Frogs in the Adolpho Lutz collection of the
Instituto Oswaldo Cruz

VIII Hyla squalirostris Lutz, 1925

Bertha Lutz
Museu Nacional

ORIGINAL DESCRIPTION. "L. 28-29 mm. La tête est plus large que le corps. Le museau est projeté en dessus et en avant de la bouche. Le corps et les extrémités sont très grêles. La membrane interdigitale est peu développée, au membre postérieur seulement. La peau est transparente, ce qui donne aux membres un ton rosâtre. Le dos est à fond brunâtre et présente une ligne verébrale foncée. Raie canthale noire, bordée de blanc en dedans. Derrière les yeux il y a une bande longitudinale double, noire, à intervalle blanc. Les membres antérieurs et postérieurs ne présentent pas de barres transversales mais sont un peu pointillées de noir. Le ventre est blanc jaunâtre; la peau du sac vocal est citrine. Plusieurs mâles, pris la nuit dans les marais de la Serra da Bocaina (Lutz, 1925)." Pl. I.

TRANSLATION. L. 28-29 mm. Head wider than the body with the snout projected over and in front of the mouth. Body and limbs very slender. Web only on toes and little developed. Skin transparent, the tissues shining through on the limbs with a rosy tinge. Ground color of back brownish, with a darker vertebral line. Canthal stripe dark with a white inner edge. Behind the eyes a double black longitudinal line divided by a white space. Limbs without crossbars but slightly dotted in black. Ventral aspect yellowing white, skin of the vocal sac lemon yellow. Several males, taken at night in the marais of the Serra da Bocaina." (Lutz, 1926).

TYPE. Male from the Serra da Bocaina, collected January 1925, by A. Lutz, B. Lutz and J. Venâncio, near the house at the Fazenda do Bonito. Paratype, another male collected on the same occasion.
In the Adolpho Lutz Collection at the Instituto Oswaldo Cruz, the juveniles at the Museu Nacional, Rio de Janeiro, Brazil.

**MAIN DIAGNOSTIC CHARACTER.** The very long and greatly projecting snout, overhanging the mouth, from which the specific name is derived. Size small, build frail, skin delicate; pattern composed of a few longitudinal dorsal stripes. Distribution montane or temperate.

**DETAILED DESCRIPTION.** Head large, longer than wide and wider than the body, contained less than three times in the total length. Body straight to the post-axillary region, narrowed between the sacrum and the groin. Legs fairly long; tibiotarsal in front of the eye, tibia much longer than femur, heels overlapping greatly. Snout very elongate, acuminate from above, angular in profile, projecting and sloping backwards to the opening of the mouth. Nostrils sub-terminal. Canthus rostralis long, well-defined towards the nostrils. Loreal region concave, sloping downwards. Tongue wide and long, oval, only slightly free and emarginate. Vomerine teeth in two short groups between and slightly beyond the posterior edge of the choanae. Eye moderate, its horizontal diameter equal to less than half the distance from its anterior corner to the tip of the snout. Tymanum distinct, not much more than half the diameter of the eye. Interorbital space more than double the width of the upper eyelid. Hand unwebbed. Outer toes not quite half webbed. A distinct inner and a very minute outer metatarsal tubercle. Skin smooth, above and beneath, except on the belly and median ventral part of the thigh. A slight ridge on the inside of tarsus. A supra-typanic ridge. Vocal sac very large, with longitudinal folds.

**MEASUREMENTS (mm).** Type: Snout to vent 27, head length 10.5, width 9, eye 2.5, eye-nostril 4, eye-tip of snout 6, tympanum 1, tympanum-eye 1, interorbital space 3; femur 11, tibia 14, tarsus and foot 18, total, hind limb 43. Paratype: the same, except head width 8, upper eyelid 1; eyes-nostril 5, femur 10, tarsus and foot 19.

**COLORATION.** (Water colour of living specimen, by Paul Sandig). Dorsal ground colour brownish, suffused with flesh colour on the translucent surfaces, especially on the limbs. Darkest on head (Vandike brown to bone brown, Ridgway, 1912) growing gradually lighter on the back (approaching orange or vinaceous cinnamon towards the sacrum and beyond it). A narrow, black, vertebral line; a black canthal line, bordered in white. Behind each eye, two black, longitudinal stripes, enclosing a slightly wider, white space, partly suffused with a faint flesh-colour. Limbs also brownish above, flesh-coloured on the surfaces concealed in repose. Thigh tawny to yellow ochre (Ridgway), tibia ochraceous salmon, tarsus, forearm, hand, foot nearer to clay colour. No pattern on the limbs, except a longitudinal, dorsal assemblage of darker dots on the leg, extending slightly onto the thigh. Crural blood vessels visible. Beneath immaculate, flesh-coloured on chest and limbs, greenish-yellow on gula and belly; vocal
sac lemon chrome to lemon yellow, belly pale greenish yellow to sulphur green (Ridgway, 1912).

REMARKS. This species seems to have very nocturnal and secretive habits. It was detected by its voice, heard late at night, often between 10 p.m. and 3 a.m., by the present writer from the farm house at Bonito. The call is like the sound produced by winding a watch: cr, cr, cr, cr, with the r trilled.

On being looked for, it was found climbing up the reeds growing in very shallow marsh, long after dark or calling perched near the tips. It is probably adapted to low temperatures at some phase of the life history. In the Serra da Bocaina (22° 32' 30" S, 44° 35', 30" W. Gr.), it was collected several times in summer in the adult state at the type locality, which is at approximatively 1,000 m of altitude, and is subject to temperatures sometimes reaching freezing point in cold years. Metamorphosing specimens were obtained in April 1951, at Ponte Alta, in the same Fazenda, but at 1,800 m of altitude. The largest ones were 12 and 13 mm long, the younger ones, with about 6 mm of tail left and the hindlimbs 3 to 3.5 mm long, were 11 mm from snout to vent. Adults were not in evidence at that season. At both places there are more or less horizontal open stretches with very shallow marsh.

Pl. II.

RELATIONSHIPS. At first sight Hyla squalirostris seems somewhat similar to Hyla polylaena Cope. Both have a pattern of longitudinal stripes on a brownish background and rosette concealed limb sufaces, but the tints of the latter are different and the details of the patterns also. The shape of the snout separates them effectively. At Bonito, in the Serra da Bocaina they both occur. Hyla polylaena is, however, much more common, and though montane, is found in many places in the eastern mountains, from 800 meters upwards.

Taxonomically the form nearest to Hyla squalirostris seems to be Hyla evelynae Karl Schmidt, 1944. The type locality is Hacienda Alvares, 15 km NE of San Carlos in Uruguay, but it was also found in the Departamento Treinta y Tres, i.e., some 10-12° higher in latitude than the Serra da Bocaina. The original description is not detailed enough for miniluous comparison but the snout seems wider and the light median stripe between the darker ones seems somewhat narrower than in ours. The metamorphosing young may also be slightly larger, since they have remnants of the tail at 14-14, 5 mm whereas this is no longer present in our specimens measuring 12-13 mm from snout to vent. The difference may however be fortuitous.

This kind of distribution is not unique, it is occasionally seen in other South American frogs. The same phenomenon occurs among plants. Thus the epiphytic fern Hymenophyllum magellanicum, from the tip of the continent, is found growing on the ground at the top of the Organ mountains, in the Brazilian state of Rio de Janeiro, at 2,000 m of altitude and 22° 26' 12" of southern latitude. In these cases the determining factors may well be the compensation of higher latitude by altitude, plus adaptation, or tolerance, for low temperatures.
The descriptions of two other small tree-frogs with elongate and pointed snouts bring them superficially rather close to *Hyla squalirostris*, although the regional faunas to which they belong do not show the affinity for the fauna of our south-eastern mountains seen in that of the Uruguayan and Argentinian coastal lowlands. They are *Hyla parkeri* Gaige, 1929 and *Hyla lindneri* L. Mueller & Hellmich, 1936.

*Hyla parkeri* was described from Bolivia, on the basis of a hundred specimens from Buena Vista and five more from Ixiamas, i. e., probably from the foot-hills of the Eastern Cordillera. It differs from *Hyla squalirostris* in the following characters: Diameter of the eye equal to the distance from its anterior corner to the nostril (5/8 to 1/2 in *H. squalirostris*). Tongue heart-shaped. Outer toes more fully webbed (almost 2/3). Skin apparently less smooth, i. e., with a few rounded tubercles on the head and the postocular region. There is generally only one dark post-ocular stripe, the second and the dark vertebral line appearing only sometimes.

*Hyla lindneri* belongs to the fauna of the Gran Chaco. It was described from Junca Vieja, in the Argentinian Gobernación Formosa, between the rivers Paraguay, Pilcomayo and Bermejo. The types are much smaller (19 and 16 mm) but they have the skin finely shagreened with scattered minute pustules. The pattern is very similar to that of *Hyla squalirostris* but there are vestiges of fine lines between the dark stripes and the vertebral line and the light area between the dark stripes is not white or pinkish but only lighter than they, and a more yellowish-brown. The legs are longer the tibiotarsal articulation reaches the tip of the snout. There is no tarsal fold.

Perhaps these forms, or at any rate the last, belong to the Kreis of *Hyla rubra*, the more so as *Hyla lindneri* seems rather similar to *Hyla fuscomarginata* Lutz. *Hyla parkeri*, on the other hand, is stated to be somewhat like *Hyla nana*, a resemblance not extended to their form by Lorenz Mueller and Hellmich.

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