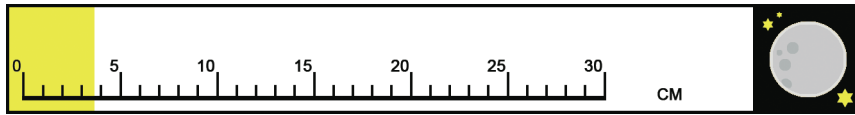


**Fig. 111.** *Hypsiboas geographicus* (Spix, 1824). A-B. Dorsolateral views. C. Lower eyelid. D. Ventral surface of a female in life. E. Palm (preserved male specimen). F. Sole (preserved male specimen). G. Call, oscillogram. H. Call, spectrogram. (Photos by P. J. R. Kok).

## *Hypsiboas liliae* Kok, 2006

2006: 191, figs 1-4.



ENGLISH NAME: None; we propose "Lili treefrog".

LOCAL NAME (PATAMONA): Unknown, but green treefrogs are generally called "Pakoko" (pron. Pa-go-go).

TYPE LOCALITY: "Between Boy Scout View and Johnson View on the Kaieteur Plateau (5°10'51"N, 59°28'57"W), ca. 400 m elevation, Kaieteur National Park, Potaro-Siparuni district, Guyana".

SELECTED REFERENCE: Kok, 2006 (original description, call description, colour photos, B&W drawings and photos, in English).

**Field identification** - Males reach 37.1 mm SVL, female not known.

- Dorsal colour and pattern strongly dependent on light intensity, from bright green to bright yellowish green during the day, to greenish brown at night; skin on dorsum thickly granular.
- Ventral surface thickly granular, blue, translucent in the central portion of abdomen (internal organs visible).
- Snout truncate in dorsal view, with strongly protuberant nostrils.
- Ulnar fold distinct.
- Iris silver with black periphery during the day, bronze at night.
- All fingers unwebbed.
- Prepollex enlarged, without prepollical spine.
- Toes extensively webbed.

**Life history** - Nocturnal, arboreal. Primary forest and forest-edged situations. Males call from the water-filled phytotelm of large terrestrial bromeliads (e.g. *Brocchinia micrantha*) or at high elevation in trees (> 10 m above the ground). Reproductive biology is totally unknown.

**Call** - First described by Kok (2006: 196), who provided a spectrogram. It consists of a long series of loud percussive notes ("tuk-tuk-tuk-tuk...") gradually increasing in speed and loudness; the duration of the entire call is about 50 s.

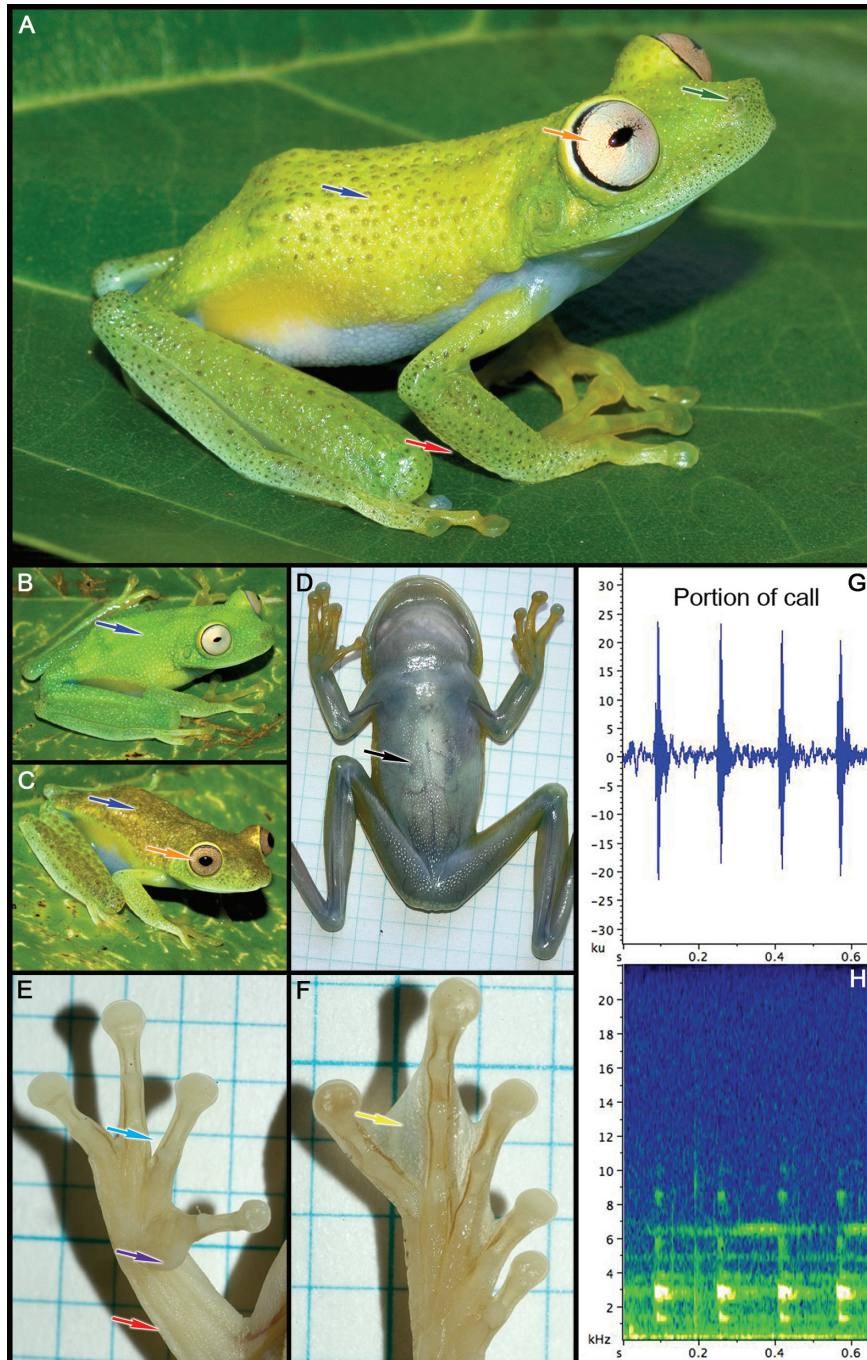
**Tadpole** - Unknown.

**Abundance and distribution in KNP** - Rare, observed only around main sampling localities # 1 and 11.

**Geographic range** - Reported only from Guyana, in KNP. We heard the species calling on the slopes of Mt Maringma at the Guyana-Brazil border (Kok, unpublished data); the species is probably widespread in the Pakaraima Mountains of Guyana.

**Taxonomic comments** - Lack of known morphological synapomorphies for the genus *Hypsiboas* (Faivovich *et al.*, 2005) precludes definite generic allocation for this species; generic allocation of *H. liliae* remains thus uncertain (J. Faivovich, pers. comm.).

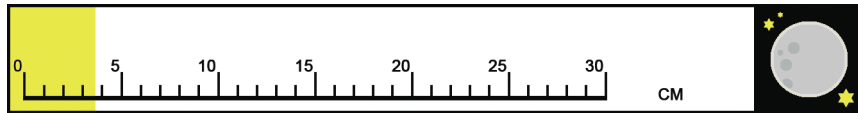




**Fig. 112.** *Hypsiboas liliae* Kok, 2006. A-B. Dorsolateral views of two males by day. C. Dorsolateral view of a male (same than A) by night. D. Ventral surface of a male in life. E. Palm (preserved male specimen). F. Sole (preserved male specimen). G. Call, oscillogram. H. Call, spectrogram. (Photos by P. J. R. Kok).

## ***Hypsiboas sibleszi* (Rivero, 1972)**

1972 "1971": 182, fig. B.



ENGLISH NAME: La Escalera treefrog.

LOCAL NAME (PATAMONA): Unknown, but green treefrogs are generally called "Pakoko" (pron. Pa-go-go).

TYPE LOCALITY: "Paso del Danto, La Escalera, entre El Dorado y Sta. Elena de Uiarén, 1300-1400 m; Serranía de Lema, Edo. Bolívar, Venezuela"

SELECTED REFERENCES: Rivero, 1972 (original description, B&W photos, call spectrogram, in Spanish); Hoogmoed, 1979 (extensive description, distribution, B&W photos, call spectrogram, in English); Señaris & Ayarzagüena, 2006 (description, call description, osteology, distribution, in English).

**Field identification** - Males reach 39.0 mm SVL, females 38.0 mm.

- Dorsal colour variable: yellowish green to pale lime-green, with or without reddish brown and/or white or yellow flecks/spots, yellow dorsolateral and interorbital stripes may be present; skin on dorsum smooth.
- Ventral surface coarsely granular, pale green to bluish green, translucent in the central portion of abdomen (internal organs visible).
- Discs of fingers and toes orange.
- Outer edge of upper eyelid not yellow, unless presence of yellow dorsolateral stripes.
- Iris yellowish bronze with black flecks.
- Outer fingers about 1/3 webbed, other fingers basally webbed.
- Prepollex enlarged, with large protruding prepollical spine in breeding males.
- Toes about 2/3 webbed.

**Life history** - Nocturnal, mostly arboreal. Found in primary forest along slow-moving streams or ponds. Males call from low vegetation, usually not far from the ground or the water surface, sometimes partly submerged in the water. Eggs are deposited in slow-flowing streams or ponds, as a film on the water surface; tadpoles feed on detritus.

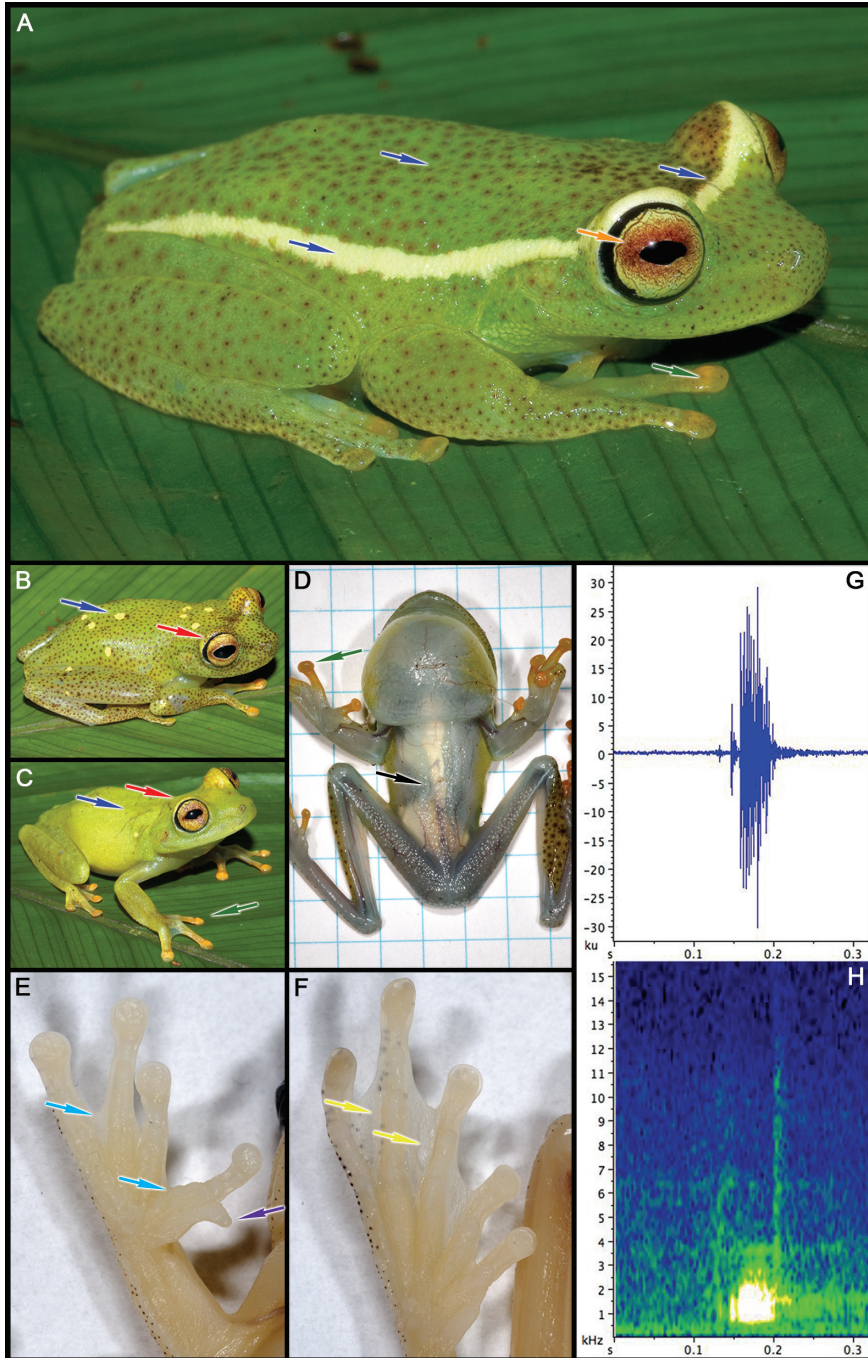
**Call** - Rivero (1972: 188) and Hoogmoed (1979: plate 5) provided spectrograms, but no formal description. Señaris & Ayarzagüena (2006: 315) provided a brief description and a spectrogram. The call consists of one or two "chucks", which are produced at a rate of about 10-15 notes/min.

**Tadpole** - First described by Hoogmoed (1979: 27). Exotroph, benthic; grey with dark grey spots; LTRF = 2(2)/4(1).

**Abundance and distribution in KNP** - Rare, observed only around main sampling locality # 4, but could be more widespread in the Park.

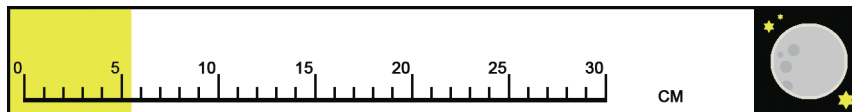
**Geographic range** - Restricted to the uplands and highlands of eastern Venezuela and western Guyana.





**Fig. 113.** *Hypsiboas sibleszi* (Rivero, 1972). A-C. Dorsolateral views of males. D. Ventral surface of a male in life. E. Palm (preserved male specimen). F. Sole (preserved male specimen). G. Call, oscillogram. H. Call, spectrogram. (Photos by P. J. R. Kok).

## *Hypsiboas* sp.



ENGLISH NAME: “Demerara Falls treefrog” (confused with *Hypsiboas cinerascens*).

LOCAL NAME (PATAMONA): Unknown, but green treefrogs are generally called “Pakoko” (pron. Pa-go-go).

TYPE LOCALITY: -

SELECTED REFERENCES: Duellman, 1978 (description, B&W photo, tadpole description, call description, in English [in part, under *Hyla granosa*]); Hoogmoed, 1979 (extensive description, distribution, B&W photos, call spectrogram, in English [in part, under *Hyla granosa*]); Schlüter 2005 (brief description, colour photos, call spectrogram, in German [in part, under *Hyla granosa*]). See taxonomic comments.

**Field identification** - Males reach 54.0 mm SVL, females 44.0 mm (but see taxonomic comments).

- Dorsal colour yellowish green to grass green with yellow dots, often with reddish flecks/dots, and/or reddish interorbital bar; skin on dorsum finely granular.
- Ventral surface coarsely granular, pale green to bluish green, translucent in the central portion of abdomen (internal organs visible).
- Outer edge of upper eyelid yellow.
- Fingers I-II unpigmented, whitish, other fingers yellowish green to green.
- Iris silver, may become light brown or brown in certain light condition.
- Outer fingers about 1/3 webbed, other fingers basally webbed.
- Prepollex enlarged, with small prepollical spine in breeding males.
- Toes about 2/3 webbed.

**Life history** - Nocturnal, arboreal. Found exclusively in open areas (e.g. forest-edge situations, savannah), along streams or small ponds. Males call from small bushes and trees, up to 4 m above the ground, sometimes from rocks along streams. Eggs are deposited in streams and small ponds, as a film on the water surface; tadpoles feed on detritus.

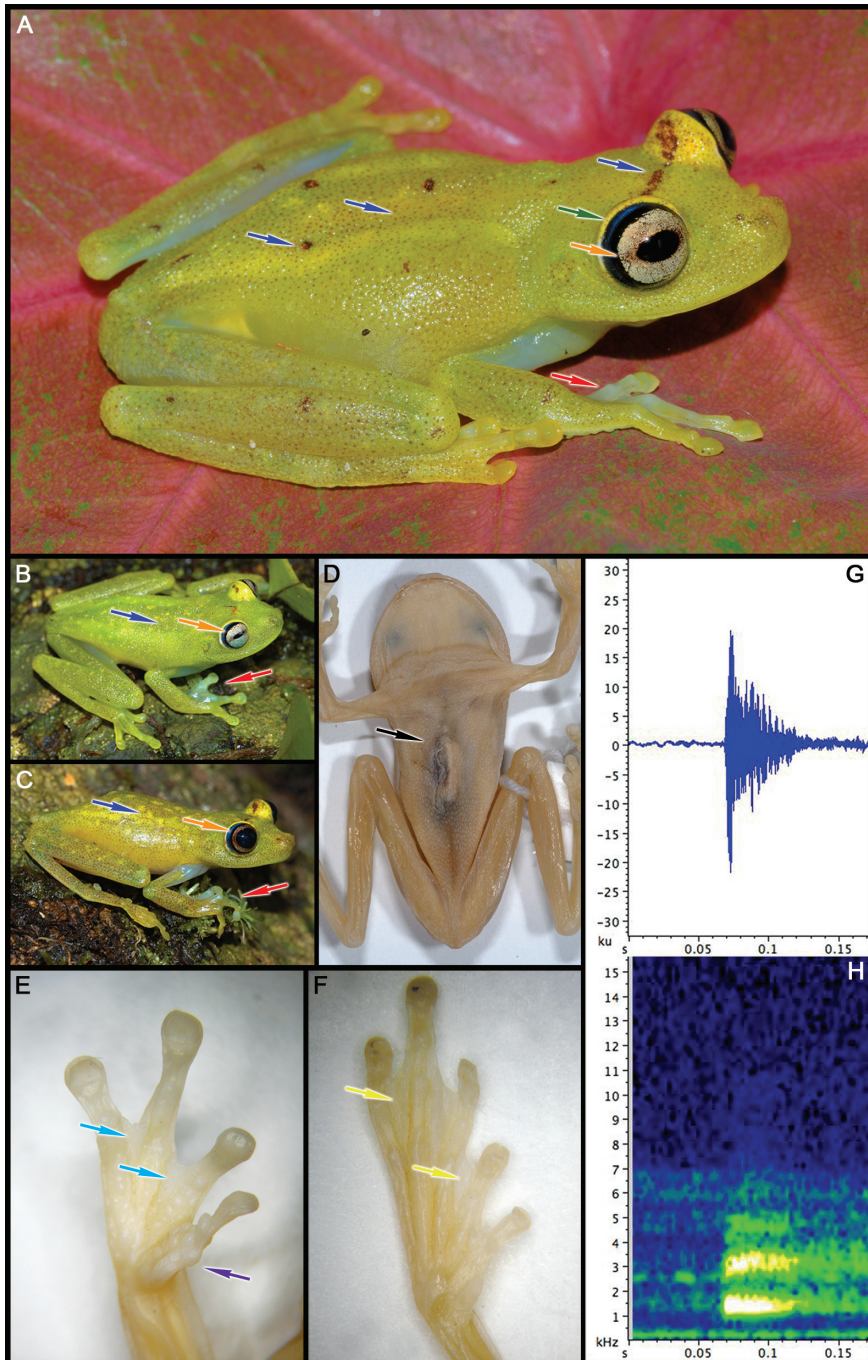
**Call** - See *Hypsiboas cinerascens* (p. 168), with which it is confused in the literature, see also taxonomic comments. It consists of a loud, metallic, pulsed “cluck”, which is produced at a rate of about 10-60 notes/min.

**Tadpole** - Exotroph, benthic. See *Hypsiboas cinerascens* (p. 168), with which it is confused in the literature, see also taxonomic comments.

**Abundance and distribution in KNP** - Locally very common, observed around main sampling localities # 2, 3, 4 and 12, probably widespread in the Park in adequate habitats.

**Geographic range** - Exact distribution is unclear due to the confusion with *Hypsiboas cinerascens* (see p. 168). Might be widespread in the Amazon Basin from eastern Ecuador, Peru, and northern Bolivia to northeastern Brazil and the Guiana Shield.

**Taxonomic comments** - Confused with *Hypsiboas cinerascens*, which is a complex of at least two sympatric species (see Kok, 2006). Re-evaluation of the taxonomy of these morphologically very similar species is in progress by Kok and colleagues.



**Fig. 114.** *Hypsiboas* sp. A-C. Dorsolateral views of males. D. Ventral surface of a preserved male. E. Palm (preserved male specimen). F. Sole (preserved male specimen). G. Call, oscillogram. H. Call, spectrogram. (Photos by P. J. R. Kok).



## *Osteocephalus* Steindachner, 1862

### “SLENDER-LEGGED TREEFROGS”



**Fig. 115.** *Osteocephalus mutabor*, a species that does not occur in the Park (compare with *O. lepreurii*); here from Volcan Sumaco, Ecuador. (Photo by K. H. Jungfer).

- ⇒ Medium to large size
- ⇒ Maxillary teeth present
- ⇒ Pupil horizontally elliptical (Fig. 42A)
- ⇒ Usually exostosed skulls (skin attached to the skull bone)
- ⇒ Vocal sacs paired, lateral/subgular or both in most species (Fig. 56C-D) or vocal sac single, subgular (e.g. *O. oophagus*) (Fig. 56A)
- ⇒ Skin on dorsum often, but not always, sexually dimorphic: smooth or shagreened in females (Fig. 44A-B), smooth, but usually tuberculate or spiculate in males (Fig. 44A, D-E)
- ⇒ Fingers unwebbed to basally webbed
- ⇒ Finger I < II when fingers adpressed
- ⇒ Finger discs expanded (Fig. 51B)
- ⇒ Tympanum present, distinct (Fig. 43A)

The genus *Osteocephalus* currently contains 20 species, which are nocturnal and arboreal. They mainly inhabit tropical rainforest.

Some species (e.g. *Osteocephalus buckleyi*) might be complexes of distinct taxa and a taxonomic revision of the genus is needed. Two additional undetermined *Osteocephalus* species have been collected in KNP and are not treated here.

### Sexual dimorphism

Males are smaller than females and often have the skin on dorsum tuberculate or spiculate (variable among species, dorsal skin not sexually dimorphic in some taxa), while females have smooth or shagreened dorsal skin. Breeding males yellow and/or with nuptial excrescences on prepollex reported in several species.

### Eggs

Eggs are laid in lentic or lotic water, as a film on the water surface, or as a gelatinous mass. Some species lay eggs in the canopy (up to 30 m high), in water-filled bromeliads or treeholes (e.g. *Osteocephalus oophagus*).

### Tadpoles

Exotroph (benthic, arboreal).

### Distribution

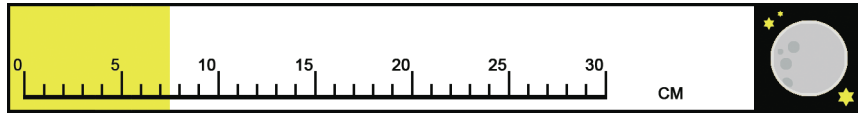
The Guiana Shield and the Amazon Basin (Frost, 2008).

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

1. Iris with conspicuous radiating black lines . . . . . **2**
- 1'. Iris lacking conspicuous radiating lines . . . . . **3**
2. Vocal sac single, subgular (Fig. 56A); frontoparietal ridges indistinct; toes not fully webbed; when leg extended, tibio-tarsal articulation does not reach snout-tip. . . . . ***O. oophagus*** (p. 186)
- 2'. Vocal sacs paired, lateral (Fig. 56D); frontoparietal ridges prominent; toes almost fully webbed; when leg extended, tibio-tarsal articulation reaches snout-tip or beyond . . . . . ***O. taurinus*** (p. 188)
3. Dorsal colour primarily greenish; tarsal tubercles very prominent . . . . . ***O. buckleyi*** (p. 180)
- 3'. Dorsal colour primarily brownish or greyish; tarsal tubercles absent or few and not very prominent . . . . . **4**
4. Vocal sac single, subgular (Fig. 56A); ventral surface greyish with dark flecks; foot webbing blackish brown; distal tubercle on Finger IV single (Fig. 52B) . . . . . ***O. exophthalmus*** (p. 182)
- 4'. Vocal sacs paired, subgular (Fig. 56C); ventral surface whitish or yellow, immaculate; foot webbing tan, orange or red; distal tubercle on Finger IV bifid (Fig. 52C) . . . . . ***O. lepreurii*** (p. 184)

## *Osteocephalus buckleyi* (Boulenger, 1882)

1882: 362, pl. 25, fig. 1.



ENGLISH NAME: Buckley's slender-legged treefrog.

LOCAL NAME (PATAMONA): Unknown.

TYPE LOCALITY: restricted to "Canelos, Provincia Pastaza, Ecuador" by Cochran & Goin (1970).

SELECTED REFERENCES: Trueb & Duellman, 1971 (description, B&W drawings, distribution, in English); Duellman, 1978 (description, tadpole description, natural history, B&W photo, in English); Lima *et al.*, 2006 (brief description, colour photos, in English).

**Field identification** - Males reach 50.0 mm SVL, females 75.1 mm.

- ➔ Dorsal ground colour variable, from greenish brown to green, with dark brown markings often in the shape of a black inverted triangle between the eyes followed on the back by a ) ( or a X and two large dark lumbar spots; skin on dorsum tuberculate/spiculate, especially in males.
- ➔ Ventral surface granular, greyish white, with brown blotches located mainly on throat, chest, and sides of belly; ventral surface sometimes entirely covered by brown flecks.
- ➔ Broad, irregular, green subocular spot.
- ➔ Frontoparietal ridges absent.
- ➔ Iris greenish bronze to gold without radiating black lines, but with irregular black vermiculations.
- ➔ Flanks areolate, inguinal region and inner thigh blue.
- ➔ Tarsal tubercles very prominent.
- ➔ Toes about 2/3 webbed.

**Life history** - Nocturnal, arboreal. Found in primary forest, usually near streams and ponds. Males call from low vegetation along streams or ponds. Eggs are deposited as a film on the water surface of streams and ponds; tadpoles feed on detritus.

**Call** - Probably still undescribed due to confusion with other species (see *Osteocephalus oophagus*, p. 186).

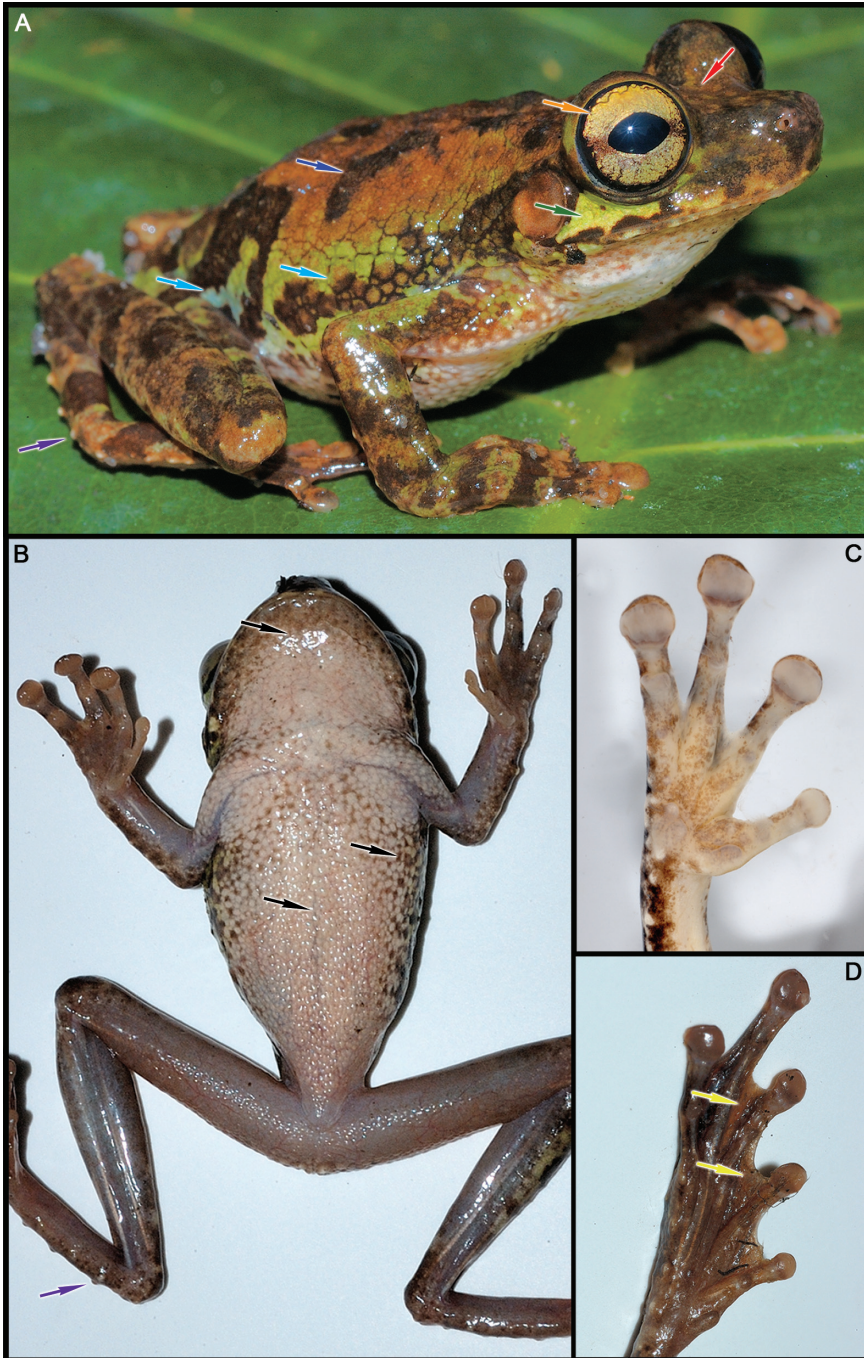
**Tadpole** - First described by Hero (1990: 236). Exotroph, benthic; dark blue; LTRF = 2(2)/3-8 [1].

**Abundance and distribution in KNP** - Rare, observed only around main sampling locality # 11 (see Fig. 3), but probably more widespread in the Park.

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

**Taxonomic comments** - Some data suggest that this taxon holds several cryptic species (K.-H. Jungfer, pers. comm.; P. Kok, unpubl. data).

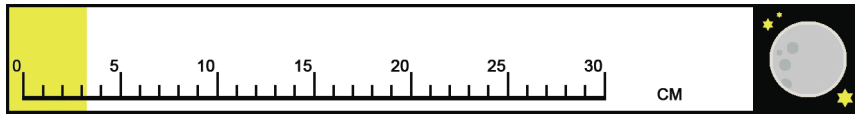




**Fig. 116.** *Osteocephalus buckleyi* (Boulenger, 1882). A. Dorsolateral view of a male. B. Ventral surface of a male in life. C. Palm (preserved male specimen). D. Sole (female specimen in life). (Photos by P. J. R. Kok).

## *Osteocephalus exophthalmus* Smith & Noonan, 2001

2001: 349, figs 1-3.



ENGLISH NAME: None; we propose "Big-eye slender-legged treefrog".

LOCAL NAME (PATAMONA): Unknown.

TYPE LOCALITY: "ca 30 km SE Imbaimadai, Mazaruni-Potaro District, Guyana... 5°37'30" N, 60°14'42" W".

SELECTED REFERENCE: Smith & Noonan, 2001 (original description, osteology, B&W photo and drawings, in English).

**Field identification** - Males reach 33.1\* mm SVL, females 42.5\* mm.

- Dorsal ground colour medium brown, with dark brown blotches, interorbital bar usually present; skin on dorsum smooth with very few tiny tubercles.
- Ventral surface granular, greyish white, with brown spotting located mainly on throat and belly, almost absent on chest.
- Eyes large and bulgy.
- Frontoparietal ridges absent, snout short.
- Iris greenish bronze to gold without conspicuous radiating black lines, but with irregular black vermiculations.
- Hidden surface of thighs black.
- Tarsal tubercles low, not very prominent.
- Toes about half-webbed.

**Life history** - Nocturnal, arboreal. Found in primary forest, usually not very far from water. Reproductive biology is totally unknown. Interestingly, non-spinous dorsa are present in males of bromeliad-breeding *Osteocephalus* species (vs. spinous dorsa in pond-breeding species, see comment by Jungfer & Hödl, 2002) and *Osteocephalus exophthalmus* might be a phytotelm-breeding species.

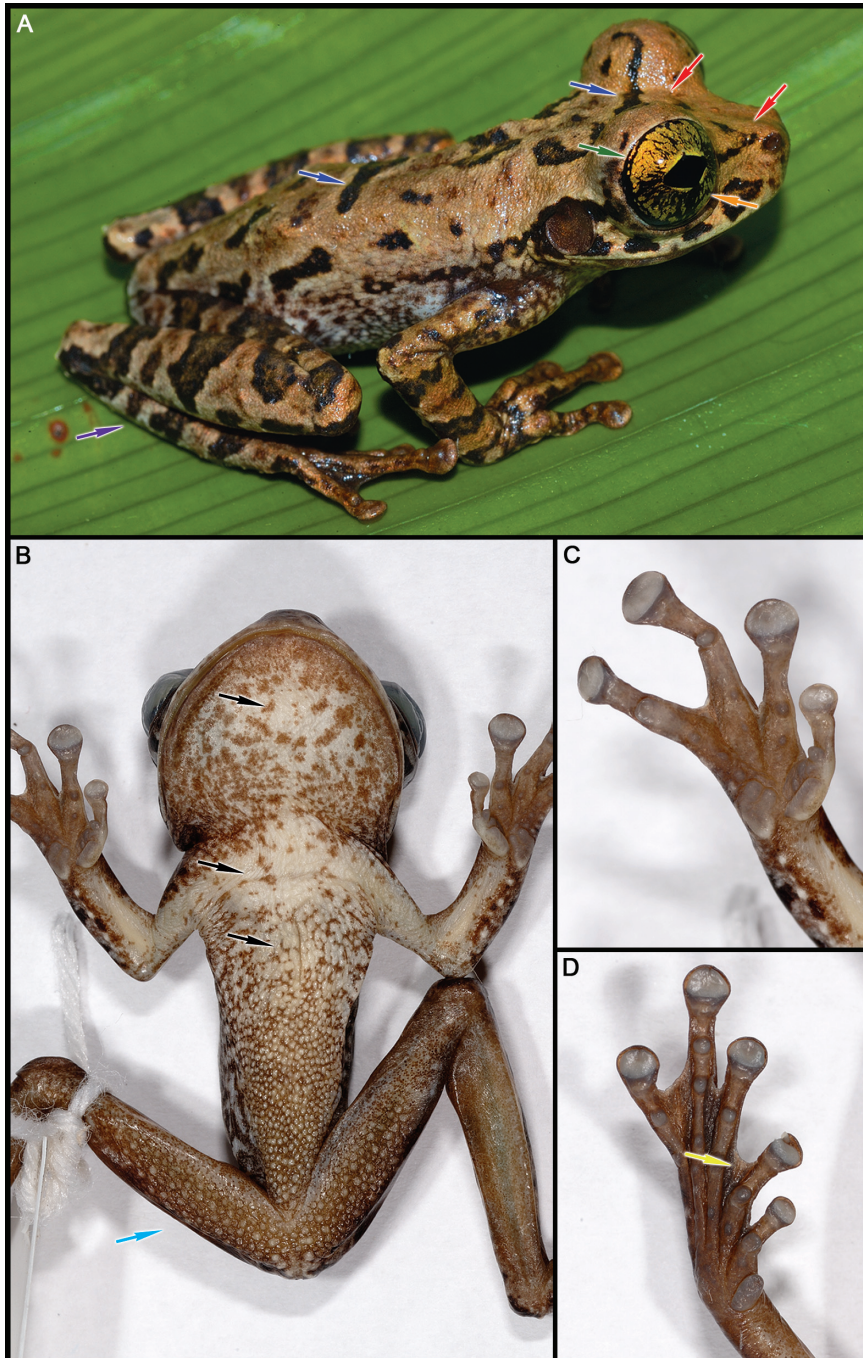
**Call** - Unknown

**Tadpole** - Unknown

**Abundance and distribution in KNP** - Very rare, observed only around main sampling localities # 1 and 4 (see Fig. 3), but probably more widespread in the Park.

**Geographic range** - Currently only reported from the type locality (Imbaimadai area, Guyana) and from Kaieteur National Park, Guyana.



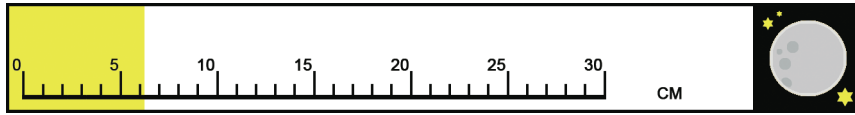


**Fig. 117.** *Osteocephalus exophthalmus* Smith & Noonan, 2001. A. Dorsolateral view of a male. B. Ventral surface of a preserved male. C. Palm (preserved male specimen). D. Sole (preserved male specimen). (Photos by P. J. R. Kok).



## *Osteocephalus leprieurii* (Duméril & Bibron, 1841)

1841: 553.



ENGLISH NAME: Cayenne slender-legged treefrog.

LOCAL NAME (PATAMONA): Unknown.

TYPE LOCALITY: "Cayenne" [French Guiana].

SELECTED REFERENCES: Lescure & Marty, 2001 (brief description, colour photo, in French); Jungfer & Hödl, 2002 (redescription, B&W drawings, colour photos, natural history, call description, distribution, in English).

**Field identification** - Males reach 45.7 mm SVL, females 61.0 mm.

- ➔ Dorsal ground colour variable, ranging from ochre, tan or reddish tan to dark tan, usually with up to four narrow, usually fragmented, dark brown transverse lines, and a narrow dark brown interorbital bar; skin on dorsum spiculate in males (more or less pronounced depending on breeding condition), smooth in females.
- ➔ Ventral surface granular, immaculate, creamy white to bright yellow.
- ➔ Broad, irregular, light subocular spot.
- ➔ Frontoparietal ridges absent, snout moderately long.
- ➔ Iris golden in its superior half, darker in its inferior half, lacking conspicuous radiating black lines, but with irregular black vermiculations.
- ➔ Hidden surface of thighs and foot webbing orange to reddish.
- ➔ Tarsal tubercles absent.
- ➔ Toes almost fully webbed.

**Life history** - Nocturnal, arboreal. Found in primary forest. The species is an explosive breeder, males congregate for a very short period (usually one or two nights) at the beginning of the rainy season and call from low vegetation, from the ground along flooded pools, sometimes floating in water. Eggs are deposited as a film on the water surface in seasonally flooded pools; tadpoles probably feed on detritus.

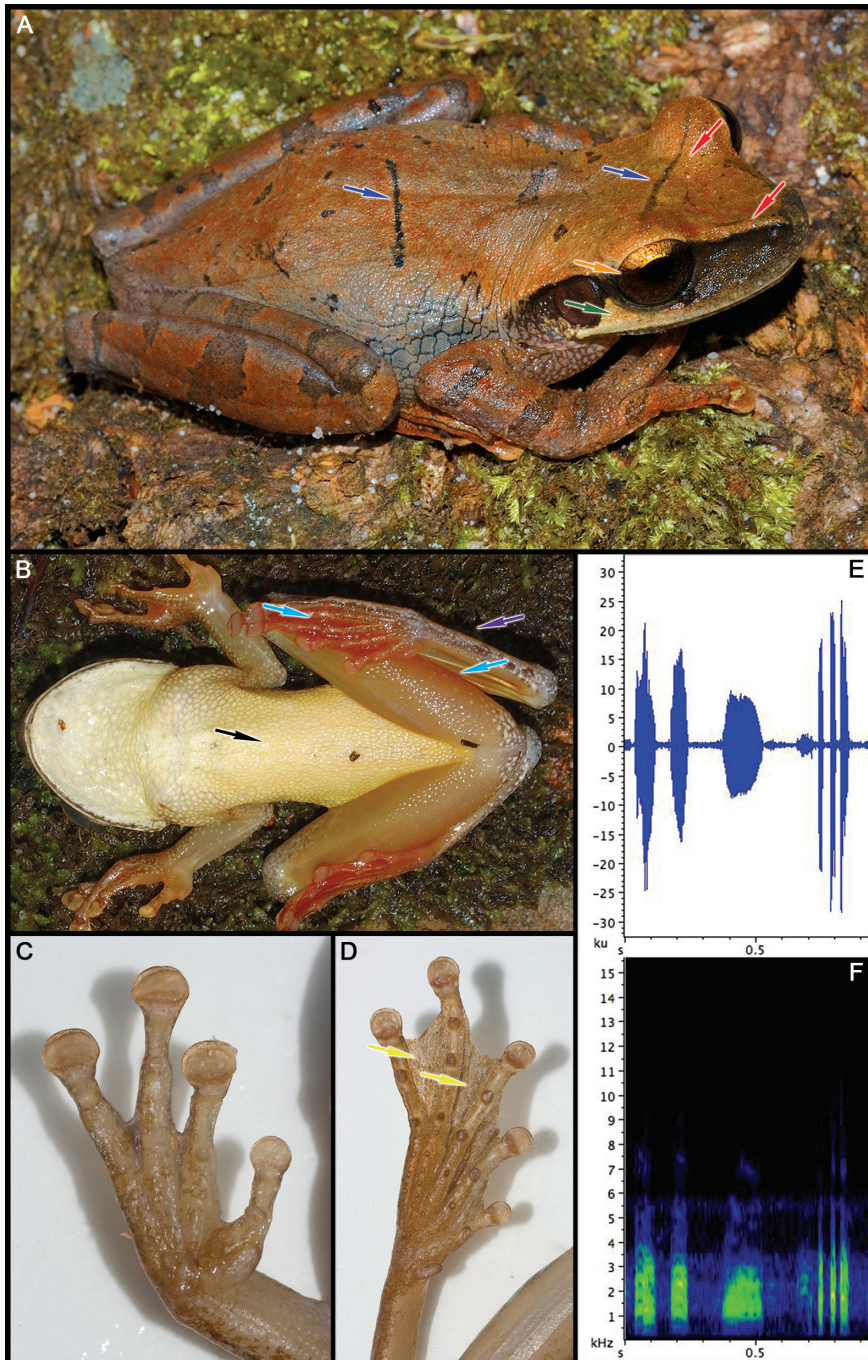
**Call** - The call of *Osteocephalus leprieurii sensu stricto* (see taxonomic comments) was described by Jungfer & Hödl (2002: 32), who provided a spectrogram. It is a complex call involving at least two different types of notes, which according to Lescure & Marty (2001) are produced at a rate of about 18 calls/min.

**Tadpole** - Probably still undescribed due to confusion with other species.

**Abundance and distribution in KNP** - Common, observed around main sampling localities # 1, 2, 4, 5 and 12 (see Fig. 3), probably widespread in the Park.

**Geographic range** - The species is found in the Guiana Shield and in northern Brazil, exact range unknown due to misidentification with other species.

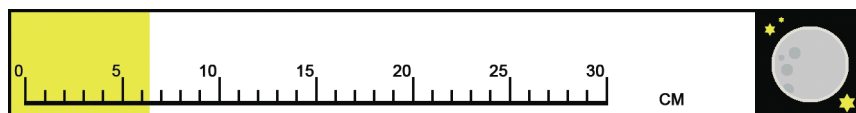
**Taxonomic comments** - A composite of several cryptic species, *Osteocephalus leprieurii* Duméril & Bibron *sensu stricto* was recently redescribed by Jungfer & Hödl (2002). Many descriptions available in the literature involve other taxa.



**Fig. 118.** *Osteocephalus lepreurii* (Duméril & Bibron, 1841). A. Dorsolateral view of a female. B. Ventral surface of a male in life. C. Palm (preserved female specimen). D. Sole (preserved female specimen). E. Call, oscillogram. F. Call, spectrogram. (Photos by P. J. R. Kok).

## *Osteocephalus oophagus* Jungfer & Schiesari, 1995

1995: 1, figs 1-4.



ENGLISH NAME: None; we propose "Oophagous slender-legged treefrog".

LOCAL NAME (PATAMONA): Unknown.

TYPE LOCALITY: "Reserva Florestal Adolfo Ducke (2°55'S, 59°59'W), situated at km 26 of the Rodovia AM-010 (Manaus-Itacoatiara), Estado do Amazonas, Brazil".

SELECTED REFERENCES: Jungfer & Schiesari, 1995 (original description, call description, tadpole description, reproductive biology, B&W photos and drawings, distribution, in English); Lescure & Marty, 2001 (brief description, colour photo, in English); Lima *et al.*, 2006 (brief description, natural history, colour photos, in English).

**Field identification** - Males reach 53.0 mm SVL, females 62.7 mm.

➔ Dorsal ground colour ranging from tan to brown, marbled with dark brown, individuals with white spots are reported; skin on dorsum smooth to weakly tuberculate.

➔ Ventral surface granular, creamy white to yellowish white, with brown spots and flecks on chin and throat.

➔ Distinct dark transverse bars on limbs.

➔ Frontoparietal ridges indistinct, never prominent.

➔ Iris gold with conspicuous radiating black lines.

➔ No calcar on heel, but some small tubercles.

➔ Tarsal tubercles present, low.

➔ Toes about 2/3 webbed.

**Life history** - Nocturnal (although the species occasionally call during the day), arboreal. Found in primary forest, often in disturbed areas (*e.g.* clearings). Males call from near or inside bromeliads, usually between 0.5-10 m above the ground, but up to 30 m high. Eggs are deposited in the phytotelm of bromeliads (both epiphytic or terrestrial) or in holes in trees; tadpoles feed on fertilized eggs laid by the female.

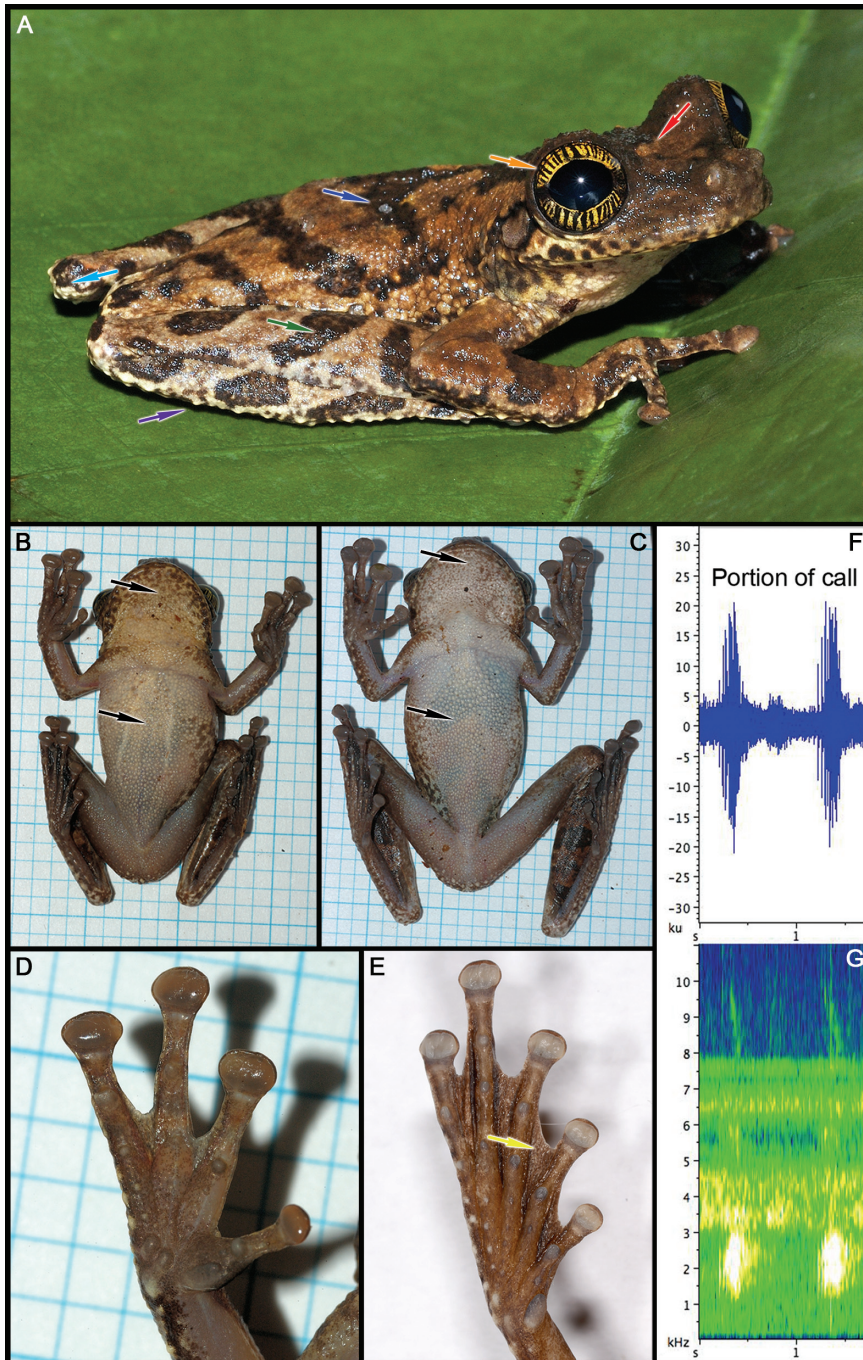
**Call** - First described by Zimmerman (1983: 241 [under *Osteocephalus* sp.]); see also Zimmerman & Bogart (1984: 479 [under *Osteocephalus* sp.] and 1988: 98 [under *O. buckleyi*]), who provided spectrograms. The advertisement call is intraspecifically variable and mainly consists of one to six croaking notes; the call is produced very irregularly, usually not more than 2 calls/m.

**Tadpole** - First described by Hero (1990: 237 [under *Osteocephalus* sp.]); see also Jungfer & Schiesari (1995: 8) and Schiesari *et al.* (1996: 115). Exotroph, arboreal; chestnut brown; LTRF = 2(2)/3[1].

**Abundance and distribution in KNP** - Rare, observed and heard only around main sampling locality # 11 (see Fig. 3), but probably more widespread in the Park.

**Geographic range** - Exact range unknown. The species is found in the Guiana Shield and in the Amazon Basin, from east and north of State of Pará to eastern Colombia.

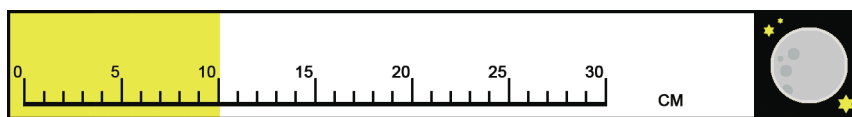




**Fig. 119.** *Osteocephalus oophagus* Jungfer & Schiesari, 1995. A. Dorsolateral view of a male. B. Ventral surface of a male in life. C. Ventral surface of a female in life. D. Palm (male specimen in life). E. Sole (male preserved specimen). F. Call, oscillogram. G. Call, spectrogram. (Photos by P. J. R. Kok).

## ***Osteocephalus taurinus* Steindachner, 1862**

1862: 77, pl. 6, figs 1-3.



ENGLISH NAME: Manaus slender-legged treefrog.

LOCAL NAME (PATAMONA): Unknown.

TYPE LOCALITY: "Barra do Rio Negro in Brasilien".

SELECTED REFERENCES: Trueb & Duellman, 1971 (description, B&W drawings, distribution, in English); Duellman & Lescure, 1973 (call description, in English); Duellman, 2005 (description, tadpole description, call description, natural history, colour photo, in English).

**Field identification** - Males reach 92.0 mm SVL, females 104.0 mm.

- Dorsal ground colour very variable, ranging from tan to dark brown, with or without dark irregular markings, sometimes with a yellow middorsal stripe, rarely with small cream spots; skin on dorsum smooth to shagreened in females, spiculate in males.
- Ventral surface smooth, creamy white, usually with brown blotches on throat, chest, and sides of belly.
- Distinct dark transverse bars on limbs.
- Frontoparietal ridges prominent.
- Iris greenish bronze to gold with conspicuous radiating black lines.
- No calcar on heel, but some small tubercles.
- Tarsal tubercles absent or not prominent.
- Toes almost fully webbed.

**Life history** - Nocturnal, arboreal. Found in primary and secondary forest. Males call from low vegetation or from the ground along small pools. The species is an explosive breeder, and many males and females may be found in and around a same pool. Eggs are deposited as a film on the water surface of pools and small ponds; tadpoles feed on detritus.

**Call** - First described by Duellman & Lescure (1973: 9), who provided a spectrogram; see also Schlüter (1979: 224). It mainly consists of a series of low, strongly pulsed, growls produced at a rate of about 8-36 calls/min.

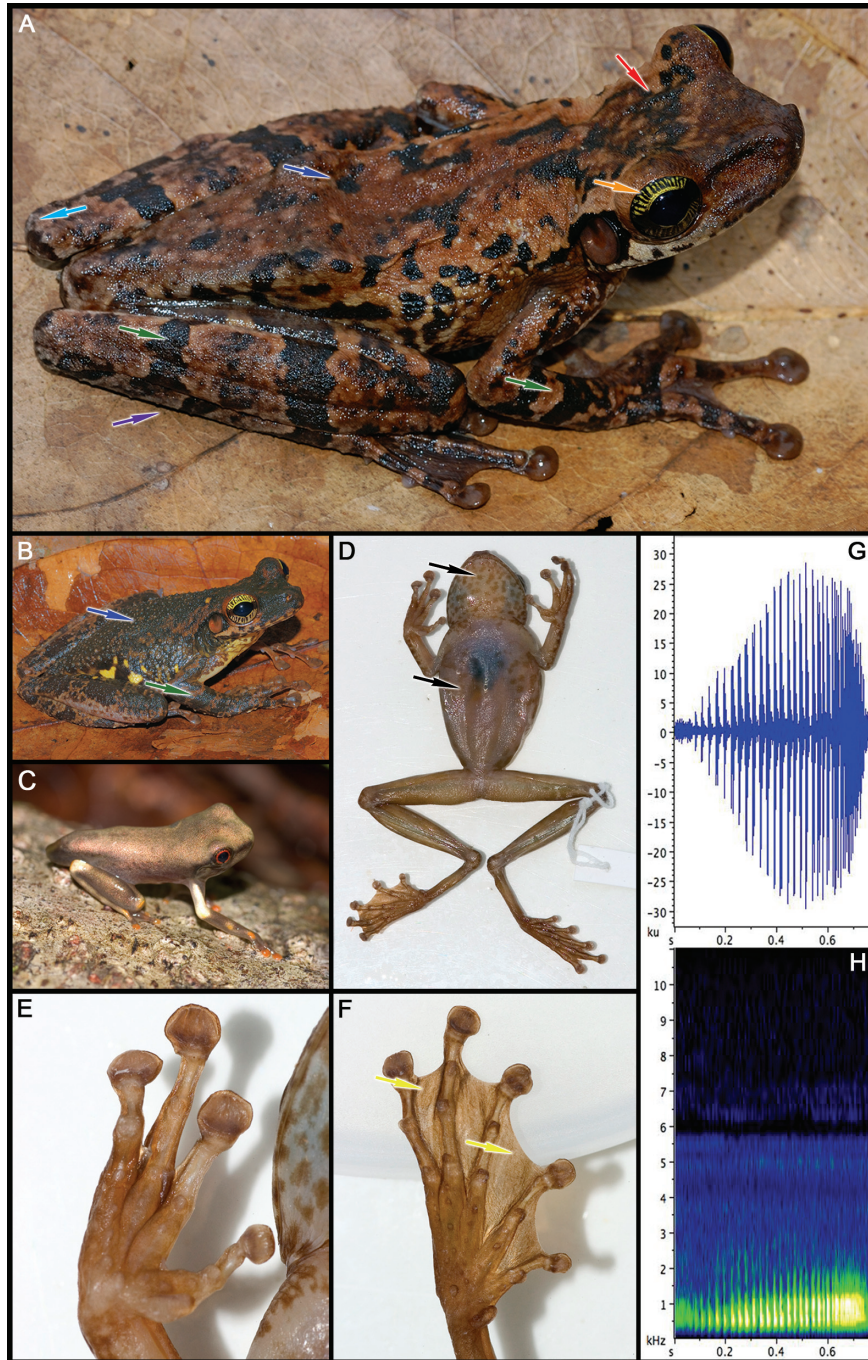
**Tadpole** - Confused with the tadpole of *Hypsiboas geographicus* by Duellman & Lescure (1973) and Duellman (1978). A complete description is provided in Duellman (2005: 228); see also Hero (1990: 238). Exotroph, benthic; brown; LTRF = 2(2)/3-7(1).

**Abundance and distribution in KNP** - Locally common, observed around main sampling localities # 5 and 11 (see Fig. 3), probably widespread in the Park.

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

**Taxonomic comments** - Very probably a complex of several cryptic species (see comments by De la Riva *et al.*, 1995).





**Fig. 120.** *Osteocephalus taurinus* Steindachner, 1862. A. Dorsolateral view of a female. B. Dorsolateral view of a male. C. Metamorph. D. Ventral surface of a preserved male. E. Palm (preserved male specimen). F. Sole (preserved male specimen). G. Call, oscillogram. H. Call, spectrogram. (Photos by P. J. R. Kok).

## *Phyllomedusa* Wagler, 1830

### “MONKEY FROGS”



**Fig. 121.** Calling male of *Phyllomedusa vaillantii*, one of the 32 described species in the genus. Here a specimen photographed in French Guiana. (Photo by P. J. R. Kok).

- ⇒ Medium to large size
- ⇒ Maxillary teeth present
- ⇒ Pupil vertically elliptical (Fig. 42B)
- ⇒ Skin on dorsum smooth, shagreened or finely granular (Fig. 44A-C)
- ⇒ Vocal sac not distinct (but vocal slits present, Fig. 53), single, subgular (Fig. 56A)
- ⇒ Digits opposable
- ⇒ Fingers and toes unwebbed
- ⇒ Finger discs expanded (Fig. 51B)
- ⇒ Tympanum present, distinct or indistinct (Fig. 43A-B)

The genus *Phyllomedusa* currently contains 32 species.