

AMPHIBIA: ANURA: HYLIDAE

OSTEOPILUS VASTUS

Catalogue of American Amphibians and Reptiles.

Henderson, R.W. and R.M. Henderson. 2004. *Osteopilus vastus*.

Osteopilus vastus (Cope)

Hyla vasta Cope 1871:219. Type locality, "Near the city of Santo Domingo, W.I." Holotype, Academy of Natural Sciences, Philadelphia (ANSP) 2097, an adult female (126 mm SVL), collected by William M. Gabb, date unknown (not examined by authors).

Osteopilus vastus: Powell and Henderson 2003:15. See **Nomenclatural History**.

• **CONTENT.** No subspecies are recognized.

• **DEFINITION.** Body size in this hylid frog is very large (maximum SVL 109 mm in males and 142 mm in females) and sexual dimorphism is extreme, with some mature females exceeding the size of mature males by 50% of SVL. The dorsum is strongly tuberculate and the venter is coarsely granular. Tubercles are present around the vent. Fingers are three-fourths webbed, and the toes are fully webbed. The fore- and hindlimbs are fringed, and the digital disks are 1.2–1.5 times as wide as the toe.

Dorsal color varies from shades of green to gray (at times a very dull greenish gray) and bears a diffuse pattern of dark gray to black markings. A rusty inverted T-shaped figure between the eyes and snout is often present. Hindlimbs are cross-banded with olive and pale green, usually most conspicuously on the crura (1 wide bar). The venter is white, and the chin, throat, and chest (in males) have scattered dark green spots or dots. Concealed surfaces are gray, purplish, or tan. The iris is bronze to gold. Juveniles are dark gray with a greenish cast.

Noble (1923a) described the call ("ook-ook-ook") and noted (1925, 1927) that tadpoles have small external gills, large adhesive mouths, no dorsal fins, slender body-forms, and thick tails.

• **DIAGNOSIS.** *Osteopilus vastus* is distinguished from all other Hispaniolan hylid frogs by the combination of well-developed webbing on the hands (barely webbed in *O. pulchilineatus*) and a conspicuous fringe on the outer edge of each limb (absent in *H. heilprini*, *O. dominicensis*, and *O. pulchilineatus*).



FIGURE 1. *Osteopilus vastus* from an unknown locality (photograph by Louis Porras).

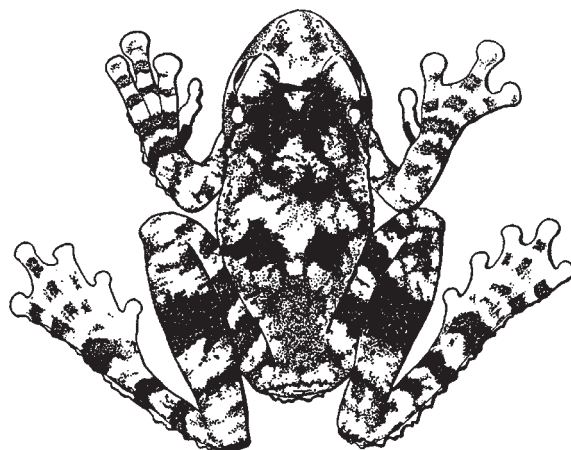
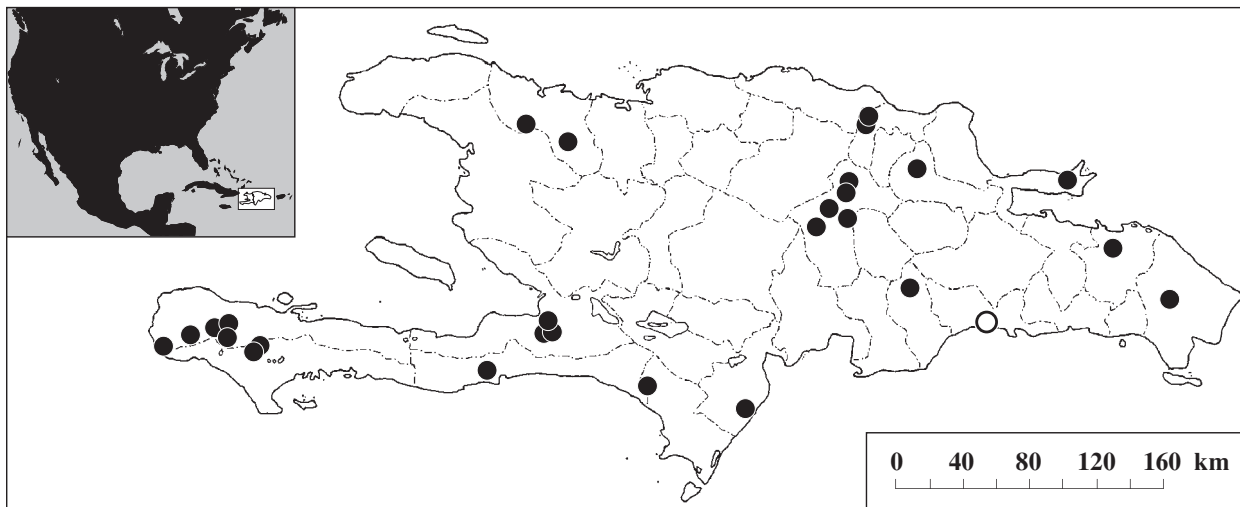


FIGURE 2. *Osteopilus vastus* (as *Hyla vasta*, USNM 65757) from Liali, Dominican Republic (from Cochran 1941).

• **DESCRIPTIONS.** Aside from the original description in Cope (1871), Boulenger (1882), Cochran (1941), and Schwartz and



MAP. Distribution of *Osteopilus vastus*: the circle marks the type locality and dots indicate other known locality records. The disjunct nature of the distribution precludes an accurate range outline.

Henderson (1991) provided detailed descriptions of this species. Shreve and Williams (1963) provided a less detailed description. Trueb and Tyler (1974) provided detailed data on external morphology, throat musculature, vocal sac structure, extrinsic musculature of the cloaca, and cranial, axial, and pelvic osteology. Noble (1927) provided a description of the tadpole.

• **ILLUSTRATIONS.** Black and white photographs appear in Noble (1923a,b), Mertens (1939, 1940), Henderson and Schwartz (1984), Franz (2003), and Powell and Henderson (2003); line drawings of the dorsum, interior of mouth, lateral view of head, and underside of fore- and hindfoot appear in Cochran (1941). Trueb and Tyler (1974) provided line drawings of osteological characters. A line drawing of a “young” tadpole appears in Noble (1927). A black and white photograph of *O. vastus* habitat is in Mertens (1939).

• **DISTRIBUTION.** The species is endemic to Hispaniola, where it is widely distributed but localized. In Haiti, the range includes an area south of the Plaine de Cul de Sac where these frogs have been recorded from the Massif de la Hotte, Montagne Noire, south of the Massif de la Selle; populations in northern Haiti are known only from Dondon and Plaisance (Massif du Nord). In the Dominican Republic, the distribution includes the eastern slopes of the Sierra de Baoruco, Cordillera Central, Cordillera Septentrional, the Sierra de Yamasá, and lowland and sea-level localities (Peninsula de Samaná; Lialí, Higüey). Elevational distribution is from sea level to about 1700 m, but these frogs appear to be most abundant along streams between 300 and 1070 m.

• **FOSSIL RECORD.** None.

• **PERTINENT LITERATURE.** Relevant references are listed by topic: **biogeography** (Hedges 1996, Trueb and Tyler 1974), **conservation** (Powell et al. 2000), **distribution** (Hedges 1999; Myers 1950; Schwartz and Henderson 1988, 1991; Schwartz and Thomas 1975), **eggs** (Noble 1925), **eye shape** (Noble 1931), **habitat** (Franz 2003, Mertens 1939, Noble 1923a, Powell et al. 1999, Schwartz and Henderson 1991, Shreve and Williams 1963), **immunological data** (Hass et al. 2001), **natural history** (Noble 1923a, Shreve and Williams 1963, Schwartz and Henderson 1991), **osteology** (Trueb and Tyler 1974), **phylogeny** (Anderson 1996, Crother 1999, Dunn 1926, Trueb 1970, Trueb and Tyler 1974), **reproductive biology** (Crombie 1999; Noble, 1923a, 1925, 1927), **size** (Cochran 1961, Meshaka 2001), **skin secretions** (Cochran 1961, Noble 1923a, 1931, Shreve and Williams 1963), **skin texture** (Noble 19927), **systematics and taxonomy** (Hedges 1996, Trueb and Tyler 1974), and **descriptions of the tadpole** (Mertens 1939; Noble 1923a, 1925, 1927).

The species is included in **notes, checklists, guides, and keys** by Barbour (1914, 1930, 1935, 1937), Böker (1939), Boulenger (1882), Cochran (1924, 1941), Duellman (1977), Frost (1985), Harding (1983), Henderson and Schwartz (1984), Henderson et al. (1984), Mertens (1938a,b, 1939), Nieden (1923) Powell et al. (1996, 1999), Schwartz and Henderson (1985, 1988), and Schwartz and Thomas (1975).

• **NOMENCLATURE HISTORY.** Although considered a member of the hylid genus *Hyla* since its original description, Hedges (1996), based on protein electrophoresis, microcomplement fixation, and DNA sequencing, by implication reassigned *H. vasta* to the hylid genus *Osteopilus*.

• **ETYMOLOGY.** The specific epithet *vastus* is from the Latin for enormous. Surely this is in reference to the size of adult

Osteopilus vastus; Cope (1871), in his description, referred to it as “The largest species of the genus . . .”

• **ACKNOWLEDGMENTS.** We thank herpetology personnel at the National Museum of Natural History and the University of Kansas for information regarding *O. vastus* in their collections, and Louis Porras for use of the photograph of *O. vastus*.

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