

OCCASIONAL PAPERS OF THE MUSEUM OF  
ZOOLOGY  
UNIVERSITY OF MICHIGAN

ANN ARBOR, MICHIGAN

---

A NEW SPECIES OF *ELEUTHERODACTYLUS* FROM  
THE CORDILLERA OCCIDENTAL OF COLOMBIA  
(AMPHIBIA: ANURA: LEPTODACTYLIDAE)

BY JOHN D. LYNCH

Frogs of the *fitzingeri* group of *Eleutherodactylus* are primarily low elevation species (below 1500 m). Of the 21 South American species recognized by Lynch (1976) only four occur at moderate elevations (1500-3000 m)—*E. insignitus* Ruthven (1800-2100 m, Nevado de Santa Marta, Colombia), *E. lymani* Barbour and Noble (1250-2500 m, Andes of extreme southern Ecuador and adjacent Peru), *E. thectopternus* Lynch (1840-2540 m, Cordillera Occidental, Colombia), and *E. w-nigrum* (Boettger) (1200-3000 m, Pacific and Amazonian slopes of Andes in Colombia and Ecuador, andean slopes of Cauca and Magdalena valleys of Colombia).

Fieldwork in 1965, 1970 and 1975 at moderate elevations on the Pacific versant of the Cordillera Occidental in Departamento Cauca of Colombia revealed the presence of a fifth non-lowland member of the *fitzingeri* group. The new species is known to be sympatric with the more widespread *E. thectopternus* (Fig. 1) and is probably also sympatric with *E. w-nigrum*.

In the description below, the following abbreviations are used: E-N, eye to nostril distance; IOD, interorbital distance and SVL, snout-vent length.

*Eleutherodactylus viridicans* new species

**Holotype.**—UMMZ 143468 (field number IJ 6022) an adult female collected 2 km S Cerro Munchique, alongside road from

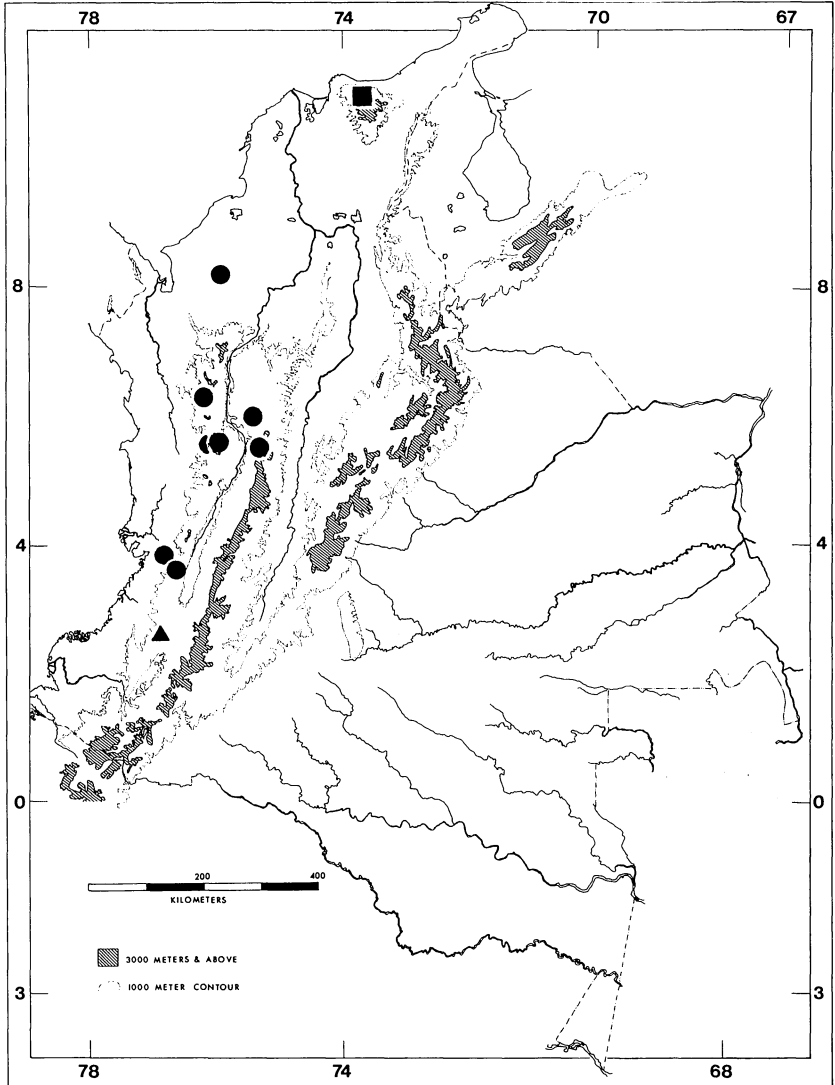


FIG. 1. Known distributions of moderate-elevation *Eleutherodactylus* of the *fitzingeri* group in Colombia: *E. insignitus* (square), *E. thectoptyernus* (circles and triangle), and *E. viridicans* (triangle).

El Tambo to the Cordillera Occidental, Departamento Cauca, Colombia, 2540 m, on 11 July 1965 by K. Adler, C. Elton, F. Lehmann V., H. Trapido and P. Trapido.

Paratypes.—UMMZ 143469(5) (IJ 5996-6000), ca 3 km (air-line) SW Cerro Munchique, Depto. Cauca, Colombia, 2520 m;

LACM 64858, 64868, Cerro Munchique, near TV tower, Depto. Cauca, Colombia; KU 144031, road to Pacific coast from El Tambo, Depto. Cauca, Colombia, 2170 m; KU 168644-46, W slope Cerro Charquayaca, Depto. Cauca, Colombia, 2240 m; KU 168647, crest, Cerro Charquayaca, Depto. Cauca, Colombia, 2680 m.

**Diagnosis.**—A moderate-sized *Eleutherodactylus* ( $\delta$  to 43.9 mm SVL,  $\text{♀}$  to 57.3 mm SVL) of the *fitzingeri* group: toes lacking basal webbing; toes (but not fingers) bearing narrow lateral fringes (keels); digits bearing pads and discs; pads of outer fingers 1 1/2 times as wide as digit, those of inner fingers scarcely dilated; palmar tubercle bifid; short inner tarsal fold present; heel and outer edge of tarsus lacking tubercles; inner metatarsal tubercle much larger than outer; skin of dorsum smooth; no dorsolateral folds; tympanum prominent, its length 1/3 to 2/5 eye length; males lack vocal sac and slits; males lack nuptial thumb pad; legs long, shank 54-67% SVL; venter and throat cream, heavily reticulated with gray; posterior surfaces of thighs dark brown with white spots; groin brown with cream spots; spots on groin and posterior thigh yellow (in life); ground color pale green to gray with a green cast (in life).

*Eleutherodactylus viridicans* resembles *E. insignitus* and *E. w-nigrum* in having small tympana; it resembles *E. insignitus* and *E. thectopternus* in the absence of vocal slits and the absence of non-spinous nuptial pads. I consider *E. viridicans* most similar to *E. insignitus*; both have weak frontoparietal depressions (low crests on frontoparietals), narrow digital pads, and short, obscure inner tarsal folds. The two differ in that *E. viridicans* is boldly marked above whereas *E. insignitus* has a muted dorsal pattern and the throat is brown with cream spots and *E. insignitus* has lateral fringes on the fingers.

**Description.**—Head slightly narrower than body, wider than long; head width 40.2-43.9 ( $\bar{x}$  = 41.8, N=7) % SVL; snout subacuminate to rounded in dorsal view, rounded in lateral profile; snout short, E-N 82.1-96.9 ( $\bar{x}$  = 89.4, N=7) % eye length; upper jaw not extending much beyond lower; nostrils not or only weakly protuberant, directed dorsolaterally; canthus rostralis sharp, convex; loreal region weakly concave, sloping gradually to lips; lips not flared; interorbital space furrowed, cranial crests palpable; upper eyelid width 92.7-116.1 ( $\bar{x}$  = 103.4, N=7) % IOD; tympanum separated from eye by 1 1/4-1 1/2 tympanum length; tympanum distinct, higher than long, its upper edge

partially concealed by ridge-like supratympanic fold, its length 28.2-39.1 ( $\bar{x}$  = 33.9, N=7) % eye length; postrictal tubercles prominent; no other enlarged tubercles on head; tongue slightly longer than wide, posterior 1/5 not adherent to floor of mouth, posterior edge shallowly notched; choanae small, round, not concealed by palatal shelf of maxillary arch; vomerine odontophores median and posterior to choanae, triangular in outline, elevated, separated by distance equal choanal width, each 4-5 times size of a choana, each bearing transverse row of 5-7 teeth along posterior border; males lacking vocal sac and slits.

Skin of dorsum smooth with some suggestion of wartiness on upper flanks and sides of head; no dorsolateral folds; anal opening not enclosed in sheath; skin posterior and lateral to vent weakly areolate; skin of throat and venter smooth; discoidal folds evident; ulnar tubercles absent; palmar tubercle bifid, larger than oval thenar tubercle, both flattened; if discernible, supernumerary palmar tubercles flat, smaller than subarticular tubercles, one at base of each finger; subarticular tubercles slightly longer than wide, non-conical, pungent, simple; fingers lacking lateral fringes or keels; all fingers with discs (broader than long); pads of fingers I and II scarcely broader than digit below pad, those of III and IV narrow (1 1/2 times digit width below pad); fingers long and slender; first finger longer than second; thumb of male not thickened, lacking nuptial pad.

Heel and outer edge of tarsus lacking tubercles or folds; inner edge of tarsus bearing low fold along distal 1/3; outer metatarsal tubercle round, non-conical, 1/4 size of inner; inner metatarsal tubercle longer than wide, laterally compressed; no supernumerary plantar tubercles; subarticular tubercles longer than wide, non-conical; toes bearing lateral keels, not webbed basally; all toes bearing discs (broader than long) on pads; toe pads as large as those of outer fingers; heel of adpressed hindlimb reaches beyond tip of snout; shank 54.5-67.0 ( $\bar{x}$  = 60.1, N=7) % SVL.

**Coloration in Preservative.**—Dorsally gray with brown spots, chevrons, and interorbital bar; labial bars, canthal and supratympanic stripe dark brown; oblique bars on flanks; limbs gray-brown with dark brown bars; bars on shanks as broad as interspaces (or slightly broader), weakly oblique; anal triangle grayish-black; posterior thigh dark brown with white spots; groin, anterior surface of thigh, and ventral surface of shank brown with cream spots; venter cream heavily reticulated with

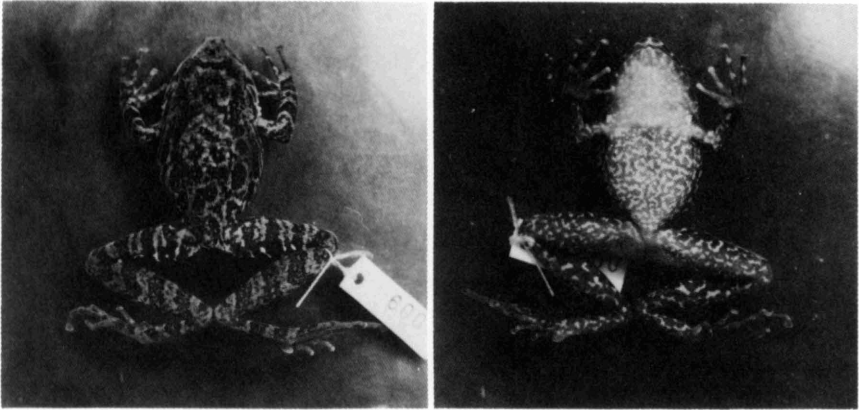


FIG. 2. *Eleutherodactylus viridicans* (paratype, UMMZ 143469, IJ 6000, adult male, 43.9 mm SVL).

gray-brown; throat gray-brown flecked with cream; underside of limbs brown with cream marbling; underside of hand and foot slate gray (Fig. 2).

In life, *E. viridicans* is grayish tan with a green cast to light green with brown to black markings; the groin and concealed limb surfaces are black with yellow spots; the throat and venter are gray with yellow spots or marbling.

**Measurements of holotype in mm.**—SVL 57.3; shank 35.8; head width 23.8; head length 20.0; upper eyelid width 4.8; IOD 4.8; tympanum length 2.7; eye length 6.9; E-N 6.0. The holotype is an adult female with strongly convoluted oviducts and small ovarian eggs (0.5-1.0 mm diameter).

**Etymology.**—Latin, meaning becoming green, in reference to the color in life.

**Natural history.**—The only adult female available is not gravid. All but one specimen were collected by day beneath rocks and debris along the road. KU 144031 was collected at night in grass along the roadbank. These limited observations suggest that *E. viridicans* is not arboreal.

#### ACKNOWLEDGMENTS

Specimens were loaned by William E. Duellman, Museum of Natural History, The University of Kansas (KU), Charles F. Walker, Museum of Zoology, The University of Michigan (UMMZ), and John W. Wright, Natural History Museum of Los Angeles County (LACM).

## LITERATURE CITED

- LYNCH, J. D. 1976. The species groups of the South American frogs of the genus *Eleutherodactylus* (Leptodactylidae). *Occas. Pap. Mus. Nat. Hist. Univ. Kansas* (61):1-24.

*Accepted for publication March 31, 1977*



