

The roar of the tiger stream treefrog *Hyloscirtus tigrinus*: advertisement call, distribution update, novel colouration patterns and comments on natural history

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Collected specimens deposited at the Museo de Historia Natural de la Universidad del Cauca (MHNUC-HE-AN) and the Amphibians Collection of the Museo de Historia Natural de la Universidad de Caldas (MHN-UCa-Am)

Hyloscirtus tigrinus (n = 6): COLOMBIA: **Cauca**: Inzá, Río Sucio, La Sabana (2° 25'53.06" N, 76° 14'00.75" W; 3,090 m), MHNUC-HE-AN 1351, 1352, MHN-UCa-Am 1869, 1870; Inzá, Río Sucio, Quebrada La Marquesa (2° 28'00.73" N, 76° 12'56.14" W; 3,180 m a.s.l.), MHN-UCa-Am 1868; **Huila**: San Agustín, Puracé National Park, Laguna La Magdalena (1° 56'10.55" N, 76° 36'22.64" W; 3,460 m), MHNUC-HE-AN 1410.

Call vouchers at the Colección de Sonidos Ambientales, Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, Villa de Leyva, Boyacá, Colombia

Hyloscirtus tigrinus (n = 4): COLOMBIA: **Cauca**: Inzá, Río Sucio, La Sabana (2° 25'53.06" N, 76° 14'00.75" W; 3,090 m), IAvH-CSA-39383, 39384; **Huila**: San Agustín, Puracé National Park, Laguna La Magdalena (1° 56'10.55" N, 76° 36'22.64" W; 3,460 m), IAvH-CSA-39385; 39386.

Morphological characters and colour patterns of collected specimens

Colour Patterns

The individual from Laguna La Magdalena (MHNUC-HE-AN 1410) had the pattern of "tiger" morph, with a striking yellow dorsal surface, adorned with irregular black blotches. The colouration transitions smoothly into a green-yellowish hue towards the flanks. Its ventral region was predominantly black, featuring some white spots, particularly in the gular area. The upper areas of the forelimbs were a soft yellowish tone, marked by irregular black bars. In contrast, the hind limbs exhibited a more consistent pattern of regular black bars on a yellowish background. The extremities of both sets of limbs were tinged blackish. Fingers and toes were distinguished by a whitish colouration near the disks, which themselves were black with white irregular spots at the tips (Fig. 2A).

The individuals from village of Rio Sucio (MHN-UCa-Am 1870, MHNUC-HE-AN 1351–1352) showed variation in dorsal colour pattern, from light brown to reddish-brown with transverse black stripes or reticulations, and with or without a mid-dorsal stripe (Fig. 2B.–D.). MHNUC-HE-AN 1351 had a light brown base colour, interspersed with irregular black spots and blotches across the dorsal, flank, and limb surfaces. Notably, the axillar and inguinal regions were orange, complemented by light brown spots that were also present on the hind parts of the forelimbs and hind limbs. The hands and feet, including the fingers and toes, were primarily black but featured light brown blotches. The disks share this black colouration but were accented with irregular white spots at the tips (Fig. 2B).

MHNUC-HE-AN 1352 presented a reddish-brown dorsal surface with a light brown mid-dorsal stripe, speckled with irregular black spots in the upper area and blotches in the lower area, extending to the exposed areas of the forelimbs and hind limbs. The flanks were a darker blackish tone, interspersed with brownish blotches. MHNUC-HE-AN 1351 also displayed orange hues with light brown spot markings in the axillar and inguinal regions, affecting the hind parts of both sets of limbs. The ventral area contrasts with a blackish tone, featuring brownish irregular lines in the gular region. The hands and feet along with the fingers and toes are brown with black bars and spots, while the disks are black with white irregular spots at the tips (Fig. 2C).

MHN-UCa-Am 1870 is characterised by a light brown colouration, lightly sprinkled with diffuse black spots on the dorsum, hind limbs, and forelimbs. The flanks are also light brown but with more regular black blotches. The orange presence is noted again in the axillar and inguinal regions, with light brown spot markings and black bars on the hind parts of the limbs. The ventral area contrasts with a blackish background, adorned with light brown irregular spots and lines in the gular region. The hands and feet, including the fingers and toes, continued the light brown theme but were marked with black bars. The disks are black, tipped with light brown irregular spots (Fig. 2D).

Table 1S. Morphological characters of collected specimens from Laguna La Magdalena, La Sabana and Quebrada La Marquesa.

	MHNUC-HE-AN 1410	MHNUC-HE-AN 1351	MHNUC-HE-AN 1352	MHN-UCa-Am 1869	MHN-UCa-Am 1870	MHN-UCa-Am 1868	<i>H. caucanus</i>	<i>H. tigrinus</i>
Sex	Male	Male	Male	Male	Male	Male	---	---
Dorsal pattern	Dark yellowish with transverse black blotches	Brown with black stripes reticulated	Red brownish with scattered black spots and brown middorsal stripe	Brown with scattered black blotches; with a light brown middorsal stripe	Light brown with scattered small dark spots	Brown with scattered black blotches; with a light brown middorsal stripe	Brown or reddish-brown with dark-brown scattered blotches; with or without middorsal stripe	Yellow-green or yellowish-brown with transverse black stripes, sometimes reticulated; with or without middorsal stripe
Flanks	Yellow on the upper part and cream-yellow on the lower part, with black transverse blotches present throughout	Light brown with black blotches and orange marks in axillary and inguinal regions	Brown to light brown, with black blotches and orange marks in the axillary and inguinal regions	Brown with black blotches and orange marks in axillary and inguinal regions	Light brown with transverse black stripes and orange marks in axillary and inguinal regions	Light brown with transverse black stripes and orange marks in axillary and inguinal regions	Black or brown with orange spots and thick black stripes with tiny white dots	Yellow-green with black reticulation
Iris colour	Light brown with black reticulation	Light brown with black reticulations	Light brown with black reticulation	Light brown with black reticulation	Light brown with black reticulation	Light brown with black reticulation	Pale yellow with brown reticulations	Light gray or yellow with black reticulation
Vomerine teeth	-	-	-	10–13	10–13	10–12	In contact, 10–14 teeth each	In contact, 10–15 teeth each
Nuptial pad	Absent	Absent	Absent	Absent	Absent	Absent	Distal component only; creamy white	Absent
Calcar tubercle	Present	Present	Present	Present	Present	Present	Present or Absent	Present
Ulnar tubercles	Absent	Absent	Absent	Absent	Absent	Absent	Present, acute, white pigmented	Absent

Table 2S. Morphometric measurements (in mm) of collected specimens from Laguna La Magdalena, La Sabana and Quebrada La Marquesa.

	MHNUC-HE-AN 1410	MHNUC-HE-AN 1351	MHNUC-HE-AN 1352	MHN-UCa-Am 1869	MHN-UCa-Am 1870	MHN-UCa-Am 1868
Sex	Male	Male	Male	Male	Male	Male
SVL	56.9	56.7	55.8	55.9	55.6	53.5
HL	20.01	19.2	19.2	20.1	18.3	18.4
WH	18.8	16.9	17.7	20.1	18.4	17.4
HAL	19.4	19.0	18.9	20.6	18.6	17.7
EN	5.4	5.9	6.0	7.2	6.1	5.4
IND	6.1	5.9	5.8	6.0	6.7	5.7
ED	6.6	6.4	6.0	6.7	5.6	6.9
TD	3.8	3.4	3.6	3.9	3.7	3.5
FOL	15.4	15.3	14.1	13.4	14.5	15.4
TL	30.02	28.2	28.4	29.0	29.6	28.4
IOD	10.08	10.04	11.2	11.0	11.14	10.4
EW	6.0	4.8	5.8	5.0	5.5	14.8
FTW	2.1	2.3	2.3	2.7	2.7	2.5
FL	27.5	27.3	25.5	27.1	26.9	27.1
THL	28.8	28.6	28.3	28.6	28.0	26.7
SL	8.7	8.9	8.1	8.8	9.0	8.3

Abbreviations are SVL (snout–vent length), HL (head length), HW (head width), ED (eye diameter), SL (snout length), HAL (hand length), FOL (forearm length), IOD (interorbital distance), EW (eyelid width), END (nostril–eye distance), NSD (nostril–tip-of-snout distance), IND (inter-nostril distance), AMD (distance between the anterior margins of eyes), TD (tympanum diameter), TL (tibia length), THL (thigh length), FL (foot length), and FTW (fourth-toe disc width).

Table 3S. Descriptive statistics for call parameters measured for *Hyloscirtus tigrinus* individuals recorded at La Sabana and Laguna La Magdalena. Temporal characters are given in milliseconds (ms), spectral characters in Hertz (Hz) and reported as mean $\pm$ standard deviation (range).

Call variables	La Sabana				Laguna La Magdalena			
	IAvH-CSA-39383	n	IAvH-CSA-39384	n	IAvH-39385	n	IAvH-39386	n
SVL (mm)	56.7		---		56.9		---	
Air temperature (°C)	12.1		13.4		9.0		9.0	
Relative humidity (%)	79		87		99		99	
Call duration	102.5 $\pm$ 17.2 (76.2–127.2)	34	123.4 $\pm$ 12.8 (89.2–154.2)	68	145.7 $\pm$ 15.7 (100.4–178.5)	83	163.2 $\pm$ 24.6 (61.9–216.6)	121
Inter-call silent interval	1530.5 $\pm$ 361.9 (1221.2–2752.4)	33	1123.7 $\pm$ 120.1 (921.1–1512.3)	63	1280.3 $\pm$ 166.6 (669.0–1759.0)	79	1320.5 $\pm$ 349.1 (965.0–3024.2)	114
Call repetition rate	37.8		48.3		43.4		41.4	
Number of pulses per call	3.6 $\pm$ 0.5 (3–4)	34	4.0 $\pm$ 0.4 (3–5)	68	4.2 $\pm$ 0.4 (3–5)	83	4.5 $\pm$ 0.6 (2–6)	121
Pulse duration	12.9 $\pm$ 2.9 (5.3–19.6)	121	11.3 $\pm$ 2.8 (5.2–25.6)	275	16.1 $\pm$ 4.7 (3.8–38.9)	351	15.6 $\pm$ 4.0 (3.2–44.8)	546
Pulse repetition rate	28.3 $\pm$ 0.8 (26.6–29.7)	34	27.2 $\pm$ 1.1 (21.0–29.7)	68	24.4 $\pm$ 0.7 (22.9–26.1)	83	24.3 $\pm$ 1.4 (17.3–31.8)	121
Low frequency	1722.7 $\pm$ 0.0	34	1551.7 $\pm$ 18.2 (1464.3–1636.5)	68	1589.8 $\pm$ 43.2 (1550.4–1636.5)	83	1546.8 $\pm$ 17.2 (1464.3–1550.4)	121
Dominant frequency	1841.7 $\pm$ 42.5 (1808.8–1894.9)	34	1716.3 $\pm$ 22.6 (1636.5–1722.7)	68	1721.6 $\pm$ 41.4 (1636.5–1808.8)	83	1643.6 $\pm$ 23.8 (1636.5–1722.7)	121
High frequency	1968.4 $\pm$ 31.0 (1894.9–258.4)	34	1808.8 $\pm$ 0.0	68	1830.6 $\pm$ 37.7 (1808.8–1894.9)	83	1761.8 $\pm$ 43.1 (1722.7–1808.8)	121
Frequency bandwidth	245.7 $\pm$ 31.0 (172.3–258.4)	34	257.1 $\pm$ 18.2 (172.3–344.5)	68	240.8 $\pm$ 53.4 (172.3–344.5)	83	215.0 $\pm$ 46.0 (172.3–344.5)	121

Table 4S. Variation ranges of advertisement call parameters described for 11 species of the *Hyloscirtus larinopygion* group. Temporal characters are given in milliseconds (ms) and spectral characters in Hertz (Hz); bouts duration and time interval between bouts are given in seconds (s).

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