

DESCRIPTION OF TWO NEW SPECIES OF SNAKES FROM CALIFORNIA.

BY

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In 1861 Prof. E. D. Cope established the genus *Lichanura* for *L. trivirgata*, which at the same time he described as new, from specimens in the Smithsonian Institution and the Philadelphia Academy of Sciences. Of the types in the former, collected by J. Xantus at Cape St. Lucas, Lower California, only one specimen now remains (U. S. Nat. Mus., No. 15502), and since then only one additional specimen has been received, viz, No. 12602, which was collected by Mr. L. Belding at La Paz. For this genus Prof. Cope, in 1868 (Proc. Ac. Philada., 1868, p. 2), instituted the family *Lichanuridae*, but afterwards, having been able to study the anatomy of these and allied forms, he referred *Lichanura* to the *Boidae*. Its external distinctive characters are given as: Tail prehensile, [though in but a slight degree]; scales smooth; no labial fossæ; muzzle and front scaled; nasal plates meeting (Bull. 32, U. S. Nat. Mus.).

To the type species the same author, in 1868 (*l. c.*), added two more species, *L. myriolepis* and *L. roseofusca*, the type specimens of which appear to be in his private collection. The distinguishing characters were derived from differences in the number of scale rows, labials, and scales composing the orbital ring, as well as in the coloration. These two species which, like the type, came from Lower California, are entirely overlooked by Bocourt in his great work on the Reptiles of Mexico (Mission Scientif. au Mexique, Rech. Zool., etc., 1882), while Garman (North Amer. Rept., Ophid., 1883) simply enumerates them as synonyms of the original type species. Besides the short description of *L. trivirgata* in Jan's Iconogr. génér. Ophid., 2<sup>e</sup> livr., 1865 (pp. 69 and 70), reproduced in Bocourt's work already referred to (p. 514), nothing of importance seems to have been published in regard to these interesting snakes. It should be remarked, however, that Professor Cope still adheres to the distinctness of the species described by him (see Bull. 1, U. S. Nat. Mus., 1875, p. 43, and Bull. 32, 1887, p. 65).

From the above it will be seen that the genus *Lichanura*, the only North American genus of the family *Boidae*, has hitherto not been recorded from the United States. It was, therefore, very interesting to receive from Miss Rosa Smith a *Lichanura*, from San Diego, and from Mr. C. R. Orcutt another from the same locality, as well as a third one collected in the Colorado Desert. Upon examination the latter proved

to be quite different from the species hitherto described, and I propose to call it \* *Lichanura orcutti*.

*Lichanura orcutti* sp. nov.

DIAGNOSIS.—Scales in 33 to 35 rows; eye encircled by 9 or 10 scales; loreals† 4; labials  $1\frac{3}{5}$ ; gasterosteges 232; anal entire; urosteges 45, entire.

HAB.—Colorado Desert, San Diego County, California.

Type.—U. S. National Museum, No. 15503; C. R. Orcutt coll., April, 1889.

*Description of type specimen.*—Rostral plate very prominent, recurved, pentagonal, its nasal border twice as long as its labial; eye surrounded by a ring of scales of nearly equal size, 10 on the right side, but only 9 on the left; between the posterior nasal and the middle preocular two large loreal scales, and under the posterior one, wedged in between it, the middle and lower prefrontals, and fourth, fifth, and sixth supralabials, a somewhat smaller subloreal; over the posterior loreal a superloreal of medium size; nasal divided, the anterior plate meeting the one of the other side; back of these a pair of rather large anterior prefrontals followed by four smaller posterior prefrontals, or what corresponds to these plates where a frontal exists, the outer ones being larger than those in the middle; posterior to these the head is covered with numerous rather irregular scales; supralabials 13, the first four highest; infralabials 15, gradually diminishing in height from the pair joining the triangular mental; mental fissure separating four pairs of scales; scales of body smooth, in 33 to 35 longitudinal rows, the inferior on each side slightly larger than the rest; gasterosteges narrow, 232; anal small, entire; tail short, blunt; urosteges 45, entire.



Fig. 1.—*Lichanura orcutti*.

*Dimensions.*—Total length, 870<sup>mm</sup>; length of tail from anus, 110<sup>mm</sup>; diameter of eye, 3<sup>mm</sup>; from tip of muzzle to anterior border of eye, 11<sup>mm</sup>; proportion of last two measurements=1:3.7.

*Coloration.*—Ground color light bluish gray, with a light brownish wash on the upper surface; three longitudinal ill-defined, zigzag bands of a pale raw umber brown running the whole length of the body, the

\* The diagnosis, reprinted from advance sheets of the present article, is published in the "West American Scientist."

† By loreals are here meant all the scales situated between the posterior nasals, the supralabials, the preorbitals, and the scales corresponding to the prefrontals, without reference to their origin; in the present case I think there are only two loreals proper, while the subloreal is only a detached portion of the fifth supralabials, and the superloreal a part of the prefrontals.

middle one starting between the eyes running to the end of the tail, the lateral ones starting on the temporal region becoming obscure on the tail; top of muzzle and occasional blotches between the bands of the same color; whole underside, except the gulars, mottled irregularly with blotches of a dark neutral tint.

Of the forms which compose this genus the present species appears to be the most highly differentiated, the most distinctive feature being the elongation of the snout and the prominence and shape of the rostral. From the *L. trivirgata*, *myriolepis*, and *simplex* group, it differs more particularly by the low number of scale rows and loreals. In these respects it seems to agree very well with *roseofusca*, from which it differs in the greater number of scales composing the eye ring as well as in coloration. There may be other and more important distinctions, but not having seen a specimen of the latter species, I have to rely solely upon Professor Cope's original description, which is very meager indeed.

A specimen collected at San Diego, Cal., received from Miss Rosa Smith can not be identified with any of the other forms hitherto recognized though combining characters of some of them in such a manner as to make it probable that additional material will prove it to be only a subspecies of *L. myriolepis*. It may be characterized as follows:

*Lichanura simplex* sp. nov.

DIAGNOSIS.—Scales in 40 rows; eye encircled by 7 or 8 scales; loreals 6; labials  $\frac{13}{5}$ ; gasterosteges 232; anal entire; urosteges 39, entire.

HAB.—San Diego, Cal.

Type.—U. S. National Museum, No. 13810; Miss Rosa Smith, coll., March 5, 1884.



FIG. 2.—*Lichanura simplex*.



FIG. 3.—*Lichanura trivirgata*.

Description of type specimen.—Rostral plate as in the other species, except *L. oreutti*, pentagonal, its nasal border but slightly longer than its labial; eye surrounded by a ring of 8 scales (on the left side, but 7 only on the right side, the two posterior superorbitals having become fused) the anteorbital being very large; three true loreals, above which two smaller supraloreals; on the right side two rather large subloreals, being the detached upper portions of the fourth and fifth supralabials, while on the left side only part of the fifth is thus separated; nasal divided, the anterior portion meeting the one of the other side; posterior to these are two pairs of rather regular prefrontals followed by the usual small irregular frontal scales of the genus; supralabials 13, the first three (four) highest; infralabials 15; mental small, triangular, mental fissure separating four pairs of scales; scales of body smooth, hexagonal, imbricated, in 40 longitudinal rows, the lower one largest; gasterosteges 232; anal small, entire; urosteges 39, entire.

*Dimensions.*—Total length, 765<sup>mm</sup>; length of tail, from anus, 80<sup>mm</sup>; diameter of eye, 2.5<sup>mm</sup>; from tip of muzzle to anterior border of eye, 10<sup>mm</sup>; proportion of last two measurements = 1 : 4.

*Coloration.*—Uniform drab-brown above, fading into whitish on the under parts.

In spite of the fewer scales forming the eye ring, a feature which seems to be of less importance, the present form appears to agree better with *L. myriolepis* than with *roseofusca*. The scale rows are only two less than in a specimen labeled *L. myriolepis* by Cope himself (U. S. Nat. Mus., No. 14129; San Diego; Charles Orcutt, coll.), and in the numerous loreal scales it also agrees better with the latter. The diameter of the eye shows the same ratio to the distance from the tip of the muzzle in these two forms, thereby differing considerably from *L. trivirgata*, in which the eye is comparatively much larger. From *L. orcutti* the new form differs in the much less produced muzzle and rostral, in the number of scale rows, loreals, and scales composing the eye ring, in the still smaller eye, as well as in coloration.

So far as can be made out from the scanty material there are at least five species, or varieties, the differences of which may be tabulated as follows :

a<sup>1</sup>. Eye ring of 9 to 10 scales, or else more than 4 loreals.

b<sup>1</sup>. Eye large, its diameter more than one-third the distance from anterior canthus to tip of muzzle; gasterosteges about 218; color whitish with three blackish-brown longitudinal bands in strong contrast.

1. *L. trivirgata*.

b<sup>2</sup>. Eye smaller, its diameter less than one-third the distance from anterior canthus to tip of muzzle; gasterosteges about 232; color brownish or bluish above, with or without longitudinal bands, which, when present, contrast but little against the ground color.

c<sup>1</sup>. Scale rows 40 to 45; loreals 5 to 7.

d<sup>1</sup>. Eye ring of 9 to 10 scales; scale rows 42 to 45; color bluish gray above, with three longitudinal light-brownish bands.

2. *L. myriolepis*.

d<sup>2</sup>. Eye ring of 7 to 8 scales; scale rows 40; color uniform; brownish drab above.

3. *L. simplex*.

c<sup>2</sup>. Scale rows 33 to 35; loreals 4 (eye ring 9 to 10 scales).

4. *L. orcutti*.

a<sup>2</sup>. Eye ring of 7 to 8 scales and 4 loreals.

5. *L. roseofusca*.

It is more than probable that additional material will alter the above results and necessitate the modification of the "key," which is somewhat clumsy because of our ignorance of the character of the rostral,

the size of the eye, the number of gasterosteges, etc., in *L. roseofusca*. The manifest great variability of the characters derived from the number and shape of scales and plates in these snakes makes it quite likely that some of the forms here recognized, in the future will be recognized only as varieties. The number of gasterosteges, on the other hand, seems to be rather constant, and the large size of the eye in *L. trivirgata*, as well as the prominence of the rostral in *L. orcutti*, are apparently also features of considerable diagnostic importance.