

REPTILIA: SQUAMATA: SERPENTES: COLUBRIDAE

MASTICOPHIS LATERALIS

Catalogue of American Amphibians and Reptiles.

JENNINGS, MARK R. 1983. *Masticophis lateralis*.

***Masticophis lateralis* (Hallowell)**
Striped racer

Leptophis lateralis Hallowell, 1853:237. Type-locality, "California," restricted by Schmidt (1953) to "San Diego" (see REMARKS). Holotype, Acad. Natur. Sci. Philadelphia 5365, juvenile male collected by Dr. Adolphus L. Heermann (examined by author).

Mastigophis lateralis: Günther, 1865:89.

Drymobius lateralis: Cronise, 1868:484.

Coluber taeniatus (part): Garman, 1883:148.

Bascanion lateralis: Duméril and Bocourt, 1886:706.

Bascanium laterale: Cope, 1892:622.

Bascanion laterale: Stejneger, 1893:209.

Zamenis taeniatus (part): Boulenger, 1893:390.

Zamenis lateralis: Cope, 1896:1018.

Zamenis laterale: Rüthling, 1915:4.

Coluber lateralis: Grinnell and Camp, 1917:190.

Masticophis lateralis: Ortenburger, 1923:2.

• CONTENT. Two subspecies: *lateralis* and *euryxanthus*.

• DEFINITION. *Masticophis lateralis* is a whipsnake with 17 dorsal scale rows on the anterior portion of the body, eight supralabials, and a dark dorsum bordered laterally by continuous, pale, longitudinal stripes $\frac{1}{4}$ -2 scales in width.

• DESCRIPTIONS. *Masticophis lateralis* was thoroughly described by Ortenburger (1928). Riemer (1954) gave an accurate account of both subspecies. General descriptions are in Van Denburgh (1897, 1922), Brown (1901), Ditmars (1939), Schmidt and Davis (1941), Stebbins (1954, 1966), Wright and Wright (1957), and Miller and Stebbins (1964).

• ILLUSTRATIONS. Black and white drawings or photographs of *M. l. lateralis* are in Hallowell (1859), Pickwell (1947), Dixon (1967), and most references under DESCRIPTIONS. Color photographs of *M. l. lateralis* are in Schmidt and Inger (1957), Shaw and Campbell (1974), and Behler and King (1979). Stebbins (1966) provided a watercolor of *M. l. euryxanthus*.

• DISTRIBUTION. *Masticophis lateralis* occurs from Trinity County, California (Bury, 1970), south to Socorro ($30^{\circ}58'N$) in the Sierra San Pedro Martir, Baja California, Norte (MVZ 140863; SDNHM 10524), excluding most of the Central Valley, California (Riemer, 1954). It occurs in Baja California, Del Sur, from near San Ignacio (Mocquard, 1899) to Comondu ($26^{\circ}10'N$) (FMNH 25863). The altitudinal range is from ca. 0-2135 m (Bogert, 1930).

• FOSSIL RECORD. Reported from the Pleistocene at Rancho La Brea, Los Angeles County, California (Thomas C. LaDuke, Michigan State University, personal communication).

• PERTINENT LITERATURE. Ortenburger (1928), Wright and Wright (1957), and Smith and Smith (1973) provided partial summaries of pertinent literature. Reports on food and feeding habits are in Grinnell and Storer (1924), Fitch (1935, 1949), Walker (1946), Loomis and Stephens (1962), and Cornett (1982). Data on reproduction are in Dixon (1967), Fitch (1970), and Goldberg (1975), and Hammerson (1978) reported on mating behavior. Klauber (1943) discussed sexual dimorphism. Climbing abilities were noted by Grinnell and Grinnell (1907), Pickwell (1947), and Cunningham (1955), and thermal aspects by Miller and Stebbins (1964), Brattstrom (1965), and Hammerson (1979). Smith (1941) presented phylogenetic relationships of *M. lateralis* to other members of the genus.

• REMARKS. Schmidt (1953) restricted the type-locality of *M. lateralis* to San Diego but examination of the holotype indicates that it is not from the San Diego area. Heermann collected many of his herpetological specimens from the Sierra Nevada foothills (Hallowell, 1853) and the holotype was probably from this general area.

• ETYMOLOGY. The specific name *lateralis* (Latin) means of the side and apparently alludes to the conspicuous lateral stripes. The subspecific name *euryxanthus* is derived from the Greek *eury-*, meaning wide or broad, and *xanthus*, yellow, which refers to the wide yellow-orange lateral stripes.

1. *Masticophis lateralis lateralis* (Hallowell)

Leptophis lateralis Hallowell, 1853:237. See species synonymy.

Bascanium taeniatum laterale: Cope, 1875:40.

Bascanium laterale laterale: Cope, 1892:628.

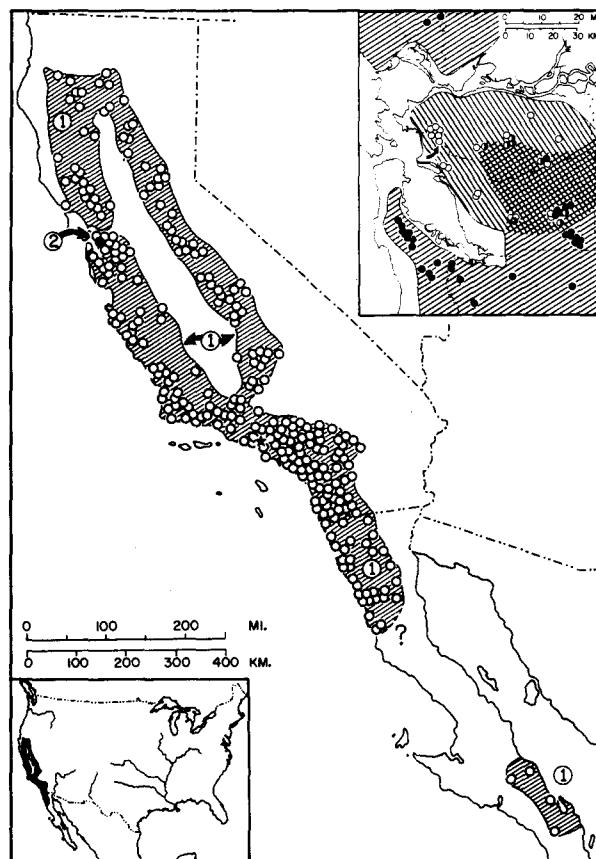
Zamenis lateralis lateralis (part): Cope, 1900:807.

• DEFINITION. A subspecies with an olive brown, blackish olive, or dark brown dorsum, narrow cream or pale yellow dorsolateral stripes $\frac{1}{4}$ -1 scale in width, and heavy spotting on the venter of the head and neck.

2. *Masticophis lateralis euryxanthus* Riemer

Masticophis lateralis euryxanthus Riemer, 1954:45. Type-locality, "Berkeley Hills, Berkeley, Alameda County, California." Holotype, Mus. Vert. Zool. 50391, adult female, collected by A. Mossman, 15 August 1950 (examined by author).

• DEFINITION. A subspecies with a sooty black dorsum, broad yellow-orange dorsolateral stripes $1\frac{1}{2}$ -2 scales in width, and virtual



MAP. Solid circle marks type-locality of *M. l. euryxanthus*; type-locality of *M. l. lateralis* is too indefinite to plot (see REMARKS). Open circles indicate other localities. Question mark indicates uncertain range boundary. Star marks Pleistocene fossil locality. Inset: map of San Francisco Bay region showing localities for *M. l. euryxanthus* (open circles, with arrow indicating type-locality), *M. l. lateralis* (solid circles), and intergrades (half-filled circles). Overlapping shading patterns indicate presumed zone of intergradation.

absence of spotting on the venter of the head and neck. A heavy suffusion of orange-rufus is present on the anterior pale areas.

COMMENT

Soulé and Sloan (1966) consider *M. barbouri* to be a subspecies of *M. lateralis*, whereas Ortenburger (1928), Cliff (1954), and Savage (1960) consider all three snakes to be distinct species. The group is currently under study.

LITERATURE CITED

- Bogert, Charles M. 1930. An annotated list of the amphibians and reptiles of Los Angeles County, California. Bull. S. California Acad. Sci. 29(1):3-14.
- Boulenger, George A. 1893. Catalogue of the snakes in the British Museum (Natural History). Vol. 1. London. xiii + 448 p.
- Brattstrom, Bayard H. 1965. Body temperatures of reptiles. Amer. Midland Natur. 73(2):376-422.
- Bury, R. Bruce. "1970" (1971). A biogeographical analysis of the herpetofauna of Trinity County, California. J. Herpetol. 4(3-4):165-178.
- Cliff, F. S. 1954. Snakes of the islands of the Gulf of California, Mexico. Trans. San Diego Soc. Natur. Hist. 12(5):67-98.
- Cope, Edward D. 1875. Check-list of North American Batrachia and Reptilia. United States Nat. Mus. Bull. (1):1-104.
- . 1892. A critical review of the characters and variations of the snakes of North America. Proc. United States Nat. Mus. 14:589-694.
- . 1896. The geographical distribution of Batrachia and Reptilia in North America. Amer. Natur. 30(359-360):886-902, 1003-1026.
- . 1900. The crocodilians, lizards, and snakes of North America. Ann. Rept. U.S. Nat. Mus. 1898:153-1294.
- Cornett, James W. 1982. Life history notes: *Masticophis lateralis*-Food. Herpetol. Rev. 13(3):96.
- Cronise, Titus F. 1868. The natural wealth of California. H. H. Bancroft and Co., San Francisco, California. 696 p.
- Cunningham, John D. 1955. Arboreal habits of certain reptiles and amphibians in southern California. Herpetologica 11(3): 217-220.
- Ditmars, Raymond L. 1939. A field book of North American snakes. Doubleday and Co., Inc., Garden City, New York. xii + 305 p.
- Dixon, James R. 1967. Amphibians and reptiles of Los Angeles County, California. Los Angeles Co. Mus. Natur. Hist., Sci. Ser. 23(10):1-64.
- Duméril, André Marie Constant, and Marie-Firmin Bocourt. 1886. In A. Duméril, M.-F. Bocourt, and F. Mocquard, Études sur les reptiles. In Recherches zoologiques pour servir à l'histoire de la faune de l'Amérique Centrale et du Mexique. Mission scientifique au Mexique et dans l'Amérique Centrale, recherches zool., part 3, sect 1. Imprimerie Nat., Paris. xiv + 1012 p. (1870-1909).
- Fitch, Henry S. 1935. Natural history of the alligator lizards. Trans. Acad. Sci. St. Louis 29(1):1-38.
- . 1949. Study of snake populations in central California. Amer. Midland Natur. 41(3):513-579.
- . 1970. Reproductive cycles in lizards and snakes. Univ. Kansas Mus. Natur. Hist. Misc. Publ. (52):1-247.
- Garman, Samuel. "1883" (1884). The reptiles and batrachians of North America. Part I, Ophidia. Mem. Mus. Comp. Zool. 8(3):xxx + 185 p.
- Goldberg, Stephen R. 1975. Reproduction in the striped racer, *Masticophis lateralis* (Colubridae). J. Herpetol. 9(4):361-363.
- Grinnell, Joseph, and Charles L. Camp. 1917. A distributional list of the amphibians and reptiles of California. Univ. California Publ. Zool. 17(10):127-208.
- . and Hilda W. Grinnell. 1907. Reptiles of Los Angeles County, California. Throop Polytech. Inst. Bull. (35):1-64.
- . and Tracy I. Storer. 1924. Animal life in the Yosemite. Univ. California Press, Berkeley. xviii + 752 p.
- Günther, Albert. 1865. Fourth account of new species of snakes in the collection of the British Museum. Ann. Mag. Natur. Hist. 15:89-98.
- Hallowell, Edward. 1853. On some new reptiles from California. Proc. Acad. Natur. Sci. Philadelphia 6(7):236-238.
- . 1859. Report upon the reptiles collected on the Survey, p. 1-27. In Reports of explorations and surveys . . . Vol. 10.
- Report of explorations . . . Lieut. R. S. Williamson . . . part 4(1).
- Hammeron, Geoffrey A. 1978. Observations on the reproduction, courtship, and aggressive behavior of the striped racer, *Masticophis lateralis euryxanthus* (Reptilia, Serpentes, Colubridae). J. Herpetol. 12(2):235-255.
- . 1979. Thermal ecology of the striped racer, *Masticophis lateralis*. Herpetologica 35(3):267-273.
- Klauber, L. M. 1943. Tail-length differences in snakes, with notes on sexual dimorphism and the coefficient of divergence. Bull. Zool. Soc. San Diego (18):3-60.
- Loomis, Richard B., and R. C. Stephens. 1962. Records of snakes from Joshua Tree National Monument, California. Bull. S. California Acad. Sci. 61(1):29-36.
- Miller, Alden H., and Robert C. Stebbins. 1964. The lives of desert animals in Joshua Tree National Monument. Univ. California Press, Berkeley. vi + 452 p.
- Mocquard, F. 1899. Contribution à la faune herpetologique de la Basse Californie. Nouv. Arch. Mus. Natur. Hist. (4) I. p. 297-344.
- Ortenburger, Arthur I. 1923. A note on the genera *Coluber* and *Masticophis*, and a description of a new species of *Masticophis*. Occas. Pap. Mus. Zool. Univ. Michigan (139):1-14.
- . 1928. The whip snakes and racers: genera *Masticophis* and *Coluber*. Mem. Univ. Michigan Mus. 1:viii + 247.
- Pickwell, G. B. 1947. Amphibians and reptiles of the Pacific states. Stanford Univ. Press, Stanford, California. xiv + 236 p.
- Riemer, W. J. 1954. A new subspecies of the snake *Masticophis lateralis* from California. Copeia 1954(1):45-48.
- Rüthling, Paul. 1915. Los Angeles snakes. Copeia (15):4.
- Savage, Jay M. 1960. Evolution of a peninsular herpetofauna. Syst. Zool. 9(3-4):184-212.
- Schmidt, Karl P. 1953. A check list of North American amphibians and reptiles. Sixth edition. Amer. Soc. Ichthyol. Herpetol. viii + 280 p.
- . and D. Dwight Davis. 1941. Field book of snakes of the United States and Canada. G. P. Putnam's Sons, New York. xiii + 365 p.
- . and Robert F. Inger. 1957. Living reptiles of the world. Doubleday and Co., New York. 287 p.
- Shaw, Charles E., and Sheldon Campbell. 1974. Snakes of the American West. Alfred A. Knopf, New York. xii + 332 p.
- Smith, Hobart M. 1941. Notes on Mexican snakes of the genus *Masticophis*. J. Washington Acad. Sci. 31(9):388-398.
- . and Rozella B. Smith. 1973. Synopsis of the herpetofauna of Mexico. Vol. II. Analysis of the literature exclusive of the Mexican axolotl. E. Lundberg, Augusta, West Virginia. xxix + 367 p.
- Soulé, Michael A., and Alan J. Sloan. 1966. Biogeography and distribution of the reptiles and amphibians on islands in the Gulf of California, Mexico. Trans. San Diego Soc. Natur. Hist. 14(11):137-156.
- Stebbins, Robert C. 1954. Amphibians and reptiles of western North America. McGraw-Hill, New York. xxii + 536 p.
- . 1966. A field guide to western reptiles and amphibians. Houghton Mifflin Co., Boston. xiv + 279 p.
- Stejneger, L. 1893. Annotated list of the reptiles and batrachians collected by the Death Valley expedition in 1891, with descriptions of new species. N. Amer. Fauna (7):159-228.
- Van Denburgh, John. 1897. The reptiles of the Pacific Coast and Great Basin. Occas. Pap. California Acad. Sci. (5):1-236.
- . 1922. The reptiles of western North America. Vol. II. Snakes and turtles. Ibid. (10):617-1028.
- Walker, M. V. 1946. Reptiles and amphibians of Yosemite National Park. Yosemite Nature Notes 25(1):1-48.
- Wright, Albert H., and Anna A. Wright. 1957. Handbook of snakes of the United States and Canada. Comstock Publ. Assoc., Ithaca, New York. 2 vols. xxvii + 1105 p.

MARK R. JENNINGS, THE UNIVERSITY OF ARIZONA, TUCSON, ARIZONA 85721.

Primary editor for this account, Larry David Wilson.

Published 30 December 1983 and Copyright 1983 by the SOCIETY FOR THE STUDY OF AMPHIBIANS AND REPTILES.