

## Catalogue of American Amphibians and Reptiles.

PALMER, WILLIAM M. 1978. *Sistrurus miliarius*.***Sistrurus miliarius* (Linnaeus)**  
Pygmy rattlesnake*Crotalus miliarius* Linnaeus, 1766:372. Type-locality, "Carolina," restricted to Charleston, South Carolina, by Schmidt (1953). The holotype, received by Linnaeus from Alexander Garden, is presumed lost.*C[rotalophorus]. miliaris*: Gray, 1825:205.*Caudisona miliaria*: Fitzinger, 1826:63.*Sistrurus miliarius*: Garman, 1883:119.

- CONTENT. Three subspecies, *miliarius*, *barbouri*, and *streckeri*, are recognized.

- DEFINITION. This small rattlesnake (neonates 130–191 mm total length; maximum total length about 785 mm) has a slender tail and tiny rattle. Dorsal scales are keeled, in 21–27 anterior rows, 21–25 rows at midbody, and 15–19 rows near the anus. Supralabials vary from 9–13, infralabials from 9–13; nasals are two; a loreal separates the upper preocular from the postnasal; preoculars are two; postoculars are 3–6; temporals are in 4–5 rows. Ventrals are 122–144 in males, 123–148 in females; subcaudals are 28–39 in males, 26–36 in females. The tail constitutes about 10–15% of the total length in males, 9–12% in females. The anal plate is undivided. The dorsum is gray to reddish with 23–45 brown to black middorsal blotches and 6–14 tail bands. A narrow reddish middorsal stripe is sometimes present. One to three rows of spots, similar in color to the dorsal blotches, occur on each side. A postorbital reddish-brown to black bar extends to the rear of the jaw. It usually is bordered below and sometimes above by a white line. A wavy reddish-brown to black stripe extends from each supraocular to the nape. The venter is whitish to pinkish with brown to black spots. The distal portion of the tail is white or yellow in juveniles and pale in some adults.

- DESCRIPTIONS. The subspecies were described by Gloyd (1935), who later (1940) provided detailed descriptions and discussed variation in all races. Klauber (1936, 1972) also gave tables of meristic and mensural variation. Other descriptions include those of a reddish phase from North Carolina (Palmer, 1971), dentition and osteology (Brattstrom, 1964), chromosomes ( $2n = 36$ ; Zimmerman and Kilpatrick, 1973), and the hemipenis (Gloyd, 1940; Klauber, 1972).

- ILLUSTRATIONS. Good schematic drawings of the head, a section of the body, and the anal region are in Cope (1900); and of the head, tail, and rattle in Wright and Wright (1957). Others include a middle precaudal vertebra (Auffenberg, 1963), cephalic bones (Brattstrom, 1964), the hemipenis (Dowling, 1975), and diagrammed phylogenies (Gloyd, 1940; Brattstrom, 1964; Klauber, 1972). Black and white photographs of all subspecies are in Gloyd (1940), Klauber (1936, 1972), and Wright and Wright (1957). Some other photographs are those of Palmer (1974) and Mount (1975) of *S. m. miliarius*, Carr and Goin (1955) of *S. m. barbouri*, Schmidt and Davis (1941) and Anderson (1965) of *S. m. streckeri*, Mount (1975) of a *S. m. miliarius* × *streckeri* intergrade, Neill (1960) showing the tail pattern of a juvenile *S. m. barbouri*, Gloyd (1940) of the hemipenis, and Zimmerman and Kilpatrick (1973) of the karyotype. Color illustrations of all subspecies are in Conant (1975). Other color photographs are those of Klemmer (1963) and Palmer (1974, two color phases) of the nominate race, Koukoulis (1972) and Anderson (1975) of *S. m. barbouri*, and Werler (1970) and Barbour (1971) of *S. m. streckeri*.

- DISTRIBUTION. This species ranges from Hyde County, North Carolina, south to the Florida Keys, and west to eastern Oklahoma and Texas. There are outlying records in Missouri (Myers, 1957; Berger, 1974) and Oklahoma (Webb, 1970). Other significant locality records after Gloyd (1940) are: ALABAMA—Mount (1975). ARKANSAS—Dowling (1957). FLORIDA—Carr (1940), Duellman and Schwartz (1958). KENTUCKY—Snyder et al. (1967). MISSISSIPPI—Cook (1954), Cliburn (1959). MISSOURI—Anderson (1965), Paukstis (1977); NORTH CAROLINA

—Palmer (1971). OKLAHOMA—Webb (1970), Ball (1975). TENNESSEE—Gentry (1956), Snyder et al. (1967). TEXAS—Raun and Gehlbach (1972). See Palmer (1971) and Raun and Gehlbach (1972) for questionable records.

This snake occurs in flatwoods, sandhills, mixed forests, floodplains, and near lakes and marshes. See Palmer and Williamson (1971) and Anderson (1975) for photographs.

- FOSSIL RECORD. *Sistrurus miliarius* has been reported from Pleistocene deposits of Florida in Alachua, Levy, and Marion counties (Holman, 1959; Auffenberg, 1963).

- PERTINENT LITERATURE. Gloyd's (1940) classic taxonomic monograph and Klauber's (1972) tractate include the relevant earlier literature. Van Bourgondieu and Bothner (1969) compared the arterial system with that of other Crotalinae. Devi (1971) and Bonilla et al. (1971) studied the venom. Lee (1968) noted certain rodents as habitat associates, and Palmer and Williamson (1971) published on the general natural history. Carpenter and Gillingham (1975) discussed responses of individuals exposed to kingsnakes. Jackson et al. (1976) included this species in a study of antipredator strategy based on dorsal pattern types. Bowler (1977) gave longevity records. Fleet and Kroll (1978) discussed litter size and parturition.

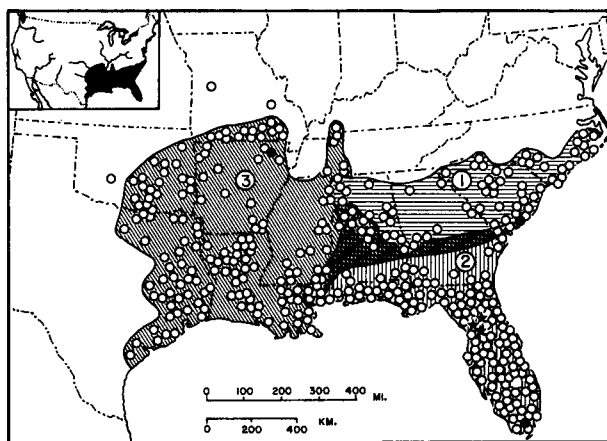
- ETYMOLOGY. The specific name *miliarius* is Latin meaning "millet or milletlike," presumably in reference to the blotched pattern. The subspecific names *barbouri* and *streckeri* are patronyms honoring Thomas Barbour and John K. Strecker, respectively.

**1. *Sistrurus miliarius miliarius* (Linnaeus)***Crotalus miliarius* Linnaeus, 1766:372. See species account.*Sistrurus miliarius miliarius*: Gloyd, 1935:2.

- DEFINITION. A subspecies with usually 25–23–17 dorsal scale rows, a pale gray to reddish dorsum with prominent body and head markings, one or two rows of lateral spots, and ventral spots each two or more scutes wide. Ventrals average about 128 in males, 133 in females.

**2. *Sistrurus miliarius barbouri* Gloyd***Sistrurus miliarius barbouri* Gloyd, 1935:2. Type-locality, "Royal Palm Hammock, 12 miles west of Homestead, Dade County, Florida." Holotype, Mus. Comp. Zool. 12512, adult male collected by Thomas Barbour in 1919 (examined by author).

- DEFINITION. A subspecies with usually 25–23–17 dorsal scale rows, a dark gray dorsum with body and head patterns not contrasting sharply with groundcolor, three rows of lateral spots, and a heavily spotted ventral pattern. Ventrals average about 133 in males, 137 in females.



MAP. Solid circles mark type localities; open circles are other records; stars are fossil localities. Areas of intergradation, indicated by overlapping patterns, are largely conjectural.

### 3. *Sistrurus miliarius streckeri* Gloyd

*Sistrurus miliarius streckeri* Gloyd, 1935:4. Type-locality, "near Imboden, Lawrence County, Arkansas." Holotype, Univ. Mich. Mus. Zool. 76751, adult male collected by B. C. Marshall, date of collection unknown (examined by author).

• DEFINITION. A subspecies with usually 23-21-17 dorsal scale rows, a pale grayish-brown to brown dorsum with prominent and often transverse body blotches, one or two rows of lateral spots, and diffuse ventral markings each about a scale wide. Ventrals average about 125 in males, 127 in females.

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