

PROCEEDINGS  
OF THE  
BIOLOGICAL SOCIETY OF WASHINGTON

A NEW ELEUTHERODACTYLIN FROG FROM  
AMAZONIAN ECUADOR

BY JOHN D. LYNCH

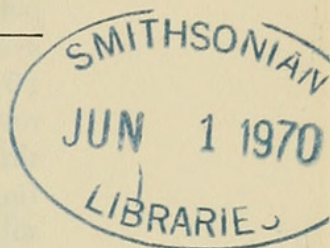
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The discovery of petroleum deposits in Napo Province, Ecuador has proven to be of considerable importance in the herpetological exploration of the Amazonian rainforest in eastern Ecuador. Recently, Texaco Petroleum Company has undertaken the construction of a new airfield near its Lago Agrio oil field. The University of Kansas Museum of Natural History personnel have been fortunate to gain early entrance into this newly-opened area. During April and May, 1969, a group of three herpetologists collected and observed amphibians and reptiles at Lago Agrio while the Texaco crews were leveling primary rainforest for the new airstrip. A significant number of animals which had only rarely been collected in the past became relatively abundant, presumably because these species are dwellers of higher levels of the rainforest than are usually sampled by the terrestrial collector. Among the leptodactylid frogs collected amid the bulldozers were two specimens of a distinctive new species of *Eleutherodactylus*. Fortuitously, both an adult male and an adult female were collected. Both sexes of this species have dark brown and black gular regions; in allusion to the throat color, this new species is named

***Eleutherodactylus orphnolaimus* new species**

*Holotype*: University of Kansas 125332, adult male collected at Lago Agrio, Napo, Ecuador, 330 m, on 7 May 1969 by Thomas H. Fritts.

*Paratype*: KU 125333, adult female, same locality, collected 9 May 1969 by William E. Duellman.





*Diagnosis:* (1) skin of dorsum relatively smooth with large tubercles on upper eyelid; skin of venter smooth with numerous pustules; discoidal fold present; (2) tympanum visible, its length less than one-half diameter of eye; (3) snout acuminate in dorsal view with small terminal papilla, pointed in lateral profile, overhanging lower jaw; (4) upper eyelid slightly narrower than interorbital distance; no cranial ridges; (5) prevomerine teeth present, 4–6 per fasciculus, arranged in a transverse row on triangular-shaped dentigerous processes; (6) males with vocal slits and sac; thumb of male bearing non-spinous nuptial pads; (7) first finger shorter than second; digital tips expanded, pads broader than long; subarticular tubercles simple; (8) fingers bearing poorly defined lateral fringes; (9) ulnar tubercles present, poorly defined; (10) tarsus with poorly defined inner tarsal fold for one-half its length; no heel tubercles; (11) inner metatarsal tubercles elongate, three to five times as large as rounded outer metatarsal tubercle; supernumerary plantar tubercles absent; (12) toes with lateral fringes and basal webbing; digital tips expanded, less so than fingers; (13) dorsum dull brown darkening on flanks; limbs dull brown with poorly defined bars; groin and posterior surface of thigh colorless in preservative; throat dark brown with black stripes in both sexes, venter cream mottled with dark brown; (14) male 24.0, female 33.4 mm SVL.

*Description:* Head wider than body, head as long as or slightly longer than its width; head width 40–41 per cent SVL; snout acuminate in dorsal view, sloping and overhanging lower lip in lateral profile; tip of snout bearing short, fleshy proboscis; canthus rostralis sharp, slightly concave; loreal region concave, sloping abruptly to lip; lips not flared; nostrils lateral, near tip of snout; snout long, distance from eye to nostril greater than length of eye; interorbital distance slightly greater than width of upper eyelid; tympanum visible externally, round, its upper edge concealed by supratympanic fold, tympanum length 39.3 per cent length of eye in male, 47.0 per cent in female; tongue large, fleshy, posterior one-third free, not or but slightly indented posteriorly; choanae relatively small, longer than wide, completely visible when roof of mouth is viewed from directly below; dentigerous processes of prevomers present, triangular in outline, larger than one choana, separated medially, lying mesiad and posterior to choanae, bearing 4–6 teeth arranged in transverse series; male with short vocal slits and a median, subgular vocal sac.

Skin of dorsum relatively smooth, lacking dorsolateral folds; upper eyelids bear two papillae (Fig. 1); flanks bear flat tubercles; skin of venter relatively smooth but bearing large scattered tubercles; skin of throat smooth except for a few papillae along edge of jaw; discoidal fold prominent posteriorly, not extending onto thighs; shank 48.0–48.2 per cent SVL; forearm bearing small ulnar tubercles; two palmar tubercles, median and outer fused; subarticular tubercles moderately small, simple, round; fingers bearing poorly defined lateral fringes; digital tips ex-



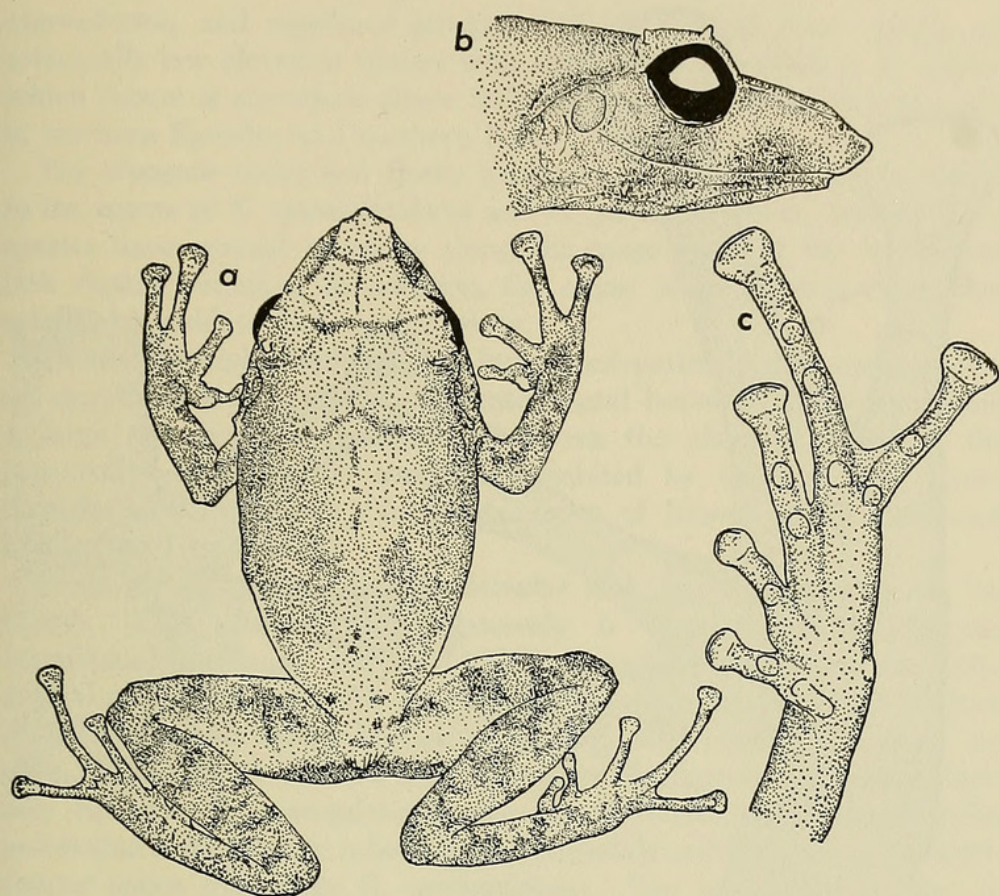


FIG. 1. *Eleutherodactylus orphnolaimus* new species. (a) dorsum, holotype, KU 125332; (b) side of head, paratype, KU 125333; and (c) foot, plantar view, holotype.

panded, pad on thumb smallest, those of other fingers broader than long, each bearing circumferential groove; first finger shorter than second; male with creamy-white, non-spinous nuptial swelling on thumb (Fig. 2).

Tarsus lacking tubercles or folds except for poorly defined inner tarsal fold for one-half length of tarsus; no tubercles on heel or shank; inner metatarsal tubercle elongate, not elevated or compressed, three to four times size of round outer metatarsal tubercle; plantar surface lacking supernumerary tubercles; subarticular tubercles of toes like those of fingers; toes bearing poorly defined lateral fringes and basal webbing (Fig. 1); digital tips expanded, broader than long, bearing circumferential grooves.

Dorsum and limbs gray-brown with poorly defined dark brown blotches; ground color darker on flanks; groin and concealed surfaces of thigh colorless in preservative; canthal and supratympanic stripes dark brown; labial bars dark brown; throat dark brown with black stripes; venter dirty-cream mottled with brown, bearing cream tubercles;



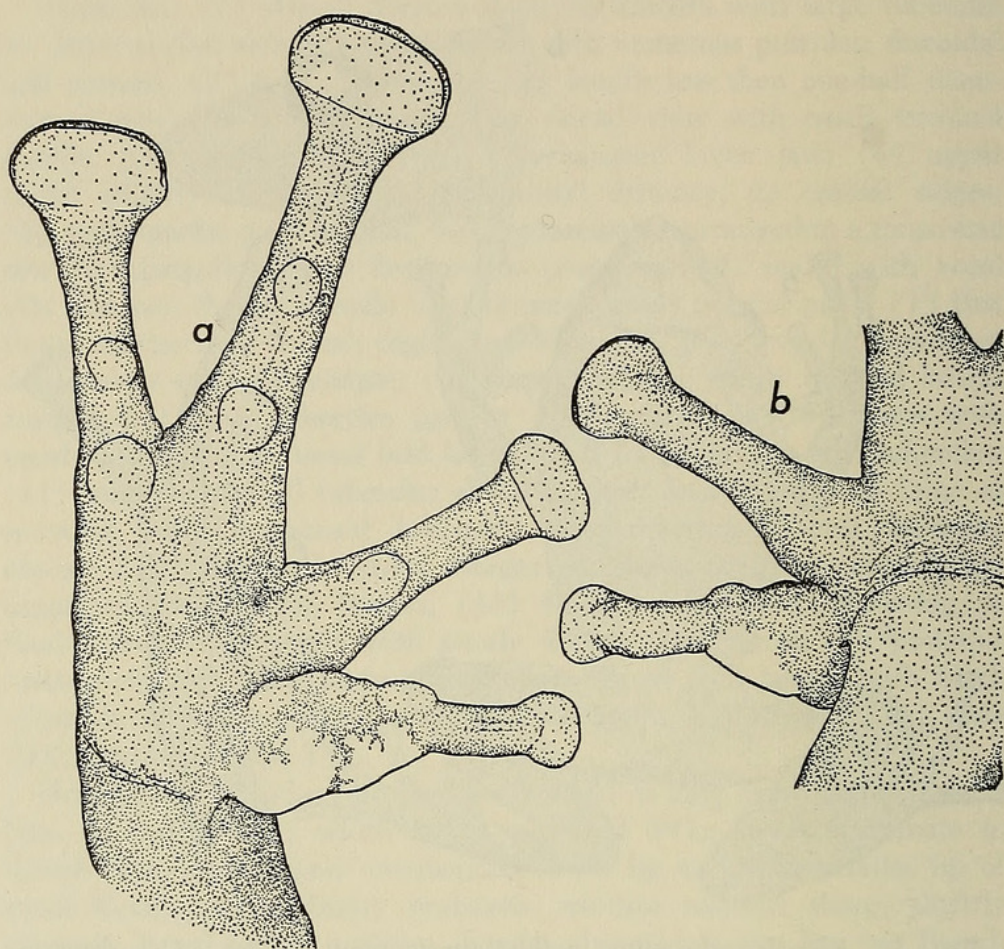


FIG. 2. Dorsal and thenar surfaces of hand of male holotype (KU 125332) of *Eleutherodactylus orphnolaimus* new species.

posterior part of venter colorless; undersurfaces of limbs mottled with brown.

In life, the dorsum is grayish-tan to tan with pale green to brown markings; concealed surfaces of thigh and groin rusty to reddish orange; venter yellowish-brown with creamy-white tubercles; throat dark tan or brown striated with black. Iris pinkish silver above, bronze below, with a reddish-brown horizontal streak.

*Measurements in mm:* the first value is for the male holotype, the second (in parentheses) for the female paratype: snout-vent length 24.0 (33.4); shank length 11.6 (16.1); head width 9.65 (13.7); head length 9.65 (14.0); interorbital distance 2.9 (IOD greater than eyelid width); eyelid width 2.7; tympanum length 1.1 (1.8); eye diameter 2.75 (3.85).

*Etymology:* Greek; *orphnos* and *laimos*, meaning dark or dusky throat.

*Comparisons:* In habitus, *E. orphnolaimus* is similar to *E. conspicillatus*; however, *conspicillatus* belongs to the section of the genus with an elongate first finger (*biporcatus*, *cornutus*, *fitzingeri*, *gollmeri*, *guentheri*,



*nigrovittatus*, and *rugulosus* groups). The species of these groups are principally low elevation species with the notable exception of *E. lymani* which occurs at elevations above 2000 meters in the Huancabamba pass in southern Ecuador and northern Peru.

The elongate snout and fleshy proboscis of *orphanolaimus* are similar to the snouts of *E. appendiculatus* and *E. galdi*. However, both of these species have conical tubercles along the outer edge of the tarsus and lack digital webbing. In addition, the edges of the frontoparietals are enlarged in *galdi* to form cranial crests.

*Eleutherodactylus orphanolaimus* lacks frontoparietal ridges and squamosal serrations, and has large, elongated nasal bones. The sphenethmoid is large and protrudes anteriorly between the alary processes of the premaxillae recalling the condition exhibited by frogs of the *Leptodactylus sibilatrix* group (*L. fuscus* group of Heyer, 1969) and some hylids (see Trueb, 1970).

Frogs of the genus *Eleutherodactylus* lack nuptial asperities on the thumb. This characteristic apparently is correlated with clasping (amplexus) on land. Rivero (1968) described non-spiny, glandular nuptial pads on the thumbs of a new Venezuelan species, *E. pulvinatus*. *Eleutherodactylus orphanolaimus* has similar pads on the thumb of the male (Fig. 2). At present, it is premature to suggest a close relationship between *E. orphanolaimus* and *E. pulvinatus*. *Eleutherodactylus pulvinatus* lacks discrete tubercles on the eyelids and has a more truncate, shorter snout than does *E. orphanolaimus*. The two species differ in color pattern and *E. orphanolaimus* has basally webbed toes whereas those of *E. pulvinatus* are free.

*Eleutherodactylus orphanolaimus* has no apparent close relatives in Ecuador or Colombia. The combination of characters of tuberculate eyelids, visible tympanum, expanded digital pads, basally webbed toes, short first finger, non-ornamented tarsus, and dark throat distinguish the species from all other congeners.

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