

OCCASIONAL PAPERS OF THE MUSEUM OF  
ZOOLOGY

---

UNIVERSITY OF MICHIGAN

ANN ARBOR, MICHIGAN

PUBLISHED BY THE UNIVERSITY

---

THREE NEW SNAKES OF THE GENUS  
LAMPROPELTIS

BY FRANK N. BLANCHARD

While engaged upon a monograph of the king snakes, genus *Lampropeltis*, it has been found necessary to propose several new names, either to correct the systematic status of forms already known or to call attention to forms hitherto unknown. Two of these names appeared in this series nearly a year ago<sup>1</sup>; the others were to await the publication of the monograph, but probable delay in this makes it advisable to record separately and in advance the remaining three names.

For the loan of specimens the writer desires to express thanks to Dr. Henry W. Fowler, of the Academy of Natural Sciences of Philadelphia, to Miss Mary C. Dickerson, of the American Museum of Natural History, and in particular to Dr. Leonhard Stejneger, who, aside from every courtesy connected with the loan of specimens, has assisted with advice on many puzzling points throughout

---

<sup>1</sup> *Occasional Papers, Mus. of Zool.*, University of Michigan, No. 70, May 5, 1919.

the preparation of the revision of the genus, which is now nearly completed.

In naming one of the new forms for Professor Alexander G. Ruthven, Director of the Museum of Zoology of the University of Michigan, the writer wishes to express his deep appreciation for three years of constant advice and encouragement.

***Lampropeltis elapsoides virginiana*, new subspecies**

*Diagnosis:* Similar in scutellation and proportions to *L. elapsoides elapsoides* (Holbrook), but the red areas instead of completely encircling the body are restricted to black-bordered dorsal saddles which extend upon the ends of the ventral plates.

*Range:* Northern North Carolina and Virginia, east of the Allegheny Mountains.

*Type Specimen:* United States National Museum No. 21163; Raleigh, North Carolina, June 16, 1893.

*Description of Type Specimen:* Ventral plates, 183; anal single and entire; caudals, 44 pairs; dorsal scale rows, 19 on middle of body, 17 anteriorly and posteriorly (formula 19-17-19-17); upper labials, 7; lower labials, 7 on the right side and 8 on the left; 1 preocular, 2 postoculars; 1 temporal of the first row and 2 of the second; no loreal plates, the prefrontal in contact with the second upper labial on each side; nasal divided; anterior chin shields in contact with each other, the posterior nearly as large, in contact with each other anteriorly, diverging somewhat posteriorly; rostral protruding, as in *L. elapsoides elapsoides*; other head shields normal for the genus.

Total length, 473 mm.; tail length, 73 mm.; tail therefore about 13 per cent of total length. Sex, male.

The dentition is as follows: maxillary teeth, 13 on each side; mandibular teeth, 14 on the left side, 15 on the right; palatine teeth, 10 on the left side; pterygoid teeth, 22 on the left and 19 on the right.

Pattern of body composed of 18 dorsal saddles of red, bordered with black, separated by whitish areas, and extending upon the ends of the ventral plates; 4 additional saddles of red on the tail. The dorsal saddles are from five to eight scales in length above, narrowing to two to four scales on the first row. The black borders are one and one-half to two scales wide on the mid-dorsal line and one-half to one scale on the first row. The whitish cross-bands are about one and one-half scales wide above, widening suddenly on the lower rows to four or five scales on the first row. On the belly, opposite each dorsal whitish cross-band, is a large squarish blotch of black.

On the head a black band, 2 mm. in width, crosses the posterior portions of the parietal plates, leaving their tips whitish, and ending on the seventh upper labials. The frontal and temporals are mostly black, the rest of the head mostly light, probably red in life. The chin and throat are immaculate whitish.

*Remarks:* So few specimens of this form are known that no general description can be drawn up. It is by no means certain that all the specimens here referred to *virginiana* are conspecific with the type.

The other specimen from Raleigh (U.S.N.M., No. 56197) is almost identical with the type in structural features, but the red saddles extend farther upon the belly. Anteriorly their black borders are separated by only a narrow mid-ventral strip of whitish, while posteriorly they meet below. The specimen from Cuscowilla, Virginia (U.S.N.M., No. 26181), is a juvenile closely similar to the two preceding in scutellation and nearly like the last in pattern, but there is a tendency to develop black pigment on the fore part of the belly between the ends of the red saddles. This tendency becomes more and more pronounced posteriorly, developing also opposite the whitish dorsal cross-bands, so that the latter half of the belly is nearly all black.

The specimen from Appomattox County, Virginia (U.S.N.M., No. 4466), lacks the head but otherwise shows itself to be almost identical with the type. The ventral borders of the red saddles are, however, less well defined, and black pigment on the belly is less regularly distributed.

The specimen from Alberene, Virginia (U.S.N.M., No. 25321), shows a few differences from the others. The twenty-first row of scales is represented by four scales on one side of the body, the lower labials are 9 on each side, the loreals are present, the upper anterior temporals are present although small, and the number of red saddles reaches 25. Furthermore the black borders of these saddles show very little of that widening in the mid-dorsal region that is so characteristic of *elapsoides*. The red saddles extend well upon the ventral plates and are sharply delimited by their black borders. Otherwise there is very little black pigment on the belly. The whitish cross-bands are rather strongly mottled with darker on the sides, and all the dorsal scales in the red areas are less strongly, but very distinctly, mottled with dark. In scutellation this specimen is perhaps nearer to *L. triangulum triangulum*, but it can certainly never be regarded as identical with that form, and, all things considered, it seems much better to identify it provisionally as *virginiana*.

The specimen from the District of Columbia (Museum of Zoology, University of Michigan, No. 52203) is much more puzzling. The scutellation is closely like *elapsoides*, but the whole snake is larger and stouter, measuring 581 mm. even with the tip of the tail missing. Furthermore the red saddles number 27 and overlap the ends of the ventral plates only a little. The black borders of the saddles show scant if any tendency to widen in the mid-dorsal region, and the head shows faint but recognizable vestiges of the common parietal and supraocular spots of *triangulum* and some specimens of *L. triangulum syspila* (Cope). There are no lateral spots alternating with the dorsal saddles, but ante-

LIST OF SPECIMENS OF *Lampropeltis elapsoides virginiana*

*Explanation.*—When two numbers occur in the same space the upper refers to the left side, the lower to the right. Abbreviations: Acad. Phila.=Academy of Natural Sciences of Philadelphia; Univ. Mich.=Museum of Zoology, University of Michigan; U.S.N.M.=United States National Museum.

Museum	Number	Locality	From Whom Received	Sex	Scale Rows	Ventrals	Caudals	Supralabials	Infralabials	Oculars	Temporals	Total Length in Millimeters	Tail Length Divided by Total Length	Number of Annuli	Remarks
U.S.N.M.	4466	Appomattox Co., Va.	C.W. Strat-ham	♀	19-18-19-17	178	39	.....	.....	.....	.....	471	.....	18	Head missing
U.S.N.M.	21163	Raleigh, N.C.	H. H. and C. S. Brimley	♂	19-17-19-17	183	44	7	{8 7	1, 2	1+2+3 1+2+4	473	.145	22	Loreals absent
U.S.N.M.	25321	Alberene, Albemarle Co., Va.	R. E. Shaw	♂	19-20-19-17	179	43	7	9	1, 2	2+2+3	558	.131	25	Type Only four scales of twentieth row
U.S.N.M.	26181	Cuscowilla, Mecklenburg Co., Va.	Wm. Townes	♂	19-17-19-17	174	38	7	8	1, 2	1+2+3	233	.129	23	.....
U.S.N.M.	56197	Raleigh, N.C.	Julius Hurter	♀	17-19-17	186	40	7	{8 7 9	1, 2	1+2+3 2+3+3	529	.136	21	Loreals absent
Univ.Mich.	52203	St. Elizabeth's Hospital, District of Columbia	Army Medical Museum	♂	19-18-19-17-15	173	36	7	{8 8	1, 2	1+2+4 2+3+3	581	.....	27	Tip of tail missing
Acad.Phila.	3601	Delaware?		♀	19-21-19-17	188	39	7	9	1, 2	2+2+3 2+3+3	285	.133	26	Twenty-first row only slightly represented



riorly on the belly there is, as in the type, a single large black blotch opposite each of the dorsal whitish bands. Posteriorly, however, these blotches become irregular and the black pigment is much increased in amount. Whatever this specimen is, it is not a *triangulum*. It may represent a derivative of *triangulum* as yet unrecognized, but in view of the great variability exhibited by specimens from the Middle Atlantic region and the lack of representatives from large areas of Virginia, Delaware, and Maryland it is not possible at present to define the characters of this unknown form or even to be certain that such a form exists. The present plan of identifying this aberrant specimen as *virginiana* is admittedly an expedient for delaying the settlement of the difficulty until more specimens shall be available for study. The dentition of this individual, except for the pterygoid teeth, is as follows: maxillaries, 13; mandibulars, 13; palatines, 11.

The specimen in the Academy of Natural Sciences of Philadelphia (No. 3601) is of uncertain origin. It may be from Delaware. It is closely similar to the Cuscowilla specimen and is with little doubt a *virginiana*.

The form *virginiana*, as defined by the type and represented by all the others listed except the two doubtful ones (those from Alberene and the District of Columbia), is without doubt a derivative of *elapsoides* by an alteration of the pattern closely similar to that which took place when the subspecies of *triangulum* changed from the ringed to the saddled type of pattern. Whether this change toward the *triangulum* type went so far that individuals of *virginiana* were able to hybridize with the degenerating section of *triangulum* of the Middle Atlantic states seems improbable. It is more likely, as indicated above, that there exists in this region a degenerate derivative of *triangulum*. This question can be settled only when specimens shall be available from the Delaware-Maryland peninsula and from eastern Virginia.

**Lampropeltis triangulum nelsoni**, new subspecies

Plate I, Figure 1

1887. *Ophibolus multiistratus* Cope (part), *Bull. U.S. Nat. Mus.*, No. 32, p. 78 (Guanajuato).
1887. *Ophibolus doliatus coccineus* Cope (part), *Bull. U.S. Nat. Mus.*, No. 32, p. 78 (Guadalajara; Colima).
1894. *Coronella micropholis* var. A. Boulenger, *Cat. Snakes Brit. Mus.*, II, 204.
1899. *Lampropeltis micropholis oligozona* Stejneger, *N. Amer. Fauna*, No. 14, p. 70 (Maria Madre Island).

*Diagnosis:* Similar to *L. triangulum annulata* (Kennicott) and to *L. polyzona* Cope, but distinguished from the former chiefly by the fact that the snout region is mottled with lighter and the red areas are broader and completely encircle the body; and from the latter in the mottled instead of cross-banded snout, in the greater width of the red rings, and the complete absence of black tips on the red scales.

*Range:* Western Mexico, from Acambaro in the state of Guanajuato to southern Sinaloa and south to Colima, including the Tres Marias Islands.

*Type Specimen:* United States National Museum No. 46552; collected by E. W. Nelson at Acambaro, Guanajuato, Mexico, in October, 1892.

*Description of Type Specimen:* Ventral plates, 206; anal single and entire; caudals, 42 pairs; dorsal scale rows somewhat irregular in number, for the most part 21, but numbering only 20 anteriorly, reaching 22 and 23 behind the middle, and ending with 19; upper labials, 8 on each side, due to interpolation of a third; lower labials, 10 on the left side and 9 on the right; 1 preocular; 2 postoculars; 2 temporals in the first row and 3 in the second; loreal longer than high; nasal divided; anterior chin shields in contact with each other and with the first 4 lower labials; posterior chin shields shorter and narrower than the anterior, in contact with each other



LIST OF SPECIMENS OF *Lampropeltis triangulum nelsoni*

*Explanation.*—When two numbers occur in the same space the upper refers to the left side, the lower to the right. Abbreviations: Acad. Phila. = Academy of Natural Sciences of Philadelphia; A.M.N.H. = American Museum of Natural History; U.S.N.M. = United States National Museum.

Museum	Number	Locality	From Whom Received	Sex	Scale Rows	Ventrals	Caudals	Supralabials	Intrablabials	Oculars	Temporals	Total Length in Millim.	Tail Divided by Total Length	Number of Annuli	Remarks
U.S.N.M.	12680	Guanaajuato, Mex.	A. Dugés	Male	21-19-17	203	45	7	9	I-2	2+3+5 2+3+4 2+3+4	280	.128	19	.....
U.S.N.M.	24684	María Madre Island, Mex.	E. W. Nelson	Female	21-23-21-19	228	50	7	{ 8 9	I-2	2+3+4 2+3+4	1070	.121	16	.....
U.S.N.M.	24967	Guadalajara, Mex.	J. J. Major	Male	21-20-21-19-17	213	54	7	9	I-2	2+3+4	661	.150	24	.....
U.S.N.M.	24968	Guadalajara, Mex.	J. J. Major	Female	21-19-21-19-17	213	49	7	9	I-2	2+3+4	555	.137	21	.....
U.S.N.M.	30504	Mexican Plateau, Mex.	F. Sumichrast	Male	21-19-17	214	50	7	9	I-2	1+3+4 2+3+4	940	.138	22	.....
U.S.N.M.	30595	Mexican Plateau, Mex.	F. Sumichrast	Male	21-19-17	214	50	7	10	I-2	2+3+4	550	.138	19	.....
U.S.N.M.	31491	Colima, Mexico	G. Xantus	Female	21-19-17	212	44	7	7	I-2	2+?+? 2+?+?	743	.120	19	.....
U.S.N.M.	31492	Colima, Mexico	G. Xantus	Male	21-19-17	211	52	7	{ 9 ?	.....	2 ?	821	.150	21	.....
U.S.N.M.	31493	Colima, Mexico	G. Xantus	Female	21-19	216	.....	7	9	I-2	2+3+4	Adult	.....	18	.....
U.S.N.M.	31494	Colima, Mexico	G. Xantus	Male	21-19-17	217	.....	7	9	I-2	2+3+4 2+3+3	Adult	.....	.....	.....
U.S.N.M.	46532	Acambaro, Guanaajuato, Mex.	E. W. Nelson	Male	21-20-21-23-21-19	206	42	8	{ 10 9	I-2	2+3+5 2+3+4	810	.133	18	Type
A.M.N.H.	3525	Escuinapa, Sinaloa, Mex.	J. Batty	.....	23-21-23-21-19	215	52	7	{ 10 9	I-2	2+3+4	.....	.139	14	.....
A.M.N.H.	3526	Escuinapa, Sinaloa, Mex.	J. Batty	Female	21-23-21-19	218	49	7	9	I-2	2+3+4	.....	.137	16	.....
A.M.N.H.	3527	Escuinapa, Sinaloa, Mex.	J. Batty	.....	21-19-17	220	53	7	9	I-2	2+3+4	.....	.139	16	.....
A.M.N.H.	3528	Escuinapa, Sinaloa, Mex.	J. Batty	Male	23-21-23-21-19	220	52	7	9	I-2	2+3+3 2+3+4	626	.142	13	.....
Acad. Phila.	3428	Mexico	Mr. Keating	Male	21-19-17	211	51	7	9	I-2	2+3+4	842	.140	23	.....



anteriorly and diverging somewhat posteriorly; other head shields normal for the genus.

Total length, 810 mm.; tail length, 108 mm.; tail, therefore, 13.3 per cent of total length. Sex, male.

Pattern of body (Plate I, Fig. 1) composed of 14 whitish rings about one and one-half scales in width above and about two on the first row of scales. They are continuous across the belly, and may be slightly mottled on the sides with darker. Bordering the whitish rings are annuli of black from three to four scales wide on the mid-dorsal line, about two on the first row of scales, and about one or two scutes in width on the belly. Between the pairs of black rings are broad encircling areas of red, from six to nine scales in width on the mid-dorsal line anteriorly, and three scales wide near the vent, but increasing to nine to eleven scales in width on the first row of scales anteriorly. On the tail are four whitish annuli separated by broad rings of black. On the belly in the red spaces posteriorly there is a little dark mottling, suggestive of *L. triangulum annulata* (Kennicott) in which these spaces are totally black.

The head is black as far back as a line from the posterior end of the parietal suture to the lower posterior angle of the fifth upper labial, except for a conspicuous mottling with lighter on all the plates anterior to the frontal. The chin and throat are whitish except for considerable black pigment on the anterior lower labials and a little on the chin shields. The first black ring is separated from the parietals by two scales and is slightly interrupted on the throat.

*Remarks:* The structural features of this form may be seen at a glance in the accompanying list of specimens examined.

The present material indicates that this is a fairly homogeneous form, characterized (*a*) by a low number of pairs of black annuli, separated by broad red interspaces, (*b*) by an absence of black tips

on the red scales, and (c) by a light-colored snout mottled with darker.

While this color pattern seems to be constant on the west coast, it is very noticeable that toward the interior of Mexico some specimens have the spaces on the belly opposite the dorsal red areas partially or completely filled with black, presenting in this a striking approach to *L. triangulum annulata* (Kennicott). The snout, too, may be blacker, and the red interspaces between the pairs of black rings may be much narrower and strongly encroached upon by the latter.

Since in structural features this form is very close to *L. triangulum annulata*, it is believed that these similarities in pattern toward the interior of Mexico are sufficient evidence of intergradation with the latter.

#### ***Lampropeltis ruthveni*, new species**

Plate I, Figure 2

*Diagnosis:* A ringed form similar in coloration to *L. polyzona* Cope, *L. triangulum nelsoni* Blanchard, and *L. multicineta* (Yarrow). From *L. polyzona* it differs in the complete absence of black tips on the red and whitish scales, in the completely black head, and in the low number of ventral plates, 189. From *L. triangulum nelsoni* it differs principally in the higher number of annuli, 30, and the much narrower red rings, two to three scales in width. From *L. multicineta* it is distinguished by the low numbers of ventrals and annuli, by the fact that the black rings show scant, if any, tendency to overspread the red areas dorsally, and by the mottling of the yellow rings with darker, particularly on the sides.

*Range:* Patzcuaro, Michoacan, Mexico.

*Type Specimen:* United States National Museum No. 46558 (skin and head only); Patzcuaro, Michoacan, Mexico; collected by E. W. Nelson, August 2, 1892.

*Description of Type Specimen:* Ventrals, 189; anal single and entire; caudal scutes, 50 plus, divided (tip of tail missing); dorsal scale rows, 21 anteriorly, 23 on middle of body, and 19 posteriorly (formula therefore 21-23-21-19); upper labials, 8 on left side, 7 on right; lower labials, 9; 1 preocular, 2 postoculars; temporals somewhat irregular, about 2+3+4, the upper left anterior temporal much reduced; loreal longer than high; nasals injured on each side; anterior chin shields in contact with each other and with the first 4 lower labials; posterior chin shields shorter than the anterior and separated from each other by two or three small scales; other head shields normal for the genus.

Total length (tip of tail missing), about 745 mm.; tail length, 112 mm.

The dentition is as follows: maxillary teeth, 14 on the left side, 15 on the right, the last two distinctly enlarged; mandibular teeth, 14 on the left side, 13 on the right, decreasing slightly in size; palatine teeth, 13 on the left, 11 on the right; pterygoid teeth, 21 on the right side.

The color pattern (Plate I, Fig. 2) is composed of 24 whitish rings on the body and 6 on the tail. These rings are about one and one-half scales wide on the mid-dorsal line and two scales wide on the first row of scales; on the sides and on the belly, posteriorly, they are mottled with darker. Bordering the whitish rings are black annuli about two scales wide dorsally and one scale wide on the belly. The black rings are separated by red rings, two to three scales in width. The actual colors cannot be determined from so old a specimen, but there are indications that the whitish rings may have been suffused with pink.

The head is black nearly to the tips of the parietal shields, except for flecks of whitish on the lower portions of some of the upper labials. The chin is whitish except for some black on the first 5 or 6 of the lower labials. The first black ring begins about

two scales behind the parietals and is continuous across the throat.

*Remarks:* The status and significance of this form, represented as it is by only a single specimen, must remain in doubt for the present. It appears, however, to be more closely allied to *L. multincta* than to any other form in the genus.



PLATE I

FIG. 1.—*Lampropeltis triangulum nelsoni*, new subspecies. Color pattern of type specimen.

FIG. 2.—*Lampropeltis ruthveni*, now species. Color pattern of type specimen.



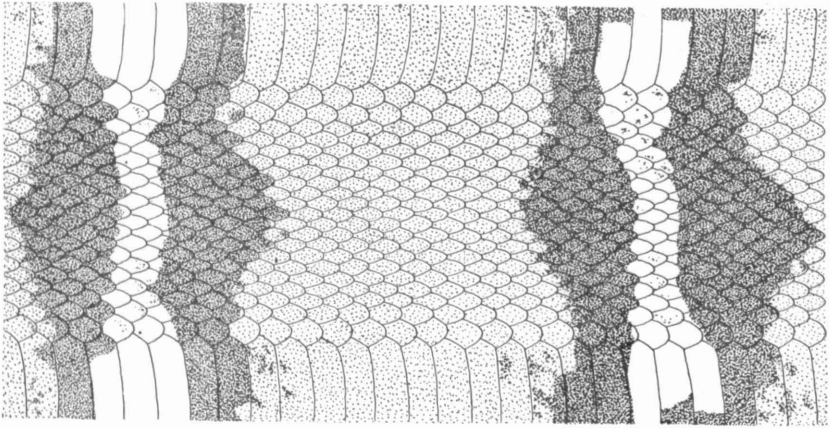


Figure 1

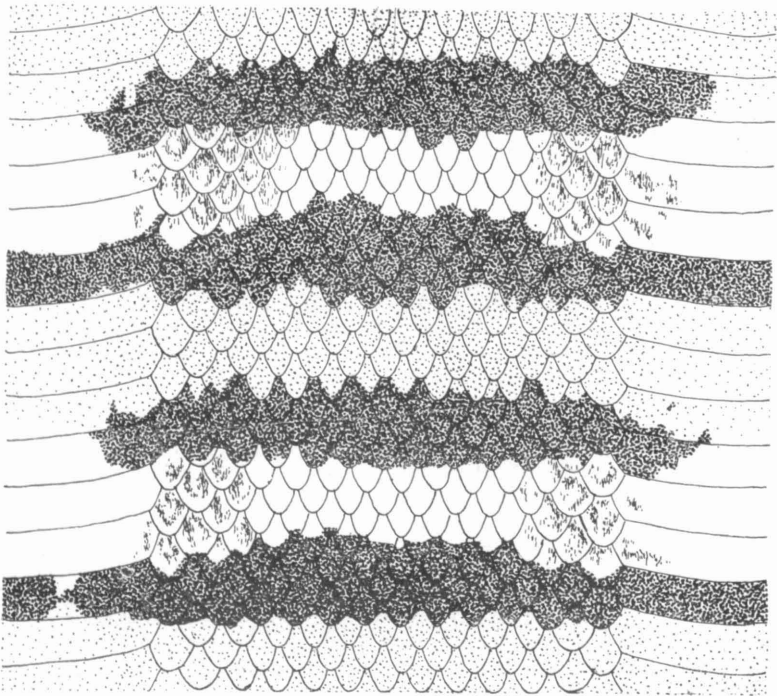


Figure 2

