

REPTILIA: SQUAMATA: CORYTOPHANIDAE

CORYTOPHANES HERNANDESII

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McCranie, J.R., J.H. Townsend, and L.D. Wilson. 2004. *Corytophanes hernandesii*.

Corytophanes hernandesii* (Wiegmann)*Hernandez's Helmeted Basilisk, Turipache de Montaña**

Chamaeleopsis Hernandesii Deppe 1830:3. *Nomen nudum*. See **Remarks**.

Chamael [eopsis]. Hernandesii Wiegmann 1831:298. Type locality not stated. See **Remarks**. Syntypes, Museum für Naturkunde, Humboldt-Universität, Berlin (ZMB) 545–546, adult female and adult male, respectively, collected by F. Deppe, probably in 1829 (not examined by authors). See **Remarks**.

Corytophanes chamaeleopsis: Duméril and Bibron 1837:176. Invalid substitute name for *Chamaeleopsis Hernandesii* Wiegmann.

Corytophanes (Chamaeleopsis) Hernandesii: Fitzinger 1843:16.

Corytophanes Hernandezii: Lichtenstein and von Martens 1856:8.

Chamaeleopris Hernandesii: Troschel 1865:599. *Lapsus*.

Corytophanes chamaeleopsis: Sumichrast 1870:204.

Corytophanes Chamaeleopsis: Sumichrast 1870:204. *Lapsus*.

Corytophanes Mexicanus Bocourt 1874:122, in Duméril et al. 1870–1909. Invalid substitute name for *Chamaeleo Mexicanus* Hernández.

Chamaeleopsis mexicanus: Cope 1885:379.

Corytophanes hernandesii: Günther 1885:53.

Corytophanes hernandezii: Boettger and Pechuel-Loesche 1892:75.

Corytophanes chamelopsis: Velasco 1895:37. *Lapsus*. See **Remarks**.

Corytophanes mexicanus: Dugès 1896:480.

Corytophanes chamelopsis: Velasco 1896:36. *Lapsus*. See **Remarks**.

Corytophanes mexicanus: Herrera 1899:21.

Corytophanes hernandesii: Smith 1947:67.

Corytophanes hernandesii: Smith and Burger 1950:166. First use of presently recognized combination.

Corytophanes hernandezii: Beltrán 1953:133.

Corytophanes hernadazi: Jarvis and Morris 1962:285. *Lapsus*.

Corytophanes hernandesii: Zug 1971:3.

Corytophanes hernandezii: Renous-Lécure and Jullien 1972a:186.

Corytophanes hernandezii: Johnson, Ely, and Webb 1977:134. *Lapsus*.

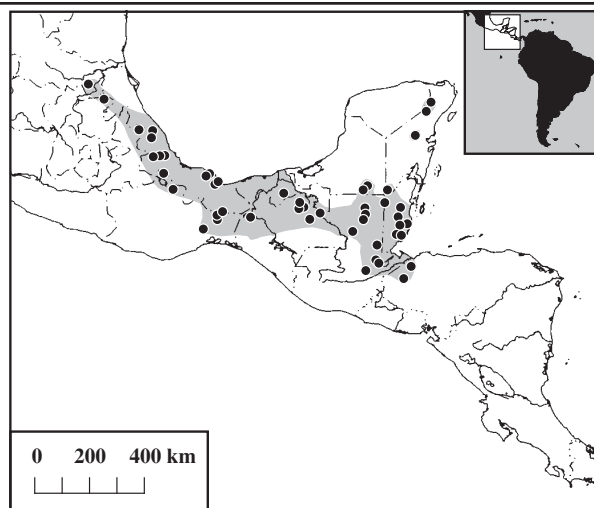
Corytophanes hernandesii: Elter 1981:63. *Lapsus*.

Corytophanes hernandezii: Alvarez del Toro 1982:83. *Lapsus*.

C [orytophanes]. hernandesii: Mendelson 1990:17. *Lapsus*.

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

• **DEFINITION.** *Corytophanes hernandesii* is a moderately small corytophanine (maximum snout-vent length of about 105 mm) with a long tail (about 2.5 times SVL), a laterally compressed body, and a triangular-shaped cephalic casque projecting posteriorly past the head. The canthus is raised into a sharp ridge that forms a raised shelf above the eye and continues posteriorly to form a distinct raised casque. The ridges forming the posterior edge of the casque unite and almost immediately curve downward onto the neck. The ridge is continuous with a short, low nuchal crest. Deep frontal and parietal depressions are



MAP. Distribution of *Corytophanes hernandesii*; dots indicate known localities (note that some dots denote two or more proximate localities; the type locality is unknown).



FIGURE. Adult male *Corytophanes hernandesii* (USNM 520003) from Las Rosas, Santa Bárbara, Honduras (photograph by JRM).

present. The dorsal head scales vary from smooth to rugose in the frontal region; the scales in the supraocular and parietal regions are keeled. A prominent squamosal spine is present above the tympanum. The nasal scale is single, the nostril is located more or less centrally in the scale, and the opening is directed posterolaterally. The gular scales are elongate and strongly keeled, and the medial row is only slightly enlarged and only slightly serrated. The gular fold is complete and continuous with the antehumeral fold. The dorsal body scales are large, imbricate, and usually smooth. The lateral body scales are imbricate and usually smooth; most lateral body scales are smaller than the dorsal scales. The middorsal scale row is enlarged, forming a serrated dorsal crest with triangular-shaped scales extending from the shoulder region to the base of the tail. The middorsal crest is more prominent anteriorly and not continuous with the low nuchal crest. A serrated row of scales forms an indistinct ventrolateral fold on the body. The ventral scales are large, imbricate, strongly keeled, and usually rounded posteriorly. The subdigital scales are strongly keeled. Caudal autotomy is absent. Femoral and preanal pores are absent.

The dorsal surfaces are some shade of brown in life. A dark brown blotch usually extends from the upper eyelid through the eye to the anterior edge of the tympanum. A large dark brown blotch frequently is present on the shoulder and is outlined by a white line anteriorly and dorsally.

• **DIAGNOSIS.** *Corytophanes hernandesii* can be distinguished from all other species of *Corytophanes* by having a short, low nuchal crest that is not continuous with the middorsal crest. The species differs from other members of the family Corytophanidae by having a triangular-shaped head casque projecting posteriorly past the head. The casque is formed by sharply raised ridges extending from the canthal region, above the eye, and continuing posteriorly to form a raised casque. The ridges forming the posterior edge of the casque unite and almost immediately curve downward onto the neck.

• **DESCRIPTIONS.** Detailed descriptions are in Wiegmann (1831, 1834), Gravenhorst (1833), A.M.C. Duméril and Bibron (1837), Gray (1839), A.H.A. Duméril et al. (1870–1909), Boulenger (1885), Taylor (1949), Lang (1989a), Lee (1996, 2000), Campbell (1998), and Köhler (1999).

• **ILLUSTRATIONS.** **Color photographs** are in Kästle (1975; see Mertens 1972, for comments on this photograph in the earlier published German edition), Alvarez del Toro (1982), Álvarez Solórzano and González Escamilla (1987), Lee (1996, 2000), Lamar (1997), Polouček (1997), Campbell (1998), Köhler (1999, 2000, 2003), Stafford and Meyer (1999), and Townsend et al. (2004). **Black and white photographs** are in Alvarez del Toro (1960, 1973), Freiberg (1972), and Resetar and Voris (1997). **Colored drawings** of adults are in Wiegmann (1834, reproduced in black and white in the reprint edition) and Gray (1839). **Black and white drawings** are in Gravenhorst (1833; adult, dorsal, lateral, and ventral surfaces of head), A.H.A. Duméril (1856, lateral surface of head and forebody), A.H.A. Duméril et al. (1870–1909, lateral surface of head), Carpenter (1978, threat posture), Lang (1989a, skull and parietal blade), and Lee (1996, 2000; lateral surface of head). Schwenk et al. (1982) illustrated the **karyotype** and Lang (1989b) provided three **SEM photographs** of a supralabial scale and one of the scales of the parietal crest.

Smith (1970) concluded that the figure of a “Quatapácatl” in Hernández (1648) corresponded fairly closely to this species. The illustration of “*Corytophanes hernandesi*” in Schmidt and Henkle (1995) is actually of *C. cristatus*.

• **DISTRIBUTION.** *Corytophanes hernandesii* occurs at low and moderate elevations (near sea level to 1300 m) on the Atlantic versant from southeastern San Luis Potosí, México to northwestern Honduras (see **Remarks**).

• **FOSSIL RECORD.** None.

• **PERTINENT LITERATURE.** References are listed by topic: **literature reviews** (Smith and Smith 1976, 1993), **hemipenis** (Böhme 1988), **karyotype** (Schwenk et al. 1982), **albinism** (Pérez-Higareda 1980), **osteology** (Etheridge 1965; de Queiroz 1982, 1987; Frost and Etheridge 1989; Lang 1989a), **dentition** (Olson et al. 1986, 1987), **scale microanatomy** (Lang 1989b), **parietal eye** (Gundy and Wurst 1976), **retina** (Heinemann 1878), **thyroid gland shape** (Lynn et al. 1966), **cochlear duct** (Miller 1966), **arterial system** (Zug 1971), **trunk nerves** (Renous-Lécure and Jullien 1972a,b), **ulnar nerve course** (Jullien and Renous-Lécure 1972), **parasites** (Lowichik et al. 1988, Asmundsson 2003), **reproduction** (McCoy 1968, Fitch 1990, Pérez-Higareda 1981, Polouček 1997, Campbell 1998), **threat posture** (Carpenter 1978), **dietary analysis** (Sasa and Salvador Monrós 2000), **behavior in captivity** (Polouček 1997), **capture in arboreal drift fences** (Vogt 1987), **native use as food and for insect control** (Góngora-Aronés 1987), **predation** (Draheim 1995), **conservation status** (Wilson and McCranie 2004), and **spelling of specific name** (Smith et al. 1999).

Lang (1989a) provided a **taxonomic review and phylogenetic analysis**. Comments on **biogeography** are in Campbell (1983), Johnson (1989), and Flores-Villela (1991).

The species is mentioned in various **distribution notes, faunal lists, or keys**: Sumichrast (1864, 1870, 1882), Boulenger (1885), Günther (1885), Ferrari-Perez (1886), Cope (1887), Boettger (1893), Dugès (1896), Gadow (1905), Stuart (1935, 1958, 1963), Schmidt (1941), Smith (1947), Taylor (1949, 1950), Smith and Taylor (1950b), Smith and Burger (1950), Shreve (1957), Duellman (1965), Neill (1965), McCoy (*in* Peters and Donoso-Barros 1970), Greene (1972), Henderson and Hoeyers (1975), Johnson et al. (1977), Pérez-Higareda (1978), Ramírez-Bautista (1978), Lee (1980, 1996, 2000), Pérez-Higareda and Navarro L. (1980), Alvarez del Toro (1982), Ramírez-Bautista et al. (1982), Campbell (1983, 1998), Flores-Villela et al. (1987, 1991, 1995), Pérez-Higareda et al. (1987), Villa et al. (1988), Campbell and Vannini (1989), Mendelson (1990), Pelcastre Villafuerte and Flores-Villela (1992), Flores-Villela (1993), Casas-Andreu et al. (1996), Muñoz et al. (1996), Vogt et al. (1997), McCranie and Espinal (1998), Köhler (1999, 2000, 2003), Stafford and Meyer (1999), Turvey and Cooper (1999), Canseco-Marquez et al. (2000), Wilson and McCranie (2002), Calderón et al. (2003), and Cedeño-Vázquez et al. (2003).

• **REMARKS.** Smith (1971) credited Deppe (1830) as the author of the name *Chamaeleopsis Hernandezii*. However, Deppe (1830) is only a price list, and it was not “issued for the purpose of providing a public and permanent scientific record” (Article 8.1.1 of the International Commission on Zoological Nomenclature 1999). Thus, *Chamaeleopsis Hernandezii* Deppe is a *nomen nudum*.

Boulenger (1885), Smith and Taylor (1950b), Stuart (1963), and McCoy (*in* Peters and Donoso-Barros 1970) considered Wiegmann (*in* Gray 1831) as the author of the specific name *Chamaeleopsis Hernandezii* (although Gray 1845 apparently considered himself the author of the name). Wiegmann (1831) published a more detailed description of the species than the brief description presented in Gray (1831). However, whether Gray (1831) or Wiegmann (1831) appeared first is not certain (for a brief discussion concerning this matter, see Smith and Taylor 1950b). We follow Bauer and Adler (2001) in citing Wiegmann (1831) as the original description of the species, because it is the most complete description, even though the possibility exists that Gray (1831) may have predated Wiegmann (1831).

Smith and Taylor (1950a) restricted the type locality of *Corytophanes hernandesii* to Jalapa, Veracruz, México. As Dunn and Stuart (1951) pointed out, the wholesale type locality restrictions of Smith and Taylor (1950a) are “...without legal status.”

Taylor (1969) and Lang (1989a) stated that three syntypes were catalogued under the numbers ZMB 545–546. However, only two syntypes (ZMB 545, 546) of *Chamaeleopsis Hernandezii* Wiegmann exist, although the number 3 is written in front of the generic name on the original label (R. Günther, *in litt.*, 8 March 2001). The original entries in the ZMB catalogue also indicate that only two types were originally registered (R. Günther, *in litt.*, 8 March 2001).

Kaup (1828) cited *Chamaeleo mexicanus* of Hernández (1648), but considered this pre-Linnaean name a synonym of his *Corythaeolus vittatus* (= *Basiliscus vittatus* Wiegmann). Wiegmann (1831) also cited *Chamaeleo mexicanus* of Hernández (1648), but considered the name a synonym of his *Chamaeleopsis Hernandezii*. Gray (1845) also included *Chamaeleo mexicanus* in the synonymy of *Chamaeleopsis hernandesii*, but attributed the name to “Wagler, Isis, 1832, 296.” This was a *lapsus* for Wiegmann (1831), who, as pointed out

above, did not adopt the name *Chamaeleo mexicanus*. *Chamaeleo mexicanus* was included in the synonymy of *Corytophanes chamaeleopsis* A.M.C. Duméril and Bibron (an invalid substitute name for *Chamaeleopsis hernandesii*; see **SYNONYMY**) by Sumichrast (1864, 1870; senior synonym spelled *Corytophanes chamaeleopsis* in the latter) and Brehm (1878). The *Chamaeleo mexicanus* of these authors is not to be confused with *Chamaeleo mexicanus* Laurenti (1768). Laurenti's name is based on plate 82, fig. 1 of Seba (1734), a poorly-drawn Old World chameleon of uncertain identification (see Stejneger 1936).

Velasco (1895, 1896), in lists unsupported by specimens, included *Corytophanes chamaelopsis* and *Corytophanes chamaelopsis* (= *Corytophanes hernandesii*) from two Mexican states (Campeche and Colima, respectively) in which the species either is not known to occur (Colima: no species of *Corytophanes* occurs anywhere near the borders of that state) or was only recently collected in that state (Campeche; see Calderón et al. 2003).

Burt and Myers (1942) recorded a specimen of this species from "Guanajuato (?), Mexico. Alfredo Dugès 1899 (?)." Much of this state lies outside the known distribution of *Corytophanes hernandesii*; however, this lizard could occur in the extreme eastern portion of the state.

• **ETYMOLOGY.** The specific epithet *hernandesii* is a patronym honoring Francisco Hernández, whose manuscript on the biota of México was published posthumously in 1648. *Corytophanes hernandesii* was discussed under the name *Chamaeleo Mexicanus* in Hernández's work.

• **COMMENT.** The common name Hernandez's Helmeted Basilisk (Liner 1994) is used in preference to Hernandez's Helmeted Iguana (Frank and Ramus 1995), although neither "common name" would have any meaning to the people living within the geographic range of this species. Herrera (1899) listed "Pasarios" as a vernacular name.

• **ACKNOWLEDGEMENTS.** R. Günther provided information on the type material. S.W. Gotte provided information on the official publication date of Zug (1971). G. Köhler furnished a translation of the pertinent section of Kaup (1828). Copies of pertinent literature were provided by A.M. Bauer, S.W. Gotte, G. Köhler, J.A. Poindexter, H.M. Smith, and M. Veselý. A.M. Bauer reviewed an earlier draft of the manuscript.

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