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## A Review of American Sibynophine Snakes, with a Proposal of a New Genus\*

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THE discovery of four new forms of Sibynophine snakes in México has led us to reëxamine as far as possible all other Mexican and Central American species known in this group, as well as certain Asiatic species of *Sibynophis* that were readily available. We have concluded that differences obtaining between American and Asiatic forms are such that the American forms should be considered as a group of generic rank separate from *Sibynophis*.

Duméril and Bibron (Erp. Gén., vol. 7, 1854, p. 328) placed the first known species of these Central American snakes in a subgenus of *Ablabes* which they called *Enicognathus*, a group largely based on a peculiar character of the lower jaw. In the group they associated four species: *Coluber melanocephalus* Linné (= *Sibynophis subpunctatus*, India, and *Tantilla melanocephala*, Guadeloupe, W. I.); *Herpetodryas rhodogaster* Schlegel (= *Sibynophis rhodogaster*, Madagascar); *Coluber geminatus* Oppel (= *Sibynophis geminatus*, Java); and their own *Enicognathus annulatus* from Guatemala. The type is *Herpetodryas geminatus* Schlegel. This generic name, preoccupied by *Enicognathus* Gray (1840) was emended by Cope in 1876 as *Henicognathus*; this in turn is preoccupied by *Henicognathus* Agassiz, 1846. Boulenger, in 1896, offered *Polyodontophis* as a substitute name for *Enicognathus*. In 1910 Stejneger pointed out that Fitzinger in 1843 had created the genus *Sibynophis* naming *Herpetodryas geminatus* Schlegel as the type. No proposed generic designation is available apparently for American species.

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*Scaphiodontophis* gen. nov.

*Sibynophis* Fitzinger, Syst. Rept., 1843, p. 26 (*part.*); Stejneger, Proc. U. S. Nat. Mus., vol. 38, 1910, p. 102 (*part.*); Dunn, Occ. Papers Boston Soc. Nat. Hist., vol. 5, 1930, p. 330 (key); *idem*, Copeia, 1931, p. 163; *idem*, Bull. Antiv. Inst. Amer., vol. 2, 1928, pp. 20, 24 (subfamily proposed).

*Enicognathus* Duméril and Bibron, Erp. Gén., vol. 7, 1854, p. 328 (*part.*).

*Henicognathus* Cope, Journ. Acad. Nat. Sci. Phila., vol. 8, 1876, p. 138 (*part.*).

*Polyodontophis* Boulenger, Fauna India, Rept., 1890, p. 301 (*part.*).

Rather small snakes (2-3 feet) with normal head squamation, the head very slightly distinct from neck; tail very long. Scales in 17 rows, smooth, lacking apical pits; subcaudals single; anal divided; a loreal, one preocular, usually two postoculars; one or two anterior temporals; hypapophyses present throughout vertebral column.

Dentary loosely attached near anterior end to articulare, leaving posterior two-thirds of the element free. Maxillary teeth numerous (more than 50), the teeth scaphoid or spatulate, smaller at anterior and posterior ends of maxilla, arranged in groups of three teeth (sometimes two) the three teeth usually differing in size and length, the third (anterior) of each triad being heaviest and longest, the first smallest. The bases of the teeth are in line, but the tips are not (a line connecting the tips of a triad is diagonal to the longitudinal axis of the jaw); a dorsal as well as a medial ectopterygoid process on maxilla; tips of teeth brownish.

Hemipenis\* relatively short (ten or eleven caudals, not everted); sulcus single; distal fourth calyces; median third relatively large spines, smaller ones curved at tip, others straight; basal portion of

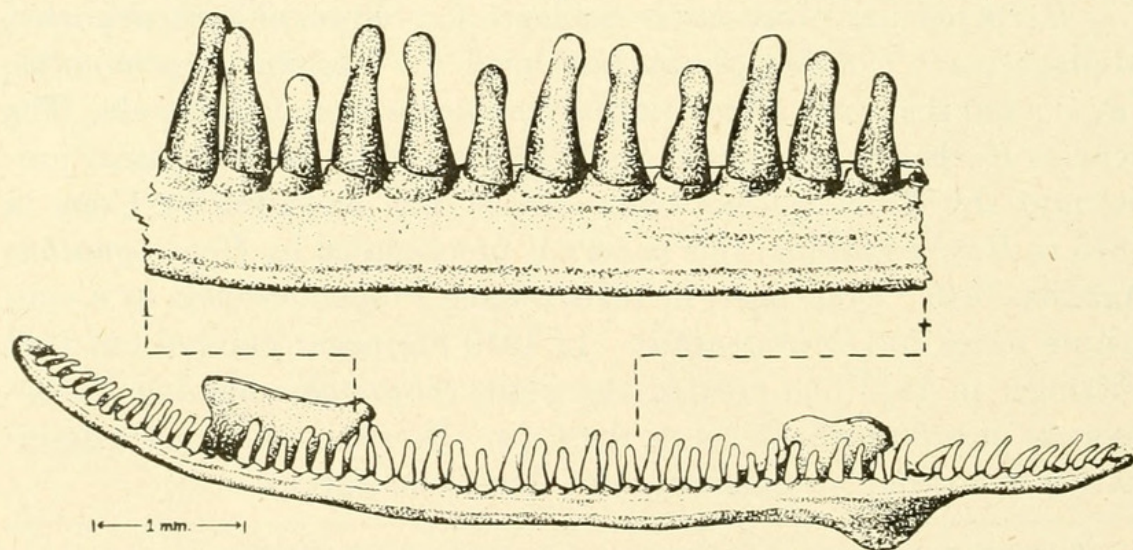


FIG. 1. Maxilla of *Scaphiodontophis albonuchalis* from the holotype, U. S. N. M. No. 110413.

\* Unfortunately the hemipenes of *venustissimus* and *sumichrasti* are unknown. Since these represent types widely different from the others, their hemipenial characters may very possibly be widely different from those described here for the genotype and its closest relatives.

spinous area with two to four larger spines; basal portion (three-fifths) of hemipenis smooth, spineless, with longitudinal ridges.

We designate *Enicognathus annulatus* Duméril and Bibron as type of the genus, and refer to it *venustissimus*, *annulatus*, *hondurensis*, *nothus*, *albocinctus*, *zeteki*, *cyclurus* and *carpicinctus*. Another species, *sumichrasti*, is placed here with considerable doubt. (See discussion of this form. It may not belong in this genus.)

This group of species, which has been associated with *Sibynophis*, differs from members of that genus in having a larger series of unequal maxillary teeth (52 to 56; known maximum in *Sibynophis*, 46), arranged in diads or triads of unequal sizes; a much larger dorsal, as well as a medial ectopterygoid process (the process is very low or lacking in *Sibynophis*).

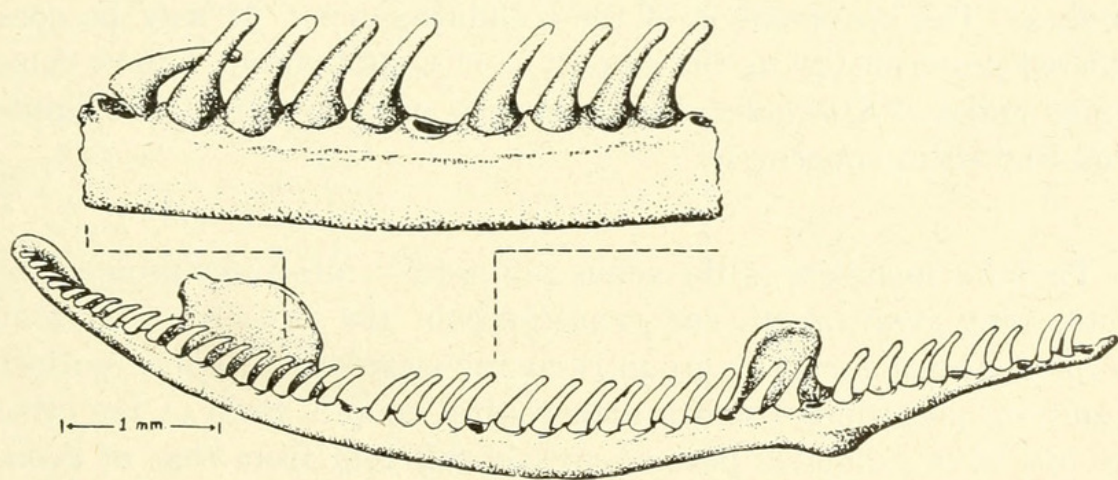


FIG. 2. Maxilla of *Sibynophis collaris*, from U. S. N. M. No. 101035, Doi Hua Mot, Northern Siam.

Most of the species of *Sibynophis* have normally pointed teeth; *subpunctatus* from Ceylon, however, has somewhat spatulate teeth; forms associated with *Scaphiodontophis* all have spatulate teeth, so far as known. All *Sibynophis* have a uniform or striped coloration; all *Scaphiodontophis* have black, yellow and red transverse spots or bars on some part or all of the body while the remainder tends to be uniform grayish with darker dots (save *sumichrasti*, which is uniformly colored with black dots forming lines and lacks the black, yellow and red bars).

That the two genera *Scaphiodontophis* and *Sibynophis* are related is evidenced by the remarkable condition of the dentary, which is very similar in the two genera, and similar to the condition obtaining in the XENOPELTIDAE. The two genera agree also in number of teeth in the palatine and pterygoid series (about fifty combined).

Species of both genera appear to suffer from a disease\* that causes a total or partial loss of the tail. When the tail is complete it approaches the length of the body in some species; rarely the subcaudals reach the number of ventrals.

The food of most of the species is unknown. One specimen, the type of *albonuchalis*, had a specimen of *Leiolopisma assatum taylori* in the stomach.

We believe that the two genera *Scaphiodontophis* and *Sibynophis* together form a group worthy of subfamily rank, as Dunn proposed in 1928 (Bull. Antiv. Inst., vol. 2, 1928, p. 20). The characters defining the subfamily are "Dentary free posteriorly; hypapophyses long, narrow, and projecting posteriorly; hemipenes calyculate distally." Dunn further states that "*Sibynophis*, with species in Central America and southern Asia, differs remarkably from all other snakes. The hemipenis is of the Colubrine type. It may be considered provisionally as the monotype of a subfamily. I have compared males of *S. annulatus* from Mexico and *S. collaris* from China, and find them congeneric."

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The nine members of the genus fall readily into three groups, one containing *sumichrasti*, one *venustissimus*, the other all remaining forms. The *sumichrasti* group is characterized by a striped pattern (uniform posteriorly) and a high ventral count. Both of the other groups have a banded pattern greatly different from that of *sumichrasti*. The *venustissimus* group is characterized by presence of single, yellow-bordered black bands on a red ground color—essentially a *Micrurus*-type pattern. This is greatly different from the pattern of the second group (*annulatus*), which is *Lampropeltis*-like, with double black bands enclosing a yellow band, all on a red ground color.

Two readily discernible divisions (*annulatus* and *zeteki*) in the *annulatus* group may be pointed out: (1) *annulatus* and *carpincinctus*, in which the black head cap is followed first by a portion of a red band, and then by a triad consisting of two black bands enclosing a yellow; (2) *cyclurus*, *zeteki*, *nothus* and *albocinctus*, in which the black head cap is followed by the posterior two thirds of a triad (*viz.*, a yellow followed by a black band), then the normal

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\* A similar disease affects *Thamnophis marcianus*: Fourteen specimens collected in a pond in New Mexico all had it. Certain specimens showed a recent loss of the tail, the stub not healed, and in others the tail was so rotten that it appeared to be held by the skin only.

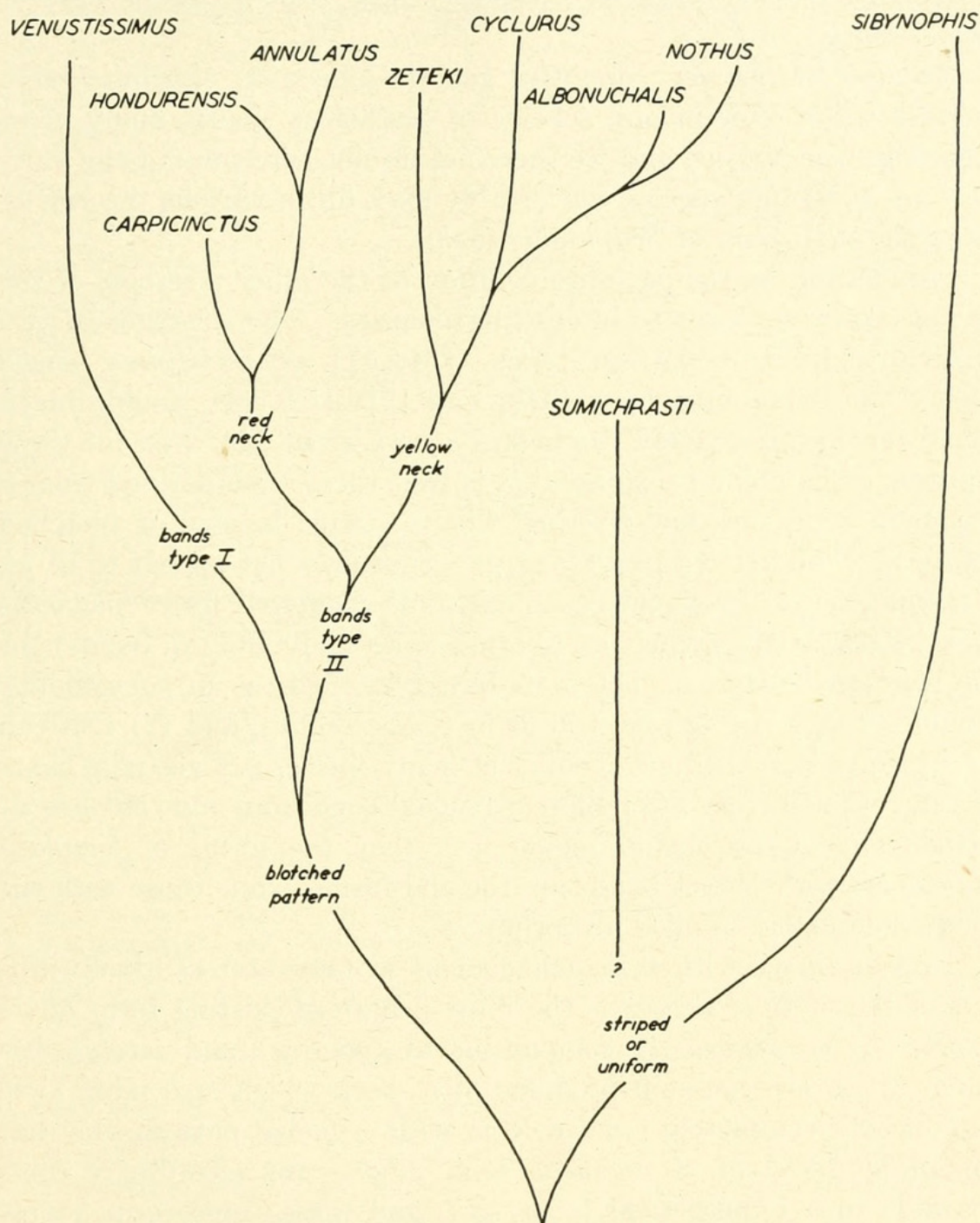


FIG. 3. Diagrammatic representation of the possible phylogeny of *Scaphiodontophis*.

succession of red bands separated by triads of black and yellow bands.

All forms of the genus here recognized are readily distinguishable one from the other (with the possible exception of *annulatus hondurensis*, which cannot be compared satisfactorily at present with typical *annulatus*, due to paucity of specimens of the latter). Certain forms, however, here described as species, may eventually be regarded as subspecies, although present data are far too inadequate

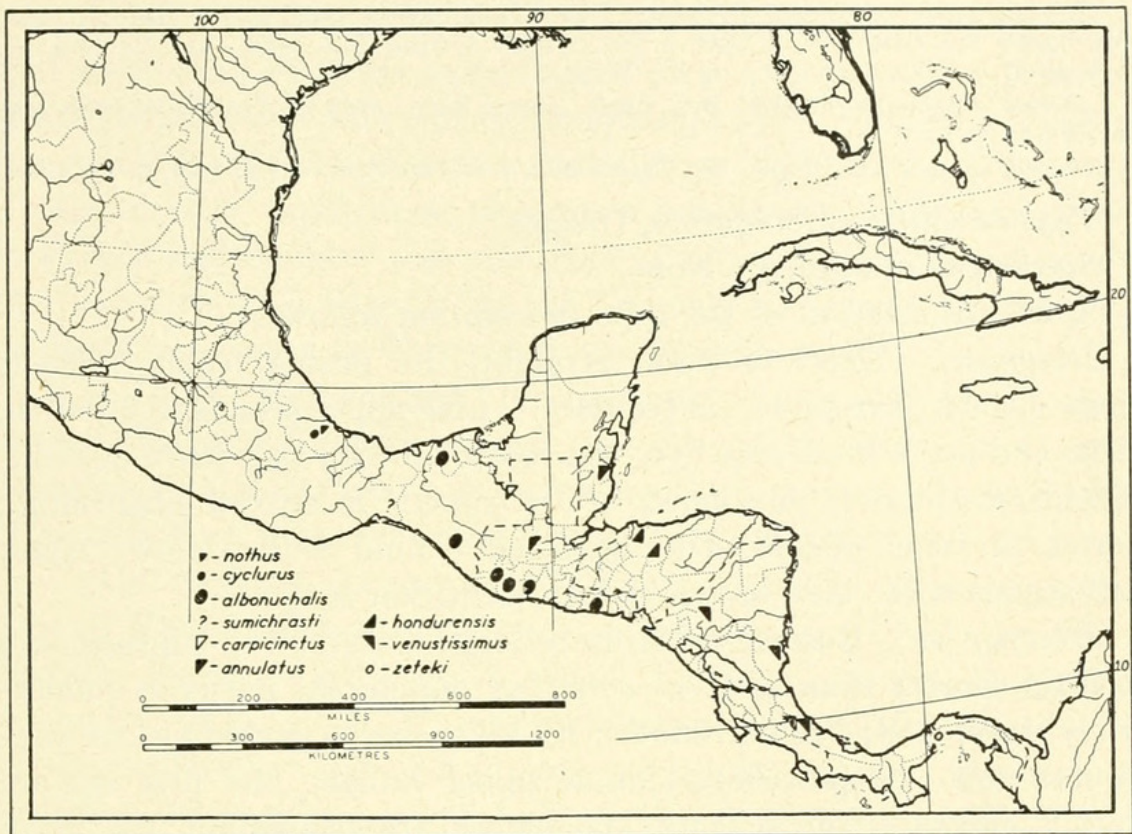
to hazard placing them as subspecies now (except in the case of *hondurensis*).

Because of the very doubtful generic allocation of *sumichrasti*, consideration of it in any scheme of phylogeny courts many gross errors in conclusions, and we therefore do not here present the various positions that species conceivably may fill in various theories of possible phylogeny of *Scaphiodontophis*.

Speculation on the pattern evolution of the other members of the genus, however, leads to interesting theories. The existence of two radically different pattern types (*i. e.*, [1] *venustissimus*, single black bands bordered by yellow; and [2] all others, double black bands enclosing a yellow) indicates a very great age, even for these species. The obvious explanation is that these were derived from a common type, not now existing, with a simple banded or blotched pattern. The banded pattern of the genus does not appear to be an anteroposterior development as might be suggested by *carpicinctus* (only neck bands, giving rise to others with body and tail bands) for at least two reasons: (1) a pattern type such as in *carpicinctus* could not give rise to one such as in *venustissimus*, and (2) if it can be assumed that the nuchal collar of many species is a vestigial character, retained from a completely banded condition, and that loss of bands affects the nuchal region last, then the forms of *Scaphiodontophis* with fewest bands are the end forms, while those with the body completely banded are primitive.

In accordance with this arrangement, it may be tentatively proposed that *venustissimus* is the most primitive existing form of its stock. It is not exactly comparable to *cyclurus* (and *zeteki*), because these are common products of a stock which also must have produced a completely banded form with a nuchal pattern like that of *annulatus et al.* *S. cyclurus* (and *zeteki*) are accordingly comparable to a hypothetical form (X), and these three form a unit comparable to *venustissimus*.

As shown in the accompanying diagram, the X-stem produced the *annulatus* division of the genus, while the *cyclurus-zeteki* stem produced the so-called *zeteki* division. While *cyclurus* and *zeteki* are widely separated geographically, they have differentiated amazingly little. The other forms of the division (*albonuchalis*, *nothus*) seem to have resulted from the *cyclurus* sections, in the north, while the *zeteki* section in the south apparently remained more stable. The stability of the *zeteki* section may have been influenced by the presence of the X stock.

FIG. 4. Distribution of the species of *Scaphiodontophis*.KEY TO *Scaphiodontophis*

1. No bands on body or tail; body nearly uniformly colored, not with red; 181 ventrals ..... *sumichrasti*
- Bands present at least on body; triads separated by red; ventrals 157 or less..... 2
2. Triads two black bands enclosing a white (yellow)..... 3
- Triads two yellow bands enclosing a black, on body and tail..... *venustissimus*
3. Black head cap followed by a red area (sometimes narrow), then a pair of black bands (enclosing a white)..... 4
- Black head cap followed in succession by a white band, a single black band, and a longer red band..... 6
4. Black bands few (two pairs in type), restricted to neck..... *carpincinctus*
- Black bands more numerous (5 to 11 pairs), extending about to middle of body... 5
5. No black spots on scales of red interspaces..... *annulatus hondurensis*
- Black spots on scales of red interspaces..... *annulatus annulatus*
6. Tail not banded; all or part of body banded..... 7
- Tail banded, as well as all of body..... 8
7. All of body banded..... *nothus*
- Anterior third or half of body banded..... *albonuchalis*
8. Snout white ..... *zeteki*
- Snout black, followed by a light interocular band..... *cyclurus*

*Scaphiodontophis sumichrasti* (Bocourt)

?*Masticophis* Sumichrast, Bull. Soc. Zoöl. France, vol. 5, 1880, p. 183 (States: "indéterminé;" "de Cocopriets, près Tapaná"); *idem.*, La Natureza, vol. 5, 1882, p. 285 ("de Cocoprieto, cerca de Tapaná").

*Henicognathus sumichrasti* Bocourt, Miss. Sci. Mex., Rept., livr. 10, 1886, pp. 628-630, pl. 41, fig. 5 ("Cocopriets" [isthme de Tehuantepec]; "Le type de l'*Henicogn. Sumichrasti* a été adressé au Muséum par F. Sumichrast, sous le nom générique de *Masticophis*.").

*Rhadinaea sumichrasti* Cope, Bull. U. S. Nat. Mus., no. 32, 1887, p. 79.

*Polyodontophis sumichrasti* Boulenger, Fauna India, Rept., 1890, p. 302 (listed); *idem*, Cat. Snakes Brit. Mus., vol. 3, 1896, p. 597 (listed); Werner, Zool. Jahrb., vol. 57, 1929, pp. 7, 8 (key).

*Ablabes sumichrasti* Günther, Biol. Centr. Amer., Rept., 1893, p. 105 (listed, with synonyms).

*Sibynophis sumichrasti* Dunn, Occ. Papers Bost. Soc. Nat. Hist., vol. 5, 1930, p. 330 (key).

*Type locality.* Cacoprieto, Oaxaca.

*Specimens examined.* None.

A free translation of the type description follows:

*Diagnosis.* Head to snout straight, the profile feebly arched; body slender; eye large, six temporals; nine upper labials, the fourth, fifth and sixth bordering eye; ten lower labials; two pairs of chinshields, moderately developed; scales smooth, in sixteen longitudinal series; a large nuchal spot, bordered behind with yellow; trunk olivaceous with three brown stripes; dentition isodont.

*Description.* Rostral moderately large; frontal and supraoculars a little shorter than in *Henicognathus annulatus*; parietals moderately developed; eye surrounded by seven scales including one preocular and two postoculars; nine upper labials; the first six are rather elongate, the seventh and eighth are triangular; the ninth well developed and rounded behind; six temporals on the left, seven on right side; ten lower labials; the first five touch the first pair of chinshields. A pair of gular scales following chinshields, in turn followed by 181 ventrals; anal divided; tail long, comprising about one third the total length of the animal. Caudals, 112, divided; scales smooth, forming seventeen rows in the middle of the body.

*Measurements.* Total length, 128 mm.; snout to vent, 357 mm.; length of tail, 171 mm.

*Color.* Head olivaceous with numerous blackish flecks on top and sides of snout, forming at level of eyes a deep black transverse band; parietals flecked with black and bordered posteriorly with a large nuchal spot of same color which extends upon the temple; upper labials blackish on their upper and lower sides, while their median parts are yellowish white; upper part of the body with three, long, brown stripes which are on a ground of deep yellow-olive, touched with brown; middle stripe, of somewhat deeper color, arises at the nuchal spot and continues upon the body as a series of small brown spots, more or less clearly defined; each of the lateral stripes begins at the angle of the mouth and disappears almost entirely about the middle of the body; ventral surfaces are of a yellowish-white relieved upon the chin and throat by numerous small brown spots; ventrals with small spots on each side forming two longitudinal lines from the middle of body to extremity of tail.

*Remarks.* The type specimen remains unique, despite the fact that more than 54 years have elapsed since its discovery. Bocourt states that the type was sent to the museum by F. Sumichrast, under the name of *Masticophis*, as coming from "Cacopriets, isthme de Tehuantepec." Sumichrast, in papers published in 1880 and 1882, in French and Spanish (*op. cit.*) lists a "*Masticophis* (indéterminé) de Cacopriets près Tapana" in the French paper, and "*Masticophis* de Cacoprieto cerca de Tapana" in the Spanish paper.

As the snake so identified by Sumichrast is placed in the list following *Bascanion mentovarium*, and preceding *Drymobius margaritiferus*—and not near *Coniophanes*, which it resembles, nor with *Henicognathus*, in which genus it was placed by Bocourt—one wonders whether the snake mentioned by Sumichrast is the same as the type of *Henicognathus sumichrasti*, or whether the latter was accidentally associated with the *Masticophis* label. Certainly the species resembles, in many of its external features (especially the nearly uniform coloration and light labial stripes), the oriental members of the genus *Sibynophis*, and might have had an oriental origin.

Bocourt states that the dentition is isodont, but he likewise places certain forms of *Rhadinaea* in the same genus. The markings, too, seem to resemble those of certain *Rhadinaea*. This may have caused Cope (1887) to associate the species with *Rhadinaea*, and Günther (1893) with *Ablabes*. Cope, however, does not consider the species in his treatment of *Rhadinaea* in 1900 (Ann. Rept. U. S. Nat. Mus., 1898). Certainty as to whether the species should be associated with *Scaphiodontophis* must await a careful study of the dentition of the type, which at this time (1943) is apparently not feasible. If it is properly associated with this genus, it possibly represents the most primitive species. It has the highest ventral count of the genus, and if the tail is complete it appears to have a shorter tail and fewer subcaudals than other *Scaphiodontophis*.

*Scaphiodontophis venustissimus* (Günther)

(Text fig. 5)

*Henicognathus venustissimus* Günther, Biol. Centr. Amer., Rept., 1894, p. 144, pl. 51, fig. c (entire, in color); Boulenger, Cat. Snakes Brit. Mus., vol. 3, 1896, p. 598 (redescription); Andersson, Medd. Göteborgs Mus. Zoöl., Afd. 9, 1916, p. 26 (not seen; *fide* Werner, = *annulatus*); Werner, Zoöl. Jahrb., vol. 57, 1929, p. 8 (key); Dunn, Occ. Papers Boston Soc. Nat. Hist., vol. 5, 1930, pp. 329, 330 (key) (Bluefields, Nicaragua; Río Banana, Bonilla, Columbia, and Zent in Costa Rica); Amaral, Mem. Inst. Butantan, vol. 7, 1932, pp. 107-109 (Muzo, Colombia).

*Type locality.* Hacienda Santa Rosa de Jericho, 3250 ft., Matagalpa, Nicaragua.

*Specimens examined.* Two.

*Type description.* "Form of the body and head as in *Coronella annulata* [= *Lampropeltis annulata*], but with a stronger and longer tail. Frontals together a little shorter than the vertical, which is nearly as long as an occipital. Loreal rhombic; one praeocular, just reaching the upper surface of the head; two postoculars, both in contact with the occipital. Temporals 2 + 2. Nine upper labials, the fourth, fifth and sixth entering the orbit. Chin-shields nearly of the same length. Scales in 17 rows. Ventrals 145; anal divided. Maxillary teeth of equal size, small, 43 in number. Coral-red or

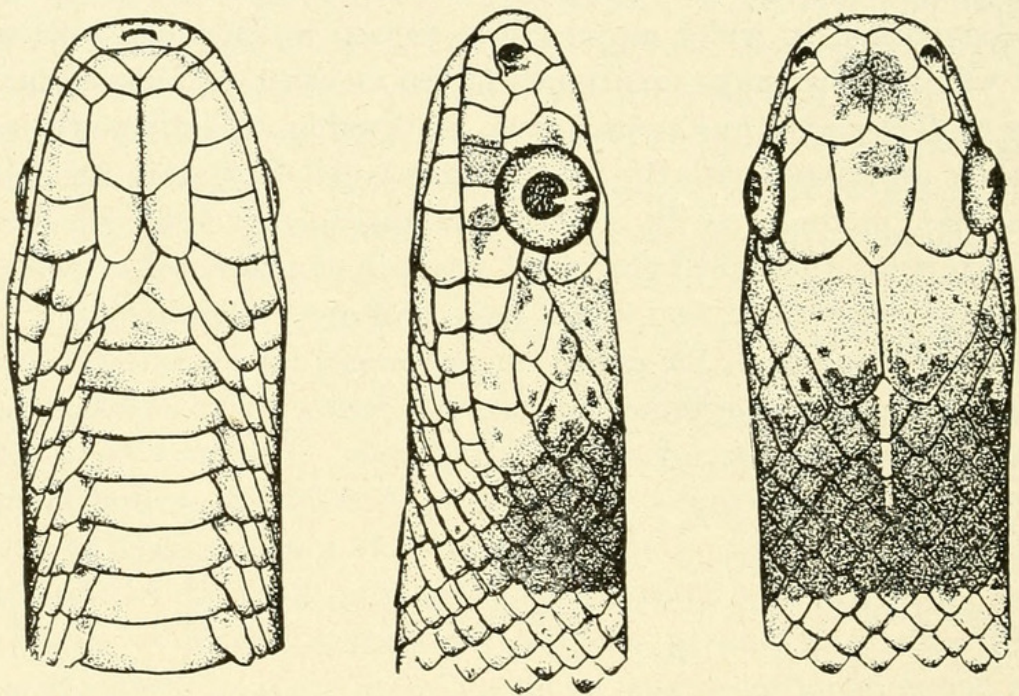


FIG. 5. Head of *Scaphiodontophis venustissimus*, from U. S. N. M. No. 37346, Bluefields, Nicaragua.

reddish-olive, with more or less irregular, broad, black, white-edged rings. The black rings encroach but slightly upon the abdomen. Head and neck black, with a broad white interocular band; the anterior two black body-bands are complete, but the following (eight or nine in number) are broken in the middle of the back; they are complete again on the tail. Each scale of the red spaces with a black tip. Lower parts whitish, with some blackish spots, irregularly crowded towards the sides of the abdomen. Each sub-caudal with a large black spot.

"I have seen two specimens, both with mutilated tails; the larger measures 17 inches, without tail."

*Remarks.* Two specimens examined (U. S. N. M. No. 67350 ♀, Columbaria, Costa Rica; No. 37346 ♀, Bluefields, Nicaragua) pre-

sent the following data, respectively: ventrals, 152, 150; anal divided; double subcaudals, 96, 25 (tips of tails missing); scale rows 19 about head, 17 throughout body, in both; supralabials 9-9, 9-9; infralabials 10-10, 9-9; temporals 1 + 2 + 2 in both; preoculars 1—1; postoculars 2—2, the lower largest in each case. In No. 67350 the snout is blackish or blackish brown, somewhat lighter in the interorbital region, followed by a large black spot occupying the posterior three fourths of the parietals and including first six or seven scale rows on neck; this followed by a yellowish band of about five scale lengths. There follow about 8 triad bands (white-black-white) on the body, which is reddish (in life), each scale marked with a black apical spot; four triads are broken medially and the halves alternate on middle of body; six triads on tail.

No. 37346 is a little larger. The snout is lighter anteriorly and the interocular band is more distinct. There are 11 triads on body and 2 on the tail (the greater portion of which is missing). Seven triads are broken medially, including the first. In both there are distinct black spots on inner edges of each of the divided subcaudals.

Scales of the head with numerous fine "pits" especially on the supraoculars, frontals and the posterior part of the parietals; scales in the neck region with from one to 5 "pits," visible on scale even when epidermis is removed.

Boulenger gives length of type 430 mm. without tail, and the ventral counts of two cotypes as 142 and 137.

The dentition of U. S. N. M. 67350 and 37346 is as follows: Maxillary teeth, 56, 56, smaller anteriorly and posteriorly, the median teeth larger, all arranged in diads and triads of unequal size; all teeth spatulate, with their tips brownish. A dorsal process on maxillary as well as a medial ectopterygoid process. Palatine teeth 25, 30; pterygoid 25, 30; dentary 54, 58.

The low maxillary count (43) given by Günther seems very likely in error, and his statement that the teeth are equal may be due to faulty observation.

*Scaphiodontophis annulatus annulatus* (Duméril and Bibron)

(Plate XXI)

*Enicognathus annulatus* Duméril and Bibron, Erp. Gén., vol. 7, 1854, pp. 335-336, pl. 80; Günther, Ann. Mag. Nat. Hist., ser. 4, vol. 1, 1868, p. 418; Sumichrast, Bull. Soc. Zoöl. France, 1880, p. 181 (*part.*); *idem*, La Natureza, vol. 5, 1882, pp. 269, 284 (*part.*); *idem*, vol. 6, 1882, p. 42 (*part.*).

*Henicognathus annulatus* Cope, Journ. Acad. Nat. Sci. Phila., ser. 2, vol. 8, p. 138 (generic relationships); Bocourt, Miss. Sci. Mex., Rept. livr. 10, 1886, pp. 626-628 (*part.*); Cope, Bull. U. S. Nat. Mus., No. 32, 1887, p. 79 (*part.*; Cobán; Belize); Günther, Biol. Centr. Amer., Rept., 1893, p. 107 (*part.*; Vera Paz, Guatemala).

*Diadophis annulatus* Garman, N. Amer. Rept., 1883, p. 70.

*Polyodontophis annulatus* Boulenger, Fauna British India, Rept., 1890, p. 302; *idem*, Cat. Snakes Brit. Mus., vol. 1, 1893, p. 189 (City of Mexico [!], Vera Paz); ?Werner, Verh. Zool. Bot. Ges. Wien, vol. 46, 1896, p. 352; ?*idem*, Abh. Akad. München, 1903, p. 345; *idem*, Zool. Jahrb., vol. 57, 1929, pp. 7-8 (*part.*).

*Sibynophis annulatus* Dunn, Occ. Papers Boston Soc. Nat. Hist., vol. 5, p. 330 (*part.*).

*Type locality.* Cobán, Alta Verapaz, Guatemala.

*Specimens examined.* Four: U. S. N. M. 32598, Belize, British Honduras; U. S. N. M. 35915-7, Alta Vera Paz, Guatemala.

*Diagnosis.* Black head cap followed by a short red space, then by a triad consisting of a pair of black bands enclosing a white band; a total of five to eleven such triads, occupying half or third of body; ventrals 137 to 157.

*Description.* A very free translation of the original description follows:

**FORM.** Tail strong and robust, equal to about half the length of the trunk. Upon the anterior fourth of the back, five double black rows appear upon a reddish ground lighter than the remainder of the body, where one sees, along the median line of the body, a series of black dots in zigzag, especially apparent toward the beginning of the tail. The posterior two-thirds of the head completely black.

**SCUTELLATION.** By the size and the length of the tail [the unique specimen in the Museum of Paris lacks the extremity of the tail] this species is very distinctly distinguished from its congeners. The eye is proportionately much larger, the head is slightly more convex above, and the snout is truncate, elongate, and slightly sloping above. The nine plates on the top of the head are normal. The rostral much enlarged, reaching to the top of the snout, the upper edge strongly curved. The loreal is small, lower behind than in front, where it is in contact with the outer edge of the frontal. The preocular single and large; two postoculars. Eight upper labials; the fourth and fifth, which are very large, border the orbit. Between the last upper labials and posterior edge of the parietal, five temporals of medium size. The lower labials are about the same size and carried posteriorly. Scales lozenge-shaped, in seventeen rows. Ventrals 142; anal divided; 74 divided caudals (tip of tail missing).

**COLORATION.** The general color of the dorsal regions is brown, tending toward green. The head, at the level of the posterior extremity of the supraocular and frontal, is deep black, which extends up to the nape of the neck and is broken by the line of junction of parietals, between which one sees a light color which is present also in the form of a regular spot in the temporal region. This color is

present also on the anterior part of the head. On the under side of the orbit three black spots begin. The middle one, smaller than the others, reaches the upper lip directly while the others are directed obliquely, one anteriorly, the other posteriorly. Upon the nape of the neck, behind the large black spot, the coloration is light, somewhat roseate, forming a sort of collar, and bordered behind by a transverse black bar; this in turn is separated by a light bar from a second black bar. From here on, at intervals becoming slightly greater and at the distance of from eight to nine millimeters, one sees four pairs of black bars, arranged like the preceding. The remainder of the back and all the tail are of a brown color, much darker than the ground color previously described. Upon this one notices three parallel series of black spots, scarcely noticeable anteriorly but becoming larger posteriorly, particularly along the median line where the spots of the three series touch and form a succession of small, angulated, transverse spots. On the ventral surface one finds small black flecks on the outer edges of each ventral and caudal.

MEASUREMENTS. The head and body, 390 mm.; tail (tip missing), 200 mm.; total length, 590 mm.

*Variation.* The four specimens in the National Museum (see above), all males, have the following ventral and caudal counts, respectively: No. 32598, 140, 142; No. 35915, 143, ?; No. 35916, 147, ?; No. 35917, 145, 132. Supralabials nine in all, fourth, fifth and sixth entering orbit; infralabials 10-10 in one, 10-11 in two, 11-11 in one; preoculars 1-1, postoculars 2-2 in all; seventh labial in contact with lower postocular on both sides in two, on one side in one, on neither side in one; two labials in contact with posterior chinshields in all. All three Vera Paz specimens have the paired bands set close together, separated by red interspaces covering two and a half to six scale lengths. Two of them have five pairs of black bands, while one has eleven. The latter has no dark spots on the red areas, and in the others there are but few spots. They are not typical *annulatus* (as figured by Duméril and Bibron), of which the Belize specimen is an excellent example. In this there are six and one-half bands, the red bands cover six to nine scale lengths, and all scales in the red areas are black-tipped. The Alta Vera Paz specimens may be intermediate between *hondurensis* and typical *annulatus*.

The hemipenis of No. 35917 is eleven caudals long, not everted; terminal portion (two caudals) calyces, not capitate; calyces ex-

tending proximally a short distance along sulcus; latter single; spines straight (very slightly curved at tip), increasing in size proximally, in diagonally placed rings interrupted at sulcus; two proximal spines very large; spines covering the length of three and one-half caudals; basal portion ridged.

Four specimens which Müller had available (*loc. cit.*), from Guatemala, apparently belong to *albonuchalis*.

Werner (1896, *op. cit.*) gives data on a male specimen, which may be this species (or may be *albonuchalis*), from Guatemala. Internasals only somewhat shorter than the prefrontals, and the count of the double subcaudals is even greater than the largest given by other specimens: ventrals 143, subcaudals 145. Total length, 612 mm.; tail, 289 mm.

*Scaphiodontophis annulatus hondurensis* (Schmidt)

*Sibynophis* (sic) *annulatus* Barbour and Loveridge, Bull. Antiv. Inst., vol. 3, 1929, p. 3 (Progreso, Tela Division, Honduras).

*Sibynophis annulatus hondurensis* Schmidt, Proc. Biol. Soc. Wash., vol. 49, 1936, pp. 48-49.

*Type locality.* Portillo Grande, Yoro, 4100 ft. altitude, Honduras.

*Specimens examined.* None.

*“Diagnosis.* In close agreement with *Sibynophis annulatus annulatus* in scale characters, but with the pairs of dark crossbars on the anterior part of the body set close together, and without black spots on the scales of the red interspaces.

*“Description of type.* Rostral wider than high, well visible from above; upper head shields normal; parietals extending to the lower postocular; nostrils between two nasals; loreal about as high as long; nine upper labials, the fourth, fifth, and sixth entering the eye; ten lower labials; oculars 1-2; temporals 1 + 2 + 2; dorsal scales in seventeen rows; ventrals 145, anal divided, caudals 149.

“A white band across the snout, in front of the eyes, rest of head black; five pairs of narrow black crossbars, separated by gray spaces of about the same width, the first of which is four scales behind the parietals; intervening spaces dark red, the scales clouded, but without black apical spots; posterior part of the body brownish gray above, with three rows of spots, one on the mid-dorsal line and a pair on the fifth scale rows; underside uniform light, the ends of the ventrals with black spots.

*“Measurements.* Total length, 617 mm.; tail, 295 mm.”

*Remarks.* Schmidt was fortunate in having available several paratypes, from the type locality and in addition from Subirana Valley (2800 ft.) and Tela, Honduras. He points out, however, a

very considerable variation in the ventral counts of the male specimens and presents the following data: males, ventrals 128 to 142, caudals 132 to 137; females, ventrals 153 to 156, caudals 128 to 132. The largest male and female specimens are as follows: total length, 739 mm.; tail, 350 mm.; total length, 782 mm.; tail 336 mm.

We retain this name, although National Museum specimens from Alta Verapaz are intermediate between this and typical *annulatus*.

*Scaphiodontophis carpicinctus* sp. nov.

(Plate XXII, fig. 1; text fig. 6)

*Holotype*. U. S. National Museum No. 110411, male, Piedras Negras, Guatemala, June 3, 1939.

*Diagnosis*. Only neck banded; black head cap followed in succession by a red space, a pair of black bands, a longer red space, and a final pair of black bands; remainder of body and tail gray; five dotted dark lines on body; three zigzag lines on tail.

*Description of holotype*. Head not depressed, somewhat distinct from neck; snout slightly truncate; rostral more than one and one-half times as broad as high, the portion visible from above about half length of internasals; latter about two thirds size of prefrontals, which extend onto sides of head to a point about on a line between middle of orbit and upper edge of naris; length of frontal (4.8 mm.)

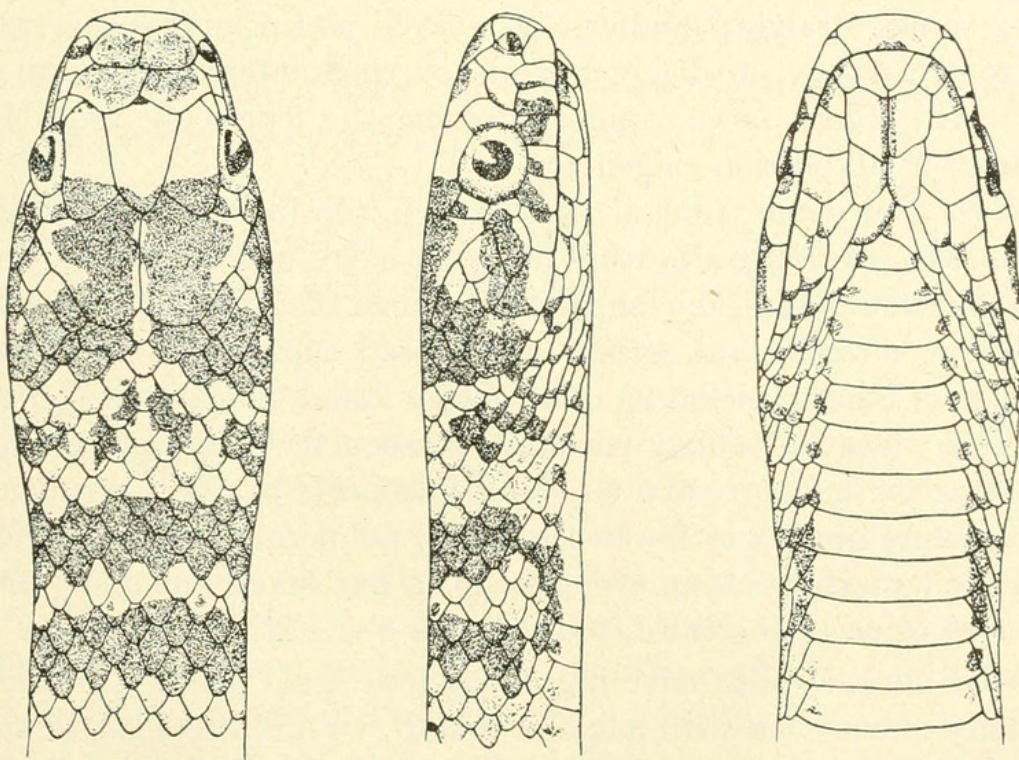


FIG. 6. Head of *Scaphiodontophis carpicinctus*, from the holotype U. S. N. M. No. 110411, Piedras Negras, Guatemala.

much greater than its distance from tip of snout (3.2 mm.) or length of interparietal suture (3.8 mm.), less than greatest length of parietal (5.3 mm.); supraocular and frontal subequal in length, latter somewhat the larger; nasal completely divided, naris occupying most of its width; anterior section of nasal lower than posterior, somewhat larger; loreal single, nearly square; a large preocular; two subequal postoculars; temporals  $1 + 2 + 2$ , the anterior separated narrowly from parietal on one side, somewhat wedged between seventh and eighth labials, not in contact with sixth labial nor with upper postocular; secondary temporals smallest, about as long as broad; tertiary temporals elongate; nine supralabials, fourth, fifth and sixth entering eye, ninth largest; eye large, its diameter (3.1 mm.) three fourths its distance from tip of snout (4.2 mm.); ten infralabials, the first in contact medially with its mate, four in contact with anterior chinshields; posterior chinshields two thirds size of anterior, in contact with two infralabials (fourth and fifth).

Scales in 17 rows throughout, smooth, without apical pits; ventrals 140; anal divided; caudals more than 102 (tail tip missing); total length 545 mm.; tail 228 mm.

Maxillary teeth, 54; 25 palatine, 23 pterygoid, 51 dentary teeth.

Hemipenis about eleven caudals long, not everted; distal portion (three caudals) calyces, not capitate, but slightly bilobed; calyces extending proximally a short distance along sulcus; latter single; larger spines straight, smaller ones curved at tip; spines increasing in size proximally, in diagonally placed rings interrupted at sulcus; four basal spines large; spines covering the length of about four caudals; basal portion ridged.

*Color.* Sides and front of snout cream, top black; a white interorbital bar, involving all except posterior edges of frontal and supraoculars; remainder of dorsal surface of head black, except fine white line along interparietal suture; black head cap extending laterally to angle of mouth, including most of last labial, reaching posteriorly two scale lengths behind parietal; postocular black spot present, involving most of primary temporal and parts of lower postocular, eighth supralabial and lower secondary temporal, fused posteriorly with the lateral extension of head cap; a fine black line about orbit, with extension to the third, fourth, fifth and sixth labials.

A red nuchal collar covering about four scale lengths, extending laterally about even with angle of mouth, with scattered dark spots (about half the scales black); a paired black ring follows, each component covering about two scale lengths and separated from each

other by a white band covering one scale length; following this, a red space of five to five and one half scale lengths; a few scales in this area with black tips; a broader black ring (of more than two scale lengths) follows, a white ring of one scale length, and finally a narrow black ring covering about one scale length. The dorsal markings extend to the second scale row; the first row is gray, stippled; remainder of dorsal surface gray; five lines, one on the median, and one on the fifth and second scale rows of each side; these lines formed by a black tip on each scale of the row they follow; other dorsal scales with finer black tips, not forming lines; the lines on the median and fifth scale rows form zigzag lines on the tail.

A considerable area at ends of ventrals pigmented; in addition, an irregular dark spot at the posterolateral edge of each ventral, even those in gular region; similar spots on ends of subcaudals, these extending farther medially; a black line on median suture between chinshields; several black flecks on infralabial and gular scales; otherwise ventral surface white.

*Remarks.* This species is perhaps most closely related to *annulatus* since it possesses a red nuchal collar. The paucity of bands, more extensive black subocular marks, fusion of postocular dark spot and presence of dark marks in the gular region distinguish it from *annulatus*.

*Scaphiodontophis zeteki* (Dunn)

*Sibynophis zeteki* Dunn, Occ. Papers Boston Soc. Nat. Hist., vol. 5, 1930, pp. 329-330.

*Type locality.* Ancon, Canal Zone, Panamá.

*Specimens examined.* None.

*Diagnosis.* "Close to *S. venustissimus* of Nicaragua and Costa Rica, but with light instead of black snout, and with black rings in contact with the red bands instead of light."

*Description.* "Female: scales 17; ventrals 142; anal divided; caudals 65+; oculars 1-2; temporals 2-2; supralabials 8; infralabials 10; third, fourth and fifth supralabials in contact with eye; four infralabials in contact with anterior chinshields which are much longer than those posteriorly; snout white; black dots on the labials under the eye; parietals and nape black; black dots on postoculars, temporals, and last labial; a light ring two scales long followed by a black ring  $1\frac{1}{2}$  scales long back of nape; this followed by a red band 9 scales long, the scales tipped with black; then black, yellow, black, each ring two scales long; then red again, etc.; 12 red bands

on body, varying in length from 9 to 3 scales; tail with three broad red bands separated by three black rings which are in turn separated by light rings; the combination about equal to one red band, and being made up in about the proportion of 1 black, 1 yellow, 6 black, 1 yellow, 1 black; throat and belly light; a black dot on each subcaudal; length 531 mm.; tail 166 mm., imperfect."

*Remarks.* This species may be closely related to *Scaphiodontophis cyclurus*, but this cannot be determined positively until the dentition is examined.

*Scaphiodontophis cyclurus* sp. nov.

(Plate XXII, fig. 2; text fig. 7)

*Holotype.* EHT-HMS No. 23618, male, Cuautlapan, Veracruz, June, 1940.

*Diagnosis.* Entire body and tail banded (terminal portion of tail missing); eight and a half bands on the body and four (plus) on the tail; head black with a dim band between eyes and a nuchal white band two and a half scales wide, followed by a black band one and a half scales wide; the latter followed by a red band sixteen scales wide, each scale with a black tip, and this band followed by a black, yellow, black band totaling from four and a half to five scales in width; two outer scale rows grayish, the color extending somewhat onto ventrals; venter otherwise without markings.

*Description of holotype.* Head not depressed, sloping from inter-orbital regions to snout, somewhat distinct from neck; snout slightly

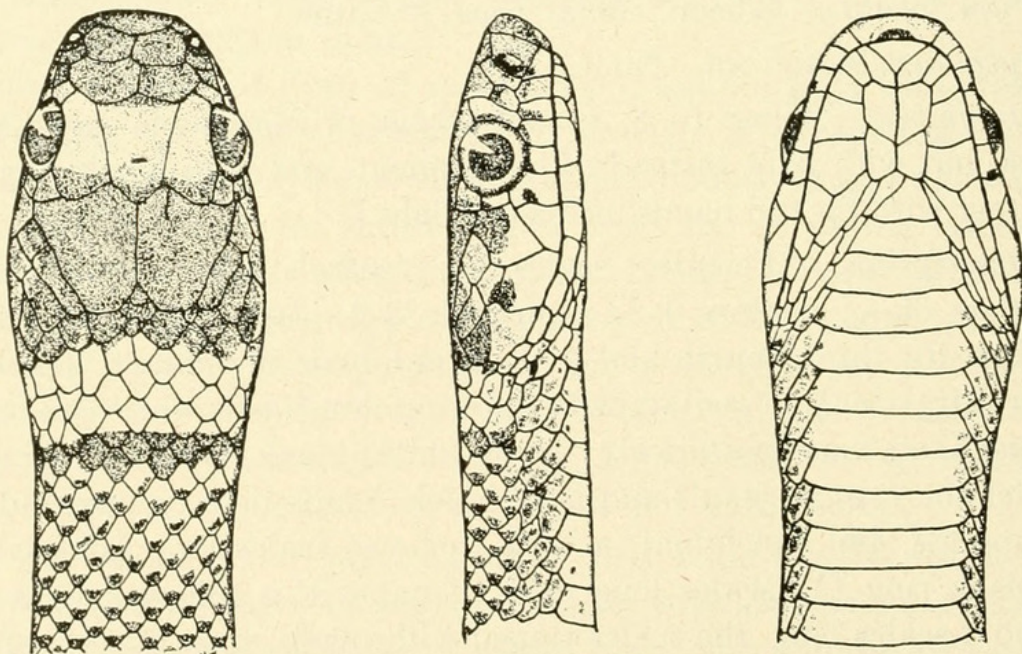


FIG. 7. Head of *Scaphiodontophis cyclurus*, from the holotype EHT-HMS No. 23618, Cuautlapan, Veracruz.

truncate; rostral one and a half times as broad as high, the part visible from above less than half the distance from the frontal; internasals much smaller than prefrontals; latter more or less curving posteriorly; length of frontal (4.3 mm.) about one-fourth greater than its distance from tip of snout (3.7 mm.); length of the interparietal suture (3.7 mm.) less than greatest parietal length (5.8 mm.); supraoculars about as long as frontal; nostril between two nasals; anterior nasal large, somewhat rectangular, and lower than posterior nasal; loreal large, irregular, its greatest anteroposterior length greater than its height, sharply angular behind; a large preocular and two postoculars, of which the upper is largest; temporals  $1 + 2 + 2$ ; primary temporal forming a deep notch between the seventh and eighth labials, touching sixth labial; secondary temporals small, their combined size less than the primary; tertiary temporals much elongated; 9 supralabials, fourth, fifth and sixth bordering orbit, the ninth largest, its posterior border curving; eye large, its length (3.5 mm.) equal to its distance from anterior end of the nasal; distance from eye to tip of snout 4.5 mm.; nine infralabials, the four anterior in contact with the anterior chinshields; posterior chinshields somewhat more than half area of anterior, in contact medially, each touching two infralabials; mental much narrower than rostral.

Scales in 17 rows from parietals to anus; dorsals smooth, without pits; ventrals 141, anal divided; subcaudals  $37 +$ , the tip of the tail missing; total length 402 mm.; body, 315 mm.; tail, 87 mm. (incomplete).

*Color.* Snout to ends of the prefrontals black; a grayish brown bar extends between the eyes and somewhat down in front of them; a broad black band extending from the posterior parts of frontal onto the first row of body scales, covering the parietals and posterior and tertiary temporals; a black spot on anterior temporal; small black spots on several of the labials, which are for the most part cream color; a stippled area above the postocular spot; a narrow black ring surrounding orbit; a white nuchal collar two and one-half scales wide follows the black spot and reaches down to the level of the last upper labial; this followed by a broad red band which extends to the ventrals, each scale with an apical blackish spot covering one-third to one-half of the scale; then follows a triad consisting of black, yellow, black bands, whose total width is four and one-half scale lengths; there follow three triads, equally spaced, separated by wide red areas; the next bands are broken so that on

the left side there are three half bands which alternate with two half bands on the right; one other complete band follows anterior to the base of the tail. Tail with four bands separated by diminishing reddish bands (the tip of the tail missing); two outer scale rows and edges of ventrals stippled with gray; venter without markings; slight dark clouding on the chin.

*Remarks.* The teeth of this species conform with the generic characters. There are 54-54 spatulate teeth on the maxillary, arranged in diads or triads of unequal size, every second or third tooth longer and larger than adjoining teeth; tips of all teeth not in line, but tips of teeth of each triad (or diad) in a diagonal row. On dentary, 49 teeth, usually every second tooth enlarged.

The hemipenis is eleven caudals long, not everted; terminal portion (two caudals) calyces, capitate; calyces extending proximally a short distance along sulcus; latter single; spines straight, increasing in size proximally, in diagonally placed rows interrupted at sulcus; four proximal spines larger than others; spines covering the length of four scales; basal portion ridged.

Ferrari-Perez (Proc. U. S. Nat. Mus., vol. 9, 1886, p. 188) lists *Henicognathus annulata cyclura* Cope M. S. subsp. nov., type locality Jicaltepec (Jalapa), Vera Cruz. So far as we know no other publication was made and accordingly the name appears to be a *nomen nudum*. We are not now certain whether Cope had a specimen of this or another form before him.

*Scaphiodontophis nothus* sp. nov.

(Plate XXIII, fig. 2; text fig. 8)

*Holotype.* U. S. Nat. Mus. No. 110412, male, Potrero Viejo, Veracruz, March 5, 1932, collected by Dyfrig McH. Forbes.

*Diagnosis.* Entire body, but not tail, banded; twelve white bands (including nuchal collar) in type; black head cap followed in succession by a white neck band, a narrow black band, a broad red band, and a succeeding series of black, white, black and red bands to end of body; tail gray, with three irregular, zigzag lines.

*Description of holotype.* Head not depressed, somewhat distinct from neck; snout slightly truncate; rostral one and one-half times as broad as high, the portion visible from above about two-thirds maximum length of internasals; latter about two thirds size of prefrontals, which extend onto sides of head to a point about on a line between middle of orbit and upper edge of naris; length of frontal (5 mm.) greater than its distance from tip of snout (3.5 mm.) or

length of interparietal suture (3.9 mm.), less than maximum length of parietal (5.6 mm.); supraocular and frontal of subequal length, latter somewhat the larger; nasal completely divided, naris occupying most of its width; anterior section of nasal somewhat lower than posterior, slightly larger; loreal large, subrectangular; a large preocular; two postoculars, lower slightly the smaller; temporals  $1 + 2 + 2$ , but the two secondary temporals fused to form one scale on one side; primary temporal in contact with parietal and lower postocular, separated from sixth labial, and wedged between seventh and eighth labials; secondary temporals small, as broad as long;

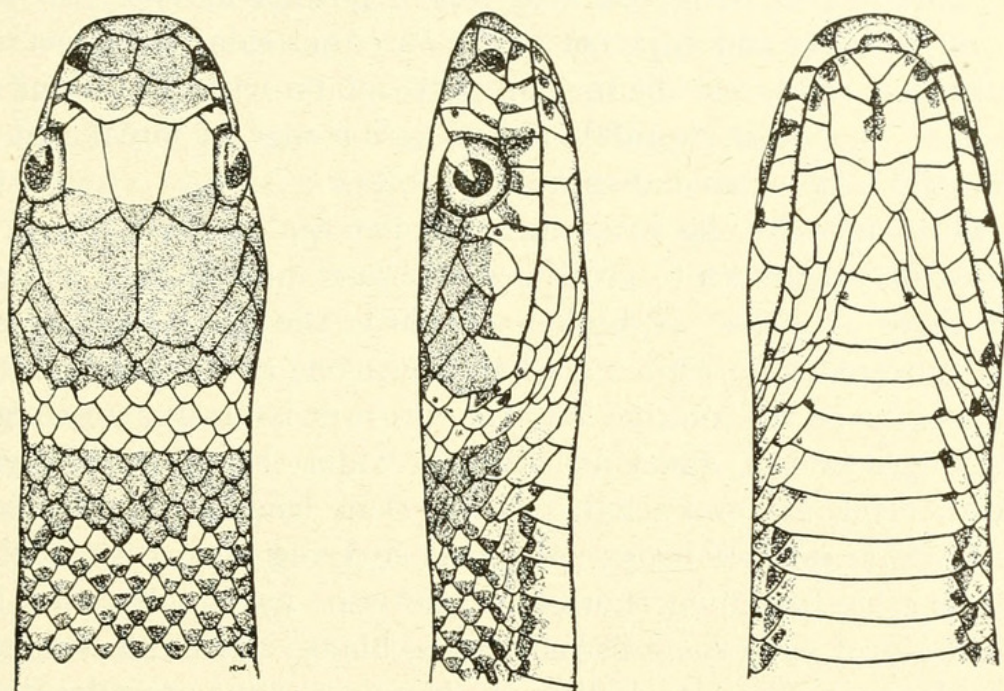


FIG. 8. Head of *Scaphiodontophis nothus*, from the holotype U. S. N. M. No. 110412, Potrero Viejo, Veracruz.

tertiary temporals elongate; nine supralabials, fourth, fifth and sixth entering eye, ninth largest; eye large, its diameter (3.2 mm.) more than half its distance from tip of snout (5 mm.); ten infralabials, the first in contact with its mate medially, four in contact with anterior chinshields; posterior chinshields two thirds size of anterior, in contact medially and with two infralabials (fourth and fifth).

Scales in 17 rows throughout, smooth, not pitted; 141 ventrals; anal divided; caudals more than 74 (tip of tail missing); total length, 531 mm.; tail, 187 mm.

Maxillary teeth 52; 23 pterygoid, 26 palatine, 56 dentary teeth.

Hemipenis ten caudals long, not everted; terminal portion (two caudals) calyces, apparently slightly capitate; calyces extending

proximally a short distance along sulcus; latter single; spines straight, increasing in size proximally, in diagonally placed rings interrupted at sulcus; four proximal spines largest; spines covering length of four scales; basal portion ridged.

*Color.* Snout to ends of prefrontals black, with extensive light areas on sides; a white interorbital bar involving all of frontal and supraoculars except posterior tips; remainder of dorsal surface of head black, the color extending onto neck about one scale length, and laterally onto sides of head as far as lower edge of ninth supralabial; a postocular black spot, fused with lateral extension of black head cap; a dark gray, stippled area above postocular spot, involving edge of parietals and adjacent scales on either side; a narrow black ring around orbit, less distinct on postoculars, with extensions onto subocular and third supralabials; posterior edge of loreal and posteromedial edge of second supralabial black.

A white nuchal collar covering about two scale lengths, the first of a series of twelve white crossbars, the last immediately preceding anus, three of which are broken medially, the half crossbars staggered (alternating); white crossbars cover one and one half to three scale lengths on the midline, but are narrower laterally, covering one scale length or less; black borders are wider than the white crossbars, covering one and a half to three scale lengths, also narrowing somewhat on sides of body; red bands covering about five to eleven scale lengths, becoming shorter on posterior part of body; a large area at tip of each scale in red bands, black; red bands somewhat longer laterally than medially; all dorsal markings terminating on second scale row; first scale row and ends of ventrals gray, stippled, but no distinct black spots on ends of ventrals; ends of subcaudals also stippled, the color extending medially more than half the width of each scale; a few indistinct dark markings in gular region; otherwise ventral surfaces white. Dorsal surface of tail gray, with three zigzag, somewhat irregular dark lines.

*Remarks.* This snake is generally known in the region of the type locality as "rabo de hueso." The bite is erroneously believed to cause death by paralysis of the neck muscles; they are unable to control the movements of the head, which sooner or later displaces the neck vertebrae. (We are aware that the name is applied to other species of snakes, elsewhere.)

*Scaphiodontophis albonuchalis* sp. nov.

(Plate XXIII, fig. 1; plate XXIV; pl. XXV, figs. 1, 2. Text fig. 9)

*Enicognathus annulatus* Jan, Arch. Zoöl. Anat. Fis., vol. 2, 1863, p. 778; Jan, Elenco Sist. Ofidi, 1863, p. 51; Jan and Sordelli, Icon. Gen., Livr. 16, 1866, pl. 4, fig. 3; Müller, Verh. Nat. Ges. Basel, vol. 6, 1878, pp. 565, 659-660 (Costa Grande, Guatemala); Slevin, Proc. Calif. Acad. Sci., ser. 4, vol. 23, 1939, pp. 396-397.

*Henicognathus annulatus* Bocourt, Miss. Sci. Mex., livr. 10, 1886, pp. 626-628 (*part.*), pl. 40, fig. 6; Cope, Bull. U. S. N. M., no. 32, 1887, p. 79 (*part.*; Tabasco); Günther, Biol. Centr. Amer., Rept., 1893, p. 107 (*part.*; Tabasco, Atitlán, Tehuantepec).

*Sibynophis annulatus* Dunn, Occ. Papers Boston Soc. Nat. Hist., vol. 5, 1930, p. 330 (*part.*).

*Holotype*. U. S. National Museum No. 110413, female, La Esperanza, Chiapas (near Escuintla), April 23, 1940. *Paratypes*. EHT-HMS No. 23881, topotype, May 19, 1940; U. S. N. M. No. 12693, Escuintla, Guatemala; No. 12087, "Mexico"; No. 6580, San Juan Bautista, Tabasco; and No. 94 (dried) of the collection of the Minister of Agriculture, San Salvador, from "San Salvador."

*Diagnosis*. Anterior half of body banded, with six to eight white bands; black head cap followed in succession by a white band, a single black band, a broad red band, and a succeeding series of black, white, black and red bands to middle of body; remainder of body and tail gray; three dark stripes on body and tail, dotted on body, zigzag on tail.

*Description of holotype*. Head not depressed, somewhat distinct from neck; snout slightly truncate; rostral more than one and one half times as broad as high, the portion visible from above about half length of internasals; latter about two thirds of prefrontals, which extend onto sides of head to a point about on a line between middle of orbit and upper edge of naris; length of frontal (5 mm.) much greater than its distance from tip of snout or length of interparietal suture (3.2 mm.), subequal to length of parietal; supraocular and frontal subequal in length; latter somewhat the larger; nasal completely divided, naris occupying most of its width; anterior section of nasal lower than posterior, subequal in size or slightly larger; a single, somewhat elongate loreal; a large preocular; two postoculars, upper slightly the larger; temporals 1 + 2 + 2, the primary wedged between seventh and eighth labials, in contact with only lower postocular, on one side narrowly in contact with sixth labial; secondary temporals smallest, about as broad as long; tertiary temporals elongate; nine supralabials, fourth, fifth and sixth entering eye, ninth the largest; eye large, its diameter (3.2 mm.) more than half its distance from tip of snout (4.9 mm.); ten infralabials, the first in contact medially with its mate, four in contact with anterior chinshields; latter about a third larger than posterior

chinshields, which are in contact medially and with two (fourth and fifth) infralabials.

Scales in 17 rows throughout, smooth, without apical pits; ventrals, 154; anal divided; caudals, 117; total length, 625 mm.; tail, 248 mm.

*Color.* Snout pale brown on sides and in front, nearly black above; a broad, white interocular bar involving all except posterior tips of frontal and supraoculars; remainder of dorsal surface of head black, except a fine, broken light line on interparietal suture; black

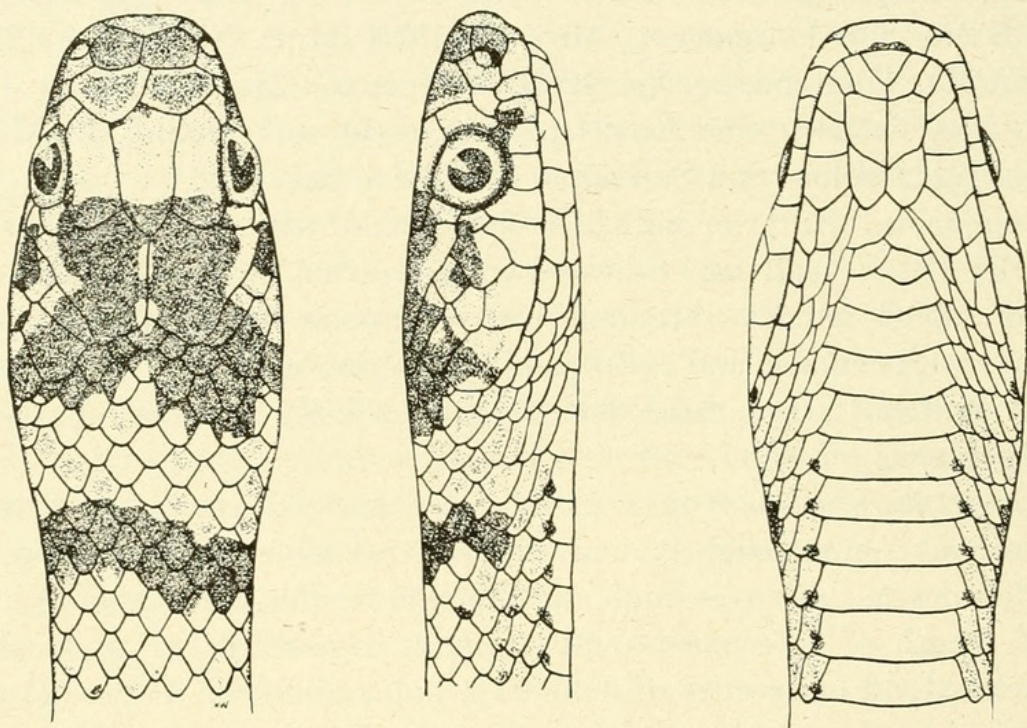


FIG. 9. Head of *Scaphiodontophis albonuchalis*, from the holotype, U. S. N. M. No. 110413, La Esperanza (near Escuintla), Chiapas.

of head extending onto nuchal region about two scale lengths, less on median line, and laterally to angle of mouth; a black spot behind eye, involving most of primary temporal, and parts of adjacent scales; this spot surrounded on all sides by a light area, which is stippled with black except below the spot; a narrow black line surrounding orbit, not very distinct on postoculars, with a projection onto third and fourth labials; otherwise labials white.

A white nuchal collar, with some darker stippling, covering about two and a half scale lengths, immediately following black head cap; this followed by a somewhat narrower black ring extending to the second scale row; a red area eleven or twelve scales long follows, and in turn seven more paired black rings; the red interspaces between the pairs of bands decrease in length posteriorly, the last

covering three scale lengths dorsally, five laterally; anteriorly the dorsal markings, including the red areas, black rings and white interspaces, extend laterally to the second scale row; posteriorly they extend to the fourth or fifth, the lateral scales gray; white spaces slightly wider than the black borders; remainder of dorsal surface gray; a line of dark spots on the tip of each middorsal scale, extending from last ring to tail, and from there to tip of tail as a continuous, zigzag line; posteriorly a similar line of dots on the tips of scales in the fifth row; this also becomes a zigzag line on tail, but less distinct; ends of ventrals stippled with black, more heavily on posterior edges; ends of subcaudals black; otherwise ventral surface white.

*Variation.* The scutellation of the five paratypes is essentially like that of the holotype. The frontal is generally somewhat broader; two loreals, one above the other, are present in one (end of prefrontals segmented); the anterior temporal is in contact with the sixth labial on both sides in three, on neither side in two. The shape and arrangement of the temporals are peculiarly constant.

The black head cap extends posteriorly one and one-half to four scale lengths, and is nearly straight in some, instead of being indented medially; the light, dark-stippled area above the postocular stripe extends a considerable distance dorsally in one (U. S. N. M. 6580), separated from its mate at posterior edge of parietals about three scale widths; the white bands (including the nuchal band) vary in number from six to eight; in one (U. S. N. M. 12087) the subcaudal black spots extend nearly to the midventral line; the latter condition is nearly approached in two others (U. S. N. M. 6580, 12087). The Chiapas specimens (as well as the dried specimen from San Salvador) have the spots confined to the edges of the subcaudals.

The accompanying table shows variation in scale counts.

| Number       | Sex | Ventrals | Caudals |
|--------------|-----|----------|---------|
| 110413 ..... | ♀   | 154      | 117     |
| 23881 .....  | ♀   | 152      | ...     |
| 12693 .....  | ♀   | 156      | 120     |
| 94 .....     | ♀   | 151      | ...     |
| 6580 .....   | ♀   | 158      | ...     |
| 12097 .....  | ♂   | 138      | ...     |

The teeth conform to the generic characters. There are 55 maxillary, 25 palatine, 24 to 29 pterygoid and 51 dentary teeth; there is a dorsal as well as a medial ectopterygoid process.

Hemipenis of No. 12087 ten caudals long, not everted; terminal portion (two caudals) calyces, not capitate; calyces extending proximally a short distance along sulcus; latter single; spines straight, increasing in size proximally, in diagonally placed rings interrupted at sulcus; four proximal spines largest; spines covering the length of four scales; basal portion ridged.

Four specimens which Müller (*op. cit.*) had available, from Guatemala, have the following scale data: No. 1, 142 ventrals, 125 caudals, 415 mm. total length, 180 mm. tail; No. 2, 143 ventrals, 133 caudals, 630 mm. total length, 300 mm. tail; No. 3, 142 ventrals; No. 4, 140 ventrals. All the specimens have only one preocular; nine upper labials, with the fourth, fifth and sixth bordering the eye (one specimen has eight on one side, the fourth and fifth bordering the eye); infralabials nine or ten, five touching two pairs of chinshields, the fifth largest, the following small; second pair of chinshields somewhat smaller than the first pair; one of the specimens has two loreals on one side, the upper bordering the prefrontal. All four specimens have five double bands behind the neck band which here and there alternate on the middle line; two specimens have the underside of the tail uniformly light, while the other two have the subcaudals sprinkled with brown. Three lines run from the last triad to the tail. The tongue is ringed with white and brown.

Slevin (*op. cit.*) reports two other specimens, presumably of this species, from Finca El Ciprés, Volcán Zunil, Guatemala. One is a male, with 142 ventrals, the other a female with 152 ventrals; tail incomplete in both. Other scale counts are typical, save one that has 10-10 infralabials. Their color is described as follows: "Both specimens are somewhat similar in coloration. The top of the head is black, with a dark grayish transverse band between the eyes. At the base of the parietals begins a series of black bands, divided by one or two rows of grayish scales, and separated from each other by a band of red, nine to ten scales wide. The black bands break posteriorly, forming blotches on a ground color of red. This coloration forms the anterior third of the body, while the remainder is grayish or olive, with or without three longitudinal rows of black spots. Under surfaces yellowish-white, the gastrosteges and urosteges with lateral grayish spots. No. 66968, the female, lacks the posterior spotting and is uniform olive in coloration.

*Comparisons.* *S. albonuchalis* differs from typical *annulatus* primarily in having the first pair of black rings farther forward on the neck. In *annulatus* both rings of the first pair are visible, and sepa-

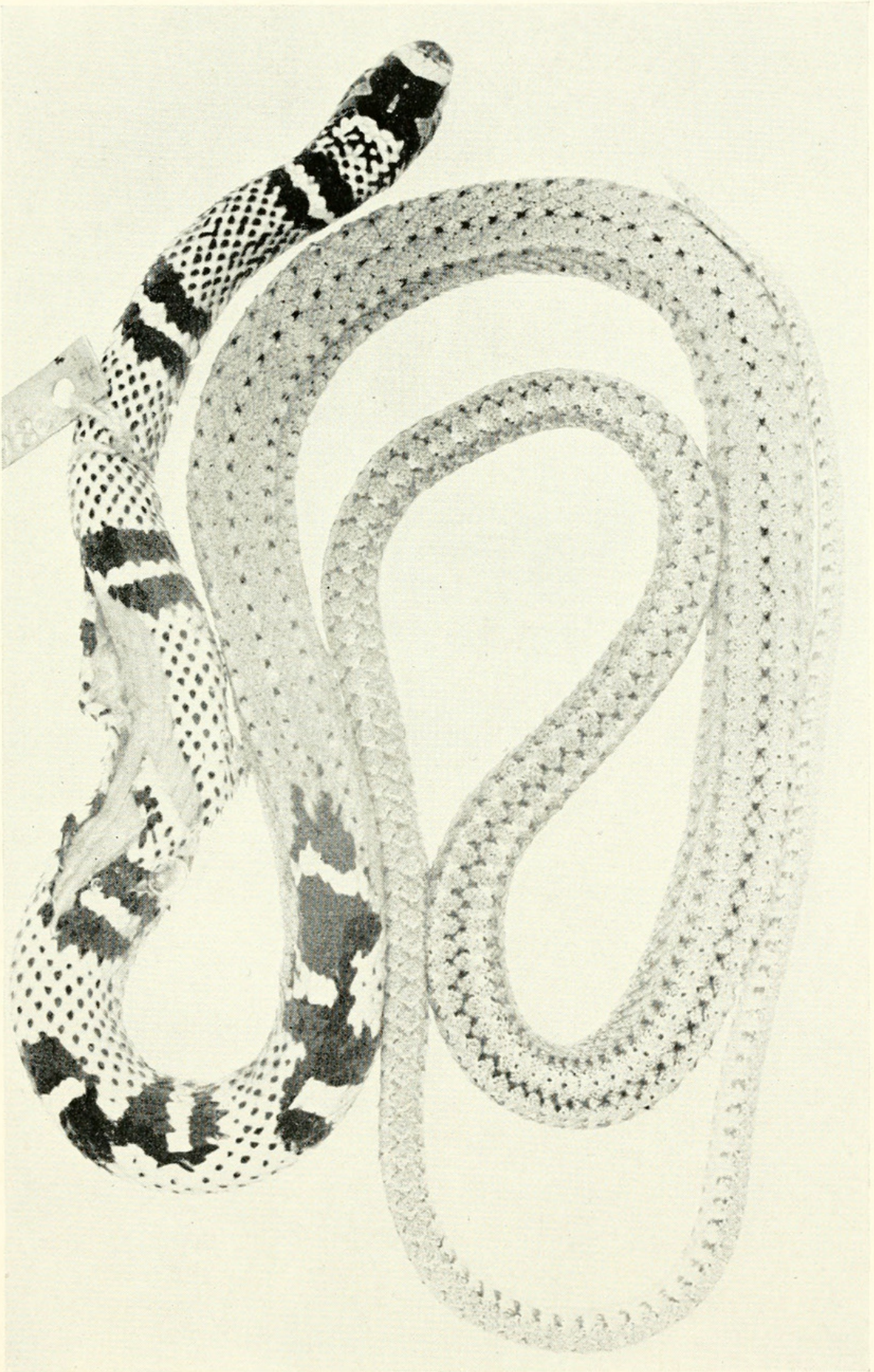
rated from the black head cap by a red area, while in *albonuchalis* the nuchal red area is absent, the anterior ring of the first pair of black rings is also absent, and the collar is formed by the first white interspace, rather than by a red area.

*Remarks.* The two specimens from Chiapas were found during the day in the leaves on the ground in a coffee grove. The type contains a specimen of *Leiolopisma assatum taylori*. Specimens reported by Slevin (*loc. cit.*) were "taken at the edge of a clearing amongst the coffee trees. . . ."

## PLATE XXI

*Scaphiodontophis annulatus annulatus*, U. S. N. M. No. 32598, Belize,  
British Honduras.

PLATE XXI

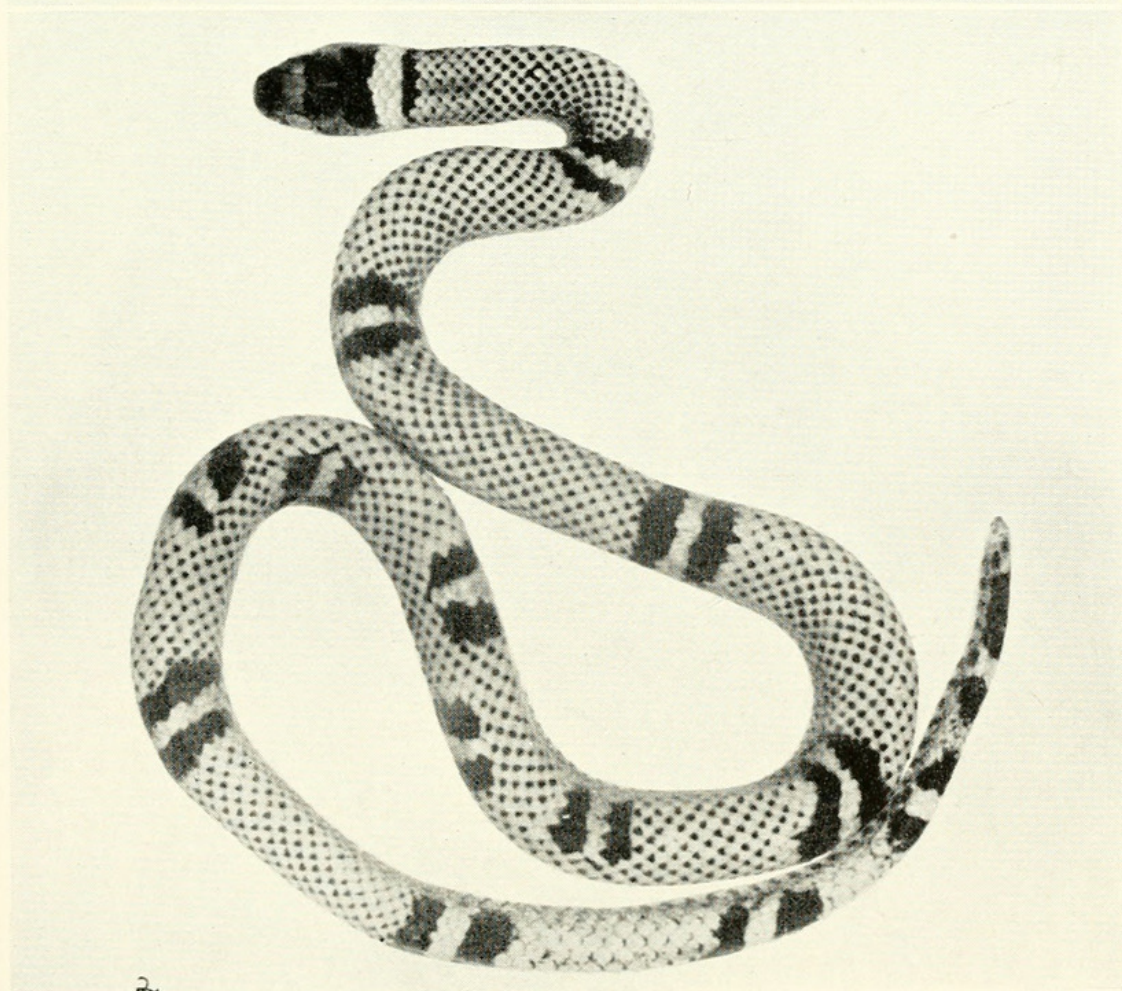
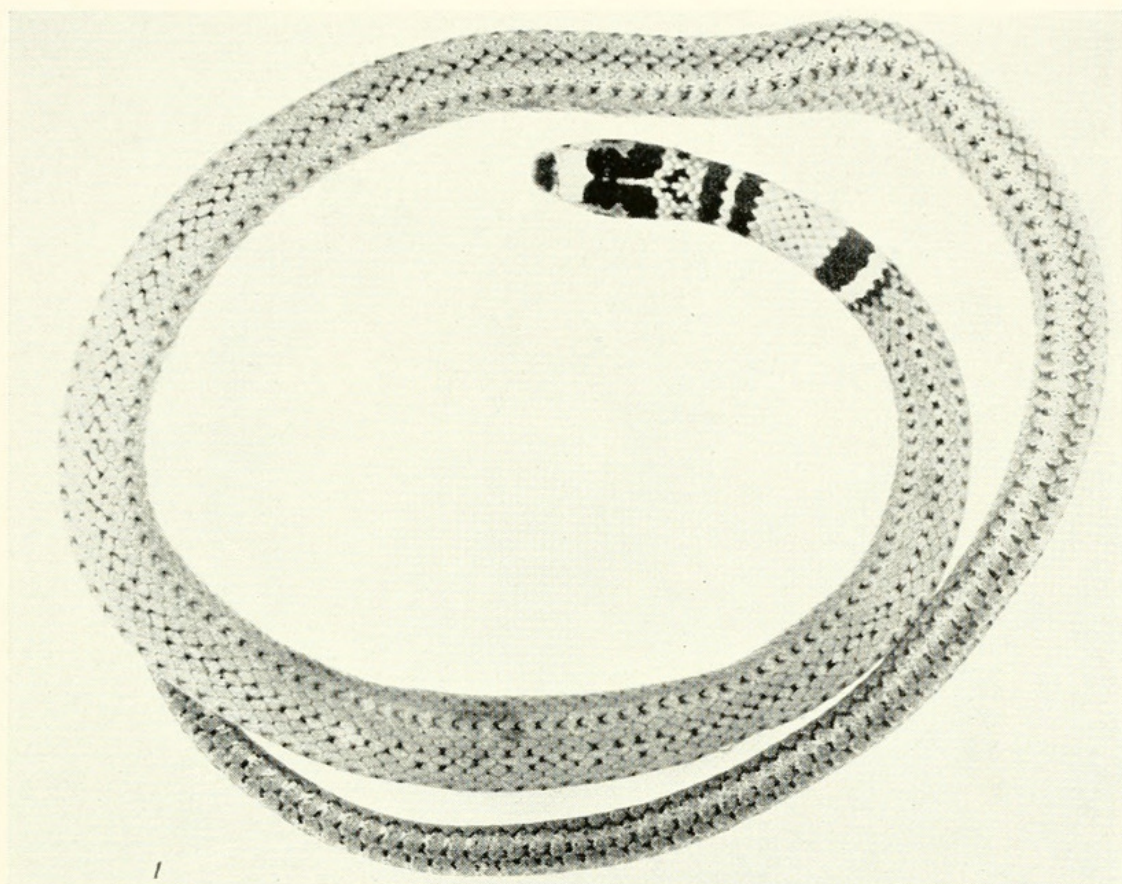


## PLATE XXII

FIG. 1. *Scaphiodontophis carpicinctus* sp. nov.; holotype, U. S. N. M. No. 110411, Piedras Negras, Guatemala.

FIG. 2. *Scaphiodontophis cyclurus* sp. nov.; holotype, EHT-HMS No. 23618, Cuautlapan, Veracruz, México.

PLATE XXII

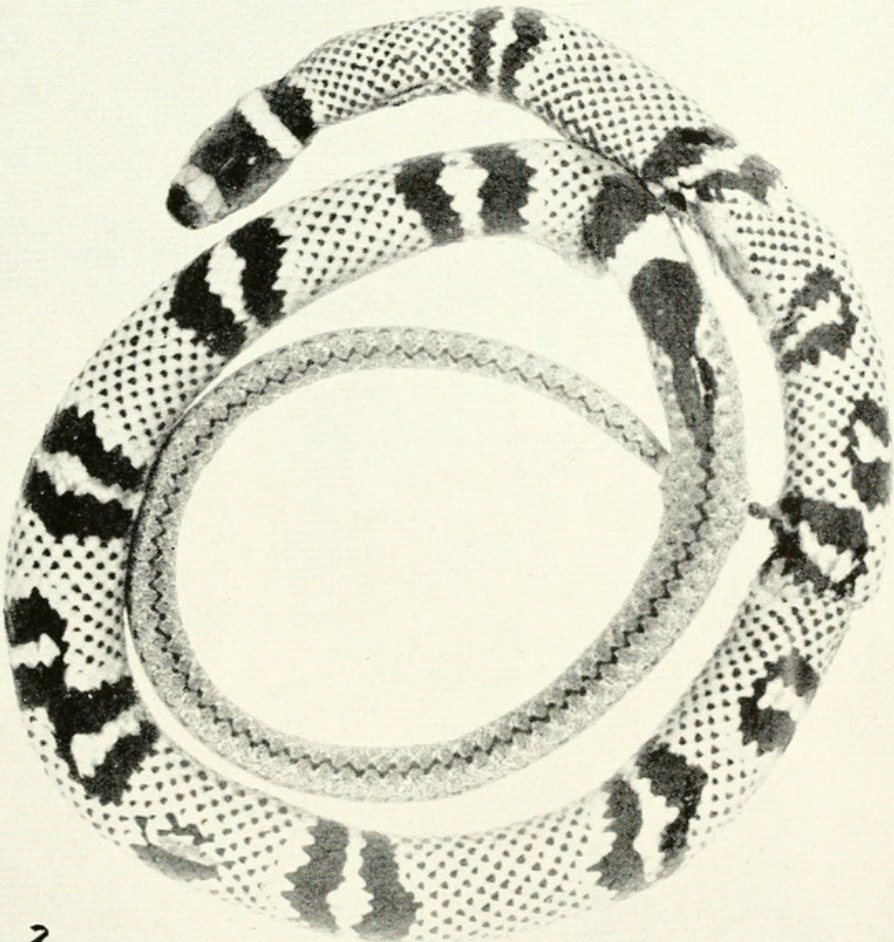
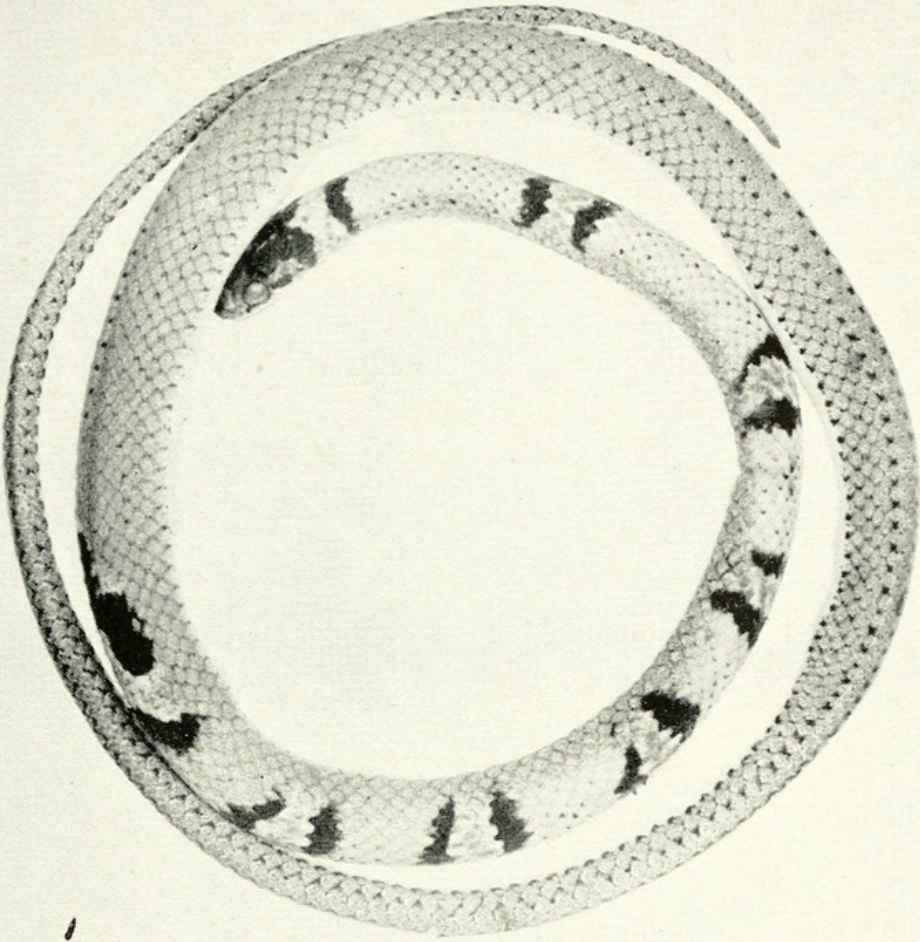


## PLATE XXIII

FIG. 1. *Scaphiodontophis albonuchalis* sp. nov.; holotype, U. S. N. M. No. 110413, La Esperanza (near Escuintla), Chiapas, México.

FIG. 2. *Scaphiodontophis nothus* sp. nov.; holotype, U. S. N. M. No. 110412, Potrero Viejo, Veracruz, México.

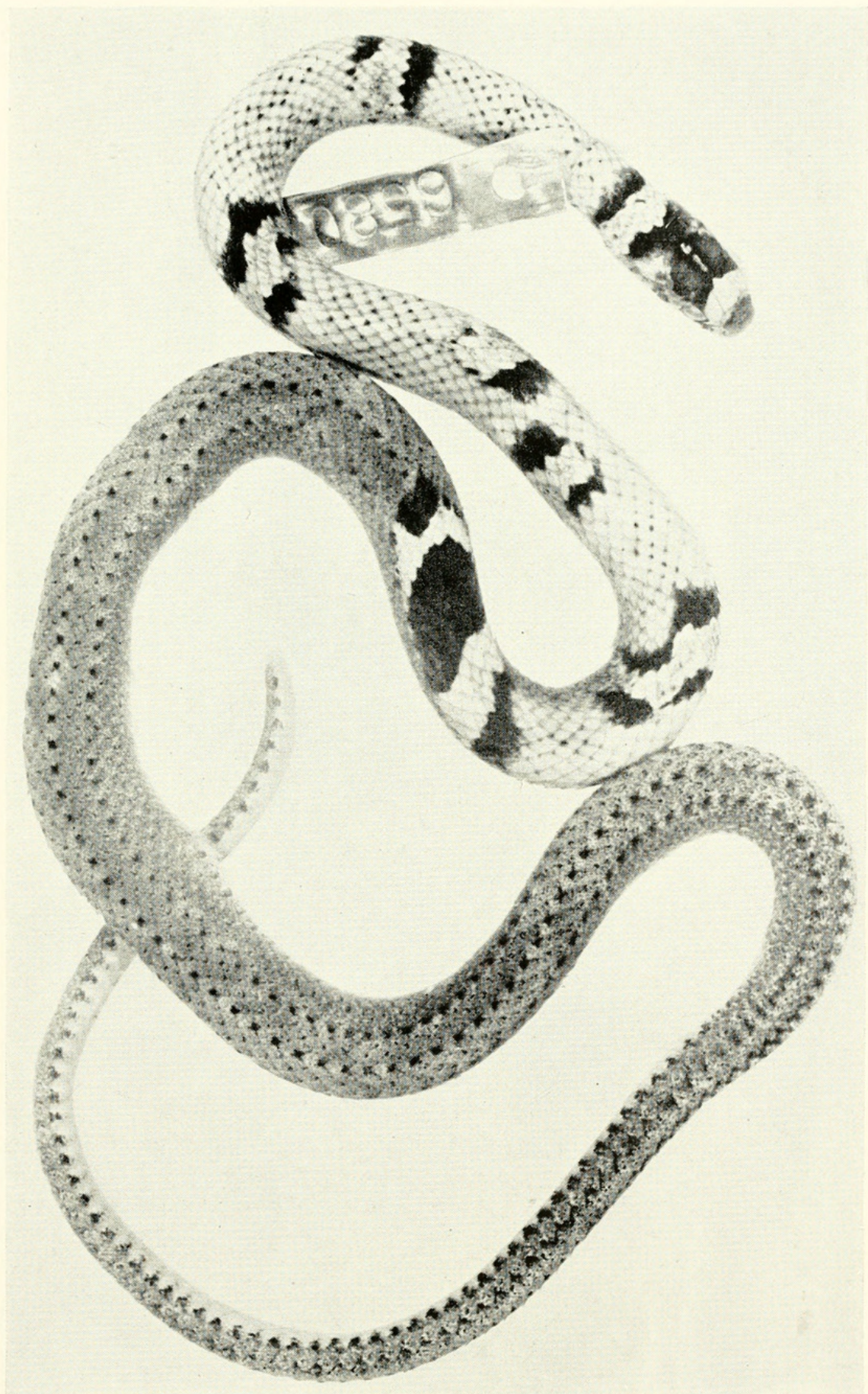
PLATE XXIII



## PLATE XXIV

*Scaphiodontophis albonuchalis* sp. nov.; a paratype, U. S. N. M. No. 6580,  
San Juan Bautista, Tabasco, México.

PLATE XXIV

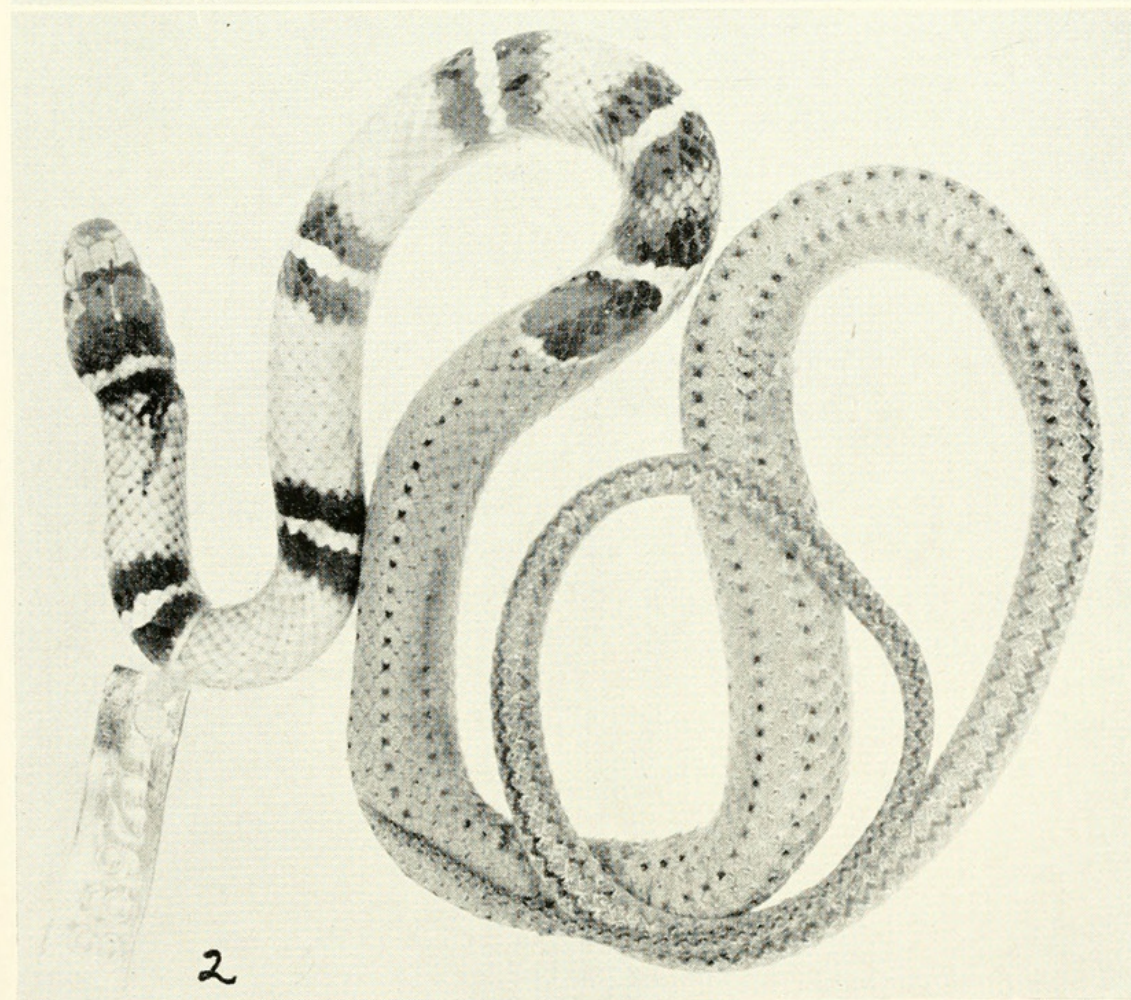
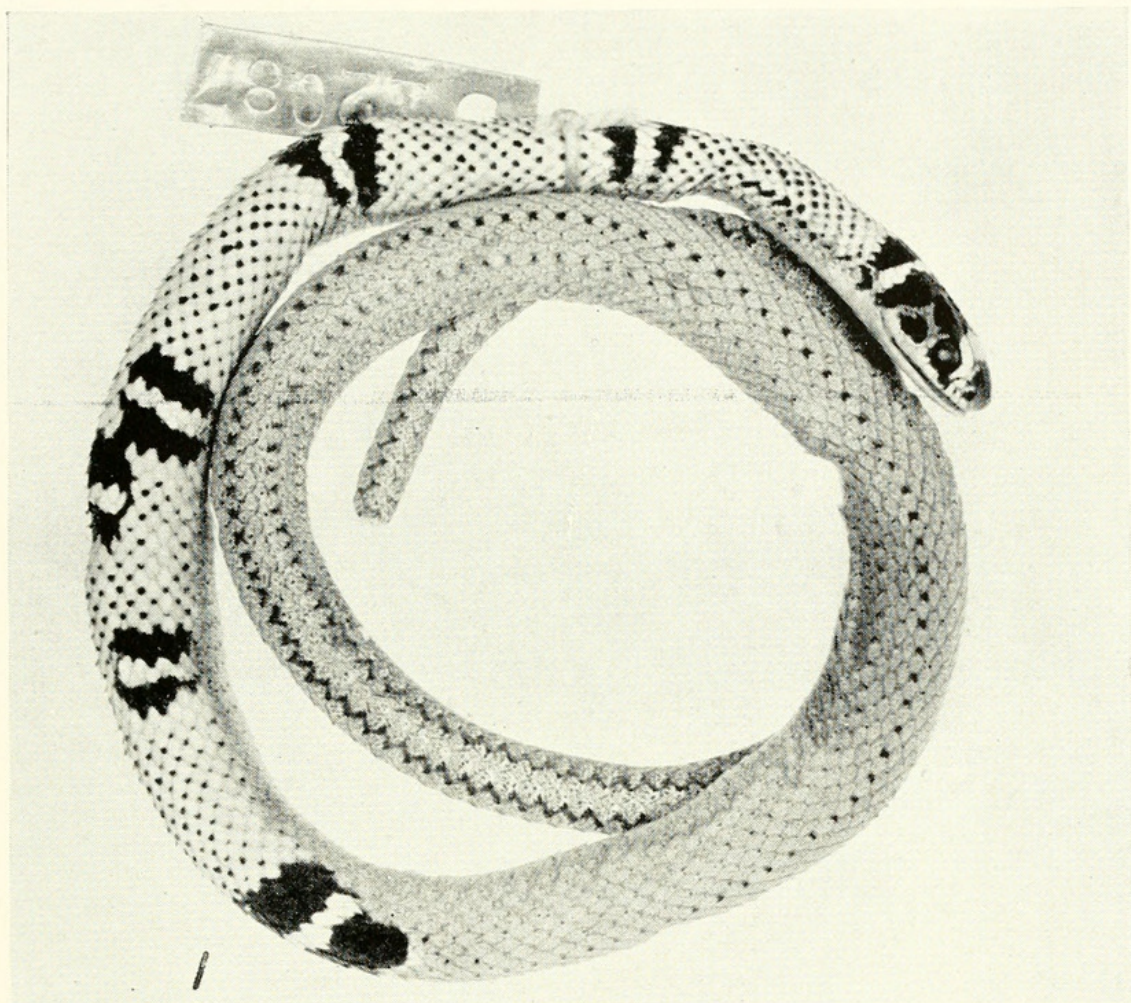


## PLATE XXV

FIG. 1. *Scaphiodontophis albonuchalis* sp. nov.; a paratype, U. S. N. M. No. 12087, "Mexico."

FIG. 2. *Scaphiodontophis albonuchalis* sp. nov.; a paratype, U. S. N. M. No. 12693, Escuintla, Guatemala.

PLATE XXV





Taylor, Edward Harrison. 1943. "A review of American Sibynophine snakes, with a proposal of a new genus." *The University of Kansas science bulletin* 29, 301–337.

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