

Catalogue of American Amphibians and Reptiles.

Banta, B.H., C.R. Mahrtdt, and K.R. Beaman. 1996. *Elgaria panamintina*.

Elgaria panamintina (Stebbins)
Panamint Alligator Lizard

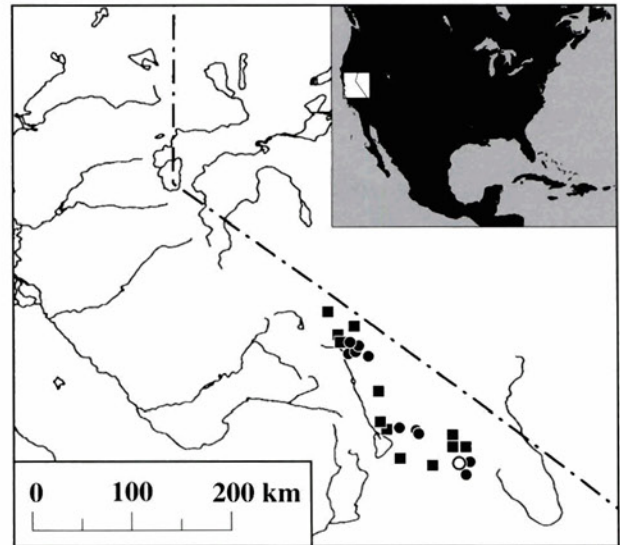
Gerrhonotus panamintinus Stebbins, 1958:2. Type-locality, "Surprise Canyon, at an elevation of 4500 feet [1360 m], on the west side of the Panamint Mountains, Inyo County, California." Holotype, Museum of Vertebrate Zoology (MVZ) 65410, an adult female, collected by James McDonald, Jr., 23 October 1954 (not examined by authors).

Elgaria panamintina: Smith and Brodie, 1982:86. First use of combination.

• **Content.** This species is monotypic.

• **Definition.** *Elgaria panamintina* is a large alligator lizard (maximum total length 150 mm), with a tail (unbroken) nearly twice its body length. The scutellation is as follows: dorsal scale rows, 44-46 (counted, respectively, on right and left sides of midline, from immediately behind the ear to above the posterior margin of the thighs); ventral scale rows, 65 (mental to preanals inclusive); longitudinal dorsal rows, 14; longitudinal ventral rows, 12; limbs without keeled scales except on upper surface of distal segment of hind limbs; number of rows of keeled scales on tail (counted on first whorl from base of tail that contains 20 scales), 6; number of rows of keeled scales on dorsum of trunk, 12; head scales, including temporals, are smooth.

The top of the head is light olive gray and unmarked; no yellow is present on the snout. The labials are light gray, with a broad purplish gray area behind the eye. The anterior edge of the ear opening is white, and the side of the neck ash gray. The iris of the eye is pale yellow, with a blackish area located posteriorly. Crossbands on the body and tail are brown, edged posteriorly with dusky brown; seven complete bands (one partial)



Map. Range of *Elgaria panamintina*: the circle marks the type-locality, dots indicate other records for which vouchers exist, and squares denote sight records.

occur between the anterior border of the hind limbs and the occiput. Borders of the bands are vague, and are dull lavender on the sides with light-yellow interspaces. The ground color of the upper surfaces of the limbs is light purplish gray, with touches of tan, most pronounced on the hind limbs. The sides of the body have sooty brown, vertical bars faintly edged posteriorly with white. An area of granular scales along the lateral fold is dull lavender, with a vague outline of large, whitish spots, each composed of a group of white scales. The sides of the tail are dull lavender, with light orange-rust bars that are continuous with brown crossbands. The scales of all ventral surfaces are gray, edged with white, and become lighter on the throat and chin. Undersides of the limbs are whitish (Stebbins, 1958).



Figure. Adult *Elgaria panamintina* (CAS 89676) from Grapevine Canyon, Nelson Mountains (elev. 1480 m), Inyo Co., California. Specimen collected by B.H. Banta on 10 June 1960. Photograph by Alan E. Leviton, courtesy of the Department of Herpetology, California Academy of Science.

• **Diagnosis.** *Elgaria panamintina* may be distinguished from all other congeners by having 10 (rarely 12) keeled longitudinal rows of dorsal scales; 44-47 (\bar{x} = 45.7) transverse dorsal scale rows; 7 or 8 complete, well-defined, brown crossbands on the body, exclusive of the tail; weakly keeled scales on the tail; whitish ventrum with gray spots at center or edges of scales forming irregular, scattered blotches; and a pale-yellow iris.

• **Descriptions.** Descriptions of *Elgaria panamintina* were published by Stebbins (1958, 1966, 1985). Banta (1961, 1963) and Good (1985, 1988b) discussed external morphological variation and Good (1988a) described allozymes from a single specimen. A description of the color pattern appeared in Jennings and Hayes (1994).

• **Illustrations.** Stebbins (1958) included a black and white photograph of a dorsolateral view of the holotype, and a dorsal view illustrating juvenile color pattern. A black and white photograph of mating adults was published by Banta and Leviton (1961). Color photographs of adults appeared in Banta (1963) and Behler and King (1979). A color photograph of a juvenile and an adult was published by Macey and Papenfuss (1991). Colored illustrations of an adult were published by Smith and Brodie (1982) and Stebbins (1985). A color illustration of a juvenile was published by Stebbins (1985). Line drawings illustrating a dorsal view of the head were included by Stebbins (1958). Matthiessen (1959), Marlow (1988), and Brown and Wright (1994) presented line drawings of the entire lizard; and a line drawing illustrating mating posture was published by Carpenter and Ferguson (1977). Black and white photographs of the habitat of *E. panamintina* were published by Stebbins (1958) and Banta (1962a, 1963).

• **Distribution.** Confirmed records of *Elgaria panamintina* are based on 24 museum specimens (including three field collected shed skins) from 16 localities in the following areas: Panamint Mountains (Brewery and Limekiln springs, Surprise Canyon); Nelson Mountains (Grapevine Canyon); Inyo Mountains (Daisy Canyon, Lime Hill); and White Mountains (Batchelder Spring, Westgard Pass, Marble Canyon, Tollhouse Spring) of Inyo County, California. A piece of shed skin, verified by L.L. Grismer as *Elgaria*, was collected by M. Wilcox on 18 October 1996 in Pleasant Canyon, Panamint Mountains, Inyo County; this represents a new locality record for the species and extends the range to the south. In addition, 11 sight records have been reported by Stebbins (1985), Macey (1986), Papenfuss (1986), Macey and Papenfuss (1991), and Jennings and Hayes (1994) for the following mountains of Inyo and southeastern Mono counties, California: eastern Argus, Cosos, Panamint (Wildrose Canyon, middlefork of Hanaupah Canyon), Inyo (Long John Canyon, French Spring), and White (Black, Cottonwood, and Silver Creek canyons, Coldwater Creek, above Chalfant and Hammil valleys). Benton and Queen valleys of Mono County are sites where *E. panamintina* is expected to occur (Macey and Papenfuss, 1991). The altitudinal range of the species extends from 760-2290 m. The disjunct distribution of this species is attributed to its occurrence in predominantly desert riparian habitat and isolated talus slopes of creosote bush scrub, desert scrub, and lower pinyon-juniper woodland plant communities.

• **Fossil Record.** None.

• **Pertinent Literature.** Stebbins (1958) described *Elgaria panamintina* and distinguished it from other North American gerrhonotine lizards. Good (1988b) discussed external morphology and phylogenetic relationships, and provided evidence supporting monophyly within the genus. Phylogenetic relationships

based on scale characters were discussed by McCoy (1970) and Waddick and Smith (1974). The biogeography and evolutionary relationships of this species with other species of *Elgaria* were treated by Grismer (1994). de Fraipont et al. (1996) presented a phylogenetic analysis of the evolution of viviparity and oviparity with egg guarding, and included this species.

Aspects of the natural history, including habitat, general ecology, reproductive biology, and interspecific variation, were reported by Stebbins (1958) and Banta (1963). Natural history was summarized by Leviton (1972), Behler and King (1979), Stebbins (1966, 1972, 1985), Marlow (1988), and Jennings and Hayes (1994). Various topics of its biology include: biogeography, distribution, and habitat (Banta, 1961, 1962a, b, 1965a, b; Turner and Wauer, 1963; Dixon, 1975; Brode and Bury, 1984; Macey, 1986; Papenfuss, 1986; Macey and Papenfuss, 1991; Stewart, 1994), mating behavior (Banta and Leviton, 1961; Carpenter and Ferguson, 1977), terrestrial vertebrate associates (Coulombe and Banta, 1964), antipredator mechanisms (Greene, 1988), systematics (Good, 1985), and genetics (Good, 1988a).

Savage (1959), Cagle (1968), Brown (1974), Stoops and Wright (1993), and Bartlett (1995) provided brief, non-technical accounts on distribution and identification. Matthiessen (1959) was aware of and briefly mentioned an undescribed species of alligator lizard from Surprise Canyon, Panamint Mountains, although his book was published after the original description by Stebbins (1958). Collins (1990) maintained the standardization of the common name, and Crippen (1962) listed the holotype. *Elgaria panamintina* is included in annotated checklists and taxonomic accounts by Wermuth (1969), Dowling (1974), Jennings (1983, 1987), Laudenslayer and Grenfell (1983), and Laudenslayer et al. (1991). Stewart (1971), Bury (1972), Berger and Neuner (1979), Groombridge (1993 [1994]), Jennings and Hayes (1994), and Levell (1995) discussed the legal status of this species, and its federal legal status was published by Drewry and Sayers (1996).

• **Etymology.** The name *panamintina* is a toponym for the Panamint Mountains, where the holotype and paratypes were collected.

• **Comment.** Only 24 museum specimens from 16 localities and an additional 11 sight records have accumulated since the species was described by Stebbins (1958). Its presumed rarity as reported by Banta (1963) is supported by subsequent observations and collections made over a period of 30 years. Comprehensive studies on the ecology and reproductive biology of *Elgaria panamintina* are lacking.

Distributional records (Macey, 1986) listing *E. panamintina* from the Chalfant, northern and southern Owens, Panamint, and Saline valleys need clarification and should include references to specific hydrographic basins associated with the species (Banta, 1962a). Although this species occurs in riparian habitats of isolated desert mountain ranges, Banta (1963) reported finding a specimen along a talus slope of Daisy Canyon in the Inyo Mountains. The presence of the species in talus suggests that it is not restricted to riparian habitat and perhaps occurs over a much wider geographic area than previously thought. Its disjunct distribution suggests that *E. panamintina* may occur in adjacent mountain ranges in Nevada (Banta, 1965a).

Elgaria panamintina is separated geographically from *E. multicarinata* by the Owens Valley, which separates the Sierra Nevada Range from the Great Basin Desert. *Elgaria multicarinata* has been found in the Alabama Hills on the eastern slope of the Sierra Nevada Range within 16 km of *E. panamintina* at French Spring in the Inyo Range (Macey and Papenfuss, 1991).

Although the U.S. Fish and Wildlife Service has discontinued the Category 2 status (candidate species being consid-

ered for listing as threatened or endangered) of *E. panamintina* (Drewry and Sayers, 1996), the species remains protected under California state law.

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