

## Catalogue of American Amphibians and Reptiles.

CENSKY, ELLEN J. 1986. *Sceloporus graciosus*.

***Sceloporus graciosus* Baird and Girard**  
Sagebrush lizard

*Sceloporus graciosus* Baird and Girard, 1852a:69. Type-locality, "Valley of the Great Salt Lake" [Utah]. Syntypes, Nat. Mus. Natur. Hist. (USNM) 2877 (4 specimens), collected by H. Stansbury, date unknown. Not examined by author.

*Sceloporus consobrinus*: Yarrow, 1875:574 (part). See REMARKS.

*Sceloporus graciosus*: Yarrow, 1875:576. Emendation.

*Sceloporus consobrinus graciosus*: Yarrow, 1882:62 (part).

*Sceloporus undulatus consobrinus*: Cope, 1900:377 (part). See REMARKS.

• CONTENT. Four subspecies are recognized: *arenicolous*, *gracilis*, *graciosus* and *vandenburgianus*.

• DEFINITION. *Sceloporus graciosus* is the sole representative of the *graciosus* group of *Sceloporus* (*sensu* Smith, 1939). Maximum snout-vent length is 65 mm. Tail length is 1.5 times snout-vent length, dorsal scales (occiput to rump) 42-62 ( $\bar{x}$  = 54.6), femoral pores 9-20. Males have enlarged post-anal scales. The posterior surface of the thigh has granular scales.

Dorsal coloration is brown, olive or gray with a bluish or greenish tinge. Paravertebral rows of dark brown blotches, often connected to form longitudinal stripes, begin behind the parietal and extend onto the tail. Two lateral series of blotches begin on the sides of the head and continue to the groin. The blotch rows are separated by mid-dorsal, dorso-lateral and lateral stripes. The dorsal color intensity varies geographically. Ventral surfaces in females are white or yellow. Males have blue lateral abdominal patches and blue mottling on the throat. Ventral coloration is geographically variable (see subspecies accounts). Bright reddish-orange sides may be present in females.

• DESCRIPTIONS. The first full description of *Sceloporus graciosus* appeared in Baird and Girard (1852b). Yarrow (1875), Stejneger (1890), Boulenger (1897), Cope (1900), Van Denburgh (1922), and Smith (1946) also included descriptions. Cole (1971, 1975) described karyotypes ( $2N = 30$ ).

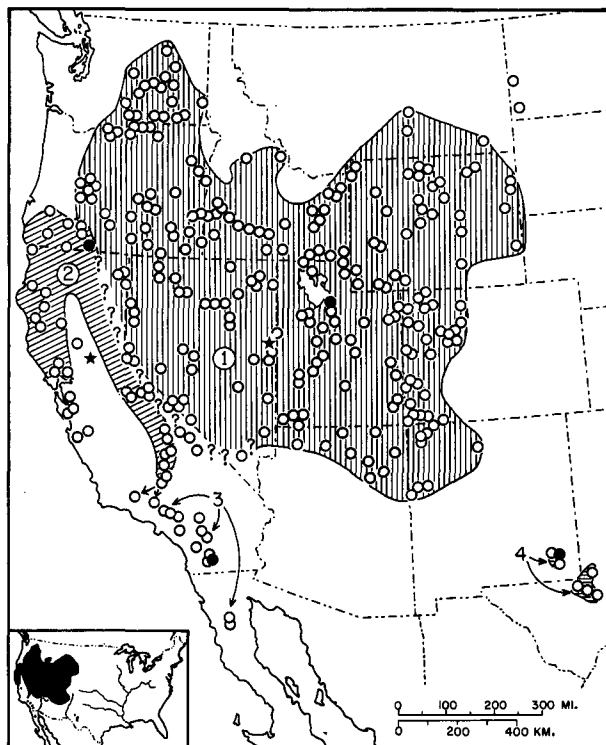
• ILLUSTRATIONS. Black and white photographs appear in Ruthven and Gaige (1915), Van Denburgh (1922), Woodbury (1931) and Kerfoot (1968)—*S. g. graciosus*; Degenhardt and Jones (1972), Cole (1975) and Conant (1975)—*S. g. arenicolous*; and Smith (1946)—*S. g. gracilis*, *S. g. graciosus*, *S. g. vandenburgianus*. Drawings are in Stebbins (1954) and Turner (1955). Color illustrations appear in Stebbins (1966), Behler and King (1979), Baxter and Stone (1980) and Hammerson (1982). Cope (1900) includes line drawings of scutellation, and Cole and Van Devender (1976) present SEM photographs of scales. Woodbury and Woodbury (1945) present a black and white photo of a dissection. Legler and Sullivan (1979) present photos demonstrating stomach flushing.

• DISTRIBUTION. *Sceloporus graciosus* ranges from central Washington, southern Idaho and southern Montana southward to northern Arizona and New Mexico, and through Oregon into northern California. The species occurs throughout Nevada and Utah, eastward through western Colorado and all of Wyoming, to extreme western North Dakota. Disjunct populations occur in extreme southeastern New Mexico and adjacent Texas, the San Francisco Bay region, southern California, and adjacent Baja California.

• FOSSIL RECORD. Remains are known from the Pleistocene of California and Nevada (Brattstrom, 1953, 1976).

• PERTINENT LITERATURE. Life history studies of *S. graciosus* were conducted by Stuart (1932), Woodbury and Woodbury (1945), Tinkle (1973) and Burkholder and Tanner (1974a). Fitch (1936, 1970, 1978, 1985), Parker (1973) and Goldberg (1975) reported on reproduction; Ruthven and Stuart (1932), Atsatt (1952), Fautin (1946) and Punzo (1982) gave data on egg size, clutch size and deposition. Jameson (1974) described fat and breeding cycles. Cuellar and Cuellar (1977) reported on gonad refractoriness. Derickson (1976) described reproductive strategies, and Vitt and Price (1982) mentioned relative clutch mass. Growth was reported by Mueller and Moore (1969) and Ferguson and Brockman (1980); thermo-

regulation and body temperatures by Cole (1943), Bogert (1949), Brattstrom (1965), Licht (1965), Cunningham (1966) and Mueller (1969, 1970a). Derickson (1974) reported on lipid deposition and utilization, and Norris (1965) reviewed color and thermal relationships. Temperature and energy characteristics were reviewed by Dawson and Poulson (1962) and Mueller (1969, 1970b). Kerfoot (1968) described geographic variation clines. Anatomical studies have been done on the preanal gland (Gabe and Saint Girons, 1965; Burkholder and Tanner, 1974b); integument (Hunsacker and Johnson, 1959; Burstein et al., 1974; Cole and Van Devender, 1976); dentition (Hotton, 1955; Yatkola, 1976); thyroid (Lynn et al., 1966) and skeleton (Etheridge, 1964; Presch, 1970; Larsen and Tanner, 1974). Age-dependent allozyme variation was studied by Tinkle and Selander (1973), and hemoglobin variation by Guttman (1970). Behavior was reported by Cunningham (1955b), Carpenter (1978) and Ferguson (1971, 1973), and parasites by Woodbury (1934), Wood (1935), Waitz (1961), Allred and Beck (1962), Telford (1970) and Pearce and Tanner (1973). *Sceloporus graciosus* was reported as prey by Knowlton and Janes (1934), Knowlton and Thomas (1936), Knowlton and Stanford (1942), Hardy (1947), Tanner (1949), Goodman (1953), Cunningham (1955a, 1956, 1959), Linder (1963) and Parker (1976). Digestive studies were done by Knowlton (1936, 1946b) and stomach contents reported by Paek (1921), Gertsch and Woodbury (1930), Cole (1932), Knowlton (1932, 1938, 1942, 1946a, 1947a, 1947b, 1948, 1953, 1974), Knowlton and Janes (1931, 1932, 1933), Knowlton et al. (1946), Knowlton and Thomas (1934a, 1934b), Knowlton and Valcarce (1950), Woodbury (1932) and Rose (1976a, 1976b). Home range and territoriality were studied by Stebbins (1944, 1948) and Stebbins and Robinson (1946). Distributional data are summarized as follows: western states—Van Denburgh (1922), Nussbaum et al. (1983), Stebbins (1985); California—Balgooyen (1970); Oregon—Gordon (1939); Washington—Johnson (1942); Colorado—Maslin (1959), Smith et al. (1965), Hammerson (1982); Idaho—Tanner (1941), Slater (1941); Montana—Brunson (1955); North Dakota—Wheeler and Wheeler (1966); Wyoming—Baxter and Stone (1980); Nevada—Linsdale (1940), Banta (1965); Utah—Woodbury (1931), Tanner (1927, 1930, 1940); Arizona—Lowe (1964); New Mexico and Texas—Sabath (1960), Degenhardt and Jones (1972); Baja California—Schmidt (1922), Smith (1939).



MAP. Solid circles mark type-localities, open circles indicate other records, the stars mark Pleistocene fossil localities. The zone of intergradation between *graciosus* and *gracilis* is uncertain.

● **REMARKS.** *Sceloporus graciosus* was confused with *S. (undulatus) consobrinus* by Yarrow (1875, 1882), Yarrow and Henshaw (1878) and Cope (1900).

● **ETYMOLOGY.** The name *graciosus* is derived from *gratia* (Latin), meaning grace. It was referred to as "this small and graceful species . . ." in the original description; *gracilis* (L., slender, thin) refers to the "slenderer" subspecies; *vandenburgianus* honors Van Denburgh, and *arenicolous* refers to the sandy habitat of that population.

### 1. *Sceloporus graciosus graciosus* Baird and Girard

*Sceloporus graciosus* Baird and Girard, 1852a:69. See species account.

*Sceloporus consobrinus*: Yarrow, 1875:574 (part). See **REMARKS**.

*Sceloporus gracilis*: Yarrow, 1875:576.

*Sceloporus graciosus graciosus*: Camp, 1916:67. First use of trinomial.

*Sceloporus graciosus graciosus*: Chenoweth, 1950:532. *Lapsus*.

● **DEFINITION.** The maximum snout-vent length is 63 mm, dorsal scales 42-53 ( $\bar{x}$  = 48) and femoral pores 9-16 ( $\bar{x}$  = 13). The throat in males is distinctly blue-mottled, and the belly is dark blue on the sides with a mid-ventral white stripe. The ventro-lateral blue patches are rarely fused.

### 2. *Sceloporus graciosus gracilis* Baird and Girard

*Sceloporus gracilis* Baird and Girard, 1852c:175. Type-locality, "Oregon," restricted to vicinity of Klamath Falls by Schmidt (1953). Holotype, unknown.

*Sceloporus consobrinus*: Yarrow and Henshaw, 1878:224 (part). See **REMARKS**.

*Sceloporus graciosus graciosus*: Grinnell and Camp, 1917:157.

*Sceloporus graciosus gracilis*: Van Denburgh, 1922:280. First use of combination.

● **DEFINITION.** A small subspecies with a maximum snout-vent length of 58 mm, dorsal scales 52-68 ( $\bar{x}$  = 61) and femoral pores 12-20. The dorsal pattern is less distinct than in *S. g. graciosus*. The lateral abdominal patches are blue, often with black borders, and the chin in males is uniform blue.

### 3. *Sceloporus graciosus vandenburgianus* Cope

*Sceloporus graciosus*: Van Denburgh, 1895:114.

*Sceloporus vandenburgianus* Cope, 1896:834. Type-locality, "Summit of Coast Range, San Diego County, California." The holotype bears the additional data "Campbell's Ranch, Laguna" (Cochran, 1961:144). Holotype, USNM 21931, collected by E. A. Mearns, 20 June 1894. Not examined by author.

*Sceloporus graciosus vandenburgianus*: Camp, 1916:67. First use of combination.

● **DEFINITION.** A large subspecies with a snout-vent length reaching 65 mm, dorsal scales 48-66 ( $\bar{x}$  = 55), and femoral pores 13-19. The adult male venter is blue from the thighs to the chin and black midventrally, sometimes with yellow along the midline.

### 4. *Sceloporus graciosus arenicolous* Degenhardt and Jones

*Sceloporus graciosus graciosus*: Sabath, 1960:22.

*Sceloporus graciosus arenicolous* Degenhardt and Jones, 1972: 212. Type-locality, "Mescalero Sands, 3.5 mi N and 44 mi E Roswell, Chaves County, New Mexico." Holotype, Univ. New Mexico Mus. Southwestern Biol. 23621, collected by Kirkland L. Jones, 27 April 1968. Not examined by author.

● **DEFINITION.** This is a pale, unblotched subspecies with the blue chin and throat markings of males reduced or absent, dorsal scales 40-55, and femoral pores 13-18.

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