

Catalogue of American Amphibians and Reptiles.

KENNEDY, J. P. 1973. *Sceloporus olivaceus*.*Sceloporus olivaceus* H. M. Smith
Texas spiny lizard

Sceloporus olivaceus Smith, 1934:277. Type-locality, "... near the lower end of Arroyo Los Olmos, about 3 miles southeast of Rio Grande City, [Starr Co.] Texas. ..." Holotype, Univ. Illinois Mus. Nat. Hist. 25057 (formerly E. H. Taylor 2508), a male, collected 23 August 1931 by Edward H. Taylor and John S. Wright (holotype examined by author).

- CONTENT. No subspecies have been described.
- DEFINITION. This is a large species of the *spinus* group (Smith, 1939). Adult females are usually larger than males of comparable age. Females attain a maximum snout-vent length of approximately 121 mm (Smith, 1939), and males a maximum snout-vent length of approximately 102 mm (Blair, 1960). Means and ranges of selected characters are: dorsal scales 29.8 (28-34); scales around midbody 35.4 (30-39); femoral pores 13.3 (11-16). There are 5 or 6 large supraoculars. At hatching the tail averages 1.3 times the snout-vent length in both males and females. At maturity the tail averages 1.6 times snout-vent length (Blair, 1960). At hatching males and females do not differ greatly in size (22-28 mm, mean 26.3 mm) but they are sexually dimorphic. Females lack the two enlarged postanal scales present in males.
- DESCRIPTIONS. The holotype was adequately described by Smith (1934). A detailed diagnosis and description of color pattern and variation were provided by Smith (1939). General features of scutellation were described by Smith (1946a). Scales, feet and claws, color and pattern including sexual dimorphism and ontogenetic variation were described by Blair (1960). General descriptions for field identification have been published by Conant (1958), Cagle (1968), and Cochran and Goin (1970). Cole (1970) described the karyotype ($2n = 22$).
- ILLUSTRATIONS. Black and white photographs appear in Newman and Patterson (1909), Smith (1939), Smith (1946a), and Conant (1958). Blair (1960) depicted year-old male and female (dorsal view) and an enlarged view of the right hind foot of an adult female. There is a comparative drawing showing relative sizes of female *S. olivaceus* at one day, one year, and two years of age in Blair (1960). Etheridge (1964) illustrated the sternum. Cope (1900) depicted scutellation of the head and hind limbs, apparently of this species, as *S. spinus*.

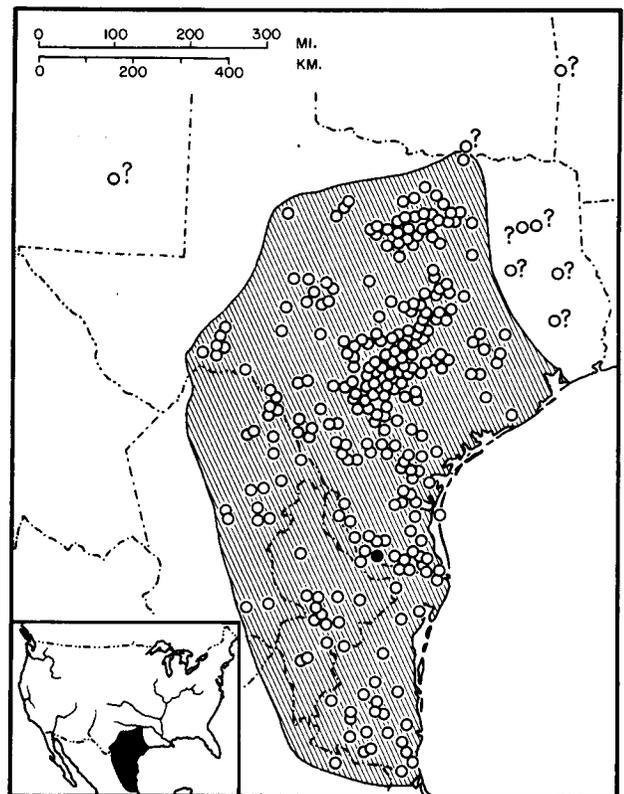
- DISTRIBUTION. *Sceloporus olivaceus* ranges in the United States from the Texas-Oklahoma border through central Texas and into Mexico, extending to southern Tamaulipas, central Nuevo Leon, southeastern Coahuila and San Luis Potosi (Smith and Taylor, 1950). The specific limits of the range are problematical. It probably does not occur in New Mexico (W. Degenhardt, *in litt.*) although it has been recorded from the Capitan Mountains, Lincoln County (Smith, 1939). There is a record of *S. olivaceus* from Fort Smith, Arkansas (Yarrow, 1882, based on U. S. Natl. Mus. 2325), but it is doubtful that the species occurs there. It was not listed by Dowling (1957). Carpenter (1955) listed *S. olivaceus* as rare in Love County, Oklahoma. Webb (1970) discussed the records of *S. olivaceus* from Love County, first mentioned by Smith and Leonard (1934), but included this species in the unverified list for Oklahoma. In the United States, the distribution of *S. olivaceus* is confined to central Texas and parts of eastern Texas. Webb and Packard (1961) recorded a specimen from Nacogdoches County, Texas, extending the range into eastern Texas and lending support to previous records (Smith and Sanders, 1952). Raun and Gehlbach (1972) questioned all records of this species from Texas east of the Trinity River. Because *S. olivaceus* has been confused with *S. undulatus* and other sceloporines, published locality records for *S. olivaceus* in extreme western Texas (Strecker, 1909b; Brown, 1950) may be erroneous (Raun and Gehlbach, 1972). Smith and Buechner (1947) noted correctly that the range of *S. olivaceus* is not limited by the Balcones Escarpment in Texas. Blair (1950) found that *S. olivaceus* ranges from the Tamaulipan northward through the Balconian to the western part of the Texan biotic province.

Martin (1958) commented that the absence of arid thorn scrub southward in the Gulf Coastal Plain of Mexico probably limits this species in its lowland distribution. *S. olivaceus* is essentially an arboreal form, with terrestrial tendencies. It is frequently associated with scrub vegetation, but also occurs on other elevated objects such as fences, bridges and buildings.

- FOSSIL RECORD. None.

- PERTINENT LITERATURE. The most extensive study of the ecology and population biology of *Sceloporus olivaceus* is that of Blair (1960). His study contains much information obtained from field study, including methods of capture, identification, and observation, the local environment, adaptation at the individual level, adaptation at the population level, and organization of a population.

Observations on breeding populations (see Milstead, 1967) have been published by Strecker (1908b, c), Newman and Patterson (1909) and Kerster (1964). Strecker (1924) noted erroneously that the female remains near the eggs after they have been laid. Noble and Bradley (1933) briefly compared breeding behavior of *S. olivaceus* (as *S. spinus floridanus*) with that of *S. undulatus*. Smith and Burger (1950) noted that one large female from Mexico contained ten eggs. Pyburn (1955) described homospecific pairing in laboratory experiments offering a species choice. Information on weight and dimensions of eggs is given in Blair (1960). Fitch (1970) included *S. olivaceus* among examples of lizards having multiple clutches in the course of a long breeding season. Brooks (1906) discussed male and female urogenital organs, and Forbes (1941) described the urogenital anatomy of the adult male and the effects of implanted sex hormones. Mulaik (1946) also described the anatomy of the urogenital system. Smith (1946a) provided a general summary of the morphology and biology of *S. olivaceus*. Lundelius (1957) discussed skeletal adaptations. The black peritoneum of *S. olivaceus* was studied by Hunsaker and Johnson (1959). Zweifel and Lowe (1966) discussed the loss of the tail of *S. olivaceus* in their study of the ecology of a population of *Xantusia vigilis*. Holman (1969) compared the dentaries of *S. undulatus* and *S. olivaceus*. Underwood and



MAP. The solid symbol marks the type-locality, hollow symbols represent other known localities. Question marks indicate questionable localities.

Menaker (1970) removed the pineal organ and parietal eye from blinded *S. olivaceus* and demonstrated the existence of an extraretinal photoreceptor which can mediate entrainment of a biological clock.

George and Stickel (1949) reported *S. olivaceus* found dead in a study plot in Bexar County, Texas where DDT had been used for tick control. Hunsaker and Lansing (1962) studied the effect of variation in body temperature on the electroencephalogram. Forbes et al. (1964) tested color discrimination in *S. olivaceus*. Parker (1965) reported observations on behavior, body temperature, stored fat and rate of oxygen consumption. Brattstrom (1965) recorded a body temperature of 36° C. The effects of drought on a population in central Texas were discussed by Blair (1957).

Strecker (1927a) reported that a captive *S. olivaceus* ate crickets, small cockroaches, beetles, and beetle larvae. Pritchett (1903) conducted laboratory experiments in feeding protectively colored insects to these lizards. Kennedy (1956) analyzed the food in 310 stomachs of adult and young *S. olivaceus*. Strecker (1927b) removed *S. olivaceus* from the stomachs of Red-shouldered hawk and Roadrunner. Strecker (1927c) recorded predation on *S. olivaceus* by the snake *Masticophis flagellum*. Werler (1951) reported that young *Hypsiglena ochrorhyncha texana* and newborn *Crotalus lepidus lepidus* ate young *S. olivaceus*. Wright and Wright (1957) recorded *Lampropeltis blairi* feeding on *S. olivaceus* (also see Gehlbach and Baker, 1962). Greene and Oliver (1965) recorded *S. olivaceus* among the food items of *Sistrurus catenatus*.

Ewing (1931) described *Neoschongastia scelopori*, a new species of mite from *Sceloporus spinosus* (probably *S. olivaceus*) from Uvalde, Texas. Parasitism of *S. olivaceus* by the mite *Eutrombicula alfreddugesi* was reported by George (1960) and Loomis and Crossley (1963). Thompson (1944) and Thompson and Huff (1944a, b) used *S. olivaceus* in studies of saurian malaria.

Cope (1880) stated that this lizard is especially arboreal, always ascending the trunks of trees when pursued. Strecker (1922) noted that this form was very common in piles of cut mesquite wood. Strecker and Williams (1928) wrote that these lizards seldom hibernate for more than a few weeks in central Texas. Strecker (1928a) stated that *S. olivaceus* will go into the water only as a last resort, and will emerge again as soon as possible after returning to the side from which it swam. Burt (1937a) recorded some notes on habitat and habits under the name *S. spinosus*. Ramsey (1949) described sites from which two *S. olivaceus* were recovered during the winter in central Texas and noted the subsequent effects of flooding on the area. Brown (1950) referred to this species as a typical tree lizard, making its home on old bridges, fence posts, abandoned houses or any place that offers shelter and concealment. Milstead, Mecham and McClintock (1950) studied this species in northern Terrell County, Texas where it is largely restricted to trees along the streams and dry watercourses of the Stockton Plateau. Blair and Kennerly (1959) reported *S. olivaceus* in an experimental nest box used by *Peromyscus leucopus*. Raun (1959) listed *S. olivaceus* from post oak, blackjack oak, wooded flood plain and peat bog communities in Gonzales County, Texas.

Cope (1875) listed *S. olivaceus* (as *S. spinosus*) from Texas and discussed some distributional aspects of the genus *Sceloporus*. Locality records from Texas are in Strecker (1902, 1908a, b, 1909a, 1915, 1926a, b, 1927d, 1928b, c, 1929, 1930, 1933, 1935), Bailey (1905), Strecker and Williams (1927), Strecker and Johnson (1935), Marr (1944), Peterson (1950), and Fouquette and Lindsay (1955), with distribution summaries in Brown (1950) and Raun and Gehlbach (1972). Mexican records are in Schmidt and Owens (1944), Smith and Laufe (1945), Taylor (1949), Chrapliwy (1956), and Baker and Webb (1967). Mexican localities are summarized in Smith (1939) and Smith and Taylor (1950).

• **NOMENCLATURE HISTORY.** *Sceloporus olivaceus* has had a history of taxonomic confusion with *S. undulatus* and *S. spinosus*. Stejneger (1893) presented comments of historical interest regarding the taxonomic disposition of *S. floridanus*. *Sceloporus olivaceus* was described under the erroneous impression that it represented a species different from the Texas form then known (Smith, 1934) as *Sceloporus spinosus floridanus*. Burt (1937b) stated that the conception of *floridanus* as a wide-ranging subspecies of the Mexican *S. spinosus* was untenable. Smith (1946b) provided an adequate review of the status of Baird's (1859) *Sceloporus floridanus*, and showed that the name applies to the Florida subspecies (*undulatus*) of *Sceloporus undulatus*, and not, as Stejneger and Barbour (1943) indicated, to *S. olivaceus*.

• **ETYMOLOGY.** The name *olivaceus* is derived from the Latin (*olive* + *aceous*) in allusion to the olive or olive green color of preserved specimens.

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