

A New Subspecies of the Snake *Masticophis lateralis* from California

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IN the region surrounding San Francisco Bay a number of species of terrestrial vertebrates tend to be more richly supplied with red, orange, or yellow pigments than related forms in adjacent areas. Examples are the salamander *Ensatina eschscholtzi xanthoptica* (Stebbins, 1949), the snakes *Thamnophis elegans atratus* (Fox, 1951), *Lampropeltis zonata* (= *multicincta*) *multifasciata* (Klauber, 1943), and the bird *Melospiza melodia pusillula* (Marshall, 1948). One might also mention the mice *Reithrodontomys r. raviventris* and *Reithrodontomys raviventris halicoetes* which according to Hooper (1944) probably evolved in the immediate vicinity of the Bay and therefore may have been influenced in some way by it. No satisfactory explanation for this striking phenomenon is yet available.

An additional instance of extreme development of orange pigment is furnished by a new subspecies of striped racer.

Masticophis lateralis euryxanthus,
subsp. nov.

Fig. 1

HOLOTYPE.—Adult female, No. 50391, Museum of Vertebrate Zoology (MVZ), collected

by Archie Mossman, August 15, 1950, in the Berkeley Hills, Berkeley, Alameda County, California. Original number: 893, W. J. Reimer.

DESCRIPTION OF TYPE (ANIMAL ANESTHETIZED).—Length from snout to vent, 84 cm.; from vent to tip of tail, 36 cm.

The type agrees in all particulars of scutellation with the detailed description given for the species by Van Denburgh (1922). It also agrees with the much briefer description given by Hallowell (1853) for the type of *Leptophis lateralis*, except that the upper portions of the preorbitals form part of the dorsal surface of the head rather than part of the lateral surface. This discrepancy presumably is the result of an error in the original description. There are 198 ventrals and 122 pairs of caudals.

The dark dorsal color of the body is divided by a pair of light stripes into three portions, a broad vertebral region and two narrower lateral regions. The color of the vertebral portion is sooty black fading on the tail and the top of the head. The lateral portions are less intensely black and are not present beyond the vent or forward of the neck. The dorsal color extends ventrally to include the ends of the ventrals from the vent forward to a point about

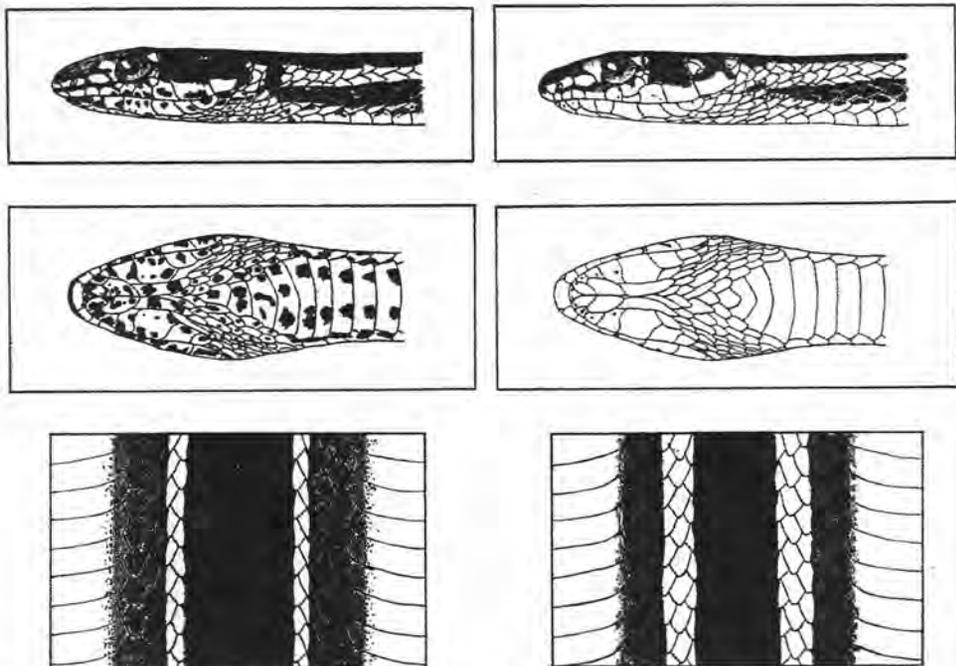


Fig. 1. Pigmentation of the lateral and ventral surfaces of the head and of the trunk at mid-body. Left: *M. l. lateralis* (MVZ 21362) from San Benito County. Right: *M. l. euryxanthus* (MVZ 50391, holotype) from Alameda County, California.

one-fifth the length of the body back from the snout. Here the dorsal color leaves the ventrals and gradually ascends the first and second scale rows. The two longitudinal light stripes are yellow-orange. Close examination reveals them at midbody to be basically a cream color, 9 F 1 (Maerz and Paul, 1930), with an overlying, unevenly distributed suffusion of orange, 10 D 10. Viewed from a distance just sufficient to obscure the irregularities of the stripe color the overall hue is saffron, 10 J 8. The stripe color is similar from the neck to the posterior third of the body where the intense orange fades out. Ventrally the body is orange on the throat, 11 K 11; pinkish-yellow at midbody, 10 F 6; and bright pink at the vent, 2 J 2. The entire underside of the tail is also pink and becomes slightly darker posteriorly, 3 J 3. The ventral colors grade gradually into one another. The underside of the head and the supralabials are white or light cream with a heavy scattering of orange pigment. A pair of small indistinct black spots is present on the mental and one spot is present on each of the first four infralabials on each side. The iris is golden-orange dorsally, 10 L 8. On the anterior two-thirds of the body the lateral orange stripe includes about two-thirds of the third scale row, all

of the fourth scale row and about one-third of the fifth row. The ventral edge of the scales of the third row is occupied with a black border to the light stripe. The stripe on the posterior third of the body occupies all of the third scale row and from three-fourths to all of the fourth row. Margins of the stripe here are less distinct than anteriorly. At the hind portion of the head the lateral light stripe broadly joins the ventral light area. An uninterrupted light line connects the nostril and eye. The dark ventral border of this stripe is not present across the rostral.

Only six specimens of this subspecies are known to the author. Three of these (MVZ 33885, 50390, 50391) are from the vicinity of Berkeley, Alameda County and the others from near Somersville (MVZ 40484), near Alamo (MVZ 58215), and from Mt. Diablo (MVZ 4866), Contra Costa County. Possible intergrades have been examined; these were not seen alive and hence the color characters are unknown. That the species is rare in the area east of San Francisco Bay is indicated by the very small number of specimens in collections from this area. (Fig. 2.)

COMPARISON OF SUBSPECIES.—The subspecies *M. l. euryxanthus* may be distinguished from *M. l. lateralis* by:

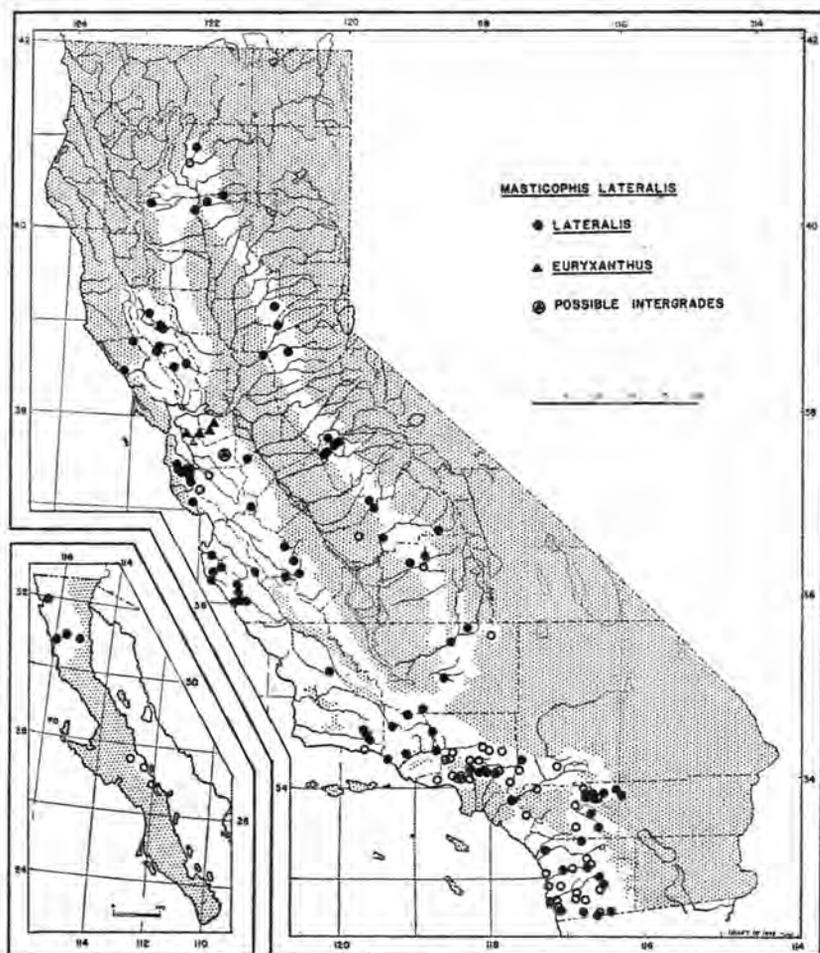


Fig. 2. Locality records for *Masticophis lateralis lateralis* and *M. l. euryxanthus*.

Solid symbols represent specimens examined; hollow symbols, those not examined. Unshaded area indicates probable total range of the species.

1. A broad dorsolateral light stripe, one and two half scales wide, or, occasionally, two full scales wide on the anterior two-thirds of the body. Occasionally individuals from other parts of the range have a stripe wider than the two half scales usual for *M. l. lateralis* but the margins are not distinct or the stripe is irregular.

2. A virtual lack of black spotting on the ventral surface of the head and neck. Juveniles may show very sparse and weak black spots. An occasional specimen from other parts of the range may lack spots in one of the two places. Spotting is heaviest in individuals from southern California and in melanistic ones. Chin spots tend to form a symmetrical pattern in animals from Tehama County.

3 A. light stripe between nostril and eye

usually not interrupted by dark vertical lines along the margins of the loreal.

4. The lack, usually, of a dark line across the rostral, representing a connection between the supralabial stripes.

5. The direct communication anteriorly between the lateral light stripe and the light venter. This character appears to be uniformly present in specimens from the counties touching on San Francisco Bay, but is irregularly present elsewhere except in southern California where such communication is absent or very rare.

6. The absence of dorsal color on the ventrals for a distance back from the snout equal to four and one half to six times the distance from the snout to the posterior edge of the parietals. In *M. l. lateralis* the dorsal color is retained on the ventrals from one and one-half to four times

(usually two to two and one-half times) the snout-parietal distance back from the snout. Rarely it may be even farther back.

7. A sooty black dorsal color. Melanistic individuals are, however, not uncommon throughout the range of the species. Usually the dorsal color is olive, olive brown, blackish-olive or dark brown.

8. The presence in life of a heavy suffusion of orange-rufous on the anterior light portions of the body. In *M. l. lateralis* the stripes are light cream or pale yellow and the anterior ventral surfaces are pale yellow or pale orange. A juvenile of *M. l. euryxanthus* has a white chin area as is typical of young *M. l. lateralis*.

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