

Catalogue of American Amphibians and Reptiles.

COLLINS, JOSEPH T. 1982. *Crotalus stejnegeri*.

Crotalus stejnegeri
Longtail rattlesnake

Crotalus stejnegeri Dunn, 1919:214. Type-locality, "Plomosas [=Plomosas], Sinaloa, Mexico." Holotype, U.S. National Museum of Natural History 46586, an adult male, collected by Edward A. Nelson and Edward W. Goldman on 19 July 1897 (not examined by author).

• CONTENT. The species is monotypic.

• DEFINITION. *Crotalus stejnegeri* is a small rattlesnake reaching a maximum adult size of 724 mm in total length. The smallest known specimen (sex not given) measures 282 mm. Length of neonates is unknown, but average length is estimated to be 170 mm. Tail length as a percentage of snout-vent length is 11.6 to 14.8 (males) and 9.5 to 9.8 (females). Scutellation is as follows: dorsal scale rows (keeled) at midbody, 23 to 29; ventrals in males, 174 to 178, in females, 171 to 172; subcaudals in males, 41 to 48, in females, 36 to 37; supralabials, 14 to 16; infralabials, 14 to 18; preoculars, 2; postoculars, 3 or 4; loreals, 4 or 5; internasals, 2; canthals, 1 to 2. Lower border of orbit is separated from supralabials by 2 or 3 scales. The first infralabial is relatively blunt, without a strongly pointed posterior projection. Top of the head has 10 to 21 (mean 15.4) small scales in the internasal-prefrontal area. Scales separating the supraoculars vary from 5 to 8. Chin shields are elongate.

Dorsal pattern consists of 40 to 50 dark-edged brown blotches (32 to 42 snout-vent, 10 to 12 tail) on a pale gray-brown ground color. Blotches on the tail are sometimes indistinct, the tail be-

coming darker toward the rattle. Laterally, there are three rows of smaller body blotches, two of which coalesce with dorsal blotches near the tail to form crossbands. The venter is mottled with irregular dark brown to black blotches on a cream ground color. The top of the grayish head has 1 to 3 pairs of dark spots, and a pair of dark elongate occipital bars. A dark postocular streak is present on each side of the head. The rattle is small, and the proximal segment is dark.

The long, slim and deeply bifurcate hemipenes of *Crotalus stejnegeri* have numerous small and slender spines which cover the entire periphery of the lobes, except at the sulci, and are present in the crotches. There is a gradual transition to fringes (which are relatively small), which disappear completely at the outer ends where the shafts are smooth and slightly expanded.

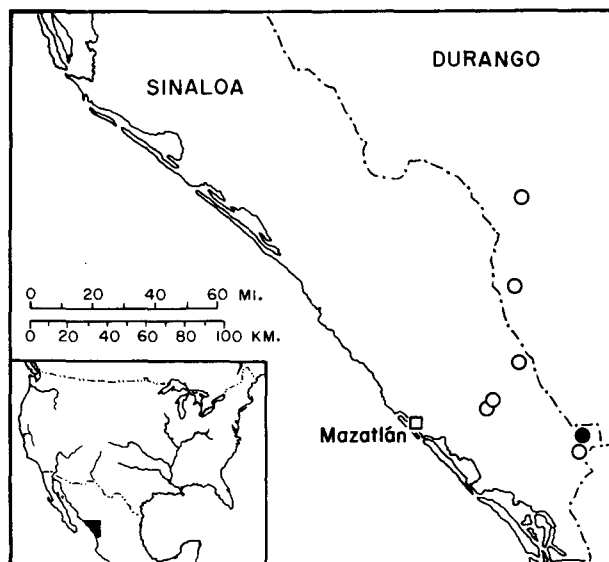
• DESCRIPTIONS. Dunn (1919), Gloyd (1940), Tanner (1966), Hardy and McDiarmid (1969), Klauber (1952, 1972), and McDiarmid et al. (1976) provided brief descriptions of this rattlesnake, including scutellation, dimensions, and patterns of adults. Armstrong and Murphy (1979) included dimensions of a large adult. Klauber (1952, 1972) described the hemipenes. No information is available on juveniles.

• ILLUSTRATIONS. Black-and-white photographs of adults are in Klauber (1952, 1972), Harris and Simmons (1978), Armstrong and Murphy (1979), and Glenn and Straight (1982). Gloyd (1940) illustrated head scutellation and body pattern of the holotype, and Tanner (1966) illustrated head scutellation. Brattstrom (1964) included a line drawing of the lower mandible. Armstrong and Murphy (1979) provided a black-and-white photograph of the habitat.

• DISTRIBUTION. *Crotalus stejnegeri* is found in the rugged foothills of the Sierra Madre Occidental of southeastern Sinaloa and western Durango, México, and probably occurs also in ad-



FIGURE. An adult male longtail rattlesnake (*Crotalus stejnegeri*) from Plomosas, Sinaloa, Mexico (University of Texas at Arlington Collection of Vertebrates #10499). Photograph by the author through the courtesy of the Dallas Zoo.



MAP. The solid circle marks the type locality; open circles indicate other localities.

adjacent Nayarit. It is known from seven localities (two in Durango and five in Sinaloa), and has been recorded at separate elevations of 1067 and 1155 meters.

Habitat preference for this rattlesnake appears to be tropical deciduous forest, subtropical dry forest, and pine-oak forest, where the species is found at canyon edges, the bases of bluffs, in rock slides, and in rodent burrows.

• Fossil Record. None.

• PERTINENT LITERATURE. The most extensive (nonetheless meager) information on *Crotalus stejnegeri* is contained in Dunn (1919), Gloyd (1940), Hardy and McDiarmid (1969), Klauber (1952, 1972), McDiarmid et al. (1976), and Armstrong and Murphy (1979). Various aspects of the biology of this species are found in the following: teeth (Klauber, 1939, 1952, 1972; Brattstrom, 1964), rattle (Gloyd, 1940; Klauber, 1940, 1952, 1972), phylogeny and primitive characteristics (Amaral, 1929; Gloyd, 1940; Brattstrom, 1964; Klauber, 1952, 1972), food (Klauber, 1972), activity temperature (McDiarmid et al., 1976; Armstrong and Murphy, 1979), behavior and narrow elevational preference (Armstrong and Murphy, 1979), relationship to *Crotalus triseriatus* (Gloyd, 1940), and comparison with *Crotalus lannomi* (Tanner, 1966).

Specific distributional information is provided in Dunn (1919), Hardy and McDiarmid (1969), Klauber (1952), McDiarmid et al. (1976), and Armstrong and Murphy (1979). Specific range maps (with actual plotted localities) are in Gloyd (1940) and Hardy and McDiarmid (1969).

• REMARKS. *Crotalus stejnegeri* is a rare rattlesnake, and is known from only eleven specimens. Klauber (1952, 1972) considered the hemipenes of this snake to be the most distinctive of all rattlesnakes. Smith and Smith (1973, 1976) provided the most extensive lists of literature citations to this rattlesnake, approximately half of which make only casual mention of the species.

Gloyd (1940) cited a nineteenth-century example of this species, which was incorrectly listed as *Crotalus tigris* by Boulenger (1896).

• ETYMOLOGY. The specific name *stejnegeri* honors the herpetologist Leonhard Stejneger (1851–1943), former Curator of Herpetology at the National Museum of Natural History, Smithsonian Institution, Washington, D.C.

LITERATURE CITED

- Amaral, Alfranio do. 1929. Studies of Nearctic Ophidia. VI. Phylogeny of the rattlesnakes. *Bull. Antivenin Inst. America* 3(1):6–8.
- Armstrong, Barry L., and James B. Murphy. 1979. The natural history of Mexican rattlesnakes. *Univ. Kansas Mus. Natur. Hist. Spec. Publ.* 5:vii + 88 p.
- Boulenger, George A. 1896. Catalogue of the snakes in the British Museum (Natural History). [Vol. 3.] London. xiv + 727 p.
- Brattstrom, Bayard H. 1964. Evolution of the pit vipers. *Trans. San Diego Soc. Natur. Hist.* 13(11):185–268.
- Dunn, Emmett R. 1919. Two new crotaline snakes from western Mexico. *Proc. Biol. Soc. Washington* 32:213–216.
- Glenn, James L., and Richard C. Straight. 1982. The rattlesnakes and their venom yield and lethal toxicity, p. 3–119. *In* Anthony T. Tu (ed.), *Rattlesnake venoms: Their action and treatment*. Marcel Dekker, New York.
- Gloyd, Howard K. 1940. The rattlesnakes, genera *Sistrurus* and *Crotalus*: A study in zoogeography and evolution. *Spec. Publ. Chicago Acad. Sci.* (4):vii + 266 + 4.
- Hardy, Laurence M., and Roy W. McDiarmid. 1969. The amphibians and reptiles of Sinaloa, México. *Univ. Kansas Publ. Mus. Natur. Hist.* 18(3):39–252.
- Harris, Herbert S., Jr., and Robert S. Simmons. 1978. A preliminary account of the rattlesnakes with the descriptions of four new subspecies. *Bull. Maryland Herpetol. Soc.* 14(3):105–211.
- Klauber, Laurence M. 1939. A statistical study of the rattlesnakes. VI. Fangs. *Occas. Pap. San Diego Soc. Natur. Hist.* 5:1–61.
- 1940. A statistical study of the rattlesnakes. VII. The rattle. *Ibid.* 6:1–62.
- 1952. Taxonomic studies of the rattlesnakes of mainland México. *Bull. Zool. Soc. San Diego* (26):1–143.
- 1972. Rattlesnakes. Their habits, life histories, and influence on mankind. Second Edition. Univ. California Press, Berkeley and Los Angeles. 2 Vols. xxx + 1533 p.
- McDiarmid, Roy W., Joseph F. Copp, and Dennis E. Breedlove. 1976. Notes on the herpetofauna of western México: New records from Sinaloa and the Tres Marias Islands. *Natur. Hist. Mus. Los Angeles Co. Contrib. Sci.* 275:1–17.
- Smith, Hobart M., and Rozella B. Smith. 1973. Synopsis of the herpetofauna of México. Vol. II. Analysis of the literature exclusive of the Mexican axolotl. Eric Lundberg, Augusta, West Virginia. xxxiii + 367 p.
- 1976. Synopsis of the herpetofauna of México. Vol. III. Source analysis and index for Mexican reptiles. John Johnson, North Bennington, Vermont. 991 p.
- Tanner, Wilmer W. 1966. A new rattlesnake from western México. *Herpetologica* 22(4):298–302.

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