

Catalogue of American Amphibians and Reptiles.

HEYER, W. RONALD. 1971. *Leptodactylus labialis*.*Leptodactylus labialis* (Cope)
White-lipped frog

Cystignathus labialis Cope, 1877:90. Type-locality, "It is probably a part of Sumichrast's Mexican collection," restricted to Potrero Viejo, Veracruz, Mexico by Smith and Taylor (1950:350; see remarks below). Holotype, U.S. Natl. Mus. 31302, a juvenile (examined by author).

Cystignathus fragilis Brocchi, 1877:182-184. Type-locality, "Tehuantepec (Mexico)." Holotype, Paris Museum 6316, 35 mm, collected by M. Sumichrast (not examined by author).

Leptodactylus labialis: Brocchi, 1881:20. First association of *labialis* with the genus *Leptodactylus*.

• CONTENT. The species is monotypic.

• DEFINITION. Adult—the snout is acutely rounded to almost sharply pointed in profile in males, rounded in females. Paired lateral external vocal sacs are present in males. The vomerine teeth are in transverse series, and are posterior to the choanae. The first finger is much longer than the second. The male lacks thumb spines and chest spines. The dorsum usually has 4 well-developed dorsolateral folds. There are no ventral glands. The toes have weak lateral ridges or are smooth. The lower tarsus and sole of foot are covered with prominent white tubercles. A variably developed light stripe passes from the tip of the snout just under the eye to the angle of the jaw. The dorsum is more or less ocellated. The posterior surface of the thigh is mottled and usually marked with a distinct light longitudinal line. Males reach a maximum standard length of 36 mm., females 40 mm.

Larva—the eye is large, the horizontal diameter being 12-16 per cent of the body length. The mouth is subterminal.

The denticle row formula is $\frac{1-1}{3}$ or $\frac{1-1}{2}$. There are more

denticles in the divided denticle row just posterior to the beak (59-104) than in the divided denticle row just anterior to the beak (46-101). The spiracle is sinistral. The larva is blotched in pattern. The total length reaches 41 mm at stage 41.

• DESCRIPTIONS. For descriptions of adults and larvae see Heyer (1970). Conant (1958) and Taylor (1954) describe the adults. Maslin (1963 a,b) and Mulaik (1937) give detailed accounts of the larvae and foam nests containing eggs. Dixon and Heyer (1968) describe the eggs and foam nest.

Fouquette (1960) describes mating calls of specimens from Texas and Panama. The call is a low rising whistle.

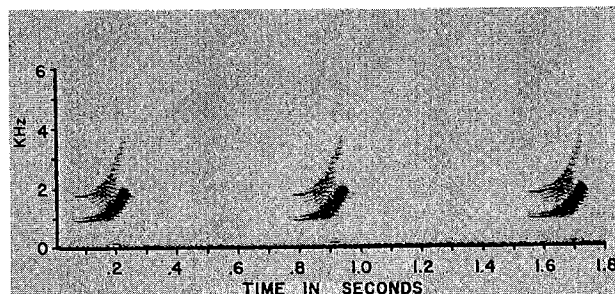


FIGURE. Audiospectrogram (narrow band, 45 Hz) of call of *Leptodactylus labialis*: Panamá; Coclé Province, El Valle, 27 June 1962, air temperature 22.8 C., specimen Amer. Mus. Nat. Hist. 69721 (Amer. Mus. Nat. Hist. Dept. Herpetology tape library).

The call of the northern sample has a frequency shift in the fundamental from 600 to 1200 Hz, whereas the call of the southern sample has a frequency shift in the fundamental from 1000 to 2200 Hz. The dominant frequency is the fundamental; two additional harmonics are present. The average duration of a single note is 0.2 seconds.

• ILLUSTRATIONS. Conant (1958) has a color illustration of the adult. Photographs of adults are in Mertens (1952), Taylor (1954), and Heyer (1970). Drawings of the larvae are in Mulaik (1937), Maslin (1963 b), and Heyer (1970). Dixon and Heyer (1968) present a photograph of a foam nest. Fouquette (1960) figures the audiospectrogram of the species.

• DISTRIBUTION. *Leptodactylus labialis* is a lowland frog occurring from southernmost Texas (Starr and Hidalgo counties) on the Atlantic coast and Colima, Mexico on the Pacific coast, southward throughout Mexico and Middle America to northern Colombia including the Magdalena valley and northern Venezuela. It is absent from the Atlantic coastal lowlands of easternmost Nicaragua, Costa Rica and western Panama to the Canal Zone region. The only Atlantic slope records for Nicaragua and Costa Rica are at the southern end of Lake Nicaragua. The known altitudinal range is sea level to 1300 meters.

• FOSSIL RECORD. Holman (1970) records "*Leptodactylus cf. labialis*" from a late Pleistocene cave deposit in Mexico.

• PERTINENT LITERATURE. Reports concerned with the ecology of the species are found in Mulaik (1937), Maslin (1963 a,b), Dixon and Heyer (1968), and Heyer (1969). Heyer (1969) broadly discusses the adaptive relationships of *L. labialis* with the other members of the genus. Ecological notes, mostly concerning habitats, are found in Schmidt and Shannon (1947), Stuart (1950, 1954), Rand (1957), Duellman (1960, 1961), and Neill and Allen (1961). Gallardo (1964) comments on the relationships of *L. labialis* with its most closely related congeners in South America. Gorham (1966) provides a brief literature summary. Many authors cite locality records for Mexico and Middle America: for example, Sumichrast, 1882; Smith, 1947; Reese and Firschein, 1950; Smith and Smith, 1951; Brattstrom and Adis, 1952; Werler and Smith, 1952; Smith and Darling, 1952; Taylor, 1953; Chrapliwy and Fugler, 1955; Fugler, 1960; Lynch and Fugler, 1965; Liner and Dundee, 1969.

• REMARKS. Although Smith and Taylor (1950:350) restricted the type-locality to Potrero Viejo, Veracruz, Mexico, this action has not been accepted by all subsequent workers, nor is this required by the International Rules of Zoological Nomenclature. Cochran (1961:40) lists the type-locality and collector as "probably Tehuantepec, Oaxaca, Mexico, F. Sumichrast." If a detailed analysis indicates taxonomic differences within the Mexican populations of the species, the type-locality will be a problem. Until such a study is undertaken, the problem is best left unresolved since only then will additional biological data point to the probable provenance of the type.

Leptodactylus labialis has been confused in some of the older literature with a West Indian species, *L. albilabris* (see Wright and Wright, 1942, for a summary and continuation of the confusion). All mainland records of *L. albilabris* refer in fact to *L. labialis*. The species have allopatric distributions. The closest ally of *L. albilabris* is not *L. labialis*, but a South American species, *L. mystaceus*. Shreve (1957) considered *L. labialis* to be a subspecies of *mystaceus*; the size differential that Shreve mentions will consistently distinguish the species, however.

• ETYMOLOGY. The Latin *labialis* means pertaining to the lips, referring in this instance to the usually prominent light lip stripe.



MAP. Circles show known localities. Star shows fossil locality. Type-locality is imprecise and is not plotted.

COMMENT

The species has not been reported previously from South America, although some Colombian specimens in collections have been correctly identified. I have examined many of the museum specimens from Costa Rica, Panama, Colombia, and Venezuela. There is a trend toward loss of dorso-lateral folds with a concurrent development of a wartier dorsum in the southern populations from mid-Panama southeastward. Many of these same individuals have a broken longitudinal light stripe on the posterior surface of the thigh.

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- W. R. HEYER, PACIFIC LUTHERAN UNIVERSITY, TACOMA, WASHINGTON 98447.
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- For information, write: SSAR Catalogue Committee
 Genera of Reptiles Project
 Department of Herpetology
 American Museum of Natural History
 New York, N. Y. 10024 USA
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