

Catalogue of American Amphibians and Reptiles.

Jennings, M.R. 1995. *Gambelia sila*.

Gambelia sila* (Stejneger)*Blunt-nosed Leopard Lizard**

Crotaphytus wislizeni: Cooper, 1870:71.

Crotaphytus wislizeni: Yarrow, 1882:53 (part).

Crotaphytus silus: Stejneger, 1890:105 (footnote). Type-locality, "Fresno, [Fresno County] Cal[ifornia]." Holotype, National Museum of Natural History (USNM) 11790 (formerly USNM 11790A), an adult male, collected in 1879 by Gustavus Augustus Eisen (examined by author).

Crotaphytus wislizenii: Cope, 1900:255 (part).

Crotaphytus fasciatus: Grinnell and Camp, 1917:152 (part).

Gambelia wislizenii silus: Smith, 1946:164.

Crotaphytus wislizeni silus: Schmidt, 1953:117.

Crotaphytus (Gambelia) wislizeni silus: Weiner and Smith, 1965:187.

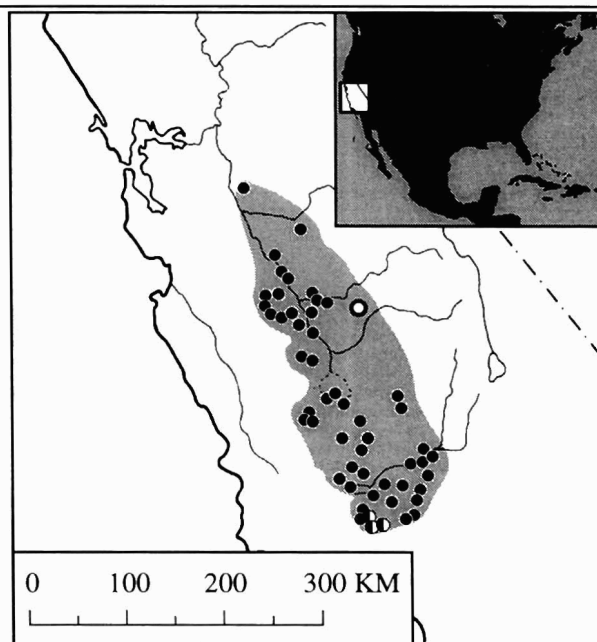
Crotaphytus wislizenii silus: Montanucci, 1965:270.

Gambelia silus: Montanucci, Axtell, and Dessauer, 1975:339. First use of combination.

Gambelia sila: Jennings, 1987:11. Change in termination (see Nomenclatural History).

• **Content.** No subspecies have been described.

• **Definition.** *Gambelia sila* is a medium-sized (75-125 mm SVL) leopard lizard with a truncate snout and a broad, triangular head. The tail is more than 1.5 times SVL. Smooth, granular scales cover the dorsum, including the lateral folds along either side of the body, and on top of the head, three or more



Map. The large circle marks the type-locality, dots indicate other selected localities, and half-filled circles indicate hybrids between *Gambelia sila* and *G. wislizenii*. The shaded area denotes the presumed limit of original distribution of this species within suitable habitats in the San Joaquin Valley. The species has disappeared from 94% of its historic range (see Remarks).

rows of scales are in the interorbital region. Scales on the venter overlap and are sometimes weakly keeled. Three or more



Figure. Adult male *Gambelia sila* (CAS 41713) collected from 8.045 kilometers south of Madera, Madera County, California, by John Van Denburgh on 20 June 1916. This photograph was taken in June 1916 by John Van Denburgh (courtesy of the Department of Herpetology, California Academy of Sciences).

scales between the lower labials are in contact with the mental, as well as one or more gular folds. The dorsal coloration is characterized by distinct light-colored bands, a paravertebral arrangement of dorsal spots, and the complete absence of ornamentation around the dorsal spots. The throat has pale gray to dusky spots or round blotches, sometimes merging to form a reticulated pattern or lengthwise streaks. The undersides of the thighs and tail are yellow in juveniles and young females. Adult males in breeding condition have a pink, salmon, or rust wash on the throat, chest, and sometimes over most of the body except the head. Gravid adult females typically have lateral blotches or spots of bright salmon or crimson in a single row along the lateral folds, neck, and head. Males are larger than females at sexual maturity.

• **Diagnosis.** A snout-length/head-width ratio of ≤ 0.45 , spots or blotches on the side of the lower jaw, distinct light-colored bands on the dorsum, a paravertebral arrangement of dorsal spots, sexual dimorphism (males larger than females), and the presence of breeding coloration in adult males distinguish *Gambelia sila* from all other species *Gambelia*.

• **Descriptions.** General descriptions are in Van Denburgh (1922), Smith (1946), Montanucci (1965, 1970), Tollestrup (1979), Behler and King (1979), Stebbins (1954, 1985), and McGuire (1996). Montanucci (1970) described the karyotype ($2N = 36$).

• **Illustrations.** Black and white photographs of adults are in Van Denburgh (1922), Slevin (1934), Smith (1946), Pickwell (1947), U.S. Fish and Wildlife Service (1985), and Lowe et al. (1990). Montanucci (1970) and Tanner and Banta (1977) show black and white photographs of hybrids between *Gambelia sila* and *G. wislizenii*. Color photographs of adults are in Behler and King (1979), Steinhart (1990), and Thelander and Crabtree (1994). Watercolor paintings of an adult female, male, and an adult female in breeding coloration are in Smith and Brodie (1982) and Stebbins (1985). Brattstrom (1953) showed a line drawing of the maxilla and Montanucci (1970) provided photographs of the skull and habitats used by *G. sila* and *G. sila* x *wislizenii* hybrids in southern California.

• **Distribution.** *Gambelia sila* originally inhabited arid lands of the San Joaquin Valley and surrounding foothills in California from southwestern San Joaquin County, south to extreme northern Santa Barbara and Ventura counties at elevations of 30-730 m (Montanucci, 1965; National Fish and Wildlife Laboratory, 1980; Stebbins, 1985; Thelander and Crabtree, 1994). The species has been eliminated from 94% of its range over the past 140 years (see Remarks). Recent attempts to estimate the present distribution of *G. sila* are mapped by U.S. Fish and Wildlife Service (1985) and Germano and Williams (1992a).

• **Fossil Record.** None based on the interpretation of Brattstrom (1953), who found measurements made on two fossil *Gambelia* maxillae taken from McKittrick, Kern County (which is within the historic range of *G. sila*), to be more like *G. wislizenii* from southern California than *G. sila*.

• **Pertinent Literature.** A fairly complete summary of published literature and unpublished reports, as well as suggestions for future research on *Gambelia sila*, is provided by National Fish and Wildlife Laboratory (1980), and Germano and Williams (1992a). Other specific topics include: body temperatures of adults (Cowles and Bogert, 1944; Brattstrom, 1965); cannibalism of young by adults (Germano and Williams, 1994); comparison of the dentition of *G. sila* with other families of lizards (Olson et al., 1986); conservation efforts to protect the

species (Dick, 1977; Seymour, 1977; U.S. Fish and Wildlife Service, 1985; Steinhart, 1990; Lowe et al., 1990; Thelander and Crabtree, 1994); dorsal and ventral color patterns (Stejneger, 1893; Meek, 1905; Van Denburgh, 1922; Montanucci, 1970); general ecology of lizard populations on the San Joaquin Valley floor (Montanucci, 1965; Tollestrup, 1979); habitat correlates of lizards observed while conducting general wildlife surveys (Harris et al., 1992; Nicolai, 1992); hybridization between *G. sila* and *G. wislizenii* (Tanner and Banta, 1977; Montanucci, 1970, 1978; Montagne, 1979); morphology of *G. sila* versus *Crotaphytus reticulatus* and *C. collaris* (Montanucci, 1969); negative effects of off-road vehicle use on lizard habitats located within public lands (Montagne, 1979); notes on growth, reproduction, and foraging patterns (Montanucci, 1967; Tollestrup, 1982; Germano and Williams, 1992b; Germano et al., 1994); occurrence of pinworm (*Cyrtosomum readi*) parasites in *G. sila* (Gambino and Heyneman, 1960); population estimates and management concerns of selected populations of lizards on public lands (Snow, 1972; Chesmore et al., 1992; Harrison et al., 1992; Olson and Magney, 1992; Uptain et al., 1992); predation on adults (Germano and Carter, 1995); social behavior of *G. sila* versus *G. wislizenii* (Tollestrup, 1983); use of barriers to exclude lizards from oil pipeline trenches (Germano et al., 1993); various survey techniques used to denote the presence or absence of *G. sila* on public and private lands (Clark and Uptain, 1992; Germano and Williams, 1992a); and the use of PIT tags to mark individual lizards in the field (Germano and Williams, 1993).

• **Nomenclatural History.** The species name has recently been treated as masculine adjective in combination with the feminine genus *Gambelia*, hence the change from *G. silus* to *G. sila* to agree in gender (e.g., see Jennings, 1987; Frost and Collins, 1988; Collins, 1990). However, 19th century Latin scholars also considered 'silus' as a noun (e.g., see Andrews, 1879), but all usages as a noun are as cognomens (names for people or objects; Glare, 1982). Based on Article 31(b)(i) of the International Trust for Zoological Nomenclature (1985), "where the author of a species-group name did not indicate whether he or she regarded it as a noun or as an adjective, and where it may be regarded as either and the evidence of usage is not decisive, it is to be treated as a noun in apposition to the name of its genus; its spelling is not changed if it is combined with a generic name of a different gender." Because all available evidence indicates that Stejneger clearly named this species with the adjectival form in mind (rather than as a cognomen), the use of *Gambelia sila* is the correct spelling of this combination.

• **Remarks.** *Gambelia sila* has been eliminated from 94% of its original range due to habitat loss primarily from agriculture, water development projects, and urbanization; but also from livestock grazing, mineral development, and off-road vehicle use (U.S. Fish and Wildlife Service, 1985). The species is currently listed as Endangered by the U.S. Fish and Wildlife Service and a new revised recovery plan for the species is being written.

• **Etymology.** The species name *sila* (Latin), which comes from the Greek (σιμῶς), means "snub-nosed" or "pug-nosed", in obvious reference to the snout of this lizard.

• **Comment.** Prior to 1970, hybrids between *Gambelia sila* and *G. wislizenii* were collected from the extreme southern part of the range of *G. sila* in Ventura and Santa Barbara counties (Montanucci, 1970, 1978). Due to subsequent habitat loss, however, hybrids have now been eliminated from this region and only isolated populations with the characteristics of *G. wislizenii* appear to be present in the areas of suitable remaining habitat (Stebbins, 1985).

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Mark R. Jennings, National Biological Service, California Science Center, Piedras Blancas Field Station, P.O. Box 70, San Simeon, CA 93452 USA, and Research Associate, Department of Herpetology, California Academy of Sciences, Golden Gate Park, San Francisco, CA 94118 USA.

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