



Tantilla planiceps (Blainville, 1835). This species is the nominotypical member of the *Tantilla planiceps* group. The westernmost member of this group, its distribution extends from southern California, United States, to the southernmost tip of the Baja California Peninsula, in Mexico. Pictured here is an individual found in the Anza-Borrego Desert State Park in San Diego County, California, United States, which is located in the Colorado Desert ecosystem of the Sonoran Desert Ecoregion. The snake was found crawling on the ground at night in an extremely rocky area in desert scrub vegetation that included brittle bush, ocotillo, and barrel cactus. We determined its EVS as 9, placing it at the upper end of the low vulnerability category. Its IUCN status is of Least Concern. 📷 © Jack Goldfarb (www.JackGoldfarb.com)



A checklist and key to the snakes of the *Tantilla* clade (Squamata: Colubridae), with comments on taxonomy, distribution, and conservation

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ABSTRACT: We provide a checklist and identification key for the 66 members of the *Tantilla* clade, as defined by Holm (2008), which consists of the genera *Geagras* (one species), *Scolecophis* (one species), *Tantilla* (61 species), and *Tantillita* (three species). We provide summary information for these genera, and the species accounts contain information on a basic synonymy, the holotype, the type locality, geographic distribution, the assigned species group, critical references, and remarks. Comments on color pattern components in members of the *Tantilla* clade precede an identification key, which we largely based on color pattern and scutellation. We discuss the distribution of clade members with respect to country, physiography, and vegetation, and also examine their conservation status. We provide illustrations in life for 39 members of the clade, the largest number ever accumulated in a single source.

Key Words: Endemism, EVS and IUCN categorizations, *Geagras*, physiographic and vegetational distribution, *Scolecophis*, *Tantilla*, *Tantillita*

RESUMEN: Proporcionamos una lista y una clave de identificación para los 66 miembros del clado *Tantilla*, como está definido por Holm (2008), y el cual consiste de los géneros *Geagras* (una especie), *Scolecophis* (una especie), *Tantilla* (61 especies) y *Tantillita* (tres especies). Incluimos un resumen de información para cada uno de estos géneros, y la ficha para cada especie en la lista proporciona información básica sobre sinonimia, holotipo, localidad tipo, distribución geográfica, grupo de especie asignado, referencias más relevantes y comentarios pertinentes. Comentarios sobre los componentes del patrón de coloración en los miembros del clado *Tantilla* preceden una clave de identificación, la cual está basada ampliamente en el patrón de coloración y escutelación. Discutimos la distribución de los miembros del clado con respecto al país, fisiografía y vegetación, y también examinamos el estatus de conservación. Proporcionamos ilustraciones en vida de 39 miembros del clado, el número más grande hasta ahora acumulado en una sola fuente.

Palabras Claves: Categorizaciones de EVS y UICN, distribución fisiográfica y vegetacional, endemismo, *Geagras*, *Scolecophis*, *Tantilla*, *Tantillita*

Citation: Wilson, L. D., and V. Mata-Silva. 2015. A checklist and key to the snakes of the *Tantilla* clade (Squamata: Colubridae), with comments on taxonomy, distribution, and conservation. *Mesoamerican Herpetology* 2: 418–498.

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Received: 14 October 2015; **Accepted:** 23 November 2015; **Published:** 26 December 2015.

 DEDICATIONS



To my wife, Elizabeth (Betty) Pineda Wilson (1946–2015), who battled an implacable enemy to the end, an incurable disease, and who I know would agree that the best thing in our 47-year marriage was to give life to our two

wonderful daughters, Robin Lee and Tayra Barbara.

– Larry David Wilson



To my dear mother, Elena Beatriz Silva Sandoval (1935–2007), who always supported my siblings and me in our search for knowledge and our efforts to become better people. She always was interested and mystified to see me studying a group of animals that

were not the usual cows and horses.

– Vicente Mata-Silva

INTRODUCTION

In an unpublished dissertation, Holm (2008) defined the *Tantilla* clade as comprised of an expanded *Tantilla* plus its putative sister genus *Scolecophis*. Based on an analysis of morphological data, Holm's expanded concept of the genus *Tantilla* included the nominal genera *Geagras* and *Tantillita*, and he recognized the *Tantilla* clade as one of three (the other two are the *Sonora* and *Ficimia* clades) in the tribe Sonorini within the family Colubridae. Unfortunately, these important taxonomic decisions likely will not be published (P. Holm, pers. comm.). Thus, in updating the taxonomy of the genus *Tantilla* documented in Wilson (1999), herein we decided to include the other generic-level members of the *Tantilla* clade and maintained the traditional taxonomy for these other members.

 The *Tantilla* Clade

Following the conclusions of Holm (2008) on the composition of “the *Tantilla* clade,” we include the nominal genera *Geagras* (one species), *Scolecophis* (one species), *Tantilla* (61 species, including the poorly understood *T. trilineata*), and *Tantillita* (three species) in this clade, for a total of 66 members. Herein, we maintain the usual arrangement of these four genera, until Holm's (2008) conclusions can be tested through the use of molecular techniques. Nonetheless, we predict that Holm's taxonomy will be upheld whenever this work is completed.

 The Genus *Geagras*

Cope (1876) described the genus *Geagras* and its single member, *G. redimitus*, based on a holotype from the “west side of the State of Tehuantepec, Mexico” (see below). Wilson (1987d: 430.1) defined *Geagras* as “a colubrid genus characterized by: slender body with head not noticeably distinct from body; head cuneiform, head scutellation accordingly modified and simplified, consisting of a cuneiform rostral, two internasals and prefrontals, a broad scutiform frontal, two parietals, divided nasal, no loreal, single tiny preocular widely separated from postnasal, single postocular, temporals 1+1; five supralabials, with the third entering the orbit; six infralabials, with four touching anterior chin shields and fourth the largest; dorsal scales smooth, in 15 rows throughout; ventrals 113–124; anal plate divided; subcaudals 26–33, paired; maximum known total length 235 mm; maxillary teeth 10 (one count), separated by a short diastema from two distinctly enlarged grooved fangs; hemipenis simple [Smith, 1943, indicated the organ to be capitate, which appears unlikely] with single sulcus spermaticus, distal third calyculate, median third spinose, proximal third bare; dorsal color pattern of narrow diffuse dark lines or stripes coursing the length of all but two lower scale rows; head pattern of a dark median spatulate blotch bounded laterally by narrow pale markings which unite on snout, these in turn bounded below by a dark facial stripe.”

This genus has been recognized in the herpetological literature since its description (see accounts at The Reptile Database and IUCN Red List websites). As indicated by Wilson (1987d: 430.1), “Smith [1943] noted the

relationship of *Geagras* to the large genus *Tantilla*. Wilson and Meyer [1981] supported this contention and, furthermore, concluded that its relationships most closely lie with the members of the *T. calamarina* group, in particular the atypical *T. calamarina*. Wilson and Meyer [1981] noted the greater specialization of *Geagras* for fossorial life over the condition seen in *Tantilla calamarina*, itself a highly specialized member of its genus.”

In the introduction to his dissertation on the phylogenetic biology of the snake tribe Sonorini, however, Holm (2008) stated that, “Wilson and Meyer (1981) suggested that *Geagras redimitus* is related to the *Tantilla calamarina* species group,” and proposed the question “Is *Geagras* nested within *Tantilla*?” Based on his analysis of morphological features in the Sonorini, his answer was yes. His phylogenetic tree (his Fig. 4) indicated that *G. redimitus* is the sister species of *T. calamarina*, and these two taxa successively are linked to *T. cascadae*, *T. coronadoi*, and *T. deppei*. Holm (2008) did not consider *T. sertula* in his analysis. Apparently, the original description of *T. ceboruca* (Canseco-Márquez et al., 2007) was not available to him.

Holm’s (2008) conclusions about the phylogeny of the *T. calamarina* group agree with those of Wilson and Meyer (1981) and Wilson and Campbell (2000). His conclusions about the relationship of *G. redimitus* to members of the *T. calamarina* group also agree with those of Wilson and Meyer (1981). He stated (2008: 97–98) that, “Wilson and Meyer (1981)...noted the similarity and probable relationship to the highly fossorial species *Geagras redimitus*. Wilson and Meyer (1981) also noted that the degree of fossoriality increased from *T. deppei* to *T. calamarina*, culminating with *Geagras*.”

Ramírez-Bautista et al. (2014b) amplified these conclusions by constructing a phylogenetic hypothesis using data on scutellation for the seven species of *Tantilla* currently placed in the *T. calamarina* group, and the species *G. redimitus*, and used these data to develop an index of fossoriality. Based on the resulting application of this index, these authors (2014b: 803) concluded that “the arrangement of species, from least to more adapted to fossoriality, is as follows: *T. sertula*...*T. deppei*...*T. ceboruca*...*T. coronadoi*...*T. cascadae*...*T. vermiformis*...*T. calamarina*... and *G. redimitus*...” Nonetheless, they (2014: 804) urged caution in the application of their conclusions “to support either of Holm’s (2008) contentions, i.e., that *T. vermiformis* is not a member of the *calamarina* group or that *G. redimitus* should be allocated to the genus *Tantilla*. Answering these two questions, as well as those relating to the phylogenetic relationships of the remainder of the species included in this discussion, will have to await the assembly and evaluation of sufficient molecular material to allow for a robust analysis.” Given the apparent rarity of most of these species, however, it might take considerable time to assemble the necessary molecular material to test these hypotheses.

Geagras redimitus Cope

Geagras redimitus Cope 1876: 141.

Holotype: National Museum of Natural History (USNM) 30115, probably a juvenile or subadult male, collected on an unknown date by Dr. Francis Sumichrast.

Type-locality: “West side of the State of Tehuantepec, Mexico” (= the Pacific side of the region of the Isthmus of Tehuantepec, Oaxaca, Mexico).

Distribution: Low elevations (0–400 m) of the Plains of Tehuantepec on the Pacific versant of southeastern Oaxaca, Mexico. Casas-Andreu et al. (1996) gave an elevational range of 100–1,000 m, but did not indicate the source of these records.

References: Cope (1876); Sumichrast (1882); Hartweg and Oliver (1940); Wilson and Meyer (1981); Wilson (1987d); Holm (2008); Wilson and Johnson (2010); Wilson and Townsend (2010); Wilson et al. (2013a); Ramírez-Bautista et al. (2014b); Wallach et al. (2014); Mata-Silva et al. (2015).

Remarks: Wilson (1987d) corrected geographic distribution errors in this taxon that continue to be promulgated (see The Reptile Database website for *G. redimitus*) with the following information: “Records of this species from Michoacán (Duellman, 1961) are based on *Tantilla calamarina* (Wilson and Meyer, 1981). The type-locality of *Sphenocalamus lineolatus* is Mazatlán. As noted by Hardy and McDiarmid (1969), the state was not indicated. They listed *G. redimitus* as part of the Sinaloan herpetofauna, in part based on Duellman’s (1961) misidentification of specimens from the supposed intermediate localities in Michoacán. An alternative possibility is that the holotype of *S. lineolatus* came from Mazatlán (= San Juan Mazatlán), Oaxaca, a village located about 76 km N

of Tehuantepec and 46 km WNW of Matías Romero at an approximate elevation of 400 m, lying in the lowlands of the Isthmus of Tehuantepec.” Google Earth shows this village at coordinates (17°01'38.79"N, 95°26'23.45"W) at an elevation of approximately 1,746 feet (= 532 m), 81 km NNW of Tehuantepec and 46 km WNW of Matías Romero. The locality mentioned by Hartweg and Oliver (1940) for this species, “Quiengola Mountain,” presumably refers to the hill (Cerro Quiengola) on which the Zapotec archeological site is located, 14 km N of Tehuantepec (16°23'09"N, 95°19'24"W; www.wikipedia.org). Duellman (1960) indicated the location of this hill as 15 km WNW of Tehuantepec, with “dense scrub forest” on its slopes.

The Genus *Scolecophis*

Fitzinger (1843) described the genus *Scolecophis* to contain the single species *Calamarina atrocincta* Schlegel, 1837. Schlegel (1837) reported that the holotype of this species was collected in Chile, an obvious error. Wilson and Williams (2002: 758.1) defined *Scolecophis* as follows: “a colubrid genus characterized by a slender body; a head only slightly distinct from the body; head shape normal; dorsal head scutellation consisting of a normal rostral followed by two internasals, two prefrontals, two supraoculars, one frontal, and two parietals; lateral head scutellation of a divided nasal, a single loreal, one preocular, two postoculars, no suboculars, 1+1+1 temporals; seven supralabials, with the 3rd and 4th entering the orbit; six or seven infralabials, with three or four touching the anterior chin shields, the fourth the largest, and the first pair in medial contact, separating the mental and anterior chinshields; dorsal scales are smooth and in 15 rows; ventrals 181–198; cloacal scute (= anal plate) divided; subcaudals 45–54 and paired; maximum known TL [= total length] about 470 mm (KU 125497 from Costa Rica); relative tail length 0.136–0.191; maxillary teeth 13–14, the two posterior teeth grooved laterally, the grooves broad and shallow; hemipenis simple with single sulcus spermaticus, distal two-thirds spinose, spines increasing in size proximally, terminating in several enlarged basal spines, and the proximal one-third of the organ naked; a body pattern of alternating black and pale rings, the black rings 1½–4 scales long, the pale rings 2–4 scales long, pale rings are cream-colored on the first 4–5 scale rows, each scale with a black tip (except in the first row), reddish orange on dorsal rows 5–11 or 6–10, black rings number 24–49 on body and 5–10 on tail; head pattern of a black head cap with a broad pale band across the prefrontals extending laterally to the lip line, a postocular pale spot, and a pale nuchal band (cream laterally, reddish orange middorsally) beginning on the posterior portion of the parietals and extending 1–2½ middorsals beyond.”

Scolecophis has been recognized in the herpetological literature since its description by Fitzinger (1843), other than from 1854 to 1866 when it was relegated either to the synonymy of *Homalocranion*, a synonym of *Tantilla* (Wilson, 1982a), or placed in the genus *Platyranion*, erected by Jan (1863) to contain the same species by monotypy as contained in *Scolecophis* (i.e., *Calamaria atrocincta* Schlegel, 1837). European herpetologists (e.g., G. A. Boulenger, A. Günther, and G. Jan), however, essentially used the genus *Homalocranion* (or *Homalocranium*) for species placed in *Tantilla* by American herpetologists of the same era (e.g., E. D. Cope).

In his phylogenetic analysis, Holm (2008) placed *Scolecophis* as the sister genus to his “expanded” *Tantilla* (including *Geagras* and *Tantillita*). He stated (p. 95) that “two characters support monophyly of the expanded *Tantilla* with respect to its sister taxon *Scolecophis*. These are absence of apical pits on dorsal scales and absence or near absence of the loreals.” *Scolecophis* exhibits a single apical pit and a single loreal separating the posterior nasal and the single preocular (McCranie, 2011a).

Scolecophis atrocinctus Schlegel

Calamaria atrocincta Schlegel, 1837: 47.

Scolecophis atrocincta: Fitzinger, 1843: 25.

Elaps zonatus Hallowell, 1855: 35.

Scolecophis atrocinctus: Günther, 1895: 156.

Holotype: Muséum National d'Histoire Naturelle, Paris (MNHN) 519, adult male, collected on an unknown date by Gay.

Type-locality: “Chile,” in error.

Distribution: Low, moderate, and intermediate elevations (100–1,530 m) on the Pacific versant from southeastern Guatemala to northwestern Costa Rica; the species also is found on the Atlantic versant in southwestern Honduras, western Nicaragua, and northwestern Costa Rica.

References: Savage (2002); Wilson and Williams (2002); Köhler (2008); Acevedo et al. (2010); Greenbaum and Komar (2010); Sasa et al. (2010); Sunyer and Köhler (2010); Wilson and Johnson (2010); Wilson and Townsend (2010); McCranie (2011a); Wallach et al. (2014); Johnson et al. (2015b).

Remarks: One of the many phylogenetic issues of interest in the systematics of members of the *Tantilla* clade is the relationship of the banded species to one another. In addition to *S. atrocinctus*, the single species allocated to the monospecific genus *Scolecophis*, considered by Holm (2008) to be the sister genus of his expanded concept of *Tantilla* (see section above), three species of *Tantilla* also have a banded pattern: *T. semicineta*, *T. shawi*, and *T. supracincta*. These three species and *S. atrocinctus* occupy non-overlapping ranges from northeastern Mexico (*T. shawi*), through largely Pacific versant portions of Central America from southeastern Guatemala to northwestern Costa Rica (*S. atrocinctus*), and the Atlantic versant from southeastern Nicaragua to central Panama, as well as the Pacific versant of Costa Rica, Panama, and Ecuador (*T. supracincta*), to the Caribbean coastal portions of Colombia and Venezuela (*T. semicineta*). Beyond the presence of dark bands on the dorsum of the body, the patterns of these four species show scant resemblance to one another. *Tantilla shawi* and *T. supracincta* generally show some banding on the anterior portion of the body, whereas *T. semicineta* and *S. atrocinctus* are banded along the length of the body. In addition to a banded pattern, some individuals of *T. semicineta* also are boldly striped. Given that Holm (2008) placed *Scolecophis* as a sister genus to *Tantilla* (including both *Geagrass* and *Tantillita*), he did not envision a close relationship between *Scolecophis* and any of the banded species of *Tantilla*. His view of the relationship of *Scolecophis* to *Tantilla* likely will be borne out by future molecular research.



Adult *Scolecophis atrocinctus* from Tilarán, Guanacaste, Costa Rica. EVS 14 (high vulnerability species).

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The Genus *Tantilla*

Wilson (1999) provided the last taxonomic summary of the entire genus *Tantilla*, in which he listed 53 species. A number of changes have occurred in the interim, which we indicate below.

Greenbaum et al. (2004) synonymized *Tantilla equatoriana* Wilson and Mena, 1980, with *T. melanocephala* (Linnaeus, 1758).

The following two species have been resurrected:

Tantilla armillata Cope, 1876, from the synonymy of *T. melanocephala* (Linnaeus, 1758) by Savage (2002).

Tantilla ruficeps Cope, 1894, from the synonymy of *T. melanocephala* (Linnaeus, 1758) by Savage (2002).

The following seven species have been described as new (country of origin in parentheses):

Tantilla boipiranga Sawaya and Sazima, 2003 (Brazil)

Tantilla ceboruca Canseco-Márquez, Smith, Flores-Villela, and Campbell, 2007 (Mexico)

Tantilla hendersoni Stafford, 2004 (Belize)

Tantilla olympia Townsend, Wilson, Medina-Flores, and Herrera-B., 2013 (Honduras)

Tantilla psittaca McCranie, 2011b (Honduras)

Tantilla robusta Canseco-Márquez, Mendelson, and Gutiérrez-Mayén, 2002 (Mexico)

Tantilla sertula Wilson and Campbell, 2000 (Mexico)

In summary, of the 53 species listed by Wilson (1999), 52 presently are regarded as valid members of the genus *Tantilla*; the difference is due to the synonymization of *T. equatoriana* with *T. melanocephala*. We do not recognize *T. marcovani*, which was described after the Wilson (1999) paper appeared, because we consider it inseparable from *T. melanocephala*. Two taxa, *T. armillata* and *T. ruficeps*, subsequently were resurrected. In addition, seven new taxa were described. Thus, 61 species currently are included in the genus.

1. *Tantilla albiceps* Barbour

Tantilla albiceps Barbour, 1925: 156.

Holotype: Museum of Comparative Zoology, Harvard University (MCZ) 20600, adult (?) male, collected in February of 1925 by Thomas Barbour.

Type-locality: Barro Colorado Island, elevation 60 m, Gatún Lake, Atlantic versant of the Canal Zone, Panama.

Distribution: Known only from the type locality, an island created with the construction of the Panama Canal, at a low elevation on the Atlantic versant of Panama.

Species group: *Tantilla albiceps* is one of 14 species that has not been placed in any of the phenetic groups recognized in the genus (Wilson and Mata-Silva, 2014). This situation likely will not improve because this species is known only from the holotype and has not been seen again for 90 years. Holm (2008) indicated *T. albiceps* as the sister species of *T. nigra*. Interestingly, each of these taxa is known from a single specimen.

References: Wilson (1982b, 1985a, 1999); Joseph-Ouni (2007); Köhler (2008); Jaramillo et al. (2010); Wallach et al. (2014); Johnson et al. (2015b); Ray and Ruback (2015).

Remarks: Jaramillo et al. (2010) opined that, “this snake possibly is extinct, especially since the herpetofauna of this island [Barro Colorado] has been well sampled (Myers and Rand, 1969; Rand and Meyers, 1990).” Apparently, it has not been found since its discovery when “an Indian boy engaged in digging out a stump near the laboratory building came upon [the] small snake when the author was visiting the research station (Barbour 1925: 156). Joseph-Ouni (2007) considered this species extinct, indicating that “the reason for its extinction is not certain, but probably tied to the industrial and commercial development of the region.” Also see Remarks section of *T. moesta* account. *Tantilla albiceps* is one of several species in the genus that remains known only from the holotype. This group of species includes (with the number of years past the original description indicated in parentheses): *T. albiceps* (90); *T. andinista* (35); *T. briggsi* (44); *T. hendersoni* (11); *T. johnsoni* (16); *T. miyatai* (28); *T. nigra* (101); *T. olympia* (2); *T. petersi* (36); *T. robusta* (13); *T. tecta* (18); and *T. trilineata* (135). These 12 species comprise 19.7% of the 61 species of *Tantilla*.

2. *Tantilla alticola* (Boulenger)

Homalocranium alticola Boulenger, 1903: 353.

Homalocranium coralliventre Boulenger, 1913: 1,035.

Tantilla costaricensis Taylor, 1954: 766.

Tantilla alticola: Amaral, “1929” (1930): 219.

Syntypes: British Museum of Natural History (BMNH) 1946.1.8.63–65 (formerly BMNH 98.10.27.7–9), first two males, third apparently a female, collected by A. E. Pratt (date of collection unknown; accessioned 27 October 1898).

Type-locality: Santa Rita, north of Medellín, 9,000 ft (= 2,743 m), Departamento de Antioquia, Colombia.

Distribution: Low to intermediate elevations (91–2,743 m) on the Atlantic versant of Nicaragua and Costa Rica, and on the Pacific versant of southwestern Costa Rica and western Panama, as well as western Colombia.

Species group: This species is one of 14 that remain unallocated to a phenetic group (Wilson and Mata-Silva, 2014).

References: Wilson et al. (1977); Wilson (1982b, 1986, 1987a, 1999); Savage (2002); Castaño-M. et al. (2004); Mueses-Cisneros and Cepeda-Quilindo (2006); Köhler (2008); Jaramillo et al. (2010); Sasa et al. (2010); Sunyer and Köhler (2010); Wilson and Johnson (2010); Myers et al. (2013); Sunyer (2014); Wallach et al. (2014); Johnson et al. (2015b); Vanegas Guerrero et al. (2015); Vera–Pérez et al. (2015).

Remarks: Vanegas Guerrero et al. (2015) recently reported a specimen of *T. alticola* that filled a distribution gap of 455 km in western Colombia. In doing so, they reviewed and mapped the known distribution of this species, which extends from west-central Nicaragua southward through Costa Rica and Panama to southwestern Colombia near the border with Ecuador. These authors, however, indicated that *T. alticola* can be distinguished from *T. melanocephala*, a species widely distributed in Colombia, on the basis of differences in the number of infralabial scales, in addition to color pattern. They indicated the number of infralabials as six in *T. alticola* and seven in *T. melanocephala*, and cited Wilson and Mena (1980) to support the latter assertion. Wilson and Mena (1980: 15), however, noted that, “the majority of the specimens [of *T. melanocephala*] examined (92.8%) have 6 infralabials,” the typical condition for members of the genus *Tantilla* (Wilson, 1982a). Vanegas et al. (2015) also maintained that *T. alticola* has the broadest elevational range (i.e., 91–2,743 m), based on information provided by Uetz and Hošek (2014). Wilson and Mena (1980), however, documented that *T. melanocephala*, as they envisioned this taxon, is found from sea level to 2,851 m in the intermontane basin of Quito in Ecuador. This range is the same as presently understood,



Tantilla alticola from the Municipio de Dagua, Departamento de Valle del Cauca, Colombia. EVS 11 (medium vulnerability species).

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even given that *T. armillata* and *T. ruficeps* were recovered from synonymy of *T. melanocephala* by Savage (2002) and *T. equatoriana* was placed in synonymy by Greenbaum et al. (2004). Also see *T. jani* account concerning the status of the paralectotype of *Homalocranium jani* Günther (1895) from Matagalpa, Nicaragua.

3. *Tantilla andinista* Wilson and Mena

Tantilla andinista Wilson and Mena, 1980: 21.

Holotype: University of Kansas Museum of Natural History (KU) 135209, adult female, collected on 9 June 1970 by Thomas H. Fritts.

Type-locality: 5 km E of Alausí, elevation 2,600–2,750 m, Provincia Chimborazo, Ecuador.

Distribution: Known only from the type locality, at intermediate and high elevations on the continental divide in Ecuador.

Species group: *melanocephala* (Wilson and Mena, 1980).

References: Wilson and Mena (1980); Wilson (1985b, c, 1987a, 1999); Wallach et al. (2014).

Remarks: This species was described 35 years ago, but remains known only from the holotype. See Remarks section of *T. albiceps* account.

4. *Tantilla armillata* Cope

Tantilla armillata Cope, “1875” (1876): 143.

Holotype: Academy of Natural Sciences of Philadelphia 336, collected within period of 1865–1875 by C. H. Van Patten.

Type-locality: “Middle Costa Rica.”

Distribution: Low to moderate elevations (0–1,435 m) on the Pacific versant from Guatemala to northwestern Costa Rica and perhaps western Panama (Knight et al., 2012); also occurs on the Atlantic versant in central and northeastern Honduras, southwestern Nicaragua, and central Costa Rica.

Species group: *melanocephala* (Wilson and Mena, 1980; Savage, 2002).



Tantilla armillata from Parque Nacional Volcán Masaya, Nicaragua. EVS 11 (medium vulnerability species).

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References: Hardy and Cole (1967); Wilson and Villa (1973); Wilson and Mena (1980); Wilson (1984 [as *T. melanocephala*], 1999); Savage (2002); Köhler (2008); Acevedo et al. (2010); Greenbaum and Komar (2010); Sasa et al. (2010); Sunyer and Köhler (2010, as *T. melanocephala*); Townsend and Wilson (2010); Wilson and Johnson (2010); McCranie (2011a); Solís et al. (2014); Sunyer (2014); Sunyer et al. (2014); Townsend (2014); Wallach et al. (2014); Acosta-Chaves and Villalobos-Chaves (2015); Johnson et al. (2015b); McCranie (2015); Ray and Ruback (2015).

Remarks: Previously this taxon was recognized as a distinct species, but Wilson and Mena (1980) synonymized it with the widespread *T. melanocephala*. Savage (2002) argued, however, that it and *T. ruficeps*, also synonymized with *T. melanocephala* by Wilson and Mena (1980), should be resurrected from the synonymy of this taxon and recognized as distinct species, and we concur with this decision. Knight et al. (2012) noted the presence of two eggs in an individual allocated to this species from western Panama. Acosta-Chaves and Villalobos-Chaves (2015) reported the Central American Bark Scorpion (*Centruroides edwardsii*) preying on *T. armillata*. Sunyer et al. (2014) reported the first individuals of this species from within protected areas in Nicaragua. *Tantilla armillata* is the northernmost member of the *melanocephala* group.

5. *Tantilla atriceps* (Günther)

Homalocranium atriceps Günther, 1895: 146.

Tantilla atriceps: Amaral, 1930: 219.

Syntypes: British Museum of Natural History (BMNH) 1946.1.8.81–82 (original numbers 89.7.3.36–37, respectively), both males, obtained in 1889 from W. Taylor.

Type-locality: “Nuevo León, Mexico.”

Distribution: “Low, moderate, and intermediate elevations [0–2,134 m] in southeastern Chihuahua, Coahuila, northwestern and southern Nuevo León, western San Luis Potosí, southern Durango, and northeastern Zacatecas, Mexico, with apparently disjunct populations in Tamaulipas, Mexico, and southern Texas, United States” (Wilson and Mata-Silva, 2014).

Species group: *planiceps* (Cole and Hardy, 1981).

References: Cole and Hardy (1981, 1983); Wilson (1999); Gotte and Wilson (2005); Lavín and Lazcano (2010); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014).



Tantilla atriceps from Aramberri, Nuevo León, Mexico. EVS 11 (medium vulnerability species).

© Timothy Burkhardt

Remarks: The statements made by Wilson (1999: 5) about the relationships of this species to *T. hobartsmithi* and *T. nigriceps* still hold to the present. He noted that, “Cole and Hardy (1981) demonstrated that *T. atriceps* and *T. hobartsmithi* are sibling species, differing from one another in the structure of the hemipenis. Other features used to distinguish between these two species (number of postoculars, contact or lack thereof between mental and anterior chinshields) do not consistently do so (Robert G. Webb, *in litt.*). In addition, some specimens of *T. nigriceps* cannot be distinguished convincingly from these two sibling species in areas of sympatry (Cole and Hardy, 1981). Thus, details of the systematic and distributional relationships among these three species remain to be elucidated.” A morphological and molecular assessment of the three species from throughout their respective ranges is necessary for this to be accomplished. See *T. wilcoxi* account.

Tantilla atriceps is one of four species (along with *T. gracilis*, *T. wilcoxi*, and *T. yaquia*; see Remarks section of respective species accounts) whose distribution extends for only a short distance across the United States–Mexico border. In the United States, *T. atriceps* is distributed only in extreme southern Texas (Conant and Collins, 1998).

6. *Tantilla bairdi* Stuart

Tantilla bairdi Stuart, 1941: 1.

Holotype: University of Michigan Museum of Zoology (UMMZ) 89223, adult female, collected on 17 May 1940 by L. C. Stuart.

Type-locality: Two km NE of Finca Chichén (10 straight line km S Cobán) on Chamelco trail (Kluge [1984] noted that catalogue and field notes indicate San Juan trail, not Chamelco trail), ca. 1,550 m, Departamento de Alta Verapaz, Guatemala.

Distribution: Moderate and intermediate elevations (1,524–1,550 m) on the Caribbean versant of central Guatemala.

Species group: Holm (2008) allocated *T. bairdi* to the *taeniata* group.

References: Stuart (1941); Wilson (1982b, 1985a, 1985e, 1999); Acevedo et al. (2010); Wilson and Johnson (2010); Wallach et al. (2014); Johnson et al. (2015b).

Remarks: This taxon apparently is known from only two localities and two specimens (Wilson 1999; Acevedo et al. 2010).

7. *Tantilla bocourti* (Günther)

Homalocranium bocourti Günther, 1895: 145.

Tantilla bocourti: Cope, “1895” (1896): 1021.

Homalocranium bocourti: Stejneger, 1902: 157.

Lectotype: British Museum of Natural History (BMNH) 1946.1.8.70 [formerly BMNH 94.10.2.1], obtained on exchange from Muséum National d’Histoire Naturelle, Paris (formerly MNHNP 3694), adult male, collected on an unknown date by Dr. Alfredo Dugés.

Type-locality: “Guanajuato, Mexico,” restricted to city of Guanajuato by Smith and Taylor (1950).

Distribution: Low to marginally high elevations (near sea level–2,750 m) on the Pacific versant from north-eastern Sinaloa and western Zacatecas, through Jalisco, Colima, Michoacán, Guerrero, and Oaxaca, as well as southeastward to Guanajuato through to Puebla, Mexico (including the Tres Mariás Islands [= Las Islas Mariás]); also on the Atlantic versant in southeastern Coahuila, San Luis Potosí, Hidalgo, Puebla, and central Veracruz, Mexico.

Species group: See *T. rubra* account.

References: McDiarmid and Folke (1991); McDiarmid (1992); Wilson (1999); Flores-Villela et al. (2010); Lavín and Lazcano (2010); Wilson and Johnson (2010); Wilson et al. (2013a); Ramírez-Bautista et al. (2014a); Wallach et al. (2014); Wilson and Mata-Silva (2014); Mata-Silva et al. (2015); Suazo-Ortuño et al. (2015).

Remarks: See *T. wilcoxi* account. *Tantilla bocourti* is the southernmost member of the *rubra* group.



Tantilla bocourti from Dexthi, Ixmiquilpan, Hidalgo, Mexico. EVS 9 (low vulnerability species).

© Leonardo Fernández-Badillo

8. *Tantilla boipiranga* Sawaya and Sazima

Tantilla boipiranga Sawaya and Sazima, 2003: 119.

Holotype: Museu de Zoologia da Universidade Estadual de Campinas “Adão José Cardoso” (ZUEC) 1840, adult male, collected on 4 May 1995 by J. Meyer and R. J. Sawaya.

Type-locality: “Montane fields of the Serra do Cipó, Santana do Riacho, Minas Gerais, SE Brazil (19°17'S, 43°36'W), elevation 1,200 m” (Sawaya and Sazima, 2003).



Tantilla boipiranga from Morro do Pilar, Minas Gerais, Brazil. EVS 14 (high vulnerability species).

© Pedro H. Martins

Distribution: Moderate elevations (648–1,361 m) on the Atlantic versant in the southern portion of Cadeia do Espinhaço, Estado do Minas Gerais, southeastern Brazil.

Species group: *melanocephala* (Sawaya and Sazima, 2003; Lima Silveira et al., 2009).

References: Sawaya and Sazima (2003); Lima Silveira et al. (2009); Wallach et al. (2014).

Remarks: Lima Silveira et al. (2009) suggested that *T. boipiranga* is endemic to the southern portion of the Espinhaço mountain range in the southeastern region of the Brazilian state of Minas Gerais.

9. *Tantilla brevicauda* Mertens

Tantilla brevicauda Mertens, 1952: 137.

Holotype: Forschungsinstitut und Naturmuseum Senckenberg (SMF) 43243, female, collected on 12 November 1951 by A. Zilch.

Type-locality: El Grito, Finca Los Angeles, Cumbre de Jayaque, elevation 1,510 m, Departamento de La Libertad, El Salvador.

Distribution: Moderate and intermediate elevations (1,200–1,510 m) on the Pacific versant in south-central and northeastern El Salvador and south-central Guatemala.

Species group: *taeniata* (Townsend et al., 2013).

References: Mertens (1952); Wilson (1970, 1982b, 1988b, 1999); Herrera et al. (2005); Acevedo et al. (2010); Greenbaum and Komar (2010); Wilson and Johnson (2010); Wallach et al. (2014); Johnson et al. (2015b).

Remarks: Wilson and Johnson (2010) gave the elevational range of this species as 1,200–1,510 m. Herrera et al. (2005), however, previously recorded the species at an elevation of 1,800 m in the Parque Nacional Los Volcanes, Departamento de Santa Ana, El Salvador.



Tantilla brevicauda from Parque Nacional El Imposible, Departamento de Ahuachapán, El Salvador. EVS 13 (medium vulnerability species).

© Twan Leenders

10. *Tantilla briggsi* Savitzky and Smith

Tantilla briggsi Savitzky and Smith, 1971: 167.

Holotype: University of Colorado Museum (UCM) 40000, adult male, collected between July and September of 1968 by Thomas MacDougall.

Type-locality: 12 de Julio, Oaxaca, Mexico.

Distribution: Known only from the type locality, at a low elevation on the Atlantic versant of Mexico. See Remarks section of *T. albiceps* account. Also see *T. flavilineata* account.

Species group: *taeniata* (Savitzky and Smith, 1971; Townsend et al., 2013).

References: Savitzky and Smith (1971); Wilson (1985f, 1999); Townsend et al. (2013); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014); Mata-Silva et al. (2015).

Remarks: This species recently was rediscovered, but the manuscript has not been submitted for publication (L. Canseco-Márquez, pers. comm.).



Tantilla briggsi from San Isidro La Gringa, Oaxaca, Mexico. EVS 16 (high vulnerability species).

© Luis Canseco-Márquez

11. *Tantilla calamarina* Cope

Tantilla calamarina Cope, 1866: 320.

Tantilla bimaculata Cope, “1875” (1876): 143.

Tantilla martindelcampoi Taylor, “1936” (1937): 347.

Holotype: National Museum of Natural History (USNM) 6600, adult female, collected on an unknown date by J. J. Major.

Type-locality: Guadalajara, Jalisco, Mexico (locality questioned by Peters [1954] and Zweifel [1959]; the latter suggested the state of Colima as the most likely source of the type specimen).

Distribution: Low, moderate, and intermediate elevations (near seal level to 1,677 m) on the Pacific versant from Sinaloa, through Nayarit (including Las Islas Marías), Jalisco, Colima, and Michoacán to Guerrero, México, the Distrito Federal, Morelos, and western Puebla. An unconfirmed record exists for Tezuitlán, Puebla, Mexico. The type locality likely is in error (see above).

Species group: calamarina (Wilson and Meyer, 1981; Canseco-Márquez et al., 2007).

References: Wilson and Meyer (1981); Wilson (1988c, 1999); Flores-Villela et al. (2010); Lavín and Lazcano (2010); Wilson et al. (2013a); Ramírez-Bautista et al. (2014b); Wallach et al. (2014); Wilson and Mata-Silva (2014); Suazo-Ortuño et al. (2015).

Remarks: Ramírez-Bautista et al. (2014b) studied morphological variation in a large sample of this species from a single locality on the coast of Guerrero, Mexico, and also commented on the relationships of this species to others in the *calamarina* group. *Tantilla calamarina* is the northernmost member of the *calamarina* group.



Tantilla calamarina from Chamela, Jalisco, Mexico. EVS 12 (medium vulnerability species).

© Christian Berriozabal-Islas

12. *Tantilla capistrata* Cope

Tantilla capistrata Cope, 1876: 181.

Holotype: Academy of Natural Sciences of Philadelphia (ANSP) 11581, juvenile female, collected on an unknown date by James Orton.

Type-locality: Valley of Jequetepeque, Departamento de La Libertad, Peru.

Distribution: Low to intermediate elevations (0–1,830 m) in northwestern coastal Peru and the valleys of the upper Río Marañón, Río Chinchipe, Río Chamaya, northward to the province of Cotopaxi (Naranjito, Reserva de Bosque Integral Otonga; www.zoologia.puce.ec/vertebrados/Reptiles/Mapa.aspx?id=8043) in northwestern Ecuador.

Species group: melanocephala (Wilson and Mena, 1980).

References: Wilson and Mena (1980); Wilson (1987a, 1990a, 1999); Pérez-Santos and Moreno (1991); Aguilar et al. (2007); Wallach et al. (2014).


Remarks: Recent photographs of this species show a red-orange to dark red dorsal ground color with no dark middorsal stripe, and a black tip present on each dorsal scale. The pattern on the head and nape includes the following: a pale horn-colored spot on the snout (internasals and prefrontals), a black head cap extends onto the anterior $\frac{2}{3}$ of the parietals, enclosing a cream-colored preocular and postocular pale spots; a cream-colored nuchal band begins on the posterior portion of the parietals and extends about one scale posteriorly; a black nape band, about

five scales long, is present and connected to the black head cap along the dorsal midline; and a pale orange neck band, about one scale long, is present. This color pattern is based on a photograph of *T. capistrata* posted at Keyko Cruz's *Serpientes en Ecuador* site on the Flickr website (www.flickr.com/photos/111420066@N08/). The individual was collected at Bosque Protector Cerro Blanco, Provincia de Guayas, Ecuador and photographed in February of 2015. The forest at this site is Tropical Dry Forest.

Aguilar et al. (2007) reported a specimen from near Tunan, Departamento de Lima, Peru, a site approximately 75 km S of Huambo in the Departamento de Ancash (Lehr, 2002), which apparently constitutes the southernmost record for this species.



Tantilla capistrata from Bosque Protector Cerro Blanco, Provincia de Guayas, Ecuador. EVS 14 (high vulnerability species).

 © Keyko Cruz

13. *Tantilla cascadae* Wilson and Meyer

Tantilla cascadae Wilson and Meyer, 1981: 13.

Holotype: American Museum of Natural History (AMNH) 107389, female, collected in June of 1939 by D. F. Brand.

Type-locality: “Tzaráracua Falls [= Cascada la Tzaráracua], S of Uruapán [10.5 km S, according to Duellman, 1961], Michoacán, México, collected in June of 1939 by D. F. Brand” (Wilson and Meyer, 1981). Duellman (1961) indicated an elevation of 1,430 m.

Distribution: Moderate and intermediate elevations (1,430–1,858 m) on the Pacific versant of Mexico, in south-central Jalisco and central Michoacán.


Species group: *calamarina* (Wilson and Meyer, 1981; Canseco-Márquez et al., 2007).

References: Wilson and Meyer (1981); Wilson (1988d, 1999); Flores-Villela et al. (2010); Wilson and Johnson (2010); Alvarado-Díaz et al. (2013); Wilson et al. (2013a); Cruz-Sáenz et al. (2015); Ramírez-Bautista (2014b); Wallach et al. (2014); Wilson and Mata-Silva (2014).

Remarks: Wilson and Meyer (1981) described this species on the basis of a specimen collected 42 years earlier. Peter Heimes discovered a second specimen at the type locality in 2000, 19 years after the species' description, and Cruz-Sáenz et al. (2015) reported a third specimen from south-central Jalisco, demonstrating that this species still persists in the western extreme of the Transvolcanic Axis of central Mexico.



Tantilla cascadae from Cascada de Tzaráracua, Uruapan, Michoacán, Mexico. EVS 15 (high vulnerability species).

 © Peter Heimes

14. *Tantilla ceboruca* Canseco-Márquez, Smith, Flores-Villela, and Campbell

Tantilla ceboruca Canseco-Márquez et al., 2007: 221.

Holotype: Museo de Zoología Facultad de Ciencias MZFC) 17048, adult male, collected on 17 July 2004 by E. N. Smith, P. Ponce-Campos, and J. Malone.

Type-locality: “Volcán Ceboruco, Nayarit, Mexico” (Canseco-Márquez et al., 2007).

Distribution: Moderate and intermediate elevations (1,233–2,094 m) on the Pacific versant of western Mexico, from southeastern Nayarit to north-central Jalisco.

Species group: *calamarina* (Canseco-Márquez et al., 2007).

References: Canseco-Márquez et al. (2007); Wilson et al. (2013a); Ramírez-Bautista (2014b); Wallach et al. (2014); Wilson and Mata-Silva (2014).

Remarks: Canseco-Márquez et al. (2007) described *T. ceboruca* based on a single specimen, and Cruz-Sáenz et al. (2015) reported two additional specimens from a locality in north-central Jalisco.

15. *Tantilla coronadoi* Hartweg

Tantilla coronadoi Hartweg, 1944: 4.

Holotype: University of Michigan Museum of Zoology (UMMZ) 85697, female, collected on an unknown date by Wilmot W. Brown.

Type-locality: Vicinity of Chilpancingo, Guerrero, Mexico.

Distribution: Moderate and intermediate elevations (1,402–1,524 m) on the Pacific versant in central Guerrero, Mexico.

Species group: *calamarina* (Wilson and Meyer, 1981; Canseco-Márquez et al., 2007).

References: Hartweg (1944); Wilson and Meyer (1981); Wilson (1990b, 1999); Flores-Villela et al. (2010); Wilson and Johnson (2010); Wilson et al. (2013a); Ramírez-Bautista et al. (2014b); Wallach et al. (2014); Wilson and Mata-Silva (2014).

Remarks: This species and *T. sertula* are endemic to the Mexican state of Guerrero (Wilson and Mata-Silva, 2014).

16. *Tantilla coronata* Baird and Girard

Tantilla coronata Baird and Girard, 1853: 131.

Homalocranium wagneri Jan, 1862: 51

Tantilla coronata mitrifer Schwartz, 1953: 153.

Holotype: National Museum of Natural History (USNM) 1875 (according to Cochran, 1961), adult female, collected on an unknown date by D. C. Lloyd.

Type-locality: Kemper Co., Mississippi, United States.

Distribution: Low elevations (0–600 m) in Florida west of the Appalachian River westward to the Mississippi River, and northward to southern Indiana and southern Virginia, United States.

Species group: *coronata* (Telford, 1966).

References: Hardy (1952); Schwartz (1953); Telford (1966, 1982); Christman (1980); Aldridge (1992); Todd et al. (2008); Todd and Andrews (2008); Wallach et al. (2014).

Remarks: The comprehensive study of the ecology of this species on the Savannah River Site in South Carolina (Todd et al., 2008) was based on data collected over a 56-year period, which illustrates how time-consuming intensive studies of the small, semifossorial snakes of the genus *Tantilla* would have to be. *Tantilla coronata* is the northernmost member of the *coronata* group, as well as the most widespread species.



Tantilla coronata from Tattnall County, Georgia, United States. EVS 12 (medium vulnerability species).

© Kevin Stohlgren

17. *Tantilla cucullata* Minton

Tantilla cucullata Minton, 1956: 449.

Tantilla diabolus Fouquette and Potter, 1961: 144.

Holotype: Field Museum of Natural History (FMNH) 74384, adult male, collected on 1 July 1955 by Sherman A. Minton, Jr.

Type-locality: 6 mi SSE of Alpine, Brewster Co., Texas, United States.

Distribution: Moderate and intermediate elevations in the Big Bend and Trans-Pecos regions (1,189–1,712 m) of southwestern Texas, United States.

Species group: See *T. rubra* account.

References: Minton (1956); Fouquette and Potter (1961); Dixon et al. (2000); Wilson et al. (2000a); Wallach et al. (2014).

Remarks: *Tantilla cucullata* is one of a few species in the genus with two pattern morphs, in this case involving differences in head pattern (Wilson et al., 2000a). This species is the northernmost member of the *rubra* group.



Tantilla cucullata from Jeff Davis County, Texas, United States. EVS 14 (high vulnerability species).

© Jack Goldfarb (www.JackGoldfarb.com)

18. *Tantilla cuniculator* Smith

Tantilla moesta cuniculator Smith, 1939: 32.

Tantilla cuniculator: Smith, 1942: 33, 35, 42.

Holotype: Field Museum of Natural History (FMNH) 19408, juvenile female, collected in 1934 by Eunice Blackburn.

Type-locality: Mérida, Yucatán, Mexico.

Distribution: Low elevations (10–ca. 200 m) of the Yucatan Peninsula in the Mexican states of Yucatán and Quintana Roo, and in the northern portion of Belize.

Species group: *taeniata* (Townsend et al., 2013).

References: Smith (1939); Wilson et al. (1977); Wilson (1982b, 1985g, 1999); Johnson et al. (2010); Wilson and Johnson (2010); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014); Johnson et al. (2015b).

Remarks: This species is the northernmost member of the *taeniata* group.



Tantilla cuniculator from Pueblo Nuevo X-Can, Quintana Roo, Mexico. EVS 13 (medium vulnerability species).

© Julian C. Lee

19. *Tantilla deppei* (Bocourt)

Homalocranion deppei Bocourt, 1883: 584.

Tantilla deppei: Cope, 1887: 83.

Holotype: Muséum National d'Histoire Naturelle, Paris (MNHNP) 54, adult male, collected on an unknown date by M. Ghiesbreght.

Type-locality: "Mexico," restricted to vicinity of Huitzilac, Morelos, Mexico, by Davis and Smith (1953).



Tantilla deppei from Tlacotenoco, Morelos, Mexico. EVS 13 (medium vulnerability species).

© Peter Heimes

Distribution: Intermediate elevations (1,524–2,438 m) on the Pacific versant in northern Morelos, northern Guerrero, and northwestern Oaxaca, Mexico.

Species group: *calamarina* (Wilson and Meyer, 1981; Canseco-Márquez et al., 2007).

References: Wilson et al. (1977); Wilson and Meyer (1981); Wilson (1988e, f, 1999); Flores-Villela et al. (2010); Wilson and Johnson (2010); Wilson et al. (2013a); Ramírez-Bautista et al. (2014b); Wallach et al. (2014); Wilson and Mata-Silva (2014); Mata-Silva et al. (2015).

Remarks: Wilson and Meyer (1981) and Ramírez-Bautista et al. (2014b) considered this species the least adapted member of the *Tantilla calamarina* group for a fossorial existence.

20. *Tantilla flavilineata* Smith and Burger

Tantilla flavilineata Smith and Burger, 1950: 117.

Holotype: University of Illinois Museum of Natural History (UIMNH) 6321, adult female, collected on 23 August 1949 by Jack Burger and W. Leslie Burger.

Type-locality: 8 mi (= 12.9 km) SE of Nochixtlán, Oaxaca, Mexico.

Distribution: Intermediate elevations (1,890–2,438 m) in the central portion of the Mexican state of Oaxaca.

Species group: *taeniata* (Wilson and Meyer, 1971; Townsend et al., 2013).

References: Smith and Burger (1950); Wilson and Meyer (1971); Wilson et al. (1977); Wilson (1985h, 1999); Flores-Villela et al. (2010); Wilson and Johnson (2010); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014); Mata-Silva et al. (2015).

Remarks: This species is one of five (along with *T. briggsi*, *T. oaxacae*, *T. striata*, and *T. triseriata*) endemic to the Mexican state of Oaxaca.



Tantilla flavilineata from San Pedro Jocotipac, Oaxaca, Mexico. EVS 14 (high vulnerability species).

© Luis Canseco-Márquez

21. *Tantilla gracilis* Baird and Girard

Tantilla gracilis Baird and Girard, 1853: 132.

Holotype: “Stated to be the University of Michigan Museum of Zoology (UMMZ) 3781 by Kluge (1984), but the previous number assigned to this specimen is USNM 4500, a number for a lot of 11 specimens, of which two are still in the USNM collection; these specimens likely were not available to Baird and Girard (1853), because this lot was collected by Captain Pope on the Pacific Railroad Survey at about the same time the Baird and Girard work was published (dated 5 January 1853). The actual holotype probably is USNM 2040 or 2041, as both specimens are listed in the USNM catalogue to be from Indianola, Texas, and collected by J. D. Graham. Neither of these specimens, however, has been located (Gotte and Wilson 2005)” (Wilson and Mata-Silva, 2014: 34).

Type-locality: Indianola, Calhoun Co., Texas, United States (but see above).

Distribution: Low and moderate elevations (0–610 m) from eastern Kansas, southern Missouri, and extreme southwestern Illinois south to northwestern Louisiana, eastern and southern Texas, United States, and northeastern Coahuila, Mexico. Isolated populations in northern Missouri, southwestern Louisiana, and the Texas Panhandle, United States.

Species group: *planiceps* (Cole and Hardy, 1981).

References: Hardy and Cole (1968); Wilson (1999); Lavín and Lazcano (2010); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014).

Remarks: *Tantilla gracilis* is one of four species (along with *T. atriceps*, *T. wilcoxi*, and *T. yaquia* (see Remarks section of respective species accounts) in the genus with a distribution that extends for only a short distance across the United States–Mexico border. In Mexico, this species is found only in extreme northeastern Coahuila, but otherwise is broadly distributed in the Great Plains of the United States. This species is the easternmost member of the *planiceps* group.



Tantilla gracilis from St. Louis County, Missouri, United States. EVS 12 (medium vulnerability species).

© Peter Paplanus

22. *Tantilla hendersoni* Stafford

Tantilla hendersoni Stafford, 2004: 44.

Holotype: The Natural History Museum, London (BMNH) 2002.3, juvenile (?) female, collected on 13 September 2002 by P. Stafford, S. McMurry, and T. Rainwater.

Type-locality: 0.5 km E of Las Cuevas on trail to Monkey Tail River, Cayo District, Belize (16°43'95"N, 88°59'17"W; elevation 580 m).

Distribution: Known only from the type locality, at a low elevation on the Atlantic versant of Belize.

Species group: *taeniata* (Stafford, 2004; Stafford et al., 2010; Townsend et al., 2013).

References: Stafford (2004); Stafford et al. (2010); Wilson and Johnson (2010); Townsend et al. (2013); Wallach et al. (2014); Johnson et al. (2015b).

Remarks: The specific status of this taxon is in doubt. Stafford et al. (2010: 385) stated that “in light of photographs we recently examined of a second, larger specimen from the same locality (ca. 350 mm) ... we suspect that BMNH 2002.3 probably represents a juvenile *T. impensa* Campbell (1998), and that differences between these two species (size, color pattern features, and ventral scale numbers) are attributable to a combination of geographic and ontogenetic variation. As and when additional material becomes available, we expect *T. hendersoni* to be relegated to the synonymy of *T. impensa*.” Robert A. Thomas and LDW currently are examining this issue. See Remarks section of *T. albiceps* account.



Tantilla hendersoni from near Las Cuevas Research Station, Belize. EVS 16 (high vulnerability species).

© Kris Kaiser

23. *Tantilla hobartsmithi* Taylor

Tantilla hobartsmithi Taylor, “1936” (1937): 339 (part).

Tantilla utahensis Blanchard, 1938: 372.

Holotype: University of Illinois Museum of Natural History (UIMNH) 25066, adult male, collected on 3 July 1934 by Edward H. Taylor.

Type-locality: Near La Posa, 10 mi (= 16.1 km) NW of Guaymas, Sonora, Mexico.

Distribution: Low, moderate, and intermediate elevations (0–1,981 m) in a series of apparently disjunct populations extending from southern California through southern Nevada and Utah, western Colorado, Arizona, southern New Mexico, western Texas, United States, and western Sonora, eastern Chihuahua, northern Coahuila, and western Nuevo León, Mexico.

Species group: *planiceps* (Cole and Hardy, 1981).

References: Taylor (“1936,” 1937); Smith (1942); Wilson (1999); Goldberg (2004); Rorabaugh (2008); Lavin and Lazcano (2010); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014).

Remarks: See *T. atriceps* account.



Tantilla hobartsmithi from Hueco Mountains, El Paso County, Texas, United States. EVS 10 (medium vulnerability species).

© James Emerson

24. *Tantilla impensa* Campbell

Tantilla impensa Campbell, 1998: 6.

Holotype: University of Texas at Arlington (UTA) R-38196, adult female, collected on 2 July 1994 by E. N. Smith.

Type-locality: Aldea San Miguelito (15°22'N, 88°43'W), elevation 460 m, Sierra de Caral, Municipio de Morales, Departamento de Isabal, Guatemala.

Distribution: Near sea level to intermediate elevations (0–1,600 m) on the Caribbean versant from eastern Chiapas, Mexico, through the mountains of central Guatemala to western Honduras.

Species group: *taeniata* (Campbell, 1998; Townsend et al., 2013).

References: Wilson (1984 [as *taeniata*], 1999); Campbell (1998); Acevedo et al. (2010); Johnson et al. (2010); McCranie and Valdes Orellana (2012); Wilson et al. (2013a); Solís et al. (2014); Townsend (2014); Wallach et al. (2014); Wilson and Mata-Silva (2014); Johnson et al. (2015a, b); McCranie (2015).

Remarks: See *T. hendersoni* account.

25. *Tantilla insulamontana* Wilson and Mena

Tantilla insulamontana Wilson and Mena, 1980: 24.

Holotype: University of Kansas Museum of Natural History (KU) 152207, adult (?) male, collected on 12 June 1971 by Arthur C. Echternacht.

Type-locality: Río Minas, 15.1 km W of Santa Isabel, elevation ca. 1,250 m, Provincia de Azuay, Ecuador.


Distribution: Moderate to intermediate elevations (1,250–2,100 m) along the Hoya de Jubones (Pacific drainage) in southern Ecuador.

Species group: *melanocephala* (Wilson and Mena, 1980).

References: Wilson and Mena (1980); Wilson (1987a, 1990c, 1999); Wallach et al. (2014).

Remarks: Several unpublished records are indicated at the “Reptilia Web Ecuador” website.



Tantilla insulamontana from Centro de Interpretación Ambiental Otongachi, La Unión del Toachi, Pichincha, Ecuador. EVS 15 (high vulnerability species).  © Santiago R. Ron

26. *Tantilla jani* (Günther)

Homalocranium jani Günther, 1895: 148.

Tantilla jani: Smith, 1942: 37.

Tantilla cuesta Wilson, 1982b: 29.

Lectotype: The Natural History Museum, London (BMNH) 1946.1.8.68, adult female, collected on an unknown date on behalf of F. D. Godman (perhaps by G. C. Champion).

Type-locality: Guatemala (see Remarks).

Distribution: Moderate elevations (1,050 m) on the Pacific versant of Guatemala.

Species group: *taeniata* (Townsend et al., 2013).

References: Smith (1942); Campbell (1998); Wilson (1999); Wallach et al. (2014); Johnson et al. (2015b).

Remarks: Günther (1895) described *T. jani* on the basis of two syntypes, BMNH 1946.1.8.68 from Guatemala and 1946.1.8.71 from Matagalpa, Nicaragua. Smith (1942) designated the former syntype as the lectotype and Wilson (1982b) allocated the Nicaraguan paralectotype to *T. alticola*. Also see *T. vulcani* account.

27. *Tantilla johnsoni* Wilson, Vaughan, and Dixon

Tantilla johnsoni Wilson et al., 1999: 1.

Holotype: Carnegie Museum of Natural History (CM) 51741, an adult (?) male collected on 11 August 1968 by E. C. Welling M.

Type-locality: Musté, Municipio Motozintla, approximate elevation 450 m, Chiapas, Mexico (but see Remarks).

Distribution: Known only from the type locality, at a low elevation on the Pacific versant of Mexico.

Species group: *taeniata* (Wilson et al., 1999; Townsend et al., 2013).

References: Wilson et al. (1999); Wilson (1999); Johnson et al. (2010); Wilson et al. (2013a); Johnson et al. (2014); Wallach et al. (2014); Wilson and Mata-Silva (2014); Johnson et al. (2015a).

Remarks: Johnson et al. (2014) pinpointed the previously incorrectly located type locality of this species and provided commentary on the species' conservation status. *Tantilla johnsoni* remains known only from the holotype and paratype. See Remarks section of *T. albiceps* account. This species and *T. tayrae* are endemic to the state of Chiapas, Mexico (Wilson and Mata-Silva, 2014).

28. *Tantilla lempira* Wilson and Mena

Tantilla lempira Wilson and Mena, 1980: 25.

Holotype: Louisiana State University Museum of Zoology (LSUMZ) 26093, adult female, collected on 3 June 1968 by Ernest A. Liner.

Type-locality: 41 km NW of Tegucigalpa, Departamento de Francisco Morazán, Honduras.

Distribution: Moderate to intermediate elevations (1,450–1,730 m) on the Pacific versant and the Atlantic versant headwaters of south-central Honduras.

Species group: *melanocephala* (Wilson and Mena, 1980).

References: Wilson and Mena (1980); Wilson (1982b, 1984, 1990d, 1999); Townsend and Wilson (2010); Wilson and Johnson (2010); McCranie (2011a); Solís et al. (2014); Townsend (2014); Wallach et al. (2014); Espinal and Solís (2015); McCranie (2015); Johnson et al. (2015b).

Remarks: This species, described 35 years ago, remains poorly known in terms of morphological variation and distribution. McCranie (2011a) based his description on four males and two females, and noted that the species had not been collected for more than 20 years. Espinal and Solís (*This issue*) are reporting this species from a different locality in Honduras.

29. *Tantilla melanocephala* Linnaeus

Coluber melanocephalus Linnaeus, 1758: 218.

Tantilla melanocephala: Cope, 1861: 74.

Elapomorphus mexicanus Günther, 1862: 57.

Homalocranium melanocephalum var. *fuscum* Bocourt, 1883: 589.

Tantilla pallida Cope, 1887: 56.

Homalocranium melanocephalum var. *fraseri* Günther, 1895: 148.

Homalocranium melanocephalum var. *pernambucense* Günther, 1895: 148.

Homalocranium longifrontale Boulenger, 1896b: 17.

Homalocranium hoffmanni Werner, 1909: 239.

Elapomorphus nuchalis Barbour, 1914: 199.

Tantilla equatoriana Wilson and Mena, 1980: 23.

Tantilla marcovani Lema, 2004: 269.

Holotype: None designated.

Type-locality: “America.”

Distribution: Low to high elevations (0–3,080 m) along both versants from Panama into South America as far south as southern Peru, Bolivia, northern Argentina, and Uruguay; also on the islands of Trinidad and Tobago, as well as Mustique Island and Union Island in the St. Vincent Grenadines and Grenada in the West Indies (where it might be introduced).

Species group: *melanocephala* (Wilson and Mena, 1980).

References: Wilson and Mena (1980); Wilson (1982b, 1987a, 1992a, 1999); Marques and Puerto (1998); Castaño-M. et al. (2004); Greenbaum et al. (2004); Cacciali and Brusquetti (2005); dos Santos-Costa et al. (2006); Henderson and Powell (2006, 2009); Berg et al. (2009); Rohling Ghizoni-Jr. et al. (2009); Ramos et al. (2012); Rivas et al. (2012); Cardona-Botero et al. (2013); Guedes et al. (2014a; as both *marcovani* and *melanocephala*); Guedes et al. (2014b; as *T. marcovani*); Sánchez-Guillén and Mendoza-Mendoza (2014); Wallach et al. (2014; as both *marcovani* and *melanocephala*); Johnson et al. (2015b); Lynch (2015).

Remarks: After Wilson and Mena (1980) revised the *melanocephala* group, information in three publications modified their concept of this taxon. In the first, Savage (2002), in his monumental treatment of the Costa Rican herpetofauna, resurrected *T. armillata* and *T. ruficeps* from the synonymy of *T. melanocephala*, where Wilson and Mena (1980) had placed these taxa. Herein, we accept this disposition (see *T. armillata* and *T. ruficeps* accounts) based on the reasoning of Savage (2002), even though the relationship between these two species and material from Panama allocated to *T. melanocephala* by Wilson and Mena (1980) remains unclear. Solórzano (2004) also accepted Savage’s (2002) position. The second publication is that of Greenbaum et al. (2004), who synonymized *Tantilla*



Tantilla melanocephala from Mont Alikene, French Guiana. EVS 11 (medium vulnerability species).

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equatoriana Wilson and Mena, 1980, with *T. melanocephala* based on a detailed examination of the supposed diagnostic features established by Wilson and Mena (1980) in the original description, which was based on a hypodigm of two male specimens; Greenbaum et al. (2004) examined three additional specimens that they allocated to *T. equatoriana*, and compared them to 42 specimens exhibiting *T. melanocephala* pattern types E and F from west of the Andes in Colombia and Ecuador and from Panama. These authors concluded that none of the diagnostic features accorded to *T. equatoriana* by Wilson and Mena (1980) stood up to their analysis. We accept their decision, and placed the name *Tantilla equatoriana* Wilson and Mena, 1980 in the simplified synonymy of *T. melanocephala* that appears at the beginning of this account. Finally, we examined the diagnosis of the nominal taxon *Tantilla marcovani*, described by Lema (2004) from a single specimen from Pico da Jabre in the Brazilian Caatinga, and concluded that none of the features of this diagnosis held up to scrutiny when compared with material of *T. melanocephala* exhibiting color pattern types C and D or any of the other color pattern types (E and F) recognized by Wilson and Mena (1980) and currently considered as *T. melanocephala*. Thus, we did not recognize this taxon in this paper. *Tantilla melanocephala* is the southernmost member of the *melanocephala* group.

30. *Tantilla miyatai* Wilson and Knight *In* Wilson

Tantilla miyatai Wilson and Knight *In* Wilson, 1987a: 12.

Holotype: Museum of Comparative Zoology, Harvard University (MCZ) 166541, adult male, collected in September of 1983 by Giovanni Onore.

Type-locality: Puerto Quito (0°10'N, 79°16'W), Provincia de Pichincha, Ecuador (see below).

Distribution: Known only from the type locality, at a low elevation on the Pacific versant of Ecuador.

Species group: *melanocephala* (Wilson, 1987a).

References: Wilson (1987a, 1990e, 1999); Wallach et al. (2014).

Remarks: This species remains known only from the holotype. The coordinates in the species description (see above) apparently are in error. The coordinates for Puerto Quito in Google Earth are (0°77'16.76"N, 79°15'09.40"W), with an elevation indicated as 622 feet (= 189 m).

31. *Tantilla moesta* (Günther)

Homalocranium moestum Günther, 1863: 352.

Tantilla moesta: Cope, 1866: 126.

Holotype: British Museum of Natural History (BMNH) 1946.1.9.74 (formerly BMNH 64.1.26.119), female, collected on an unknown date by Osbert Salvin.

Type-locality: “Province of Peten” (Departamento de El Petén, Guatemala); restricted to Flores, Departamento de El Petén, Guatemala, by Smith and Taylor (1950).


Distribution: Low elevations (10–283 m) of the Yucatan Peninsula in the Mexican states of Yucatán and Quintana Roo, and the northern portion of the Guatemalan department of El Petén.

Species group: Unallocated.

References: Wilson (1982b, 1988g, 1999); Acevedo et al. (2010); Johnson et al. (2010); Wilson and Johnson (2010); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014); Johnson et al. (2015b).

Remarks: *Tantilla moesta* is one of three species in the genus with a solid black dorsal body and tail color; the others are *T. albiceps* and *T. nigra*. The latter two species remain known only from their holotypes, and thus known only from their respective type localities. Based on the limited amount of information available on the geographic distribution of these three taxa, it appears unlikely that their non-overlapping ranges are indicative of a close phylogenetic relationship. *Tantilla moesta* is limited to the Yucatan Peninsula in Mexico and northern Guatemala; *T. albiceps* is known only from Barro Colorado Island in central Panama; and *T. nigra* is recorded only from a single locality on the Pacific coastal plain of Colombia.



Tantilla moesta from Las Guacamayas Biological Station, Parque Nacional Laguna del Tigre, Guatemala. EVS 13 (medium vulnerability species).  © Rowland Griffin, Indigo Expeditions

32. *Tantilla nigra* (Boulenger)

Homalocranium nigrum Boulenger, 1914: 816.

Tantilla nigra: Amaral, 1929: 221.

Holotype: British Museum of Natural History (BMNH) 1946.1.8.69, female (?), received by museum in May of 1914 from Dr. H. G. G. Spurrell.

Type-locality: Near Peña Lisa, Condoto (5°06'N, 76°37'W), elevation ca. 91 m, Departamento de Chocó, Colombia.

Distribution: Known only from the type locality, at a low elevation on the Pacific versant of Colombia.

Species group: Unallocated, but see Remarks section of *T. albiceps* account.

References: Wilson (1984, 1987a, 1992b, 1999); Wallach et al. (2014).

Remarks: This species remains undiscovered after a century. See Remarks section of *T. albiceps* and *T. moesta* accounts.

33. *Tantilla nigriceps* Kennicott

Tantilla nigriceps Kennicott, 1860: 328.

Scolecophis fumiceps Cope, “1860” (1861): 371.

Homalocranium praeoculum Bocourt, 1883: 582.

Tantilla kirnia Blanchard, 1938: 373.

Neotype: University of Texas at El Paso Biodiversity Collection (UTEP) 1349, adult male, collected on 15 June 1971 by A. J. Ward, E. Rogers, and B. Kinniburgh.

Neotype-locality: Hueco Tanks [State Park] Road (Farm Road 2775), 0.25 mi [= 0.4 km] N of the junction with US highway 62–180, El Paso Co., Texas (Gotte and Wilson, 2005).

Distribution: Low, moderate, and intermediate elevations (near sea level–2,130 m) from southwestern Nebraska, eastern Colorado, and western Kansas south through eastern and southern New Mexico, southeastern Arizona, and central and western Texas, United States, to eastern Chihuahua, northern Durango, and northern Tamaulipas in Mexico.

Species group: *planiceps* (Cole and Hardy, 1981).

References: Cole and Hardy (1981); Wilson (1999); Gotte and Wilson (2005); Rorabaugh (2008); Bateman et al. (2009); Lavín and Lazcano (2010); Wilson and Johnson (2010); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014).

Remarks: In order to firmly attach the name *Tantilla nigriceps* Kennicott, 1860 to this taxon, as currently recognized because of the apparent loss of the two syntypes, Gotte and Wilson (2005) designated UTEP 1349 as the neotype, in accordance with the provisions of the International Code of Zoological Nomenclature. We indicate the collection locality for the neotype above, and according to Google Earth the elevation is 1,332 m.



Tantilla nigriceps from Chaparral, Wildlife Management Area, Dimmet County, Texas, United States. EVS 10 (medium vulnerability species).

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34. *Tantilla oaxacae* Wilson and Meyer

Tantilla oaxacae Wilson and Meyer, 1971: 26.

Holotype: University of Illinois Museum of Natural History (UIMNH) 40910, adult male, collected in February of 1965 by Thomas MacDougall.

Type-locality: Santo Tomás Teipan, Oaxaca, Mexico.

Distribution: Moderate to intermediate elevations (2,250–2,286 m) on the Pacific versant of southeast-central Oaxaca, Mexico.

Species group: *taeniata* (Wilson and Meyer, 1971; Townsend et al., 2013).

References: Wilson and Meyer (1971); Wilson (1990f, 1999); Flores-Villela et al. (2010); Townsend et al. (2013); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014); Mata-Silva et al. (2015).

Remarks: See *T. flavilineata* account.



Tantilla oaxacae from Santo Tomás Teipan, Oaxaca, Mexico. EVS 15 (high vulnerability species).

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35. *Tantilla olympia* Townsend, Wilson, Medina-Flores, and Herrera-B.

Tantilla olympia Townsend et al., 2013: 194.

Holotype: National Museum of Natural History (USNM) 574000, adult male, collected on 31 July 2010 by Hermes Vega R. and Paul R. House.

Type-locality: La Liberación (15.541°N, 87.294°W), elevation 1,150 m, Refugio de Vida Silvestre Texíguat, Departamento de Atlántida, Honduras.

Distribution: Known only from the type locality, at a moderate elevation on the Atlantic versant of Honduras.

Species group: *taeniata* (Townsend et al., 2013).

References: Townsend et al. (2013); Solís et al. (2014); Townsend (2014); McCranie (2015); Johnson et al. (2015b).

Remarks: This species, the most recently described member of *Tantilla*, is known only from the holotype. Its discovery is indicative that more taxa remain to be found in this large genus. See Remarks section of *T. albiceps* account.

36. *Tantilla oolitica* Telford

Tantilla oolitica Telford, 1966: 281.

Holotype: Florida Museum of Natural History (UF) 17326, adult male, collected in April of 1955, collector unknown.

Type-locality: A vacant lot on southwest 27th Avenue near 24th Street, Miami, Dade County, Florida, United States. Porras and Wilson (1979: 219) wrote that, “the type locality of the species is currently occupied by a supermarket and its attendant parking lot.” According to Google Earth, several high-rise buildings presently are located at the above-indicated intersection.

Distribution: Low elevations (near sea level to no higher than about 14 m) of the Atlantic versant in Dade and Monroe counties, in southeastern Florida, United States.

Species group: *coronata* (Telford, 1966).

References: Telford (1966; 1980a); Porras and Wilson (1979); Christman (1980); Campbell and Moler *In* Moler (1992); Wilson (1999); Hines and Bradley (2009); Enge et al. (2011); Wallach et al. (2014).

Remarks: The Rim Rock Crowned Snake is listed as Endangered by the IUCN, based on the criteria B1ab(ii,iii,iv,v), a listing published in 2007 and authored by G. A. Hammerson. Two more recent assessments are available. Hines and Bradley (2009) concluded that *T. oolitica* should be moved from candidate status for listing under the Federal Endangered Species act to actual listing, and Enge et al. (2011) recommended that *T. oolitica* should be listed as a Threatened species by the Florida Fish and Wildlife Conservation Commission. *Tantilla oolitica* and *T. relicta* are endemic to the state of Florida, United States; the former species is the southernmost member of the *coronata* group.



Tantilla oolitica from Miami-Dade County, Florida, United States. EVS 14 (high vulnerability species).

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37. *Tantilla petersi* Wilson

Tantilla petersi Wilson, 1979: 274.

Holotype: University of Michigan Museum of Zoology (UMMZ) 92074, adult female, collected on 10 June 1934 by P. Hershkowitz.

Type-locality: San Nicolás, Pimampiro (= Pimampiro; 0°26'N, 77°58'W), Provincia de Imbabura, Ecuador.

Distribution: Intermediate elevations (2,100 m) on the extreme northern end of the Andean highlands of Ecuador.

Species group: Not allocated (but see Holm, 2008).

References: Wilson (1979, 1987a, 1991a, 1999); Wallach et al. (2014).

Remarks: Holm (2008) indicated this species as the sister taxon of *T. andinista*, and a member of the *melanocephala* group. See Remarks section of *T. albiceps* account.

38. *Tantilla planiceps* (Blainville)

Coluber planiceps Blainville, 1835: 294.

Tantilla eiseni Stejneger, “1895” (1896): 117.

Tantilla eiseni transmontana Klauber, 1943: 71.

Holotype: Muséum National d'Histoire Naturelle, Paris (MNHN) 818, adult male, collected in 1827–1829 by M. P. E. Botta.

Type-locality: “California,” restricted to southern Baja California del Sur (Cabo San Lucas) by Smith and Taylor (1950); restriction accepted by Cole and Hardy (1981).

Distribution: Low and moderate elevations (near sea level–1,220 m) from southern California, United States, to the cape region of Baja California Sur, Mexico; also on Isla del Carmen in the Gulf of California.

Species group: *planiceps* (Cole and Hardy, 1981).

References: Cole and Hardy (1981); Wilson (1999); Murphy and Méndez de la Cruz (2010); Wilson and Johnson (2010); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014).

Remarks: This species is the westernmost member of the *planiceps* group.

39. *Tantilla psittaca* McCranie

Tantilla psittaca McCranie, 2011b: 38.

Holotype: National Museum of Natural History (USNM 578389), adult male, collected on 15 July 2008 by James R. McCranie.

Type-locality: Rawa Kiamp (15°06'N, 84°26'W), elevation 60 m, along the Río Siksatingni, Departamento de Gracias a Dios, Honduras.

Distribution: Low elevations (5–420 m) of the Atlantic versant in the Mosquitia of eastern Honduras.

Species group: *taeniata* (McCranie, 2011b; Townsend et al., 2013).

References: McCranie (2011b); Townsend et al. (2013); Solís et al. (2014); Townsend (2014); Wallach et al. (2014); Johnson et al. (2015b); McCranie (2015).

Remarks: This species is one of several taxa that have been renamed or resurrected from the synonymy of *T. taeniata*, as envisioned by Wilson and Meyer (1971).

40. *Tantilla relicta* Telford

Tantilla relicta Telford, 1966: 270.

Holotype: Florida Museum of Natural History (UF) 12421, adult female, collected on 26 December 1960 by Sam R. Telford, Jr.

Type-locality: South side of Babson Park, Polk Co., Florida, United States.

Distribution: Low elevations (approximately sea level–90 m) of peninsular Florida from southern Palm Beach, Highlands, and Charlotte counties north to Duval, Columbia, and Taylor counties, United States.

Species group: *coronata* (Telford, 1966).

References: Telford (1966, 1980b); Christman (1980); Wilson (1999); Wallach et al. (2014); Schrey et al. (2015).

Remarks: See *T. oolitica* account. Schrey et al. (2015) reported phylogeographic patterning in the nominate “subspecies” of this species in the Lake Wales Ridge region of central Florida.



Tantilla relicta from Ocala National Forest, Florida, United States. EVS 13 (medium vulnerability species).

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41. *Tantilla reticulata* Cope

Tantilla reticulata Cope, 1860: 77.

Microdromus virgatus Günther, 1873: 17.

Homalocranium sexfasciatum Fischer, 1882: 225.

Holotype: Academy of Natural Sciences of Philadelphia (ANSP) 3361 (lost, according to E. Malnate, pers. comm.).

Type-locality: “Cocuyas de Veraguas, New Grenada” (= Cocuyas, Provincia de Veraguas, Panama).

Distribution: Low and moderate elevations (10–1,435 m) on the Atlantic versant of Central America from southeastern Nicaragua to Panama, and on the Atlantic and Pacific versants of northwestern Colombia.

Species group: *taeniata* (Wilson and Meyer, 1971; Townsend et al., 2013).

References: Wilson and Meyer (1971); Wilson et al. (1977); Wilson (1982b, 1985i, 1987a, 1999); Köhler (2001); Jaramillo et al. (2010); Sasa et al. (2010); Sunyer and Köhler (2010); Wilson and Johnson (2010); Solórzano et al. (2012); Sunyer et al. (2014); van den Berghe et al. (2014); Wallach et al. (2014); Ray and Ruback (2015); Johnson et al. (2015b).

Remarks: van den Berghe et al. (2014) reported the fourth specimen of this species from Nicaragua. This species is the southernmost member of the *taeniata* group.



Tantilla reticulata from Greytown, Departamento de Río San Juan, Nicaragua. EVS 13 (medium vulnerability species). 📷 © Lenin Obando

42. *Tantilla robusta* Canseco-Márquez, Mendelson, and Gutiérrez-Mayén

Tantilla robusta Canseco-Márquez et al., 2002: 493.

Holotype: Laboratorio de Herpetología, Escuela de Biología, Benemérita Universidad Autónoma de Puebla (EBUAP) 1031, adult female, collected on 4 March 1998 by local collectors for Luis Canseco-Márquez.

Type-locality: Octimaxal Norte (20°02.743'N, 97°30.103'W), elevation 930 m, Municipio de Cuetzalan del Progreso, Sierra Norte de Puebla, Puebla, Mexico.

Distribution: Known only from the type locality, at a moderate elevation on the Atlantic versant of Mexico.

Species group: Not allocated.

References: Canseco-Márquez et al. (2002); Wilson and Johnson (2010); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014).

Remarks: This species is known only from the holotype. See Remarks section of *T. albiceps* account.

43. *Tantilla rubra* Cope

Tantilla miniator Cope, 1863: 100 (see Remarks).

Tantilla rubra Cope, “1875” (1876): 144.

Homalocranium boulengeri Günther, 1895: 148.

Tantilla morgani Hartweg, 1944: 5.

Holotype: National Museum of Natural History (USNM) 26500, male, collected by François Sumichrast, catalogued on 9 January 1900 after being returned to USNM from Cope’s estate.

Type-locality: “Japana” (= Tapanatepec), Oaxaca, Mexico.

Distribution: Low, moderate, and intermediate elevations (near sea level–2,618 m) on the Atlantic versant from central Nuevo León, Mexico, to western Guatemala; also on the Pacific versant in Oaxaca, Mexico.

Species group: Wilson and Mata-Silva (2014) suggested that this species could be one of three (including *T. bocourti* and *T. cucullata*, q.v.) that might comprise a so-called *rubra* group. Dixon et al. (2000) provided partial support for this hypothesis, by indicating that *T. cucullata* presumably is the sister taxon of this species.



Tantilla rubra from El Pinalito, Jacala de Ledezma, Hidalgo, Mexico. EVS 5 (low vulnerability species). © Christian Berriozabal-Islas

References: Wilson (1999); Dixon et al. (2000); Wilson et al. (2000b); Flores-Villela et al. (2010, as *T. miniata*); Lavín and Lazcano (2010); Johnson et al. (2010); Farr et al. (2011); Wilson et al. (2013a); Ramírez-Bautista et al. (2014a); Wallach et al. (2014); Wilson and Mata-Silva (2014); Johnson et al. (2015a, b); Lemos-Espinal and Smith (2015); Mata-Silva et al. (2015).

Remarks: Wilson (1999) stated the following: “This taxon was recently revised by Dixon et al. (In Press), who synonymized *Tantilla miniata* Cope, 1863, and *T. morgani* Hartweg, 1944, with it. Given the priority of the name *miniata* over *rubra*, application will be made to the International Commission on Zoological Nomenclature to conserve the name *rubra*.” The application was never made, however, so this matter remains unresolved.

44. *Tantilla ruficeps* Cope

Pogonaspis ruficeps Cope, 1894: 204.

Tantilla ruficeps: Amaral, 1929:

Holotype: American Museum of Natural History (AMNH) R17272, adult, collected by A. Alfaro.

Type-locality: “Jimenez, Costa Rica” (= “Jiménez, Provincia de Limón, Costa Rica, 10°13'N, 83°45'W, elevation 230 m”; Wallach et al., 2014: 691).

Distribution: Low, moderate, and lower intermediate elevations (0–1,600 m) on the Atlantic versant from Nicaragua to Panama; also occurs on the Pacific versant from Costa Rica to western Panama.

Species group: *melanocephala* (Wilson and Mena, 1980; Savage, 2002).

References: Savage (2002); Wilson and Johnson (2010); Sunyer (2014); Wallach et al. (2014); Ray and Ruback (2015); Johnson et al. (2015b).

Remarks: See *T. armillata* account.



Tantilla ruficeps from San Luis, Provincia de Puntarenas, Costa Rica. EVS 12 (medium vulnerability species).

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45. *Tantilla schistosa* (Bocourti)

Homalocranium schistosum Bocourt, 1883: 584.

Tantilla schistosa: Cope, 1887: 83.

Tantilla phrenetica Smith, 1942: 33.

Holotype: Muséum National d'Histoire Naturelle (MNHN) 1883-506, sex, age status, and date of collection unknown, collected by M.-F. Bocourt (designated by Smith, 1942); accepted by Wilson and Mata-Silva (2014).

Type-locality: “Alta Verapaz and Mexico,” restricted to Departamento de Alta Verapaz, Guatemala, by Smith (1942).



Tantilla schistosa from Monte Verde, Provincia de Puntarenas, Costa Rica. EVS 14 (high vulnerability species).

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Distribution: Low, moderate, and intermediate elevations (60–1,600 m) on the Atlantic versant from Veracruz and Oaxaca, Mexico, to Panama.

Species group: Unallocated.

References: Wilson and Villa (1973); Wilson (1982b, 1984, 1987b, 1999); Luja (2006); Johnson et al. (2010); McCranie and Valdés-Orellana (2011); Wilson et al. (2013a); Solís et al. (2014); Sunyer (2014); Townsend (2014); Wallach et al. (2014); Wilson and Mata-Silva (2014); Johnson et al. (2015a, b); Mata-Silva et al. (2015); McCranie (2015); Ray and Ruback (2015).

Remarks: This species requires a comprehensive systematic review (Townsend and Wilson, 2008).

46. *Tantilla semicineta* (Duméril, Bibron, & Duméril)

Homalocranium semi-cinctum Duméril, Bibron, & Duméril, 1854: 862.

Homalocranium laticeps Günther, 1860: 240.

Homalocranium lineatum Fischer, 1883: 6.

Holotype: Muséum National d'Histoire Naturelle, Paris (MNHNP) 3695, adult female, collector and date of collection unknown.

Type-locality: “Martinique,” in error. Listed as “Colombia” by Peters and Orejas-Miranda (1970), without justification.

Distribution: Low elevations (0–457 m) on the Caribbean coastal regions of Colombia and Venezuela.

Species group: Holm (2008) added this species to the *taeniata* group, although this association is improbable. Its relationships are unclear.

References: Wilson (1976, 1984, 1987a, 1990g, 1999); Rivas et al. (2012); Wallach et al. (2014).

Remarks: *Tantilla semicineta* is one of only two species in the genus with two distinctive pattern types (the other is *T. cucullata*), one banded and the other striped (Wilson, 1976).

47. *Tantilla sertula* Wilson and Campbell

Tantilla sertula Wilson and Campbell, 2000: 821.

Holotype: University of Texas at Arlington (UTA) R-38145, juvenile female, collected in July of 1978 by Jonathan A. Campbell.

Type-locality: 0.8 km NNE of the junction of Mexico highway 200 on the road to La Unión (17°59'N, 101°49'W), Guerrero, México, approximate elevation slightly above 150 m.

Distribution: Known from the type locality, and a second locality in Guerrero reported by Canseco-Márquez et al. (2007).

Species group: *calamarina* (Wilson and Campbell, 2000; Canseco-Márquez et al., 2007).

References: Wilson and Campbell (2000); Canseco Márquez et al. (2007); Wilson and Johnson (2010); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014).

Remarks: The IUCN account written for this species in 2007 indicated that this species is known only from the holotype, but as noted above Canseco-Márquez et al. (2007) reported a second specimen from 2.5 km W of Puerto Marquez, Guerrero. See *T. coronadoi* account.

48. *Tantilla shawi* Taylor

Tantilla shawi Taylor, 1949: 207.

Holotype: Louisiana State University Museum of Zoology (LSUMZ) 306, subadult (?) male, collected on 28 August 1947 by Charles R. Shaw.

Type-locality: Xilitla region (Rancho Miramar Grande), San Luis Potosí, Mexico, ca. 4,500 feet (= ca. 1,372 m); Campbell et al. (1995) indicated the elevation of the type-locality as 2,200 feet (= 670 m), based on Taylor's (1950) determination; Taylor (1949: 173) noted the elevation of the town of Xilitla as “2,200 ft.,” but on p. 205 indicated “Miramar, 4,500 ft.”

Distribution: Moderate elevations (ca. 1,372–ca. 1,400 m) on the Atlantic versant, along the eastern slopes of the Sierra Madre Oriental of southwestern San Luis Potosí and northwestern Veracruz, Mexico.

Species group: Not allocated. Campbell et al. (1995) stated that this species appears to have no close relatives within the genus. Holm (2008: 13) indicated that, “species with many unique character states,” including this species, “are difficult to classify.”

References: Taylor (1949, 1950); Wilson (1976, 1991b, 1999); Campbell et al. (1995); Wilson (1999); Wilson and Johnson (2010); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014).

Remarks: *Tantilla shawi* is one of only three species of *Tantilla* with a cross-banded pattern (at least over a portion of the body); the others are *T. semicineta* and *T. supracincta*.

49. *Tantilla slavensi* Pérez-Higareda, Smith, and Smith

Tantilla slavensi Pérez-Higareda et al., 1985: 290.

Holotype: Herpetological collection of the Estación de Biología Tropical “Los Tuxtlas,” Universidad Nacional Autónoma de México 1668, adult female, collected on 17 April 1983 by Gonzalo Pérez-Higareda.

Type-locality: Cerro Chochobi, El Acuyal area, 8 km NW of Catemaco, Veracruz, Mexico, elevation 800 m.

Distribution: Low to moderate elevations (50–800 m) on the Atlantic versant in southeastern Veracruz (the Los Tuxtlas area), Mexico.

Species group: *taeniata* (Pérez-Higareda et al., 1985; Townsend et al., 2013).

References: Pérez-Higareda et al. (1985); Pérez-Higareda and Smith (1991); Campbell (1998); Wilson (1999); Johnson et al. (2010); Townsend et al. (2013); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014).

Remarks: *Tantilla slavensi* is the only species of *Tantilla* endemic to the state of Veracruz, Mexico (Wilson and Mata-Silva, 2014).



Tantilla slavensi from Los Tuxtlas, Veracruz, Mexico. EVS 14 (high vulnerability species).

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50. *Tantilla striata* Dunn

Tantilla striata Dunn, 1928: 3.

Holotype: American Museum of Natural History (AMNH) 19745, adult male, collected in 1919 by Paul D. Ruthling.

Type-locality: Mixtequillo, Oaxaca, Mexico.

Distribution: Low and moderate elevations (152–1,143 m) along the Pacific versant of the Isthmus of Tehuantepec in Oaxaca, Mexico.

Species group: *taeniata* (Wilson and Meyer, 1971; Townsend et al., 2013).

References: Dunn (1928); Wilson and Meyer (1971); Wilson (1990b, 1999); Wilson and Johnson (2010); Townsend et al. (2013); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014); Mata-Silva et al. (2015).

Remarks: See *T. flavilineata* account.

51. *Tantilla supracincta* (Peters)

Homalocranium supracinctum Peters, 1863: 272.

Tantilla annulata Boettger, 1892: 419.

Tantilla supracincta: Peters, 1960: 539.

Holotype: Universität Humboldt, Zoologisches Museum, Berlin (ZMB) 4991, adult female, collected in about 1860 by C. Reib.

Type-locality: “Guayaquil,” Provincia de Guayas, Ecuador.

Distribution: Low and moderate elevations (2–1,323 m) on the Caribbean versant from extreme southeastern Nicaragua to central Panama; also on the Pacific versant in Costa Rica, Panama, and Ecuador.

Species group: Not allocated.



Tantilla supracincta from Parque Nacional La Cangreja, Puriscal, Costa Rica. EVS 16 (high vulnerability species).

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References: Wilson et al. (1977, as *T. annulata*); Wilson (1982b, 1984 [as *annulata*]; 1985d, 1987a, 1999); Cisneros-Heredia (2005); Köhler (2008); Jaramillo et al. (2010); Sasa et al. (2010); Sunyer and Köhler (2010); Wilson and Johnson (2010); Wilson and Townsend (2010); Sunyer (2014); Wallach et al. (2014); Goldberg (2015); Hurtado et al. (2015); Johnson et al. (2015b); Ray and Ruback (2015).

Remarks: Much of the literature on this species appears under the name *Tantilla annulata* Boettger 1892; this taxon was synonymized with *Tantilla supracincta* (Peters, 1863) by Wilson (1987a). See *T. shawi* account.

52. *Tantilla taeniata* (Bocourt)

Homalocranium taeniatum Bocourt, 1883: 587.

Homalocranium trivittatum Müller, 1885: 678.

Tantilla taeniata: Cope, 1887: 83.

Holotype: Muséum National d'Histoire Naturelle, Paris (MNHNP) 1666, adult male, collected on an unknown date by A. Bouvier.

Type-locality: “Guatemala” (restricted to “vicinity of Guatemala City” by Campbell 1998).

Distribution: Low to moderate elevations (0–1,280 m) on the Atlantic versant from eastern Guatemala to north-central Nicaragua, and on the Pacific versant from El Salvador to south-central Honduras.

Species group: *taeniata* (Wilson and Meyer, 1971; Townsend et al., 2013).

References: Wilson and Meyer (1971); Wilson and Villa (1973); Wilson (1974, 1983b); Campbell (1998); Wilson (1999); Sunyer and Köhler (2007); Acevedo et al. (2010); Wilson and Johnson (2010); Townsend et al. (2013); Solís et al. (2014); Sunyer (2014); Townsend (2014); Wallach et al. (2014); Johnson et al. (2015b); McCranie (2015).

Remarks: The systematic concept of this taxon has changed markedly from that of Wilson and Meyer (1971), based on the work of Campbell (1998), Smith et al. (1998), Wilson and McCranie (1999), and McCranie (2011b). McCranie (2015: 373) opined that, “this nominal form seems to represent a species complex among the populations in El Salvador, Guatemala, and Honduras.”



Tantilla taeniata from Kilambé, Departamento de Jinotega, Nicaragua. EVS 12 (medium vulnerability species).

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53. *Tantilla tayrae* Wilson

Tantilla tayrae Wilson, 1983a: 54.

Holotype: Museum of Vertebrate Zoology, University of California, Berkeley (MVZ) 159203, adult male, collected on 30 July 1978 by Robert L. Seib.

Type-locality: Finca San Jerónimo, 7.5 km N (by road) of Cacoahatán (= Cacahoatán or Cacahuatán), elevation 760 m, Volcán Tacaná, Municipio de Unión Juárez, Chiapas, Mexico.

Distribution: Moderate elevations (760–960 m) along the slopes of Volcán Tacaná on the Pacific versant of Mexico.

Species group: *taeniata* (Wilson, 1983a; Townsend et al., 2013).

References: Wilson (1983a, 1984, 1990i, 1999); Johnson et al. (2010); Wilson and Johnson (2010); Townsend et al. (2013); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014); Johnson et al. (2014); Johnson et al. (2015a).

Remarks: See *T. johnsoni* account.

54. *Tantilla tecta* Campbell and Smith

Tantilla tecta Campbell and Smith, 1997: 333.

Holotype: University of Texas at Arlington (UTA) R-41160, adult female, collected on 29 June 1992 by Cristian Granizo.

Type-locality: Slope facing NE side of Laguna Yaxhá (17°03'43"N, 89°23'12"W), Departamento de El Petén, Guatemala.

Distribution: At a low elevation (220 m) on the Atlantic versant of northern Guatemala.

Species group: *taeniata* (Townsend et al., 2013).

References: Campbell and Smith (1997); Wilson (1999); Wilson and McCranie (1999); Lee (2000); Stafford (2004); Köhler (2008); Acevedo et al. (2010); Townsend and Wilson (2010); Wilson and Johnson (2010); Townsend et al. (2013); Wallach et al. (2014); Johnson et al. (2015b).

Remarks: This species is known from a single specimen. See Remarks section of *T. albiceps* account.

55. *Tantilla trilineata* (Peters)

Leptocalamus trilineatus Peters, 1880: 221.

Holotype: Universität Humboldt, Zoologisches Museum, Berlin (ZMB) 9648, juvenile female, collected on an unknown date by H. Boeckmann.

Type-locality: “Brazil,” apparently in error.

Distribution: Unknown.

Species group: *taeniata* (Wilson and Meyer, 1971; Townsend et al., 2013).

References: Wilson and Meyer (1971); Savitzky and Smith (1971); Wilson (1974); Campbell (1998); Wilson (1999); Townsend et al. (2013); Wallach et al. (2014).

Remarks: The circumstances surrounding this taxon have not changed since Wilson (1999: 18) wrote the following: “This name was considered to be of indeterminate status by Wilson and Meyer (1971) and Wilson (1974), but to belong to a valid species by Savitzky and Smith (1971), as noted by Campbell (1998). In my opinion, its status still remains to be clarified, and it is here listed provisionally. If recognizable, it would belong to the *taeniata* group (Savitzky and Smith, 1971; Wilson and Meyer, 1971)...” See Remarks section of *T. albiceps* account.

56. *Tantilla triseriata* Smith and Smith

Tantilla triseriata Smith and Smith, 1951: 97.

Holotype: University of Illinois Museum of Natural History (UIMNH) 20198, adult female, collected on 9 October 1949 by Thomas MacDougall.

Type-locality: Coatlán, Oaxaca, Mexico.

Distribution: Intermediate elevations (ca. 914 m) in south-central Oaxaca, Mexico.

Species group: *taeniata* (Townsend et al., 2013).

References: Smith et al. (1998); Wilson (1999); Wilson and Johnson (2010); Wilson and Townsend (2010); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014); Mata-Silva et al. (2015).

Remarks: As noted by Wilson (1999: 18), “this taxon, placed in the synonymy of *T. taeniata* (Bocourt), 1883, was...resurrected by Smith et al. (1998).” See *T. flavilineata* account.

57. *Tantilla tritaeniata* Smith and Williams

Tantilla tritaeniata Smith and Williams, 1966: 483.

Holotype: British Museum of Natural History (BMNH) 94.12.28.23, adult female, collected on an unknown date probably by G. F. Gaumer.

Type-locality: Isla Bonacca (= Isla de Guanaja), Islas de la Bahía, Honduras.

Distribution: Low elevations (near sea level) on Isla de Guanaja, Islas de la Bahía, Honduras.

Species group: *taeniata* (Townsend et al., 2013).

References: Smith and Williams (1966); Wilson and Meyer (1971); Wilson (1999); Wilson and McCranie (1999); Wilson (1999); Townsend and Wilson (2010); Wilson and Johnson (2010); Wilson and Townsend (2010); McCranie (2011); Townsend et al. (2013); Solís et al. (2014); Townsend (2014); Wallach et al. (2014); Johnson et al. (2015b); McCranie (2015).

Remarks: As noted by Wilson (1999: 18), “this taxon, placed in the synonymy of *T. taeniata* by Wilson and Meyer (1971), was...resurrected by Wilson and McCranie” (1999).

58. *Tantilla vermiformis* (Hallowell)

Lioninia vermiformis Hallowell, 1861: 484.

Tantilla vermiformis: Cope, 1861: 74.

Holotype: National Museum of Natural History (USNM) 32338 (originally catalogued as USNM 5792, part of a lot), adult (?) female, collected by Wright on North Pacific Exploring Expedition, originally catalogued February–March 1861 and recatalogued 18 September 1903, after being returned to USNM from Cope’s estate (designated by Van Devender and Cole, 1977).

Type-locality: “Nicaragua.”

Distribution: Low elevations (40–520 m) on the Pacific versant from El Salvador to northwestern Costa Rica; also on the Atlantic versant of eastern Guatemala at an elevation of 590 m.

Species group: *calamarina* (Wilson et al., 1999; Canseco-Márquez et al., 2007; but see Holm, 2008).

References: Wilson and Villa (1973); Van Devender and Cole (1977); Wilson (1982b, 1984, 1987c, 1999); Wilson et al. (1999); Wilson and Campbell (2000); Dueñas et al. (2001); Savage (2002); Canseco-Márquez et al. (2007); Holm (2008); Köhler (2008); Greenbaum and Komar (2010); Sasa et al. (2010); Townsend and Wilson (2010); Wilson and Johnson (2010); McCranie (2011); McCranie et al. (2013); Solís et al. (2014); Sunyer (2014); Townsend (2014); Wallach et al. (2014); Ariano-Sanchez (2015); Johnson et al. (2015b); McCranie (2015).



Juvenile *Tantilla vermiformis* from Volcán Masaya, Masaya, Nicaragua. EVS 14 (high vulnerability species).

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Remarks: Wilson et al. (1999) associated this species with the *Tantilla calamarina* group, a position accepted by Canseco-Márquez et al. (2007). Holm (2008), however, disputed this association, stating that, “[his] results do not include *T. vermiformis* in the *T. calamarina* group as suggested by Wilson et al. (1999) and Wilson and Campbell (2000). Similarities [among] these taxa may be due to convergent adaptations for fossoriality and the dark vertebral line is a shared primitive trait.” Shared primitive traits, however, do not allow for the recognition of clades. The relationships of this taxon are not likely to be answered without the application of molecular methodologies.

McCranie et al. (2013) reported this species from southern Honduras. Ariano-Sánchez (2015: 222) recently reported a specimen from the Reserva Natural para la Conservación del *Heloderma* y el Bosque Seco, 4 km W of El Arenal, Departamento de Zacapa, Guatemala. This locality lies on the Atlantic versant in the middle Motagua River Valley, in “seasonally dry tropical forest.” This species is the southernmost member of the *calamarina* group.

59. *Tantilla vulcani* Campbell

Tantilla vulcani Campbell, 1998: 11.

Holotype: University of Texas at Arlington (UTA) R-21772, adult female, collected on April or May 1986 by Carlos Mirón.

Type-locality: Finca El Carmen, km 197.5 on CA-2, elevation 518 m, Departamento de Quetzaltenango, Guatemala.

Distribution: Low to moderate elevations (518–610 m) on the Pacific versant from eastern Oaxaca, Mexico, to south-central Guatemala.

Species group: *taeniata* (Townsend et al., 2013).

References: Campbell (1998); Wilson (1984 [as *jani*], 1999); Acevedo et al. (2010); Johnson et al. (2010); Wilson et al. (2013a); Wilson and Mata-Silva (2014); Johnson et al. (2014); Johnson et al. (2015b); Mata-Silva et al. (2015).

Remarks: As noted by Wilson (1999: 19), “this name was given by Campbell (1998) to material reported erroneously as *T. fusca* by Slevin (1939) and *T. jani* by Wilson and Meyer (1971) and Wilson (1985i).” Also see *T. jani* account.

60. *Tantilla wilcoxi* Stejneger

Tantilla wilcoxi Stejneger, 1902: 156.

Tantilla deviatrice Barbour, 1916: 93.

Tantilla wilcoxi rubricata Smith, 1942: 40.

Holotype: National Museum of Natural History (USNM) 19674, juvenile male, collected in 1892 by Timothy E. Wilcox, M.D.

Type-locality: Fort Huachuca, Huachuca Mountains, Cochise Co., Arizona, United States.

Distribution: Moderate to intermediate elevations (914–2,438 m) on both versants from extreme southern Arizona, United States, southward and eastward through southwestern Chihuahua, northeastern Sinaloa, central Durango, Zacatecas, northern Aguascalientes, northeastern Jalisco, southeastern Coahuila, southern Nuevo León, and southwestern San Luis Potosí, Mexico.

Species group: *planiceps* (Cole and Hardy, 1981).

References: Cole and Hardy (1981); Liner (1983); Wilson (1999); Rorabaugh (2008); Lavín and Lazcano (2010); Wilson and Johnson (2010); Wilson and Townsend (2010); Rorabaugh (2013); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014); Carbajal-Márquez et al. (2015).

Remarks: As noted by Wilson (1999: 19), “the name *Tantilla deviatrice* Barbour, 1916, formerly attached to a purported subspecies of *T. bocourti* by Smith and Lafe (1945), was placed in the synonymy of this species by McDiarmid (1992).” Carbajal-Márquez et al. (2015) reported the occurrence of this species in northeastern Jalisco, the southernmost record for this taxon.

Tantilla wilcoxi is one of only four species (along with *T. atriceps*, *T. gracilis*, and *T. yaquia*; see Remarks section of respective species accounts) in the genus whose distribution extends for only a short distance across the United States–Mexico border. *Tantilla wilcoxi* occurs only marginally in the United States, in extreme southeastern Arizona (Stebbins, 2003). The range of this species extends about the same distance to the south (to southwestern San Luis Potosí) as that of *T. atriceps* (Wilson and Mata-Silva, 2014).



Tantilla wilcoxi from Huachuca Mountains, Cochise County, Arizona, United States. EVS 10 (medium vulnerability species).

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61. *Tantilla yaquia* Smith

Tantilla yaquia Smith, 1942: 41.

Tantilla bogerti Hartweg, 1944: 1.

Holotype: Museum of Comparative Zoology, Harvard University (MCZ) 43274, female, collected in August of 1936 by Howard S. Gentry.

Type-locality: Guasaremos, Río Mayo, Chihuahua, Mexico.

Distribution: Low, moderate, and intermediate elevations (near sea level–1,680 m) on the Pacific versant from southeastern Arizona and extreme southwestern New Mexico, United States, to Nayarit, Mexico.

Species group: *planiceps* (Cole and Hardy, 1981).

References: McDiarmid (1968, 1977); Cole and Hardy (1981); Wilson (1999); Rorabaugh (2008); Lavín and Lazcano (2010); Wilson and Johnson (2010); Wilson and Townsend (2010); Wilson et al. (2013a); Wallach et al. (2014); Wilson and Mata-Silva (2014).

Remarks: *Tantilla yaquia* is only one of four species (along with *T. atriceps*, *T. gracilis*, and *T. wilcoxi*; see Remarks section of respective species accounts) in the genus whose distribution extends for only a short distance across the United States–Mexico border. *Tantilla yaquia* occurs only marginally in the United States in southeastern Arizona and extreme southwestern New Mexico (Stebbins, 2003).



Tantilla yaquia from Pima County, Arizona, United States. EVS 10 (medium vulnerability species).

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The Genus *Tantillita*

Smith (1941) described the genus *Tantillita* and included two species, *T. brevissima* Taylor (1937) and *T. lintoni* Smith (1940). Subsequently, Smith et al. (1993) transferred another species, *T. canula* Cope (1876), to this genus. Wilson (1988h) defined the genus *Tantillita* (based only on the inclusion of *T. brevissima* and *T. lintoni*) as follows: “slender body with head not noticeably distinct or barely wider than body; dorsal head scutellation consisting of a normal rostral followed by two internasals, two prefrontals, two supraoculars, one frontal, and two parietals; lateral head scutellation of a divided nasal, no loreal, one preocular, two postoculars, no suboculars, temporals 1+1 (anterior temporal fused to sixth supralabial in some specimens of *T. lintoni*); 7 supralabials, with the 3rd and 4th entering orbit; 6 infralabials, the first pair in contact behind the mental or not, with 4 in contact with anterior chinshields; dorsal scales smooth, in 15 rows throughout; ventrals 103 (*lintoni*) to 125 (*brevissima*); anal plate divided; subcaudals 28 (*brevissima*) to 56 (*lintoni*); maximum total length about 200 mm (*lintoni*); maxillary teeth 22 to 25, the

posterior pair not or but slightly enlarged, not laterally offset from preceding ones, very weakly grooved or not, with a diastema; hemipenis spinose proximally, grading to calyces distally, sulcus spermaticus probably single; dorsal color pattern of two types; (1) uniform brown; or (2) dark brown anteriorly, orange suffused with brown posteriorly, head pattern of a pale nuchal collar or a pair of pale nuchal spots, with pale spotting or blotching on the snout, supraoculars, as well as anterior and posterior to the eye.” This definition requires little modification for accommodating the species *canula*. Based on the definition provided by Wilson (1988: 434.1), the following changes are necessary: (1) the color patterns consist of three types instead of two, including one in which the ground color is tan to dark brown, “with or without a pale middorsal stripe, which, if present, may occupy as little as a spot on the anterior end of each middorsal scale or as much as the middorsal row and adjacent halves of the paravertebral rows”; in addition, the head pattern can consist of “pale markings on the snout and parietals (almost absent in darker specimens), which may be so extensive as to almost cover the entire top of the head,” and “the temporal and postparietal region is usually a shade darker in color than the dorsum of the body.” The ventral and subcaudal ranges for *T. canula* (103–114 and 32–44, respectively) fall within those indicated above in the generic definition.

Although *Tantillita* still is recognized (see www.reptiledatabase.org), Holm (2008) considered that this genus should be synonymized with *Tantilla* based on his morphological analysis, and also because it nested within the *Tantilla taeniata* group as a sister clade to *Tantilla bairdi*, which he also allocated to this species group (see his Fig. 4). Holm (2008: 102) noted that, “the nested position of former *Tantillita* to the *Tantilla taeniata* group (Fig. 4) suggests that a high number of maxillary teeth and aspects of small body size are derived.” He concluded that, “other aspects of dentition [slight enlargement, faint grooving, and slightly offset condition of fangs] among the putative *Tantillita* are also derived...” Determination of the phylogenetic relationships of the three species traditionally allocated to *Tantillita* with the species of *Tantilla*, especially those of the large *taeniata* group (see Townsend et al., 2013) likely will require a molecular assessment of the entire *Tantilla* clade.

***Tantillita brevissima* Taylor**

Tantilla brevissima Taylor, 1937: 344.

Tantillita brevissima: Smith, 1941: 117.

Tantilla excubitor Wilson, 1982b: 37.

Holotype: University of Illinois Museum of Natural History (UIMNH) 25075, adult, sex unknown, collected between 27 and 31 August 1935 by Edward H. Taylor and Hobart M. Smith.

Type-locality: “Tonolá” (= Tonalá), Chiapas, Mexico.

Distribution: Low, moderate, and intermediate elevations (200–1,700 m) on the Pacific versant from southeastern Oaxaca, Mexico to southcentral Guatemala.

References: Taylor (1937); Smith (1941); Wilson (1982b, 1988); Köhler (2008); Acevedo et al. (2010); Johnson et al. (2010); Wilson and Johnson (2010); Wilson and Townsend (2010); Wallach et al. (2014); Johnson et al. (2015a, b); Mata-Silva et al. (2015).

Remarks: Wilson (1988a) synonymized the taxon *Tantilla excubitor*, which he described (Wilson 1982b), with *Tantillita brevissima*.

***Tantillita canula* Cope**

Tantilla canula Cope, 1876: 144.

Homalocranium breve Günther, 1895: 150.

Tantillita canula: Smith et al., 1993: 126.

Syntypes: National Museum of Natural History (USNM) 24881–82, male and female, respectively, collected on an unknown date by Arthur Schott.


Type-locality: “Yucatan” (Mexico).

Distribution: Low elevations (0–450 m) on the Atlantic versant in the Mexican states of Campeche, Quintana Roo, and Yucatán, and in the northern portion of the Guatemalan department of El Petén and northern Belize.

References: Wilson et al. (1977); Wilson (1982b, 1988); Lee (1996, 2000); Campbell (1998); Stafford and Meyer (2000); Köhler (2001, 2008); Murillo and Matias-Ferrer (2003); Acevedo et al. (2010); Johnson et al. (2010); Wilson and Johnson (2010); Wilson and Townsend (2010); Wallach et al. (2014); Johnson et al. (2015b).

Remarks: The geographic range of this species overlaps that of its congener, *T. lintoni*, only in northeastern Guatemala.



Tantillita canula from Las Guacamayas Biological Station, Parque Nacional Laguna del Tigre, Guatemala. EVS 12 (medium vulnerability species).  © Rowland Griffin, Indigo Expeditions

Tantillita lintoni (Smith)

Tantilla lintoni Smith, 1940: 61.

Tantillita lintoni: Smith, 1941: 117.

Holotype: National Museum of Natural History (USNM) 108603, adult (?) female, collected on 24 May 1939 by Hobart M. Smith.

Type-locality: “Piedras Negras, Guatemala” (Departamento de El Petén, at a locality ca. 45 mi [= 72.4 km] by trail from Tenosique, Tabasco, Mexico, on a bank of the Río Usumacinta).

Distribution: Low and moderate elevations (0–900 m) on the Atlantic versant from southern Veracruz, north-eastern Oaxaca, and southern Quintana Roo, Mexico, to north-central Nicaragua; also on Isla de Utila in the Islas de la Bahía, Honduras.

References: Smith (1940, 1941); Wilson et al. (1977, as *Tantilla canula*); Wilson and Meyer (1985); Wilson (1988); Lee (1996, 2000); López-Luna and de la Torre-Loranca (2000); Platt et al. (2000); Stafford and Meyer (2000); Köhler (2008); Acevedo et al. (2010); Johnson et al. (2010); Wilson and Johnson (2010); Wilson and Townsend (2010); Martínez (2011); McCranie (2011); Wilson et al. (2013a); Aguilar-López et al. (2014); Solís et al. (2014); Townsend (2014); Wallach et al. (2014); Johnson et al. (2015a, b); McCranie (2015).

Remarks: Aguilar-López et al. (2014) recently reported *T. lintoni* from the Uxpanapa-Chimalapas region of northeastern Oaxaca, thus increasing the area inhabited by this species in the northern limit of its range.



Tantillita lintoni from Arroyo Zarco, Uxpanapa, Veracruz, Mexico. EVS 12 (medium vulnerability species). 📷 © José Luis Aguilar-López

COLOR PATTERN COMPONENTS IN MEMBERS OF THE *TANTILLA* CLADE

The most obvious distinctions among most members of the *Tantilla* clade relate to the color pattern of the head, as well as the dorsum and venter of the body. Supplemental features involve head scutellation and segmental counts (ventrals and subcaudals). The color pattern of the head and dorsum of the body are the characters most commonly used to discriminate among the species, and in some species these (especially the head pattern) can be rather complicated. Because in the following section we present a key to the 66 members of the *Tantilla* clade, below we present a brief discussion of the components of the various color pattern types.

Head Pattern

The head pattern among members of the *Tantilla* clade can be as simple as that seen in *T. gracilis* and *T. lintoni*, in which the dorsum of the head basically is unicolor and essentially the same color as the dorsum of the body, to as complex as that seen in *T. armillata*. Because *T. armillata* displays the most complicated head pattern among members of the *melanocephala* group, we adopted the terminology developed by Wilson and Mena (1980) for use with this group, which we slightly expanded and modified, as follows:

1. Dark head cap: the dark portion of the head pattern occupying a variable portion of the dorsum of the head.
2. Pale nuchal band: the pale band, which can be divided medially or medially and laterally, located on the posterior portion of the head, variously developed, limited to the parietals, located on the posterior portion of the parietals and a variable portion of the neck, or limited to the scales posterior to the parietals.
3. Dark nape band: the dark band, of variable length, that follows the pale nuchal band.
4. Pale neck band: the narrow pale band of variable length that follows the dark nape band.
5. Dark posterior border: the dark border, often consisting of a series of dark spots, that bound the pale neck band posteriorly.

We developed the above terminology in an attempt to standardize the features of head pattern exhibited by species in the *Tantilla* clade. If a common head pattern is present in the clade, it probably is one where the dorsum of the head is darker than that of the body, separated by a pale nuchal band that can be complete, divided medially, divided medially and laterally, or reduced to a pair of pale parietal spots.

Dorsal Body Pattern

In members of the *Tantilla* clade, the dorsal portion of the body usually is unicolor or patterned with stripes, but in some cases alternating dark and pale crossbands are present on the anterior portion of the body or extend throughout its length. If the pattern is striped, one of its components is a middorsal stripe that can be darker or paler than the dorsal ground color. In each of these pattern types, the rest of the body can be patterned with dark and/or pale stripes or not. A typical member of the *Tantilla* clade is unicolor or patterned with pale or dark stripes, or a combination thereof.

Ventral Body Pattern

In nearly all cases, the venter in members of the *Tantilla* clade is patternless, except that the ground color of the dorsum sometimes extends onto the lateral edges of the ventrals. In *T. miyatai*, however, the venter is patterned with a series of dark markings.

Key to the Species of *Geagras*, *Scolecophis*, *Tantilla*, and *Tantillita*

This identification key is based on those in Wilson (1988c, 1988e, 1999), Townsend et al. (2013), and Wilson and Mata-Silva (2014), as well as other published and unpublished information. As with other dichotomous keys, its use must be supplemented by examining a diagnosis and/or description.

- 1a. Loreal scale present; body pattern of alternating black and cream rings and a broad reddish orange middorsal stripe *Scolecophis atrocinctus*
- 1b. Loreal scale absent; body pattern not as above 2
- 2a. Five supralabial scales *Geagras redimitus*
- 2b. Six or seven supralabial scales. 3
- 3a. Dorsum of body with transversely-banded or striped pattern. 4
- 3b. Dorsum of body unicolor or nearly so 49
- 4a. Dorsum of body transversely-banded, at least on anterior portion 5
- 4b. Dorsum of body with striped pattern 7
- 5a. Dorsum of body red to dark red in life, with black-yellow-black dyads usually extending length of body. *Tantilla supracincta*
- 5b. Dorsal body pattern not as above. 6
- 6a. Dorsal body pattern of short cream crossbands restricted to anterior portion of body. *Tantilla shawi*
- 6b. Dorsal body pattern of pale crossbands extending length of body *Tantilla semicincta* (part)
- 7a. Dorsal body pattern of at least one dark middorsal stripe. 8
- 7b. Dorsal body pattern of at least one pale middorsal stripe, well defined or not, extending length of body or not, or a pair of pale lateral stripes, well defined or not, extending length of body or not 24
- 8a. Dark nape band absent, pale nuchal spots in contact or confluent with dorsal ground color 9
- 8b. Dark nape band present, pale nuchal marking separated from dorsal ground color 17

9a. Subcaudals fewer than 30	10
9b. Subcaudals 30 or more	11
10a. Postocular single	<i>Tantilla calamarina</i> (part)
10b. Postoculars two	<i>Tantilla vermiformis</i>
11a. 7 th supralabial and parietal scale in contact	<i>Tantilla coronadoi</i>
11b. 7 th supralabial and parietal scale not in contact	12
12a. Supralabials 6, rarely 4, 5, or 7	13
12b. Supralabials 7, rarely 6	14
13a. Postoculars two	<i>Tantilla cascadae</i>
13b. Postocular single	<i>Tantilla calamarina</i> (part)
14a. No dark lateral stripe on dorsum	<i>Tantilla sertula</i>
14b. One or more dark lateral stripes on dorsum	15
15a. Dark middorsal stripe relatively broad, occupying as little as all of middorsal scale row or as much as middorsal row and adjacent halves of paravertebral rows	<i>Tantilla deppei</i>
15b. Dark middorsal stripe relatively narrow, confined to middle of middorsal scale row, but can be connected to dark markings along medial edges of scales of paravertebral row	16
16a. Dark lateral stripe single, present on adjacent edges of dorsal scale rows 3 and 4	<i>Tantilla ceboruca</i>
16b. Multiple dark lateral stripes present, including one on adjacent halves of dorsal scale rows 2 and 3	<i>Tantilla insulamontana</i>
17a. Length of venter with narrow irregular median dark stripe	<i>Tantilla miyatai</i>
17b. No dark markings on medial portion of venter	18
18a. Dorsum of head with extensive pale pigment on dark background, including large pale marking on snout, confluent with pale markings on supraoculars and anterolateral portion of parietals, latter in contact with postocular pale spot	<i>Tantilla andinista</i>
18b. Pale markings on head confined to markings on snout, if present, and pale pre- and postocular spots	19
19a. Dorsal ground color red to red-orange	20
19b. Dorsal ground color tan to dark brown	21
20a. Lateral extension of dark head cap extending to lip; pale marking on snout extensive; dark subocular blotch not reaching lip; pale neck band present posterior to dark nape band	<i>Tantilla capistrata</i>
20b. Lateral extension of dark head cap not extending to lip; pale marking on snout limited; dark subocular blotch reaching lip; pale neck band posterior to dark nape band absent	<i>Tantilla boipiranga</i>
21a. Dorsum of head pale brown; pale neck band absent	<i>Tantilla ruficeps</i>
21b. Dorsum of head brown to dark brown; pale neck band present	22

- 22a. Pale nuchal spots small, confined to parietal scales; pale neck band bordered posteriorly by dark pigment. *Tantilla armillata*
- 22b. Pale nuchal band not confined to parietal scales, divided medially and/or medially and laterally; pale neck band not bordered by dark pigment **23**
- 23a. Head pattern of brown head cap with pair of small, indistinct nuchal spots, largely confined to scales posterior to parietals, and no dark lateral extension of head cap between postocular pale spots and pale pigment on lateral gulars; subcaudals relatively low, 36–44 *Tantilla lempira*
- 23b. Color pattern variable, but head pattern of brown to dark brown head cap with pale nuchal collar complete, divided medially, or divided medially and laterally; dark lateral extension of head cap present between postocular pale pigment on lateral gulars; subcaudals variable, but relatively high, 41–92 *Tantilla melanocephala* (part)
- 24a. Dorsal pattern of pale middorsal stripe, variously developed; pale lateral stripes absent *Tantillita canula* (part)
- 24b. Dorsal pattern not as above **25**
- 25a. Dorsal pattern of pair of pale lateral stripes, variously developed; pale middorsal stripe absent. **26**
- 25b. Dorsal pattern of pair of pale lateral stripes, variously developed; pale middorsal stripe present, variously developed. **30**
- 26a. Pale lateral stripe present along length of the body **27**
- 26b. Pale lateral stripe interrupted along middle of body, present only on anterior portion of body, or absent . . . **28**
- 27a. Pale nuchal band divided middorsally and laterally, pale lateral stripe well developed *Tantilla jani* (part)
- 27b. Pale nuchal band complete; pale lateral stripe barely discernible *Tantilla cuniculator*
- 28a. Pale lateral stripe present but interrupted along middle of body *Tantilla briggsi*
- 28b. Pale lateral stripe, if present, confined to anterior portion of body **29**
- 29a. Pale nuchal band poorly developed, confined to scales posterior to parietals; subcaudals fewer than 60 (range 44–49). *Tantilla tayrae* (part)
- 29b. Pale nuchal band well developed, extending onto parietals; subcaudals more than 60 (single count 62). *Tantilla johnsoni*
- 30a. Dorsal pattern consisting of pair of dark dorsolateral fields three and two half scales wide, flanking pale middorsal stripe occupying middorsal scale row and adjacent halves of paravertebral rows on pale ground color *Tantilla semicincta* (part)
- 30b. Dorsal pattern not as above **31**
- 31a. Subcaudals fewer than 30 (range, 21–26). *Tantilla brevicauda*
- 31b. Subcaudals more than 30 **32**
- 32a. Pale lateral stripe occupying rows 4 and adjacent halves of rows 3 and 4 **33**
- 32b. Pale lateral stripe occupying adjacent halves of rows 3 and 4, 4 and 5, or restricted to row 4 **35**

- 33a. Pale nuchal collar not crossing last supralabial *Tantilla oaxacae*
 33b. Pale nuchal collar crossing last supralabial **34**
- 34a. Pale nuchal collar complete; venter essentially immaculate; subcaudals 56 or fewer (range, 43–56)
 *Tantilla flavilineata*
 34b. Pale nuchal collar divided medially; well-developed dark stripe present on lateral edges of ventrals; subcaudals
 59 or more (range, 59–70) *Tantilla reticulata*
- 35a. Pale nuchal band reduced to two nuchal spots *Tantilla striata*
 35b. Pale nuchal band complete, divided medially, or divided both medially and laterally **36**
- 36a. Pale middorsal stripe on middorsal scale row and some portion of paravertebral rows at least on posterior
 portion of body **37**
 36b. Pale middorsal stripe confined to middorsal scale row **40**
- 37a. Pale middorsal stripe confined to middorsal scale row anteriorly, expanding to adjacent halves of paravertebral
 rows posteriorly *Tantilla triseriata*
 37b. Pale middorsal stripe present on middorsal scale row and some portion of paravertebral rows throughout length
 of the body **38**
- 38a. Pale middorsal stripe does not narrow anteriorly and begins on 3rd middorsal scale row posterior to parietals;
 pale lateral stripe occupies adjacent $\frac{2}{3}$ of dorsal scale rows 3 and 4 *Tantilla tritaeniata*
 38b. Pale middorsal stripe narrows anteriorly and begins on 4th or 5th middorsal scale row posterior to parietals; pale
 lateral stripe occupies adjacent halves of dorsal scale rows 3 and 4 **39**
- 39a. Ventrals 153–163 *Tantilla psittaca*
 39b. Ventrals 143–152 *Tantilla taeniata*
- 40a. Paraventral scale with a pale center edged with dark pigment *Tantilla olympia*
 40b. Paraventral scale unicolor or divided into dark upper half and pale lower half **41**
- 41a. Paraventral scale unicolor **42**
 41b. Paraventral scale divided into dark upper half and pale lower half **47**
- 42a. Pale nuchal band confined to scales posterior to parietals *Tantilla tayrae* (part)
 42b. Pale nuchal band extending onto parietals **43**
- 43a. Pale nuchal band interrupted middorsally and laterally *Tantilla jani* (part)
 43b. Pale nuchal band complete or interrupted middorsally **44**
- 44a. Pale middorsal stripe consisting of a slight paling of color on the middorsal scale row **45**
 44b. Pale middorsal stripe consisting of a series of spots (one per middorsal scale) extending along some portion of
 body and tail **46**

- 45a. Barely to well discernible dark nape band present, grading into ground color of dorsum, most of internasals and prefrontals cream colored; well developed pre- and postocular pale spots present *Tantilla alticola* (part)
- 45b. No dark nape band present; internasals and prefrontals same color as rest of head or only slightly paler; preocular spot absent; postocular pale spot usually poorly developed to absent. . . . *Tantilla schistosa* (part)
- 46a. Pale middorsal stripe confined to anterior one-half of trunk *Tantilla tecta*
- 46b. Pale middorsal stripe extending length of trunk, becoming ill defined on tail *Tantilla vulcani*
- 47a. Pale middorsal stripe becoming increasingly obscured and fragmented posteriorly; subcaudals in females fewer than 60 (range, 52–56) *Tantilla slavensi*
- 47b. Conspicuous pale middorsal stripe extending length of body; subcaudals in females more than 60 48
- 48a. Ventrals in females fewer than 160 (single specimen 153). *Tantilla hendersoni*
- 48b. Ventrals in males and females more than 160 (range for males, 162–165, for females, 164–172).
. *Tantilla impensa*
- 49a. Postocular single 50
- 49b. Postoculars usually 2 53
- 50a. Head and nape white, remainder of dorsum dark olive *Tantilla albiceps*
- 50b. Dorsal coloration not as above. 51
- 51a. Dorsum and venter black *Tantilla nigra*
- 51b. Coloration not as above 52
- 52a. Dorsum of head only slightly darker than remainder of body or same color *Tantilla gracilis*
- 52b. Dorsum of head distinctly darker than remainder of body *Tantilla atriceps*
- 53a. Dorsum and venter dark brown to black *Tantilla moesta*
- 53b. Coloration not as above 54
- 54a. Color of dorsum of head same as dorsum of body 55
- 54b. Color of dorsum of head distinctly darker than dorsum of body. 62
- 55a. Ventrals 163 or more 56
- 55b. Ventrals 154 or fewer 57
- 56a. Ventrals 172. *Tantilla petersi*
- 56b. Ventrals 163–164 *Tantilla bairdi*
- 57a. Pale nuchal band absent 58
- 57b. Pale nuchal band present 59
- 58a. Irregular pale markings on dorsum of head; subcaudals 32–44 *Tantillita canula* (part)
- 58b. No pale markings on head; subcaudals 43–56. *Tantillita lintoni*

- 59a. Pale preocular spot absent *Tantilla schistosa* (part)
 59b. Pale preocular spot present 60
- 60a. Pale nuchal band poorly developed, confined to scales posterior to parietals *Tantilla tayrae* (part)
 60b. Pale nuchal band well developed, beginning on posterior portion of parietals 61
- 61a. Ventrals 153 in single known specimen *Tantilla robusta*
 61b. Ventrals 128–149 *Tantilla alticola* (part)
- 62a. Entire head dark above and below to point 3 to 4 scales posterior to parietals *Tantilla cucullata* (part)
 62b. Head pattern not as above 63
- 63a. Pale nuchal band absent 64
 63b. Pale nuchal band present, sometimes reduced to a pair of nuchal spots 65
- 64a. Head cap convex or pointed posteriorly *Tantilla nigriceps*
 64b. Head cap straight edged posteriorly *Tantilla oolitica* (part)
- 65a. Subcaudals 28–34 *Tantillita brevissima*
 65b. Subcaudals 34–92 66
- 66a. Pale nuchal band crossing posterior portion of parietals 67
 66b. Pale nuchal band bordering parietals or present 1–3 scales posterior to parietals 75
- 67a. Dorsum of body coral red, reddish brown, or reddish tan *Tantilla rubra*
 67b. Color of dorsum of body not as above 68
- 68a. Ventrals 160 or more 69
 68b. Ventrals fewer than 160 71
- 69a. Dark nape band 3 or more scales in length *Tantilla melanocephala* (part)
 69b. Dark nape band 2 or fewer scales in length 70
- 70a. Secondary temporal elongate, ventrals 140–164; black head cap extending ventrally to or below corner of mouth, including parts of 6th and 7th infralabials *Tantilla wilcoxi* (part)
 70b. Secondary temporal about same size as dorsal body scales; ventrals 160–195; black head cap does not reach corner of mouth nor extend below it onto 6th and 7th infralabials *Tantilla bocourti* (part)
- 71a. Dark nape band 1.5 scales long or less *Tantilla wilcoxi* (part)
 71b. Dark nape band usually 2 scales or more in length 72
- 72a. Pale nuchal band present, usually divided both medially and laterally *Tantilla melanocephala* (part)
 72b. Pale nuchal band present or not; if present, usually complete or divided only medially 73
- 73a. Hemipenis with a single basal hook in basal one-third of organ *Tantilla relicta*
 73b. Hemipenis with two basal hooks, one in basal one-third of organ and the other in mesial one-third 74

- 74a. Prominent pale nuchal band present, usually 3 or fewer scales in length at dorsal midline. . . . *Tantilla coronata*
 74b. No prominent pale nuchal band usually present, if so, broken middorsally and usually confined to scales posterior to parietals. *Tantilla oolitica* (part)
- 75a. Pale nuchal band distinct, bordered behind by dark nape band 76
 75b. Pale nuchal band distinct or not, not bordered posteriorly by dark pigment, or if so, pigment reduced to series of spots. 77
- 76a. Pale nuchal band complete; subcaudals 38–63 *Tantilla bocourti* (part)
 76b. Pale nuchal band indistinctly to completely medially divided; subcaudals 63–83 . . . *Tantilla cucullata* (part)
- 77a. Black head cap does not extend laterally below angle of mouth *Tantilla hobartsmithi*
 77b. Black head cap extends laterally below angle of mouth 78
- 78a. Extensive white postocular spot present, extending onto lower $\frac{1}{4}$ – $\frac{3}{4}$ of anterior temporal *Tantilla yaquia*
 78b. No white pigment on anterior temporal *Tantilla planiceps*

COUNTRY LEVEL DISTRIBUTION

Collectively, members of the *Tantilla* clade are distributed within the range of the large genus *Tantilla*. Their range is comprised of low to high elevations (0–3,080 m) on both versants from the southern portion of the United States throughout most of Mexico and Central America, and into South America as far south as southern Peru, eastern Bolivia, northeastern Argentina, and Uruguay (Wilson, 1982a, 1987, 1988, 1999; Wilson and Williams, 2002).

The distribution of the monospecific genus *Geagras* (*G. redimitus*) is the most restricted of the four genera in the *Tantilla* clade, occurring at low elevations (0–400 m) in the Plains of Tehuantepec on the Pacific versant of southeastern Oaxaca, Mexico (Wilson, 1987; Wilson and Johnson, 2010; Mata-Silva et al., 2015).

Scolecophis also is monospecific (*S. atrocinctus*) and its distribution is limited to Central America, where it occurs at low to intermediate elevations (100–1,530 m) from southeastern Guatemala to northwestern Costa Rica (Table 1).

The genus *Tantillita* is comprised of three species (*T. brevissima*, *T. canula*, and *T. lintoni*) that collectively occur at low to intermediate elevations (sea level–1,700 m) in southern Mexico and northern Central America (Guatemala and Belize to northern Nicaragua). *Tantillita lintoni* is the most broadly distributed of the three, and occurs farther north and south than the other two species (Wilson, 1988h).

In the United States, the genus *Tantilla* is comprised of two segments: one ranging east and the other west of the Mississippi River (Wilson and Mata-Silva, 2014). The eastern segment consists of the *T. coronata* group (*T. coronata*, *T. oolitica*, and *T. relictata*; Telford, 1966). *Tantilla coronata* is the most broadly distributed, ranging from southern Virginia and western Kentucky (with a slight extension into extreme southern Indiana) southward to the Florida Parishes of Louisiana and the panhandle of Florida (Conant and Collins, 1998). The next most widely distributed is *T. relictata*, which is confined to the Florida peninsula; its range is fragmented, but collectively extends from the border with Georgia to just south of Lake Okechobee (Conant and Collins, 1998). The third species, *T. oolitica*, is highly restricted to oolitic limestone areas of southeastern Florida from Miami-Dade County to Big Pine Key (to perhaps as far south as Key West; see Hines and Bradley, 2009) in the upper portion of the Lower Keys in Monroe County (Telford, 1966, 1980a; Porras and Wilson, 1979; Hines and Bradley, 2009).

Table 1. Distribution of species of *Geagras*, *Scolecophis*, *Tantilla*, and *Tantillita* by country. * = endemic species. Shaded area encompasses countries in Mesoamerica. *Tantilla trilineata* is excluded.

Species	USA	Mexico	Guatemala	Belize	El Salvador	Honduras	Nicaragua	Costa Rica	Panama	Colombia	Ecuador	Venezuela	Peru	Bolivia	Suriname	French Guiana	Guayana	Brazil	Paraguay	Uruguay	Argentina
<i>G. redimitus</i>		++																			
Subtotals	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>S. atrocinctus</i>			+		+	+	+	+													
Subtotals	0	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
<i>T. albiceps</i>									++												
<i>T. alticola</i>							+	+	+	+											
<i>T. andinista</i>											++										
<i>T. armillata</i>			+		+	+	+	+													
<i>T. atriceps</i>	+	+																			
<i>T. bairdi</i>			++																		
<i>T. bocourti</i>		++																			
<i>T. boipiranga</i>																		++			
<i>T. brevicauda</i>			+		+																
<i>T. briggsi</i>		++																			
<i>T. calamarina</i>		++																			
<i>T. capistrata</i>											+		+								
<i>T. cascadiae</i>		++																			
<i>T. ceborica</i>		++																			
<i>T. coronadoi</i>		++																			
<i>T. coronata</i>	++																				
<i>T. cucullata</i>	++																				
<i>T. emiculator</i>		+																			
<i>T. deppei</i>		++																			
<i>T. flavilineata</i>		++																			
<i>T. gracilis</i>	+	+																			
<i>T. hendersoni</i>																					
<i>T. hobartsmithi</i>	+	+																			
<i>T. impensa</i>		+																			
<i>T. insulamontana</i>																					
<i>T. jani</i>																					
<i>T. johnsoni</i>		++																			
<i>T. lempira</i>																					
<i>T. melanocephala</i>																					
<i>T. miyatai</i>																					

The distribution of the western segment, which is almost entirely west of the Mississippi River, contains portions of the ranges of eight species, of which all but one are probable members of the *T. planiceps* group (Cole and Hardy, 1981). The remaining species, *T. cucullata*, currently is considered a member of the *T. rubra* group, along with *T. bocourti* and *T. rubra* (Wilson and Mata-Silva, 2014); these two species occur in Mexico (and western Guatemala, in the case of the latter). The distribution of *T. cucullata* is confined to the Big Bend and the Trans-Pecos region of Texas, near the border with Mexico. The seven members of the *T. planiceps* group all range on either side of the United States–Mexico border, although with different patterns of distribution. The major portion of the range of four species is in Mexico, with only a small portion in the border region of the United States. These species include *T. atriceps* (which occupies a small portion of southern Texas), *T. planiceps* (which occurs in southern California), *T. wilcoxi* (which occurs in extreme southern Arizona), and *T. yaquia* (which is found in southeastern Arizona and extreme southwestern New Mexico). *Tantilla hobartsmithi* and *T. nigriceps* each have a range with a significant northern component in the western United States and a southern component in northern Mexico. Finally, *T. gracilis* occurs almost exclusively in the United States, with a single record in northern Coahuila, Mexico.

The largest component of the genus *Tantilla* is found in Mexico, with 30 species (Wilson and Mata-Silva, 2014), almost one-half of the species in the genus. Collectively, these species have been recorded in every state in Mexico except for Campeche, Tabasco, and Tlaxcala (Wilson and Mata-Silva, 2014). These 30 species have been placed in several putative species groups with varying patterns of distribution in the country; to date, however, the association of a number of species has not been documented. Seven of the eight species indicated as occurring on both sides of the United States–Mexico border in the previous paragraph have been assigned to the *planiceps* group, and collectively range in all of the Mexican border states. The distribution of *T. gracilis* and *T. planiceps* is restricted to one of the six border states, the former in Coahuila and the latter in Baja California Norte. Three species are found in four border states, *T. atriceps* and *T. nigriceps* in Chihuahua, Coahuila, Nuevo León, and Tamaulipas, and *T. hobartsmithi* in Sonora, Chihuahua, Coahuila, and Nuevo León. *Tantilla wilcoxi* occurs in three of the border states, in Chihuahua, Coahuila, and Nuevo León. Finally, *T. yaquia* is distributed in Sonora and marginally in Chihuahua. Beyond the border states, these seven *planiceps*-group members range varying distances into Mexico. *Tantilla planiceps* occurs to the southern terminus of the peninsula of Baja California. As noted above, *T. gracilis* is known to occur only marginally in northern Coahuila. *Tantilla atriceps* is found as far south as central San Luis Potosí. In Mexico, *T. hobartsmithi* is distributed only in the mainland border states of Sonora, Chihuahua, Coahuila, and Nuevo León. *Tantilla nigriceps* occurs as far south as northeastern Durango and southcentral Tamaulipas. The remaining two members of the *planiceps* group, *T. wilcoxi* and *T. yaquia*, range southward into Mexico as far as northeastern Jalisco and southwestern San Luis Potosí and Nayarit, respectively (Wilson and Mata-Silva, 2014).

The provisionally recognized *T. rubra* group contains two broadly distributed species in Mexico (as well as one species, *T. cucullata*, in western Texas). One of these two species, *T. bocourti*, is the most widely distributed species of *Tantilla* in Mexico, ranging from northern Sinaloa and southeastern Coahuila southward to central Oaxaca, with records available for most intervening states. The other species, *T. rubra*, also widely distributed in Mexico, occurs from northcentral Nuevo León southward to Guerrero, Oaxaca, Chiapas, and on into extreme western Guatemala.

A third species group of *Tantilla* in Mexico, the *T. calamarina* group, consists of seven species, of which six are confined to Mexico and another (*T. vermiformis*) is distributed in Central America. The six Mexican species comprise one relatively broadly distributed species, *T. calamarina*, and five narrowly distributed species (*T. cascadae*, *T. ceboruca*, *T. coronadoi*, *T. deppei*, and *T. sertula*). *Tantilla calamarina* occurs from northern Sinaloa to southcentral Guerrero, with records available for most of the intervening states (Wilson and Mata-Silva, 2014). The other five species are distributed collectively from southern Nayarit to northwestern Oaxaca. Of these, *T. ceboruca* is the most northern species, found in a small region of southern Nayarit and adjacent Jalisco. *Tantilla cascadae* is the next most northerly occurring, distributed in southern Jalisco and west central Michoacán. *Tantilla sertula* and *T. coronadoi* are found to the south in coastal and central Guerrero, respectively. Finally, *T. deppei* is the most southern species, ranging from northern Morelos to west central Oaxaca.

The largest phenetic group of *Tantilla* is the *taeniata* group, which contains 11 species distributed in Mexico (*T. briggsi*, *T. cuniculator*, *T. flavilineata*, *T. impensa*, *T. johnsoni*, *T. oaxacae*, *T. slavensi*, *T. striata*, *T. tayrae*, *T. triseriata*, and *T. vulcani*). All 11 species are distributed in southern Mexico, and none ranges farther north than

Oaxaca and southern Veracruz (Wilson and Mata-Silva, 2014). *Tantilla briggsi*, *T. flavilineata*, *T. oaxacae*, *T. striata*, and *T. triseriata* are found in Oaxaca. *Tantilla slavensi* only is known from southeastern Veracruz. *Tantilla cuniculator* inhabits the Yucatan Peninsula. Within Mexico, the remaining species are found only in Chiapas; two are known from Chiapas (*T. johnsoni* and *T. tayrae*), and the other two (*T. impensa* and *T. vulcani*) from Chiapas and some portion of northern Central America.

Presently, the remaining species of *Tantilla* in Mexico (*T. moesta*, *T. robusta*, *T. schistosa*, and *T. shawi*) have not been allocated to any phenetic group (Wilson and Mata-Silva, 2014), and thus their relationships to other members of the genus are unclear. The distribution of two species, *T. robusta* and *T. shawi*, is limited in the country; the former is known only from the type locality in Puebla, and the latter from southwestern San Luis Potosí and northwestern Veracruz (Wilson and Mata-Silva, 2014). The other two species are more widespread, with *T. moesta* found in Yucatán and Quintana Roo, as well as in the Petén region of northern Guatemala, and *T. schistosa* from Veracruz, Oaxaca, and Quintana Roo (as well as Chiapas) in Mexico, southward to Panama in Central America.

Twenty-four species of *Tantilla* are found in Central America, including six species also found in Mexico. The latter group includes *T. cuniculator*, *T. impensa*, *T. moesta*, *T. rubra*, *T. schistosa*, and *T. vulcani* (see discussion above). The 18 species confined to Central America are allocated to the applicable phenetic groups (or not) as follows: the *calamarina* group (*T. vermiformis*); the *melanocephala* group (*T. armillata*, *T. lempira*, *T. melanocephala*, and *T. ruficeps*); the *rubra* group (*T. rubra*); the *taeniata* group (*T. brevicauda*, *T. hendersoni*, *T. jani*, *T. psittaca*, *T. reticulata*, *T. taeniata*, *T. tecta*, and *T. tritaeniata*); and the remaining eight species have not been assigned to a species group, including *T. albiceps*, *T. alticola*, *T. bairdi*, and *T. supracincta*. The single *calamarina* group member (although this association is disputed by Holm, 2008), *T. vermiformis*, is distributed along the Pacific coastal region of Central America from El Salvador to Costa Rica. The distribution of two of the four *melanocephala* group members is limited in Central America, with *T. lempira* found only in Honduras and *T. melanocephala*, as currently understood, occurring only as far north as Panama. The single *rubra* group species in Central America, *T. rubra*, is found only in extreme western Guatemala. The distribution of most of the Central American species allocated to the *T. taeniata* group is limited within the region. The most broadly distributed species, *T. taeniata*, is found from eastern Guatemala to north central Nicaragua. The distribution of five of these species is limited to small portions of individual Central American countries, including *T. hendersoni* (Belize), *T. jani* (Guatemala), *T. psittaca* (Honduras), *T. tecta* (Guatemala), and *T. tritaeniata* (Honduras). The remaining two species are distributed somewhat more broadly, with *T. brevicauda* occurring in Guatemala and El Salvador, and *T. reticulata* in Nicaragua, Costa Rica, and Panama. The four unallocated species (*T. albiceps*, *T. alticola*, *T. bairdi*, and *T. supracincta*) either occur in a single country, including *T. albiceps* (Panama) and *T. bairdi* (Guatemala), or in more than one country, as with *T. alticola* and *T. supracincta* (both species are found in Nicaragua, Costa Rica, and Panama, and also occur in South America).

The 12 species of *Tantilla* in South America have been allocated to the *melanocephala* group (*T. andinista*, *T. boipiranga*, *T. capistrata*, *T. insulamontana*, *T. melanocephala*, *T. miyatai*), the *taeniata* group (*T. reticulata*), or remain unallocated (*T. alticola*, *T. nigra*, *T. petersi*, *T. semicincta*, and *T. supracincta*). The six *melanocephala* group members either are limited in distribution (*T. andinista* in central Ecuador, *T. boipiranga* in southeastern Brazil, *T. capistrata* in the area from northwestern Peru to southern Ecuador, *T. insulamontana* in southern Ecuador, and *T. miyatai* in coastal Ecuador), or are broadly distributed (*T. melanocephala* throughout the range occupied by all the species occurring in South America). *Tantilla reticulata*, the single member of the *taeniata* group found in South America, is limited on this continent to northwestern Colombia. Of the five presently unallocated species in South America, two also are found in Central America (*T. alticola* and *T. supracincta*; see above) and the other three are limited to the southern continent. *Tantilla nigra* and *T. petersi* are found only in Pacific coastal Colombia and northern Ecuador, respectively.

The general trend for members of the genus *Tantilla* is for species to be relatively limited in geographic distribution (often known from a small area around the type locality), or for them to be relatively broadly distributed (with ranges occupying areas within more than one of the major regions of occurrence, i.e., the United States, Mexico, Central America, and South America).

Most of the countries within the combined ranges of the members of the *Tantilla* clade are host to endemic species. Four species of *Tantilla* are endemic to the United States, including *T. coronata*, *T. oolitica*, and *T. relicta* found east of the Mississippi River, and *T. cucullata* west of this river (Table 1).

Seventeen species of *Tantilla* are endemic to Mexico, including *T. bocourti*, *T. briggsi*, *T. calamarina*, *T. cascadae*, *T. ceboruca*, *T. coronadoi*, *T. deppei*, *T. flavilineata*, *T. johnsoni*, *T. oaxacae*, *T. robusta*, *T. sertula*, *T. shawi*, *T. slavensi*, *T. striata*, *T. tayrae*, and *T. triseriata*. In addition, *Geagras redimitus* is endemic to Mexico (Table 1).

Four of the seven Central American countries harbor endemic members of the genus *Tantilla* (but not other genera in the *Tantilla* clade), as follows (Table 1): Guatemala (*T. bairdi*, *T. jani*, and *T. tecta*); Belize (*T. hendersoni*); Honduras (*T. lempira*, *T. olympha*, *T. psittaca*, and *T. tritaeniata*); and Panama (*T. albiceps*).

Of the 12 South American countries in which species of *Tantilla* are distributed, three are home to endemic species, as follows (Table 1): Colombia (*T. nigra*); Ecuador (*T. andinista*, *T. insulamontana*, *T. miyatai*, and *T. petersi*); and Brazil (*T. boipiranga*).

In total, of the 61 species of *Tantilla* currently known, 36 (59.0%) are endemic at the country level. In addition, *Geagras redimitus* is endemic to Mexico.

PHYSIOGRAPHIC DISTRIBUTION

Collectively, members of the *Tantilla* clade are broadly distributed among the physiographic regions of the United States, Mexico, Central America, and South America. In documenting the physiographic distributions of these species, we applied the systems utilized by United States Geological Service for the United States, Wilson and Johnson (2010) for Mesoamerica, and Wilson (1987) for South America. We registered the data on physiographic distribution in Tables 2 and 3.

As noted in the previous section, the 11 species found in the United States are distributed in two groups, one east and the other west of the Mississippi River. The eastern group comprises three species, of which two are restricted to the Coastal Plain on the Florida peninsula (Table 2). *Tantilla oolitica* is confined to the southernmost portion of the peninsula and the Florida Keys. The other species, *T. relictata*, is distributed in the northern and central portions of peninsular Florida. The third species, *T. coronata*, is much more broadly occurring (Table 2), with portions of its range along the Coastal Plain from eastern North Carolina to the Florida Parishes of Louisiana, the Piedmont from southern Virginia to east central Alabama, the Appalachian Highlands in eastern Tennessee and northern Alabama, and the Interior Low Plateaus in eastern Kentucky and eastern Tennessee (this species is the only member of the genus found in the last three of these regions).

Table 2. Distribution of *Tantilla* species in the physiographic regions of the United States. Abbreviations for the regions are as follows: AH = Appalachian Highlands; BC = Baja Californian; BR = Basin and Range; CL = Central Lowland; CO = Colorado Plateau; CP = Coastal Plain; GP = Great Plains; IP = Interior Low Plateaus; OM = Ouachita Mountains; OP = Ozark Plateaus; PB = Pacific Border; PM = Piedmont. * = endemic species.

Species	CP	AH	PM	IP	CL	GP	OP	OM	BR	CO	PB	BC
<i>T. atriceps</i>	+											
<i>T. coronata</i>	+	+	+	+								
<i>T. cucullata</i>									+			
<i>T. gracilis</i>	+				+	+	+	+				
<i>T. hobartsmithi</i>	+						+		+	+		
<i>T. nigriceps</i>	+				+	+			+			
<i>T. oolitica</i>	+											
<i>T. planiceps</i>											+	+
<i>T. relictata</i>	+											
<i>T. wilcoxi</i>									+			
<i>T. yaquia</i>									+			
Totals	7	1	1	1	2	3	1	1	5	1	1	1

The western component consists of eight species, collectively distributed west of the Mississippi River to coastal California (Table 2). As noted in the previous section, all but one of these eight species also occurs to some

extent in northern Mexico. The exceptional species is *T. cucullata*, known only from the southern tongue of the Basin and Range region in southwestern Texas (Table 2). Two of these eight species occupy only a small portion of the same region along the United States–Mexico border in southeastern Arizona (*T. wilcoxi* and *T. yaquia*) and extreme southwestern New Mexico (*T. yaquia*). The remaining five species are more broadly occurring in the United States. Two of these five species range widely in the west-central United States, in one case (*T. gracilis*) in the Central Lowland, Great Plains, Ozark Plateaus, Ouachita Mountains, and the Coastal Plain from southern Missouri and eastern Kansas to the United States–Mexico border, and in the other (*T. nigriceps*) in the Central Lowland, Great Plains, Coastal Plain, and Basin and Range regions from southwestern Nebraska to southern Texas, eastern and southern New Mexico, and southeastern Arizona on into Mexico (Table 2). Of the remaining three species, in the United States one (*T. atriceps*) occurs only on the Coastal Plain in southeastern Texas (Table 2). *Tantilla hobartsmithi*, as presently understood, ranges in a series of disjunct populations marginally on the Coastal Plain in southeastern Texas westward through the southern Great Plains, the Basin and Range, and northwestward into the Colorado Plateau regions (Table 2). Finally, in the United States *T. planiceps* occurs in a series of disjunct populations from coastal central California, in the Pacific Border region, southward to the northern end of the Baja California region in extreme southwestern California (Table 2). The greatest number of species in the United States (seven) is found in the Coastal Plain region and the next greatest number (five) in the Basin and Range region. The other 10 regions contain from one to three species.

Wilson and Mata-Silva (2014) recently discussed the physiographic distribution of the 30 species of *Tantilla* inhabiting Mexico. We placed their physiographic distributional data in our Table 3, along with those for the single species of *Geagras* and *Scolecophis* and the three of *Tantillita*. The 14 physiographic regions found in Mexico are placed in three regional groups: the Highland group, the Atlantic Coastal group, and the Pacific Coastal group.

Seven of the 14 physiographic regions in Mexico fall into the Highland group (Wilson and Mata-Silva, 2014). Collectively, 24 of the 30 Mexican species (80.0%) have been recorded from one or more of these seven regions (Table 3; Wilson and Mata-Silva, 2014). In addition, two of the three species of *Tantillita* also are recorded from one or more of these regions (Table 3). The numbers of *Tantilla* species recorded from these seven regions are as follows (Table 3; Wilson and Mata-Silva, 2014): Northern plateau basin and ranges (NB; 6); Sierra Madre Oriental (ORI; 9); Sierra Madre Occidental (OCC; 5); Mesa Central (MC; 6); Sierra Madre del Sur (SUR; 8); Sierra de los Tuxtlas (LT; 2); and western Nuclear Central American highlands (CG; 4). In addition, one species of *Tantillita* (*T. brevissima*) is recorded from the CG region and another (*T. lintoni*) from the ORI, LT, and CG regions (Table 3).

The Atlantic Coastal group of Mexican regions (of which there are three; Wilson and Mata-Silva, 2014) harbors eight of 30 species (26.7%) of *Tantilla*, as follows: subhumid extratropical lowlands of northeastern Mexico (EL; 2); Gulf lowlands from Tamaulipas to Tabasco (TT; 3); and Yucatan Platform (YP; 3). Also, one species of *Tantillita* (*T. canula*) is found in the YP region; and *T. lintoni* is distributed in the TT and YP regions.

The Pacific Coastal group of Mexican regions (of which there are four; Wilson and Mata-Silva, 2014) includes 10 of 30 species (33.3%) of *Tantilla*, as follows: Sonoran Desert basin and ranges (SD; 3); Pacific lowlands from Sinaloa to western Chiapas (SC; 9); Pacific lowlands from eastern Chiapas to south-central Guatemala (CGU; 1); and Baja California and adjacent islands (BC; 1).

In summary, the largest number of Mexican *Tantilla* species is found in the Highland group (24), and within that group in the Sierra Madre Oriental (nine). The next highest number is located within the Pacific Coastal group (10), with nine species distributed in the Pacific lowlands from Sinaloa to western Chiapas (the SC region). The smallest number is distributed in the Atlantic Coastal group (eight), with the greatest number (three) located on the Yucatan Platform (Table 3).

In addition to the 30 species of *Tantilla* in Mexico, the species *Geagras redimitus* is endemic to this country and to the SC region. Also, all three species of the genus *Tantillita* are distributed in Mexico in the following regions: CG (2); LT (1); ORI (1); TT (1); YP (2); GH (1); CGU (1); and SC (1).

As indicated in the section on distribution by country, 24 species of *Tantilla* are found in Central America, of which six also occur in Mexico (Table 3). In addition, *S. atrocinctus* is limited to this area, and all three species of *Tantillita* are found there. Four physiographic regions within the Highland group are represented in Central America, including the western Nuclear Central American highlands (CG), the eastern Nuclear Central American highlands

Table 3. Distribution of members of the *Tantilla* clade in the physiographic regions of Mesoamerica and South America. Abbreviations of the regions are as follows: AC = Atlantic coastal lowlands of southern South America; AG = Amazonian-Guianan lowlands of South America; BC = Baja California and adjacent islands; BP = Brazilian Plateau; CC = Caribbean coastal lowlands of northern South America; CG = western nuclear Central American highlands; CGU = Pacific lowlands from eastern Chiapas, Mexico, to south-central Guatemala; CP = Pacific lowlands from central Costa Rica through Panama (area includes associated Pacific islands); CRP = Isthmian Central American highlands; EL = subhumid extratropical lowlands of northeastern Mexico; EP = highlands of eastern Panama; GCR = Pacific lowlands from southeastern Guatemala to northwestern Costa Rica; GH = Caribbean lowlands of eastern Guatemala and northern Honduras (area includes associated Caribbean islands); GUH = Guiana Highlands of northern South America; HN = eastern nuclear Central American highlands; LT = Sierra de Los Tuxtlas of Mexico; MC = Meseta Central of Mexico; NA = northern Andes of South America; NB = northern plateau basin and ranges of Mexico; NP = Caribbean lowlands from Nicaragua to Panama (area includes associated Caribbean islands); NPC = northern Pacific coastal lowlands of western South America; OCC = Sierra Madre Occidental of Mexico; OL = Orinoco lowlands of northern South America; ORI = Sierra Madre Oriental of Mexico; PP = Paraná-Paraguay lowlands of southern South America; SCC = Pacific lowlands from Sinaloa to western Chiapas in Mexico; SD = Sonoran Desert basins and ranges of Mexico; SPC = southern Pacific coastal lowlands of western South America; SUR = Sierra Madre de Sur of Mexico; TT = Gulf lowlands from Tamaulipas to Tabasco in Mexico; and YP = Yucatan Platform in Mexico and Central America. * = endemic species. *Tantilla trilineata* is excluded.

Taxa	Highland Regions													Atlantic Coastal Lowlands													Pacific Coastal Lowlands										
	NB	ORI	OCC	MC	SUR	LT	CG	HN	CRP	EP	NA	GUH	BP	EL	TT	YP	GH	NP	CC	OL	AG	AC	PP	SD	SC	CGU	GCR	CP	BC	NPC	SPC						
<i>G. redimitus</i>																																					
Subtotals																																					
<i>S. atrocinctus</i>							+		+																												
Subtotals							1	1																													
<i>T. albiceps</i>																																					
<i>T. alticola</i>																																					
<i>T. andinista</i>																																					
<i>T. armillata</i>																																					
<i>T. ariceps</i>	+																																				
<i>T. bairdi</i>																																					
<i>T. bocourti</i>	+	+	+	+	+																																
<i>T. bojpranga</i>																																					
<i>T. brevicauda</i>																																					
<i>T. briggsi</i>																																					
<i>T. calamarina</i>																																					
<i>T. capistrata</i>																																					
<i>T. cascadeae</i>																																					
<i>T. ceboruca</i>																																					
<i>T. coronadoi</i>																																					
<i>T. cuniculador</i>																																					
<i>T. deppei</i>																																					
<i>T. flavilineata</i>																																					
<i>T. gracilis</i>																																					
<i>T. hendersoni</i>																																					
<i>T. hobartsmithi</i>	+																																				
<i>T. impensa</i>																																					

(HN), the Isthmian Central American highlands (CRP), and the highlands of eastern Panama (EP). Collectively, 16 of the 24 Central America species of *Tantilla* (66.7%) are distributed in the regions of the Highland group, in addition to *S. atrocinctus* and two species of *Tantillita*. The number of species of *Tantilla* recorded from the four Central American regions in the Highland group is as follows: CG (eight); HN (seven); CRP (seven); and EP (three). In addition, *S. atrocinctus* is known from the HN and CRP regions and *Tantillita brevissima* and *T. lintoni* from the CG region.

In the Atlantic Coastal lowlands group, 14 of the 24 (58.3%) *Tantilla* species are found collectively in the three regions involved, as follows: YP (4); GH (2); and NP (8). The number of species of *Tantillita* found in these regions is as follows: YP (2); GH (1); and NP (1).

In the Pacific Coastal lowlands group, 11 of the 24 (45.8%) *Tantilla* species are found collectively in the three regions involved, as follows: GCU (three); GCR (four); and CP (five). In addition, *S. atrocinctus* is recorded from the GCR region and *T. brevissima* in the CGU region.

In summary, the greatest number of Central American *Tantilla* species is found in the Highlands group (16) and within that group in the western Nuclear Central American highlands (eight). The next highest number is found within the Atlantic Coastal lowlands group (14), with eight species distributed in the Caribbean lowlands from Nicaragua to Panama. The smallest number occurs in the Pacific Coastal lowlands group (11), with the largest number (five) found in the CP region (Table 3).

As noted in the previous section, 12 species of *Tantilla* are recorded from South America, of which four also occur in Central America (Table 1). None of the other genera in the *Tantilla* clade occurs south of Central America. Three physiographic regions in the Highland group are represented in South America, including the Northern Andes (NA), the Guiana Highlands (GUH), and the Brazilian Plateau (BP). Collectively, seven of the 12 (58.3%) South American *Tantilla* species are found in the Highland group regions. The number of species of *Tantilla* recorded from these three regions is as follows: NA (six); GUH (one); and BP (two).

In the Atlantic Coastal lowlands group, two of 12 (16.7%) *Tantilla* species are distributed collectively in the five regions involved, as follows: CC (two); OL (one); AG (one); AC (one); and PP (one).

In the Pacific Coastal lowlands group, seven of 12 (58.3%) *Tantilla* species are distributed collectively in the two regions involved, as follows: NPC (six) and SPC (one).

In summary, the largest number of South American *Tantilla* species is found in the Highlands group (eight) and within that group in the Northern Andes (six). The next highest number is in the Pacific Coastal lowlands group (seven), with six species found in the Northern Pacific Coastal lowlands. The smallest number is found in the Atlantic Coastal lowlands group (two), with the larger number (two) located in the CC region (Table 3).

In general, the number of species of the *Tantilla* clade distributed among the 43 physiographic regions we recognize in the United States, Mexico, Central America, and South America ranges from one (in 15 of 43 regions) to 12 (in the western Nuclear Central American highlands). The mean occupancy figure is 3.9.

With reference to physiographic regional endemism, the following conclusions can be made:

1. Three species inhabiting the United States are endemic to single physiographic regions, i.e., two to the Coastal Plain region (*T. oolitica* and *T. relicta*) and one to the Basin and Range region (*T. cucullata*).

2. In Mexico, 18 *Tantilla* clade species are restricted to single physiographic regions, as follows: two in the Sierra Madre Oriental (*T. robusta* and *T. shawi*); one in the Sierra Madre Occidental (*T. ceboruca*); two in the Mesa Central (*T. cascadae* and *T. deppei*); three in the Pacific lowlands from Sinaloa to western Chiapas (*T. coronadoi*, *T. flavilineata*, and *T. oaxacae*); one in the Sierra de Los Tuxtlas (*T. slavensi*); three in the western Nuclear Central American highlands of Mexico (*T. bairdi*, *T. johnsoni*, and *T. tayrae*); one in the Gulf lowlands from Tamaulipas to Tabasco (*T. briggsi*); three in the Yucatan Platform (*Tantilla cuniculator*, *T. moesta*, and *Tantillita canula*); and two in the Pacific lowlands from Sinaloa to western Chiapas (*Geagras redimitus* and *Tantilla sertula*).

3. In Central America, 12 *Tantilla* clade species are restricted to single physiographic regions, as follows: two in the western Nuclear Central American highlands (*T. bairdi* and *T. hendersoni*); two in the eastern Nuclear Central American highlands (*T. lempira* and *T. olympia*); four in the Yucatan Platform (*Tantilla cuniculator*, *T. moesta*, *T. tecta*, and *Tantillita canula*); two in the Caribbean lowlands of eastern Guatemala and northern Honduras (*T.*

psittaca and *T. tritaeniata*); one in the Caribbean lowlands from Nicaragua to Panama (*T. albiceps*); and one in the Pacific lowlands from southeastern Guatemala to northwestern Costa Rica (*T. vermiformis*).

4. In South America, seven species of *Tantilla* inhabit single physiographic regions, as follows: three in the Northern Andes (*T. andinista*, *T. insulamontana*, and *T. petersi*); one in the Brazilian Plateau (*T. boipiranga*); one in the Caribbean Coastal lowlands (*T. semicincta*); and two in the Northern Pacific coastal lowlands (*T. miyatai* and *T. nigra*).

VEGETATIONAL DISTRIBUTION

As with physiographic distribution, members of the *Tantilla* clade are widely distributed among the vegetational zones present in Mesoamerica, South America, and the United States. In documenting the vegetational distribution of these species (Table 4), we used the Holdridge system of life zones or forest formations, and their terminology, as detailed in Lugo et al. (1999). This terminology differs somewhat from what we indicated in Wilson and Mata-Silva (2014), in that we used the nomenclature for latitudinal regions established by Holdridge (1967) in his life zone or forest formation chart, i.e., tropical, subtropical, warm temperate, and cool temperate, instead of that for altitudinal belts used by Savage (2002), i.e., basal or lowland, premontane, lower montane, and montane.

The most narrowly distributed genus in the *Tantilla* clade is *Geagras*, with its single species (*G. redimitus*) recorded only in the Tropical Arid and Tropical Dry forest formations of the 19 we include in this analysis, both located in the basal or lowland altitudinal belt (Table 4). The next most narrowly distributed is *Scolecophis*, with its single species (*S. atrocinctus*) recorded in Tropical Dry, Tropical Moist and Tropical Wet forest formations in the basal or lowland altitudinal belt, Subtropical Dry, Subtropical Moist, and Subtropical Wet forest formations in the premontane belt, and Warm Temperate Wet Forest in the lower montane belt. Finally, among the three smaller genera in the clade, the genus *Tantillita*, with its three species (*T. brevissima*, *T. canula*, and *T. lintoni*), is found in the Tropical Arid Forest (*T. canula*), Tropical Dry Forest (all three species), and Tropical Moist Forest formations (all three species) in the lowland belt, the Subtropical Moist (*T. brevissima*) and Subtropical Wet Forest formations (*T. brevissima* and *T. lintoni*) in the premontane belt, and the Warm Temperate Moist Forest and Warm Temperate Wet Forest formations in the lower montane belt (*T. brevissima* in both).

As expected, the most broadly distributed genus in the *Tantilla* clade in the United States, Mesoamerica, and South America is *Tantilla*, with its 60 species (one species, *T. trilineata*, is not included in this total, because its distribution is not understood). Typically, within a given altitudinal belt, the number of species in the various formations increases across its breadth to a given point, and decreases thereafter (Table 4). In the lowland belt, the species numbers increase from one at the lower end (in Tropical Desert Scrub) to 18 in the middle of seven formations (Tropical Dry Forest), thereafter declining to six at the upper end (Tropical Rain Forest). In the premontane belt, the species numbers begin with 11 in Subtropical Dry Forest, then increase to 20 in Subtropical Moist Forest, thereafter decreasing to 15 in Subtropical Wet Forest and finally to two in Subtropical Rain Forest. This pattern continues in the Lower Montane altitudinal belt, with six formations; a single species is found in each of the Warm Temperate Desert and Warm Temperate Desert Scrub formations; thereafter, the numbers increase to six and seven in the Warm Temperate Thorn Steppe and Warm Temperate Dry Forest formations, respectively; the highest number of 14 is found in the Warm Temperate Moist Forest formation, decreasing thereafter to nine in the Warm Temperate Wet Forest. Finally, only a single species each is known from the Cool Temperate Moist Forest and the Cool Temperate Wet Forest formations.

In the 60 species in the genus *Tantilla* for which information on vegetational distribution is available, the number of forest formations occupied ranges from one to 11. These species are distributed among these occupancy numbers as follows: one formation (27, 45.0%); two (16, 26.7%); three (five, 8.3%); four (six, 10.0%); five (one, 1.7%); six (two, 3.3%); seven (one, 1.7%); nine (one, 1.7%); and 11 (one, 1.7%).

Based on these occupancy figures, 27 (45.0%) *Tantilla* species inhabit a single forest formation, and 43 (71.7%) of the 60 species are found in one or two formations. Profound consequences for conservation result from such restricted vegetational distributions (see following section).

Table 4. Distribution of members of the *Tantilla* clade in the vegetation zones of Mesoamerica and South America (except for members of the *Tantilla planiceps* group). Abbreviations of the zones are as follows: TDS = Tropical Desert Scrub; TTW = Tropical Thorn Woodland; TAF = Tropical Arid Forest; TDF = Tropical Dry Forest; TMF = Tropical Moist Forest; TWF = Tropical Wet Forest; TRF = Tropical Rain Forest; SDF = Subtropical Dry Forest; SDF = Subtropical Moist Forest; SWF = Subtropical Wet Forest; SRF – Subtropical Rain Forest; WTD = Warm Temperate Desert; WTDS = Warm Temperate Desert Scrub; WTDS = Warm Temperate Desert Scrub; WTDF = Warm Temperate Thorn Steppe; WTDF = Warm Temperate Dry Forest; WTMF = Warm Temperate Moist Forest; WTMF = Warm Temperate Moist Forest; WTMF = Cool Temperate Moist Forest; CTWF = Cool Temperate Wet Forest. * = endemic species. *Tantilla trilineata* is excluded.

Taxa	Tropical (Lowland) Zones (0–600m)								Subtropical (Premontane) Zones (600–1,500 m)						Warm Temperate (Lower Montane) Zones (1,500–2,700 m)						Cool Temperate (Montane) Zones (2,700–3,500 m)	
	TDS	TTW	TAF	TDF	TMF	TWF	TRF	SDF	SMF	SWF	SRF	WTD	WTDS	WTDF	WTMF	WTWF	CTMF	CTWF				
<i>G. redimitus</i>			+	+																		
Subtotals		1	1	1																		
<i>S. atrocinctus</i>			+	+	+	+	+	+	+													
Subtotals			1	1	1	1	1	1	1	1					1							
<i>T. albiceps</i>					+					+												
<i>T. alticola</i>					+	+				+												
<i>T. andinista</i>																						
<i>T. armillata</i>					+					+												
<i>T. atriceps</i>																						
<i>T. bairdi</i>														+								
<i>T. bocourti</i>			+	+						+					+							
<i>T. boipiranga</i>																						
<i>T. breviceauda</i>										+												
<i>T. briggsi</i>					+																	
<i>T. calamarina</i>			+	+						+					+							
<i>T. capistrata</i>	+																					
<i>T. cascadae</i>										+												
<i>T. ceboruca</i>										+												
<i>T. coronadoi</i>										+												
<i>T. coronata</i>																						
<i>T. cucullata</i>																						
<i>T. cuniculator</i>			+	+																		
<i>T. deppei</i>																						
<i>T. flavilineata</i>																						
<i>T. gracilis</i>																						
<i>T. hendersoni</i>										+												
<i>T. hobartsmithi</i>																						
<i>T. impensa</i>																						
<i>T. insulamontana</i>																						
<i>T. jani</i>																						
<i>T. johnsoni</i>																						

The 27 single-formation species are distributed among 10 of the 19 formations (52.6%) generally inhabited by species of *Tantilla*. These formations, and the species restricted to them, are as follows (numbers in parentheses indicate the total number of resident *Tantilla* species):

Tropical Dry Forest (17)

*Tantilla sertula**Tantilla tecta*

Tropical Moist Forest (17)

*Tantilla albiceps**Tantilla briggsi**Tantilla johnsoni**Tantilla psittaca**Tantilla tritaeniata*

Tropical Rain Forest (6)

*Tantilla miyatai**Tantilla nigra*

Subtropical Dry Forest (11)

Tantilla insulamontana

Subtropical Moist Forest (20)

*Tantilla boipiranga**Tantilla hendersoni**Tantilla oolitica**Tantilla robusta**Tantilla shawi*

Subtropical Wet Forest (15)

*Tantilla jani**Tantilla olympia*

Warm Temperate Thorn Steppe (6)

*Tantilla cucullata**Tantilla planiceps**Tantilla wilcoxi**Tantilla yaquia*

Warm Temperate Dry Forest (7)

Tantilla atriceps

Warm Temperate Moist Forest (14)

*Tantilla coronata**Tantilla petersi**Tantilla relictata*

Warm Temperate Wet Forest (9)

*Tantilla andinista**Tantilla bairdi*

The forest formations harboring single-formation species of *Tantilla* vary in importance (Table 4), with the number of species involved ranging from one to five ($\bar{x} = 2.7$). The one with the greatest number of single-formation *Tantilla* species is Subtropical Moist Forest, which is expected because often it is a high-diversity vegetation type. The formations occupied by the single-formation species, also as expected, are the ones generally inhabited by the highest numbers of species (range 6–20; $\bar{x} = 7.5$; see above).

Given that 92.3% of the members of the *Tantilla* clade are in the genus *Tantilla*, the overall pattern of vegetational distribution is expected to be similar to that for the genus *Tantilla* alone, and such is the case. The number of clade members found in each of the 19 forest formations under consideration ranges from one to 22 ($\bar{x} = 8.6$), and essentially bears the same relative relationship to one another as those for the genus *Tantilla* (Table 4). Thus, the most speciose forest formations, in relative order, are as follows: Tropical Dry Forest (22 species); Subtropical Moist Forest (22); Tropical Moist Forest (21); Subtropical Wet Forest (18); Warm Temperate Moist Forest (15); Subtropical Dry Forest (12); Warm Temperate Wet Forest (11); Tropical Arid Forest (9); and Warm Temperate Dry Forest (7). No forest formation, however, harbors representatives of all four genera in the *Tantilla* clade (Table 4). Nonetheless, three of the four genera are represented in Tropical Dry Forest (*Geagras*, *Tantilla*, and *Tantillita*), Tropical Moist Forest (*Scolecophis*, *Tantilla*, and *Tantillita*), Subtropical Moist Forest (*Scolecophis*, *Tantilla*, and *Tantillita*), Subtropical Wet Forest (*Scolecophis*, *Tantilla*, and *Tantillita*), and Warm Temperate Wet Forest (*Scolecophis*, *Tantilla*, and *Tantillita*). Thus, these five formations are the most significant in terms of generic-level vegetational distribution.

CONSERVATION STATUS OF MEMBERS OF THE *TANTILLA* CLADE

In assessing the conservation status of members of the *Tantilla* clade, we used two measures—the globally utilized IUCN measure and the EVS measure; the last measure previously has been used to assess members of the Mesoamerican herpetofauna (Wilson et al., 2013a, b; Johnson et al., 2015b). We tabulated the data on the application of these two measures in Table 5, and summarized and compared the results in Table 6.

Most of the 65 taxa involved (one *Geagras*, one *Scolecophis*, 60 *Tantilla* [except for *T. trilineata*, because its status remains unclear], and three *Tantillita*) have been provided with an IUCN rating (53 [81.5%] of the taxa for which a rating is possible). The 53 taxa have been allocated as follows (Table 5): Critically Endangered (one [1.9%]); Endangered (four [7.5%]); Vulnerable (three [5.7%]); Near Threatened (0 [0%]); Least Concern (29 [54.7%]); and Data Deficient (16 [30.2%]). Nonetheless, although slightly more than eight of every 10 species have been rated, the Data Deficient plus the Not Evaluated species results in a total of 28 species (43.1%) that have not been allocated to one of the fully assessed categories in the IUCN system. Almost all of the 16 Data Deficient species are known from one or a few specimens (*T. albiceps*, *T. bairdi*, *T. briggsi*, *T. cascadae*, *T. hendersoni*, *T. johnsoni*, *T. nigra*, *T. oaxacae*, *T. robusta*, *T. sertula*, *T. slavensi*, *T. striata*, *T. tayrae*, *T. tecta*, and *T. triseriata*) or have a limited distribution (*Geagras redimitus* and many of the species indicated in the first part of this sentence). All 12 of the Not Evaluated species are in the genus *Tantilla*, and nearly all occur in a part of the *Tantilla* clade's range that to date has not been covered by the Global Reptile Assessment (i.e., South America) or their range overlaps a portion of Mesoamerica and South America. The former group of *Tantilla* includes *T. andinista*, *T. capistrata*, *T. insulamontana*, *T. melanocephala*, *T. miyatai*, *T. petersi*, and *T. semicincta*, and the latter group includes *T. alticola*, *T. reticulata*, and *T. semicincta*. Two of the 13 species (*T. ceboruca* and *T. olympia*) recently were described and thus have not been assessed by the IUCN.

The EVS values range from 5 to 16 (Table 5). When we calculated these values and placed the species into the three categories commonly used for analysis, we obtained the following results: low (6 species [9.2%]); medium (24 [36.9%]); and high (35 [53.8%]). Consequently, we assigned slightly more than one-half of the 65 species for which the EVS can be calculated (excepting *T. trilineata*) to the high category of vulnerability (Table 5).

Table 5. IUCN Red List categorizations (as of 26 May 2015) and EVS calculations for species of *Geagras*, *Scolecophis*, *Tantilla*, and *Tantillita*. *Tantilla trilineata* is excluded.

Species	IUCN Rating	Environmental Vulnerability Score Calculations			
		Geographic Distribution	Ecological Distribution	Degree of Persecution	EVS
<i>G. redimitus</i>	DD	5	7	2	14
<i>S. atrocinctus</i>	LC	5	3	5	13
<i>T. albiceps</i>	DD	6	8	2	16
<i>T. alticola</i>	NE	4	5	2	11
<i>T. andinista</i>	NE	6	8	2	16
<i>T. armillata</i>	LC	5	4	2	11
<i>T. atriceps</i>	LC	2	7	2	11
<i>T. bairdi</i>	DD	6	8	2	16
<i>T. bocourti</i>	LC	5	2	2	9
<i>T. boipiranga</i>	VU	5	7	2	14
<i>T. brevicauda</i>	LC	5	6	2	13
<i>T. briggsi</i>	DD	6	8	2	16
<i>T. calamarina</i>	LC	5	5	2	12
<i>T. capistrata</i>	NE	5	7	2	14
<i>T. cascadeae</i>	DD	5	8	2	15
<i>T. ceboruca</i>	NE	5	8	2	15
<i>T. coronadoi</i>	LC	6	7	2	15
<i>T. coronata</i>	LC	5	5	2	12
<i>T. cucullata</i>	LC	5	7	2	14
<i>T. cuniculator</i>	LC	4	7	2	13
<i>T. deppei</i>	LC	5	6	2	13
<i>T. flavilineata</i>	EN	5	7	2	14
<i>T. gracilis</i>	LC	2	8	2	12
<i>T. hendersoni</i>	DD	6	8	2	16
<i>T. hobartsmithi</i>	LC	2	6	2	10
<i>T. impensa</i>	LC	2	5	2	9
<i>T. insulamontana</i>	NE	5	8	2	15
<i>T. jani</i>	VU	5	8	2	15
<i>T. johnsoni</i>	DD	6	8	2	16
<i>T. lempira</i>	EN	5	7	2	14
<i>T. melanocephala</i>	NE	2	7	2	11
<i>T. miyatai</i>	NE	6	8	2	16
<i>T. moesta</i>	LC	4	7	2	13
<i>T. nigra</i>	DD	6	8	2	16
<i>T. nigriceps</i>	LC	2	6	2	10
<i>T. oaxacae</i>	DD	6	7	2	15
<i>T. olympia</i>	NE	6	8	2	16
<i>T. oolitica</i>	EN	5	7	2	14
<i>T. petersi</i>	NE	5	8	2	15
<i>T. planiceps</i>	LC	4	3	2	9
<i>T. psittaca</i>	VU	5	8	2	15
<i>T. relicta</i>	LC	5	6	2	13
<i>T. reticulata</i>	NE	4	7	2	13
<i>T. robusta</i>	DD	6	8	2	16
<i>T. rubra</i>	LC	2	1	2	5
<i>T. ruficeps</i>	LC	5	5	2	12
<i>T. schistosa</i>	LC	2	3	2	7
<i>T. semicineta</i>	NE	5	7	2	14
<i>T. sertula</i>	DD	5	8	2	15
<i>T. shawi</i>	EN	5	8	2	15
<i>T. slavensi</i>	DD	5	7	2	14
<i>T. striata</i>	DD	5	7	2	14
<i>T. supracincta</i>	NE	4	7	5	16
<i>T. taeniata</i>	LC	5	5	2	12

<i>T. tayrae</i>	DD	6	7	2	15
<i>T. tecta</i>	DD	6	8	2	16
<i>T. triseriata</i>	DD	5	6	2	13
<i>T. tritaeniata</i>	CR	6	8	2	16
<i>T. vermiformis</i>	LC	5	7	2	14
<i>T. vulcani</i>	LC	4	6	2	12
<i>T. wilcoxi</i>	LC	2	6	2	10
<i>T. yaquia</i>	LC	2	6	2	10
<i>T. brevissima</i>	LC	4	3	2	9
<i>T. canula</i>	LC	4	6	2	12
<i>T. lintoni</i>	LC	4	6	2	12

The data in Table 5 also allowed us to compare the IUCN and EVS categorizations (Table 6) and demonstrate the expected discordance between these two systems. Only eight of 65 taxa have been allocated to the three IUCN “threat categories” (CR, EN, and VU), whereas we assessed 35 taxa in the EVS high vulnerability category. Similar to the pattern we found in previous studies, 29 of 65 taxa (44.6%) have been placed in the Least Concern category. Interestingly, the EVS values for these 29 species (5–15) exhibit almost the whole range we applied to the entire clade of species (5–16), but most of these values are in the medium vulnerability EVS category (20 of 29 [69.0%]); only six scores are in the low category and three are in the high category. Unfortunately, with reference to the IUCN categorizations, 57 of 65 taxa (87.7%) have been placed in one of three categories, i.e., Least Concern (29 taxa), Data Deficient (16), or Not Evaluated (12). Thus, almost nine of every 10 taxa in the *Tantilla* clade are considered of limited conservation concern, too poorly known to allow for an assessment to be made, or have not been evaluated by the IUCN.

Table 6. Comparison of Environmental Vulnerability Scores (EVS) and IUCN categorizations for species of *Geagras*, *Scolecophis*, *Tantilla*, and *Tantillita*. Shaded area at the top encompasses low vulnerability category scores, and that at the bottom high vulnerability category scores. Score not calculable for *Tantilla trilineata*.

EVS	IUCN categories							Totals
	Critically Endangered	Endangered	Vulnerable	Near Threatened	Least Concern	Data Deficient	Not Evaluated	
5	—	—	—	—	1	—	—	1
6	—	—	—	—	—	—	—	—
7	—	—	—	—	1	—	—	1
8	—	—	—	—	—	—	—	—
9	—	—	—	—	4	—	—	4
10	—	—	—	—	4	—	—	4
11	—	—	—	—	2	—	2	4
12	—	—	—	—	8	—	—	8
13	—	—	—	—	6	1	1	8
14	—	3	1	—	2	3	2	11
15	—	1	2	—	1	4	3	11
16	1	—	—	—	—	8	4	13
Totals	1	4	3	0	29	16	12	65

Our EVS analysis, however, produced startlingly disparate results (Table 6). We assigned relatively few species to the low vulnerability category (with EVS values of 5–9), as follows: *Tantilla bocourti* (EVS of 9), *T. impensa* (9), *T. planiceps* (9), *T. rubra* (5), *T. schistosa* (7), and *Tantillita brevissima* (9). In general these species are wide-ranging; *T. brevissima* is the least broadly distributed (southeastern Oaxaca to south-central Guatemala). As noted above, we allocated 24 of the 65 (36.9%) species in the *Tantilla* clade to the medium vulnerability category. Interestingly, the number of species allocated to the included EVS (10–13) increases markedly with an increase in the EVS (Table 5), from four species with an EVS of 10 or 11 to eight with one of 12 or 13. Also as noted above, we assigned 35 species to the high vulnerability category, with the highest number (13) assessed an EVS of 16.

Interestingly, of these 13 species all but one are indicated as DD (eight) or NE (four) by the IUCN. These species are *T. albiceps*, *T. andinista*, *T. bairdi*, *T. briggsi*, *T. hendersoni*, *T. johnsoni*, *T. miyatai*, *T. nigra*, *T. olympia*, *T. robusta*, *T. supracincta*, *T. tecta*, and *T. tritaeniata*. All but one of these species are known only from the vicinity of their respective type localities, and thus presently are known to be geographically and ecologically limited in distribution. The exception is *T. supracincta*, with a distribution from Nicaragua to Ecuador; its EVS is high because of its tricolored coral-snake-like pattern, which increases the threat posed by humans and thus raises its EVS (Table 6).

The 65 members of the *Tantilla* clade (excepting *T. trilineata*) comprise a broadly distributed group of colubrid snakes with significant representation in all of the four major areas of occupancy, i.e., the United States, Mexico, Central America, and South America. As indicated in Table 1, 11 species of *Tantilla* are distributed within the confines of the United States. Four of the 11 species are endemic to this country (*T. coronata*, *T. cucullata*, *T. oolitica*, and *T. relictata*), and all except *T. cucullata* are limited to the eastern portion of the United States. *Tantilla cucullata* is limited to a small portion of the state of Texas that lies west of the Pecos River, but might be found on the other side of the Rio Grande in northern Chihuahua, in Mexico. Most or all of the other seven species are distributed west of the Mississippi River, and all occur to some extent in northern Mexico. Of considerable interest is that the IUCN has judged all but one of the 11 United States species as Least Concern; the single exception is *T. oolitica*, restricted to a limited portion of southern Florida, evaluated as Endangered (Table 5). Conversely, the EVS for these 11 species ranges from 9 to 14, with eight of these scores falling into the medium category of vulnerability, one into the low category, and two into the high category (Table 5). Thus, a decided distinction can be made between the views of the conservation status of these species in the United States when applying the IUCN and EVS systems, with the latter demonstrating more significant concern than the former (Table 6).

Wilson and Mata-Silva (2014) recently presented a conservation status assessment of the 30 species of *Tantilla* occurring in Mexico. The other members of the *Tantilla* clade that occur in Mexico are *Geagras redimitus* (endemic to the country) and all three species of *Tantillita* (none endemic to Mexico). Thus, 34 of the 65 *Tantilla* clade members (excepting *T. trilineata*) inhabit some portion of Mexico, with 18 of these species endemic to the country (Table 1). The IUCN ratings for these species are as follows: EN (two); LC (20); DD (11); and NE (one). Interestingly enough, for a country with 18 endemic members of the *Tantilla* clade, the IUCN judges that 58.8% of the 34 species are of Least Concern and 32.4% are too poorly known to allow for a full assessment; one species remains unevaluated. Thus, 94.1% of these species are evaluated as LC, DD, or NE, which in our estimation allows for a very poor overall assessment for this significant group of Mexican snake taxa (see Wilson and Mata-Silva, 2014). In major contrast, the EVS ratings provide another picture of the conservation status of the Mexican clade members. The EVS values range from 5–16 and we allocated the species to the three vulnerability categories, as follows: low (6 [17.6%]); medium (14 [41.2%]); and high (14 [41.2%]). As for the United States, the EVS values for Mexico indicate a more significant level of conservation concern than those provided by the IUCN categorizations (Table 6).

Central America is another major area of occupancy for *Tantilla* clade members, which include one species of *Scolecophis*, 24 of *Tantilla*, and three of *Tantillita* (Table 1). Fifteen of these 28 species (53.6%) are endemic to Central America, nine (32.1%) also occur in Mexico, and four (14.3%) also occur in South America. Similar to the situation in Mexico, the IUCN ratings most often are LC (15 of 28 species [53.6%]), DD (four [14.3%]), or NE (five [17.9%]). Only four of the 28 species (14.3%) are allocated to other categories, one to the CR, one to the EN, and two to the VU (Table 5). In summary, 24 of the 28 species (85.7%) have been placed in the LC, DD, or NE categories, which provides a poor estimate of the conservation status of another significant group of *Tantilla* clade members. In contrast, the EVS values range from 5 to 16 (Table 5), with the following representation among the three vulnerability categories: low (4 [14.3%]); medium (13 [46.4%]); and high (11 [39.3%]). Again, as for both the United States and Mexico, the EVS values attach more conservation significance to this group of *Tantilla* clade members than the IUCN determinations (Table 6).

Finally, South America is the home of another sizable group of *Tantilla* clade members, as 12 species of *Tantilla* have been recorded from the continent. Eight of the 12 (66.7%) are endemic to this region, and four (33.3%) also occur in Central America (Table 1). Since the Global Reptile Assessment has not been extended to South America, not surprisingly 11 of the 12 species (91.7%) remain unevaluated (Table 5); the other species has been judged as Vulnerable. Presently, therefore, the IUCN system is of little use in this portion of the range of the *Tantilla*

clade. Consequently, the EVS system can provide an idea of the conservation status of the South American clade members. The EVS values of the 12 species range from 11 to 16, allocated to the vulnerability categories as follows: medium (three [25.0%]) and high (nine [75.0%]). As with the other areas in the range of the *Tantilla* clade members, the EVS values indicate a considerable degree of conservation significance for this distinctive assemblage of *Tantilla* clade members (Table 6).

In summary, the EVS system provides a useful means of evaluating the conservation status of the 65 members of the *Tantilla* clade (excepting *T. trilineata*). In total, the values are allocated to the three vulnerability categories as follows: low (six [9.2%]); medium (24 [36.9%]); and high (35 [53.8%]). These results indicate that the number of species allocated to the three categories of vulnerability increases markedly from low through medium to high. Since the *Tantilla* clade includes the 60 species (excepting *T. trilineata*) of the second largest genus of snakes in the Western Hemisphere (Wilson and Mata-Silva, 2014), after *Atractus* (Wallach et al., 2014), obviously the conservation status of the clade members is of major concern with regard to efforts to conserve the herpetofauna of this hemisphere. We believe we have provided, through the application of the EVS measure, a useful accounting for the members of the *Tantilla* clade, as presently understood, for implementation by conservation planners.

Acknowledgments.—Our sincere thanks to Gunther Köhler for his assistance with some of the literature cited in this paper. We also are extremely grateful to the following people for allowing us to use the many fine photographs that illustrate this paper: Juan G. Abarca-Alvarado, José Luis Aguilar-López, Christian Berriozabal-Island, William Booker, Timothy Burkhardt, Luis Canseco-Márquez, Timothy Cota, Keyko Cruz, James Emerson, Leonardo Fernández-Badillo, Jack Goldfarb, Rowland Griffin, Peter Heimes, Fabio Hidalgo, Jessica Hitandegüi Swanson Santiago, Kris Kaiser, Julian C. Lee, Twan Leenders, José Gabriel Martínez-Fonseca, Pedro H. Martins, Gary Nafis, Lenin Obando, Peter Paplanus, Todd Pierson, Santiago R. Ron, Dustin Smith, Kevin Stohlgren, Javier Sunyer, Jean-Pierre Vacher, and Fernando Vargas-Salinas. We also would like to acknowledge the fine work done by Jerry D. Johnson and Javier Sunyer on their reviews of our work.

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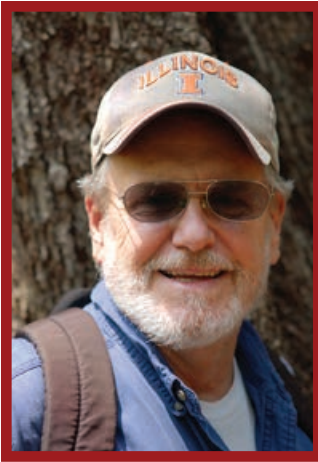
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