

STUDIES ON FROGS OF THE GENUS *LEPTODACTYLUS*
(AMPHIBIA, LEPTODACTYLIDAE). V. TAXONOMIC
NOTES ON *L. LATINASUS*, *RHODONOTUS*,
ROMANI, AND *WUCHERRERI*

W. RONALD HEYER

Examination of type specimens during an ongoing biosystematic study of the frog genus *Leptodactylus* indicates the need for nomenclatural changes. The larva of one of the involved species is described and illustrated for the first time.

MATERIALS AND METHODS

The nomenclatural changes indicated herein resulted from examination of the types involved. I examined all the types personally, with the exception of *Cystignathus rhodonotus*. The methods for examining the adults and larvae are the same as those given earlier (Heyer, in press).

ACKNOWLEDGMENTS

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SPECIES ACCOUNTS

Leptodactylus latinus

Leptodactylus latinus was described on the basis of a single specimen from Montevideo, Uruguay, in 1875 by Jiménez de la

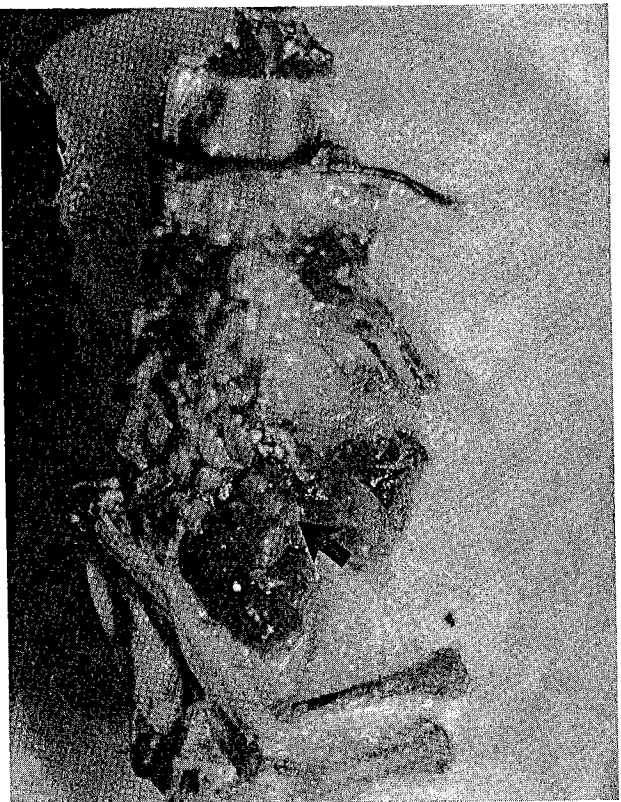


FIG. 1.—Holotype of *Leptodactylus latinus*. Arrow points to eggs.

Espada. The species has been placed questionably in the synonymy of *Leptodactylus ocellatus* by workers beginning with Boulenger (1882:247). The name has never been associated with any specimens other than the holotype. No terminal phalanges are left in the type, the front of the skull is smashed, and the specimen is partially rotted (Fig. 1). The bony style of the sternum, the vomerine teeth, and the snout-vent are the same as given in the type description. The rest of the type specimens of *Leptodactylus* described by Jiménez de la Espada are in much better condition and are clearly the specimens that he described with one possible exception noted below. There is little reason to doubt that the specimen indicated is the type of *L. latinus*. Jiménez de la Espada's description of *L. latinus* is very complete. The combination of toes lacking a fringe, tarsus and sole of foot tuberculate, and a tuberculate-granulose dorsum with irregular folds as described for *L. latinus* is typical of only one species of frog occurring in Montevideo or its surroundings—*Leptodactylus prognathus*. One point of discrepancy between the description of *L. latinus* and specimens of *L. prognathus* (females to 40 mm standard length) might indicate that they are not identical. Jiménez de la Espada stated that his specimen was a juvenile female. The belly skin and muscle have rotted away on the holotype exposing several large, yellowish

eggs (Fig. 1), indicating that the holotype of *L. latinus* is an adult female. *Leptodactylus latinus* Jiménez de la Espada, therefore, is a senior synonym of *L. prognathus* Boulenger and should be used for the species.

Leptodactylus rhodonotus

Richard E. Etheridge and David B. Wake collected a series of amphibians and reptiles from the Iscozazin region, Departamento de Pasco, Peru. The specimens are in the Los Angeles County Museum of Natural History. Included is a series of specimens of a species representing life history stages from larvae to adults. There is ontogenetic change in the character of toe ridging in the series. The toes of juveniles have noticeable lateral ridges, which are lost during ontogeny. Such a change is typical of members of the *Pentadactylus* species group. The adults are clearly the same as *Leptodactylus rubido* (Cope), 1874, a member of the *Pentadactylus* group. The males have the characteristic two horny spines per thumb, chest spines, paired dark outlined dorsolateral folds, and relatively small size (70–80 mm) of *L. rubido*.

Cystignathus rhodonotus was described on the basis of a 40 mm specimen from Chyavetas, eastern Peru, by Günther (1868). The species name has never been associated with any specimens other than the type, but the species has been considered distinct and perpetuated in literature lists (Gorham, 1966). Etheridge compared the holotype of *Cystignathus rhodonotus* (BMNH 1947. 2.17.39) with a juvenile specimen (LACM 40626) from the recent series while he was at the British Museum (Natural History) in July 1967. He found both specimens shared the following diagnostic characters: (1) tibia with large conical apical teeth dorsally; (2) two dark outlined dorsolateral folds; (3) vomerine teeth in slightly arched series, extending posterior to the choanae; (4) toes with distinct lateral ridges; and (5) venter dark with light specks. The two names *rhodonotus* and *rubido* thus apply to the same species of *Leptodactylus*. *Cystignathus rhodonotus* is the oldest name, and must be used. Since Cope did not designate a holotype for *Gnathophrysa rubida* from the type series, I designate specimen MCZ 4780 (a syntype), an adult male, as the lectotype of *Gnathophrysa rubido* Cope.

A large series of tadpoles of *L. rhodonotus*, LACM 40646–49, collected by Etheridge and Wake is described as follows:

Larvae generalized; nostril almost always nearer tip of snout than eye, rarely median in position; distance between nares less than interorbital distance; eye moderate, diameter 9 (minimum)–10.3 (mean)–12 (maximum) % body length; mouthparts subterminal; oral papillae formula 1-2-3-2-1, 1-2-3-2, 1-2-1, or 1-2; oral disk entire; oral disk width 17–20.9–24% body length; oral papilla

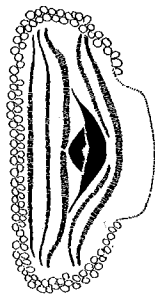


Fig. 2.—Mouthparts, dorsal and lateral views of the larva of *Leptodactylus rhodonotus*. Upper line equals 1 mm, lower line equals 10 mm.

gap 46–55.7–63% oral disk width; tooth row formula $\frac{1}{1-1}$ or $\frac{1-1}{3}$, all three

tooth rows posterior to beak of equal length; fewer denticles in divided tooth row just anterior to beak (total 150–167) than in single or divided tooth row just posterior to beak (total 164–196); beak serrations small and blunt to moderate and blunt; dorsal fin origin on tail, just posterior to body-tail juncture, or origin on body, just anterior to body-tail juncture; tail height usually greater than body height, or rarely about the same as body height; tail tip bluntly rounded or more elongate and rounded; dorsum dark brown, with denser blotches of melanophores posteromedially to the nostrils and sometimes lateral to the tail musculature on the body; spiracle noticeably lighter than rest of lateral body surrounding the spiracle; the lateral line system clearly visible or indistinct; belly profusely, moderately, or lightly suffused with melanophores anteriorly, including oral papillae and disk; fewer melanophores on posterior belly, almost none on the anal tube; tail moderately or lightly suffused with melanophores, with distinct blotched pattern on entire tail; total length largest specimen, stage 40, 59 mm; body length 32–34.0–37% total length (Fig. 2).

Leptodactylus rhodonotus has a median anus and sinistral spiracle as do all *Leptodactylus* larvae.

Larvae are known of only 11 species of *Leptodactylus*, including *L. rhodonotus*. Of these, I have examined larval *L. bolivianus*, *L. labialis*, *melanonotus*, *mystaceus*, *ocellatus*, *pentadactylus*, *poecilochilus*, and *rhodonotus*. *Leptodactylus rhodonotus* has a distinctly patterned tail, distinguishing it from *L. bolivianus*, *melanonotus*, and *ocellatus* which have almost uniform dark tails. *Leptodactylus rhodonotus* has a higher total denticle count in the split tooth row anterior to the beak (150–167) than any *L. labialis* (46–101), *mystaceus* (92–157), *pentadactylus* (45–67), and *poecilochilus* (64–142) examined. *Leptodactylus rhodonotus* is further distinguished by its larger total length (maximum examined 59 mm) from *L. mystaceus* (stage 37, 38 mm). The only other larva described from northern South America with which *L. rhodonotus* might be confused is *L. rugosus*. The latter are stream-adapted, have long, narrow tails, and the dorsal fin originates about mid-tail.

Leptodactylus romani

Leptodactylus romani was described from five specimens from Taracua, Rio Vaupes, Brasil, by Melin (1941). The name has not been associated with specimens other than the types, but has been considered a distinct species (Gorham, 1966). The individual type specimens are not tagged, but are placed in numbered jars in the Göteborg Museum. There has been an apparent mixing of specimens. Bottle No. 499 contains a specimen of *Ateolopus minutus* Melin, presumably from the type series, although the bottle label clearly indicates it is a type of *L. romani*. Melin listed the sizes of all the specimens of *L. romani*, which agreed with the specimens examined, with the exception of the smallest. The specimen of *A. minutus* is much smaller (14 mm vs. 35 mm listed in Melin), indicating that someone mistakenly put a type of *A. minutus* in the *L. romani* jar and a type of *L. romani* in a different jar.

The remaining specimens, Ba. 499, 501 (two individuals), and 502, are the ones described by Melin. The largest, a 61.5 mm specimen (60 mm in Melin, p. 56), is a juvenile, not an adult male as stated by Melin. Melin states that the specimen, "has two small blackish, well separated, tooth-like protuberances on the medial side of the swollen base of the first finger." I am able to find black pigment on the side of the first finger only. In all male *Leptodactylus* I have examined that have thumb spines, the spines indicate sexual maturity and are not deciduous. In a few specimens that have been poorly preserved over a long period of time, the black horny covering of the spine is missing, but a bony spine remains. Further, the 61.5 mm specimen lacks vocal slits which are present in all adult male *Leptodactylus*. The diagnostic combination of toe fringes, paired dorsolateral folds from the eye to the sacrum,

