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A SYNOPSIS OF THE KING SNAKES: GENUS
LAMPROPELTIS FITZINGER¹

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Owing to the probability of delay in publication of a complete monograph of the king snakes, which the writer now has in press, it has been deemed advisable to issue in advance this brief synopsis of the genus, in order to make immediately available the systematic results of the work.

In the following key the various forms have been arranged in general according to their affinities, but only in so far as such arrangement coincides with simplicity and convenience. A summary of the most useful systematic characters has been placed at the end to assist in confirming identifications made by the key.

GENUS LAMPROPELTIS FITZINGER

Diagnosis: Maxillary teeth 12 to 20, solid, slightly increasing or slightly decreasing in size posteriorly, subequal or the last two a little enlarged; mandibular teeth decreasing in size posteriorly; head usually not or but slightly distinct from the neck; eye

¹ Contributions from the Department of Zoology, University of Michigan.

moderate, with round pupil; scales smooth, with two apical pits, in 17 to 27 rows; anal plate entire; tail moderate; caudals in two rows.

SYNOPSIS OF THE FORMS OF LAMPROPELTIS

- a¹. Pattern of narrow cross bands of black, the alternate bands mixed or split with red; ground color above, slate gray; head very distinct from neck.
L. alterna (Brown).
(Davis Mountains, Texas.)
- a². Pattern not of narrow dorsal cross-bands of black with the alternate bands mixed or split with red; head usually only slightly distinct from neck.
- b¹. Color pattern without red² and without dorsal blotches of brown or gray with black borders. Getulus group.
- c¹. Scales chiefly black with sharply defined white or yellow spots (not light at base shading gradually into a dark distal border), these yellow spots often so grouped as to form 50 or more narrow cross bands on body and tail.
- d¹. Scale rows on middle of body 23 or 25; no light centers, dorsally, on the scales between the cross-bands; head mostly black.
L. getulus splendida (Baird and Girard).
(Southeastern Arizona to the ninety-seventh meridian; southern Texas, and northern Mexico.)
- d². Scale rows on middle of body usually 21.
- e¹. A yellow spot on practically all of the dorsal scales.
L. getulus holbrookii (Stejneger).
(Eastern Texas to southeastern Wyoming, east to eastern Illinois, and south to the Gulf of Mexico.)
- e². Scales between the dorsal cross-bands without light centers or with only a very few small ones.
L. getulus niger (Yarrow).
(Eastern Illinois to Ohio, south to central Alabama.)
- c². Pattern in rings, cross-bands, or stripes, or chiefly of scales white at base shading gradually into a black distal border, but not chiefly of sharply defined white or yellow spots on black scales.
- f¹. Posterior chin shields nearly as long and nearly as wide as anterior, in contact or separated by not more than one small scale; pattern neither of rings nor of longitudinal stripes.
- g¹. Many dorsal cross-bands of white or yellow.

² The red fades to whitish in alcohol, but it is sufficient, for the purpose of the key, to determine that the pattern is in two colors instead of in three.

- h¹. Cross-bands less than 50; 21 (sometimes 23) rows of scales. *L. getulus getulus* (Linnaeus).
(New Jersey to Mobile Bay and central Florida.)
- h². Cross-bands more than 50, or nearly indistinguishable; 23 (sometimes 21) rows of scales; scales between the cross-bands usually white at base.
L. getulus floridana Blanchard.
(Central to southern Florida.)
- g². No dorsal cross-bands distinguishable; dorsal scales light at base, shading gradually into a dark distal border. *L. getulus brooksi* Barbour.
(Extreme southern Florida.)
- f². Posterior chin shields generally much shorter and narrower than anterior and separated by one or two small scales; pattern of rings, or of longitudinal stripes of white or yellowish.
- i¹. A dorsal longitudinal stripe, complete or interrupted.
- j¹. Dorsal stripe white or yellow, sharply defined on a dark brown or black ground color.
L. californiae californiae (Blainville).
(Fresno County, California, to northern Lower California.)
- j². Dorsal stripe poorly defined, of light brown or cinnamon on a dark-brown ground color; belly uniform brown.
L. californiae nitida (Van Denburgh).
(Southern Lower California.)
- i². Pattern of rings.
- k¹. White scales³ white to their bases, forming rings of uniform white; white bars on prefrontals broad, convex behind; infra-labials usually 9.
L. getulus boylii (Baird and Girard).
(California, Nevada, southwestern Utah, northern and western Arizona, and northern Lower California.)
- k². White scales³ mostly brown at their bases. White bars on prefrontals broad or narrow. Infralabials 9 or 10.

³ Specimens may be found which can be accurately identified only by locality; in particular it should be noted that young examples of *yumensis* and *conjuncta* may resemble *boylii*.

- 1^a. White bars on prefrontals occupying less than half the area of these scutes; frontal plate uniform black, or with the white restricted to a narrow transverse bar at its anterior end; no white on parietals; infralabials usually 9. *L. getulus yumensis* Blanchard.
(Southern Arizona, extreme southeastern California, northeastern Lower California, and northwestern Sonora.)
- 1^b. White bars on prefrontals occupying more than half the area of these plates; frontal plate with prominent white markings, or at least with a central spot of white; each parietal with one or more white spots; infralabials usually 10. *L. getulus conjuncta* (Cope).
(Southern Lower California.)
- b². Pattern with red, or with dorsal blotches of brown, gray, or red, with black borders.
- m¹. Pattern of black-edged dorsal blotches of brownish or dark red, only narrowly in contact with the fifth row of scales or extending no lower than the sixth or seventh rows. . . . Calligaster group.
- n¹. Blotches less than 40. *L. leonis* (Günther).
(Nuevo Leon, Mexico.)
- n². Blotches 45 to 80.
- o¹. Scale rows 25 to 27 on middle of body; dorsal blotches with concave anterior and posterior margins; infralabials 9 or 10, rarely 8. *L. calligaster* (Harlan).
(Western Texas to Mississippi, north to Indiana and northwest to Minnesota, thence south to Texas.)
- o². Scale rows 23 or 21 on middle of body; dorsal blotches with straight or convex anterior and posterior margins; infralabials 8, less often 9. . . . *L. rhombomaculata* (Holbrook).
(Mobile, Alabama, to Knoxville, Tennessee, north to Maryland, and south to central Florida.)
- m². Pattern in rings; or, if in blotches or saddles of brown, gray, or red, these broadly in contact with the fifth or a lower row of scales.
- p¹. Whitish cross-bands on body and tail less than 40; or, if more than 40, the snout not uniformly whitish.
- q¹. Whitish cross-bands little if any widened on the lower rows of dorsal scales, and the scale rows more than 17 on the anterior portion of the body.
- r¹. Red scales usually tipped with black.
- s¹. Snout black, with usually a light transverse bar on or near the prefrontals; two temporals in the first row; caudals usually not less than 49. *L. polyzona* Cope.
(Southern Mexico to Costa Rica.)

- s². Snout yellowish with transverse black spots; a single, anterior temporal, or, if two, the upper much the smaller; caudals not more than 49.

L. micropholis Cope.

(Panama to Colombia and Ecuador.)

- r². Red scales not tipped with black.

- t¹. Whitish annuli usually more than 30; snout black.

- u¹. Ventrals more than 200; black rings often meeting across the red dorsally.

L. multincta (Yarrow).

(California.)

- u². Ventrals less than 200; black rings not meeting across the red dorsally.

L. ruthveni Blanchard.

(Southern Mexico.)

- t². Whitish annuli less than 30.

- v¹. Dorsal red areas usually continuous across the belly; snout whitish, specked with black.

- w¹. Ventrals usually more than 210 (199 to 231).

L. triangulum nelsoni Blanchard.
(Western Mexico.)

- w². Ventrals usually less than 200 (180 to 212).

L. triangulum amaura (Cope).
(Lower Mississippi Valley.)

- v². Spaces on belly between the yellow rings filled with black; snout totally black, or only very slightly lightened on the top or sides.

- x¹. Yellowish rings 19 to 25; black spaces on belly usually longer than the intervening yellow ones.

L. triangulum annulata
(Kennicott).

(Plateau region of southern Mexico north to extreme southern Texas.)

- x². Yellow rings 25 to 40; black spaces on belly usually shorter than the intervening yellow ones.

L. triangulum gentilis (Baird and Girard).

(South central Texas to South Dakota, west into Utah and Arizona.)

- q². Dorsal whitish bands usually distinctly widened on the first row of scales, or the scale rows anteriorly not more than 17.

- y¹. Black practically uniform over the head, except for the snout region, which is more or less lightened, at least on the sides; scale rows anteriorly more than 17.

- z¹. Whitish annuli or cross-bands 25 to 40; black often strongly encroaching upon the red on the mid-dorsal line.

L. triangulum gentilis
(Baird and Girard).

- z². Whitish annuli or cross-bands 18 to 25; black showing not more than a slight tendency to encroach upon the red areas on the mid-dorsal line.

L. triangulum amauro
(Cope).

(Lower Mississippi Valley.)

- y². Black of head practically restricted to posterior portion, or to various black-edged light markings.

aa¹. Usually a single anterior temporal; scale formula generally 17-19-17, rarely higher than 19-17.

bb¹. Red areas continuous across the belly.

L. elapsoides elapsoides (Holbrook).

(North Carolina and Kentucky, south to New Orleans and throughout Florida.)

bb². Red not continuous across the belly, but restricted to black-bordered dorsal saddles that extend upon the ventrals.

L. elapsoides virginiana Blanchard.

(Northern North Carolina to Delaware.)

aa². Usually two anterior temporals; scale formula very rarely lower than 19-21-19-17.

cc¹. Whitish annuli or cross-bands 18 to 23; pattern of body practically in rings. *L. triangulum amaura* (Cope).
(Lower Mississippi Valley.)

cc². Whitish cross-bands 23 to 60; pattern of dorsal saddles or blotches of red or brown.

dd¹. Infralabials 8 or 9, rarely 10; tail less than 16 per cent of total length; often a dark band from eye to angle of mouth.

ee¹. Dorsal saddles 35 to 60, reaching down to the fifth or third row of scales; often two rows of lateral alternating blotches; a dark band on posterior portion of prefrontals; a black-bordered light band from the eye to the angle of the mouth; usually a Y-shaped light spot on the back of the head. *L. triangulum triangulum* (Lacépède).
(Eastern United States and southern Canada.)

ee². Dorsal saddles 23 to 35, extending down to the third row of scales, or lower; only one series of alternating spots; head markings of *triangulum* only partially or not at all developed. *L. triangulum syspila* (Cope).
(Southern Indiana to Minnesota, south to central Arkansas and west to central Kansas.)

dd². Infralabials 10; tail more than .16 of total length; a dark blotch behind the eye. *L. mexicana* (Garman).

(San Luis Potosi, Mexico.)

p². Whitish cross-bands on body and tail more than 40; top of head black, snout uniformly white. *L. pyrrhomelaena* (Cope).
(Utah, Arizona, western New Mexico, and northern Mexico.)

SUMMARY OF CERTAIN CHARACTERISTICS OF THE FORMS OF LAMPROPELTIS *

NAME	VENTRALS	CAUDALS	SUPRA-LABIALS	INFRA-LABIALS	TEMPORALS	SCALE ROWS		TAIL DIVIDED BY TOTAL LENGTH	PATTERN	NUMBER OF BANDS OR SPOTS
						Extremes	Average			
alterna.....	213	60	7	10-11	3+4	25-23-25-23-21	21-19	.170	Alternating bands	18-26
amaura.....	180-212	39-51	7	9(8-10)	2+3	21-23-21-19 to 19-21-19-17	21-19	.118-.156	Rings	19-26
annulata.....	197-212	40-57	7(8)	9(10)	2+3	23-21-19-21 to 21-20-21-19	23-21-19	.123-.167	Rings	28-49
boylii.....	206-254	41-62	7(8)	9-10	2+3	23-25-23-21-19 to 21-23-21-19	23-21-19	.107-.145	No bands or rings	.....
brooksi.....	Similar to floridana	Similar to floridana								
californiae.....	229-241	47-60	7-8	(8)9-10	2+3	23-25-23-21-19 to 21-23-21-19	23-21-19	.113-.140	Stripes	.....
calligaster.....	196-215	38-57	7(8)	9-10	2+3	25-27-25-23-21 to 21-23-21-19	23-25-23-21-19	.110-.150	Blotches	46-78
conjuncta.....	228-240	48-54	7	10(9-11)	2+3	23-25-23-21-19 to 21-23-21-19	23-21-19	.115-.132	Rings	30-40
elapsoides.....	152-193	32-48	7	8(7-9)	1+2	19-21-19-17 to 15-17-15	17-19-17	.118-.169	Rings	15-25
floridana.....	210-225	42-55	7(8)	9-10	2+3	23-21 to 21-19	21-23-21-19	.107-.146	Cross-bands	46-85
gentilis.....	176-212	41(31)-53	7(8)	9(8-10)	2+3	23-21 to 19-17	21-19	.115-.156	Rings	25-40
getulus.....	203-224	38-58	7(6-8)	9(8-10)	2+3	23-21 to 19-21-19-17	21-19 or 21-23-21-19	.100-.155	Cross-bands	23-52
holbrookii.....	200-220	38-55	7(6-8)	9(8-10)	2+3	21-23-21-19 to 19-17	21-19 or 19-21-19	.096-.150	Cross-bands	50-100
leonis.....	200	50	7	.....	2+3	.....	23	.....	Blotches	27
mexicana.....	193-199	55	7	10	2+3	23-21-19	23-21-19	.16-.17	Blotches	39
micropholis.....	211-228	40-49	7(8)	9-8(10)	1+2 to 2+3	21-23-21-19 to 19-21-19-17	19-21-19-17	.112-.136	Rings	13-21
multicincta.....	202-222	45-61	7(8)	9(8-10)	2+3	23-25-23-21-19 to 21-19-17	21-23-21-19 or 21-19-17	.131-.161	Rings	23-57
nelsoni.....	199-231	42-59	7(8)	9(10)	2+3	21-23-21-19 to 19-21-19-17	21-19-17	.120-.150	Rings	13-24
niger.....	199-216	41-53	7	9(8-10)	2+3	21-23-21-19 to 19-21-19-17	19-21-19	.110-.146	Narrow bands	50-90
nitida.....	227	56	.....	.....	.....	23	.....	.....	Stripes	.....
polyzona.....	208-239	42-61	7(8)	9(8-10)	2+3	21-23-21-19 to 19-17	21 or 23	.124-.164	Rings	17-37
pyrrhomelaina.....	216-235	61-79	7-8	9-10(11-12)	2+3	23-25-23-21-19 to 21-23-21-19-17	23-21-19	.153-.182	Rings	35-71
rhomomaculata.....	191-213	31-55	7	8-9	2+3	21-23-21-19 to 19-21-19-17	23 or 21	.100-.150	Blotches	48-64
ruthveni.....	100	50+	7-8	7-8	2+3	21-23-21-19	.....	.....	Rings	30+
splendida.....	207-225	43-56	7(8)	9(10-11)	2+3	23-25-23-21-19 to 21-23-21-19	21-23-21-19	.100-.150	Light cross-bands	41-85
syspila.....	180-215	40-54	7	9(8-10)	2+3	21-23-21-19 to 19-17	21-19	.114-.157	Blotches	23-36
triangulum.....	180-213	29-54	7(8)	9(8-10)	2+3	21-23-21-19 to 19-17	21-19-17	.100-.155	Blotches	28-62
yumensis.....	212-240	44-57	7(8)	9-10	2+3	23-25-23-21-19 to 21-23-21-19	23-21-19	.090-.140	Rings	20-45
virginiana.....	173-188	36-44	7	7-9	1+2	17-19-17 to 19-17	17-19-17	.129-.145	Blotches	18-27

* Figures in parentheses represent less common numbers.

