

Catalogue of American Amphibians and Reptiles.

McCranie, J.R. 2006. *Bolitoglossa carri*.

***Bolitoglossa carri* McCranie and Wilson**

Bolitoglossa carri McCranie and Wilson 1993:9. Type-locality, "Cerro Cantagallo, near Lepaterique (14°06'N, 87°28'W), 1840 m elevation, Departamento de Francisco Morazán, Honduras." Holotype, Field Museum of Natural History (FMNH) 236502, an adult female, collected by J.R. McCranie, K.L. Williams, and L.D. Wilson, 18 August 1986 (examined by author).

B. [olitoglossa]. (Magnadigita) carri. Parra-Olea et al. 2004:336.

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

• **DEFINITION.** *Bolitoglossa carri* is a moderately large salamander (SVL 37.4–48.0 mm, mean = 42.6 ± 3.4 mm in 14 adult males, 42.4–58.1 mm, mean = 50.1 ± 5.9 mm in 9 adult females) with a moderately long and broad head (head length/SVL 0.240–0.286 in adult males, 0.230–0.271 in adult females; head width/SVL 0.159–0.177 in adult males, 0.150–0.170 in adult females). The snout is truncate to broadly rounded in dorsal aspect and in lateral profile. The labial protuberances are well developed in both sexes, and are pronounced in adult males. Adult males have a distinct, oval-shaped mental gland cluster. The eyes are slightly protuberant and are narrowly visible beyond the margin of the jaw when viewed from below in males and are not or only narrowly visible from below in females. The postorbital groove is shallow and extends posteriorly from the eye before turning sharply ventrally to connect with the gular fold, and another groove proceeds sharply ventrally just posterior to the lower jaw and extends irregularly across the throat anterior to the gular fold. Some specimens have one or two additional irregular grooves between the anteriormost groove and the gular fold. There is no sublingual fold. The maxillary teeth number 46–60 (50.4 ± 3.8) in adult males, 47–68 (55.9 ± 7.4) in adult females, and extend posteriorly to a level beyond the center of the orbit. The vomerine teeth number 18–24 (22.1 ± 1.6) in adult males, 22–28 (24.1 ± 2.1) in adult females, and are in long, single, arched series that extend laterally to a level slightly beyond the outer edge of the choanae. The premaxillary teeth number 2–6 (3.4 ± 1.0) in adult males and 4–7 (5.3 ± 1.1) in adult females. The premaxillary teeth are enlarged and pierce the lip in adult males and are not enlarged and are located posterior to the lip and in line with the maxillary series in all females. The costal grooves number 13. The tail is nearly rectangular in cross section anteriorly, becoming ovoid for about the distal one-third of its length. The tail is strongly constricted basally and relatively long (tail length/SVL 0.751–0.830 in 10 adult males, 0.679–0.741 in 7 adult females). The limbs are relatively slender and moderately long (hind limb length/SVL 0.257–0.291 in adult males, 0.241–0.285 in adult



Figure 1. Adult male (KU 219896) of *Bolitoglossa carri* (photograph by the author).

females). The addressed limb interval varies from slightly overlapping to about 1.0 costal fold in adult males and from about 0.5–2.5 costal folds in adult females. The feet are moderately large (hind foot width/SVL 0.096–0.127 in adult males, 0.091–0.117 in adult females). The digits are moderately webbed, with from one to one and one-half segments on the inside and from one and one-half to two segments on the outside of Toe III on the forelimbs free of webbing, and from one and one-half to two segments of Toe III between Toes III–IV on the hind limbs free of webbing. The protruding toe tips are bluntly rounded and all toe tips have well-developed subdigital pads. The relative length of the toes on the forelimbs is I<IV<II<III, whereas that on the hind limbs is I<V<II<IV<III. A fairly distinct postiliac gland cluster is present. Males have cloacal papillae and females have cloacal folds (the above from data taken by the author, most of which was published in McCranie and Wilson 1993, 2002).

McCranie and Wilson (1993), using Smithe (1975–1981) for color names (capitalized) and color codes (in parentheses), described the color in life of the species as follows: "Coloration is somewhat variable in this species. All adult specimens had pale brownish dorsolateral stripes from the shoulder region to the end of the body on a darker brown ground color. The area between the dorsolateral stripes varied in the extent of pale color present. Some specimens had only a narrow, incomplete pale middorsal stripe, whereas others had extensive pale areas on the middorsum that were mottled with darker brown. The inner borders of the dorsolateral stripes may be partially broken in those specimens with extensive pale middorsal areas. The top of the head was always dark brown without paler markings. The dorsal surface of the tail had varying amounts of pale brownish areas over its entire length. Subcaudal coloration varied from pale yellow with small, scattered melanophores to pinkish-cream with a heavy sprinkling of melanophores with or without scattered rust red mottling. KU 219895–96, 219898–99: dorsal surfaces of heads, middorsal regions, and lateral areas Raw Umber (color 23); dorsolateral stripes Kingfisher Rufous (color 240); dorsal surfaces of tails Kingfisher Rufous. KU 219893: similar to KU 219895–96, 219898–99, except that dorsolateral stripes and dorsal surface of tails Pratt's Rufous (color 140). KU 219894: dorsal surfaces of head, narrow middorsal region, and lateral areas Dark Brownish Olive (color 129); diffuse dorsolateral stripes and dorsal surface of tail Raw Sienna (color 136). FMNH 236502: ventral and subcaudal surfaces pale yellow with scattered melanophores, additional scattered rust-red mottling

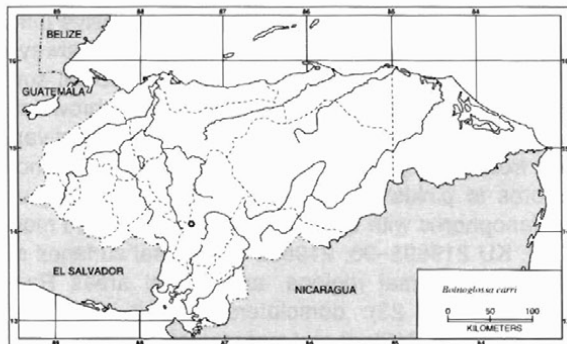
present on the subcaudal surface. FMNH 236472–73: ventral and subcaudal surfaces pinkish-cream with heavy sprinkling of melanophores, additional scattered rust red mottling on subcaudal surface.”

In alcohol, the dorsolateral stripes and middorsal swath (the latter is sometimes absent) are pale brown to tannish brown, but in occasional specimens these pale markings are inconspicuous. The dorsal surfaces of head and the portion of body not included in the pale stripes are usually dark brown. The lateral surfaces of head and body are also usually dark brown, but occasionally are pale brown. The ventral and subcaudal surfaces are paler brown than the dorsal surfaces. The subcaudal surface also has conspicuous paler brown spots or areas.

• **DIAGNOSIS.** *Bolitoglossa carri* is a member of the *B. dunni* species group of the subgenus *Magnadigita* Taylor 1944 (Parra-Olea et al. 2004). Eleven species were included in this species group by Parra-Olea et al. (2004) and two more species have been subsequently described (Greenbaum 2004, McCranie et al. 2005). *Bolitoglossa carri* is the only species in this group, with the exception of some *B. oresbia*, with paired pale dorsolateral stripes. *Bolitoglossa carri* differs from *B. oresbia* in lacking yellow spots on the body and in having pinkish-cream ventral and subcaudal surfaces. *Bolitoglossa carri* also differs from the remaining species in the group (except *B. oresbia*, from which data is unavailable) in mitochondrial DNA sequences (Parra-Olea et al. 2004).

• **DESCRIPTIONS.** Detailed descriptions of external morphology are in McCranie and Wilson (1993, 2002) and McCranie and Castañeda (2007).

• **ILLUSTRATIONS.** Color photographs are in McCranie and Wilson (2002), Wilson and McCranie (2004a), and McCranie and Castañeda (2007). A black and white photograph is in McCranie and Wilson (1993).



Map. Distribution of *Bolitoglossa carri*. The circle denotes the type and only known locality.

• **DISTRIBUTION.** *Bolitoglossa carri* is known only from Cerro Cantagallo, near Lepaterique in south-central Honduras to the west of Tegucigalpa, Francisco Morazán. The known elevational range for this species is 1840–2070 m in primary to slightly disturbed cloud forest (Lower Montane Moist Forest for-

mation of Holdridge 1967).

• **FOSSIL RECORD.** None.

• **PERTINENT LITERATURE.** What little is known about the natural history of this species was discussed by McCranie and Wilson (1993, 2002) and McCranie and Castañeda (2007). Its distribution by Honduran physiographic and ecogeographic regions was presented by McCranie and Wilson (2002) and Wilson et al. (2001). Wilson and McCranie (2003) discussed its status as an “indicator species” used to measure environmental stability and these authors considered the species to be highly vulnerable. Wilson and McCranie (2004a) discussed its conservation status and also considered the species to be highly vulnerable, McCranie and Wilson (2006) considered the species to be declining, Wilson and McCranie (2004b) discussed its distribution within the Honduran cloud forests, and McCranie (2007) listed museum specimens. Parra-Olea et al. (2004) studied its mitochondrial DNA and presented a phylogenetic analysis of its relationships among the genus *Bolitoglossa* that placed it in the *B. dunni* species group. Parra-Olea et al. (2004) also placed the species in the subgenus *Magnadigita* Taylor (1944). The species was included in diagnosis of new species of *Bolitoglossa* by Greenbaum (2004), McCranie and Cruz (1996), McCranie and Wilson (1995, 1997), and McCranie et al. (2005). Greenbaum (2004) also reproduced the figure of the “*Magnadigita*” clade previously published in Parra-Olea et al. (2004). McCranie et al. (2005) included a map showing the known localities of this species and the remaining members of the *B. dunni* group in Honduras and Wilson and McCranie (1994) included it in their species list. Duellman (2001) listed the species as occurring in the Eastern Nuclear Highlands of Middle America and Campbell (1999) listed the species in various tables concerning distributional patterns of amphibians in Middle America. Larson et al. (2003) listed the species as a member of the subfamily Plethodontinae, tribe Bolitoglossini, and also included it in the *B. dunni* group. Duellman and Schlager (2003) included it in their valid species list.

• **ETYMOLOGY.** The name *carri* is a patronym that honors Archie F. Carr.

• **COMMENT.** Frank and Ramus (1995) and Wrobel (2004) used the common names Cloud Forest Salamander and Cloud-forest Salamander for this species, respectively, whereas McCranie and Castañeda (2007) suggested Salamandra Cantagallo. Museum acronyms follow Leviton et al. (1985).

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