

Catalogue of American Amphibians and Reptiles.

Villa, Jaime D. 1990. *Rana warszewitschii*.

***Rana warszewitschii* (Schmidt)**

Ixalus warszewitschii Schmidt, 1857:11. Type-locality, "Unweit des Vulcanes Chiriqui, Zwischen 6000' und 7000' Höhe, in einem feuchten, nie trockenen Klima von 12-14°R," Panama [near Volcán Chiriquí, between 6000 and 7000 feet (actually 4500-5250 feet = 1370-1600 m) fide Savage, 1974]. Holotype, Krakow Museum (Jagellonian University) 1006/1338 (not examined by author).

Ixalus warschewitschii: Schmidt, 1858:241. Incorrect subsequent spelling.

Rana coeruleopunctata Steindachner, 1864:264. Type-locality: "Fundort unbekannt" (unknown). Syntypes, Naturhistorisches Museum, Wien, 20840: 1-4 fide Haupt and Tiedemann (1978), not examined by author.

Trypberopsis chrysoprasinus: Cope, 1868:117.

Ranula chrysoprasina: Cope, 1866:129. Type-locality, "Arriba, Costa Rica." Holotype, a juvenile specimen in the National Museum of Natural History collection according to Cope but not listed by Cochran (1961), collected by Charles N. Riotte (not examined by author).

Rana caeruleopunctata: Boulenger, 1882:50. Incorrect subsequent spelling.

Rana chrysoprasina: Boulenger, 1882:49.

Hylarana chrysoprasina: Brocchi, 1882:65.

Rana zeteki Barbour, 1925:156. Type-locality, "Barro Colorado Island, Gatun Lake Canal Zone of Panama." Holotype, Museum of Comparative Zoology 10031 collected by W. S. Brooks, E. Wigglesworth and Thomas Barbour (not examined by author).

Rana warschewitschii zeteki: Dunn, 1931:416.

Rana warschewitschii warschewitschii: Dunn, 1931:416.

Rana warszewitschii: Villa et al., 1988:33. Incorrect subsequent spelling.

• **Content.** No subspecies are recognized.

• **Definition and Diagnosis.** A small member of the *palmipes* group (Hillis, 1985; Hillis and de Sá, 1988) with a maximum snout-vent length of 63 mm in adult females, 48 mm in males. The snout is longer than wide, and the head is pointed. The tympanum is oval, diagonally placed. Vocal sacs and slits are absent. The dorsolateral folds are narrow, light-colored with black margins, and continuous to the groin. The tympanum is distinct. Males lack Müllerian ducts. The fingers are slightly spatulate at their tips, lacking terminal grooves and membranes between them. The first finger is longer

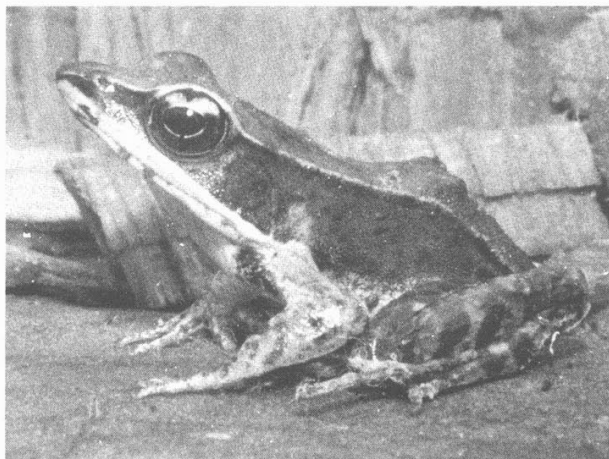
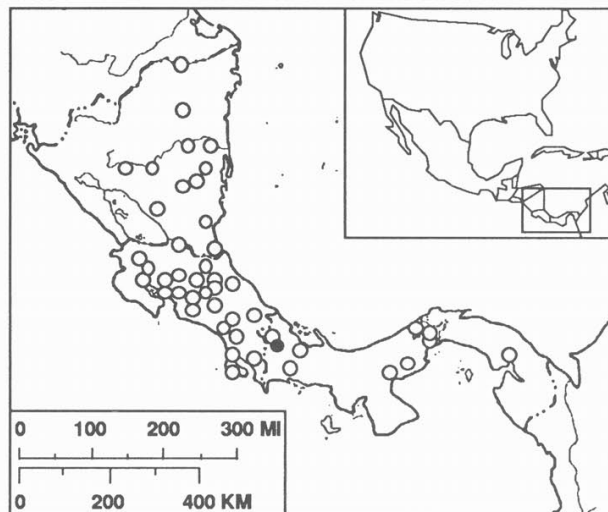


Figure 1. *Rana warszewitschii* from Nicaragua, Boaco: Finca. Photograph by Franco Peñalba.



Map. Solid circle indicates the type-locality. Open circles indicate other localities. Modified from Hillis and de Sá (1988).

than the second. The toe tips are greatly expanded, and the toes are approximately 2/3 webbed. There are two metatarsal tubercles on each foot. The dorsal surface of the head and body is smooth, usually covered with very fine pearly tubercles. The dorsal skin tubercles are reduced. The sacral and presacral vertebrae are fused. A supralabial stripe is present. Adult color is bronze to bright-green dorsally darker laterally, cream to dusky ventrally, with undersurfaces of the limbs usually red and with distinct yellow spots on the posterior surfaces of the thighs and axillae. In males the ventral surfaces is blackish.

Tadpoles are large (to 115 mm) with thick muscular tails and low fins, heavily mottled with dark pigment. They lack marginal teeth and emargination of the oral disk. The tooth formula is 6(2-6)/4(1)

• **Descriptions.** The most comprehensive description of this species is in Hillis and de Sá (1988). Taylor (1952) described the species based mostly on Costa Rican specimens, with reference to specimens from Panama, and Villa (1972) provided a brief description of Nicaraguan specimens. Starrett (1960) described the tadpole. Tadpole features are summarized in Altig and Johnston (1986). Greeding (1972) described the call.

• **Illustrations.** The species was first illustrated by Schmidt (1858: pl. 1, fig. 1-4). It was illustrated as *Rana coeruleopunctata* by Steindachner (1864: pl. 15, figs. 1, 1a-1c) and as *Trypberopsis chrysoprasinus* by Cope (1876: pl. 23, figs. 12, 12a). Taylor (1952) presented a drawing of the dorsum and a lateral aspect of the head of a preserved specimen. A black and white photograph of a living specimen from Nicaragua is in Villa (1972) and a color photograph is in Hillis and de Sá (1988).

• **Distribution.** This species was originally known from Panama (Schmidt, 1857; Barbour, 1925) and Costa Rica (Cope, 1866). It is now also known from Nicaragua (Villa, 1972) and Honduras (Meyer and Wilson, 1971). It is found in very humid environments, usually on the forest floor at elevations from near sea-level to about 2000 m. The species is usually common within its range, frequently seen and heard calling during the day by roadside ditches, streams, and ponds.

• **Fossil Record.** None.

• **Pertinent Literature.** Taylor (1952) and Villa (1972) summarized the literature and added new information. Hillis (1985) and Hillis and Davis (1986) reviewed the systematics of New World species of *Rana*, and Hillis and de Sá (1988) those of the *R. palmipes* group in particular, and considered *R. warszewitschii* as most closely related to *R. vibicaria* (as Zweifel [1964] had concluded). Savage

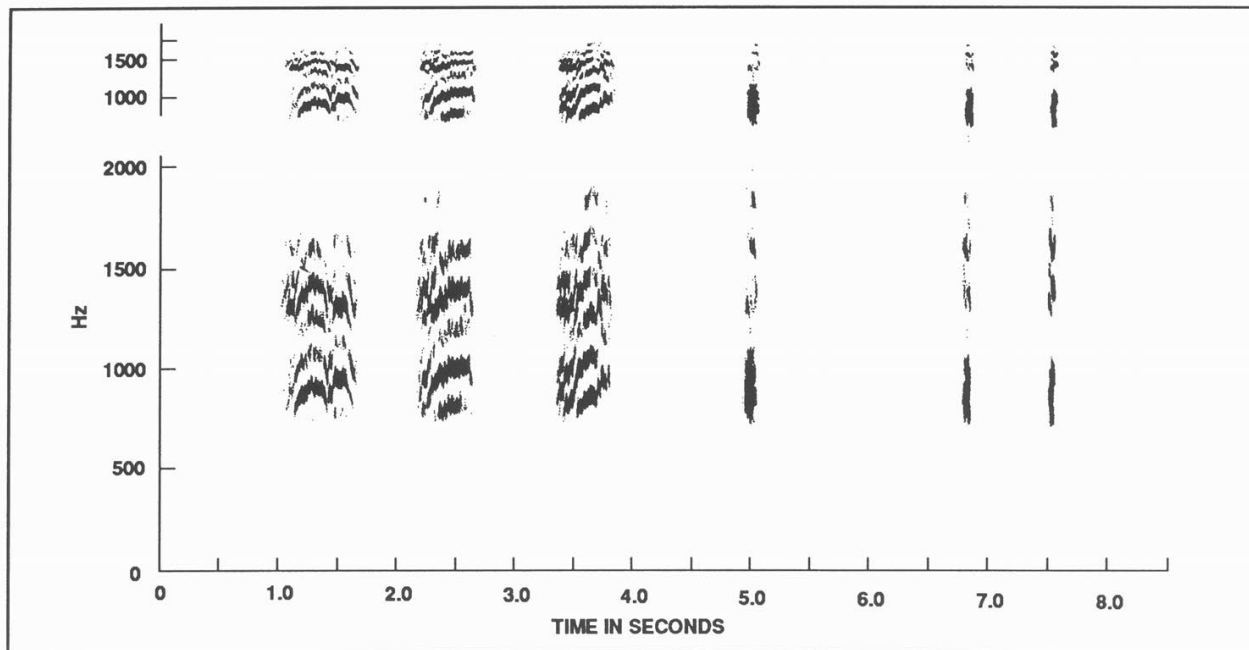


Figure 2. Audiospectrogram of a presumed advertisement call of *Rana warszewitschii* from San José, Costa Rica, courtesy of Edward J. Greding, Jr. Logarithmic scale above, linear below, narrow band, 2000 Hz range. The call consists of 2-4 primary (trilled) and 3-4 secondary (untrilled) notes. Illustration courtesy of Joseph Marshall.

(1970, 1974) discussed the type-localities of *R. warszewitschii* and its synonyms. The species is included in checklists for Middle America (Villa et al., 1988), Honduras (Meyer and Wilson, 1971), Nicaragua (Villa, 1972, 1983) and Costa Rica (Savage and Villa, 1986).

• **Etymology.** Named in honor of Joseph Warszewicz (1812-1866), pioneer collector of herpetological materials from lower Central America. The name *warszewitschii* has suffered a number of misspellings starting with its own author (Schmidt, 1858). See Hillis and de Sá (1988) for comments.

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