



A New Species of Osornophryne (Anura: Bufonidae) from the Andes of Ecuador

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A New Species of *Osornophryne* (Anura: Bufonidae) from the Andes of Ecuador

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A new species of the high Andean genus *Osornophryne* is described from the Nudo de Mojanda of northern Ecuador. The new species can be distinguished from the other two species of the genus, *O. percrassa* and *O. bufoniformis*, by its elongate, pointed rostrum, smooth dorsal skin with glandular ridges and proportions of the head and limbs.

THE bufonid genus *Osornophryne* was described by Ruiz-Carranza and Hernández-Camacho (1976) to accommodate the newly described species *O. percrassa* and the species *O. bufoniformis*, which had been included previ-

ously in the genus *Atelopus*. This genus of small toads is distinguished from all other bufonid genera by having only six presacral vertebrae and palmate hands and feet. Additionally, the two species of the genus exhibit inguinal am-



Fig. 1. Dorsal and ventral views of *Osornophryne talipes* (left), holotype, KU 131797, male, SVL = 23.8 and *Osornophryne bufoniformis*, KU 169140, female, SVL = 26.8.

plexus rather than the axillary position that is prevalent in the more advanced frogs.

Examination of the material of *O. bufoniformis* on which Peters (1973) based his review of the Ecuadorian *Atelopus* has revealed the existence of a third species, represented by two specimens

that were collected by John D. Lynch on the slopes of the Nudo de Mojanda in Ecuador.

METHODS

Abbreviations are as follow: SVL—snout-vent length; TIB—tibia length; FEM—femur

length; HLEN—head length; HWID—head width; IOD—interorbital distance; IND—internarial distance; EYE—horizontal diameter of eye; EYENOS—anterior corner of eye to nostril; and KU—The University of Kansas Museum of Natural History. Alizarin and alizarin-alcian skeletons were prepared according to the methods of Zug and Crombie (1970) and Dingerkus and Uhler (1977). Measurements (in mm) were made to facilitate comparisons with those of Ruiz-Carranza and Hernández-Camacho (1976).

Osornophryne talipes n. sp.

Fig. 1

Atelopus bufoniformis Peracca: Peters, 1973 (in part); Ruiz-Carranza and Hernández-Camacho, 1976 (in part).

Holotype.—KU 131797, adult male, SVL = 23.8, from the north slope of the Nudo de Mojanda, 3400 m, Imbabura Province, Ecuador, collected Aug. 2, 1970 by John D. Lynch and Francisco Ortiz.

Paratype.—KU 131798, SVL = 24.2, adult male, same data as holotype.

Measurements.—For each variable and ratio the datum for the holotype is given followed by that of the paratype in parentheses. TIB 7.3 (7.8); FEM 8.6 (8.5); HLEN 8.0 (8.2); HWID 8.0 (8.0); IOD 2.3 (2.6); IND 2.7 (2.5); EYE 2.4 (2.6); EYENOS 1.9 (1.8); TIB/SVL 0.307 (0.322); FEM/SVL 0.361 (0.360); TIB/FEM 0.849 (0.897); HWID/HLEN 1.000 (0.976); HLEN/SVL 0.336 (0.339); HWID/SVL 0.336 (0.331).

Diagnosis.—*O. talipes* differs from its congeners in having a fleshy, glandular, pointed rostrum and smooth dorsal skin with only a few glandular ridges. It differs from *O. percrassa* in having longer forelimbs and a relatively longer and narrower head (HLEN/SVL = 0.209–0.321; HWID/HLEN = 1.051–1.200 in *O. percrassa*; data from Ruiz-Carranza and Hernández-Camacho, 1976). *O. talipes* differs from *O. bufoniformis* in having a longer femur (FEM/SVL = 0.292–0.354) and paler dorsal coloration (tan vs dark brown to black).

Description of holotype.—Head slightly narrower than body; head about as long as wide; snout pointed, with fleshy, glandular rostrum extend-

ing well beyond lower jaw in dorsal and lateral views. Nostrils slightly protruding, directed laterally, situated slightly more than one-half the distance from anterior corner of eye to tip of snout. Canthus rostralis distinct, rounded due to glandular ridge extending from eye to nostril; loreal region slightly concave, smooth. Lips very slightly flared. Interorbital region and top of snout smooth and flat. Eyelids slightly rugose, with glandular ridge continuous with that of canthus rostralis. Tympanum absent. Postorbital glandular ridge extending from eye into dorsolateral ridges of dorsum; parasagittal glandular ridges extending from posteromedial margin of orbit into similar ridges on dorsum. Choanae very small, round, widely separated, located almost at margins of roof of mouth. Premaxillae, maxillae and vomers (=prevomers) edentate. Tongue about 2.5 times as long as wide, narrowing anteriorly, not notched at tip, free for about one-half its length posteriorly. Vocal slits and eustachian tubes absent.

Skin on dorsum smooth except for dorsolateral and parasagittal glandular ridges, which break into isolated glands posteriorly; glandular ridges present along ilia. Skin on dorsal surfaces of limbs moderately rugose; skin of flanks and posttympanic region warty, with less prominent warts extending onto belly; ventral surfaces of belly and limbs slightly rugose; that of chin almost smooth. Anal opening an inconspicuous tube, directed ventrally at lower level of thighs; a single supra-anal wart present.

Hands and feet palmate; third finger and fourth toe prominent, others reduced and barely distinct from the fleshy mass. Thin, keratinous nuptial excrescences present on thumbs of both specimens; soles and palms tubercular, but lacking distinct subarticular, metatarsal and thenar tubercles. Digital pads distinguishable from other tubercles; ulnar and tarsal folds absent.

Color in preservative.—Dorsal surfaces tan to pale brown, with glandular ridges and warts slightly darker; soles and palms tan; ventral surfaces of limbs and body dark brown with paler tubercles; tubercles pale tan, many with orange-tan patches at the apices of tubercles; anal region black-brown; KU 131798 with more extensive pale area on venter than holotype.

Color in life.—Dorsum and limbs brown, warts along flanks and on venter yellow; venter brown; warts on concealed surfaces of limbs yellow; un-

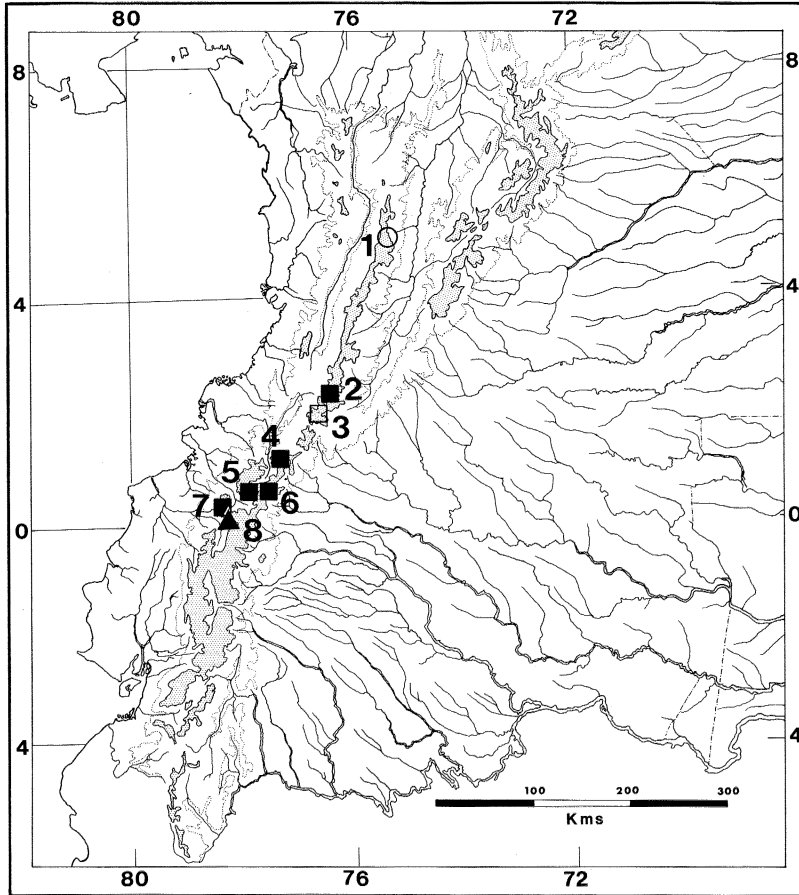


Fig. 2. Distribution of the genus *Osornophryne* in Colombia and Ecuador. The circle represents *O. percrassa*, squares are *O. bufoniformis* and the triangle is *O. talipes*. Open symbols are literature records. Localities are represented by numbers as follows: 1) Páramo de Herveo; 2) Páramo de Puracé; 3) Páramo de las Papas; 4) Pasto; 5) Páramo del Angel; 6) El Pún (=El Carmelo) and Santa Barbara; 7) La Delicia; and 8) Nudo de Mojanda.

dersides of hands and feet rose-red; iris black, heavily flecked with dull gold (from field notes of J. D. Lynch, Aug. 2, 1970).

Etymology.—The specific epithet is an English noun that is derived from the Latin *talus*, meaning ankle and *pes*, meaning foot. Both in Latin and in English, *talipes* means clubfoot. The epithet is used as a noun in apposition.

Remarks.—Both specimens were taken under a log by the old Quito-Ibarra road. *Eleutherodactylus curtipes*, *E. myersi* and *E. sp.* (KU 131286–88) were collected at the same site. In this region, treeline is at 3580 m; the dense forest at the site (3400 m) contained tree ferns, lichens,

mosses, orchids and bromeliads, with trees reaching heights of 10 m (Lynch, 1981).

Peters (1973) examined the type material of the new species, and referred it without comment to *A. bufoniformis*.

The localities of *O. bufoniformis* near Pasto, Departamento Nariño, that are reported here for the first time, fill in the distributional gap between the Ecuadorian specimens and the Colombian specimens from Departamento de Cauca (Fig. 2).

Specimens of *O. bufoniformis* collected by University of Kansas field parties generally were taken from beneath rocks in moist to wet areas, including seepages, in subparamo habitats. In the Puracé region of Colombia the species was

collected with *A. ebenoides*, *E. myersi*, *E. buckleyi* and various undescribed species of *Eleutherodactylus*. The coloration of specimens in this area was described as sepia-umber above, venter spotted yellow on brown, abdomen with greenish suffusion, iris dark brown (field notes of W. E. Duellman, Sept. 19, 1974).

In the region of Pasto, individuals were found under rocks on gravel in a stream bed located in subparamo with dense growths of woody plants and bamboo. *A. ignescens*, *Colostethus sp.*, *E. buckleyi*, *E. chloronotus* and *E. vertebralis* also were collected here. The specimens of *O. bufoniformis* were described as having a pale umber-brown dorsum with greenish yellow spots and a pinkish brown venter with cream yellow spots (field notes of W. E. Duellman, Sept. 24, 1974).

A single specimen of *O. bufoniformis* from the Páramo del Angel in Ecuador was found beneath a large rock in a seepage channel, along with *E. buckleyi* and *E. whymperi*. The dorsum had pale reddish brown warts with darker interspaces; warts of flanks and venter were yellowish with dark, brownish red interspaces; undersurfaces of hands and feet were pale red and the iris dark gray (field notes of J. D. Lynch, Feb. 24, 1968).

A specimen of *O. bufoniformis* was collected by John D. Lynch at La Delicia, Provincia Imbabura, in a terrestrial bromeliad by day on a rocky cliff heavily overgrown with mosses and orchids. The venter was off-white with black marbling. In 1977, John Lynch, Thomas Berger and I collected at the site, but found no more specimens.

Ruiz-Carranza and Hernández-Camacho (1976) reported the maximum size of males of *O. bufoniformis* as 21.0, but the single KU male (169136) has an SVL of 23.6. Cochran and Goin (1970) reported a specimen of *O. bufoniformis* from the Páramo de las Papas, Colombia. I have not examined the specimen, but from their photograph it is clear that it is *O. bufoniformis*.

m, KU 145036-37; 23 km E Puracé, 3275 m, KU 169134-35, 170103 (alizarin skeleton); 26 km E Puracé, 3180 m, KU 169136. Nariño: 12 km E Pasto, 3050 m, KU 169137, 169139-40. Ecuador: Carchi: Páramo del Angel, 23 km SW Tulcán, KU 117880; Santa Barbara, 2650 m, KU 189945. Imbabura: Cordillera de Intag, La Delicia, KU 132126.

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