

Fig. 132. *Trachycephalus resinifictrix* (Goeldi, 1907). A. Dorsolateral view. B. Ventral surface in life. C. Palm (preserved specimen). D. Sole (preserved specimen). E. Call, oscillogram. F. Call, spectrogram. (Photos by K. H. Jungfer).

Leptodactylus Fitzinger, 1826

“THIN-TOED FROGS”



Fig. 133. *Leptodactylus lutzi*, endemic to Guyana, one of the ca. 85 described species in the genus. (Photo by P. J. R. Kok).

- ⇒ Small to large size
- ⇒ Maxillary teeth present
- ⇒ Pupil horizontally elliptical (Fig. 42A)
- ⇒ Vocal sac single, subgular (Fig. 56A), bilobate, subgular (Fig. 56B), or paired, subgular (Fig. 56E); vocal sac internal and indistinct in some species (e.g. *L. discodactylus*)
- ⇒ Skin on dorsum smooth to warty (Fig. 44A-F)
- ⇒ Ventral skin smooth (Fig. 44A)
- ⇒ Fingers unwebbed, toes no more than basally webbed
- ⇒ Finger I \geq II when fingers adpressed
- ⇒ Finger discs unexpanded (Fig. 51A), or slightly expanded
- ⇒ Tympanum present, distinct (Fig. 43A)

This large and diverse genus currently contains about 86 species. Thin-toed frogs are mostly nocturnal and terrestrial (some semiaquatic), they inhabit a wide range of habitats, from savannah to tropical primary forest. Several species produce toxic skin secretions.

The genera *Adenomera* and *Lithodytes* were synonymized with *Leptodactylus* by Frost *et al.* (2006). It has been suggested to use the term “*Leptodactylus marmoratus* group” (Heyer, 1973) for those species formerly included in *Adenomera* (Almeida & Angulo, 2006).

Sexual dimorphism

Very variable between species. Males of many species have enlarged forearms and/or keratinized spine(s) on the thumb (sometimes also on the chest); in some species males have a shovel-shaped snout used to excavate nesting chambers.

Eggs

Deposited in foam nests on land (sometimes in nesting chambers), or in water.

Tadpoles

Exotroph (benthic, carnivorous) or endotroph (nidicolous).

Distribution

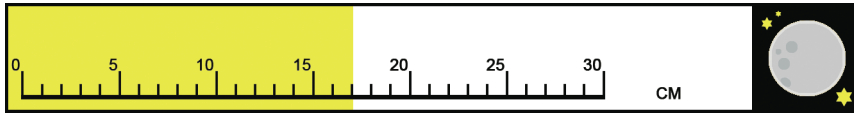
The genus is widespread and known from southern North America, the West Indies, and South America (Frost, 2008).

Field key to the *Leptodactylus* species of Kaieteur National Park

1. Skin smooth to finely granular (Fig. 44A-C); at least one pair of well-defined, usually continuous, dorsolateral folds (Fig. 46A) **2**
- 1'. Skin warty, tuberculate or spiculate (Fig. 44D-F); no well-defined, continuous dorsolateral folds **3**
2. Rear of thighs black with light spots (Fig. 39A) and immaculate pinkish stripe on the upper lip ***L. rhodomystax*** (p. 226)
- 2'. Not as above **5**
3. Body black with dorsolateral yellow stripes ***L. lineatus*** (p. 216)
- 3'. Not as above **4**
4. Ventral surface yellow, centre of belly immaculate ***L. lutzii*** (p. 220)
- 4'. Ventral surface whitish or greyish with dark mottling **6**
5. Dorsolateral folds extend to sacrum only ***L. knudseni*** (p. 214)
- 5'. Dorsolateral folds extend to groin **7**
6. Ventral pattern anastomosed (Fig. 39E), extending on the lower surface of legs ***L. petersii*** (p. 224)
- 6'. Ventral pattern not anastomosed, not extending on the lower surface of legs ***L. rugosus*** (p. 228)
7. Supernumerary plantar tubercles absent; stripe on the upper lip entering eye anteriorly ***L. longirostris*** (p. 218)
- 7'. Supernumerary plantar tubercles present (Fig. 50); stripe on the upper lip never entering eye anteriorly. ***L. mystaceus*** (p. 222)

Leptodactylus knudseni Heyer, 1972

1972: 3, fig. 2.



ENGLISH NAME: Knudsen's thin-toed frog.

LOCAL NAMES (PATAMONA): Chinau, Pùdùka.

TYPE LOCALITY: "Limoncocha, 0°24'S, 76°37'W, Provincia de Napo, Ecuador".

SELECTED REFERENCES: Heyer, 1979 (description, call description, in English), Heyer, 2005 (description, variation, call description, tadpole description, distribution, in English), Heyer & Heyer, 2006 (extended account, colour photo, in English).

Field identification - Males reach 170.0 mm SVL, females 154.0 mm.

- Dorsal ground colour variable, ranging from pinkish or greyish tan to orangish or reddish brown, with two or more broad dorsal transverse brown bands, sometimes ill-defined; flanks reddish in males; juveniles greyish with reddish dorsal transverse broad bands and reddish dorsolateral fold (fold more conspicuous than in adult); skin on dorsum smooth, slightly granular posteriorly.
- Ventral surface smooth, variable in colour and pattern, often creamish white with diffuse brown mottling; throat dark brown with pale flecks.
- Pair of low, often interrupted, dorsolateral folds extending from eye to sacral region, never entering groin. Supratympanic fold bifurcating on shoulder.
- Upper lip with dark triangular marks.
- Posterior thigh pattern variable, often black with reddish orange vermiculations.
- When addressed, Finger I much longer than Finger II.
- Lateral fringes on fingers and webbing absent.
- Male thumb with one large spine; large breeding males with chest spines.

Life history - Nocturnal, terrestrial. Found in primary and secondary forest, and in open areas, including savannah. Males call from various terrestrial sites, including edge of burrows or hollow trunks and flooded areas. Eggs are laid in foam nests, from which tadpoles escape into nearby water (temporary or semi-permanent) after heavy rains; tadpoles feed on frog eggs (hetero- and conspecific) and detritus.

Call - First described by Heyer (1979: 21), who provided a spectrogram. It consists of a single pulsed note (a loud rising "whoop") repeated at a rate of about 16-66 calls/min.

Tadpole - Probably first described by Duellman (1978: 109, as *Leptodactylus pentadactylus*), see also Hero (1990: 247). Exotroph, benthic/carnivorous; grey or dark olive; LTRF = 2(2)/2-3[1-2].

Abundance and distribution in KNP - Common. Observed around main sampling localities # 2, 4, and 11 (see Fig. 3), probably widespread in the park.

Geographic range - Widespread in the Amazon Basin, from Bolivia, Ecuador, Colombia and Peru, through Brazil and the Guiana Shield to Trinidad.

Taxonomic comments - The broad distribution and notably the geographic variation of the juvenile pattern suggest a possible complex of cryptic species.

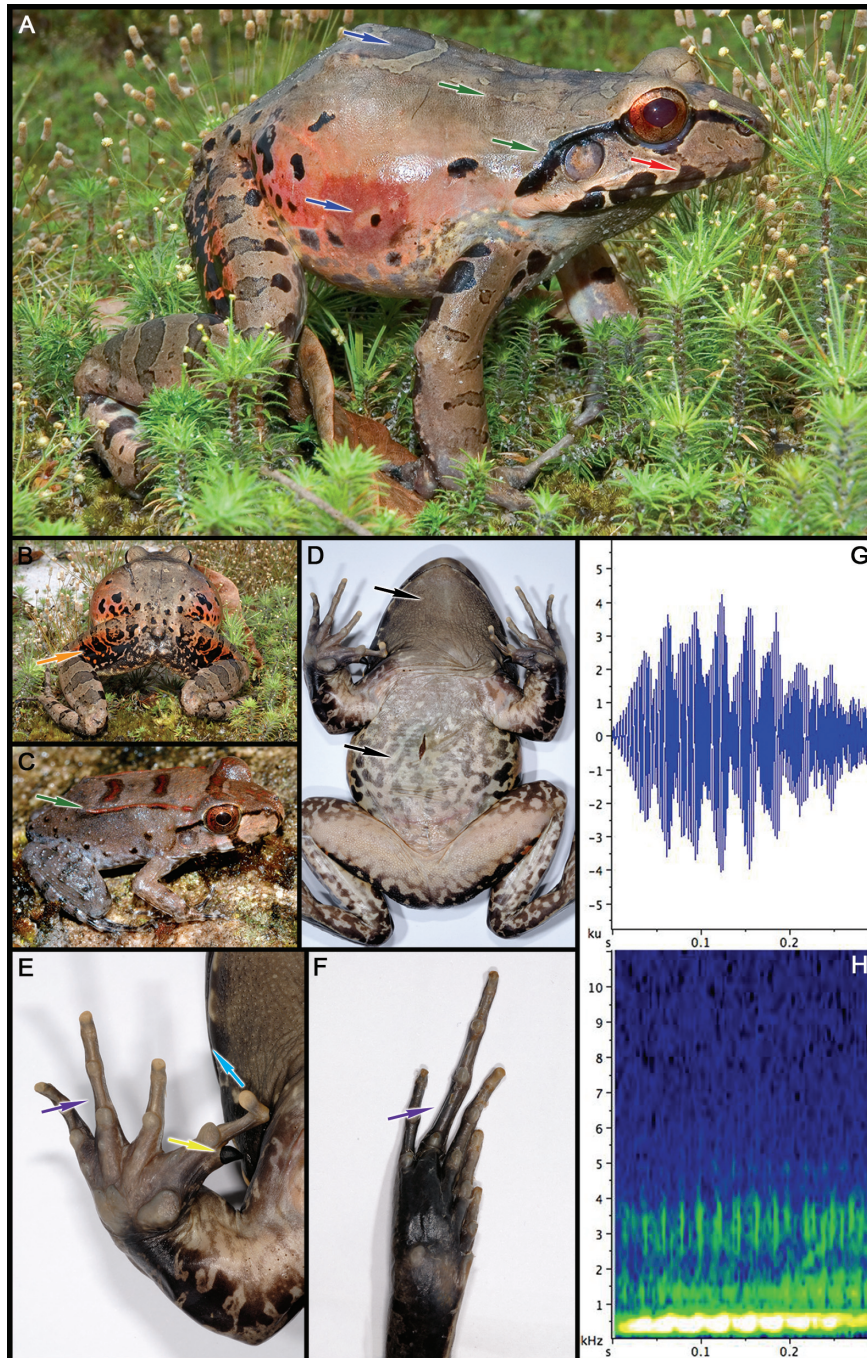
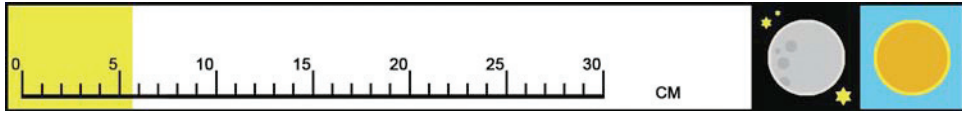


Fig. 134. *Leptodactylus knudseni* Heyer, 1972. A. Dorsolateral view of male. B. Posterior surface of thighs. C. Juvenile. D. Ventral surface in preservative. E. Palm (preserved male specimen). F. Sole (preserved male specimen). G. Call, oscillogram. H. Call, spectrogram. (Photos by P. J. R. Kok).

Leptodactylus lineatus (Schneider, 1799)

1799: 138.



ENGLISH NAME: Gold-striped frog, painted antnest frog.

LOCAL NAMES (PATAMONA): Kubi gobi.

TYPE LOCALITY: Not stated.

SELECTED REFERENCES: Lamar & Wild, 1995 (natural history, tadpole description, B&W photos and drawings, in English); Schlüter & Regös, 1996 (tadpole description, in English); Duellman, 2005 (description, call description, tadpole description, colour photo, in English).

Field identification - Males reach 45.0 mm SVL, females 56.0 mm.

- Dorsal ground colour dark brown to black with yellowish to gold dorsolateral stripe from tip of snout to groin, sometimes shortly interrupted; skin on dorsum finely spiculate.
- Ventral surface smooth, light to dark grey with white flecks.
- Cream spots at angle of jaw and arm insertion.
- Bright red flashmarks (spots) on axilla, groin, and posterior surfaces of thighs and shanks (red spots totally absent in a 21.2 mm juvenile).
- More or less distinct transverse brown bars on limbs (bluish and more conspicuous in juveniles).
- Flanks immaculate light or dark grey to black.
- When addressed, Finger I slightly longer than Finger II.
- Lateral fringes on fingers and webbing absent.

Life history - Mainly nocturnal (although sometimes found by day), terrestrial. Found exclusively in primary forest, often associated with large nests of leaf cutting ant (*Atta* spp.). Males call from the entrance of or from subterranean tunnels in *Atta*-nests. Eggs are laid in foam nests constructed at the edge of temporary pools or at the mouth of partially submerged burrows, possibly also in water reservoirs in *Atta*-nests, from which tadpoles escape to water; larvae probably feed on detritus. *Leptodactylus lineatus* is part of a mimetic complex involving several species of the genera *Allobates* (Aromobatidae) and *Ameeraga* (Dendrobatidae).

Call - First described by Schlüter (1980: 240), who provided a spectrogram; see also Duellman (2005: 21). It consists of a short low whistle repeated at a rate of about 80-90 calls/min.

Tadpole - First described by Lamar & Wild (1995: 138); see also Schlüter & Regös (1996: 2). Exotroph, benthic; bright pink with a short metallic white middorsal stripe; LTRF varies from 0/0 to 2(2)/3(1) (apparently correlated with growth stages).

Abundance and distribution in KNP - Locally common (especially in the vicinity of large *Atta*-nests), but usually difficult to find. Observed around main sampling localities # 4 and 11 (see Fig. 3), probably widespread in the park.

Geographic range - Widespread in the Amazon Basin, reported from eastern Peru, Ecuador and Bolivia to the Guiana Shield.

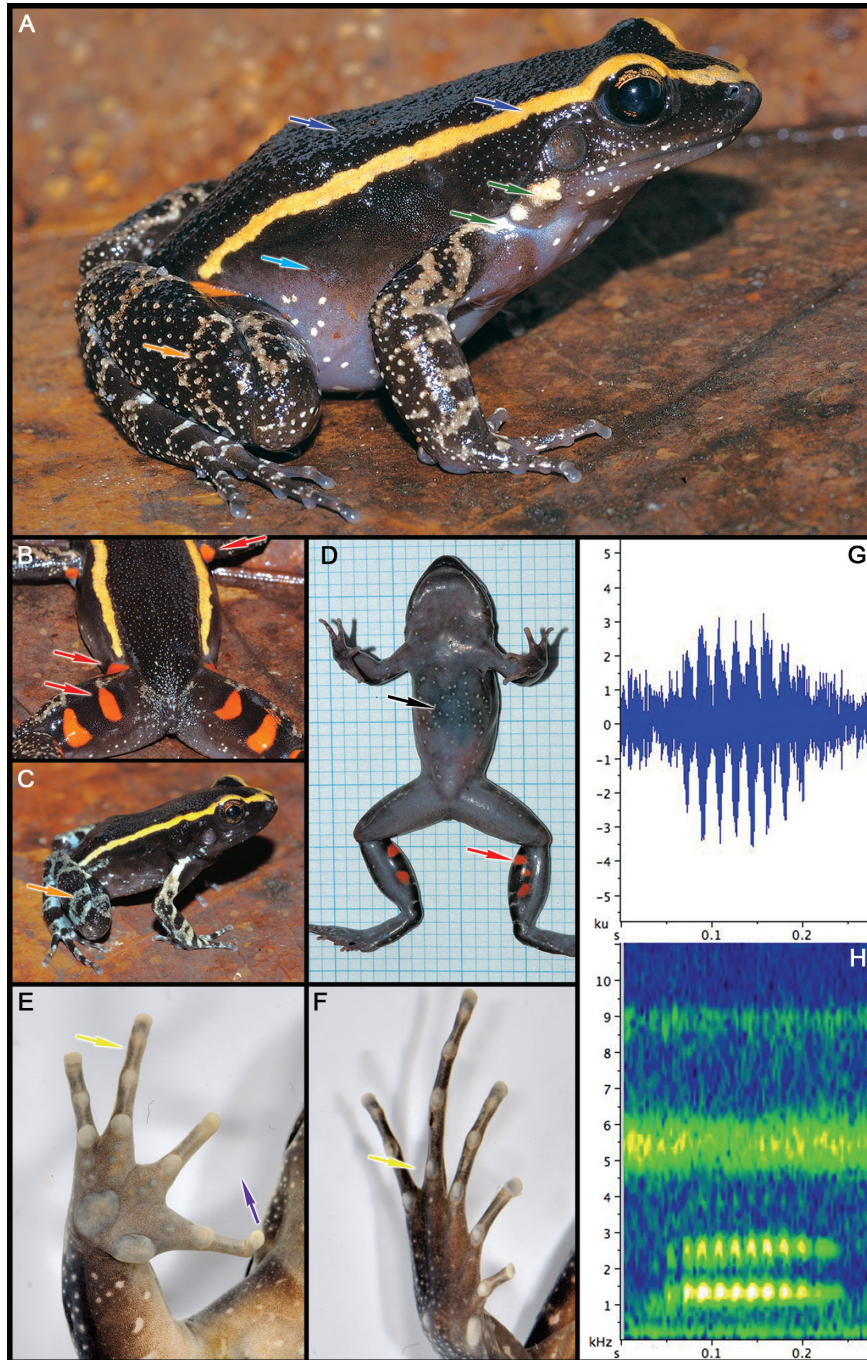
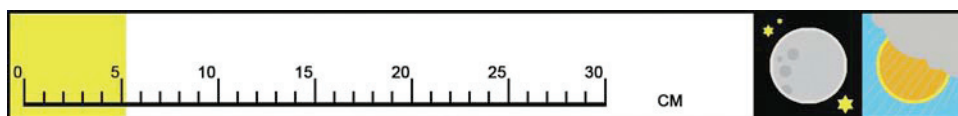


Fig. 135. *Leptodactylus lineatus* (Schneider, 1799). A. Dorsolateral view of female. B. Flashmarks on axilla and posterior surface of thighs. C. Juvenile. D. Ventral surface in life. E. Palm (preserved male specimen). F. Sole (preserved male specimen). G. Call, oscillogram. H. Call, spectrogram. (Photos by P. J. R. Kok).

Leptodactylus longirostris Boulenger, 1882

1882: 240, pl. 16, fig. 3.



ENGLISH NAME: Long snouted thin-toed frog.

LOCAL NAMES (PATAMONA): Kuma-pik.

TYPE LOCALITY: "Santarém" [Brazil].

SELECTED REFERENCES: Heyer, 1978 (description, call description, colour pattern variation, B&W drawing of colour pattern, distribution, in English), Crombie & Heyer, 1983 (call description, tadpole description, morphological variation, natural history, distribution, in English), Duellman, 1997 (description, tadpole description, natural history, in English).

Field identification - Males reach 43.0 mm SVL, females 51.6 mm.

- Dorsal ground colour and pattern very variable, light brown to reddish brown, sometimes greyish or dark brown, uniform or with irregular dark brown markings, middorsal and paravertebral stripes absent or present; skin on dorsum smooth to finely granular.
- Ventral surface smooth, throat and chest cream or white, turning yellow on belly.
- Two to six dorsolateral folds (2-4 in most Kaieteur specimens). Distinct supratympanic fold forming an angle posteriorly to tympanum.
- Upper lip with a white, cream, light brown or pinkish stripe below eye, always entering eye anteriorly.
- Black stripe from tip of snout to eye.
- No distinct triangular dark brown interorbital bar, dorsal markings not bordered by cream lines.
- When adpressed, Finger I much longer than Finger II.
- Supernumerary plantar tubercles absent.

Life history - Mainly nocturnal (active by day during heavy rains), terrestrial. Found in open areas like savannah. Males call from the base of grass, hidden by the vegetation. Eggs are laid in foam nests, usually constructed in hidden small cavities excavated by the male, from which tadpoles escape after a heavy rain into shallow pools or small temporary streams flowing on rocks and sand; tadpoles feed on detritus.

Call - First described by Rivero (1971: 6) who provided a spectrogram, see also Crombie & Heyer (1983: 294). It consists of a short unpulsed note repeated at a rate of about 60-120 notes/min (weet, weet, weet).

Tadpole - First described by Crombie & Heyer (1983: 296), see also Duellman (1997: 24). Exotroph, benthic; pale brown with dark brown mottling; LTRF = 2(1)/3[1].

Abundance and distribution in KNP - Very common in suitable habitat. Observed only around main sampling locality # 3 (see Fig. 3), but probably more widespread in other savannahs in the park.

Geographic range - East of the Amazon Basin in northern Brazil and the Guiana Shield.

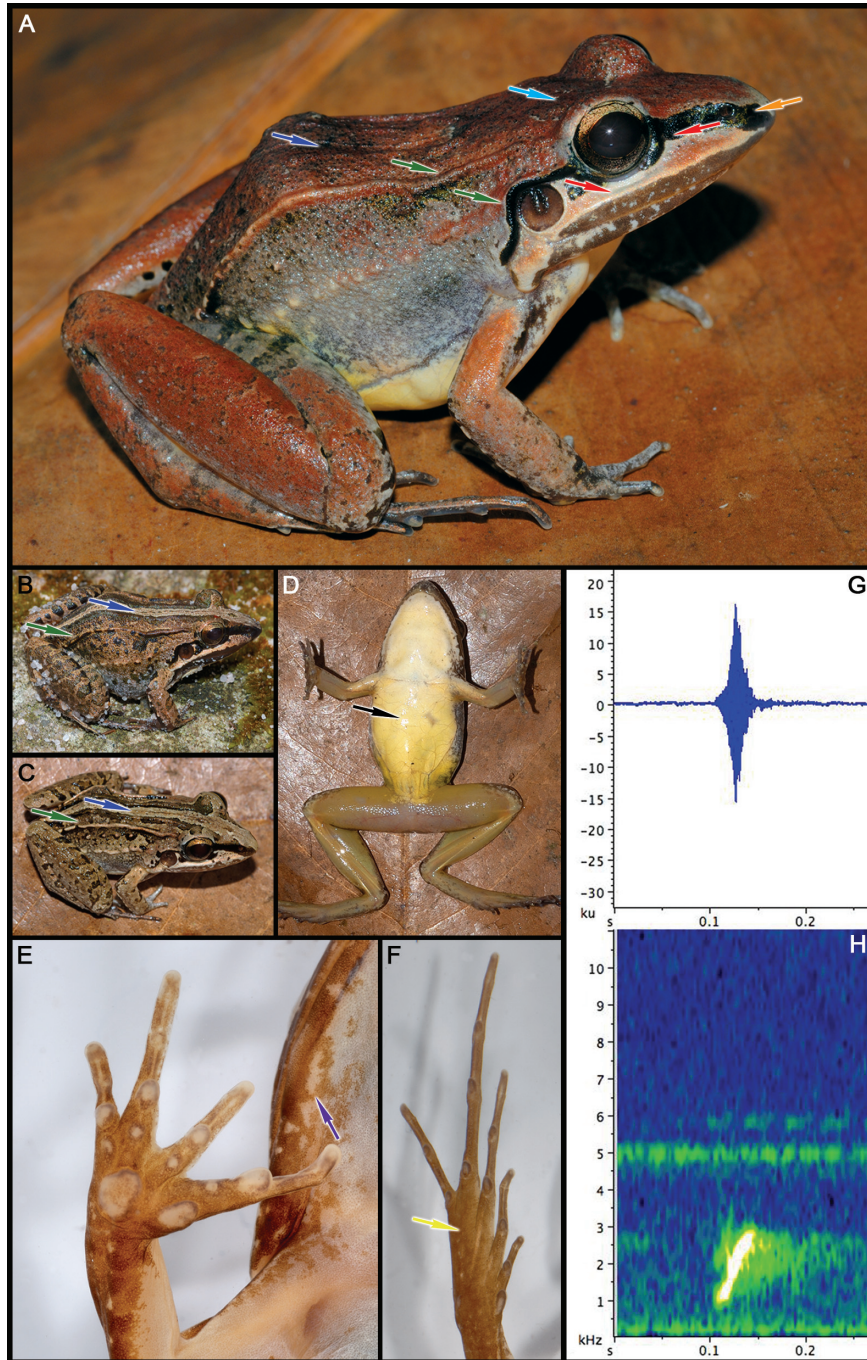
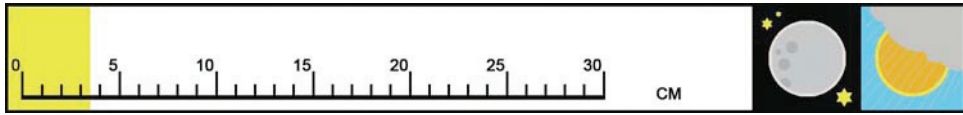


Fig. 136. *Leptodactylus longirostris* Boulenger, 1882. A. Dorsolateral view of unstriped morph. B, C. Dorsolateral views of striped morph. D. Ventral surface in life. E. Palm (preserved male specimen). F. Sole (preserved male specimen). G. Call, oscillogram. H. Call, spectrogram. (Photos by P. J. R. Kok).

Leptodactylus lutzi (Heyer, 1975)

1975: 315, fig. 1.



ENGLISH NAME: Lutz's thin-toed frog.

LOCAL NAMES (PATAMONA): Quima.

TYPE LOCALITY: "Guyana, Chinapoon R., upper Potaro (probably Chenapowu River)".

SELECTED REFERENCES: Heyer, 1975 (original description, B&W photo, in English), Kok *et al.*, 2007 (extended account, description, colour variation, call description, natural history, colour photos, in English).

Field identification - Males reach 33.5 mm SVL, females 34.0 mm.

- ➔ Dorsal ground colour extremely variable, ranging from light or medium grey, dark brown or reddish brown to black, dorsal pattern usually present, very variable, consisting of more or less evident dark interorbital bar, postorbital ridges, and chevron between shoulders, sometimes with dark mottling and orangish brown oblique lateral stripe; skin on dorsum with numerous small warty tubercles.
- ➔ Ventral surface smooth, yellow to orangish yellow suffused with dark grey stippling on throat, chest, and perimeter of belly (centre of belly immaculate).
- ➔ Round black lumbar spots always present (inconspicuous in very dark specimens).
- ➔ Dark triangular seat patch always present.
- ➔ Posterior thigh pattern variable, but always black with distinct yellow, orange or red spotting or mottling.
- ➔ When adressed, Finger I slightly longer than Finger II.
- ➔ Lateral fringes on fingers and webbing absent.
- ➔ Fleshy proboscis on snout in males.

Life history - Mainly nocturnal, terrestrial. Found exclusively in primary forest. Males call on or under the leaf litter. Eggs are laid in foam nests constructed in excavated nesting chambers that have no entrance tunnel; high probably non-feeding tadpoles that complete development within the chamber.

Call - First described by Kok *et al.* (2007: 54), who provided a spectrogram. It consists of single note (a high-pitch "peep") repeated at a rate of about 17-23 calls/min.

Tadpole - Unknown. Probably endotroph, nidicolous.

Abundance and distribution in KNP - Locally common. Observed around main sampling localities # 1, 5, 6, and 11 (see Fig. 3), the species is probably widespread in the park.

Geographic range - Known only from the Pakaraima Mountains of Guyana.

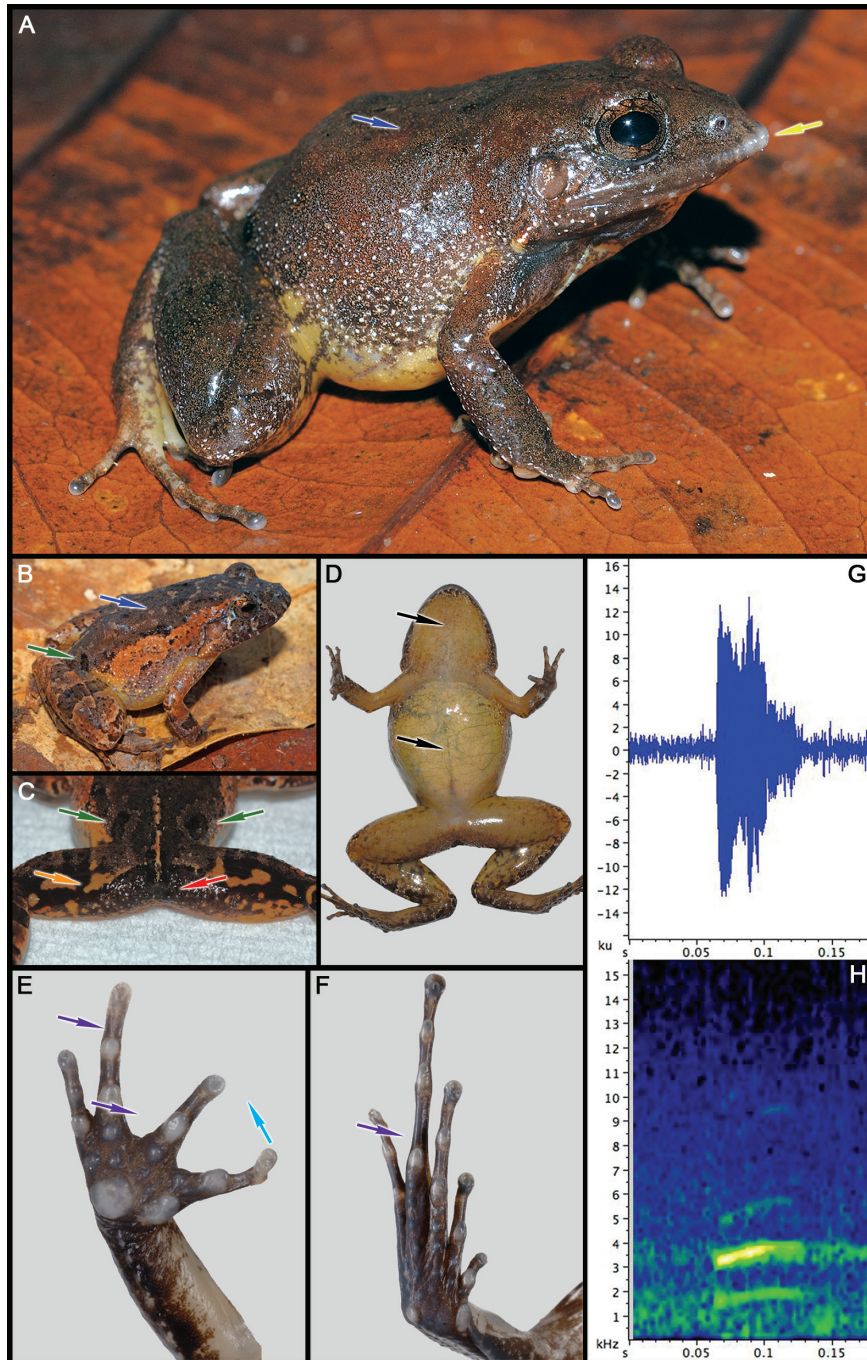
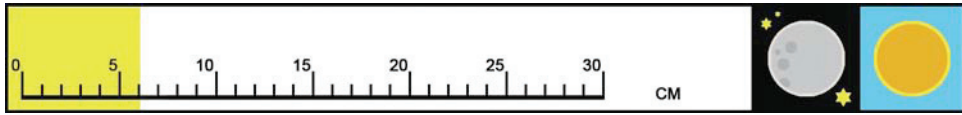


Fig. 137. *Leptodactylus lutzi* (Heyer, 1975). A. Dorsolateral view of male (pattern A of Kok *et al.*, 2007). B. Female (pattern E of Kok *et al.*, 2007). C. Posterior surface of thighs. D. Ventral surface in life (female). E. Palm (preserved male specimen). F. Sole (preserved male specimen). G. Call, oscillogram. H. Call, spectrogram. (Photos by P. J. R. Kok).

Leptodactylus mystaceus (Spix, 1824)

1824: 27, pl. 3, figs 1, 3.



ENGLISH NAME: Amazonian white-lipped frog.

LOCAL NAMES (PATAMONA): Kuma.

TYPE LOCALITY: "ad Bahiam in aqua fluvatilis; differ tab illa prope flumen Solimoens" [Bahia and Solimoes, Brazil].

SELECTED REFERENCES: Duellman, 1978 (description, tadpole description, call description, natural history, B&W photo, in English), Heyer, 1978 (description, call description, tadpole description, distribution, B&W photo, in English [as *Leptodactylus amazonicus*]), Heyer *et al.*, 1996 (call description, comparison with similar species, in English).

Field identification - Males reach 56.0 mm SVL, females 60.0 mm.

- Dorsal ground colour grey to light brown, sometimes reddish brown, with irregular dark brown, transverse, chevron-shaped bars bordered by cream lines; skin on dorsum smooth.
- Ventral surface smooth, creamy white (female and juvenile) to yellow (active male), some inconspicuous brown flecks on throat.
- Pair of dorsolateral folds extending from eye to groin, usually bordered by black ventrally, reddish in juveniles. Distinct supratympanic fold not forming an angle posteriorly to tympanum.
- Upper lip with a broad white or creamy white stripe below eye, not entering eye anteriorly.
- Broad black band from tip of snout to arm insertion.
- More or less triangular dark brown interorbital bar.
- When adpressed, Finger I much longer than Finger II.
- Supernumerary plantar tubercles present.

Life history - Mainly nocturnal (although individuals may be found by day), terrestrial. Usually found in primary forest, but occurs also in secondary vegetation and clearings. Males call from various secluded terrestrial sites, *i.e.* under logs, among leaves, or in small holes in the ground. Eggs are laid in foam nests, usually constructed in hidden small cavities excavated by the male, from which tadpoles escape into nearby water (temporary ponds) after heavy rains; tadpoles able to generate foam, feed on detritus.

Call - First described by Duellman (1978: 108) and Heyer (1978: 41, as *Leptodactylus amazonicus*) who provided a spectrogram, see also Heyer *et al.* (1996: 10). It consists of a series of pulsed notes (oit, oit, oit, oit, oit) repeated at a rate of about 40-120 notes/min.

Tadpole - First described by Duellman (1978: 108) and Heyer (1978: 41, as *Leptodactylus amazonicus*), see also Hero (1990: 248). Exotroph, benthic; olive tan; LTRF = 2(2)/3(1).

Abundance and distribution in KNP - Rare. Observed only around main sampling locality # 5 (see Fig. 3), but probably more widespread in the park.

Geographic range - Widespread in the Amazon Basin, from Paraguay to the Guiana Shield.

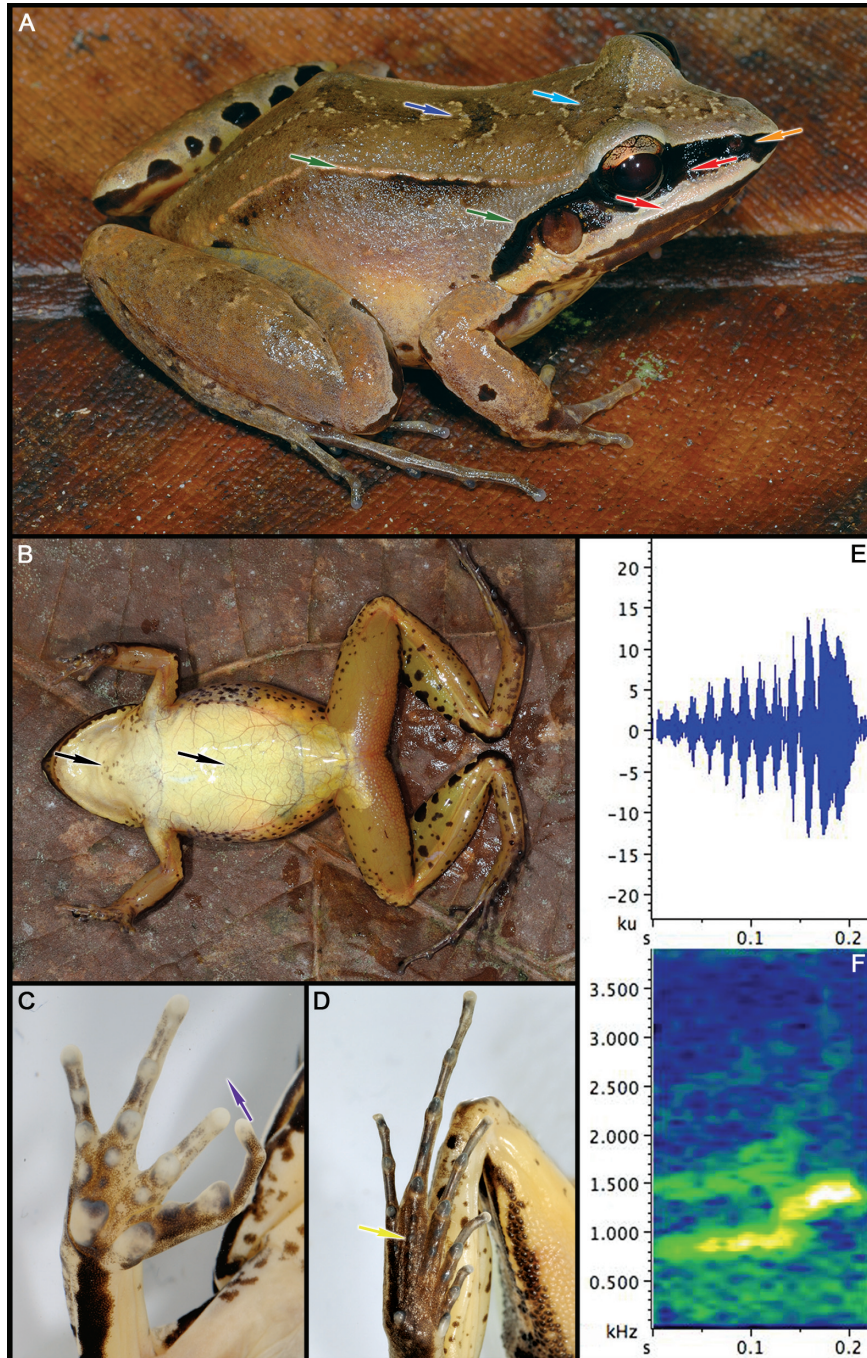
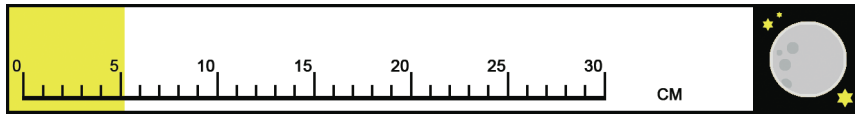


Fig. 138. *Leptodactylus mystaceus* (Spix, 1824). A. Dorsolateral view of male. B. Ventral surface of male in life. C. Palm (preserved male specimen). D. Sole (preserved male specimen). E. Call, oscillogram. F. Call, spectrogram. (Photos by P. J. R. Kok).

***Leptodactylus petersii* (Steindachner, 1864)**

1864: 254, pl. 16, figs 2, 2a-c.



ENGLISH NAME: Peter's thin-toed frog.

LOCAL NAMES (PATAMONA): Unknown.

TYPE LOCALITY: "Marabitanas" [Amazonas, Brazil].

SELECTED REFERENCES: Heyer, 1994 (description, call description, tadpole description, geographic variation, distribution, in English), Lescure & Marty, 2001 (short description, natural history, spectrogram, colour photo, in French).

Field identification - Males reach 41.1 mm SVL, females 51.3 mm.

- Dorsal ground colour variable, ranging from greenish or greyish brown to reddish brown, with irregular dark brown to black markings; skin on dorsum with many spicules and short elongated glandular ridges laterally.
- Ventral surface smooth, variable in pattern, white with extensive grey to black mottling always in an anastomotic pattern; throat dark grey with white spots.
- No prominent dorsolateral folds, but short glandular ridges and/or large to elongate glandular warts instead. Distinct supratympanic fold reaching arm insertion.
- Dark triangular interorbital mark.
- Iris bronze to reddish brown with two distinct light stripes from pupil to upper lip where they prolong into cream lip stripes.
- When addressed, Finger I much longer than Finger II.
- Lateral fringes on fingers absent or very weak, but extensive on toes, which are basally webbed.
- Male thumb with two large spines, no chest spines.

Life history - Nocturnal, terrestrial. Found exclusively in primary forest, sometimes in clearings. Males call hidden in the mud or under vegetation along ponds, marshes and flooded areas; calling activity is intense during heavy rains. Eggs are laid in foam nests constructed next to water, under vegetation or in the mud, from which tadpoles escape into nearby water; tadpoles feed on detritus.

Call - First described by Heyer (1994: 97) who provided several spectrograms from different geographic populations. It consists of a single pulsed note repeated at a rate of about 48 calls/min (weet, weet, weet, weet).

Tadpole - First described by Hero (1990: 252, as *Leptodactylus wagneri/podicipinus*), see also Heyer (1994: 96). Exotroph, benthic; dark brown to black; LTRF = 2(2)/3.

Abundance and distribution in KNP - Common. Observed around main sampling locality # 5 (see Fig. 3).

Geographic range - Widespread in the Amazon Basin, from Colombia, eastern Ecuador and Peru, and northern Bolivia to the Guiana Shield and central Brazil.

Taxonomic comments - Possibly a complex of cryptic species, the species found in KNP might prove to be a different taxon.

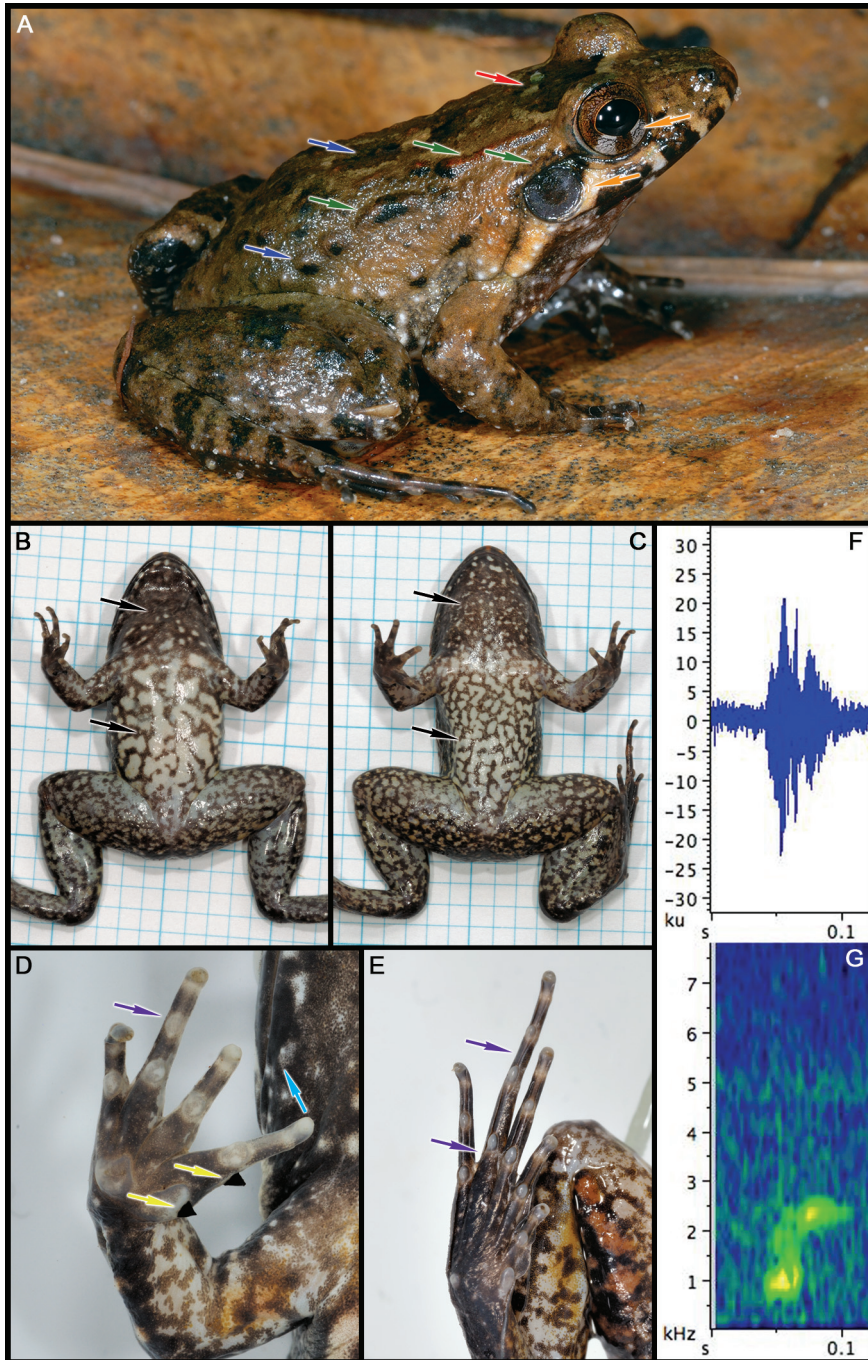
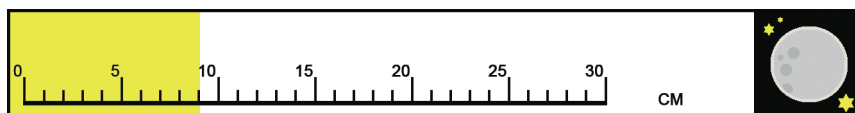


Fig. 139. *Leptodactylus petersii* (Steindachner, 1864). A. Dorsolateral view of a male. B, C. Ventral views of two males. D. Palm (preserved male specimen). E. Sole (preserved male specimen). F. Call, oscillogram. G. Call, spectrogram. (Photos by P. J. R. Kok).

Leptodactylus rhodomystax Boulenger, 1884

1884 "1883": 637, pl. 58, fig. 2.



ENGLISH NAME: Rose-lipped thin-toed frog.

LOCAL NAMES (PATAMONA): Pai-talo.

TYPE LOCALITY: "Yurimaguas, Huallaga River, Peru".

SELECTED REFERENCES: Duellman, 1978 (description, short tadpole description, natural history, B&W photo, in English), Heyer, 1979 (description, distribution, in English), Zimmerman & Bogart, 1988 (call description, ecology).

Field identification - Males reach 90.0 mm SVL, females 83.0 mm.

- Dorsal ground colour greyish brown to reddish brown (more reddish in juveniles), sometimes with narrow transverse bands and an interorbital bar, flanks orange tan; skin on dorsum smooth.
- Ventral surface smooth, creamy white suffused with brown, throat dark brown to black with white small spots and flecks.
- Pair of dorsolateral folds extending from eye to groin, usually dark brown and bordered by black ventrally. Distinct supratympanic fold extending to arm insertion.
- Upper lip with a broad pinkish tan stripe, entering eye anteriorly.
- Groin and posterior surfaces of thighs dark brown to black with greenish yellow or creamy spots.
- Fingers lack lateral fringes, toes basally webbed.
- When addressed, Finger I much longer than Finger II, male thumb with black spine (not illustrated).
- Supernumerary plantar tubercles absent.

Life history - Nocturnal, terrestrial. Found exclusively in primary forest. Males call from the ground, usually near puddles, sometimes partially submerged in water. Eggs are laid in foam nests constructed between the vegetation, near puddles or small ponds, sometimes floating on water, from which tadpoles escape into nearby water (small temporary ponds) after a heavy rain; tadpoles feed on conspecific and heterospecific eggs and tadpoles, probably also on detritus.

Call - First described by Zimmerman & Bogart (1988: 104) who provided a spectrogram. It consists of a powerful short, high-pitch, note repeated at a rate of about 12 notes/min.

Tadpole - First briefly described by Duellman (1978: 111), extensive redescription by Rodrigues *et al.* (2007: 62). Exotroph, benthic/carnivorous; dark brown to black; LTRF = 2(2)/3.

Abundance and distribution in KNP - Common. Observed around main sampling localities # 1, 2, 4, 5, 6, 8, 10, and 11 (see Fig. 3), can be considered as widespread in the park.

Geographic range - Widespread in the Amazon Basin, from eastern Ecuador and Peru to the Guiana Shield.

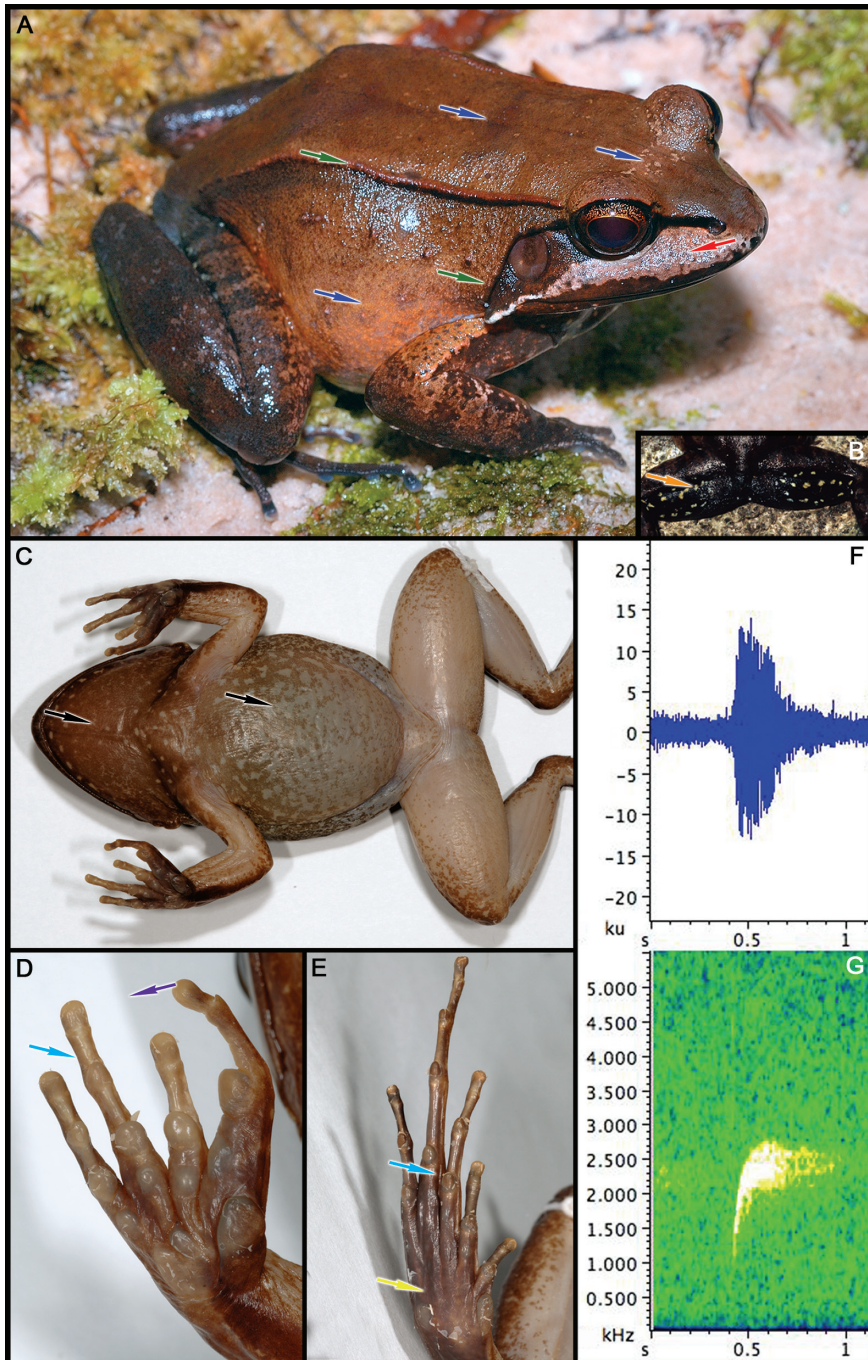


Fig. 140. *Leptodactylus rhodomystax* Boulenger, 1884. A. Dorsolateral view. B. Posterior surface of thighs. C. Ventral surface (preserved female specimen). D. Palm (preserved female specimen). E. Sole (preserved female specimen). F. Call, oscillogram. G. Call, spectrogram. (Photos by P. J. R. Kok).

Leptodactylus rugosus Noble, 1923

1923: 297.



ENGLISH NAME: Rugose thin-toed frog.

LOCAL NAMES (PATAMONA): Quoi.

TYPE LOCALITY: "near Kaieteur Falls, British Guiana".

SELECTED REFERENCES: Donnelly & Myers, 1991 (description, B&W photos, in English), Duellman, 1997 (description, tadpole description, call description, colour photo, in English), Heyer & Thompson, 2000 (extended account, call description, tadpole description, distribution, colour photo, in English).

Field identification - Males reach 72.0 mm SVL, females 74.0 mm.

- ➔ Dorsal ground colour variable, ranging from greyish or greyish brown to olive brown or reddish brown (dorsum bright red in some subadults), with irregular pale cream to greyish tan blotches and black markings; juveniles similar to adults, but dorsal markings more conspicuous; skin on dorsum rugose, warty.
- ➔ Ventral surface smooth, variable in pattern, white to light greyish brown with diffuse brown mottling (pattern more conspicuous in juveniles and subadults, which have ventral surface of thighs orangish); throat white, heavily marked with grey mottling in juvenile and female, grey in adult male.
- ➔ No dorsolateral fold, but short glandular ridges and/or large to elongate glandular warts on dorsum and flanks. Strong supratympanic fold.
- ➔ Dirty white, cream or brownish lines from eye to lip (ill-defined in some specimens).
- ➔ Dirty white, cream or brownish interorbital stripe.
- ➔ When addressed, Finger I much longer than Finger II.
- ➔ Lateral fringes on fingers and toes absent, webbing absent.
- ➔ Male thumb with 1-2 large spines; breeding males with paired chest spines.

Life history - Nocturnal, terrestrial; juveniles often active by day. Found in rocky and sandy habitats in open areas, but juveniles and subadults may be found in adjacent primary forest. Males call sitting on or under rocks. Eggs are laid in foam nests constructed under boulders, from which tadpoles escape into shallow small temporary streams flowing on rocks and sand; tadpoles feed on detritus.

Call - First described by Heyer (1979: 35) who provided a spectrogram, see also Duellman (1997: 26). It consists of a single powerful high-pitch trill repeated at a rate of about 1-7 calls/min.

Tadpole - First described by Heatwole *et al.* (1965: 361), see also Duellman (1997: 25). Exotroph, semiterrestrial; reddish brown with dark brown transverse marks; LTRF = 2(1)/3(1).

Abundance and distribution in KNP - Very common in suitable habitat. Observed around main sampling localities # 1, 2, 3, 4, 6, 10, and 11 (see Fig. 3), the species is mostly restricted to rocky habitats in the park.

Geographic range - Known only from the Guiana Shield, in the Pakaraima Mountains from eastern part of Bolívar State in Venezuela to western Guyana.

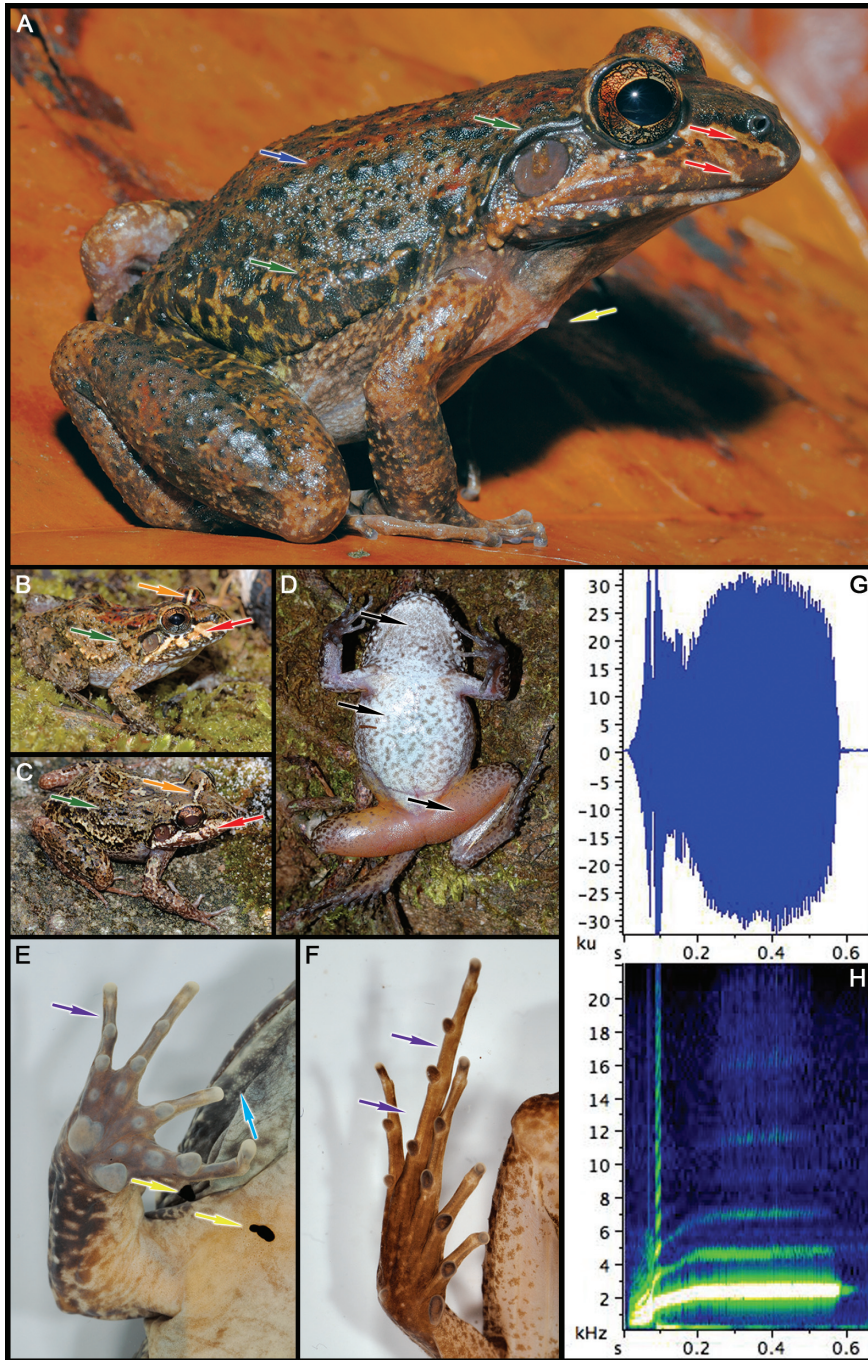


Fig. 141. *Leptodactylus rugosus* Noble, 1923. A. Dorsolateral view of male. B, C. Subadults. D. Ventral surface of subadult in life. E. Palm (preserved male specimen). F. Sole (preserved male specimen). G. Call, oscillogram. H. Call, spectrogram. (Photos by P. J. R. Kok).

Synapturanus Carvalho, 1954

“DISC FROGS”



Fig. 142. *Synapturanus mirandaribeiroi*, a species currently not reported from the Park (compare with *S. salseri*); here from Manaus, Brazil. (Photo by K. H Jungfer).

- ⇒ Very small to medium size
- ⇒ Body globular, ovoid, eyes small
- ⇒ Maxillary teeth absent
- ⇒ Pupil circular (Fig. 42C)
- ⇒ Snout very long, acuminate (Fig. 40), protruding well beyond the lower jaw
- ⇒ Skin on dorsum and venter smooth (Fig. 44A)
- ⇒ Digits unwebbed
- ⇒ Finger I < II when fingers adpressed
- ⇒ First toe reduced
- ⇒ Finger discs unexpanded (Fig. 51A)
- ⇒ Tympanum present, distinct or indistinct (Fig. 43A-B)