercles lacking). The outer tarsus is smooth. The sole of the foot is smooth.

The upper lip usually (71%) has a distinct light stripe, sometimes (29%) the stripe is indistinct. The dorsum is spotted or striped. A light middorsal stripe is always present. The belly is usually immaculate or sometimes with a few melanophores or small spots encroaching laterally onto the belly. The posterior thigh surfaces have distinct (51%) to indistinct (49%) light horizontal stripes on their lower aspects. The upper shanks have dark crossbands, usually interrupted medially; no longitudinal light pin-stripes are present.

Larvae (description based on Sazima and Bokermann 1978) have a typical pond morphology and are members of the lentic, benthic guild (McDiarmid and Altig 1999, guild 7). The oral disk is anteroventrally positioned, entire (not emarginate), with an anterior gap lacking marginal papillae. The tooth row formula is 2(2)/3(1). The spiracle is sinistral and the vent tube is median. The dorsal fin ends at the body and does not extend onto it. At Gosner stage 38, the larval TL = 41 mm. The dorsum and sides of the body are blackish-gray, darker dorsally. The venter is iridescent white in life, patternless in preservative. The tail is speckled with dark gray or black markings, the speckles are irregular and usually confluent. The iris is yellow in life.

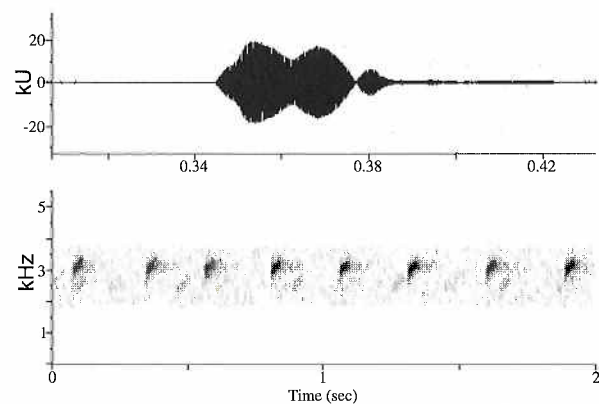
The advertisement call consists of a single note per call, given at a rate of about 200/min (recording analyzed for this description) to about 450/min (Sazima and Bokermann 1978). Calls are given in bouts lasting 30 s or more (Sazima and Bokermann 1978). Call duration is 0.04 s (Sazima and Bokermann's 1978 value of 0.10 s apparently included a terminal portion of the call in their Fig. 3 that is probably due to over-recording or microphone ringing). The call is moderately amplitude modulated with 3–4 partial pulses; the end of the call often has a complete pulse. The call is frequency modulated, starting at 2600–2800 Hz and rising to 3300–3400 Hz. The call reaches maximum intensity at about 15% of the call duration. The dominant frequency is the fundamental frequency and is about 3014



**FIGURE 1.** *Leptodactylus furnarius*, an unvouchered specimen from Serra do Cipó, Minas Gerais, Brazil (photograph courtesy of Paula C. Eterovick).



**FIGURE 2.** Tadpole of *Leptodactylus furnarius* (WCAB 48127 – this specimen was not with the Bokermann collection materials catalogued into the MZUSP collection [C. Mello, pers. comm.], nor could it be found in the ZUEC collection [I. Sazima, pers. comm.]) from Campo Grande, São Paulo, Brazil (image published with permission of the Revista Brasileira de Biologia).



**FIGURE 3.** Wave form and audiospectrogram displays of the advertisement call of *Leptodactylus furnarius* (USNM recording 226, cut 4) from Chapada dos Guimarães, Aldeia Velha, Mato Grosso, Brazil. Wave form of the second call in the audiospectrogram.

Hz for the call analyzed herein). No indication of harmonic structure is evident in the call.

• **DIAGNOSIS.** The species that have a combination of light stripes on the posterior surface of the thigh (either distinct or at least discernible) and smooth surfaces on the posterior surface of the tarsus and sole of foot in some or all individuals are *Leptodactylus furnarius*, *L. fuscus*, *L. gracilis*, *L. longirostris*, *L. marambaiae*, *L. notoaktites*, *L. plaumanni*, and *L. poecilochilus*. *Leptodactylus furnarius* lacks light stripes on the dorsal surface of the shank; such stripes occur in *L. gracilis*, *L. marambaiae*,

and *L. plaumanni*. All individuals of *L. furnarius* have a light middorsal stripe and at least six dorsolateral folds; only some individuals of *L. fuscus*, *L. longirostris*, *L. notoaktites*, and *L. poecilochilus* have the same combination. Most individuals of *L. fuscus* lack light middorsal stripes (but all have at least six dorsolateral folds), and other individuals of *L. longirostris*, *L. notoaktites*, and *L. poecilochilus* lack the pair of dorsolateral folds immediately on either side of the midline and also lack a light dorsal stripe. *Leptodactylus furnarius* is most difficult to distinguish from individuals of *L. fuscus*, *L. longirostris*, *L. notoaktites*, and *L. poecilochilus* that have at least six dorsolateral folds and a light middorsal stripe. The leg of *L. furnarius* is longer (e.g., foot length/SVL 57–72%) than in *L. fuscus*, *L. longirostris*, and *L. poecilochilus* (e.g., foot length/SVL 42–60%). The dominant frequency of the advertisement call of *L. furnarius* is frequency modulated between 2600–3400 Hz, whereas that of *L. notoaktites* ranges from 470–1990 Hz.

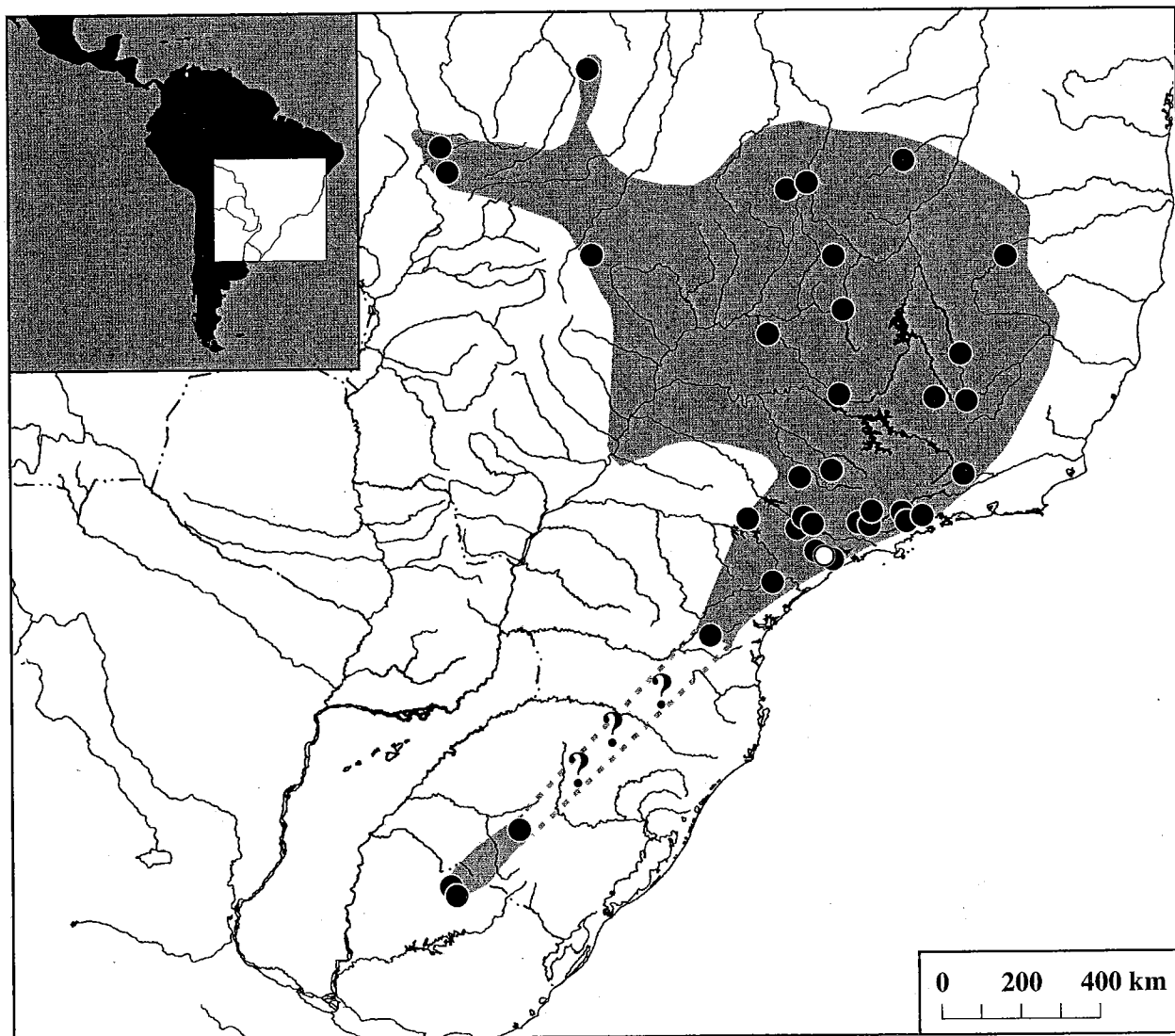
• **DESCRIPTIONS.** Sazima and Bokermann (1978) engendered a morphological description of the holotype including color. Cochran's (1955, as *L. gracilis*) detailed description considered

color in alcohol, whereas Heyer's (1978, as *L. laurae*) included life color. Heyer (1978, as *L. laurae*) discussed sexually dimorphic characteristics. An account of the larva with color is in Sazima and Bokermann (1978). Advertisement calls are outlined in García Pérez and Heyer (1993) and Sazima and Bokermann (1978). The karyotype is unknown.

• **ILLUSTRATIONS.** A color photograph appears in

**TABLE.** Summary measurement data for *Leptodactylus furnarius* (means are in parentheses).

Measurement	Males	Females
SVL (mm)	31–39 (36.5)	32–45 (40.7)
Head length/SVL (%)	35–41 (38)	35–41 (37)
Head width/SVL (%)	29–35 (32)	29–34 (31)
Thigh length/SVL (%)	41–54 (49)	45–52 (49)
Shank length/SVL (%)	53–66 (59)	54–67 (59)
Foot length/SVL (%)	57–72 (65)	58–70 (63)



**MAP.** Distribution of *Leptodactylus furnarius*: The circle marks the type locality, dots indicate other localities (a dot may represent more than one proximate site), and question marks denote the unknown status of predicted distribution. Published locality data used to generate the map should be considered as secondary sources of information, as we did not confirm all specimen identities. The locality coordinate data and sources are available on a spread sheet at <http://learning.richmond.edu/Leptodactylus>.

