———. 1963. Results of the *Puritan*-American Museum of Natural History Expedition to Western Mexico. 18 Cyclostomata, Ctenostomata (Ectoprocta) and Entoprocta of the Gulf of California. Amer. Mus. Novit., 2144:1–34.

Soule, J. D., and D. F. Soule. 1968. A new species of *Terebripora* (Ectoprocta Ctenostomata) from Antarctic *Cephalodiscus*. Bull. So. California Acad. Sci., 67:178–181.

———. 1969a. Systematics and biogeography of burrowing bryozoans. Amer. Zool., 9:791–802.

———. 1969b. Three new species of burrowing bryozoans (Ectoprocta) from the Hawaiian Islands. Occas. Paps. California Acad. Sci., 78:1–9.

Voigt, E., and J. D. Soule. 1973. Cretaceous burrowing bryozoans. J. Paleo., 47:21–33.

Accepted for publication March 10, 1975.



# VARIATION IN THE SOUTH AMERICAN COLUBRID SNAKE *TANTILLA SEMICINCTA* (DUMÉRIL, BIBRON, AND DUMÉRIL), WITH COMMENTS ON PATTERN DIMORPHISM

Larry David Wilson[1]

Abstract: Variation and distribution of *Tantilla semicincta* are discussed. This species exhibits pattern dimorphism. One phase has a banded dorsal pattern and the other a striped dorsal pattern. Variation in scutellation is described. This species is known to occur along the Caribbean coastal regions of Colombia and Venezuela. Purported occurrence of this snake in Panamá is discounted. Relationships of *T. semicincta* with other banded species of *Tantilla* are discussed and a key to those species is provided.

Little information is available concerning the species of *Tantilla* occurring in South America. This paper is the first in a series dealing with the taxonomy and distribution of the species of *Tantilla* known from that continent.

*Tantilla semicincta* (Duméril, Bibron, and Duméril) is one of the few species in the genus with a banded dorsal pattern. Only three other species, *T. annulata*, *T. shawi*, and *T. supracincta*, have such a pattern. *Scolecophis atrocinctus*, an apparent close relative of *Tantilla* (Stickel, 1943), has a pattern very similar to that of *T. semicincta*.

*Tantilla semicincta* is also the only species in the genus known to exhibit a pronounced pattern dimorphism. *Tantilla melanocephala* has been reported to exhibit pattern dimorphism (Roze, 1966), some individuals having a dark middorsal stripe, whereas others lack it, but it has been suggested that *T. melanocephala*, as currently conceived, may be a composite taxon (Schmidt and Walker, 1943). This problem is presently under investigation.

## PATTERN DIMORPHISM AND VARIATION IN *TANTILLA SEMICINCTA*

Boulenger (1896) was the first worker to note the pattern dimorphism in *T. semicincta*, and he did so in passing by placing *Homalocranion linnaeatum* Fischer in the synonymy of *T. semicincta* and noting the different patterns in his description of the species.

*Pattern Dimorphism.—Tantilla semicincta* exhibits two basic pattern variants, one striped, and the other banded. In addition, some specimens exhibit a pattern intermediate between that of the two phases.

The striped pattern (Fig. 1) is present in two specimens examined (BMNH 86.5.15.16–17) and consists of a pale middorsal stripe occupying the middorsal scale row and adjacent halves of the paravertebral rows, flanked by dark dorsolateral

[1] Div. Intercurricular Studies, Miami-Dade Comm. College, South Campus, Miami, Florida 33156.

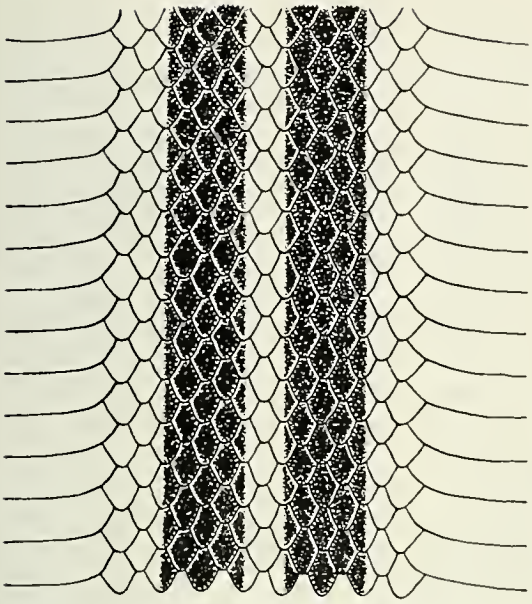

*Figure 1.* Dorsal color pattern of BMNH 85.5.15.16 from "Colombia."

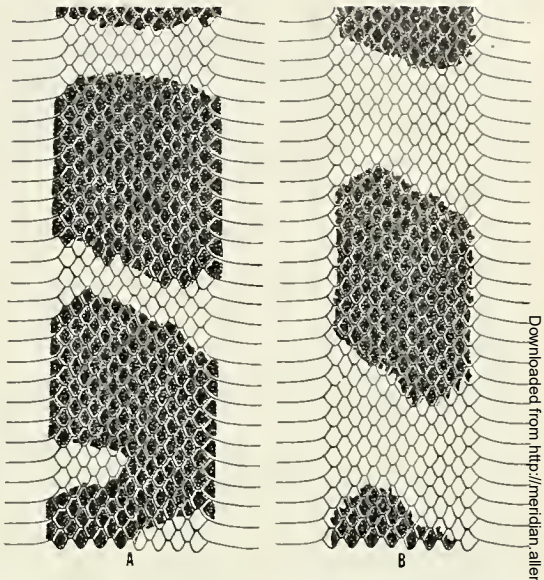


*Figure 2.* Dorsal color pattern of (A) BMNH 1902.5.15.11 from the Magdalena Valley, Colombia, and (B) USNM 107324 from near Caracas, Distrito Federal, Venezuela.

fields extending from the lower half of the paravertebral row to the upper half of the third scale row. The remainder of the dorsum and all of the venter is pale in color. The tail is not striped in either specimen, but rather is patterned with a series of irregular spots and/or narrow crossbands. The syntypes of *Homalocranion lineatum*, which I have not seen, also exhibit this pattern (Fischer, 1883).

The banded pattern (Fig. 2) is present in 13 specimens examined. It consists of dark transverse bands on a pale groundcolor. The number of dark bands on the body ranges from 12 to 26 ($\bar{x} = 19.4$). They range from 5 to 12 scales in length ($\bar{x} = 7.8$) and extend laterally to a point ranging from the second scale row to the lateral edge of the ventrals. The pale bands range from 1 to 6 scales in length ($\bar{x} = 2.2$). Frequently, the pale bands are broken middorsally and staggered. The percentage of broken pale bands ranges from 0 to 57.7 ($\bar{x} = 37.5$). The number of tail bands ranges from 3 to 13 ($\bar{x} = 8.5$).

The intermediate pattern is characterized by a high number of short dark bands (38–47) that are most frequently divided middorsally (showing a tendency toward development of a pale middorsal stripe) and tend to be joined to one another laterally (showing a tendency toward development of a dark dorsolateral field). They also are narrow, extending to somewhere on the third scale row. This pattern is present in four specimens examined (ANSP 20831, BMNH 86.5.15.18, NMB 9154-55).

The pattern dimorphism in *Tantilla semicincta* bears a striking resemblance to that seen in the California Kingsnake (*Lampropeltis getulus californiae*—see pattern illustrations in Blanchard, 1921).

*Head Pattern.*—The head pattern (Fig. 3) consists of a dark head cap usually extending from the posterior half of the prefrontals to and including one-half to two-thirds of the parietals. Laterally the cap extends to the lip below the eye and at the junction of the ultimate and penultimate supralabials, thereby enclosing a postorbital pale spot.

The pale nuchal band is either complete or divided (partially divided in one specimen). If complete, it extends from the middle, posterior third, or posterior quarter of the parietals to a point from two-thirds of the first middorsal scale to one and one-half middorsal scales posterior to the parietals. The nuchal band is complete in eight specimens and divided in 10 specimens.

## VENEZUELAN *TANTILLA SEMICINCTA*

Roze (1966) listed three specimens of *Tantilla semicincta* from Venezuela, one from Estado

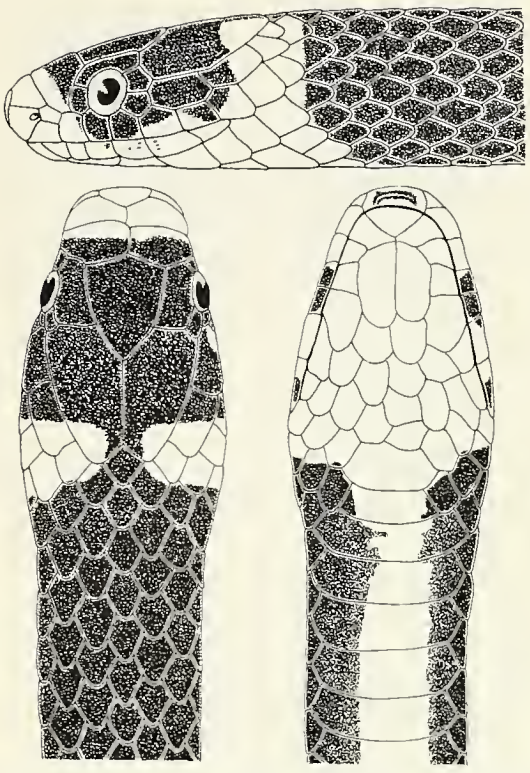

*Figure 3.* Lateral, dorsal, and ventral views of head of BMNH 1902.5.15.10 from the Magdalena Valley, Colombia.

Zulia and two from the Distrito Federal. In addition, the syntypes of *Homalocranion lineatum* Fischer came from Maracaibo, Est. Zulia. This name is a synonym of *T. semicincta*, according to Boulenger (1896), but I have been unable to examine the specimens. I have examined only one of these specimens (USNM 107324) from near Caracas, which differs in some respects from specimens I have examined from Colombia. In comparison with Colombian specimens, USNM 107324 has well-defined dark crossbands (Fig. 2B) that are separated by pale bands about six scales in length (1 to 3 in Colombian specimens). The number of dark tail bands is 3, which is much lower than the number in Colombian specimens (4–13, $\bar{x} = 9.1$). Also, the nuchal band is longer, occupying half of the parietals and one and one-half dorsal scales (as opposed to a maximum size of one-third of the parietals and one dorsal scale in Colombian specimens). This specimen, however, shows no scutellational distinctions compared to Colombian material.

Although USNM 107324 is distinctive in a number of features, I think it premature to consider recognizing it nomenclaturally until the other specimens from Venezuela are examined (the three syntypes of *Homalocranion lineatum* are all of the striped phase and their description by Fischer, 1883, corresponds well to that of Colombian material of the striped phase) and until additional material from the entire range of the species becomes available. Accordingly, I will consider for the present that the Caracas population is conspecific with the populations to the west and present the following taxonomic summary.

### *Tantilla semicincta* (Duméril, Bibron, and Duméril)

*Homalocranion semi-cinctum* Duméril, Bibron, and Duméril, 1854: 862; Jan, 1862: 53; Jan and Sordelli, 1866, livr. 15, pl. ii, fig. 6.

*Homalocranium laticeps* Günther, 1860: 240 (Holotype, BMNH 1946.1.8.85; type locality: Cartagena, Depto. Bolívar, Colombia—not examined).

*Tantilla semicincta*: Cope, 1861: 74, 1866: 136, 1876: 145, 1900: 1111; Griffen, 1916: 209; Amaral, 1930: 222, 1931: 93; Briceño, 1934: 41; Dunn and Bailey, 1939: 19; Stickel, 1943: 140; Dunn, 1944: 208; Smith, 1958: 224; Roze, 1966: 225; Peters and Orejas-Miranda, 1970: 297.

*Homalocranion lineatum* Fischer, 1883: 6 (Syntypes, Naturhistorisches Museum Hamburg 1033—three specimens; type locality: Maracaibo, Est. Zulia, Venezuela—destroyed in World War II *fide* Werner Ladiges).

*Homalocranium semicinctum*: Boulenger, 1896: 229.

*Tantilla semicinctum*: Ruthven, 1922: 68.

*Holotype.*—MNHN 3695, adult female.

*Type locality.*—"Martinique," in error. Listed as "Colombia" by Peters and Orejas-Miranda, 1970.

*Diagnosis.*—A member of the genus *Tantilla* with a banded or striped dorsal pattern, a white venter, 161–176 ventrals, and 54–71 subcaudals.

*Description.*—*Tantilla semicincta* has a banded or striped dorsal pattern (Figs. 1 and 2). The banded specimens have black bands which extend to a point ranging from the second dorsal scale row to the lateral edge of the venter. The dorsal interspaces of at least some specimens are yellowish-green to reddish (Roze, 1966). These colors fade to cream in preservative. The venter is white. The striped specimens have a pale middorsal stripe flanked by broad dark dorsolateral bands. The lower portions of the dorsum are the same pale color as the venter.

A dark cap is present on the head extending from the middle of the prefrontals to the middle or posterior third to quarter of the parietals. The nose

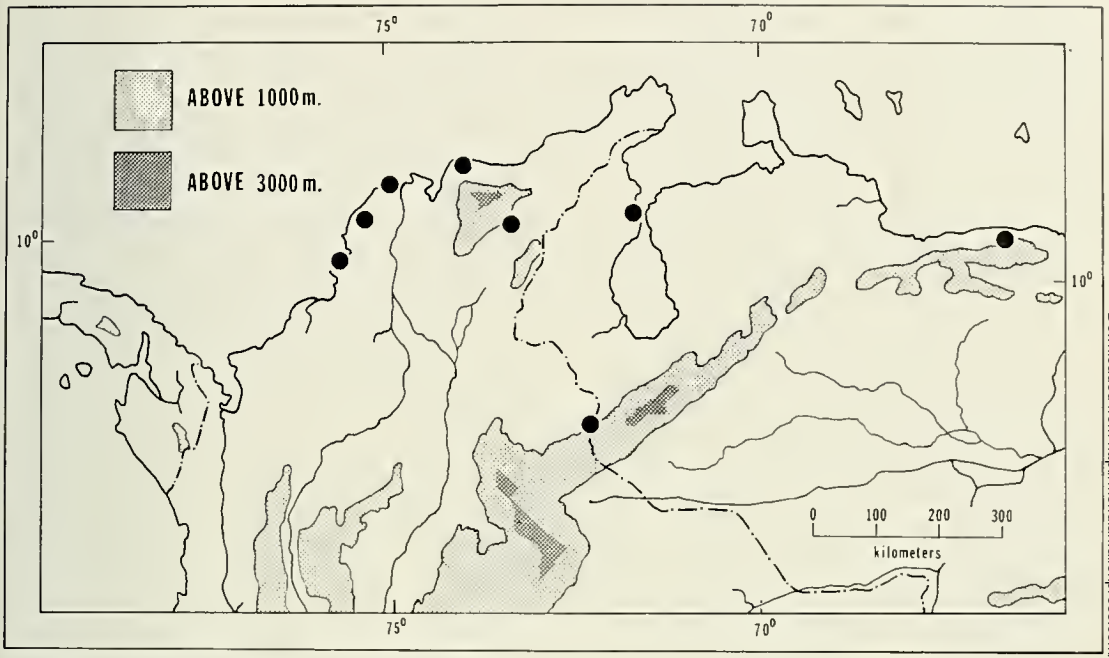


*Figure 4.* Distribution of *Tantilla semicincta*.

is pale in color and there is a pale postorbital spot. The dark head cap is followed by a pale nuchal band, which may be divided or not, but is always in broad lateral contact with the pale ventral coloration of the chin.

Variation in scutellation may be summarized as follows: supralabials 7-7, with 3rd and 4th entering orbit (one specimen has the fifth supralabial fused to the anterior temporal on both sides); infralabials 5 to 7, usually 6 (one specimen has 7 on one side, another has 5 on one side, and yet another has 5 on both sides); four infralabials usually are in contact with anterior chin shields when the total number is 6 and the fourth is largest (when the total number is 7, 5 are in contact, when 5, 3 or 4 are in contact); first pair of infralabials always in medial contact, separating mental and anterior chin shields; postnasal and preocular are invariably separated by contact of prefrontal and second supralabial; preoculars 1-1; postoculars 2-2; temporals 1 + 1; dorsal scales in 15 rows throughout; anal plate divided; ventrals in males 161–173 ($\bar{x} = 165.7$), in females 166–176 ($\bar{x} = 172.0$); subcaudals in males 59–71 ($\bar{x} = 65.9$), in females 54–64 ($\bar{x} = 58.3$).

Maxillary tooth counts in two specimens are 14 + 2 and 15 + 2.

Total length in snakes of all ages ranges from 171–600 mm, and tail length ranges from 37–127 mm. Relative tail length ranges from 0.222–0.257 in males and from 0.192–0.218 in females. This species grows to the greatest length of any species of *Tantilla*. Dunn and Bailey (1939) reported a specimen of *T. annulata* that measures 590 mm in total length. The largest complete specimen of *T. semicincta* I have seen (USNM 117506), a female, measures 600 mm in total length. It has a tail length of 127 mm and a relative tail length ratio of 0.212. Another female specimen (UMMZ 55033) with an incomplete tail has a snout-vent length of 479 mm. If the relative tail length ratio were the same for this specimen as for USNM 117506, then this specimen would have had a total length near 608 mm.

*Range.*—*Tantilla semicincta* is known to occur from near sea level to 457 m along the Caribbean coast of Colombia and Venezuela from Cartagena to Caracas (Fig. 4). Several authors (Barbour and Amaral, 1928; Amaral, 1930; Smith, 1958; Peters and Orejas-Miranda, 1970) have stated that *T. semicincta* occurs in Panamá. Apparently, this statement is based upon a report of a specimen (MCZ 24927) from Cerro Bruja identified as *T. semicincta* by Barbour and Amaral (1928). This specimen was subsequently reidentified as *T. annulata* by Dunn and Bailey (1939). Apparently, all subsequent statements about the occurrence of *T. semicincta* in Panamá are based on Barbour and Amaral's (1928) misidentification. I have examined MCZ 24927 and can verify that it is a *T. annulata*. Charles W. Myers, who is currently working on the herpetofauna of Panamá, informed me (pers. comm.) that he has seen no specimens of *T. semicincta* from that country. Accordingly, until additional information appears to the contrary, I will consider that *T. semicincta* does not occur in Panamá.

*Ecological Distribution.*—Little direct information is available on the ecological distribution of *T. semicincta*. Ruthven (1922) stated that a specimen from Valledupar, Depto. Magdalena, Colombia came from "dry woods." Roze (1966) considered this species characteristic of the "formación montañosa" and a species that illustrated faunal similarities between the Cordillera de la Costa Central and the Sierra de Perijá.

Most specimens of *T. semincta*, however, have come from localities that lie within xerophilic or semixerophilic vegetation. Specimens from the region of the Sierra Nevada de Santa Marta all came from low elevations in thorn scrub, characterized by the presence of acacia trees and large, columnar cacti (Ruthven, 1922). The only exceptions to the general pattern of distribution in Colombia are three specimens said to have come from Cucutá, Depto. Norte de Santander. Cucutá lies in the eastern foothills of the Cordillera Oriental at an elevation of about 310, apparently east of the broad finger of broadleaf deciduous forest bordering the Río Magdalena that passes south from the Caribbean coast to the region of Bogotá (see Fig. 14 in Uzzell, 1973).

Most specimens from Venezuela have come from areas with similar vegetation (Maracaibo) or close to areas with similar vegetation (Caracas) to that which this species inhabits in Colombia (Roze, 1966). I do not agree with Roze (1966) that *T. semicincta* is "characteristic" of the "formación montañosa" in Venezuela, but think it is more likely characteristic of the "formación costanera," covered by xerophytic and semixerophytic vegetation (Marcuzzi, 1954; Roze, 1966) and may range into the contiguous areas of the "formación montañosa."

I do not know from what portion of the Sierra de Perijá the specimen labelled "Perijá" (unnumbered specimen in the Museo de Ciencias Naturales, Los Caobos, Caracas) came but some portions of that mountain range abut the coastal areas of the northwestern portion of the Estado de Zulia.

In summary, *T. semicincta* appears to inhabit almost exclusively thorn scrub vegetation along the Caribbean coastal regions of Colombia and Venezuela.

## RELATIONSHIPS

*Tantilla semicincta* appears to belong to a group of banded species of *Tantilla* including, perhaps, three other species, *annulata*, *shawi*, and *supracincta*. I have not examined the holotype and only known specimen of *T. supracincta* but I have examined the original description and have had the benefit of the late James A. Peters' notes on the genus *Tantilla* in Ecuador. I examined the holotype and only known specimen of *T. shawi* (LSUMZ 306) several years ago when I was a student at Louisiana State University, and I have seen a few specimens of *T. annulata*. Consequently, my comments on relationships of *T. semicincta* within the genus *Tantilla* are anything but definitive, but I hope to remedy this deficiency in subsequent studies on the members of this genus. In addition, the Central American snake *Scolecophis atrocinctus* appears to be closely related to this segment of the genus *Tantilla*.

Of the species mentioned above, *T. semicincta* is closest geographically to *T. annulata*. *Tantilla annulata* occurs in Panamá (Scott, 1969) and *T. semicincta* occurs as far west as the region around the mouth of the Río Magdalena. They resemble one another in sharing the banded dorsal pattern, and in their relative large size. They differ from one another most obviously in dorsal pattern, although the two resemble one another in head pattern. *Tantilla annulata* has a dorsal pattern consisting of alternating black-outlined pale vertical bars on a reddish-brown background (Taylor, 1951). They also differ from one another in ventral number (161–176 in *semicincta*, 148–155 in *annulata*) and the lack of consistency of postnasal-preocular separation in *annulata*.

*Tantilla supracincta* was described from one specimen from Guayaquil, Ecuador (Peters, 1863). It resembles *T. semicincta* in possessing a dorsal pattern of alternating dark and pale bands. The head pattern in the two appears to be virtually the same. They differ from one another most obviously in the lower number of ventrals and subcaudals in *T. supracincta* (148 and 38 in the holotype of *supracincta*, 161–176 and 54–71 in *semicincta*), which is the reason Peters (1960) recognized *T. supracincta* as a "valid lowland species on the west coast" of Ecuador (Peters' research notes).

*Tantilla shawi* was described on the basis of one specimen from Xilitla, San Luis Potosí, Mexico (Taylor, 1949). It is the species most geographically distant from the ranges of the other species mentioned above. It resembles *T. semicincta* in possessing a banded dorsal pattern, a similar number of ventrals (166 in holotype of *shawi*—my count, 161–176 in *semicincta*). It differs from *T. semicincta* most obviously in dorsal color pattern. *Tantilla shawi* has a series of alternating cream vertical bars on the anterior fourth of the body. The groundcolor is black to bluish-black. The head patterns of the two are similar. *Tantilla shawi* may not be a particularly large species; the holotype measures 369 mm. *Tantilla semicincta* has a maximum known total length of 600 mm.

*Scolecophis atrocinctus* is an endemic Central

American snake ranging from eastern Guatemala to northwestern Costa Rica. The monotypic genus *Scolecophis* appears to differ from *Tantilla* in but a single character, viz., the presence of a loreal in the former and its absence in the latter. *S. atrocinctus* resembles *T. semicincta* most obviously in pattern. *Scolecophis atrocinctus* has a pattern of alternating dark and pale bands, but the bands completely cross the venter. The head patterns are very similar. In addition to the presence of a loreal, *S. atrocinctus* differs from *T. semicincta* in possessing a higher number of ventrals (181–198 in *S. atrocinctus*, 161–176 in *T. semicincta*) and a lower number of subcaudals (45–54 as opposed to 54–71).

Tentatively, *T. semicincta* appears to be most closely related to *T. supracincta* on the one hand and to *S. atrocinctus* on the other.

I append below a key for the identification of the banded species of *Tantilla*.

## KEY TO THE SPECIES OF TANTILLA WITH A BANDED DORSAL PATTERN

1. a. Dorsum reddish-brown with pale, black-bordered transverse bands, usually extending to middorsal line and alternating with those on other side of body ..... *T. annulata*
   b. Dorsal coloration not as above ..... 2
2. a. Pale bands present only on anterior portion of body ..... *T. shawi*
   b. Pale bands present the length of the body ..... 3
3. a. Ventrals more than 160; subcaudals more than 50 ..... *T. semicincta*
   b. Ventrals less than 150; subcaudals less than 50 ..... *T. supracincta*

## LOCALITY RECORDS

COLOMBIA: No other data (BMNH 86.5.15.16–18; MCZ 29601); Department unknown—Magdalena Valley (BMNH 1902.5.15.10–11—not mapped); Depto. Atlantico—Barranquilla (NMB 14390); Villanueva (USNM 117506); Depto. Bolívar—Cartagena (BMNH 1946.1.8.85—holotype of *Homalocranium laticeps*—not examined); Depto. Magdalena—Bonda, 46 m (CM 200, 1094; MCZ 11864); Cacagualito, 457 m (CM 2024, 2037); Sierra de Santa Marta, Valledupar (UMMZ 55033); Depto. Norte de Santander, Cucutá (ANSP 20830; NMB 9154–55). VENEZUELA: Distrito Federal—near Caracas (USNM 107324); Caracas, Alta Vista (Museo de Biología, Universidad Central de Venezuela—no number—not examined); Estado Zulia—Maracaibo (Naturhistorisches Museum Hamburg 1033—3 syntypes of *Homalocranion lineatum*—not examined); Perijá (Museo de Ciencias Naturales, Caracas—no number—not examined—not mapped).

In addition to the above-noted specimens, I have also examined the holotype of *Homalocranion semi-cinctum* Duméril, Bibron, and Duméril (MNHN 3695) purported, in error, to have come from "Martinique."

## ACKNOWLEDGMENTS

I wish to thank the following curators who were kind enough to loan me specimens (museum abbreviations indicated parenthetically): Alice G. C. Grandison and A. F. Stimson, British Museum (Natural History) (BMNH); Edmond V. Malnate, Academy of Natural Sciences of Philadelphia (ANSP); Clarence J. McCoy, Carnegie Museum (CM); Olivier Rieppel, Naturhistorisches Museum Basel, Switzerland (NMB); Charles F. Walker, University of Michigan Museum of Zoology (UMMZ); Ernest E. Williams, Museum of Comparative Zoology (MCZ); George R. Zug, United States National Museum (USNM). I am especially indebted to Jean Guibé, Museum National d'Histoire Naturelle, Paris, for the loan of the holotype of *Tantilla semicincta*. I would also like to thank Charles W. Myers, American Museum of Natural History, for his comments regarding the probable lack of occurrence of *T. semicincta* in Panamá. Finally, I am indebted to George R. Zug, United States National Museum, for the gift of the late James A. Peters' notes on the genus *Tantilla* in Ecuador.

## LITERATURE CITED

Amaral, A. do. 1930(1929). Lista remissiva dos ophidios da regiao neotropica. Mem. Inst. Butantan, 4:129–271.

———. 1931. Studies of Neotropical Ophidia. XXVI. Ophidia of Colombia. Bull. Antivenin Inst. Amer., 4:89–94.

Barbour, T., and A. do Amaral. 1928. A new elapid from western Panamá. Bull. Antivenin Inst. Amer., 1:100.

Blanchard, F. N. 1921. A revision of the king snakes: genus *Lampropeltis*. Bull. U.S. Natl. Mus., 114:1–260.

Boulenger, G. A. 1896. Catalogue of snakes in the British Museum (Natural History). Vol. 3. Taylor and Francis, London. 727 p.

Briceño Rossi, A. L. 1934. El problema del ofidismo en Venezuela. Bol. Min. Salubr. Agric. Cría, año II, no. 14, pp. 1079–1177 and no. 15, pp. 15–103.

Cope, E. D. 1891. [No title.] Proc. Acad. Nat. Sci. Philadelphia, 13:73–75.

———. 1866. Fourth contribution to the herpetology of tropical American. Acad. Nat. Sci. Philadelphia, 18:123–132.

———. 1876(1875). On the Batrachia and Reptilia of Costa Rica. J. Acad. Nat. Sci. Philadelphia, ser. 2, 8:93–154.

———. 1900. The crocodilians, lizards, and snakes of North America. Rep. U.S. Natl. Mus., 1898: 153–1270.

Duméril, A. M. C., G. Bibron, and A. H. A. Duméril. 1854. Erpétologie générale ou histoire naturelle complète des reptiles. Paris Vol. 7:780 pp.

Dunn, E. R. 1944. Los generos de anfibios y reptiles de Colombia, III, Tercera parte: Reptiles, Orden de las serpientes. Caldasia, 3:155–224.

Dunn, E. R., and J. R. Bailey. 1939. Snakes of the uplands of the Canal Zone and of Darien. Bull. Mus. Comp. Zool., 86:3–22.

Fischer, J. G. 1883. Beschreibung neuer Reptilien. Oster Prog. Akad. Gymnasium Hamburg, 1883: 1–16.

Griffen L. E. 1916. A catalog of the Ophidia from South America at present (June, 1916) contained in the Carnegie Museum with descriptions of some new species. Mem. Carnegie Mus., 7:163–228.

Günther, A. C. L. G. 1860. Description of *Homalocranium laticeps*, a new snake from Carthagena. Proc. Zool. Soc. London, 1860:240–241.

Jan, G. 1862. Enumerazione sistematico delle specie d'ofidi del gruppo Calamaridae. Archo. Zool. Anat. Fis., 2:1–76.

Jan, G., and F. Sordelli. 1866. Iconographie générale des ophidiens. Milan and Paris. Vol. 1, livr. 15.

Marcuzzi, G. 1954. Nota sobre zoogeografia y ecologia del medio xerofilo venezolano. Mem. Soc. Cien. LaSalle, 14:225–260.

Peters, J. A. 1960. The snakes of Ecuador. A check list and key. Bull. Mus. Comp. Zool., 12:491–541.

Peters, J. A., and Braulio Orejas-Miranda. 1970. Catalogue of the Neotropical Squamata: Part I. Snakes. Bull. U.S. Natl. Mus., 297:1–347.

Peters, W. C. H. 1863. Neue odor weniger bekannte Schlangenarten des zoologischen Museums zu Berlin. Monatsb. Akad. Berlin, 1863: 272–289.

Roze, J. A. 1966. La taxonomia y zoogeografia de los ofidios de Venezuela. Servicio de Distribucion de Publicaciones, Biblioteca, Universidad Central de Venezuela, Caracas. 362 pp.

Ruthven, A. G. 1922. The amphibians and reptiles of the Sierra Nevada de Santa Marta, Colombia. Univ. Michigan Mus. Zool. Misc. Publ., 8:1–69.

Schmidt, K. P., and W. F. Walker, Jr. 1943. Peruvian snakes from the University of Arequipa. Zool. Ser., Field Mus. Nat. Hist., 24:279–296.

Scott, N. J., Jr. 1969. A zoogeographic analysis of the snakes of Costa Rica. Ph.D. Thesis, Univ. Southern California. 390 pp.

Smith, H. M. 1958. Handlist of the snakes of Panama. Herpetologica, 14:222–224.

Stickel, W. H. 1943. The Mexican snakes of the genera *Sonora* and *Chionactis* with notes on the status of other colubrid genera. Proc. Biol. Soc. Washington, 56:109–128.

Taylor, E. H. 1949. A preliminary account of the herpetology of the state of San Luis Potosí, México. Univ. Kansas Sci. Bull., 33:169–215.

———. 1951. A brief review of the snakes of Costa Rica. Univ. Kansas Sci. Bull., 34:3–188.

Uzzell, T. 1973. A revision of lizards of the genus *Prionodactylus*, with a new genus for *P. leucostictus* and notes on the genus *Euspondylus* (Sauria, Teiidae). Postilla, 159:1–67.

Accepted for publication January 2, 1975.