

## Catalogue of American Amphibians and Reptiles.

BEZY, ROBERT L. 1982. *Xantusia vigilis**Xantusia vigilis* Baird  
Desert night lizard

*Xantusia vigilis* Baird, 1859:254. Type-locality, "Fort Tejon [Kern County], Cal." Syntypes, U.S. Nat. Mus. 3063 (3 specimens), sex unknown, collected by John Xantus (not examined by author).

• CONTENT. Seven subspecies are recognized: *arizonae*, *extorris*, *gilberti*, *sierrae*, *utahensis*, *vigilis*, and *wigginsi*.

• DEFINITION. A small xantusiid (maximum snout-vent length 53 mm in males, 60 mm in females) with 12 longitudinal rows of rectangular ventral scales, 30–50 granular dorsal scales around mid-body, one row of well-developed supraoculars above each eye, one frontonasal, two frontals, and two parietals. Dorsal coloration is usually light gray to brown, sometimes unicolor, but often with small dark spots and/or dark-edged dorsolateral light stripes.

• DESCRIPTIONS. Details of scalation, external measurements, color and color pattern have been described by Baird (1859), Bezy (1967a, 1967b), Cope (1900), Klauber (1931), Savage (1952), Smith (1946), Stebbins (1954, 1966), Tanner (1957), Van Denburgh (1895a, 1922), and Webb (1965).

• ILLUSTRATIONS. Black-and-white photographs have been published by Bezy (1967a, 1967b), Bezy et al. (1980), Cowles and Bogert (1944), Grenot and Price (1978), Grinnell and Grinnell (1907), Klauber (1931), Miller and Stebbins (1964), Smith (1946), Van Denburgh (1922), Webb (1965), and Zweifel and Lowe (1966); a color photograph by Behler and King (1979); and drawings by Cope (1900), Fisher (1936), Savage (1952, 1963), Stejneger (1893), Stebbins (1954, 1966), Tanner (1957), Van Denburgh (1895a), and Webb (1965).

• DISTRIBUTION. The species occurs at scattered localities in the southwestern United States and northern Mexico: *X. v. vigilis* is widely distributed in the Mohave and Sonoran Deserts of southwestern Utah, northwestern Arizona, southern Nevada, southern California and northern Baja California, with isolated populations in the desert ranges of western Arizona, the northern coast of Sonora, and the Inner Coast Ranges of central California; *X. v. arizonae* occurs along the southern edge of the Colorado Plateau and in the Grand Canyon of Arizona; *X. v. extorris*, in the southern Chihuahuan Desert of Durango and Zacatecas; *X. v. gilberti*, in the Sierra Victoria of Baja California Sur; *X. v. sierrae*, along the southwestern foothills of the Sierra Nevada in California; *X. v. utahensis*, in the Great Basin Desert of southeastern Utah; and *X. v. wigginsi*, in the Vizcaino Desert of Baja California from El Rosario to near Poza Grande. Specimens from Santa Catalina Island, California, are considered to represent introductions (Klauber, 1939; Savage, 1952). The elevational range is from sea level to 9360 ft (2855 m).

Since Van Denburgh's (1895b) report of an ecological and geographical association of *X. vigilis* with the Joshua tree (*Yucca brevifolia*), considerable information has been published on habitat and distribution—General: Bezy (1967b), Klauber (1931, 1932, 1939), Meek (1905), Stebbins (1954, 1966), Stejneger (1893), Storey (1940), Van Denburgh (1922), Wood (1944a), and Zweifel and Lowe (1966). Arizona: Jones et al. (1981), Klauber (1938, 1940), Lowe (1964), and Tomko (1975). Baja California: Bostic (1971), Murray (1955), Savage (1952), Schmidt (1922), Smith and Holland (1971), and Van Denburgh (1895a). California: Banta (1962), Bezy (1967a), Camp (1916), Christenson (1948), Cowles (1920), Cowles and Bogert (1936, 1944), Fisher (1936), Glaser (1970), Grinnell and Camp (1917), Grinnell and Grinnell (1907), Hanley (1942), Hawbecker (1949), Hubbs (1916), Johnson et al. (1948), Kaufman and Tollestrup (1981), Miller and Stebbins (1964), Morafka and Banta (1968, 1973), Schoenherr (1976), Stebbins (1948b), and Turner (1959). Durango: Grenot and Price (1978) and Webb (1965). Nevada: Banta (1950), Deacon et al. (1966), Linsdale (1940), and Tanner and Jorgenson (1963). Sonora: Felger (1965), Malkin (1962), and Slevin (1949). Utah: Tanner (1957, 1958). Zacatecas: Baker et al. (1981).

• FOSSIL RECORD. Brattstrom (1953) reported the species from Rancho La Brea Pit 101, but Savage (1963) has indicated that the fragments are of iguanids, probably of the genus *Uta*.

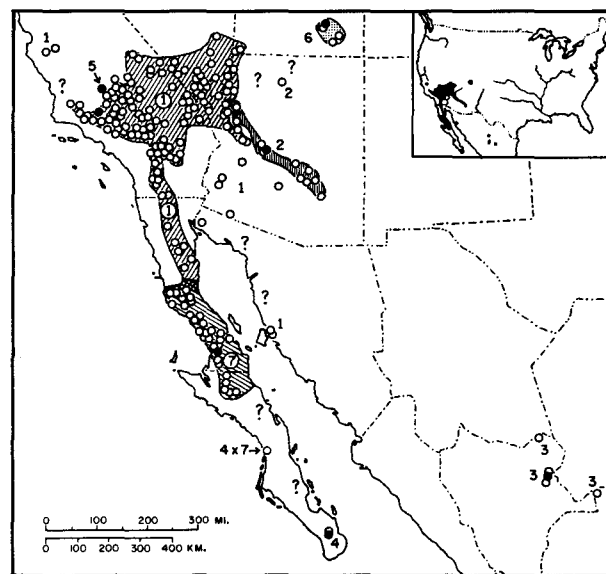
• PERTINENT LITERATURE. The extensive literature of the species is categorized below. Systematics and geographic variation—Exomorphology, color, and color pattern: Fisher (1936), Schmidt (1922), Tanner and Banta (1966), Van Denburgh (1895b), and Webb (1970). Karyotypic variation: Bezy (1972). SEM of scales: Stewart and Daniel (1975). Anatomy—Osteology and dentition: Camp (1923), Edmund (1960), Etheridge (1967), Holman (1972), Savage (1957, 1963), and Young (1942). Eye: Butler (1974) and Underwood (1970). Ear: Miller (1966), Schmidt (1964), and Wever (1978). Nose: Gabe and Saint-Girons (1976), Malan (1946), and Stebbins (1948a). Nerves: Miller and Kasahara (1967). Brain: Northcutt (1978). Cloaca: Gabe and Saint-Girons (1965). Musculature: Theisen (1967). Physiology and experimental biology—Endocrine glands and cycles: Bartholomew (1950), Colombo et al. (1974), Licht (1973), Miller (1948a, 1948b, 1952, 1955, 1963), and Yaron (1972). Control of activity levels: Glaser (1958) and Stebbins (1970). Limb regeneration: Bryant and Wozny (1974). Envenomation: Cowles (1941) and Lowe (1948a). Comparative biochemistry: Bezy et al. (1980), Dessauer and Fox (1964), Guttman (1971), and Quay and Wilhoft (1964). Metabolism: Bennett and Licht (1972), Cook (1949), Mautz (1979), and Snyder (1971). Temperature limits: Brattstrom (1965), Cowles and Bogert (1944), Cowles and Burleson (1945), Kour and Hutchison (1970), and Lowe et al. (1971). Metachromism: Atsatt (1939) and Caswell (1950). Ecology and behavior—Reproduction: Bartholomew (1953), Brattstrom (1951), Cowles (1944), Heimlich and Heimlich (1950), Miller (1948a, 1954), Vitt (1977, 1978), Vitt and Congdon (1978), Webb (1965), and Yaron (1977). Parasitology: Amrein (1952a, 1952b, 1953), Brattstrom (1952), and Wood (1935). Food habits: Brattstrom (1952), Heimlich and Heimlich (1947, cannibalism), and Wood (1944b). Ecology (see also Distribution for habitat): Banta (1960), Hubbs (1916), Lowe (1948b), Miller (1951), Wood (1944a), and Zweifel and Lowe (1966). Conservation: Cowles (1952). Ethnozoology: Malkin (1962).

• ETYMOLOGY. The names are derived as follows: *vigilis*, Latin, alert, watchful; *arizonae*, *sierrae*, and *utahensis*, location of type-localities; *extorris*, Latin, banished, exiled; *gilberti*, Dr. Charles H. Gilbert, inspirer of Van Denburgh; and *wigginsi*, Dr. Ira L. Wiggins, Stanford botanist, collector of the holotype.

1. *Xantusia vigilis vigilis* Baird

*Xantusia vigilis* Baird, 1859:254. See species account.

*Xantusia vigilis vigilis*: Savage, 1952:447. First use of trinomial.



MAP. Solid circles mark type-localities, open circles indicate other records. Question marks indicate areas where the species may occur.

• DEFINITION. Ranges (and means) of diagnostic scale characters: granular dorsals around mid-body 31–40 (35.4); 4th toe lamellae 17–23 (20.8); transverse rows of gulars 27–38 (33.2); femoral pores (each leg) 4–11 (8.5); transverse rows of ventrals 25–31 (28.6); 7th supralabial not as high as 6th. Postorbital light head stripe narrow and inconspicuous; tail spots occupy entire scale; dorsal body spots (when present) often occupying 2–3 adjacent scales. Maximum snout–vent length 50 mm.

## 2. *Xantusia vigilis arizonae* Klauber

*Xantusia arizonae* Klauber, 1931:3. Type-locality, “one mile south of Yarnell, Yavapai County, Arizona, elevation 4940 ft.” Holotype, San Diego Natur. Hist. Mus. 5433, adult female, collected by P. M. and L. M. Klauber on 21 August 1931 (not examined by author).

*Xantusia vigilis arizonae*: Bezy, 1967b:661.

• DEFINITION. Dorsal scales 38–49 (43.3); 4th toe lamellae 21–29 (26.0); gulars 32–42 (37.2); femoral pores 9–13 (10.9) (absent or poorly developed in females); ventrals 30–32 (30.8); 7th supralabial not as high as 6th. Dorsal spots often occupying 5 or more scales, sometimes tending to form longitudinal rows. Maximum snout–vent length 60 mm.

## 3. *Xantusia vigilis extorris* Webb

*Xantusia extorris* Webb, 1965:2. Type-locality, “3 miles southwest of Chocolate, at an elevation of 4550 feet, Durango, Mexico.” Holotype, Michigan State Univ. Mus. 6866, female, collected by R. G. Webb and A. L. Metcalf on 8–9 July 1963 (not examined by author).

*Xantusia vigilis extorris*: Webb, 1970:6.

• DEFINITION. Dorsal scales 34–41 (36.9); 4th toe lamellae 17–22 (19.8); gulars 31–37 (34.1); femoral pores 5–8 (6.8); ventrals 30–33 (32.6); 7th supralabial usually as high as, or higher than 6th. Dorsal spots small, often occupying only one scale; dorsolateral light stripes usually present on body.

## 4. *Xantusia vigilis gilberti* Van Denburgh

*Xantusia gilberti* Van Denburgh, 1895a:121. Type-locality, “San Francisquito, Sierra Laguna, Lower California.” Holotype, California Acad. Sci. 401, collected on 28 March 1892 by G. Eisen (not examined by author).

*Amoebopsis gilberti*: Cope, 1895:758. See generic account.

*Xantusia vigilis gilberti*: Savage, 1952:469.

• DEFINITION. Dorsal scales 30–34 (32.2); 4th toe lamellae 15–18 (16.8); femoral pores 5–9; ventrals 29–32 (30.2); 7th supralabial as high as, or higher than 6th. Dorsal spots few, concentrated on the lateral surfaces; dorsolateral light stripes often present on body. Eye relatively small.

## 5. *Xantusia vigilis sierrae* Bezy

*Xantusia vigilis sierrae* Bezy, 1967a:163. Type-locality, “Granite Station, 9.1 mi (by rd) S Woody, 1700 ft, Kern Co., California.” Holotype, Univ. Arizona 13905, adult male, collected by R. L. Bezy and W. C. Sherbrooke on 5 March 1965.

• DEFINITION. Dorsal scales 40–44 (42.0); 4th toe lamellae 22–25 (23.5); gulars 39–45 (41.7); femoral pores 10–12 (11.1); ventrals 29–32 (30.7); 7th supralabial not as high as 6th. Postorbital light stripe broad and conspicuous; dorsal spots interconnected, forming a dark reticulated pattern.

## 6. *Xantusia vigilis utahensis* Tanner

*Xantusia vigilis utahensis* Tanner, 1957:5. Type-locality, “approximately 20 miles northwest of Hite in North Wash, Garfield County, Utah.” Holotype, Brigham Young Univ. 11733, adult female, collected by W. W. and W. L. Tanner on 10 June 1954 (not examined by author).

• DEFINITION. Dorsal scales 37–39 (37.1); 4th toe lamellae 23–25 (24.0); gulars 37–40 (38.6); femoral pores 7–11 (9.5); ventrals 29–30 (29.3); 7th supralabial not as high as 6th. Small dorsal spots on an orange-buff and yellow background.

## 7. *Xantusia vigilis wigginsii* Savage

*Xantusia vigilis wigginsii* Savage, 1952:473. Type-locality, “in an arroyo 9 miles east of Miller’s Landing, Distrito del Norte, Baja California, Mexico.” Holotype, California Acad. Sci.—Stanford Univ. 11564, collected by I. L. Wiggins, H. M. Hill, and A. M. Vollmer on 29 October 1946 (not examined by author).

• DEFINITION. Dorsal scales 31–38 (34.3); 4th toe lamellae 16–20 (17.9); femoral pores 4–9 (6); ventrals 25–29 (27.4); 7th supralabial usually not as high as 6th. Tail spots generally restricted to tips of scales; dorsal spots (when present) numerous and small, often occupying only one scale; dorsolateral light stripes often present on body.

### COMMENT

Bezy (1967b) identified populations that are intermediate between *X. arizonae* and *X. vigilis* in geography, scalation, body proportions, and color pattern, and concluded that the two forms are conspecific. Morafka (1977:75) retained *X. arizonae* as a separate species and speculated that the morphologically intermediate populations are saxicolous *X. vigilis* that are convergent with *X. arizonae*. He also proposed the new combination *X. arizonae bolsonae* for *X. henshawi bolsonae* of Webb (1970), citing unspecified morphological observations and the karyotype data of Bezy (1972). Since the same karyotype occurs in *vigilis*, *arizonae*, and *bolsonae*, the chromosomal data cannot resolve this trichotomy. However, the morphological continuum between *arizonae* and *vigilis* (Bezy 1967b) and the presence of 12 longitudinal rows of ventrals in all populations of *X. vigilis* (including *arizonae*) as compared to 14 in *henshawi* and *bolsonae* (Webb, 1970, 1979), clearly indicate that the combinations *X. vigilis arizonae* and *X. henshawi bolsonae* best reflect the relationships involved.

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