

REPTILIA: SQUAMATA: CORYTOPHANIDAE

CORYTOPHANES CRISTATUS

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

***Corytophanes cristatus* (Merrem)**
Smoothhead Helmeted Basilisk, Turipache Selvático

Agama cristata Merrem 1820:50. Type locality, "Ceylona" [in error]; holotype originally in the Seba collection (based on Plate 94, Fig. 4 in Vol. 1 of Seba 1734).

Corytophanes cristata: Boie in Schlegel 1827:290 (by inference).

Corytophanes cristata: Wagler 1830:151 (by inference).

Cyrtophanus Cristatus: Gray 1831:55. *Lapsus*.

Corytophanus cristatus: Gravenhorst 1833:938. *Lapsus*.

Corytophanes cristatus: Gravenhorst 1833:947.

Corytophanes cristatus: Herrera 1899:21.

Corytopherus cristatus: Elter 1981:63. *Lapsus*.

Corytophanes percristatus: Arnold 1994:512 (part?). *Lapsus*.

Corytophanes christatus: Sehnal 1996:108. *Lapsus*.

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

• **DEFINITION.** *Corytophanes cristatus* is a moderately large corytophanine lizard (maximum SVL ~125 mm) with a long tail (~2.0–2.5 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 after about 20–30 mm (in adults) taper downward onto the neck. The ridge is continuous with a long, well-developed nuchal crest. Deep frontal and parietal depressions are present. Dorsal head scales vary from smooth to weakly rugose. A squamosal spine is absent above the tympanum, although an enlarged scale, strongly keeled to rounded above, usually is present. The nasal scale is single, the nostril is located more or less centrally in the scale, and the opening is directed posterolaterally. Gular scales are elongate, strongly keeled, and the medial row is distinctly enlarged and strongly serrated. The gular fold is complete and continuous with the antehumeral fold. Dorsal body scales are imbricate and usually smooth. Individual

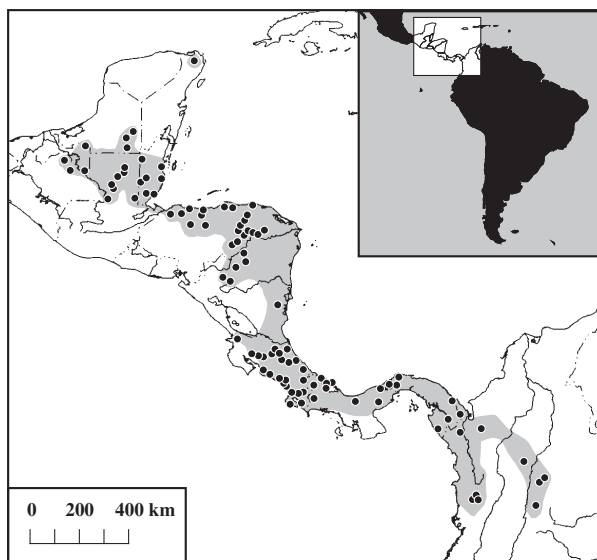


FIGURE. Juvenile (top: USNM 559556) from Bodega de Río Tapalwás, and adult (USNM 559547) from Caño Awawás, Depto. Gracias a Dios, Honduras (photographs by JHT).

dorsal scales can be much larger than surrounding scales. Lateral body scales are imbricate and usually smooth; most lateral body scales are smaller than 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 is continuous with the well-developed nuchal crest. A serrated row of scales forms a distinct to indistinct ventrolateral fold. Ventral scales are large, imbricate, and strongly keeled with rounded to broadly rounded posterior ends; some ventral scales also are mucronate. Subdigital scales are strongly keeled. Caudal autotomy is absent. Femoral and preanal pores are absent.

Dorsal surfaces usually have some pale olive green to darker green pigment. Olive brown to black crossbands usually are present on the body. These lizards are capable of changing color to brown or nearly black. The iris is ochre to copper in color.

• **DIAGNOSIS.** *Corytophanes cristatus* can be distinguished from *C. hernandesii* by having a well-developed nuchal crest that is continuous with the middorsal crest and by lacking a squamosal spine, and from *C. percarinatus* by having smooth



MAP. Distribution of *Corytophanes cristatus*: dots indicate known localities; the type locality is unknown.

to weakly rugose head scales and by lacking a squamosal spine. The species differs from other corytophanids 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 after 20–30 mm (in adults) taper downward onto the neck.

• **DESCRIPTIONS.** Detailed descriptions are in Gravenhorst (1833), Duméril and Bibron (1837), Duméril and Duméril (1851), Duméril et al. (1874), Boulenger (1885), Taylor (1956), Lang (1989a), Lee (1996, 2000), Campbell (1998), Köhler (1999a), and Savage (2002).

• **ILLUSTRATIONS.** Color photographs are in Breen (1974), Kundert (1974), Oostveen (1974a,b), Kästle (1975), Lucassen (1976), Sprackland (1977), Lüthi-Müller (1978), Wynne (1981), Bartlett (1988), Obst et al. (1988), Villa et al. (1988), Polouček (1992), Gradstein and Equihua (1995, epizoic growth on the head), W. Schmidt and Henkel (1995, also as *C. hernandezii*), Lee (1996, 2000), Sehnel (1996), Lamar (1997), Campbell (1998), Crumly et al. (1998), Franzen (1999), Köhler (1999a, 2000, 2001, 2003), Renjifo and Lundberg (1999), Stafford and Meyer (1999), Turvey and Cooper (1999), Krywicki (2001), Leenders (2001, 2002), Zug et al. (2001), Savage (2002), Pianka and Vitt (2003), Pough et al. (2003), and Townsend et al. (2004). **Black and white photographs** are in Davis (1953, defensive displays and posture), Taylor (1956), Mertens (1960), Neill (1961), Ream (1964, eggs), Oostveen (1974a), Lucassen (1976), Lüthi-Müller (1978), Andrews (1979), Bock (1987, female excavating nest), Krijnen (1987), Lazcano-Berrero and Góngora-Aronés (1993; adult, egg clutch, and scat), Emmons et al. (1996), Resetar and Voris (1997), Köhler (1999b), Crump (2000), and Pough et al. (2001). **Black and white drawings** are in Gravenhorst (1833; adult, dorsal, lateral, and ventral views of head), A.H.A. Duméril (1856; lateral surface of head and forebody, skull), Werner (1896, lateral surface of head), Bellairs (1970, defensive posture), Carpenter and Ferguson (1977, display posture), Lang (1989a; palatal, dorsal, and lateral views of skull, sclerotic ring, angular process, posterior marginal teeth, pectoral girdle, lateral surface of head), Hallermann (1994, anatomy of ethmoidal region), Lee (1996, 2000; lateral surface of head), Savage (2002, anterior superciliary scales), and Köhler (2003, lateral view of head). **SEM photographs** are in Lang (1989b, suborbital scale microstructure) and Schleich and Kastle (1985, subdigital setae). Schwenk et al. (1982) illustrated the **karyotype**.

• **DISTRIBUTION.** *Corytophanes cristatus* occurs from the Yucatán Peninsula and Chiapas, México to northwestern Colombia on the Atlantic versant, west-central Costa Rica to central Panamá on the Pacific versant, and marginally on the Pacific versant in northwestern Costa Rica (see **Remarks**). This species is found at elevations from sea level to about 1300 m and inhabits mesic tropical and subtropical forests.

• **FOSSIL RECORD.** None.

• **PERTINENT LITERATURE.** References are listed by topic: **literature reviews** (Smith and Smith 1976, 1993), **anatomy** (Lynn et al. 1966, Moody 1983, Schleich and Kastle 1985), **functional morphology** (Zani 1996, 2000), **dentition** (Olson et al. 1986, 1987), **osteology** (Etheridge 1965; de Queiroz 1987; Hallermann 1994, 1998), **eye morphology** (de Queiroz 1982), **microanatomy of scales** (Lang 1989b), **hemipenis** (Böhme 1988), **hindlimb functional morphology** (Snyder 1954), **loco-**

motion (Snyder 1952), **karyotype** (Schwenk et al. 1982), **sexual size dimorphism** (Fitch 1981), **diet and foraging** (Andrews 1979, 1983; Vitt and Zani 1998; Sasa and Monrós 2000; Pough et al. 2001, 2003), **absence of prey chemical discrimination** (Cooper 1999), **reproduction and nesting** (Duellman 1963, Ream 1964, McCoy 1968, Fitch 1970, Telford 1971, Bock 1987, Lazcano-Berrero and Góngora-Aronés 1993, Franzen 1999), **occurrence in leaf litter** (Scott 1976, Lieberman 1986), **defensive and display behavior** (Davis 1953, Carpenter and Ferguson 1977, Ferguson 1977, Greene 1988), **epizoic and epiphytic associations** (Gradstein and Equihua 1995, Leenders 2002), **parasites** (Guerrero et al. 1977; Telford 1977; Kournay and Telford 1981, 1982; Kimsey 1992; Asmundsson 2003), **lifespan** (Altman and Dittmer 1962, Bowler 1977, Snider and Bowler 1992, Slavens and Slavens 1998), **conservation status** (Franke and Telecky 2001, Wilson and McCranie 2004), **captive breeding and husbandry** (Oostveen 1974a,b; Lucassen 1976; Lüthi-Müller 1978; Krijnen 1987; Polouček 1992; Köhler et al. 1994), **ethnozoology** (Malkin 1956), **phylogenetic relationships** (Frost and Etheridge 1989, by inference; Harris et al. 2001; Schulte et al. 2003), and **native use as a food source and for insect control** (Góngora-Aronés 1987).

Lang (1989a) provided a **taxonomic review and phylogenetic analysis**. Comments on **biogeography** are in Stuart (1950), Campbell (1983), and Johnson (1989). This species is included in various **keys, faunal lists, or notes on distribution**: Cope (1875a,b, 1887), Günther (1885), Boulenger (1913), Fowler (1916), Barbour (1923), Burt and Burt (1931, 1933), Burt (1932), Dunn and Emlen (1932), Schmidt (1933, 1941), Stuart (1934, 1935, 1948, 1958, 1963), Gaige et al. (1937), Smith (1938), Dunn (1944), Smith and Taylor (1950), Taylor (1956), Neill and Allen (1959), Duellman (1963), Neill (1965), Ortleb and Heatwole (1965), Heyer (1967), Medem (1968), Myers and Rand (1969), McCoy (*in* Peters and Donoso-Barros 1970), Meyer and Wilson (1973), Henderson and Hoervers (1975), Lee (1980, 1996, 2000), Perez-Higareda and Navarro L. (1980), Alvarez del Toro (1982), Campbell (1983, 1998, 2001), Scott et al. (1983), Villa (1983), Wilson (1983), Ayala (1986), Savage and Villa R. (1986), Villa et al. (1988), Campbell and Vannini (1989), Hayes et al. (1989), Mendelson (1990), Rand and Myers (1990), Stafford (1991), Flores-Villela (1993), Auth (1994), Guyer (1994), Stafford (1994), Wilson and McCranie (1994, 2002), da Silva and Sites (1995), Flores-Villela et al. (1995), Frank and Ramus (1995), Sanchez-C. et al. (1995), Emmons et al. (1996), Kamstra et al. (1996), Ruiz-Pérez (1996), Vitt (1996), Aranda and Guzman (1999), Köhler (1999a,b, 2000, 2001, 2003), Stafford and Meyer (1999), Turvey and Cooper (1999), Vargas-S. and Bolanos-L. (1999), Young et al. (1999), Pounds and Fogden (2000), Burger (2001), Espinal et al. (2001), Ibáñez D. et al. (2001), Lewis (2001), Wilson et al. (2001), McCranie et al. (2002), Savage (2002), and Cedeño-Vásquez et al. (2003).

• **REMARKS.** Smith and Taylor (1950a,b) restricted the type locality to “Orizaba, Veracruz [México].” Their apparent source for this restriction was Cope (1865), who reported *Corythaëolus cristatus* (equals *Corytophanes cristatus*, according to Smith and Smith 1976) from “Orizava, Mexico.” However, the identification of Cope’s specimen is questionable, as he included after *Corythaëolus cristatus* “(*Thysanodactylus*, Gray, *Dracontura*, Hallow).” *Thysanodactylus* Gray is a junior synonym of *Basiliscus* Laurenti and “*Dracontura* Hallow” apparently was a *lapsus* by Cope for *Daconura* Hallowell, also a junior synonym of *Basiliscus*. Additional evidence supporting Cope’s specimen being a *Basiliscus* is that no specimens of *Corytophanes cristatus* from Veracruz, México are in the collection of the U.S. National Museum, where Cope’s specimens were supposed to have been deposited (see Cope 1865). In fact, no specimens of *C.*

cristatus from Veracruz are in any U.S. museum, and the species apparently is not known to occur there (see Pelcastre Villafuerte and Flores-Villela 1992). Smith and Taylor (1950a) stated that *C. cristatus* occurred on the “Atlantic slopes from central Veracruz to Costa Rica.” Similar range statements erroneously including “central Veracruz” still occur in much of the recent literature (e.g., Lee 1996, 2000; Campbell 1998; Köhler 2001, 2003; Savage 2002). Lang (1989a), in the most recent systematic study of the genus, included central Veracruz in the species’ range, but did not plot corresponding localities on his map.

• **ETYMOLOGY.** The specific epithet *cristatus* is Latin (meaning “tufted” or “crested”), alluding to either the occipital or middorsal crests found in this species.

• **COMMENT.** The common names Smoothhead Helmeted Basilisk and Turipache Selvático follow Liner (1994). Herrera (1899) and Aranda and Guzman (1999) provided the colloquialisms “pasa-rios” and “teterete,” respectively, for this species.

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