

Catalogue of American Amphibians and Reptiles.

Camper, J.D. 1996. *Masticophis taeniatus*.

***Masticophis taeniatus* (Hallowell)**
Striped Whipsnake

Leptophis taeniata Hallowell, 1852:181. Type-locality, "New Mexico west of the Rio Grande;" restricted to Shiprock, San Juan Co., New Mexico, USA (Smith and Taylor, 1950). Holotype, National Museum of Natural History (USNM) 2110, adult male (547 mm SVL), collected by Dr. S.W. Woodhouse, date unknown (examined by author).

Leptophis taeniatus: Sitgreaves, 1853:133.

Masticophis taeniatus: Baird and Girard, 1853:103. First use of combination.

Drymobius taeniatus: Cope, 1860 (1861):561.

Bascanium taeniatum: Cope, 1875:40.

Coluber taeniatus: Garman, 1883 (1884):46.

Bascanion taeniatus: Duméril and Bocourt, 1886:703.

Bascanion taeniatum: Stejneger, 1893: 210.

Zamenis taeniatus: Boulenger, 1893:390.

• **Content.** Two subspecies are recognized, *taeniatus* and *girardi*.

• **Definition.** *Masticophis taeniatus* is a large (to 1349 mm SVL), long-tailed (to 40% TL) species of whipsnake with 15 anterior and midbody scale rows. Posterior scale rows number 9-13. Males have 183-236 ventrals and 117-175 subcaudals; females have 187-232 ventrals and 105-178 subcaudals. Two preoculars and 2 postoculars are present in most specimens. Temporals number 6-9 and increase in size posteriorly. Supralabials number 7-9 (mode 8), with supralabials 4 and 5 entering the orbit. Infralabials number 8-11 (mode 9) and increase in size posteriorly. One loreal scale and two scale pits are usually present. The eyes are large with prominent supraorbital ridges. Maxillary teeth number 15-23 and increase in size posteriorly. The hemipenis extends 4-15 subcaudals posterior to the vent.

Specimens from the northern portion of the range have four olive to brown stripes against a cream ground color. Stripes are centered on each of the first four dorsal scale rows. In southern specimens, the stripes are black and usually fused except where 0-10 transverse gray bands are present. The dorsal coloration

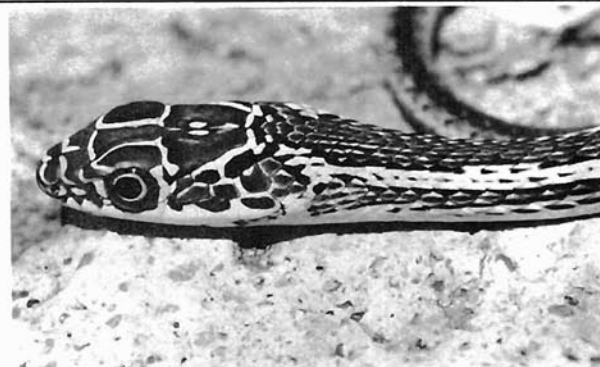


Figure 1. *Masticophis taeniatus taeniatus* from near Columbus, Luna County, New Mexico. Photograph by James R. Dixon.

(between scale rows 4 on each side) is the same as that of the stripes. The dorsal head scales are edged with cream or white and a light temporal spot is absent. Southern specimens have a light nuchal collar or a pair of light nape blotches. Dark pigment extends down the sides of the head, covering the upper third of the supralabials. The posterior quarter of the venter and the undersurface of the tail are pink. The remainder of the venter is cream, with a pair of indistinctly edged dark stripes along the lateral margins of the ventrals in northern specimens. Southern animals have an almost entirely black venter.

• **Diagnosis.** This species is the only *Masticophis* with 15 dorsal scale rows lacking light dorsal speckling and red pigment at the angle of the jaw.

• **Descriptions.** Thorough descriptions were given by Ortenburger (1928) and Camper and Dixon (1994). Descriptions of one or both subspecies are in Van Denburgh (1897, 1922), Cope (1900), Brown (1901), and Wright and Wright (1957). Coues (1875), Garman (1883 [1884]), Ditmars (1907, 1936, 1939), Schmidt and Davis (1941), Fowlie (1965), Cochran and Goin (1970), Behler and King (1979), Nussbaum et al. (1983), and Vermersch and Kuntz (1986) presented additional descriptive information.

• **Illustrations.** Black and white drawings and photographs are

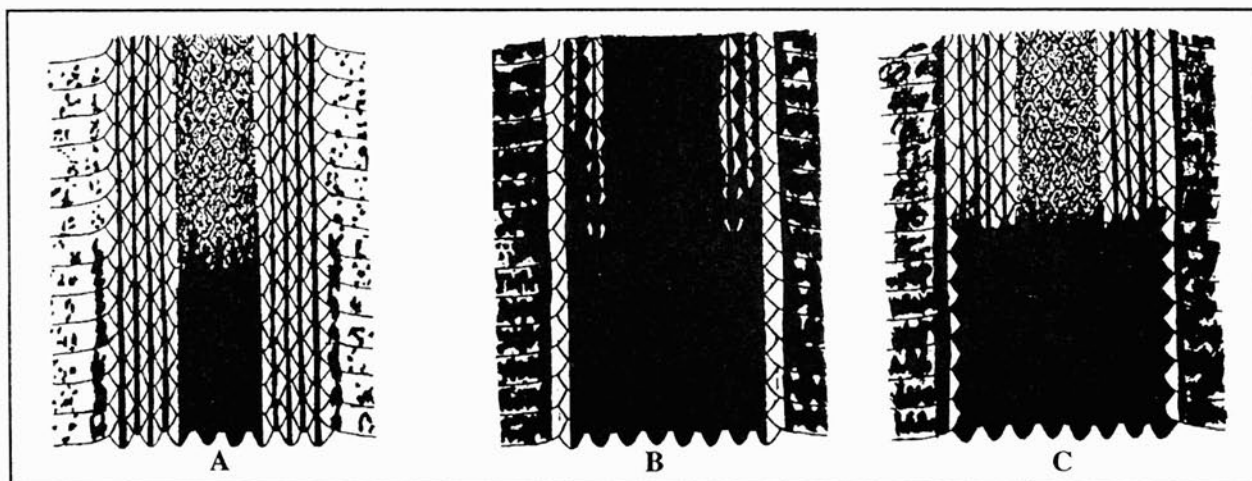
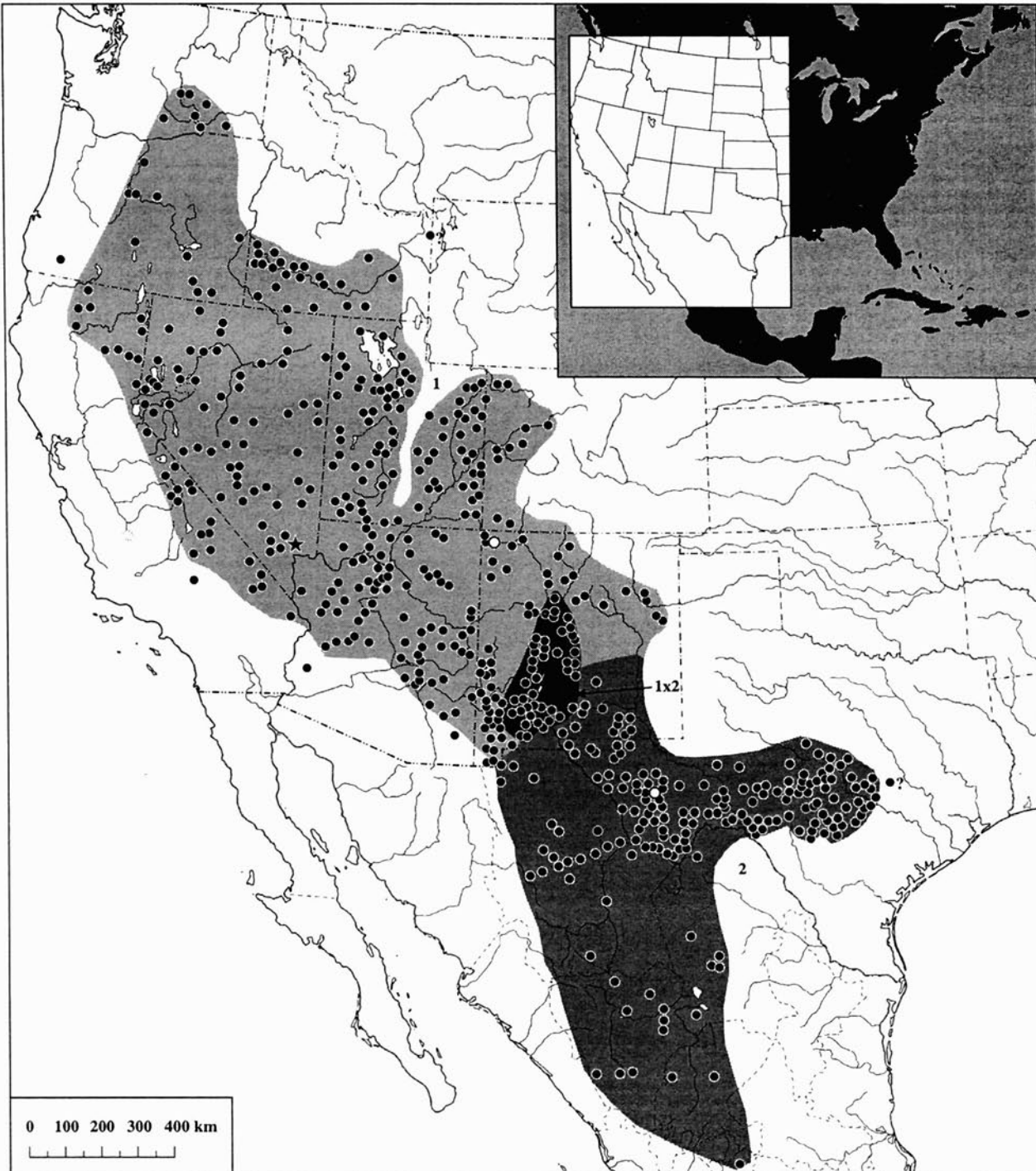


Figure 2. Dorsal pattern of *Masticophis taeniatus girardi* (from Camper and Dixon, 1994): (A) light pattern common throughout the Chihuahuan Desert; (B) dark pattern common on the Edwards Plateau; (C) intermediate pattern found throughout the range of this subspecies.



Map. Range of *Masticophis taeniatus*. Large circles mark type-localities; dots indicate other records; the star marks a Late Pleistocene–Recent fossil locality.

in Jan and Sordelli (1867), Baird (1859), Wright and Wright (1931), and most of the references listed under Descriptions. Color illustrations are in Schmidt and Inger (1957), Wauer (1964), Shaw and Campbell (1974), Tennant (1984, 1985), Conant and Collins (1991), and Williamson et al. (1994). Selected habitats are illustrated in Ruthven and Gaige (1915), Lowe (1964), and Morafka (1977). A den site in Utah is illustrated in Woodbury (1964).

• **Distribution.** *Masticophis taeniatus* occurs in arid grassland,

desert, woodland, and montane habitats in the Great Basin and Chihuahuan deserts and the Edwards Plateau of Texas in the United States, and throughout northern and central México. The species occurs north to the Snake and Columbia River valleys of Idaho and Washington, respectively. It occurs east of the Cascade Mountains in Oregon and the Sierra Nevada in California through Nevada and Utah, except for the Wasatch and Uintah mountain ranges, and east into western Colorado. In Arizona, it is found mainly north of the Gila River and east to the Llano Estacado in eastern New Mexico. *Masticophis*

taeniatus occurs east of the Continental Divide in México south through Chihuahua, western Coahuila, Durango, and Zacatecas to northeastern Jalisco. The eastern and southern range limits of *M. taeniatus* in México are poorly understood. Range maps are in Ortenburger (1928), Parker (1982), Smith and Brodie (1982), Stebbins (1985), and Camper and Dixon (1994). It occurs to elevations of 3077 m (Stumpel, 1995).

Additional notations of habitat and locality records are listed by state as follows: Arizona — Aitchison and Tomko (1974), Jones et al. (1981), Williamson and Scott (1982), and Short (1983); California — Johnson et al. (1948), Turner and Wauer (1963), and Brown (1972); Colorado — Maslin (1947), Smith et al. (1965), Douglas (1966), and Holland (1977); Idaho — Slater (1941b) and Tanner (1941); Nevada — Linsdale (1940), Banta (1965), and Bradley and Deacon (1966); New Mexico — Little and Keller (1937), Lewis (1950), Gehlbach (1956, 1965), Bogert and Degenhardt (1961), Dean and Stock (1961), and Dixon and Medina (1965); Oregon — Brooking (1934), Gordon (1939), and Anderson and Slater (1941); Texas — Schmidt and Smith (1944), Raun (1966), Raun and Gehlbach (1972), Karges (1982), Dixon (1987), and McCord and Dorcas (1989); Utah — Ruthven (1932), Hayward et al. (1958), and Tanner and Banta (1966); Washington — Slater (1941a, 1963), Svihla (1955), and Nussbaum et al. (1983); México — Smith (1941, 1943), Smith and Taylor (1945), Smith et al. (1963), Smith and Smith (1973, 1976), Van Devender and Lowe (1977), and Tanner (1985).

• **Fossil Record.** Late Pleistocene–Recent fossils are known from Gypsum Cave, Clark County, Nevada (Brattstrom, 1954). Pleistocene fossils of *M. flagellum* or *M. taeniatus* are known from the Edwards Plateau of Texas (Holman, 1966, 1969; Hill, 1971) and Howell's Ridge Cave, Grant County, New Mexico (Van Devender and Worthington, 1977). See Holman (1995) for additional information.

• **Pertinent Literature.** The taxonomy of *Masticophis taeniatus* has been treated by Ortenburger (1928) and Camper and Dixon (1994). Parker and Brown (1980) reviewed most of the ecological literature. Elements of *M. taeniatus* biology in the literature include use as an outgroup in phylogenetic analyses (Grismer, 1990), biogeography (Smith and Buechner, 1947), melanism (Camper and Dixon, 1990), dorsal color pattern as an antipredator strategy (Jackson et al., 1976), costal cartilages (Hardaway and Williams, 1976), Duvernoy's gland (Taub, 1967), use in Hopi snake dance (Bogert, 1933), parasites (Woodbury and Parker, 1956), nucleolar organizer region (Camper and Hanks, 1995), food habits (Fitch, 1936; La Rivers, 1944; Fautin, 1946; Herreid, 1961; Douglas, 1966; Pianka, 1970; Klauber, 1972; Tinkle, 1973; Nussbaum and Diller, 1976; Camper, 1990), body temperatures (Hirth and King, 1969), descriptions of Utah dens (Woodbury and Hansen, 1950; Woodbury, 1951), marking techniques (Woodbury, 1948; Brown and Parker, 1976; Camper and Dixon, 1988), population characteristics at the Utah dens (Heyrend and Call, 1951; Julian, 1951; Hirth, 1966b; Hirth and King, 1968; Parker and Brown, 1973; Parker, 1976), movements (Hirth, 1966a; Hirth et al., 1969), seasonal activity (Reynolds, 1982), reproduction (Minton, 1958; Fitch, 1970; Parker and Brown, 1972; Goldberg and Parker, 1975; Pianka and Parker, 1975), mating behavior (Bennion and Parker, 1976), niche dimensions (Brown and Parker, 1982), and demography and life history (Parker and Brown, 1980).

• **Etymology.** The name *taeniatus* is from the Greek *tainia* (= ribbon) and *-atus* (= having) in reference to the striped pattern of these snakes, and *girardi* is a patronym honoring Charles Girard, noted 19th century naturalist.

• **Comment.** This account is being updated because of the recent taxonomic study by Camper and Dixon (1994); also see Remarks in the *Masticophis schotti* account (Camper, 1996).

• **Acknowledgments.** I thank James R. Dixon for help with the literature and the Carnegie Museum of Natural History for permission to use the figure.

1. *Masticophis taeniatus taeniatus* (Hallowell)

Leptophis taeniata Hallowell, 1852:181. See species synonymy. *Bascanium taeniatum laterale*: Yarrow, 1875:543 (part).

Zamenis taeniatus taeniatus: Brown, 1901:62. First use of trinomial.

Coluber taeniatus taeniatus: Stejneger and Barbour, 1917:80.

Masticophis taeniatus taeniatus: Ortenburger, 1923:2. First use of present combination.

• **Definition.** *Masticophis t. taeniatus* is a subspecies with 15 dorsal scale rows anteriorly and at midbody, pale borders on head scales, and four dark longitudinal stripes on each of the first four dorsal scale rows.

2. *Masticophis taeniatus girardi* (Stejneger and Barbour)

Masticophis ornatus Baird and Girard, 1853:102. Type-locality, "Betw. Indianola & El Paso," restricted to Fort Davis, Jeff Davis Co., Texas (Smith and Taylor, 1950). Holotype, National Museum of Natural History (USNM) 1971, skin of adult, sex unknown, collected by J.D. Graham, date unknown (examined by author).

Bascanium taeniatum ornatum: Cope, 1875:40.

Bascanium taeniatum laterale: Yarrow, 1875:543 (part).

Bascanium ornatum: Cope, 1891:622.

Zamenis ornatus: Günther, 1894:122.

Zamenis taeniatus ornatus: Brown, 1901:57.

Bascanium ornatum: Bailey, 1905:28.

Coluber taeniatus girardi Stejneger and Barbour, 1917:89. See Remarks.

Masticophis taeniatus girardi: Ortenburger, 1923:2. First use of present combination.

Masticophis taeniatus ornatus: Schmidt and Smith, 1944:90.

• **Definition.** *Masticophis t. girardi* is a subspecies with transverse light banding and black dorsal and ventral coloration.

• **Remarks.** Stejneger and Barbour (1917) did not recognize the genus *Masticophis*, therefore *Coluber taeniatus ornatus* became a secondary junior homonym of *Coluber ornatus* Shaw, 1802 (= *Chrysopelea ornata* of Asia).

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