

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

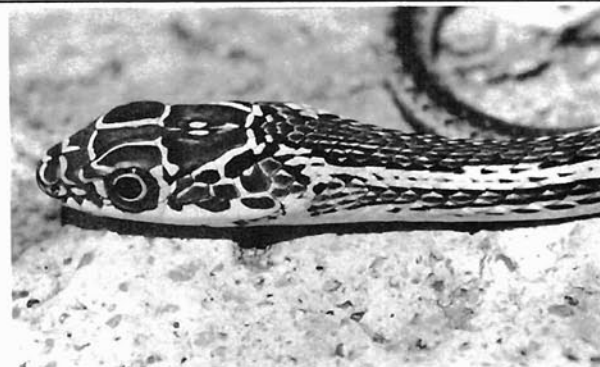


Figure 1. *Masticophis taeniatus taeniatus* from near Columbus, Luna County, New Mexico. Photograph by James R. Dixon.

(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

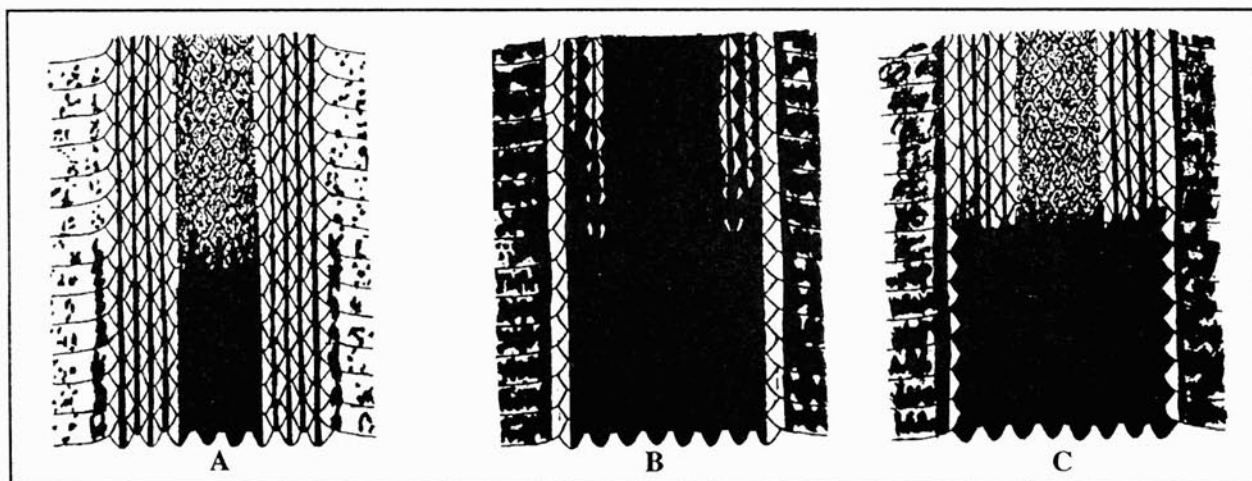
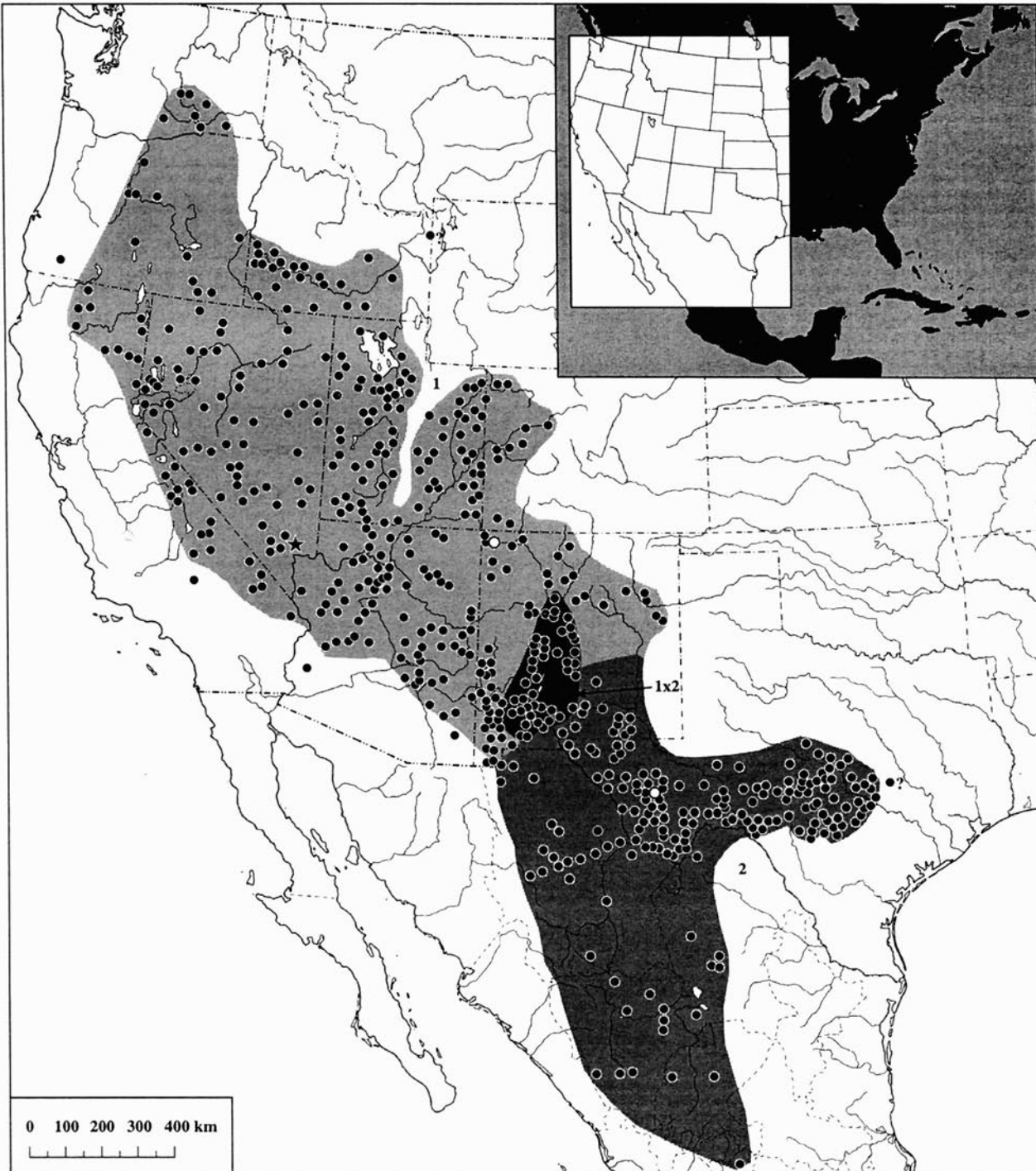


Figure 2. Dorsal pattern of *Masticophis taeniatus girardi* (from Camper and Dixon, 1994): (A) light pattern common throughout the Chihuahuan Desert; (B) dark pattern common on the Edwards Plateau; (C) intermediate pattern found throughout the range of this subspecies.



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).

Literature Cited

- Aitchison, S.W. and D.S. Tomko. 1974. Amphibians and reptiles of Flagstaff, Arizona. Plateau 47:18-25.
- Anderson, O.I. and J.R. Slater. 1941. Life zone distribution of the Oregon reptiles. Occ. Pap. Dept. Biol. Univ. Puget Sound (15):109-119.
- Bailey, V. 1905. Report on the biological survey collection of lizards and snakes from Texas. N. Amer. Fauna 24:38-51.
- Baird, S.F. 1859. Report on reptiles collected on the survey. In Explorations for a railroad route, from the Sacramento Valley to the Columbia River, part 4(4):9-13.
- and C. Girard. 1853. Catalogue of North American reptiles in the museum of the Smithsonian Institution, Part I. Serpents. Smithsonian Inst. Washington, D.C.
- Banta, B.H. 1965. An annotated chronological bibliography of

- the herpetology of the state of Nevada. Wasmann J. Biol. 23(1-2):1-224.
- Behler, J.L. and F.W. King. 1979. The Audubon Society field guide to North American reptiles and amphibians. Alfred A. Knopf, New York.
- Bennion, R.S. and W.S. Parker. 1976. Field observations on courtship and aggressive behavior in Desert Striped Whipsnakes, *Masticophis t. taeniatus*. Herpetologica 32:30-35.
- Bogert, C.M. 1933. Notes on the snake dance of the Hopi Indians. Copeia 1933:219-221.
- and W.G. Degenhardt. 1961. An addition to the fauna of the United States, the Chihuahua Ridge-nosed Rattlesnake in New Mexico. Amer. Mus. Nov. (2064):1-15.
- Boulenger, G.A. 1893. Catalogue of the snakes in the British Museum (Natural History). Board of Trustees, British Museum, London.
- Bradley, W.G. and J.E. Deacon. 1966. Amphibian and reptile records for southern Nevada. Southwest. Nat. 11:132-134.
- Brattstrom, B.H. 1954. Amphibians and reptiles from Gypsum Cave, Nevada. Bull. S. California Acad. Sci. 53:8-12.
- Brooking, W.J. 1934. Some reptiles and amphibians from Malheur County, in eastern Oregon. Copeia 1934:93-95.
- Brown, A.E. 1901. A review of the genera and species of American snakes north of Mexico. Proc. Acad. Nat. Sci. Philadelphia 53:10-110.
- Brown, T.W. 1972. A new record of the Desert Striped Whipsnake (*Masticophis taeniatus taeniatus*) from the Providence Mountains region of San Bernardino County, California. Herpetol. Rev. 4:172.
- Brown, W.S. and W.S. Parker. 1976. A ventral scale clipping system for permanently marking snakes (Reptilia, Serpentes). J. Herpetol. 10:247-249.
- and —. 1982. Niche dimensions and resource partitioning in a Great Basin desert snake community, p. 59-81. In N.J. Scott (ed.), Herpetological communities: a symposium of the Society for the Study of Amphibians and Reptiles and the Herpetologists' League. U.S. Fish and Wildl. Serv., Wildl. Res. Report No. 13.
- Camper, J.D. 1990. Systematics of the striped whipsnake, *Masticophis taeniatus* (Hallowell). Ph.D. Diss. Texas A&M Univ., College Station.
- , 1996. *Masticophis schotti*. Cat. Amer. Amphib. Rept.:638.1-638.4.
- and J.R. Dixon. 1988. Evaluation of a microchip marking system for amphibians and reptiles. Texas Parks and Wildl. Dept., Res. Publ. 7100-159:1-22.
- and —. 1990. High incidence of melanism in the whipsnake, *Masticophis taeniatus girardi* (Reptilia: Colubridae) from the Cuatro Ciénegas Basin of Coahuila, México. Texas J. Sci. 42:202-204.
- and —. 1994. Geographic variation and systematics of the striped whipsnakes (*Masticophis taeniatus* complex; Reptilia: Serpentes: Colubridae). Ann. Carnegie Mus. 63:1-48.
- and B.G. Hanks. 1995. Variation in the nucleolus organizer region among New World snakes. J. Herpetol. 29:468-471.
- Cochran, D.M. and C.G. Goin. 1970. The new field book of reptiles and amphibians. G.P. Putnam's Sons, New York.
- Conant, R. and J.T. Collins. 1991. A field guide to reptiles and amphibians of eastern and central North America. 3rd ed. Houghton Mifflin Co., Boston, Massachusetts.
- Cope, E.D. 1860 (1861). Catalogue of the Colubridae in the museum of the Academy of Natural Sciences of Philadelphia. III. Proc. Acad. Nat. Sci. Philadelphia 12:553-566.
- , 1875. Check-list of North American batrachia and reptilia; with a systematic list of the higher groups, and an essay on geographic distribution. Based on the specimens contained in U.S. National Museum. Bull. U.S. Natl. Mus. (1):1-104.
- , 1891. A critical review of the characters and variations of the snakes of North America. Proc. U.S. Natl. Mus. 14:589-694.
- , 1900. The crocodilians, lizards and snakes of North America. Ann. Rept. U.S. Natl. Mus. 1898:153-1270 + 36 pl.
- Coues, E. 1875. Synopsis of the reptiles and batrachians of Arizona; with critical and field notes, and an extensive synonymy, p. 585-633 + 10 pl. In Report upon geographical and geological explorations and surveys west of the one hundredth meridian in charge of first Lieutenant G.M. Wheeler. Vol. 5, Zoology. Eng. Dept. U.S. Army Govt. Printing Office, Washington D.C.
- Dean, N.K. and A.D. Stock. 1961. Amphibians and reptiles of the Navajo Reservoir Basin. Univ. Utah Anthropol. Pap. No. 55, Upper Colorado Ser. (5):123-127.
- Ditmars, R.L. 1907. The reptile book. Doubleday, Page and Co., New York.
- , 1936. The reptiles of North America. Doubleday, Doran and Co. Inc., New York.
- , 1939. A field book of North American snakes. Doubleday, Doran and Co., New York.
- Dixon, J.R. 1987. Amphibians and reptiles of Texas. Texas A&M Univ. Press, College Station.
- and P.A. Medica. 1965. Noteworthy records of reptiles from New Mexico. Herpetologica 21:72-75.
- Douglas, C.L. 1966. Amphibians and reptiles of Mesa Verde National Park, Colorado. Univ. Kansas Publ. Mus. Nat. Hist. 15:711-744 + 2 pl, 2 figs.
- Duméril, A.M.C. and M.F. Bocourt. 1886. In A. Duméril, M.F. Bocourt, and F. Mocquard, Études sur les reptiles et les batraciens. In M. Milne Edwards (dir.), 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., Traisiéne Partie 3, sect. 1. Imprimerie Nat., Paris.
- Fautin, R.W. 1946. Biotic communities of the northern desert shrub biome in western Utah. Ecol. Monog. 16:251-310.
- Fitch, H.S. 1936. Amphibians and reptiles of the Rogue River Basin, Oregon. Amer. Midl. Nat. 17:634-652.
- , 1970. Reproductive cycles in lizards and snakes. Univ. Kansas Mus. Nat. Hist. Misc. Publ. (52):1-247.
- Fowle, J.A. 1965. The snakes of Arizona. Azul Quinta Press, Fallbrook, California.
- Garman, S.W. 1883 (1884). The reptiles and batrachians of North America, Part 1, Ophidia. Mem. Mus. Comp. Zool. 8(3): xxxi + 185 p. + 9 pl.
- Gehlbach, F.R. 1956. Annotated records of southwestern amphibians and reptiles. Trans. Kansas Acad. Sci. 59:364-372.
- , 1965. Herpetology of the Zuni Mountains region, northwestern New Mexico. Proc. U.S. Natl. Mus. 116:243-332.
- Goldberg, S.R. and W.S. Parker. 1975. Seasonal testicular histology of the colubrid snakes, *Masticophis taeniatus* and *Pituophis melanoleucus*. Herpetologica 31:317-322.
- Gordon, K. 1939. The Amphibia and Reptilia of Oregon. Oregon State Monogr. Stud. Zool. (1):1-82.
- Grismer, L.L. 1990. Relationships, taxonomy, and biogeography of the *Masticophis lateralis* complex in Baja California, México. Herpetologica 46:66-77.
- Günther, A.C.L.G. 1894. Reptilia and Batrachia, p. 113-144. In O. Salvin and F.D. Godman (eds.), Biologia Centrali Americana. R.H. Porter and Dalau & Co., London.
- Hallowell, E. 1852. Descriptions of new species of reptiles inhabiting North America. Proc. Acad. Nat. Sci. Philadelphia 6:177-182.
- Hardaway, T.E. and K.L. Williams. 1976. Costal cartilages in snakes and their phylogenetic significance. Herpetologica 32:378-387.

- Hayward, C.L., E. Beck, and W.W. Tanner. 1958. Zoology of the Upper Colorado River Basin. I. The biotic communities. *Brigham Young Univ. Sci. Bull.* 1(3):1-74.
- Herreid, C.F. II. 1961. Snakes as predators of bats. *Herpetologica* 17:271-272.
- Heyrend, F.L. and A. Call. 1951. Growth and age in Western Striped Racer and Great Basin rattlesnake. *Herpetologica* 7:28-40.
- Hill, W.H. 1971. Pleistocene snakes from a cave in Kendall County, Texas. *Texas J. Sci.* 22:209-216.
- Hirth, H.F. 1966a. The ability of two species of snakes to return to a hibernaculum after displacement. *Southwest. Nat.* 11:49-53.
- . 1966b. Weight changes and mortality of three species of snakes during hibernation. *Herpetologica* 22:8-12.
- and A.C. King. 1968. Biomass densities of snakes in the cold desert of Utah. *Herpetologica* 24:333-335.
- and —. 1969. Body temperatures of snakes in different seasons. *J. Herpetol.* 3:101-102.
- , R.C. Pendleton, A.C. King, and T.R. Downard. 1969. Dispersal of snakes from a hibernaculum in northwestern Utah. *Ecology* 50:332-339.
- Holland, R.L. 1977. Geographic distribution. *Masticophis taeniatus taeniatus*. *Herpetol. Rev.* 8:13.
- Holman, J.A. 1966. The Pleistocene herpetofauna of Miller's Cave, Texas. *Texas J. Sci.* 18:372-377.
- . 1969. The Pleistocene amphibians and reptiles of Texas. *Publ. Mus. Michigan St. Univ. Biol. Ser.* 4:161-192.
- . 1995. Pleistocene amphibians and reptiles in North America. Oxford Univ. Press, Inc., New York.
- Jackson, J.F., W.I. Ingram III, and H.W. Campbell. 1976. The dorsal pigmentation pattern of snakes as an antipredator strategy: a multivariate approach. *Amer. Nat.* 110:1029-1053.
- Jan, G. and F. Sordelli. 1867 (1961). *Iconographie générale des ophiidiens*. Vol. 2. J. Cramer, Weinheim (Hafner Publ. Co., New York).
- Johnson, D.H., M.D. Bryant, and A.H. Miller. 1948. Vertebrate animals of the Providence Mountains area of California. *Univ. California Publ. Zool.* 48(5):221-375.
- Jones, K.B., D.R. Abbas, and T. Bergstedt. 1981. Herpetological records from central and northeastern Arizona. *Herpetol. Rev.* 12:16.
- Julian, G. 1951. Sex ratios of the winter populations. *Herpetologica* 7:21-24.
- Karges, J.P. 1982. Texas amphibians and reptiles: Some new distributional records, part IV. *Herpetol. Rev.* 13:27.
- Klauber, L.M. 1972. Rattlesnakes. Their habits, life histories, and influence on mankind. 2nd ed. Vol. 2 Univ. California Press, Berkeley.
- La Rivers, I. 1944. Observations on the nesting mortality of the Brewer blackbird, *Euphagus cyanocephalus*. *Amer. Midl. Nat.* 32:417-437.
- Lewis, T.H. 1950. The herpetofauna of the Tularosa Basin and Organ Mountains of New Mexico with notes on some ecological features of the Chihuahuan Desert. *Herpetologica* 6:1-10.
- Linsdale, J.M. 1940. Amphibians and reptiles in Nevada. *Proc. Amer. Acad. Arts Sci.* 73:197-257.
- Little, E.L., Jr. and J.G. Keller. 1937. Amphibians and reptiles of the Jornada Experimental Range, New Mexico. *Copeia* 1937:216-222.
- Lowe, C.H., Jr. 1964. Arizona landscapes and habitats, p. 1-136. In C.H. Lowe, Jr. (ed.), *The vertebrates of Arizona*. Univ. Arizona Press, Tucson.
- Maslin, T.P. 1947. Range extensions of three reptiles in Colorado. *Copeia* 1947:138.
- McCord, J.S., Jr. and M.E. Dorcas. 1989. New Texas herpetological distribution records from the University of Texas at Arlington collection of vertebrates. *Herpetol. Rev.* 20:94-96.
- Minton, S.A., Jr. 1958 (1959). Observations on amphibians and reptiles of the Big Bend Region of Texas. *Southwest. Nat.* 3:28-54.
- Morafka, D.J. 1977. A biogeographical analysis of the Chihuahuan Desert through its herpetofauna. *Biogeographica* 9:viii + 313 p.
- Nussbaum, R.A., E.D. Brodie, Jr., and R.M. Storm. 1983. Amphibians and reptiles of the Pacific northwest. Univ. Press of Idaho, Moscow.
- and L.V. Diller. 1976. The life history of the Side-blotched Lizard, *Uta stansburiana* Baird and Girard, in north-central Oregon. *Northwest Sci.* 50:243-260.
- Ortenburger, A.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 + 3 pl.
- . 1928. The whip snakes and racers, genera *Masticophis* and *Coluber*. *Mem. Univ. Michigan Mus.* (1):viii + 247 p. + 36 pl.
- Parker, W.S. 1976. Population estimates, age structure, and denning habits of whipsnakes, *Masticophis t. taeniatus*, in a northern Utah *Atriplex-Sarcobatus* community. *Herpetologica* 32:53-57.
- . 1982. *Masticophis taeniatus*. *Cat. Amer. Amphib. Rept.*: 304.1-304.4.
- and W.S. Brown. 1972. Telemetric study of movements and oviposition of two female *Masticophis t. taeniatus*. *Copeia* 1972:892-895.
- and —. 1973. Species composition and population changes in two complexes of snake hibernacula in northern Utah. *Herpetologica* 29:319-326.
- and —. 1980. Comparative ecology of two colubrid snakes, *Masticophis t. taeniatus* and *Pituophis melanoleucus deserticola*, in northern Utah. *Milwaukee Pub. Mus. Publ. Biol. Geol.* (7):vii + 104 p.
- Pianka, E.R. 1970. Comparative autecology of the lizard *Cnemidophorus tigris* in different parts of its geographic range. *Ecology* 51:703-720.
- and W.S. Parker. 1975. Age-specific reproductive tactics. *Amer. Nat.* 109:453-464.
- Raun, G.G. 1966. The distribution of whipsnakes (*Masticophis taeniatus*) in Texas. *Texas J. Sci.* 18:226-227.
- and F.R. Gehlbach. 1972. Amphibians and reptiles in Texas. Taxonomic synopsis, bibliography and county distribution maps. *Bull. Dallas Mus. Nat. Hist.* (2):ii + 61 p. + 140 maps.
- Reynolds, R.P. 1982. Seasonal incidence of snakes in northeastern Chihuahua, Mexico. *Southw. Nat.* 27:161-166.
- Ruthven, A.G. 1932. Notes on the amphibians and reptiles of Utah. *Occ. Pap. Mus. Zool. Univ. Michigan* (243):1-4.
- and H.T. Gaige. 1915. The reptiles and amphibians collected in northeastern Nevada by the Walker-Newcomb expedition of the University of Michigan. *Occ. Pap. Mus. Zool. Univ. Michigan* (8):1-33 + 5 pl.
- Schmidt, K.P. and D.D. Davis. 1941. Field book of snakes of the United States and Canada. G.P. Putnam's Sons, New York.
- and R.F. Inger. 1957. Living reptiles of the world. Doubleday and Co., New York.
- and T.F. Smith. 1944. Amphibians and reptiles of the Big Bend region of Texas. *Field Mus. Nat. Hist. Zool. Ser.* 29:75-96.
- Shaw, C.E. and S. Campbell. 1974. Snakes of the American west. Alfred A. Knopf, New York.

- Shaw, G. 1802. General zoology or systematic natural history. Vol. 3, Part 2. Thomas Davidson, London.
- Short, H.L. 1983. Wildlife guilds in Arizona desert habitats. Tech. Note (362). U.S. Dept. Interior, Bureau of Land Management, Washington, D.C.
- Sitgreaves, L. 1853. Report of an expedition down the Zúñi and Colorado rivers. Senate Exec. Doc. (59). Robert Armstrong, Washington, D.C.
- Slater, J.R. 1941a. Western Striped Racer in Washington. Occ. Pap. Dept. Biol. Univ. Puget Sound (12):74.
- . 1941b. The distribution of amphibians and reptiles in Idaho. Occ. Pap. Dept. Biol. Univ. Puget Sound (14):78-109.
- . 1963. Distribution of Washington reptiles. Occ. Pap. Dept. Biol. Univ. Puget Sound (24):212-233.
- Smith, H.M. 1941. Notes on Mexican snakes of the genus *Masticophis*. J. Washington Acad. Sci. 31:388-398.
- . 1943. Summary of the collection of snakes and crocodilians made in Mexico under the Walter Rathbone Bacon traveling scholarship. Proc. U.S. Natl. Mus. 93:393-504.
- and E.D. Brodie, Jr. 1982. A guide to field identification of reptiles of North America. Golden Press, New York.
- and H.L. Buechner. 1947. The influence of the Balcones Escarpment on the distribution of amphibians and reptiles in Texas. Bull. Chicago Acad. Sci. 8:1-16.
- , T.P. Maslin, and R.L. Brown. 1965. Summary of the distribution of the herpetofauna of Colorado. A supplement to *An annotated check list of the amphibians and reptiles of Colorado*. Univ. Colorado Stud. Ser. Biol. (15):1-52.
- and R.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.
- and —. 1976. Synopsis of the herpetofauna of Mexico. Vol. III. Source analysis and index for Mexican reptiles. John Johnson, North Bennington, Vermont.
- and E.H. Taylor. 1945. An annotated checklist and key to the snakes of México. Bull. U.S. Natl. Mus. (187):iv + 239 p.
- and —. 1950. Type localities of Mexican reptiles and amphibians. Univ. Kansas Sci. Bull. 33, pt II:313-380.
- , K.L. Williams, and E.O. Moll. 1963. Herpetological explorations on the Río Conchos, Chihuahua, México. Herpetologica 19:205-215.
- Stebbins, R.C. 1985. A field guide to western reptiles and amphibians. 2nd ed. Houghton Mifflin Co., Boston.
- 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 + 4 pl.
- and T. Barbour. 1917. A check list of North American amphibians and reptiles. Harvard Univ. Press, Cambridge, Massachusetts.
- Stumpel, A.H.P. 1995. Natural history notes. *Masticophis taeniatus taeniatus*. Herpetol. Rev. 26:102.
- Svihla, A. 1955. Status of the striped racer *Masticophis taeniatus taeniatus* in Washington. Copeia 1955:65.
- Tanner, W.W. 1941. The reptiles and amphibians of Idaho. No. 1. Great Basin Nat. 2:87-97.
- . 1985. Snakes of western Chihuahua. Great Basin Nat. 45:615-676.
- and B.H. Banta. 1966. A systematic review of the Great Basin reptiles in the collections of Brigham Young University and the University of Utah. Great Basin Nat. 26:87-135.
- Taub, A.M. 1967. Comparative histological studies of Duvernoy's gland of colubrid snakes. Bull. Amer. Mus. Nat. Hist. 138:1-50.
- Tennant, A. 1984. The snakes of Texas. Texas Monthly Press, Inc., Austin.
- . 1985. A field guide to Texas snakes. Texas Monthly Press, Inc., Austin.
- Tinkle, D.W. 1973. A population analysis of the Sagebrush Lizard, *Sceloporus graciosus* in southern Utah. Copeia 1973:284-296.
- Turner, F.B. and R.H. Wauer. 1963. A survey of the herpetofauna of the Death Valley area. Great Basin Nat. 23:119-128.
- Van Denburgh, J. 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. Occas. Pap. California Acad. Sci. (10):615-1028 + 71 pl.
- Van Devender, T.R. and C.H. Lowe, Jr. 1977. Amphibians and reptiles of Yepómera, Chihuahua, Mexico. J. Herpetol. 11:41-50.
- and R.W. Worthington. 1977. The herpetofauna of Howell's Ridge Cave and the paleoecology of the northwestern Chihuahuan desert, p. 85-106. In R.H. Wauer and D.H. Riskind (eds.), Transactions of the symposium on the biological resources of the Chihuahuan Desert Region, United States and Mexico. U.S. Dept. Int. Natl. Park Serv. Trans. Series No. 3.
- Vermersch, T.G. and R.E. Kuntz. 1986. Snakes of south central Texas. Eakin Press, Austin, Texas.
- Wauer, R.H. 1964. Reptiles and amphibians of Zion National Park. Zion Nat. Hist. Assoc.
- Williamson, M.A., Jr. and N.J. Scott. 1982. Geographic distribution. *Masticophis taeniatus*. Herpetol. Rev. 13:25.
- , P.W. Hyder, and J.S. Applegarth. 1994. Snakes, lizards, turtles, frogs, toads, and salamanders of New Mexico: a field guide. Sunstone Press, Santa Fe, New Mexico.
- Woodbury, A.H. 1948. Marking reptiles with an electric tattooing outfit. Copeia 1948:127-128.
- . 1951. Introduction — a ten year study, p. 4-14. In Symposium: a snake den in Tooele County, Utah. Herpetologica 7:1-52.
- . 1964. Disease dissemination among biotic communities of the Great Salt Lake Desert. Bull. Univ. Utah 55(22):1-282.
- and R.M. Hansen. 1950. A snake den in Tintic Mountains, Utah. Herpetologica 6:66-70.
- and D.D. Parker. 1956. A snake den in Cedar Mountains and notes on snakes and parasitic mites. Herpetologica 12:261-268.
- Wright, A.A. and A.H. Wright. 1931. Some Stejneger species photographed from life. Copeia 1931:84-85.
- Wright, A.H. and A.A. Wright. 1957. Handbook of snakes of the United States and Canada. Comstock Publ. Assoc., Ithaca, New York.
- Yarrow, H.C. 1875. Report upon the collections of batrachians and reptiles made in portions of Nevada, Utah, California, Colorado, New Mexico, and Arizona during the years 1871, 1872, 1873 and 1874. Geographical and geological surveys west of the one hundredth meridian Rept. In charge of First Lieutenant Geo. M. Wheeler. Engineer Dept., U.S. Army, Washington, D.C. 5:509-584 + 5 pl.

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