

*Phyllomedusa* species are nocturnal and mostly arboreal, although some taxa are terrestrial (e.g. *P. atelopoides*). They mainly inhabit tropical rainforests, but are also found in savannah and seasonally arid areas.

Some species (e.g. *Phyllomedusa bicolor*) produce waxy skin secretions containing opioid peptides with analgesic properties (e.g. dermorphin, deltorphin) that are used by certain Amerindian tribes as a hunting aid and for disease prevention. Frog secretions are scraped off, dried and later mixed with saliva and applied to self-inflicted skin burns. The chemicals produced by the frog proved to be effective against various diseases, from heart and liver diseases to malaria.

**Sexual dimorphism**

Males have nuptial excrescences on the first finger. In most species males are slightly smaller than females.

**Eggs**

Egg masses are deposited above lentic water in most species (above lotic water in some taxa), on the tip of the upper surface of leaves, or in “leaf nests” made by folding one or two leaves into a funnel (into which eggs are laid).

**Tadpoles**

Exotroph (nektonic, suspension-rasper).



Fig. 122. The tadpole of *Phyllomedusa vaillantii*. (Photo by R. Ernst).

**Distribution**

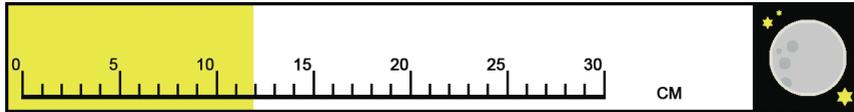
Species belonging to the genus *Phyllomedusa* are found from Panama, through South America east of the Andes, to northern Argentina and Uruguay, including Trinidad (Frost, 2008).

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

- 1. Parotoid region rounded, without longitudinal row of small whitish tubercles; Toes I-II equal or subequal in length when adpressed; finger discs large, covering the tympanum . . . . . ***P. bicolor*** (p. 192)
- 1'. Parotoid region angulate, with longitudinal row of small whitish tubercles; Toe I longer than II when adpressed; finger discs not covering the tympanum . . . . . ***P. vaillantii*** (p. 194)

## *Phyllomedusa bicolor* (Boddaert, 1772)

1772: 19, pls 1-2.



ENGLISH NAME: Giant monkey frog.

LOCAL NAME (PATAMONA): Pakoko (pron. Pa-go-go).

TYPE LOCALITY: "Guinea" [restricted to Suriname by Funkhouser, 1957].

SELECTED REFERENCES: Duellman, 1974 (description, B&W photo in English); Lescure *et al.*, 1995 (description, breeding behaviour, colour photos, in French); Lescure & Marty, 2001 (brief description, natural history, colour photo, in French).

**Field identification** - Males reach 115.3 mm SVL, females 120.5 mm.

- Dorsal colour green, dark green by night; skin on dorsum smooth (sometimes reported as "rough").
- Ventral surface granular, light grey, sometimes with a few white ocelli.
- White ocelli on lower lip, flank, and hidden surfaces of thigh.
- Parotoid region rounded, without longitudinal row of small whitish tubercles.
- Iris silvery grey.
- Fingers and toes unwebbed.
- Finger discs large, covering the tympanum.
- Toes I-II opposable, equal or subequal in length when adpressed.

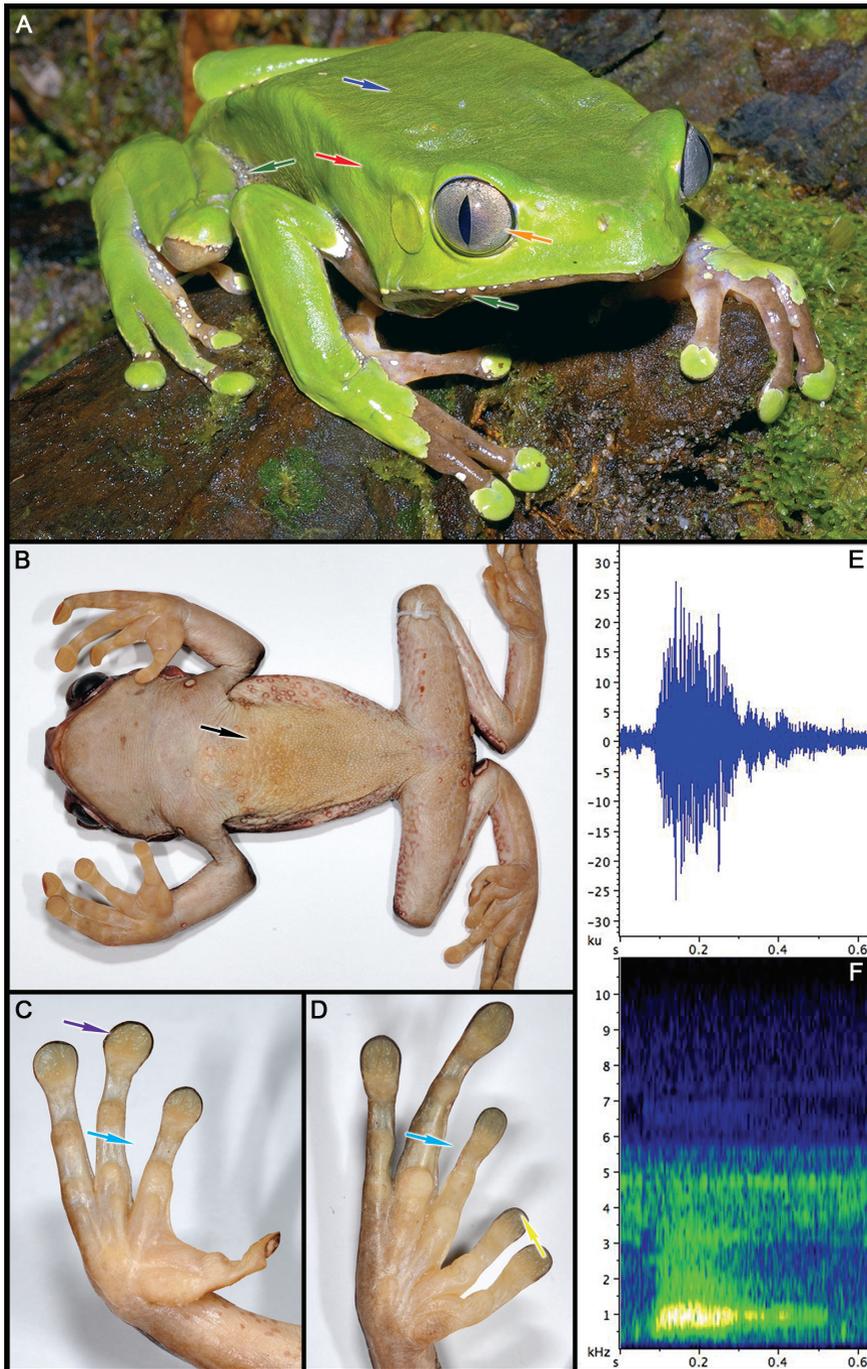
**Life history** - Nocturnal, arboreal. Found in primary and secondary forest. Males call from trees (usually between 2-10 m), typically above or at the edge of pools or ponds. Eggs are laid over ponds and pools, in leaf nests made by folding one or more leaves into a funnel, from which tadpoles will fall into the water as they hatch; tadpoles feed on detritus.

**Call** - First description might be that of Zimmerman & Bogart (1984: 480), who provided spectrograms. It consists of a loud, explosive "bok" usually followed by several additional short, lower-pitched notes; the call is produced at a rate of about 3 calls/min.

**Tadpole** - First described by Hero (1990: 240) and Rada de Martínez (1990: 398). Exotroph, suspension-rasper; translucent orange with silver belly; LTRF = 2(2)/2-3(1).

**Abundance and distribution in KNP** - Common, observed only around main sampling localities # 5 and 11, but the species is probably widespread in the Park.

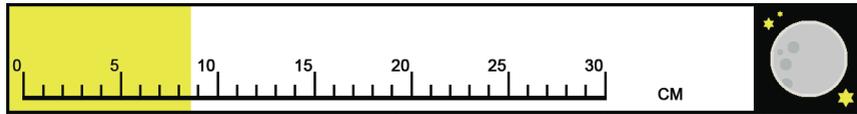
**Geographic range** - Widespread in the Amazon Basin from Ecuador, Peru and northern Bolivia east of the Andes to northern Brazil and the Guiana Shield.



**Fig. 123.** *Phyllomedusa bicolor* (Boddaert, 1772). A. Dorsolateral view of a male. B. Ventral surface of a preserved male. C. Palm (preserved male specimen). D. Sole (preserved male specimen). E. Call, oscillogram. F. Call, spectrogram. (Photos by P. J. R. Kok).

## *Phyllomedusa vaillantii* Boulenger, 1882

1882: 427, pl. 29, fig. 2.



ENGLISH NAME: White-lined monkey frog.

LOCAL NAME (PATAMONA): Might be "Pakalais".

TYPE LOCALITY: "Santarém, Brazil".

SELECTED REFERENCES: Duellman, 1974 (description, B&W photo in English); Lescure *et al.*, 1995 (description, breeding behaviour, colour photos, in French); Lescure & Marty, 2001 (brief description, natural history, colour photo, in French).

**Field identification** - Males reach 65.0 mm SVL, females 87.3 mm.

- Dorsal colour pale or dark green to greyish green; skin on dorsum smooth (sometimes reported as "rough").
- Ventral surface granular, orange to reddish brown or greyish brown, usually with a few white ocelli on throat and chest.
- Cream, orange or reddish ocelli on flank and hidden surfaces of thigh, lower lip white.
- Parotoid region angulate, with longitudinal row of small whitish tubercles.
- Iris silvery grey.
- Fingers and toes unwebbed.
- Finger discs medium, not covering the tympanum.
- Toes I-II opposable, Toe I longer than II when adpressed.

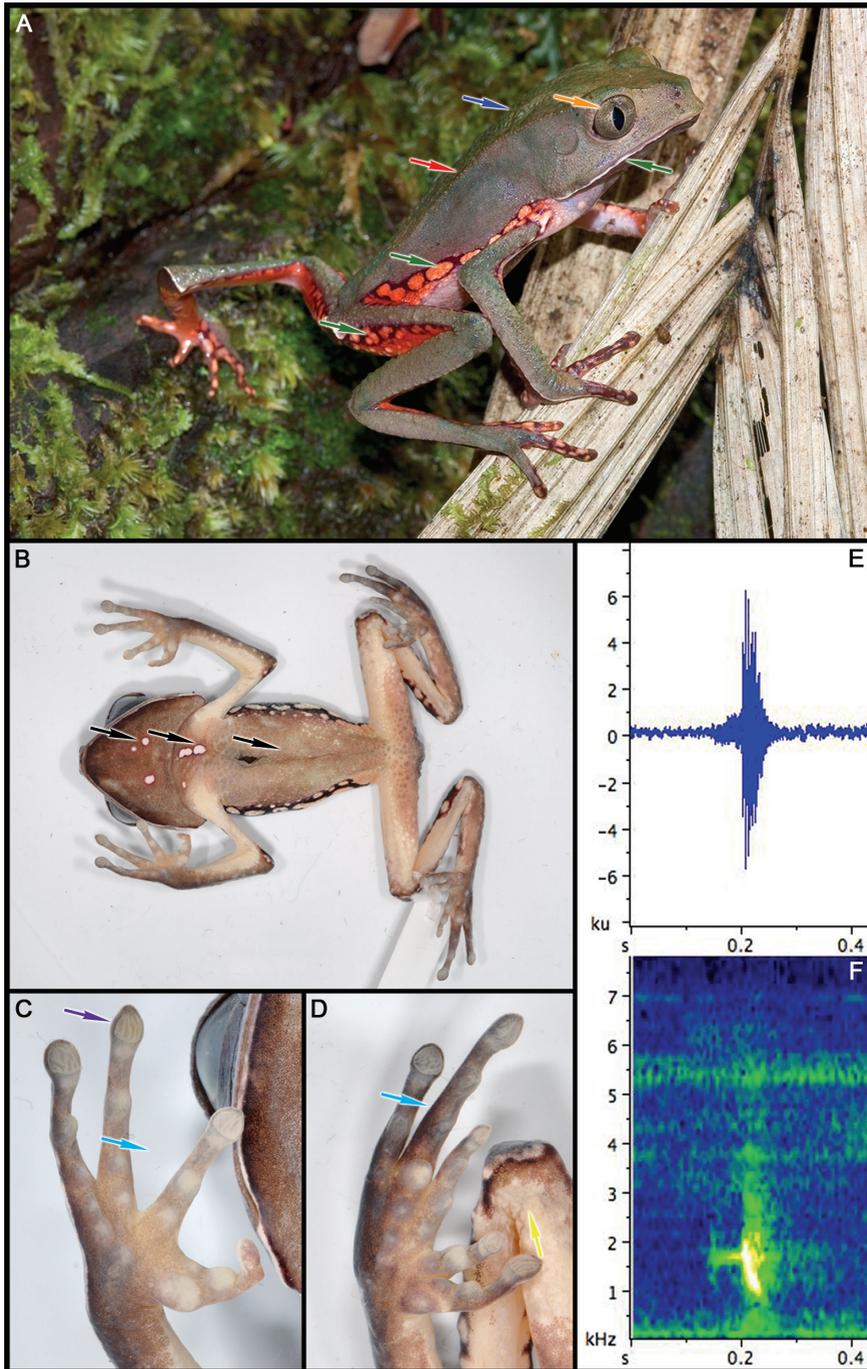
**Life history** - Nocturnal, arboreal, but often observed sitting or walking on the ground. Found in primary and secondary forest. Males call from bushes (usually between 0.5-2 m above the ground), typically above or at the edge of pools or ponds. Eggs are laid over ponds and pools, in leaf nests made by folding one or more leaves into a funnel, from which tadpoles will fall into the water as they hatch; tadpoles feed on detritus.

**Call** - First description might be that of Duellman (1978: 181); see also Schlüter (1979: 227), who provided a spectrogram. It consists of a harsh "cluck"; the call is produced very irregularly, at a rate of about 12-14 calls/min.

**Tadpole** - First described by Duellman (1978: 181); see also Caramaschi & Jim (193: 262) and Hero (1990: 243). Exotroph, suspension-rasper; translucent orange with silver belly; LTRF = 2[2]/2-3[1].

**Abundance and distribution in KNP** - Common, observed around main sampling localities # 5, 10 and 11, but the species is probably widespread in the Park.

**Geographic range** - Widespread in the Amazon Basin from Ecuador, Peru and northern Bolivia east of the Andes to northern Brazil and the Guianas.



**Fig. 124.** *Phyllomedusa vaillantii* Boulenger, 1882. A. Dorsolateral view of a male. B. Ventral surface of a preserved male. C. Palm (preserved male specimen). D. Sole (preserved male specimen). E. Call, oscillogram. F. Call, spectrogram. (Photos by P. J. R. Kok).

## *Scinax* Wagler, 1830

### “SNOUTED TREEFROGS”



**Fig. 125.** *Scinax ruber*, one of the 94 described species in the genus. (Photo by P. J. R. Kok).

- ⇒ Small to medium size
- ⇒ Snout relatively long, protruding beyond lower jaw
- ⇒ Maxillary teeth present
- ⇒ Pupil horizontally elliptical (Fig. 42A)
- ⇒ Skin on dorsum smooth, shagreened, granular or tuberculate (Fig. 44A-D)
- ⇒ Vocal sac single, subgular (Fig. 56A), bilobate subgular (Fig. 56B), or paired, lateral (Fig. 56D) in a few species
- ⇒ Toes extensively webbed, but webbing reduced between Toes I-II
- ⇒ Webbing between fingers absent or much reduced
- ⇒ Finger discs expanded (Fig. 51B)
- ⇒ Tympanum present, distinct (Fig. 43A)

The genus currently contains 94 species assigned to four different species groups (Faivovich *et al.* 2005): the *Scinax catharinae* group, the *S. perpusillus* group, the *S. rostratus* group, and the *S. uruguayus* group. Several species remain unassigned to any group.

Snouted treefrogs are nocturnal, terrestrial or arboreal. They inhabit a wide range of habitats, from savannah to tropical rainforest.

### Sexual dimorphism

Males are smaller than females; there is no other evident sexual dimorphism or dichromatism, although males of some species are yellow when calling (e.g. *Scinax ruber*).

### Eggs

Egg deposition sites are diverse in the genus: eggs may be laid in a foam nest constructed in temporary pools (e.g. *Scinax rizibilis*), in lotic water (e.g. *S. albicans*), or in lentic water (in most species). Lescure & Marty (2001) suggested deposition of eggs on a floating leaf or above water in *S. proboscideus*.

### Tadpoles

Exotroph (benthic, nektonic).

### Distribution

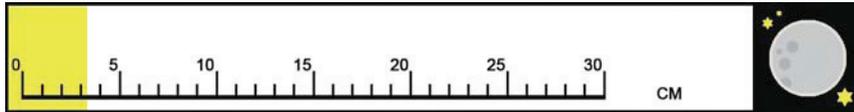
Species belonging to the genus *Scinax* are found from Mexico (eastern and southern parts) to Argentina and Uruguay, including Trinidad and Tobago and St Lucia (Frost, 2008).

### Field key to the *Scinax* species of Kaieteur National Park

1. Posterior surface of thighs immaculate; no longitudinal stripes on dorsum ..... ***S. boesemani*** (p. 198)
- 1'. Posterior surface of thighs with conspicuous yellowish blotches (Fig. 39B); usually distinct longitudinal stripes (Fig. 39G) on dorsum ..... ***S. ruber*** (p. 200)

## *Scinax boesemani* (Goin, 1966)

1966: 229, fig. 1.



ENGLISH NAME: Boeseman's snouted treefrog.

LOCAL NAME (PATAMONA): Unknown.

TYPE LOCALITY: "near Zanderij, Suriname District, Suriname".

SELECTED REFERENCES: Goin, 1966 (original description, B&W drawings, in English); Lescure & Marty, 2001 (brief description, natural history, colour photo, in French); Lima *et al.*, 2006 (brief description, natural history, colour photos, in English).

**Field identification** - Males reach 32.1 mm SVL, females 33.0 mm.

- Dorsal ground colour variable, ranging from tan to dark brown, depending on light intensity, with cream or yellow spotting (spots may be more or less visible depending on light intensity); skin on dorsum smooth to weakly granular.
- Ventral surface granular, white.
- Flanks with well-defined dark brown spots (spots may be more or less visible depending on light intensity).
- Dark line from nostril to arm insertion.
- Iris greyish brown to dark brown with inconspicuous irregular black vermiculations.
- Hidden surfaces of thighs greyish brown, immaculate.
- Webbing between Toes I-II reduced.
- Fingers unwebbed.

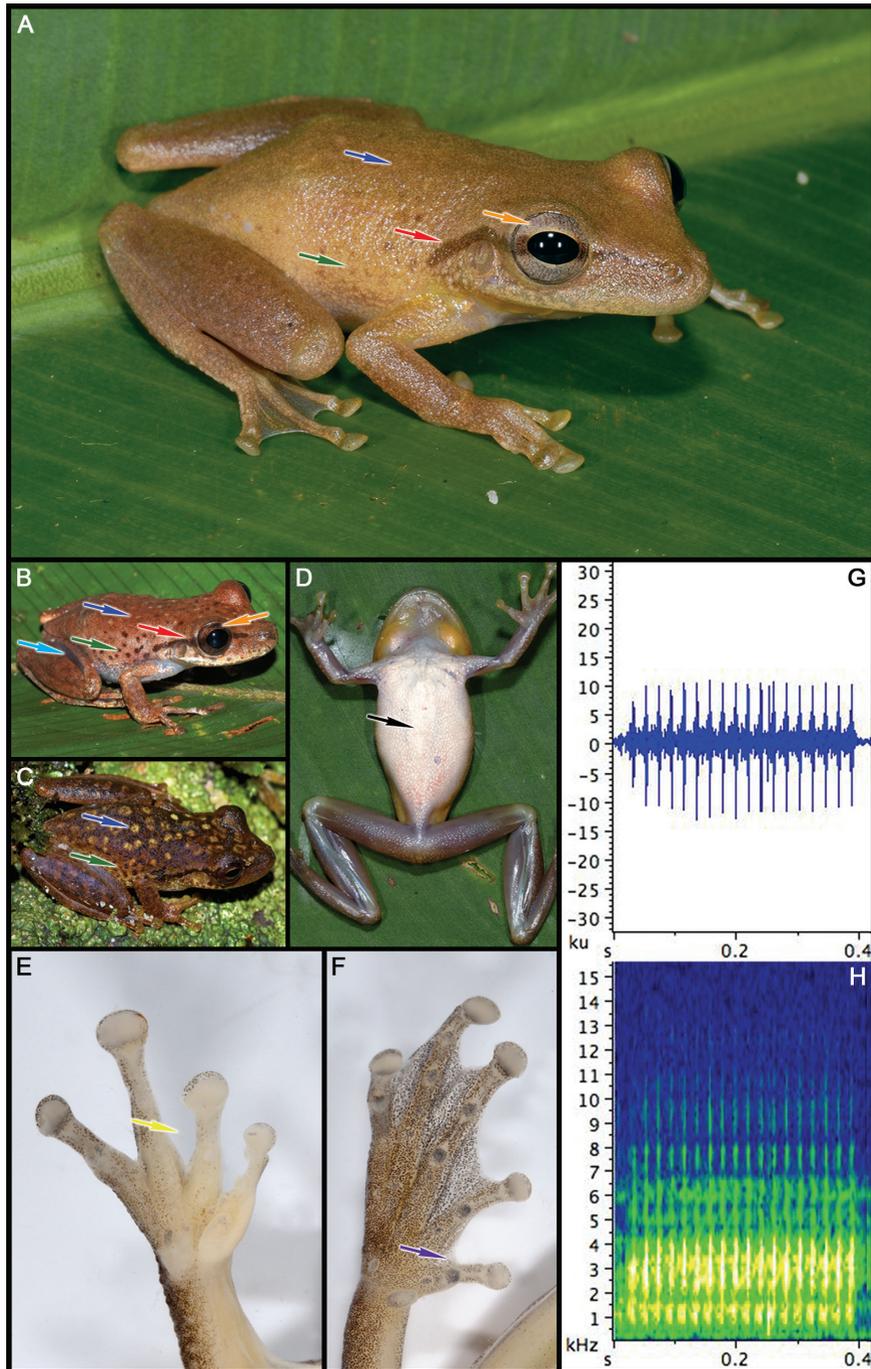
**Life history** - Nocturnal, arboreal. Found in savannah and open areas, very rarely observed in primary and secondary forest. Males call from low elevation in shrubs and bushes, sometimes from the ground, along seasonally flooded pools and small ponds, often in large choruses. Eggs are deposited as a film on the water surface of slow-moving streams, pools and small ponds; tadpoles feed on detritus.

**Call** - First described by Hödl (1977: 358), who provided a spectrogram. It consists of a buzzing trill produced at a rate of ca. 30 notes/min.

**Tadpole** - First described by de Sá *et al.* (1997: 15). Exotroph, nektonic; colour in life unknown; LTRF = 2(2)/3(1-2).

**Abundance and distribution in KNP** - Very common locally, observed around main sampling localities # 2, 3 and 4 (see Fig. 3), but probably widespread in the Park in suitable habitats.

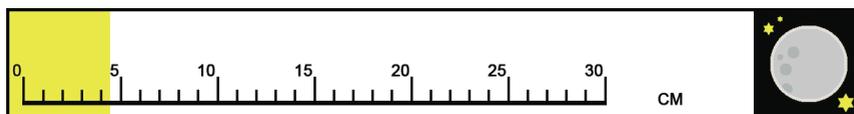
**Geographic range** - The Guiana Shield and the Amazon Basin in Brazil.



**Fig. 126.** *Scinax boesemani* (Goin, 1966). A-B. Dorsolateral views of males. C. Dorsolateral view of a female. D. Ventral surface of a male in life. E. Palm of hand (preserved male specimen). F. Sole of foot (preserved male specimen). G. Call, oscillogram. H. Call, spectrogram. (Photos by P. J. R. Kok).

## *Scinax ruber* (Laurenti, 1768)

1768: 35.



ENGLISH NAME: Red snouted treefrog.

LOCAL NAME (PATAMONA): Waroma.

TYPE LOCALITY: "America".

SELECTED REFERENCES: Duellman, 1978 (description, natural history, tadpole description, call description, B&W photo, in English); Duellman & Wiens, 1993 (description, natural history, colour photo, in English); Lescure & Marty, 2001 (brief description, natural history, colour photo, in French).

**Field identification** - Males reach 41.0 mm SVL, females 44.0 mm.

- ➔ Dorsal ground colour variable, ranging from cream, tan or grey to dark brown, depending on light intensity, usually with broad dark brown dorsolateral and lateral stripes and distinct lumbar spots (stripes inconspicuous in some specimens, sometimes broken into longitudinal spots); skin on dorsum smooth to weakly granular.
- ➔ Ventral surface granular, greyish white, cream or yellow.
- ➔ Flanks usually lack well-defined dark brown spots.
- ➔ Broken interorbital bar often present.
- ➔ Iris bronze with conspicuous irregular black vermiculations.
- ➔ Groin and hidden surfaces of thighs with yellowish or orange blotches on a dark background.
- ➔ Webbing between Toes I-II reduced.
- ➔ Fingers unwebbed.

**Life history** - Nocturnal, arboreal. Found in disturbed and open areas, rarely observed in secondary forest, very anthropophilic. Males call from low elevation in shrubs, bushes, or grasses along seasonally flooded pools and small ponds. Eggs are deposited as a film on the water surface of pools and small ponds; tadpoles feed on detritus.

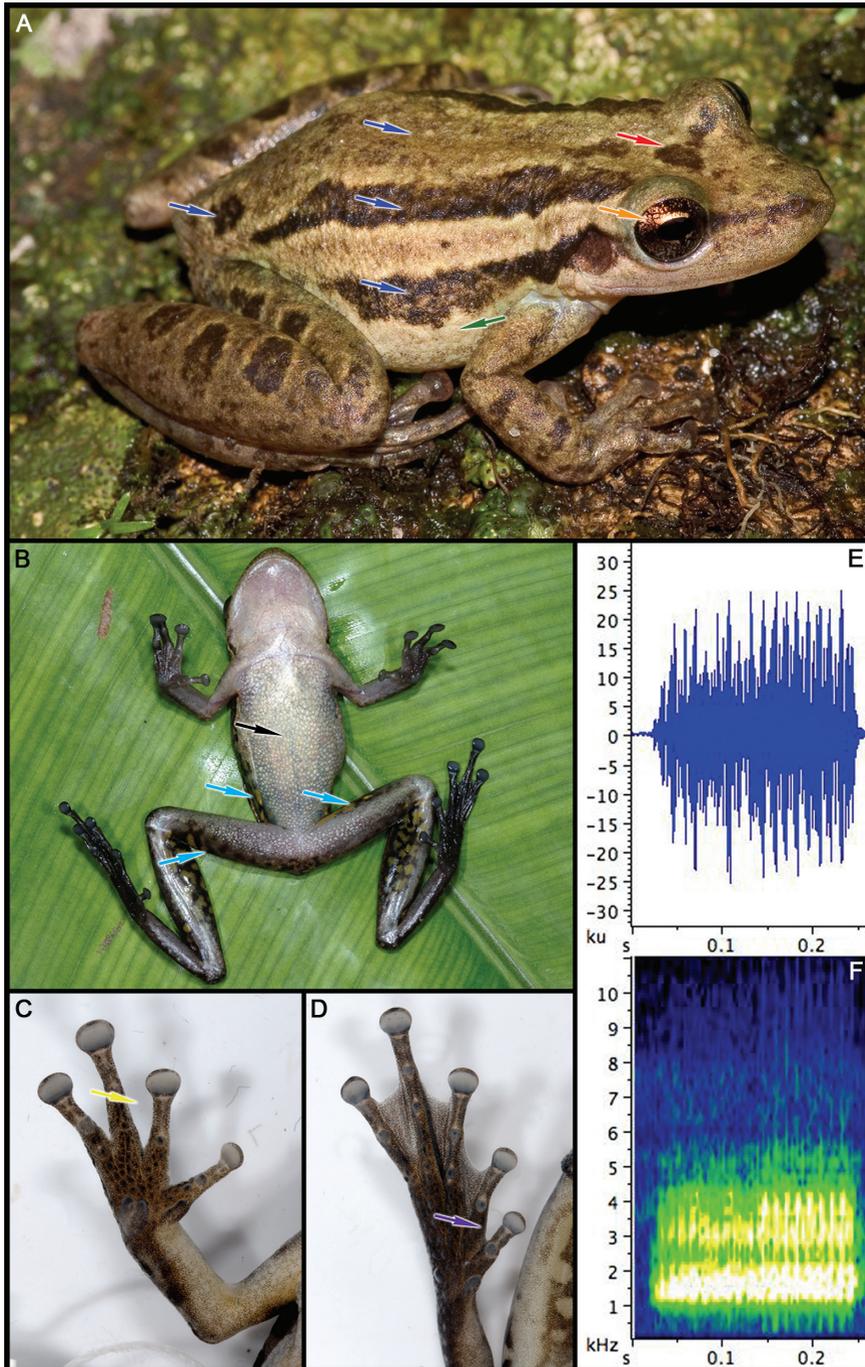
**Call** - First description might be that of Duellman (1978: 164); see also Schlüter (1979: 220), who provided a spectrogram. It consists of a series of short loud trills ("aaah") produced at a rate of ca. 45 notes/min.

**Tadpole** - First described by Kenny (1969: 33); see also Duellman (1970: 185) and Hero (1990: 235 [under *Ololygon* cf. *rubra*]). Exotroph, nektonic; silvery gold with black dots and a brown stripe from snout to eye; LTRF = 2(2)/3(1).

**Abundance and distribution in KNP** - Very common locally, observed around main sampling localities # 2, 3 and 10 (see Fig. 3), probably widespread in the Park.

**Geographic range** - Widespread (but see taxonomic comments), found from Panama through the Guiana Shield and northern Brazil, also on Trinidad & Tobago.

**Taxonomic comments** - A composite of as many as six cryptic species according to Fouquet *et al.* (2007). Call of specimens from the Rupununi savannah in southern Guyana is significantly different from specimens from KNP (Kok, unpubl. data).



**Fig. 127.** *Scinax ruber* (Laurenti, 1768). A. Dorsolateral view of a male. B. Ventral surface of a 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).

## ***Tepuihyla* Ayarzagüena, Señaris & Gorzula, 1993**

### “TEPUI TREEFROGS”



**Fig. 128.** *Tepuihyla talbergae*, endemic to Kaieteur National Park, one of the eight described species in the genus. (Photo by P. J. R. Kok).

- ⇒ Small to medium size
- ⇒ Maxillary teeth present
- ⇒ Pupil horizontally elliptical (Fig. 42A)
- ⇒ Skin on dorsum smooth, shagreened, tuberculate or spiculate (Fig. 44A-B, D-E)
- ⇒ Vocal sac poorly distinct (vocal slits small; absent in some species), single, subgular (Fig. 56A) or bilobate, subgular (Fig. 56B)
- ⇒ Toes no more than half-webbed, webbing absent or vestigial between Toes I-II
- ⇒ Webbing between fingers absent or vestigial
- ⇒ Finger discs expanded (Fig. 51B)
- ⇒ Tympanum present, distinct (Fig. 43A)

The genus currently contains eight species.

Tepui treefrogs are nocturnal, terrestrial or arboreal. They inhabit tropical primary forest and tepui summits and are often associated with bromeliads (Bromeliaceae). Very little is known about their natural history.

### **Sexual dimorphism**

Males are distinctly smaller than females and have the dorsal skin spiculate, males in breeding condition have nuptial excrescences on the prepollex.

### **Eggs**

Aquatic, lentic (e.g. in shallow swampy areas) or lotic (small streams), probably deposited as a film on the water surface. Breeding habits of most of *Tepuihyla* species are virtually unknown.

### **Tadpoles**

Unknown, presumably exotroph (benthic, nektonic?).

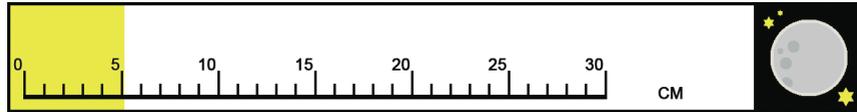
### **Distribution**

Species belonging to the genus *Tepuihyla* are restricted to the mountains of eastern and southeastern Venezuela (Amazonas and Bolívar states) and the Pakaraima Mountains in Guyana (Frost, 2008). It must be noted that one species, *Tepuihyla celsae*, is reported from Cerro Galicia in Falcón State, northwestern Venezuela (Mijares-Urrutia *et al.*, 1999); that species was never seen alive and the type locality is considered as doubtful by Barrio-Amorós (2004).

Only *Tepuihyla talbergae* (p. 204) is currently reported from Kaieteur National Park, which is the lowest and easternmost known locality for the genus.

***Tepuihyla talbergae* Duellman & Yoshpa, 1996**

1996: 276, figs 1-3.



ENGLISH NAME: Kaieteur tepui treefrog.

LOCAL NAME (PATAMONA): Unknown.

TYPE LOCALITY: "Kaieteur Falls, 366 m (05°10'S, 59°28'W), Mazaruni-Potaro District, Guyana".

SELECTED REFERENCES: Duellman & Yoshpa, 1996 (original description, B&W drawings and photo).

**Field identification** - Males reach 36.6\* mm SVL, females 50.3\* mm.

- Dorsal ground colour variable, ranging from pinkish grey, greyish tan to reddish brown, usually with minute dark brown flecks, sometimes with minute red flecks, rarely with a dark brown "hour-glass" pattern (exclusively observed in a few males); skin on dorsum smooth to shagreened in females, spiculate in males (breeding males have black keratinized nuptial excrescences on thumb).
- Ventral surface granular, greyish white; throat usually with brown spots and flecks (often more conspicuous in males).
- Dark brown canthal stripe from nostril to eye followed by a narrow dark brown stripe from eye to posterior edge of tympanum or to arm insertion.
- Upper lip white.
- Iris silver grey to bronze with inconspicuous irregular black vermiculations.
- Inner metatarsal tubercle projecting.
- Webbing between Toes I-II reduced.
- Fingers unwebbed.

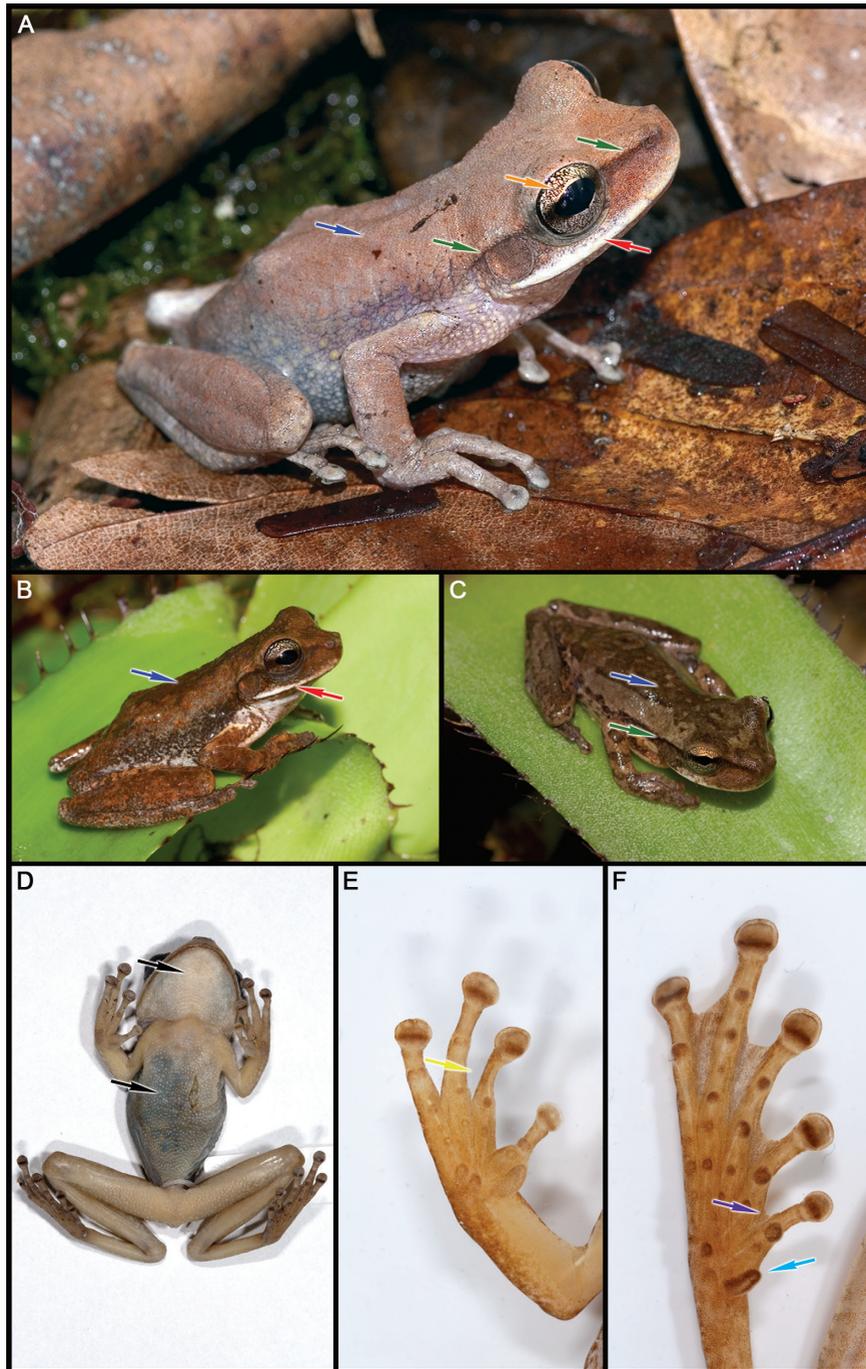
**Life history** - Nocturnal, arboreal. Found in savannah and neighbouring forest-edge situations, usually perched on shrubs between 0.5-1.5 m above ground level. During the day the species typically takes refuge in terrestrial bromeliads (e.g. *Brocchinia micrantha*, *B. reducta*), but a few individuals were found in low-perched epiphytic bromeliads (max 1.5 m above the ground). Reproductive behaviour remains unknown, but males with keratinized nuptial excrescences and gravid females were exclusively collected at the end of November and at the beginning of December (which corresponds to the beginning of the short rainy season), which suggests that breeding might be restricted to a very short period of the year. One male in breeding condition was collected on 2 December 2005, in the water, sitting on an immersed rock at the edge of a small pool in savannah. Males (which lack vocal slits) probably call floating in the water or from the ground or low elevation in shrubs and bushes along seasonally flooded pools and small ponds. Eggs are probably deposited in seasonally flooded pools and small ponds in the savannah.

**Call** - Unknown.

**Tadpole** - Unknown.

**Abundance and distribution in KNP** - Common locally, observed only around main sampling localities # 2, 3 and 4 (see Fig. 3).

**Geographic range** - Endemic to Kaieteur National Park, Guyana.



**Fig. 129.** *Tepuihyla talbergae* Duellman & Yoshpa, 1996. A. Dorsolateral view of a female. B. Dorsolateral view of a male. C. Dorsal view of a male. D. Ventral surface of a preserved female. E. Palm (preserved female specimen). F. Sole (preserved female specimen). (Photos by P. J. R. Kok).

## *Trachycephalus* Tschudi, 1838

### “CASQUE-HEADED TREEFROGS”



**Fig. 130.** Calling male of *Trachycephalus coriaceus*, one of the 10 currently described species in the genus. Here a specimen from French Guiana. (Photo by C. Marty).

- ⇒ Medium to large size
- ⇒ Maxillary teeth present
- ⇒ Pupil horizontally elliptical (Fig. 42A)
- ⇒ Vocal sacs usually paired, lateral (Fig. 56A), but vocal sac single, subgular in *T. hadroceps* (Fig. 56D)
- ⇒ Skin glandular, very thick, smooth, shagreened or tuberculate (Fig. 44A-B, D)
- ⇒ Toes extensively webbed
- ⇒ Finger discs expanded (Fig. 51B)
- ⇒ Tympanum present, distinct (Fig. 43A)

The genus *Trachycephalus* currently contains 10 species, which are nocturnal and highly arboreal. They mainly inhabit primary tropical rainforest.

The genus *Phrynohyas* was recently synonymized with *Trachycephalus* by Faivovich *et al.* (2005); the two species from Kaieteur National Park were formerly known as *Phrynohyas coriacea* and *P. resinifictrix*.

**Sexual dimorphism**

There is no evident sexual dimorphism; in most species males are slightly smaller than females.

**Eggs**

Eggs are deposited in lentic water, as a film on the water surface, or as a gelatinous mass. Some species lay eggs in the canopy (up to 32 m high), in water-filled tree holes (*e.g.* *Trachycephalus resinifictrix*).

**Tadpoles**

Exotroph (benthic, nektonic, arboreal).

**Distribution**

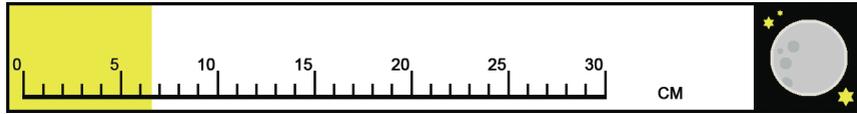
Species belonging to the genus *Trachycephalus* are found from Mexico, through Central and South America east of the Andes to northern Argentina and eastern Brazil, including Trinidad and Tobago (Frost, 2008).

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

- 1. Skin on dorsum smooth (Fig. 44A); iris dark bronze, lacking radiating lines (without a black cross); skin of flanks areolate (Fig. 44G); large bluish black spot above arm insertion. . . . . ***T. coriaceus*** (p. 208)
- 1'. Skin on dorsum tuberculate (Fig. 44D); iris golden with four radiating black lines (a black “Maltese cross”); skin on flanks not areolate; no bluish black spot above arm insertion . . . . . ***T. resinifictrix*** (p. 210)

## *Trachycephalus coriaceus* (Peters, 1867)

1867: 711.



ENGLISH NAME: Surinam casque-headed treefrog.

LOCAL NAME (PATAMONA): Etáule.

TYPE LOCALITY: "Surinam".

SELECTED REFERENCES: Duellman, 1978 (description, B&W photo, in English); Lescure *et al.*, 1996 (description, tadpole description, natural history, colour photos, in French); Duellman, 2005 (description, tadpole description, natural history, colour photo, in English).

**Field identification** - Males reach 63.0 mm SVL, females 67.6 mm.

- Dorsal ground colour ranging from tan (by day) to reddish brown (by night), with a large dark brown rectangular blotch narrowly outlined with a creamy border extending from upper eyelids to middle of the back (blotch sometimes broken in two, rarely absent), followed by a similar saddle-shaped dark brown blotch over the sacrum; skin on dorsum smooth, thick, glandular.
- Ventral surface areolate, creamy white to yellow.
- Thick supratympanic glandular fold covering the upper part of the tympanum.
- Skin on flanks areolate.
- Large bluish black spot below supratympanic fold, at arm insertion.
- Iris dark bronze, lacking radiating lines.
- Fingers half-webbed, finger webbing red.
- Toes 3/4 webbed, toe webbing red.

**Life history** - Nocturnal, arboreal. Exclusively found in primary forest. The species is an explosive breeder, which congregates for a short period, at the time of the first heavy rains. Males call on shrubs (up to 2 m above the ground) or while floating on the surface of the water. Eggs are deposited as a film on the water surface of temporary pools and small ponds; tadpoles feed on detritus.

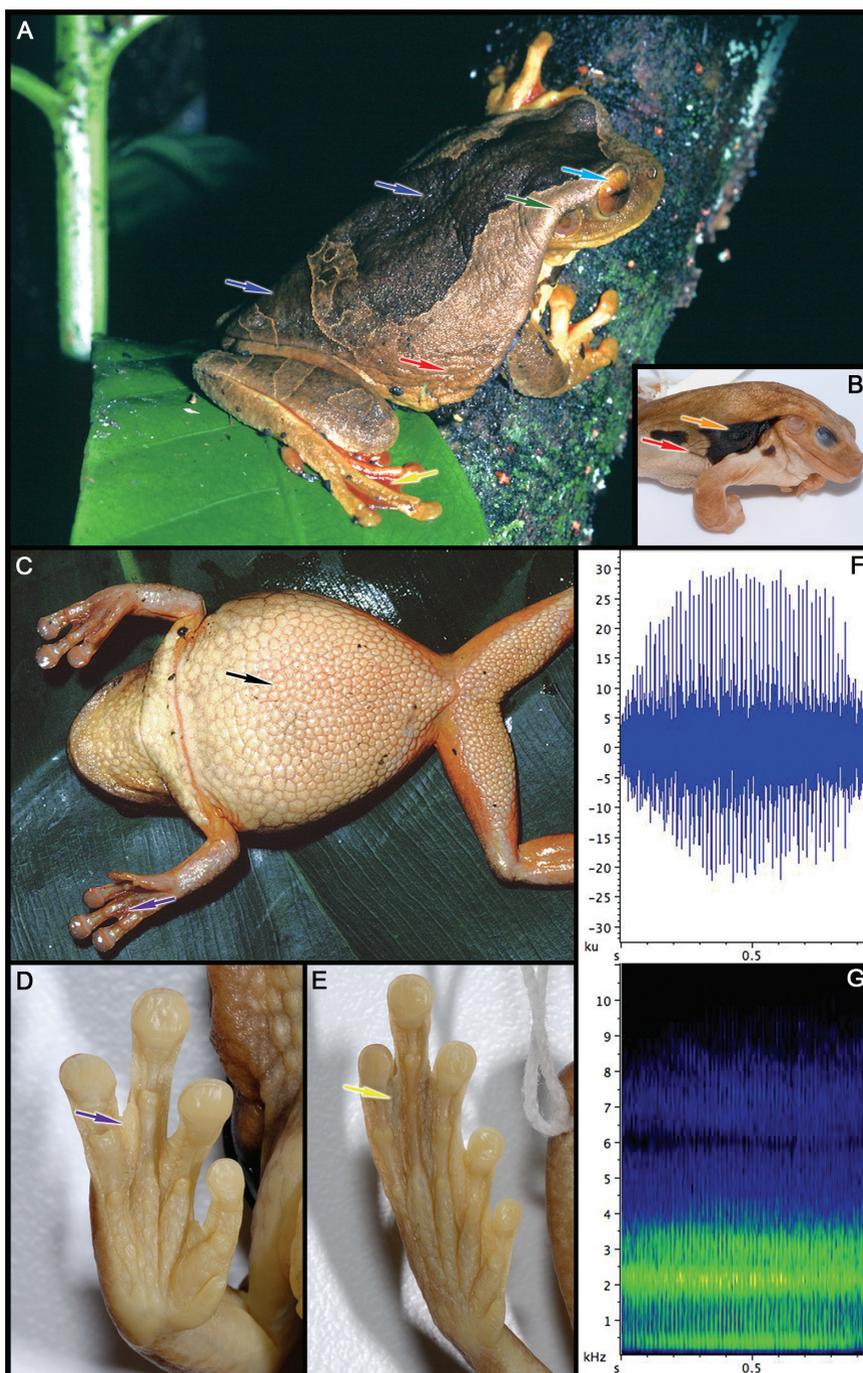
**Call** - First described by Schlüter (1979: 225), who provided a spectrogram. It consists of a loud grinding growl, produced at a rate of about 28 calls/min according to Lescure & Marty (2001).

**Tadpole** - First briefly described by Rodriguez & Duellman (1994: 42); see also Lescure *et al.* (1996: 70) and Schiesari & Moreira (1996: 404). Exotroph, nektonic; greyish brown with or without black spots; LTRF variable = 2-3(3)/5-6(1), 4(1,2,4)/6(1).

**Abundance and distribution in KNP** - Very rare, only one specimen collected in the western part of the Park without precise locality, but probably widespread in KNP.

**Geographic range** - Apparently a disjunct distribution, but it is expected that new records will fill the gap. One population in the Guianas, another found from eastern Ecuador, Peru and northern Bolivia through the Amazon Basin to near Manaus, Brazil.

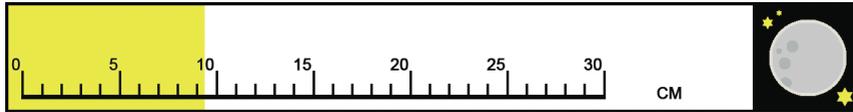
**Remark** - Photos A & C in figure 131 are of a specimen from French Guiana, D & E are of a specimen from Peru.



**Fig. 131.** *Trachycephalus coriaceus* (Peters, 1867). A. Dorsolateral view. B. Lateral view in preservative. C. Ventral surface in life. D. Palm (preserved specimen). E. Sole (preserved specimen). F. Call, oscillogram. G. Call, spectrogram. (Photos A, C-E by C. Marty, B by P. J. R. Kok).

## ***Trachycephalus resinifictrix* (Goeldi, 1907)**

1907: 135, figs 56-57.



ENGLISH NAME: Kunawalu casque-headed treefrog.

LOCAL NAME (PATAMONA): Kunawa.

TYPE LOCALITY: "Mission of San Antonio do Prata, at the River Macaraná" [Brazil].

SELECTED REFERENCES: Zimmerman & Hödl, 1983 (call description, natural history, colour patterns, B&W drawing, distinction from *Trachycephalus venulosus*, in English); Lescure *et al.*, 1996 (description, natural history, colour photos, in French); Lescure & Marty, 2001 (brief description, natural history, colour photo, in French).

**Field identification** - Males reach 83.8 mm SVL, females 93.7 mm.

- Dorsal ground colour dark brown, with one large whitish, tan or greenish brown blotch narrowly outlined with a creamy border on the flank and another on the top of the head, the latter often having the shape of a triangle; skin on dorsum tuberculate (tubercles usually with white tip), thick, glandular.
- Ventral surface granular, greenish white to light brown.
- Supratympanic glandular fold not covering the upper part of the tympanum.
- Skin on flanks tuberculate, never areolate.
- No black spot at arm insertion.
- Iris golden with four radiating black lines (a black "Maltese cross").
- Fingers half-webbed, finger webbing greenish blue.
- Toes 3/4 webbed, toe webbing greenish blue.

**Life history** - Nocturnal, arboreal. Observed only in primary forest. Males call exclusively from water-filled cavities in hollow trunks or branches, at heights between 2.2-32 m (usually between 10-20 m). Eggs are deposited as a gelatinous mass in water-filled treeholes; tadpoles feed on conspecific eggs and detritus.

**Call** - First described by Zimmerman & Hödl (1983: 343), who provided spectrograms. It consists of 3-4 loud barklike notes, produced at a rate of about 4 calls/min according to Lescure & Marty (2001).

**Tadpole** - First described by Hero (1990: 239); see also Grillitsch (1992: 53) and Schiesari *et al.* (1996: 115). Exotroph, arboreal; dark olive; LTRF = 2(2)/3-5.

**Abundance and distribution in KNP** - Common, heard around main sampling localities # 5, 8, 9, 10, 11, 12 and 13 (see Fig. 3).

**Geographic range** - Widespread from eastern Ecuador, Peru and northern Bolivia through the Amazon Basin to the Guiana Shield.

**Remark** - Photos in figure 132 are of a specimen from Manaus, Brazil.