

**Catalogue of American Amphibians and
Reptiles 917.**

McCranie, J. R. 2018. *Craugastor omoaensis*.

***Craugastor omoaensis*
(McCranie and Wilson)**

Sierra de Omoa Streamside Frog

Eleutherodactylus milesi: Schmidt 1933:18 (in part).

Eleutherodactylus milesi / Population System: McCranie et al. 1989:487 (in part).

Eleutherodactylus omoaensis McCranie and Wilson 1997:155. Type locality, “from about 10 airline km WSW San Pedro Sula on road to Perú (15°28'N, 88°06'W), elevation 1150 m, Sierra de Omoa, Departamento de Cortés, Honduras.” Holotype, Museum of Vertebrate Zoology (MVZ) 115286, an adult male, collected by J. Kezer and J. F. Lynch, 9 February 1974 (examined by author).

Eleutherodactylus (Craugastor) omoaensis: Lynch 2000:150.

Craugastor omoaensis: Savage 2002:551. By implication.

Craugastor omoaensis: Frost et al. 2006:360. First use of combination in print.

Craugastor (Campbellius) omoaensis: Hedges et al. 2008:34.

CONTENT. No subspecies are recognized.

DESCRIPTION. *Craugastor omoaensis* is a small eleutherodactyline frog (in eight adult males, snout-vent length [SVL] range = 26.2–30.0 mm, mean [standard deviation] = 28.1 mm [\pm 1.3 mm]; in nine adult females, SVL range = 25.6–38.4 mm, mean [standard deviation] = 32.2 mm [\pm 4.4 mm]) with a moderately long, broad head (head length/SVL in adult males = 0.433–0.457, in adult females = 0.409–0.465; head width/SVL in adult males = 0.437–0.478, in adult females = 0.425–0.487). The snout is semicircular to nearly rounded



FIGURE 1. Adult female in the series MVZ 128749–752 of *Craugastor omoaensis* from ~10 airline km WSW of San Pedro Sula, Cortés, Honduras. Photograph taken by the late J. F. Lynch on 9 February 1974. Photograph courtesy of D. B. Wake.

in dorsal aspect and rounded in lateral profile. The top of the head is flat. The canthal ridges are angular and the loreal regions are concave. The upper lips are distinctly flared. The nostrils are directed posterolaterally and are situated at a point slightly less than, to about two-thirds the distance between the anterior borders of the eyes (interorbital distance/eye length in males = 0.600–0.850, in females = 0.674–0.970) and the tip of the snout. Cranial crests are absent. The upper eyelids are prominent (eyelid width/interorbital distance in males = 1.032–1.250, in females = 1.000–1.214). A well-developed supratympanic fold is present on each side, narrowly obscuring the upper edge of the tympana. Tympana are otherwise distinct in both sexes, tympana located posteroventral to the eyes, in males separated from eyes by distance of about one-third of tympanum length, in females separated by distance of about two-thirds or more of tympanum length.

The upper arms are slightly more slender than the moderately robust forearms. A transverse dermal fold is absent on the upper surfaces of the wrists. No vertical dermal folds are present along the elbows. Tubercles are



MAP. Distribution of *Craugastor fecundus*. The open circle marks the type locality and the black dot represents single additional nearby locality.

arranged in an irregular series, or arranged in a linear row along the posterior ventrolateral edges of the forearms, but tubercles not developed into a dermal ridge. The finger discs are narrowly expanded to definite (*sensu* Savage 1987) with disc on Finger III about 1.4–2.0 times the width of the digit just proximal to disc). The disc covers on fingers I–II are rounded, but ovoid apically, those on fingers III–IV are rounded (even; see Savage 1987). The disc pads on fingers I–II are ovoid, those on fingers III–IV are broadened. The subarticular tubercles on the fingers are round to ovoid and globular. Supernumerary tubercles are absent on the fingers. The palmar tubercle on each hand is elevated and bifid, and is about as large as, or slightly larger than the thenar tubercles. A few small accessory palmar tubercles are present. The thenar tubercle on each hand is suboval, elevated, and visible from above. Each prepollex is not enlarged, but nuptial thumb pads bearing granular, colorless nuptial excrescences are present in

adult males. Relative length of the fingers is $I < II < IV < III$ or $I = II < IV < III$. The fingers are not webbed, but bear lateral keels.

The hind limbs are relatively long (shank length/SVL 0.517–0.593 in males, 0.541–0.617 in females; foot length/SVL 0.500–0.553 in males, 0.503–0.566 in females). The heels are not overlapping, to slightly overlapping, when the hind limbs are held together towards the cloacal opening at right angles to the body. A vertical dermal fold is present on the outer lateral edge of each heel. Each heel has about 20–30 small, pustular tubercles. Tubercles or dermal ridges are absent along the posterior ventrolateral edge of each tarsus. An inner tarsal fold is absent. The subarticular tubercles on the toes are ovoid and globular. Supernumerary and plantar tubercles are absent on the toes. Each inner metatarsal tubercle is elongate, elevated, and visible from above. The outer metatarsal tubercles are small, rounded, and barely elevated. Relative toe length is $I < II < V < III < IV$. Each toe disc is

narrowly expanded to definite (*sensu* Savage 1987) with disc on Toe IV about 1.3–2.0 times the width of the digit just proximal to the disc. Disc covers on the toes are rounded (even; see Savage 1987) and the disc pads on the toes are broadened. The modal webbing formula of the feet is I 2–2 $\frac{1}{2}$ II 2–3 $\frac{3}{4}$ III 3–4 $\frac{1}{2}$ IV 4 $\frac{1}{4}$ –2 $\frac{3}{4}$ V. Lateral keels are present on the unwebbed portions of the toes. An inguinal gland is faintly visible or not.

The vent opening is directed posteroven- trally near the upper level of the thighs, with the skin surrounding the vent tuberculate. The skin of the dorsal surface of the head, the upper eyelids, and the anterior portion of the body varies from wrinkled to strongly gran- ular, with numerous tiny tubercles or with numerous tiny tubercles plus a few to many moderately-sized tubercles. The tubercles on the flanks and posterior portion of the body are larger than those on the remainder of the dorsum. A row of raised skin, usually tuber- culate, forms discontinuous postocular ridges that extend to level of scapular region. Dor- solateral ridges are absent on the body. The skin on the chin, throat, and chest is smooth to slightly wrinkled. The skin of the belly and ventral surfaces of the thighs is slightly wrinkled, almost smooth in most specimens, but coarsely wrinkled in those with strongly granular dorsal surfaces. The ventral disc is usually absent to indistinct in both sexes, but distinct in those with strongly granular dor- sal surfaces. The pupil is horizontally ellipit- ical. The palpebral membrane is translucent and unpatterned. The tongue is ovoid, not notched posteriorly, and is free posteriorly for about one-fourth of its length. The vom- erine tooth patches are on elevated, ovoid to nearly triangular-shaped ridges located pos- teromedially to the round, tear-shaped, or ovoid choanae. Each tooth patch is separated by a distance about equal to the width of ei- ther patch in males, separated by a distance less than the width of either patch in females. Maxillary teeth are present. Males lack paired vocal slits and a subgular vocal sac. All of the

above data were taken by the author and pub- lished by McCranie and Castañeda (2007) and McCranie and Wilson (1997, 2002).

Color in life for an adult female from the series MVZ 128749–128752 follows. The dorsal surface of the body was Kingfisher Rufous (color code 240; Smithe 1975, 1981; see Smithe 1974 for detailed descriptions of colors) with slightly darker brown indistinct mottling. The upper eyelids and the upper surface of the snout were the same shade as the dorsal mottling. The dorsal surfaces of the limbs were Kingfisher Rufous with indistinct, slightly darker brown crossbars. The upper lip was barred with Kingfisher Rufous and slightly darker brown. Those color notes were taken by the author from the color image used herein for Figure 1 and was previously published by McCranie and Wilson (2002).

DIAGNOSIS. The following combination of characters will distinguish *Craugastor omoaensis*, a member of the *Craugastor milesi* species group, from from all other Honduran species of *Craugastor*. An inner tarsal fold is absent and the tympana are distinct in both sexes. The upper lips are distinctly flared. The toe webbing is basal with the modal webbing formular I 2–2 $\frac{1}{2}$ II 2–3 $\frac{3}{4}$ III 3–4 $\frac{1}{2}$ IV 4 $\frac{1}{4}$ –2 $\frac{3}{4}$ V. The toes have lateral keels, but lateral fleshy fringes are absent. The dorsal surfaces of the body and limbs vary from containing numer- ous tiny and some small tubercles to being strongly granular. Males lack vocal slits and a vocal sac. The species is known to reach 30.0 mm SVL in males and 38.9 mm SVL in fe- males. *Craugastor omoaensis* is the only spe- cies in the *Craugastor milesi* group in which male vocal slits and a vocal sac are absent and the upper lips are distinctly flared, especially in the largest females.

PUBLISHED DESCRIPTIONS. Detailed descriptions of the external morphology of the adult of *Craugastor omoaensis* were done by the author and published by McCranie and Castañeda (2007) and McCranie and Wilson

(1997, 2002). The karyotype was described by DeWeese (1976; as *Eleutherodactylus milesi*), and that description was repeated (also as *Eleutherodactylus milesi*) by McCranie et al. (1989) and Savage (1987).

ILLUSTRATIONS. Color photographs of an adult were published by McCranie and Castañeda (2007) and McCranie and Wilson (2002). A black-and-white drawing of a hind foot was presented by McCranie and Wilson (1997).

DISTRIBUTION. *Craugastor omoaensis* is known to occur from 760 m to 1150 m elevation in the Premontane Wet Forest formation (see Holdridge 1967) in the Sierra de Omoa W of San Pedro Sula in northwestern Honduras.

FOSSIL RECORD. None.

PERTINENT LITERATURE. Relevant citations are listed by topic: **checklists and faunal lists** (Anonymous 2016; Campbell 1999; Frost 2018; Glaw et al. 1998, 2000a, 2000b; Heinicke et al. 2007; Hutchins et al. 2003; Köhler 2011; McCranie 2006, 2007, 2009, 2015; McCranie and Castañeda 2007; McCranie and Wilson 2002; McCranie et al. 2006; Padial et al. 2014; Solís et al. 2014; Townsend and Wilson 2008, 2010; Wilson and Johnson 2010; Wilson and Townsend 2006, 2010; Wilson et al. 2001), **comparisons to new species** (McCranie and Wilson 1997), **conservation status** (Johnson et al. 2015; McCranie and Wilson 2004; Mitchell 2017; Stuart et al. 2008; Wilson and McCranie 2003, 2004; Wilson and Townsend 2006, 2010), **identification keys** (McCranie and Castañeda 2007; McCranie and Wilson 1997, 2002), **taxonomy, systematics, and phylogenetics** (Frost et al. 2006; Lynch 2000; Padial et al. 2014), and **type specimen catalogue** (Rodríguez-Robles et al. 2003).

REMARKS. The author visited the type locality of the species on 27 July 1996. The area

at that time was considerably more deforested than it was during 1974 when *Craugastor omoaensis* was last seen. The small stream where the late J. F. Lynch collected the type series could not be found, even though the author was apparently at the site where that stream was located in 1974 (using the J. F. Lynch field notes and other information supplied by him as a guide). Additionally, all local residents spoken with at that site told the author there were no streams in the area. Apparently the small stream where Lynch collected the type series had presumably long since dried up as a result of the continued deforestation of the steep montane slopes in the vicinity of the type locality. In addition to the habitat devastation having taken place in the vicinity of the type locality of *Craugastor omoaensis*, the chytrid fungus *Batrachochytrium dendrobatidis* was reported in some frogs at a higher elevation site (1690 m) from the Sierra de Omoa in northwestern Honduras by Kolby et al. (2010). Chytrid fungus was also reported in some anuran species collected in 2003 along streams in the Cordillera Nombre de Dios (ca. 1550 m) in north-central Honduras by Puschendorf et al. (2006). This fungus has been linked to anuran declines in other neotropical regions (Puschendorf et al. 2006; also see recent summary by Whitfield et al. 2016 and references cited therein) and likely played a role in the apparent extinction of *Craugastor omoaensis*, if the species was still extant upon the appearance of the fungus in the Sierra de Omoa.

The best chance for a surviving population of *Craugastor omoaensis*, if one exists, might be from an unknown stream in the Sierra de Omoa that penetrates into moderate elevations of the Sierra de Omoa. If a surviving population could be located, there is doubt that the ambitious captive management program for moderate and intermediate elevations anurans announced by Kolby (2013) would have any chance to succeed at the lowland site where he planned to start that program.

ADDITIONAL VERNACULAR NAMES.

“Ranita de Arroyo Labio Enanchado” as a Spanish vernacular name (= Flared Lip Streamside Frog) was used by McCranie and Castañeda (2007); “Omoa Patterlove” was listed by Mitchell (2017).

ETYMOLOGY. The name *omoaensis* refers to the Sierra de Omoa, the mountain range from which the species *Craugastor omoaensis* was described.

COMMENTS. The disagreement in the tympanum and digital keels and fringes characters of various species of the *Craugastor milesi* group as discussed by Savage (2001) in relation to McCranie and Wilson (1997), was because Savage did not realize his discussion of those characters was based on more than one species, including *Craugastor omoaensis* (based on his own recording of data for McCranie et al. 1989).

The karyotype data given by Campbell and Savage (2000), McCranie et al. (1989), and Savage (1987) for *Craugastor milesi* actually applies to *Craugastor omoaensis* (based on MVZ 128749–52; see DeWeese 1976). Specimens of *Craugastor omoaensis* (as *Eleutherodactylus* in all cases) were also identified as *Craugastor milsei* by Meyer (1969), Meyer and Wilson (1971), Savage (1975), and Schmidt (1933), and as *Craugastor milesi* “Population System” by McCranie et al. (1989). Savage (2001:998) stated he had not examined samples of *Craugastor omoaensis*, but he had previously examined specimens when they were identified as *Craugastor milesi* (Savage 1975).

The suggestion that *Craugastor* Cope might be available as a subgenus or genus name for the complex of frogs containing the subsequently described *Craugastor omoaensis* (Lynch’s *Eleutherodactylus rugulosus* group) was made by Lynch (1986, 1993). *Craugastor omoaensis* was listed as belonging to the subgenus *Craugastor* by Lynch (2000). The use of *Craugastor* as a genus name was advocated by Savage (2002), but *Craugastor*

was used as a subgenus of *Eleutherodactylus* by Crawford and Smith (2005). The subgenus name *Campbellius* was erected for the group of frogs containing *Craugastor omoaensis* by Hedges et al. (2008); however, several errors occur in their literature-based morphological description of that subgenus. The speculation that the subgenus *Campbellius* “will ultimately be considered” a genus was made by Padial et al. (2014). However, that bold speculation was based solely on genetic data available from only two of the 13 species included in that subgenus by Padial et al. (2014).

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