

THE IDENTITY OF THE FROG  
*ELEUTHERODACTYLUS CONSPICILLATUS* (GÜNTHER),  
WITH DESCRIPTIONS OF TWO RELATED SPECIES  
FROM NORTHWESTERN SOUTH AMERICA  
(AMPHIBIA, LEPTODACTYLIDAE)<sup>1</sup>

By JOHN D. LYNCH<sup>2</sup>

ABSTRACT: The name *Eleutherodactylus conspicillatus* (Günther) is restricted to a population of *fitzingeri* group frogs found in eastern Ecuador and adjacent Colombia and Peru. *Hylodes peruvianus* Melin is a synonym. The northern Amazonian frog previously considered a race of *conspicillatus* is regarded as a distinct species, *E. vilarsi* (Melin). *Hylodes roseus* Melin, *Eleutherodactylus rosmelinus* Gorham, *E. brachypodius* Rivero, *E. conspicillatus ileamazonicus* Rivero, and a nomen nudum, *E. c. guayanensis* Rivero, are synonyms of *E. vilarsi*. Two new species having calcars are named. *Eleutherodactylus lanthanites*, from eastern Ecuador, is distinguished from all other frogs of the *fitzingeri* group in lacking webbing, having a heel tubercle, tuberculate skin, broad digital pads, white stripe on a dark throat, and brown concealed thigh surfaces. *Eleutherodactylus thectopternus*, from the Pacific versant of Colombia, is distinguished from all other frogs of the *fitzingeri* group in lacking webbing, having a calcar, shagreened skin (with scattered warts), relatively narrow digital pads, cream venter reticulated with gray, and brown concealed thigh surfaces with white spots.

INTRODUCTION

In the first catalogue of the frogs in the collections of the British Museum, A. Günther (1858) named *Hylodes conspicillatus* from a single adult female purportedly from the "Andes of Ecuador." This was only the twelfth name applied to frogs that now constitute the genus *Eleutherodactylus*. Within a decade, the number of nominate species increased three-fold, and by 1882, Günther's name had been misapplied to several other species. Boulenger, and apparently Günther as well, confused *E. conspicillatus* with the Andean *E. w-nigrum* (Böttger), the Amazonian *E. fenestratus* (Steindachner), and the Chocoan *E. achatinus* (Boulenger). The holotype of *conspicillatus* was eventually re-labeled in the British Museum collections as a synonym of *Hylodes fitzingeri* O. Schmidt. During the 1930's and 1940's many frogs previously identified as *E. conspicillatus* were called *E. gollmeri* (Peters). With the discovery that *E. gollmeri* applied to a Central American population (Dunn 1931; Dunn and Emlen 1932), use of the

---

<sup>1</sup>REVIEW COMMITTEE FOR THIS CONTRIBUTION

Robert L. Bezy  
W. Ronald Heyer  
Jay M. Savage  
John W. Wright

<sup>2</sup>Associate Professor of Zoology, School of Life Sciences, University of Nebraska, Lincoln, Nebraska 68508.



name *E. conspicillatus* for a wide array of South American frogs of the genus *Eleutherodactylus* returned. Rivero (1961) discussed the population named by Günther under *E. c. conspicillatus*, although his use of the trinomial was not justified. Cochran and Goin (1970), in the most recent use of the name, confused no fewer than eight species under the name *conspicillatus*. In part their confusion resulted from misidentifications of specimens by Boulenger, whose identifications they accepted without question. Before several undescribed species of the genus could be named, the fixing of the identity of Günther's *conspicillatus* was of utmost importance. Fortunately the holotype, although somewhat bleached after 115 years in preservatives, is readily identified with a relatively common frog of Amazonian Ecuador. In this paper I present a redescription of *E. conspicillatus* based on freshly collected material and the descriptions of two related species found in Colombia, Ecuador, and Peru.

*Acknowledgments.*—Specimens were loaned, or working space provided by, Werner C.A. Bokermann, the late Doris M. Cochran, James R. Dixon, William E. Duellman, Josef Eiselt, Alice Grandison, Brigitta Hansson, Alan Leviton, Charles W. Myers, the late James A. Peters, William Pyburn, Douglas Rossman, Stephen B. Ruth, Terry Schwaner, Dorothy Smith, Hobart M. Smith, Richard Thomas, Charles F. Walker, Ernest E. Williams, John W. Wright, and George Zug.

Abbreviations for collections used in the text are identified below:

AMNH	-American Museum of Natural History
AUM	-Auburn University Museum
BM	-British Museum (Natural History)
GNM	-Göteborgs Naturhistoriska Museum
KU	-University of Kansas Museum of Natural History
LACM	-Natural History Museum of Los Angeles County
LSUMZ	-Louisiana State University Museum of Zoology
MCZ	-Museum of Comparative Zoology (Harvard University)
MVZ	-Museum of Vertebrate Zoology (V. California - Berkeley)
TCWC	-Texas Cooperative Wildlife Collection (Texas A&M Univ.)
UIMNH	-University of Illinois Museum of Natural History
UMMZ	-University of Michigan Museum of Zoology
USNM	-National Museum of Natural History
UTA	-University of Texas - Arlington
WCAB	-Werner C.A. Bokermann, São Paulo, Brasil (private collection)

*Eleutherodactylus conspicillatus* (as well as the two new species named herein) is a member of the *E. fitzingeri* group (roughly equivalent to Group I of Cochran and Goin 1970). Frogs of this species group are distinctive within the genus in having heads of normal width (head width 30-40% of snout-vent length, SVL), the skin of the abdomen smooth (not coarsely areolate), the first finger longer than the second, all digits bearing discs on narrowly to broadly dilated pads, the fold of skin above the disc not markedly indented or notched distally, the tympanum clearly visible (not concealed beneath the skin of the head), and having narrow prevomerine odontophores that are triangular in outline (neither oblique or slanted nor broad and archlike).



*Eleutherodactylus conspicillatus* (Günther)

*Hylodes conspicillatus* Günther 1858:92. [Holotype.—BM 58.7.25.24/1947.2.16.20, Andes of Ecuador].

*Lithodytes conspicillatus*: Cope 1868:115.

*Hylodes peruvianus* Melin 1941:43 [Holotype.—GNM 490, Roque, Depto. San Martín, Peru]. New synonymy.

*Eleutherodactylus conspicillatus*: Barbour and Noble 1920:403.

*Eleutherodactylus conspicillatus conspicillatus*: Rivero 1961:60.

*Eleutherodactylus peruvianus*: Gorham 1966:91.

*Diagnostic characters*.—A moderate-sized *Eleutherodactylus* (♂♂ 25.0-30.1, ♀♀ 34.8-48.8 mm SVL) of the *fitzingeri* group; toes with narrow basal webbing and narrow lateral fringes (web and fringes rarely absent); digits bearing pads and discs; pads of inner fingers 1.4-2.2 ( $\bar{x}$  = 1.8) times width of digit below pad, those of outer fingers 2.0-3.1 ( $\bar{x}$  = 2.6); palmar tubercle bifid; no tarsal fold, inner tarsal tubercle present; no heel calcar; inner metatarsal tubercle much larger than outer; skin of dorsum finely shagreened without enlarged warts; narrow dorsolateral folds present; tympanum prominent, its horizontal diameter one-half to three-fifths length of eye; males with vocal sac and slits; legs long, shank 57-65 percent SVL; throat white or cream, without dark markings; posterior surface of thigh brown or black enclosing white (red in life) spots; limb bars narrow (one-tenth to one-eighth width of interspaces) and oblique; dorsum tan with brown chevrons; no labial bars; canthal and supratympanic stripes black.

*Eleutherodactylus conspicillatus* belongs to the section of the *fitzingeri* group lacking appreciable webbing (web does not enclose the basal subarticular tubercles of toes I-IV) and having broad dilated pads on the outer fingers and toes. This section includes most populations indiscriminately identified as *E. conspicillatus* and *E. gollmeri* between 1900 and 1960. The recognizable species of this complex include three unnamed taxa from the Guyanas and adjacent Brasil (Lynch and Hoogmoed MS), *E. terraebolivaris* Rivero from the Coastal Range of Venezuela, *E. vilarsi* (Melin) from the Rio Negro-Solimões-Vaupés drainage (Colombia, Brasil, and Venezuela), *E. fenestratus* (Steindachner) from the large area of Brasil draining north into the Rio Amazonas east of the Ucayali in Peru, *E. lathanites* new species from eastern Ecuador, *E. w-nigrum* (Böttger) from the Andean slopes of Colombia and Ecuador (1200-3000 m), *E. lymani* Barbour and Noble from the Andes of southern Ecuador and northern Peru, *E. insignitus* Ruthven from the Santa Marta Range of Colombia, *E. thectopternus* new species from the Pacific versant of Colombia, and *E. achatinus* (Boulenger) from the Pacific lowlands of Colombia and Ecuador (0-1500 m). Additional nominate taxa are found in Panama and presumably may occur in northwestern Colombia.

The absence of enlarged tubercles (on back, eyelid or heel) and tarsal fold distinguishes *E. conspicillatus* from all other species of the group except one Guyanan species although occasional individuals of *E. achatinus* and *E. vilarsi*



TABLE 1  
Size and proportions of four species of the *Eleutherodactylus fitzingeri* group from northern South America. The first line for each proportion gives the range followed by N in parentheses; the second line gives the mean  $\pm$  SE (standard error).

Species	Sex	SVL <sup>1</sup>	Tibia/SVL	HW/SVL	eyelid/IOD	tymp/eye	E-N/eye
<i>conspicillatus</i>	♂♂	25.0-30.1(22)	56.8-64.9(22) 60.3 $\pm$ 0.5	36.2-42.0(22) 38.0 $\pm$ 0.3	82.8-102.8(22) 92.6 $\pm$ 1.2	48.4-60.7(22) 56.4 $\pm$ 0.7	92.1-115.1(22) 101.8 $\pm$ 1.2
	♀♀	34.8-48.8(12)	57.0-66.1(20) 61.8 $\pm$ 0.5	36.4-40.6(14) 38.7 $\pm$ 0.4	81.8-111.1(14) 94.9 $\pm$ 1.8	50.5-60.2(16) 54.1 $\pm$ 0.8	100.0-118.5(13) 107.0 $\pm$ 1.5
<i>lanthanites</i>	♂♂	21.7-26.0(20)	51.4-58.4(19) 55.0 $\pm$ 0.4	33.3-37.9(20) 35.6 $\pm$ 0.3	90.1-118.0(20) 103.4 $\pm$ 2.0	41.3-55.9(20) 50.0 $\pm$ 1.0	92.1-114.7(20) 103.9 $\pm$ 1.3
	♀♀	27.5-42.2(31)	50.0-63.6(31) 57.4 $\pm$ 0.6	31.7-38.2(31) 35.9 $\pm$ 0.3	84.8-118.2(30) 103.2 $\pm$ 1.7	42.1-61.0(31) 49.8 $\pm$ 0.8	92.1-114.7(31) 115.7 $\pm$ 1.4
<i>thectopternus</i>	♂♂	24.2-35.4(13)	54.5-62.5(13) 60.5 $\pm$ 0.5	37.9-41.8(13) 40.0 $\pm$ 0.3	75.8-96.9(12) 86.8 $\pm$ 2.0	46.7-58.8(13) 52.4 $\pm$ 1.0	105.6-125.8(13) 114.7 $\pm$ 1.5
	♀♀	44.0-47.0(3)	57.3-65.0(10) 61.2 $\pm$ 0.8	38.0-41.7(10) 39.9 $\pm$ 0.4	78.4-96.1(8) 86.3 $\pm$ 2.0	46.9-56.4(10) 51.5 $\pm$ 1.0	104.7-128.2(10) 116.5 $\pm$ 2.0
<i>vilarsi</i>	♂♂	25.4-31.5(8)	52.0-56.7(8) 53.4 $\pm$ 0.5	35.9-40.2(8) 38.8 $\pm$ 0.5	96.6-118.9(8) 106.3 $\pm$ 2.5	52.5-70.7(8) 61.7 $\pm$ 2.2	89.9-106.8(8) 97.2 $\pm$ 2.1
	♀♀	34.1-43.2(15)	45.4-56.2(32) 52.0 $\pm$ 0.4	34.4-41.5(32) 37.7 $\pm$ 0.3	97.1-134.5(27) 110.4 $\pm$ 1.7	42.7-66.7(32) 54.3 $\pm$ 1.1	91.5-111.8(32) 103.4 $\pm$ 0.9

<sup>1</sup>Size and N for females is for adult females only. Females were considered adult if large eggs were present and/or if the oviducts were enlarged and convoluted.



lack enlarged warts on the dorsum. The dark face mask (no labial bars) is unique to *E. conspicillatus* and the shagreened-skin species from the Guayanan area. The essentially white venter and concealed thigh color pattern is unique to *E. conspicillatus*. *Eleutherodactylus vilarsi* differs from *E. conspicillatus* in usually having enlarged warts on the dorsum, a broader snout, broad transverse bars on the limbs, a uniform brown area on the concealed thigh, labial bars, and short legs (shank 45-57 percent SVL). *Eleutherodactylus achatinus* is more similar to *E. conspicillatus* than is any other species of the section (no webs, large pads). The two are readily separated in life but preserved specimens may present problems of identification. Most *E. achatinus* have tiny flecks within the brown field on the posterior surfaces of the thighs (instead of larger spots), labial bars (some have a broad white to bronze stripe on the upper lip), broader limb bars, and more extensive dorsal markings. *Eleutherodactylus achatinus* also differs in frequently lacking any trace of basal webbing and lateral fringes of the toes.

*Description.*—Head as broad as body, longer than wide; snout subacuminate in dorsal view, rounded in lateral profile; upper jaw extending beyond lower; snout long, eye-nostril distance greater than eye length (Table 1); nostrils weakly protuberant, directed laterally; canthus rostralis sharp, straight or weakly concave; loreal region flat or weakly concave, sloping abruptly to lips; lips not flared; upper eyelid width a little narrower than IOD; interorbital space flat; no frontoparietal fontanelle; tympanum prominent, round in males, a little higher than long in females, its length one-half to three-fifths eye length; tympanum separated from eye by distance equal to one-half or two-thirds tympanum length; supratympanic fold glandular except for ridgelike section postero-ventral to tympanum; choanae partially concealed by palatal shelf of maxillary arch when roof of mouth viewed from directly above; choanae large, round, situated at edge of palate, each slightly larger than a prevomerine odontophore; prevomerine odontophores posterior and medial to choanae, triangular in outline, separated medially by distance equal to one-half width of an odontophore; each odontophore bearing transverse row of 6-8 teeth across its posterior edge; tongue longer than wide, notched posteriorly, posterior one-third not adherent to floor of mouth; males with large subgular vocal sac and vocal slits.

Skin of dorsum and flanks finely shagreened; texture on eyelid and lower flanks more warty than that of back; dorsolateral folds present, thin, extending from eye to groin; no supra-anal warts; skin below anus and on posteroventral surfaces of thighs coarsely areolate; skin of venter smooth; discoidal folds prominent.

Ulnar tubercles usually absent, when present, obscure; antebrachial tubercle present; palmar tubercle bifid, nearly twice as large as elongate thenar tubercle; supernumerary palmar tubercles present, not prominent, not extending onto digits; subarticular tubercles prominent, round, subconical, simple; fingers bearing narrow, keellike lateral fringes; first finger longer than second (pad of second finger reaching middle of pad of first finger when adpressed); all fingers dilated apically (bearing pads), pads of fingers 1 and 2 round, those on fingers 3 and 4 broader than long; pad on thumb 1.3-1.5 times digit width (below pad), pad on





FIGURE 1. Color patterns and limb length in *Eleutherodactylus*. Top row: *E. conspicillatus* (left and center, KU 123438; right, KU 123437). Bottom row: *E. vilarsi* (left and center, UTA 2732; right, WCAB 18470).

second finger 1.8-2.2 ( $\bar{x} = 2.0$ ) times digit width, those on outer fingers 2.0-3.1 ( $\bar{x} = 2.6$ ) times digit width; all pads bearing discs; fold of skin above disc (ungual flap), not indented.

Heel and outer edge of tarsus lacking enlarged tubercles; inner edge of tarsus bearing an elongate ridgelike tubercle just proximal to inner metatarsal tubercle; no tarsal folds; two metatarsal tubercles, outer round, subconical, one-third to one-fourth size of elongate (twice as long as wide), non-compressed inner metatarsal tubercle; plantar supernumary tubercles, if present, at bases of toes 2-4; subarticular tubercles round, conical, slightly smaller than those of fingers; toes



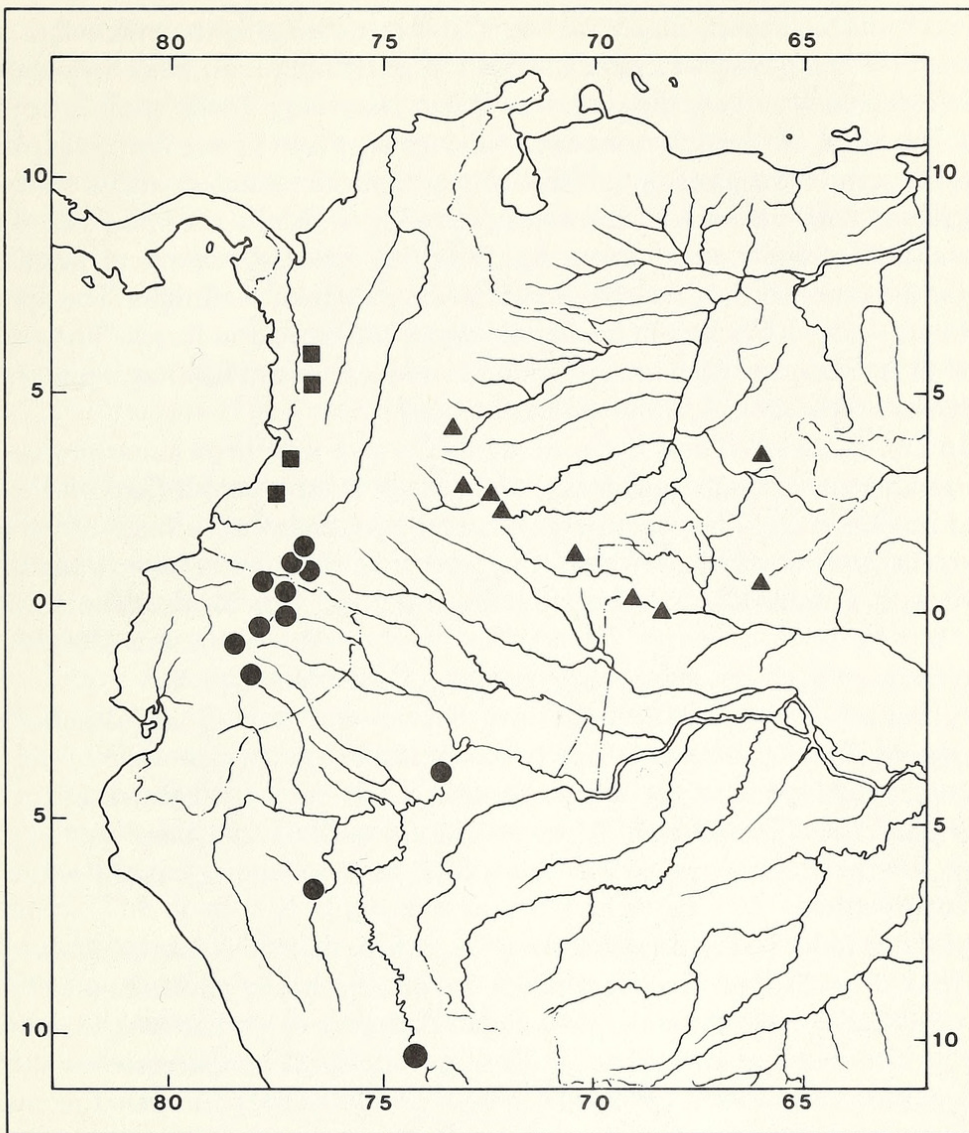


FIGURE 2. Distribution of *Eleutherodactylus conspicillatus* (circles), *E. thectopternus* (squares), and *E. vilarsi* (triangles) in northwestern South America.

bearing narrow lateral fringes and basal webbing (web not enclosing subarticular tubercles except between toes IV and V); all toes bearing pads and discs, ungual flap not indented; pads on toes as large as those of fingers, pad of first toe smaller than those on II-V; heel of adpressed leg reaching to tip of snout or beyond; heels distinctly overlapping when legs flexed at right angles to sagittal plane.

In preservative, *E. conspicillatus* is tan to brown above with slightly darker interorbital bar, ill-defined chevrons, obscure, slanting bars on flanks, and oblique limb bars (Fig. 1). The limb bars are narrow (one-eighth to one-tenth width of interspaces) and oblique. The side of the head is dark brown or black, darkest along the canthus and becoming paler toward the lip. The lip occasionally has white spots along the edge but labial bars are absent. The upper edge of the



canthus is marked by a thin cream line which extends along the outer edge of the upper eyelid and along the top of the black supratympanic stripe. The undersides of the tarsus and foot are dark brown (darkest laterally). Black spots are present below the knee, on the anterior edge of the forearm and anteroventral surface of the upper arm. The posterior surfaces of the thighs are marked with a black anal triangle and dark-brown to black areas extending to behind the knee. These areas enclose small white or cream spots. A diffuse, but essentially identical, pattern occurs on the inner edge of the shank and anterior edge of the thighs. The venter is white with some duskiness on the undersides of the limbs and throat. The dusking on the throat is more often seen in females and is faint (not forming a pattern and usually not noticeable without magnification).

In life, *E. conspicillatus* is tan to reddish brown with brown markings on the dorsum and limbs, black face-mask, and red spots on a brown field on the concealed thigh surface. The venter is white except on the lower surfaces of the limbs (and sometimes the throat) where it is pale gray. The iris is bronze to reddish brown with a reddish brown horizontal streak, and fine black reticulations.

*Distribution of E. conspicillatus.*—Known from low elevations (300-1000 m) in Amazonian Ecuador, Peru, and Putamayo, Colombia (Fig. 2).

*Systematic notes.*—Although now flaccid and somewhat bleached, the holotype of *E. conspicillatus* is clearly recognizable as representative of the population of frogs found in the upper Amazon basin having shagreened skin, thin dorsolateral folds, no enlarged tubercles (except on the foot), basal webbing and narrow lateral fringes, spotted posterior thigh surfaces and essentially white, unpatterned venters.

Melin's (1941) *Hylodes peruvianus* is conspecific with *conspicillatus*. The holotypes of each have been examined by me; both are adult females having shagreened skin, dorsolateral folds, reduced dorsal color patterns, dark facial masks, white venters, brown fields enclosing white spots on the posterior surfaces of the thighs, and lacking enlarged tubercles. Melin (1941) compared *peruvianus* with his *H. roseus* and *H. vilarsi* from Brasil and with "*H. gollmeri*" from Ecuador. The Ecuadorian frogs were those later reported by Andersson (1945) and probably represent a composite of three species, including *E. conspicillatus*. The Brazilian frogs are discussed below.

One frog frequently confused with *E. conspicillatus* is *E. w-nigrum* (Böttger). This error stems from misidentifications by Günther (bottles labeled in the British Museum) and their acceptance by Boulenger. The illustrated specimen of "*H. conspicillatus*" in Boulenger (1882) is *E. w-nigrum*. The two are readily distinguished in that *E. w-nigrum* has a smaller ear (tympanum length 35.7-54.5 percent eye length), black and yellow reticulations on the concealed thigh and flanks, and labial bars.

The account of *E. conspicillatus* in Cochran and Goin (1970) includes many of the erroneous identifications of frogs as *conspicillatus* by Boulenger. The described and illustrated specimen in Cochran and Goin (1970) is *E. thectopternus* new species (see below). All but one (BM 1901.8.2.43) of the specimens listed from Bolivia are *E. fenestratus*. The Ecuadorian specimens include an un-



described lowland Pacific species (BM 98.3.1.29), *E. lymani* (USNM 98931), *E. longirostris* (BM 80.12.5.229, 80.12.5.249—incorrect localities, BM 1901.6.27.13-16), and *E. w-nigrum* (remaining specimens; four of these are erroneously listed as “probably cotypes”—their receipt was two years after Günther’s description). The Peruvian specimens I have examined (BM material), include one *E. conspicillatus* (BM 1900.11.27.39) and nine *E. fenestratus*. I have not examined all of the Colombian material listed but the specimens from Depto. Choco are *E. longirostris* and those for Deptos. Tolima and Valle are *E. w-nigrum*. The account of variation in *E. conspicillatus* by Cochran and Goin (1970) reflects their confusion of at least eight species under that name. The specimen reported by Stebbins and Hendrickson (1959) as *E. conspicillatus* from Depto. Meta is a young female *E. vilarsi*.

Rivero (1961) named *E. conspicillatus ileamazonicus* from Terr. Amazonas, Venezuela, and compared it to the nominate race and *E. terraebolivaris*. He distinguished *ileamazonicus* from *conspicillatus* because it has uniformly brown concealed surfaces of the thighs. Later, Rivero (1968) used *E. conspicillatus guayanensis*, a nomen nudum, for the race.

I have directly compared the holotypes (and cotypes) of *E. c. ileamazonicus* (MCZ 30397), *E. brachypodius* Rivero (MCZ 28568), *Hylodes roseus* Melin (GNM 492), and *H. vilarsi* Melin [GNM 491 (2)] and consider all conspecific. All five frogs have shagreened-skin on the dorsum with scattered enlarged warts, lack dorsolateral folds, lack calcars, have broadly dilated digital pads, relatively short snouts (E-N/E proportions less than those for *conspicillatus*), and gray to brown venters. The concealed thigh is uniformly brown. With the exception of the bleached cotypes of *vilarsi*, all have extensive marbling of brown on the dorsum, labial bars, and broad, transverse (not oblique) limb bars (Fig. 1). These frogs are likewise distinct from *E. conspicillatus* in having shorter limbs (Table 1). The exceptionally short legs of the holotype of *E. brachypodius* are in part due to the broken femora but partially due to the shortness of the limbs of this specimen. Four of the type specimens are gravid females having snout-vent lengths between 34.1 and 37.9 mm. The holotype of *ileamazonicus* is a male, 31.5 mm SVL. Two of the four names (*roseus* and *vilarsi*) antedate the others by 20 years. In considering *roseus* and *vilarsi* synonymous, as first revisor I select *vilarsi* as the senior name. Melin’s (1941) description and illustrations are inconclusive in determining which of the cotypes served as the primary basis of the definition. The drawings (Fig. 24) are reported as “about nat. size and X2.3 resp.” but are each larger than the largest specimen. The larger specimen, a gravid female 37.2 mm SVL, is here designated as the lectotype of *Hylodes vilarsi* Melin, (GNM 491). The specimen was collected by A. Vilars, at Taracúa, Rio Vaupés, Estado Amazonas, Brasil, on 5 March 1924. The smaller cotype, a gravid female 34.1 mm SVL, having the same data as the lectotype, is here designated as a paralectotype (GNM 491).

*Hylodes roseus* Melin (1941) is a primary homonym of *Hylodes roseus* Boulenger (1918) and was replaced by *Eleutherodactylus rosmelinus* Gorham (1966); it too becomes a synonym of *E. vilarsi* (Melin). A skeletal synonymy for *E. vilarsi* is given below.



*Eleutherodactylus vilarsi* (Melin)

*Hylodes vilarsi* Melin 1941:45 [Lectotype.—GNM 491, 37.2 mm specimen, Taracúa, Rio Vaupés, Estado Amazonas, Brasil].

*Hylodes roseus* Melin 1941:47 [Holotype.—GNM 492, Rio Vaupés, north of Rio Japú, Estado Amazonas, Brasil]. **New synonymy.**

*Eleutherodactylus conspicillatus*: Stebbins and Hendrickson 1959:528.

*Eleutherodactylus conspicillatus ileamazonicus* Rivero 1961: 63 [Holotype.—MCZ 30397, Temiche, Mt. Marahuaca, Terr. Amazonas, Venezuela, 1234 m]. **New synonymy.**

*Eleutherodactylus brachypodius* Rivero 1961:61 [Holotype.—MCZ 28568, upper Cunucunuma region, Terr. Amazonas, Venezuela]. **New synonymy**

*Eleutherodactylus rosmelinus* Gorham 1966:98 [Replacement name for *Hylodes roseus* Melin, a primary homonym of *Hylodes roseus* Boulenger 1918]. **New synonymy.**

*Eleutherodactylus vilarsi*: Gorham 1966:108.

*Eleutherodactylus conspicillatus guayanensis* Rivero 1968:148 [nomen nudum, identical to *E.c. ileamazonicus* Rivero 1961].

*Eleutherodactylus terraebolivaris* (part): Cochran and Goin 1970:393-95.

*Distribution of E. vilarsi*.—Known from Amazonian Venezuela, north-eastern Estado Amazonas, Brasil, and Deptos. Meta and Vaupés, Colombia (Fig. 2).

*Eleutherodactylus lanthanites* new species

Figures 3 and 4

*Holotype*.—KU 146144, an adult female collected at Santa Cecilia, Provincia Napo, Ecuador, 340 m, 2 April 1972 by William E. Duellman.

*Paratypes*.—(50) BMNH 1971.1796-99, KU 123852-77, 126215-16, 146141-43, 146145-60, WCAB 47391-93. All from the type locality.

*Diagnosis*.—A moderate-sized *Eleutherodactylus* (♂♂ 21.7-26.0 mm, ♀♀ 27.5-42.2 mm SVL) of the *fitzingeri* group: toes lacking basal webbing; digits lacking lateral fringes; digits bearing pads and discs; pads of inner fingers 1.9-2.6 ( $\bar{x}$  = 2.2) times width of digit below pad, those of outer fingers 2.6-3.5 ( $\bar{x}$  = 3.0); palmar tubercle bifid; no tarsal fold; heel bearing prominent calcar; inner metatarsal tubercle much larger than outer; skin of dorsum finely tuberculate bearing numerous warts; no dorsolateral folds; tympanum prominent, its length two-fifths to three-fifths that of eye; males with vocal sac and slits; legs moderate length, shank 51-64 per cent SVL; throat dark with median white streak; posterior surfaces of thigh uniform brown; limb bars about as wide as interspaces, bars nearly perpendicular to shank axis.

The gular coloration of *E. lanthanites* is duplicated in many specimens of *E. fitzingeri*. *Eleutherodactylus fitzingeri* has longer legs, no heel tubercle, basal webbing of the toes (enclosing at least the basal subarticular tubercles), and less warty dorsum. The only other species of the *binotatus* and *fitzingeri* groups having heel tubercles are *E. binotatus* and *E. thectopternus*; *E. binotatus* has narrow, pointed



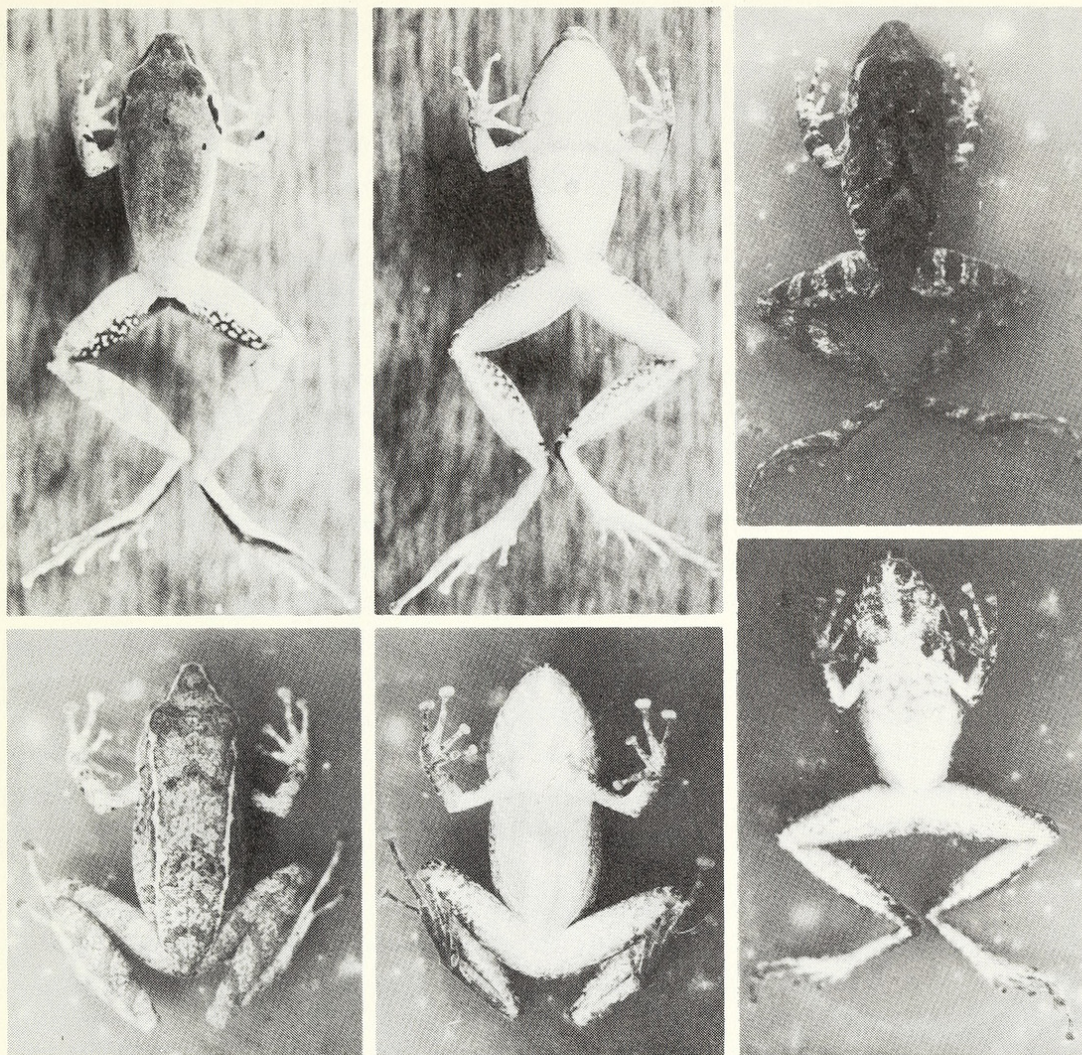


FIGURE 3. Color patterns and limb length in *Eleutherodactylus*. Top row (left and center, *E. thectopternus*, KU 143986; right, *E. lanthanites*, KU 123863). Bottom row: *E. lanthanites* (left and center, KU 126216; right, KU 123863).

digital pads with a notch in the unguis flap as well as longitudinal ridges on the dorsum. *Eleutherodactylus thectopternus* has a less warty dorsum, no supra-anal warts, narrower digital pads, spotted posterior surfaces of the thighs, and less boldly marked throat.

*Description*.—Head about as broad as body, longer than wide; snout acuminate in dorsal view, rounded in lateral profile and not extending much beyond lower jaw; snout long, eye-nostril distance usually greater than eye length (Table 1); nostrils protuberant, directed laterally; canthus rostralis straight to weakly convex, sharp; loreal region concave, sloping abruptly to lips; lips not flared; interorbital space broader than upper eyelid width, flat; no frontoparietal fontanelle; tympanum prominent, round, not sexually dimorphic in size or shape, its length one-half that of eye (Table 1); tympanum separated from eye by about



one-half tympanic diameter; supratympanic fold prominent, obscuring upper edge of tympanum; choanae lying within palatal shelf of maxillary arch; choanae large, each three to four times size of a prevomerine dentigerous process; prevomerine dentigerous processes teardrop-shaped, slanted posteriorly, posterior and median to choanae, separated by distance equal to width of a process; 4-8 teeth per process, arranged in a transverse row across posterior edge of process; tongue longer than wide, not notched posteriorly, posterior one-fourth to one-third not adherent to floor of mouth; males with subgular vocal sac and vocal slits.

Skin of dorsal surfaces and flanks tuberculate to shagreened with numerous conical warts; no dorsolateral folds but some individuals having short ridges on the back; skin of upper eyelids tuberculate, no tubercle elongate; supra-anal warts present; skin of venter smooth (occasional individuals with weak areolation); discoidal folds prominent; skin on underside and backs of thighs near vent areolate.

Forearm lacking ulnar fold or series of ulnar tubercles; antebrachial tubercle present; one bifid palmar tubercle, larger than thenar tubercle; numerous supernumerary palmar tubercles present; subarticular tubercles prominent, round, non-conical, simple; fingers lacking lateral fringes; first finger longer than second; all fingers dilated apically (bearing pads), pad on thumb round, those on other fingers broader than long; pad on thumb 1.9-2.0 times width of digit below pad, pad on second finger 2.0-2.6 ( $\bar{x} = 2.3$ ) times digit width, those on outer fingers 2.6-3.5 ( $\bar{x} = 3.0$ ); all pads bearing discs; fold of skin above disc (ungual flap) not indented.

Heel bearing elongate, conical tubercle; outer edge of tarsus bearing row of indistinct tubercles; inner edge of tarsus bearing tubercle on distal one-third of tarsus; no tarsal fold; two metatarsal tubercles, outer round, conical, one-fifth to one-sixth size of elongate (two to three times as long as wide), non-compressed inner metatarsal tubercle; few supernumerary plantar tubercles; subarticular tubercles like those of hand except smaller and more conical; toes lacking webbing and lateral fringes; all toes bearing pads, wider than long; all pads bearing discs and non-indented ungual flaps; toe pads as large as those of outer fingers, pad width 2.9 - 3.7 ( $\bar{x} = 3.3$ ) times digit width below pad; heel of adpressed leg reaching to between eye and nostril; heels overlapping when legs flexed at right angles to sagittal plane.

In preservative, *E. lanthanites* is usually brown above with darker brown chevrons, interorbital bar, slanting bars on flanks, and limb bars. The limb bars are as wide or slightly narrower than the interspaces and are more or less perpendicular to the limb axis. The canthal and supratympanic stripes tend to be black; labial bars are present. The anal patch is black to dark brown. The posterior surfaces of the thighs are unicolor brown in most individuals (occasional specimens, e.g., KU 146158, have cream flecks on a black background). Most specimens have black spots on the ventral surface of the knee and a black scapular chevron or series of spots. The venter is white with dull gray spots on the anterior one-half. The throat is dusky gray to dark brown with white flecks and a median white streak (Fig. 3). The intensity of throat pigmentation varies considerably.



In life, the holotype was described as follows: "Dorsum olive tan with dark brown markings and orange-tan dorsolateral folds. Limbs pinkish tan dorsally with olive-tan cross-bars. Canthal and supratympanic stripes dark brown. Loreal and labial region metallic olive-tan. Flanks grayish tan with pale tan vertical and diagonal markings. Anterior surfaces of thighs pale rose; posterior surfaces dark brown with faint orange-tan flecks. Soles of feet dark brown. Throat gray with median white stripe; belly creamy white with gray spots. Ventral surfaces of thighs greenish cream with brown flecks. Iris bronze, clear above and with radiating black streaks below and a median horizontal red streak (William E. Duellman field notes, 2 April 1972).

*Measurements of the holotype in mm.*—SVL 36.4, shank 21.4, head width 13.4, head length 14.6, eyelid width 3.6, interorbital distance 3.6, tympanum length 2.4, eye length 4.6, eye-nostril distance 5.4. The holotype is an adult female with convoluted oviducts and large ovarian eggs.

*Etymology.*—Greek, meaning hidden one, in reference to my belief prior to field work that this frog might be a polymorph of the sympatric *E. conspicillatus*.

*Distribution.*—Known from low elevations (300-950 m) in Amazonian Ecuador; I have tentatively identified as *E. lanthanites* specimens from adjacent Colombia and the vicinity of Iquitos, Peru (Fig. 4).

*Remarks.*—So far as I am aware *E. lanthanites* has not been misidentified in the literature; I have not examined the frogs reported as *E. gollmeri* by Andersson (1945) from Amazonian Ecuador.

Two other species of the *fitzingeri* group are sympatric with *E. lanthanites*. *Eleutherodactylus nigrovittatus* Andersson has narrow, pointed digital pads, a sloping and pointed snout, is much smaller and colored quite differently than *E. lanthanites*. *Eleutherodactylus conspicillatus* has a shagreened dorsum (no warts), dorsolateral folds, lacks a heel tubercle, has narrower digital pads, has a dark face mask, white or nearly white venter, and comparatively large red spots on the posterior surfaces of the thighs.

The other two species of the *binotatus* and *fitzingeri* groups with calcars (*E. binotatus* and *E. thectopternus*) differ markedly from *E. lanthanites* and are not closely related to the upper Amazonian species. I consider *E. lanthanites* most closely related to *E. fenestratus* (Steindachner) and *E. vilarsi* (Melin), two allopatric species found at low elevations in the Amazon basin. Both have large digital pads, weakly tuberculate skin, similar head shape and profile, no digital webbing, and uniform brown posterior surfaces of the thighs. *Eleutherodactylus fenestratus* occurs in Amazonian Bolivia and Peru as well as much of Amazonian Brasil south of the Rio Amazonas.

A statement of comparison with *E. variabilis* Lynch is germane, judging from sorting errors made by University of Kansas field parties. The two species have pattern polymorphs that are similar. I found several *E. variabilis* mixed in collections with small *E. lanthanites*. In *E. variabilis* the first finger is shorter than the second, the skin of the venter coarsely areolate, the groin bears one or two large yellow areas edged with black, and although the venter frequently bears black flecking and/or reticulation, the throat does not have a white median stripe.



*Eleutherodactylus thectopternus* new species

Figures 2 and 3

*Holotype*.—LACM 73087, an adult female collected 10 km W Andes, Departamento Antioquia, Colombia, 2090 m, by Philip A. Silverstone, 2 Aug. 1971.

*Paratypes*.—(11) LACM 73086, 10 km W Andes, 1840 m; LACM 73088-93, 10 km W Andes 2030-2130 m; LACM 73082-85, 10 km W Andes, 2100-2330 m. P.A. Silverstone, 31 July - 2 Aug. 1971.

*Diagnosis*.—A moderate-sized *Eleutherodactylus* (♂♂ 24.2-35.4 mm, ♀♀ to at least 47.0 mm SVL) of the *fitzingeri* group; toes lacking basal webbing; lateral fringes of digits poorly developed; digits bearing pads and discs; pads of inner fingers 1.2-1.6 ( $\bar{x}$  = 1.4) times width of digit below pad, those of outer fingers 1.8-2.4 ( $\bar{x}$  = 2.0); palmar tubercle bifid; no tarsal fold; heel bearing an elongate calcar; inner metatarsal tubercle much larger than outer; skin of dorsum shagreened with scattered warts; no dorsolateral folds; tympanum prominent, its length one-half that of eye; males lacking vocal sac and slits; legs relatively long, shank 54-65 percent SVL; venter cream with indefinite gray reticulation and/or spotting; posterior surfaces of thigh brown with cream spots (white in life); limb bars narrower than interspaces, oblique.

Two other species of the *binotatus* and *fitzingeri* groups have a calcar (*E. binotatus* and *E. lanthanites*); *E. lanthanites* differs from *E. thectopternus* in having wartier skin, shorter legs, supra-anal warts, a uniform brown posterior surface of the thigh, and a dark gular region divided by a median white stripe. *Eleutherodactylus binotatus* has numerous longitudinal ridges on the dorsum, narrow, pointed digital pads, numerous supernumerary plantar tubercles, and a notch in the ungual flap. *Eleutherodactylus conspicillatus* has been confused with *E. thectopternus* but differs in lacking a heel spur, in having vocal sac slits, dorsolateral folds, uniform shagreened dorsum (no enlarged warts), white venter, dark face mask, and in having red rather than white spots on the posterior surface of the thighs.

*Description*.—Head as broad as body, slightly broader than long; snout acuminate in dorsal view, rounded in lateral profile and not extending much beyond lower jaw; snout long, eye-nostril distance greater than eye length (Table 1); nostrils weakly protuberant, directed laterally; canthus rostralis straight or weakly concave, sharp; loreal region weakly concave, sloping abruptly to lips; lips not flared; interorbital space broader than upper eyelid width, weakly furrowed (edges of frontoparietals upturned and ridgelike) in large females, flat in smaller individuals; no frontoparietal fontanelle; tympanum prominent, round or slightly higher than long, its length about one-half that of eye (Table 1); tympanum separated from eye by two-thirds tympanic length; supratympanic fold prominent, obscuring upper edge of tympanum; chonae lying within palatal shelf of maxillary arch; choanae relatively small, each smaller than a prevomerine dentigerous process; prevomerine dentigerous processes elliptical, slanted posteriorly, posterior and median to choanae, separated by a distance equal to two-thirds width of a process; 8-10 teeth per process, arranged in an irregular and slanted row on the posterior end of the process; tongue longer than wide, cordiform, posterior one-third not adherent to floor of mouth; male lacking vocal sac and slits.



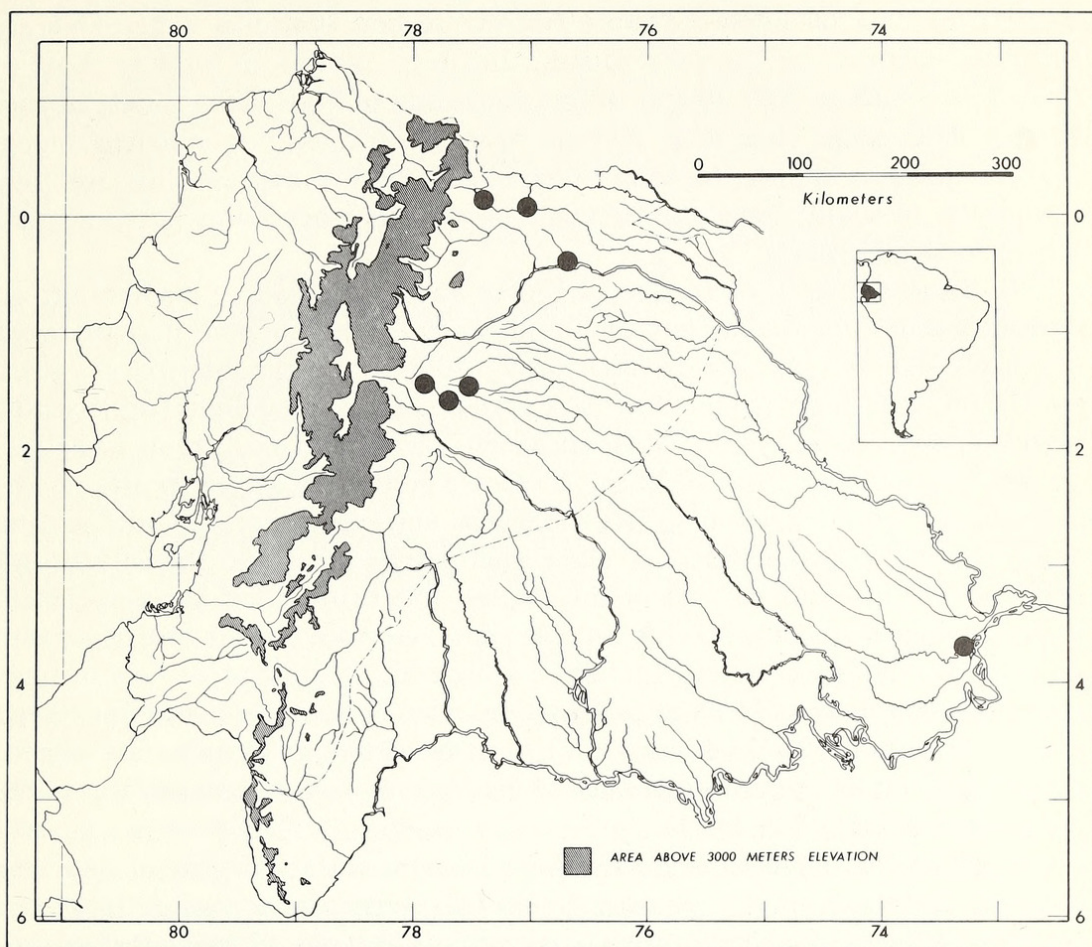


FIGURE 4. Distribution of *Eleutherodactylus lanthanites* in northwestern South America.

Skin of dorsum shagreened with some slightly enlarged warts; that of flanks coarsely shagreened to areolate; skin of upper eyelids bearing larger warts than those on rest of body; no distinct ridges or folds on dorsum or limbs; no enlarged supra-anal warts; skin of venter weakly areolate to smooth (most specimens having a smooth venter); discoidal folds prominent; skin on underside and backs of thighs near vent areolate.

Forearm lacking ulnar fold but bearing small warts along outer edge; one bifid palmar tubercle, larger than thenar tubercle; supernumerary palmar tubercles indefinite in outline; subarticular tubercles round, prominent, non-conical, simple; fingers bearing indefinite lateral fringes; first finger longer than second; all fingers dilated apically (pads), pads on inner fingers round, those on outer fingers broader than long, their width 1.8-2.4 ( $\bar{x} = 2.0$ ) times width of digit below pad; all pads bearing discs; fold of skin above disc (ungual flap) not indented medially.

Upper edge of heel bearing calcar (Fig. 3); outer edge of tarsus smooth, inner edge bearing an obscure tubercle just proximal to inner metatarsal tubercle; no tarsal fold; two metatarsal tubercles, outer round, small, one-fifth to one-sixth size of elongate (two to three times as long as wide), non-compressed inner



metatarsal tubercle; plantar surface bearing several indistinct supernumerary tubercles; subarticular tubercles round, subconical, simple, as large as those of fingers; toes lacking web; lateral fringes consisting of keels along digits; all toes bearing pads, wider than long; all pads bearing discs and non-indented ungual flap; toe pads as large as those of outer fingers; heel of adpressed leg reaching beyond tip of snout; heels overlapping considerably when limbs flexed at right angles to sagittal plane.

In preservative, *E. thectopternus* is gray above with pale to medium brown dorsal chevrons, interocular bar, and limb bands. The dorsal markings are edged in cream. The limb bars are one-fourth the width of the gray interspaces (which tend to be subdivided by indefinite dark gray lines) and are oblique (not oriented perpendicularly across limb). Most specimens have some black spots (scapular, on the forearm, and front of knee); these are sometimes edged in cream. The canthal and supratympanic stripes are black and edged dorsally with cream; labial bars are poorly defined. A black anal patch grades into the dark brown field on the posterior surface of the thighs. The brown field contains small, irregular-shaped cream spots (Fig. 3). The venter is cream or yellowish white with an indefinite suffusion of gray forming a loose reticulation and/or field of spotting over the venter. The loose reticulation extends onto the lower flanks and anterior surface of the thighs. A dark brown or black line demarks the edge of dorsal pigmentation on the outer edge of the forearm. The ventral surfaces of the tarsus and foot are dull black.

In life, *E. thectopternus* was described as having a pale tan ground color and brown to black markings (especially the canthal and supratympanic stripes). The posterior surfaces of the thighs were black with white spots. (Stephen R. Edwards field notes, 24 April 1971).

*Measurements of the holotype in mm.*—SVL 46.9, shank 30.5, head width 18.9, head length 19.8, eyelid width 4.0, interorbital distance 4.6, tympanum length 3.1, eye length 5.5, eye-nostril distance 7.1. The holotype is an adult female with convoluted oviducts and small to medium-sized ovarian eggs.

*Etymology.*—Greek, in reference to the calcar or spur (*thektos*) on the heel.

*Distribution.*—Moderate elevations (1840-2540 m) on the Pacific versant of the Cordillera Occidental of Colombia (Fig. 2).

*Remarks.*—The described and illustrated specimen of *E. conspicillatus* in Cochran and Goin (1970) is a specimen of *E. thectopternus*. I have examined most of the specimens they referred to *E. conspicillatus*. Only five specimens are *E. thectopternus*; the remaining specimens include representatives of *E. achatinus* (Boulenger), *E. conspicillatus* (Günther), *E. fenestratus* (Steindachner), *E. longirostris* (Boulenger), *E. lymani* Barbour and Noble, and *E. w-nigrum* (Böttger). No Colombian specimens are *E. conspicillatus*; the only specimen of that species in their sample is BM 1900.11.27.39 from Dagomro pass, Peru.

One other northwestern South American species of the *fitzingeri* group has a calcar (*E. lanthanites* new species) and is readily distinguished from *E. thectopternus* in having supra-anal warts, more warty skin on the dorsum, larger digital pads, a shorter shank, narrower head, broader upper eyelid, shorter snout,



and different color pattern (dark throat with median white stripe; brown posterior thigh with no spots; broader limb bars). The only species of the *binotatus* group with a heel tubercle is *E. binotatus* (including *Hylodes plicifera* Boulenger 1888). This species has a notched ungual flap, narrow, pointed digital pads, numerous supernumerary plantar tubercles, and numerous longitudinal folds on the dorsum.

Two species of the *fitzingeri* group were collected sympatrically with *E. thectopternus*—*E. achatinus* and *E. w-nigrum*. In habitus, both more closely resemble *E. thectopternus* than does *E. lanthanites*. Neither species has a calcar. A single *E. achatinus* was found by Silverstone in the vicinity of the type locality of *E. thectopternus*; this record represents the highest elevation (1840 m) thus known for *E. achatinus* (10-1460 m in Ecuador). *Eleutherodactylus w-nigrum* occurs commonly at elevations between 1400 and 3000 meters and is broadly sympatric with *E. thectopternus*. It differs from *E. thectopternus* in having a smaller ear (one-third to one-half eye length), in snout length, and in coloration; *E. w-nigrum* has large black spots on the flanks and black and yellow marbling on the posterior thigh.

#### RESUMEN

El nombre *Eleutherodactylus conspicillatus* (Günther) se restringido para una población de ranas se encuentran en la cuenca amazónica (el oriente del Ecuador y Peru, y Colombia meridional). *Hylodes peruvianus* Melin es un sinónimo. Una otra especie, del cuenca amazónica al norte (principalmente Colombia, Brasil, y Venezuela meridional), una vez pensamiento una subespecie de *conspicillatus* (por Rivero 1961), está tratado como una especie distinto, *E. vilarsi* (Melin). *Hylodes roseus* Melin, *Eleutherodactylus rosmelinus* Gorham, *E. brachypodius* Rivero, *E. conspicillatus ileamazonicus* Rivero, y una nomen nudum, *E. c. guayanensis* Rivero, son colocadas en la sinónimia de *E. vilarsi*. Dos especies nuevas teniendo tuberculos grandes por los talones se nombran aqui. *Eleutherodactylus lanthanites*, de Ecuador oriental, se distinguido de todo otras especies del grupo *fitzingeri* en faltando membranas interdigital, en teniendo un tuberculo talón, piel tuberculosa, discos por los dedos ancha, blanco raya en una garganta oscuro, y muslo posterior moreno. *Eleutherodactylus thectopternus*, de las laderas pacifico del cordillera occidental en Colombia, se distinguido de todo otras especies del grupo *fitzingeri* en faltando membranas interdigital, en teniendo un tuberculo talón, piel granulado fino (pero con verrugas disipados), discos del dedos relativamente estrecho, abdomen reticuiado con gris, y muslo posterior moreno o negro con puntas blancas. Los dos especies faltan arrugas dorsolateral desemejante *E. conspicillatus*.



## SPECIMENS EXAMINED

*Eleutherodactylus conspicillatus* (146)

COLOMBIA. **Depto. Putumayo:** 10 km S Mocoa, 700-800 m, AMNH 84830-31; Puesto de Bombeo Guamez, Río Guamúes, 1000 m, KU 140299-300; San Antonio, Río Guamúes, 400 m, KU 140301.

ECUADOR. Andes of Ecuador, BM 58.7.25.24/1947.2.16.20 (holotype of *Hylodes conspicillatus*). **Prov. Napo:** Lago Agrio, 330 m, KU 126154-55; Limon Cocha, 300 m, LACM 72165-71, 72216, UIMNH 93612-13; Puerto Libre, Río Aguarico, 570 m, KU 123427-45; Puerto Napo, UIMNH 55813; Santa Cecilia, 340 m, KU 104551-63, 106959-60, 106966, 108983-87, 108988 (cleared and stained skeleton), 110784-88, 123408-26, 126152-53, 146071-78, 148785-827. **Prov. Pastaza:** Chontoa, 780 m, KU 119524; Mera, 1140 m, KU 119525; Sarayacu, 400 m, BM 80.12.5.236, KU 119526; Schilcayacu, below Puyo, WCAB 35689-90.

PERU. Dagomro Pass, 1000 m, BM 1900.11.27.39. **Depto. Loreto:** Moropon, TCWC JRD 17927. **Depto. Pasco:** Oxapampa, Nevati, 275 m, KU 144308-11. **Depto. San Martín:** Rogue, GNM 490 (holotype of *Hylodes peruvianus*).

*Eleutherodactylus lanthanites* (246)

ECUADOR. **Prov. Napo:** Lago Agrio, 330 m, KU 126217-25; Limon Cocha, 300 m, KU 104628, LACM 72175-77, 72179-80, 72196-206, UIMNH 54134, 63421, 93557, Puerto Libre, Río Aguarico, 570 m, KU 123878-927; Río Cotapino, WCAB 35592; Santa Cecilia, 340 m, AUM 7917, 7919, 7921, 7925-26, 7928, 7930-32, 7935-40, 7945, 7948, 7950-52, 7955-56, 7959-66, 7968-71, 7973, 7976-78, 7983-87, 7989-92, BM 1971. 1796-99, KU 104544, 104546-50, 104564-74, 106963-65, 109095-114, 109134, 111189-205, 123852-77, 126215-16, 146141-60, WCAB 47391-93. **Prov. Pastaza:** Canelos, 530 m, KU 120102; Río Villano, upper Río Curaray, WCAB 252, 35586; Veracruz, 950 m, KU 120100-01.

PERU. **Depto. Loreto:** Moropon, TCWC JRD 17931.

*Eleutherodactylus thecopternus* (42)

COLOMBIA. **Depto. Antioquia:** Andes, AMNH 14139, 14142-43; 10 km W Andes, 1840-2330 m, LACM 73082-93. **Depto. Caldas:** Montanita, USNM 150657, 150669; San Felix, E Salamina, KU 150725-26. **Depto. Cauca:** 2 km SW Cerro Munchique, 2540 m, UMMZ (IJ 6018-21); 3 km SW Cerro Munchique, 2520 m, UMMZ (IJ 6007-08); road to coast from El Tambo, 2170 m, KU 143971-87; road to Munchique, 2350 m, KU 143988. **Depto. Valle:** 15 km WNW Cali, 2050 m, UMMZ (IJ 6071).

*Eleutherodactylus vilarsi* (50)

BRASIL. **Terr. Amazonas:** Salto da Hua, Rio Maturaca, USNM 83558, 83576; Rio Uaupés, Rio Japú, Iauereté, GNM 492 (holotype of *Hylodes roseus* Melin); Taracuá, GNM 491(2) (lectotype and paralectotype of *Hylodes vilarsi*), WCAB 18470.

COLOMBIA. **Depto. Meta:** 22 km W, 45 km S San Martin, 470 m, MVZ 63752; Villavicencio, USNM 146998-7000, 147002-03, 147005-06; 5 km NE Villavicencio, 450 m, UMMZ (IJ 6133); Vista Hermosa, UTA 3559; 28 km WSW Vista Hermosa, Sierra de Macarena, UTA 3549; 30 km WSW Vista Hermosa, Sierra de Macarena, 396 m, UTA 3548, 3550-54. **Depto. Vaupés:** jct. Río Ariari and Río Guaviare, UTA 2732, 2734-35, 2774, 3558, 3560-61; upper Río Cuduyari, trib of lower Río Vaupes, USNM 144760-68; upper Río Inirida, trib of Río Guaviare, Cerro de las Pinturas, USNM 140290-92, 144769-74.

VENEZUELA. **Terr. Amazonas:** Temiche, Cerro Marahuaca, 1235 m, MCZ 30397 (holotype of *Eleutherodactylus conspicillatus ileamazonicus*); upper Cunucunuma region, MCZ 28568 (holotype of *E. brachypodius*).



## LITERATURE CITED

- ANDERSSON, L. G. 1945. Batrachians from east Ecuador collected 1937, 1938 by Wm. Clarke-MacIntyre and Rolf Blomberg. *Ark. Zool.* 37A (2):1-88.
- BARBOUR, T., AND G. K. NOBLE. 1920. Some amphibians from northwestern Peru, with a revision of the genera *Phyllobates* and *Telmatobius*. *Bull. Mus. Comp. Zool.* 63: 395-427.
- BOULENGER, G. A. 1882. Catalogue of the Batrachia Salientia s. Ecaudata in the collections of the British Museum. 2nd ed. 503 pp.
- . 1918. Descriptions of new South American batrachians. *Ann. Mag. Nat. Hist.* (9) 2:427-33.
- COCHRAN, D. M., AND C. J. GOIN. 1970. Frogs of Colombia. *Bull. U.S. Natl. Mus.* 288: 1-655.
- COPE, E.D. 1868. An examination of the Reptilia and Batrachia obtained by the Orton expedition to Equador and the upper Amazon, with notes on other species. *Proc. Acad. Nat. Sci. Philadelphia* 20:96-140.
- DUNN, E.R. 1931. The Amphibia of Barro Colorado Island. *Occ. Pap. Boston Soc. Nat. Hist.* 5:403-21.
- DUNN, E.R., AND J.T. EMLIN, JR. 1932. Reptiles and amphibians from Honduras. *Proc. Acad. Nat. Sci. Philadelphia* 84: 21-32.
- GORHAM, S.W. 1966. Liste der rezenten Amphibien und Reptilien/Ascaphidae, Leiopelmatidea (sic), Pipidae, Discoglossidae, Pelobatidae, Leptodactylidae, Rhinophrynidae. *Das Tierreich* 85:1-222.
- GÜNTHER, A.C.L.G. 1858. Catalogue of the Batrachia Salientia in the collections of the British Museum. 160 pp.
- MELIN, D. 1941. Contributions to the knowledge of the Amphibia of South America. *Medd. Göteborgs Mus. Zool. Avd.* 88:1-71.
- RIVERO, J.A. 1961. Salientia of Venezuela. *Bull. Mus. Comp. Zool.* 126:1-207.
- . 1968. Anfíbios coleccionados por la expedición Franco-Venezolana al alto Orinoco 1951-1952. *Carib. J. Sci.* 7 (3-4): 145-54.
- STEBBINS, R. C., AND J. R. HENDRICKSON. 1959. Field studies of amphibians in Colombia, South America, *Univ. California Publ. Zool.* 56:497-540.

Accepted for publication February 18, 1975.





Lynch, John D. 1975. "The identity of the frog *Eleutherodactylus conspicillatus* (Günther), with descriptions of two related species from northwestern South America (Amphibia, Leptodactylidae)." *Contributions in science* 272, 1–19.  
<https://doi.org/10.5962/p.214211>.

**View This Item Online:** <https://www.biodiversitylibrary.org/item/214242>

**DOI:** <https://doi.org/10.5962/p.214211>

**Permalink:** <https://www.biodiversitylibrary.org/partpdf/214211>

#### **Holding Institution**

Smithsonian Libraries and Archives

#### **Sponsored by**

Biodiversity Heritage Library

#### **Copyright & Reuse**

Copyright Status: In Copyright. Digitized with the permission of the rights holder

Rights Holder: Natural History Museum of Los Angeles County

License: <https://creativecommons.org/licenses/by-nc-sa/4.0/>

Rights: <https://www.biodiversitylibrary.org/permissions/>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.