Catalogue of American Amphibians and Reptiles.

Hunt, L.E. 2006. *Anniella pulchra*.

Anniella pulchra Gray
California Legless Lizard

Anniella pulchra Gray 1852:440. Type-locality, "0.8 km S of east entrance (California Highway 146) to Pinnacles National Monument, San Benito County, California". Neotype, University of California Museum of Vertebrate Zoology (MVZ) 64656, an adult male, collected by R.C. Stebbins on 17 March 1956 (examined by author). See **Nomenclatural History**.

Anniella pulchra: Richardson 1852:154 (not of Gray 1852). Specimen presumably lost (Hunt 1983).

Anniella nigra Fischer 1885:9. Type-locality, "close to San Diego, California", restricted by Schmidt (1953) to, "the vicinity of Pacific Grove, Monterey County, California." Holotype, British Museum (Natural History) (BMNH) 86.5.15.41, an adult male collected by J. Behrens, date unknown.

Anniella texana Boulenger 1887:50. Type-locality, "El Paso, Texas", restricted by Smith and Taylor (1950a,b) to "San Diego, California", and by Hunt (1983) to "the Monterey Peninsula, Monterey County, California." Holotype, British Museum (Natural History) (BMNH) 1946.8.29.27 (original number BMNH 87.5.12.36), an adult male, collected by A. Forrer, date unknown (examined by author).

Anniela pulchra: Baker 1987:236. *Lapsus*.

• **CONTENT**. Two subspecies, *pulchra* and *nigra*, are recognized.

• **DEFINITION**. *Anniella pulchra* is a small, elongate, fossorial, limbless lizard (adult SVL 95–170 mm, tail length 43–103 mm, tail 26%–42% of total length). Sexual dimorphism and dichromatism are absent. The snout is rounded in profile, there are 24–34 body scale rows at mid-body, 5–8 (typically 7) supralabials with the second supralabial scale being the largest, 4–8 scale rows between the vertebral and first lateral stripe, and 84–130 scales along the vertebral midline on the tail.

Color, pattern, body size, and scalation vary geographically (Hunt 1984). Populations inhabiting coastal dunes fringing southern Monterey Bay and on the Monterey Peninsula in Monterey County display a dark brown to jet-black dorsum and a relatively short tail (as a percentage of total length). Coastal populations from southwestern San Luis Obispo and western Santa Barbara County also display a dark brown dorsum, but are not jet-black and have relatively longer tails. Dorsal coloration in other coastal and interior populations ranges from metallic silver, silvery-green, copper, tan, to beige. Ventral coloration varies from whitish-yellow to bright chrome yellow. One or more brown or black stripes separate the dorsum and ventrum along the side of the body. These stripes coalesce along the sides of the head to form an eye stripe in some populations. The preanal scales are tipped with brown or black and contrast with the surrounding solid yellow or whitish-yellow ventral body scales. A brown or brownish-black border occurs along the edges of the ventral tail scales, forming faint zigzag longitudinal stripes between the scale rows on the tail. A brown or black vertebral stripe is visible in most non-melanistic populations, although this may be faint or distinct.

FIGURE 1. *Anniella pulchra* from Morro Bay, San Luis Obispo County, California (top) and Monterey County, California (bottom). Photos courtesy of Gary Nafis and CaliforniaHerps.com.

• **DESCRIPTIONS**. Detailed descriptions of the external morphology of this species are found in Bocourt (1881), Boulenger (1887), Cope (1900), Fischer (1885), Fisher (1934), Grismer (2002), Hunt (1983, 1984), Miller (1944), Richardson (1852), Rieppel (1978), Shaw (1940, 1950), Smith (1946), Stebbins (1954, 2003), and Van Denburgh (1897, 1905, 1922). Grinnell and Camp (1917), Klauber (1940), and Miller (1943) described intergrades between the subspecies. Bezy et al. (1977) describe karyotypic variation.

• **ILLUSTRATIONS**. **Line drawings and/or color illustrations** of scalation, coloration, pattern, external and internal morphology are found in Anonymous (1982), Bettelheim (2005), Duméril et al. (1870–1909), Burt (1935), Coe and Kunkel (1904, 1905, 1906), Cope (1900), Gutberlet (2003), Hunt (1983, 1984), Hutchins et al. (2003), Oliver (1955), Richardson (1852 (reproduced in Bettelheim (2006)), Rieppel (1978, 1981), Rivers (1902), Schoenherr (1976), Smith (1946), Smith and Brodie (1982), Smith et al. 1983, Stebbins (1954, 1959, 1972, 2003), Van Denburgh (1897), Webb et al. (1978), and Zim and Smith

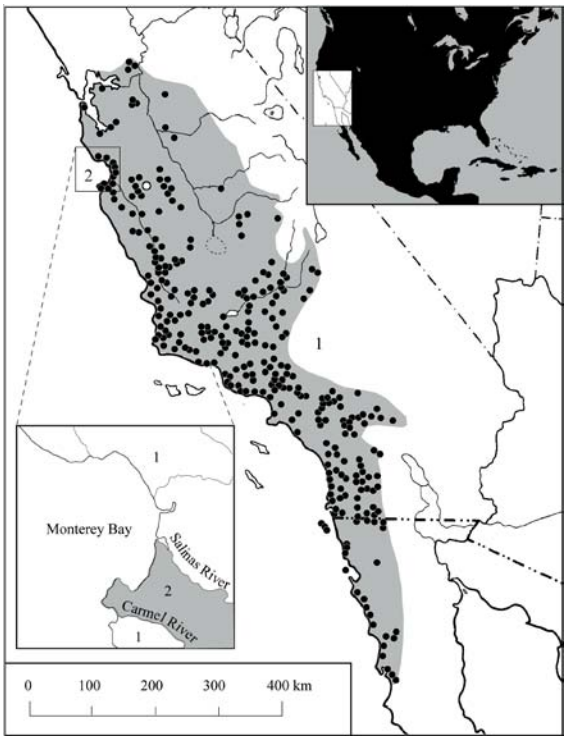
FIGURE 2. Habitat in San Benito County (above) and Los Angeles County (below), California. Photos courtesy of Gary Nafis and CaliforniaHerps.com.

(1956). **Black-and-white or color photographs** of legless lizards and/or their habitats can be found in Anonymous (2005), Behler and King (1979), Bettelheim (2005), Bezy et al. (1977), Brandes (1974), Cochran and Goin (1970), Dixon (1967), Duellman (1982), Gans (1975), Gevirtz et al. (2007), Grinnell and Grinnell (1907), Grismer (2002), Hill (1948), Hunt (1983), Leviton (n.d.), Mattison (1989), McPeak (2000), Miller (1944), Pianka and Vitt (2003), Pickwell (1947), Powers (1974), Smith (1946), and Van Denburgh (1905, 1922), and Walgren et al. (2005). Gans et al. (1992) illustrated and modeled locomotory behavior of this species in different substrates. Bezy et al. (1977), Gorman (1973), and Matthey (1931b, 1948) illustrated the karyotype. Rieppel et al. (2008) present a 3D high-resolution x-ray computed tomographic reconstruction of the skull.

• **DISTRIBUTION**. This species is widely, though discontinuously, distributed from the confluence of the Sacramento and San Joaquin rivers in Contra Costa County, California southward to the vicinity of Bahia de San Quintin on the Pacific coast of northwestern Baja California Norte, Mexico (see **Comment**). It occurs in a variety of plant communities ranging from coastal dunes near sea level to open pine forest and has been found at elevations up to 2,050 meters in the Sierra Nevada in California and 1,360 meters in the Sierra San Juarez and Sierra San Pedro Martir in Baja California. Populations occur on the desert slopes of the southern Sierra Nevada, Transverse, and Peninsular ranges. Insular populations occur on Islas Los Coronados (north, middle, and south islands) and Isla Todos Santos (north and south islands) in Baja California Norte, Mexico. *Anniella pulchra* is narrowly sympatric with *Anniella geronimensis* in coastal dunes north and east of Bahia de San Quintin, Baja California Norte, Mexico (Hunt 1983; Shaw 1953).

• **FOSSIL RECORD**. Although there are numerous fossil localities referable to genus, none of the material found to date can be referred to *Anniella pulchra* (see *Anniella* generic account).

• **PERTINENT LITERATURE**. The following citations provide information on **anatomy and morphology** (Bassett 1953; Duméril et al. (1870–1909); Boulenger 1887; Coe and Kunkel 1904, 1905, 1906; Cope 1900; Dufaure and Saint Girons 1984; Eddy 1906; Fischer 1885; Fisher 1934; Gray 1852; Gundy and Wurst 1976; Hamilton 1964; Hunsaker and Johnson 1959; Hunt 1983; Miller 1943; Mosauer 1932; Pough 1969; Richardson 1852; Rieppel 1978, 1981; Senn 1969; Shaw 1940; Smith et al. 1983; Stewart and Daniel 1973; Toerien 1950; Van Denburgh 1905), **behavior** (Denneen 2002; Gans et al. 1992; Kavanau and Norris 1961; Powers 1974), **biogeography** (Calsbeek et al. 2003; Cope 1896; Grismer 1993, 1994a,b,c, 2002; Grismer and Mellink 2005; Johnson 1978; Morafka and Banta 1972; Murphy 1983; Olalla-Tárraga et al. 2006; Peabody and Savage 1958; Savage 1960, 1967; Schoenherr 1976; Welsh 1988; Wilcox 1980; Yanev 1980), **conservation** (Anonymous 2005; Block and Morrison 2005; Block et al. 1988; Brode and Bury 1984; Bury 1972, 1985; Brandes 1974; Bury 2006; California Department of



MAP. Distribution of *Anniella pulchra*. The circle indicates the restricted type-locality, and dots indicate other records.

Fish and Game 2006; California Department of Parks and Recreation 2004; CDWR and SMPEDT 1999; Center for Biological Diversity 2002; City of Lompoc 2004; Court et al. 2000; Crawford, Multari & Clark Assoc. 2004; Dudek and Assoc. 2003; Dugas et al. 2001; East Bay Regional Park District 2007; Edwards and Pisani 1976; Gevirtz et al. 2007; Graber 1996; Groombridge 1983; Honegger 1979; Hunt and Zander 1997; Jennings and Hayes 1994; Jones & Stokes 2006; Morey 1998; Owens 2001; Rutherford and Rorabaugh 1995; Tempel et al. 2005; Thorne et al. 2002; USDI 2007; USFWS 1995, 1998; Walgren et al. 2005; WRA 2006), **ecology, distribution, and natural history** (ABA Consultants and Ruth 1998; ABA Consultants and Kuhnz 2000; Banta and Morafka 1968; Barrett et al. 2003; Bernard and Brown 1977; Bettelheim 2005; Bettelheim and Thayer 2006; Block et al. 1998; Bogert 1930; Bogert and Cowles 1947; Bostic 1975; Brattstrom 1965; Brehme 2003; Breininger 1989; Burt 1931; Bury 1983; Bury and Balgooyen 1976; Cope 1883[1884]; Cornett 1979; Crawford 1958; Cunningham 1959; Ditmars 1936; Dixon 1967; Fisher and Case 2000; Fusari 1997; Germano and Morafka 1996; Glaser 1970, Gorman 1957; Gregory 1980; Grinnell and Camp 1917; Grinnell and Grinnell 1907; Grismer 1993, 2001, 2002; Hanley 1943; Hathaway 2000; Henson and Usner 1993; Hill 1948; Hunt 1983, 1997; Jennings and Hayes 1994; Klauber 1924, 1929, 1932, 1934, 1939, 1940; Kuhnz 2000a,b; Kuhnz et al. 2005; Lawrence 1966; Leviton n.d.; Linsdale 1932; Meek 1905; Miller 1943, 1944; Morafka and Banta 1976; Morey 1988; Morrison 1998; Mosauer 1935; Mullen 1989; Murray 1955; Musgrave 1930; Natural Resources Defense Council 2002; Oliver 1955; Parker et al. 2001; Peralta-García et al. 2007; Pianka 1989; Pianka and Vitt 2003; Ramirez 1995; Rivers 1902; Sanders 1950; Schmidt 1922; Schoenherr 1976; Shaw 1953; Slevin 1934; Sprackland 1995, 1996; Stephens 1921; Stoops and Wright 1993; Tietje and Vreeland 1997; Tietje et al. 1997; Van Denburgh 1895, 1897, 1922; Van Denburgh and Slevin 1914, 1921; von Bloeker 1942; Vreeland and Tietje 2000; Zweifel 1952, 1958), **field guides, checklists, and keys** (Baird and Girard 1853; Banks et al. 1987; Banta and Morafka 1966, 1968; Behler and King 1979; Burg 2007; Burt 1935; Cochran and Goin 1970; Collins 1990; Collins and Taggart 2002; Cope 1875; Crother et al. 2000, 2003; Edwards 1929; Flores-Villela 1993; Frank and Ramus 1995; Garman 1884; Grismer 2001; Hole 1990; Jennings 2004; Liner 1994, 2007; Loomis et al. 1974; McPeak 2000; Nelson 1922; Pickwell 1947; Powell et al. 1998; Pregill and Berriam 1984; Roberts et al. 1980; Rodriguez-Robles et al. 2003; Savage 1952; Schmidt 1953, 1954; Shaw 1950; Slavens and Slavens 1998; Smith 1946; Smith and Brodie 1982; Smith and Smith 1976; Smith and Taylor 1950a,b; Stebbins 1954, 1959, 1966b, 1972, 2003; Stejneger and Barbour 1943; Webb et al. 1978; Werner 2004; Woods 1982; Yarrow 1882; Zim and Smith 1956), **genetic variation** (Bertolotto et al. 2004; Bezy and Wright 1971; Bezy et al. 1977; Conroy et al. 2005; Gorman and Renzi 1979; Gorman et al. 1971; Guttman 1971; Matthey 1931a,b, 1948; Olmo 2005; Pearse 1996; Pearse and Pogson 2000; Rainey 1984; Rogers et al. 1996; Rosenblum et al. 2004; Schulte et al. 2003), **morphological variation** (Miller 1943; Hunt 1984; Van Denburgh 1905, 1922), **nomenclature** (Ballinger et al. 1992; Hunt 1983; Jennings et al. 1992; International Commission on Zoological Nomenclature 1993; Murphy and Smith 1985, 1991), **parasites** (Adamson 1981; Della Santa 1956; McAllister et al. 1985; Read and Amrein 1952; Stunkard and Lynch 1944; Telford 1965, 1970; Voge and Fox 1950; Walton 1941; Wood 1935), **physiology** (Bogert and Cowles 1947; Chew 1961; Fusari 1982, 1983, 1984, 1985; Hunsaker and Johnson 1959; Kamel and Gatten 1983), **population density** (Block and Morrison 1998; Kuhnz et al. 2005; Turner 1977), **predation** (Bell and Bowden 1995; Cook 1930; Fisher 1901; Gander 1931; Greene 1973; Klauber 1932; Kuhns 1961; Kuhnz et al. 2005; Lowe 1948; Rodriguez-Robles et al. 1999), **reproduction** (Fitch 1970, 1981; Goldberg and Miller 1985; Miller 1944; Oliver 1955; Porter 1972; Vitt and Price 1982).

• **NOMENCLATURAL HISTORY**. When John Edward Gray named *Anniella pulchra* he did not designate a holotype, and did not illustrate or provide a detailed description of the specimen upon which he based his account, saying only that it "will be figured in the forthcoming work on the Zoology of that Voyage." (Gray 1852, p. 437), i.e., the voyage of H.M.S. Herald. Richardson (1852) described and illustrated a specimen of *Anniella* collected on the same voyage (see reproduction in Bettelheim 2006). Boulenger (1885) provided additional details on the specimen described by Gray in 1852 and Richardson in 1852, but it is evident from the measurements given by Boulenger and Richardson that they were not describing the same individual. The measurements given in Boulenger (1885) match those of the holotype of *Anniella pulchra* in the British Museum (Hunt 1983). Richardson's specimen has apparently been lost. The holotype of *Anniella pulchra* in the British Museum, and presumably the one upon which Gray based his original description, actually belongs to the species currently called *Anniella geronimensis* Shaw 1940. Hunt (1983) speculated that H.M.S. Herald put ashore in Baja California Norte, Mexico, in a localized area around Bahia de San Quintin where these two species are sympatric and that the ship's surgeon, J.O. Goodridge, collected individuals of both species. Differences between the specimens were apparently not noticed until Hunt (1983) re-examined and described the holotype of *Anniella pulchra* Gray 1852. He considered *Anniella geronimensis* Shaw 1940 to be a junior objective synonym of *Anniella pulchra* Gray 1852, applied the name *Anniella pulchra* to the taxon restricted to Baja California Norte, Mexico, and resurrected the next available name, *Anniella nigra* Fischer 1885, for the wide-ranging species found in California and Baja California Norte. Murphy and Smith (1985, 1991), Jennings et al. (1992), and Ballinger et al. (1992) disputed this arrangement on the grounds that it destabilized an entrenched nomenclature. The

International Commission on Zoological Nomenclature agreed and ruled that all previous fixations of type specimens for the nominate species, *Anniella pulchra*, be set aside and that the holotype of *Anniella nigra argentea* Hunt 1983 be designated the neotype of *Anniella pulchra* Gray 1852 (International Commission on Zoological Nomenclature 1993).

• **REMARKS**. The distribution and habitat relationships of this unusual lizard have intrigued many workers because of its fossorial habitats and dependence on a narrow range of soil textures, temperatures, and moisture conditions (Miller 1944, Hunt 1997). Although both "subspecies" have regulatory protection (California Department of Fish and Game 2006), this lizard may well be the most common vertebrate in certain habitats. Population densities in excess of 2,282 lizards/hectare (924 lizards/acre) have been documented in coastal dunes in Monterey County (Kuhnz et al. 2005) and 700+ lizards/acre have been found in stabilized dunes in northern Santa Barbara County (L. Hunt, pers. obs.). Despite being locally abundant, populations are spatially discontinuous, reflecting the high spatial variability of soil texture and other edaphic variables (Hunt 1997).

Old records from the San Francisco Peninsula (San Francisco and Palo Alto) and Santa Clara Valley (Alum Rock and San Jose) were dismissed by some authors as erroneous, but are likely valid. For example, much of San Francisco is built upon wind-blown sand deposits whose extant counterparts in the Monterey, Santa Maria, and Los Angeles basins (Cooper 1967) continue to support high densities of legless lizards. Rivers (1902) reported that *Anniella pulchra* ranged northward to Marin County, but gives no source for this information. The American Museum of Natural History has an old record of *Anniella nigra* from "Redwood Canyon, Marin County", but which is presumably lost. Old topographic maps show a "Redwood Canyon" (now called Redhead Canyon) located a few miles northeast of San Ardo, Monterey County, well within the known geographic range of this species. Regardless, the occurrence of *Anniella* north of the San Francisco Bay-Sacramento Delta region has not been verified. The Los Angeles County Museum contains a specimen bearing the locality, "22 mi. W of Blanding, Utah", and the holotype of *Anniella texana* Boulenger 1887 was described from "El Paso, Texas." These two records are far outside the known distribution of *Anniella* and must be considered errors. The elevational limit for *Anniella pulchra pulchra* described in the **Distribution** section and the range limits in the Sierra Nevada shown on the **Map** are based upon a specimen from Frazier Mountain, Ventura County found in April 2002 at 6,800 feet (R. Hansen, pers. comm.). Old collections and recent sightings from remnant habitats in Contra Costa, Alameda, San Joaquin, Stanislaus, Fresno, Merced, Tulare, Kings, and Kern counties suggest that *Anniella* historically ranged across the floor of the San Joaquin Valley, probably as isolated populations associated with wind-blown sand dunes and alluvium deposited by the numerous watercourses that drain the eastern slopes of the Inner Coast Range and western slopes of the Sierra Nevada. Legless lizards have not been found in the Santa Lucia Range of Monterey and San Luis Obispo counties, but whether this reflects the geology (Franciscan Complex) and subsequent isolation of this landform during the Pliocene, or is an artifact, is unknown at this time. The first record of this species from Inyo County is from Nine Mile Canyon on the desert slope of the Sierra Nevada (R. Hansen, pers. comm.). Other records delimiting the geographic range along the edge of the Mojave Desert include the eastern slopes of the Scodie, Piute, and Tehachapi ranges in Kern County. Legless lizards range widely across high elevation joshua tree-juniper woodlands in the western limits of the Mojave Desert (e.g., Antelope Valley, desert slopes of the San Gabriel Mountains and San Bernardino Mountains, San Gorgonio Pass, Little San Bernardino Mountains), but their range in southern Riverside and eastern San Diego counties coincides closely with the Peninsular Range/Sonoran Desert contact zone (e.g., San Jacinto Mountains, Santa Rosa Mountains, and western Anza Borrego State Park). Stebbins (1966a) mapped *Anniella pulchra pulchra* as occurring east of the Sierra San Pedro Martir in Baja California Norte, Mexico, to the Gulf of California. This range extension apparently originated from a misinterpretation of the localities "San Jose", and "San Salado River Canon, Lower California", as reported by Meek (1905) and later by Van Denburgh (1922) and Klauber (1932), and "near San Felipe", as reported by Gorman (1957). Bury (1983) demonstrated that all of these localities have Pacific Coast analogues at approximately the same latitude, well within the known range of this species. Specimens from the first 2 localities were collected by Edmund Heller in the late 1800's and deposited at the Field Museum of Natural History (Nos. 1077–1078), but these have been lost. The San Diego Natural History Museum has multiple specimens from the latter locality.

• **ETYMOLOGY**. The name *pulchra* is the feminine declension of the Latin adjective 'pulcher', meaning beautiful, probably referring to the smooth, shiny scalation and bright dorsal and ventral colors of the nominate taxon. The name *nigra* is the feminine declension of the Latin noun 'niger', meaning black, referring to the dorsal color of the melanistic populations found on and around the Monterey Peninsula in Monterey County, California.

• **COMMENT**. The taxon currently known as *Anniella pulchra* is composed of at least two potential species-level clades whose geographic distributions do not conform to the boundaries of the currently recognized "subspecies". These clades differ in chromosome number (Bezy and Wright 1971, Bezy et al. 1977), allozymes (Rainey 1984), morphology (Hunt 1984), and mitochondrial DNA sequences (Pearse and Pogson 2000). The "subspecies" *nigra*, was described on the basis of the dark dorsal coloration and relatively shorter tail found in populations of lizards inhabiting coastal dunes fringing the Monterey Pe-

ninsula and southeastern edge of Monterey Bay in Monterey County, California (Cope 1900, Van Denburgh 1905, Grinnell and Camp 1917). Miller (1943, 1944) described "intergrades" between *pulchra* and *nigra* in the vicinity of the Monterey Bay north of the Salinas River. However, morphological characters used to define these "subspecies" overlap substantially, and the melanistic dorsal color characteristic of *nigra* also is found in populations from coastal and interior dunes in the Santa Maria and Los Angeles basins (Grinnell and Camp 1917, Hunt 1984; Figure 3). These northern and southern melanistic populations do not form monophyletic groups with the Monterey Peninsula dark morphs (Pearse and Pogson 2000), and differ in chromosome number (Bezy et al. 1977). Melanism may be an adaptation that allows lizards to thermoregulate more efficiently in cool, fog-shrouded coastal habitats (Grinnell and Camp 1917, Miller 1943, 1944, Bury 1985, Pearse and Pogson 2000, Rosenblum et al. 2004), but melanism is not pervasive in coastal populations of this lizard (Hunt 1984). Ongoing mitochondrial DNA analyses (J. Parham and T. Papenfuss, pers. comm.) will likely reveal multiple species-level clades whose phylogeography is closely linked to central and southern California landform evolution on a scale similar to the pattern of differentiation displayed by *Batrachoseps* salamanders (Yanev 1980, Jockusch and Wake 2002).

1. *Anniella pulchra pulchra* Gray
Silvery Legless Lizard

Anniella pulchra Gray 1852. See species synonymy.
Anniella pulchra var. *pulchra*: Cope 1900:675.
Anniella texana: Grinnell and Camp 1917:170.
Anniella pulchra pulchra: Grinnell and Camp 1917: 170. First use of trinomial.
Anniella nigra argentea Hunt 1983:86.

• **DEFINITION**. Maximum SVL 170 mm, maximum tail length 103 mm, tail length 32%–42% of total length, 86–130 scales along dorsal midline of tail, 24–32 scale rows around mid-body, 16–20 scale rows around anterior portion of tail, 4–8 scale rows between vertebral stripe and first lateral stripe, 1–3 lateral stripes present along sides of body between scale rows, preanal scales usually tipped with brown or black against a more or less clear yellow or whitish-yellow ventral surface. Adult dorsal color varies widely between populations, ranging from dark brownish black, tan, beige, olive-grey, copper, to metallic silver. The ventral surface varies from whitish-yellow to bright lemon yellow and is typically unpatterned, but throat and ventral surfaces are heavily pigmented with brownish-grey in southern Sierra Nevada and Tehachapi Mountain populations. A black or brown vertebral stripe, which may be faint or distinct, is typically present. Lateral stripes coalesce on the sides of the head to form an eyestripe in some populations.

2. *Anniella pulchra nigra* Fischer
Black Legless Lizard

Anniella nigra Fischer 1885:9. Type-locality, "S. Diego in California" restricted by Schmidt (1953) to "vicinity of Pacific Grove, Monterey County, California." Holotype, British Museum (Natural History) (BMNH) 86.5.15.41, adult male, collected by J. Behrens, date of collection unknown (examined by author).
Anniella texana Boulenger 1887:52. See species synonymy.
Anniella pulchra var. *nigra*: Cope 1900:675.
Anniella pulchra nigra: Grinnell and Camp 1917:170. First use of trinomial.
Anniella nigra nigra Hunt 1983:85.

• **DEFINITION**. Maximum SVL 159 mm, maximum tail length 84 mm, tail length 26%–37% of total length, 80–94 scales along vertebral line of tail, 28–34 scale rows around mid-body, 18 scale rows around anterior portion of tail, 4–5 scale rows between the vertebral stripe (when visible) and first lateral line (when visible). The preanal scales are usually tipped with brown or black against a clear yellow ventral surface. Adult dorsal coloration chocolate brown to jet-black. The juvenile dorsal coloration is olive-grey, beige, tan, or light brown, and darkens with age. Ventral color is pale yellow to bright chrome yellow, and the ventral surface is typically immaculate. A vertebral stripe is visible in brownish individuals, not visible in jet-black individuals.

• **ACKNOWLEDGMENTS**. I thank R. Hansen, R. Fisher, J. Lemm, and T. Papenfuss for sharing locality records, T. Olson for accessing locality records in the California Natural Diversity Data Base, P. Collins for providing access to the library and resources at the Santa Barbara Museum of Natural History, K. Adler and S. Sweet for reviewing the manuscript, and A.H. Price for bibliographic assistance.

LITERATURE CITED

ABA Consultants and L.A. Kuhnz. 2000. Moss Landing Marine Laboratories earthquake reconstruction project: California Legless Lizard relocation project, Phase II report. Capitola, California.
– and S.B. Ruth. 1998. Moss Landing Marine Laboratories earthquake reconstruction project: California Legless Lizard relocation project, Phase I report. Capitola, California.
Adamson, M.L. 1981. *Parapharyngodon osteopili* n. sp. (Pharyngodonidae: Oxyuroidea) and a revision of *Parapharyngodon* and *Thelandros*. Syst. Parasitol. 3:105–117.
Anonymous. 1982. *Anniella pulchra*, pl. 141. *In* S.P. Parker (ed.), Synopsis and classification of living organisms, Vol. 2. McGraw-Hill Book Co., New York.
–. 2005. Silvery Legless Lizard (*Anniella pulchra pulchra*). Species accounts ◊ Reptiles. East Contra Costa County HCP/NCCP.
Baird, S.F. and C. Girard. 1853. List of reptiles collected in California by Dr. John L. Leconte, with description of new species. Proc. Acad. Nat. Sci.

Philadelphia 1853:300–302.
Baker, M.R. 1987. Synopsis of the Nematoda parasitic in amphibians and reptiles. Mem. Univ. Newfoundland, Occ. Pap. Biol. (11):1–325 p.
Ballinger, R.E., L.E. Brown, W.W. Tanner, R.C. Stebbins, J.B. Iverson, and D. Chiszar. 1992. Comments on the proposed designation of a neotype for *Anniella pulchra* Gray, 1852 (Reptilia, Squamata). Bull. Zool. Nomen. 49:155–156.
Banks, R.C., R.W. McDiarmid, and A.L. Gardner (eds.). 1987. Checklist of vertebrates of the United States, the U.S. Territories, and Canada. USDI, Fish Wildl. Serv., Res. Publ. (166):ii + 79 p.
Banta, B.H. and D. Morafka. 1966. An annotated check list of the recent amphibians and reptiles inhabiting the city and county of San Francisco, California. Wasmann J. Biol. 24:223–238.
– and –. 1968. An annotated check list of the recent amphibians and reptiles of Pinnacles National Monument and Bear Valley, San Benito and Monterey counties, California, with some ecological observations. Wasmann J. Biol. 26:161–183.
Barrett, K., D.A. Wait, and W.B. Anderson. 2003. Small island biogeography in the Gulf of California: lizards, the subsidized island biogeography hypothesis, and the small island effect. J. Biogeogr. 30:1575–1581.
Bassett, L.W. 1953. The microanatomy of the adrenal glands of the limbless lizard *Anniella pulchra* Gray. M.S. Thesis, Univ. California, Los Angeles.
Behler, J.L. and F.W. King. 1979. The Audubon Society Field Guide to North American Reptiles and Amphibians. A.A. Knopf, New York.
Bell, C.J. and J.K. Bowden. 1995. Natural history notes. *Diadophis punctatus modestus* (San Bernardino Ringneck Snake). Diet. Herpetol. Rev. 26: 38.
Bernard, S.R. and K.F. Brown, 1977. Distribution of mammals, reptiles, and amphibians by BLM physiographic regions and A.W. Kuchler's associations for the eleven western states. USDI, BLM Tech. Note (301):viii + 169 p., 1 map.
Bertolotto, C.E.V., K.C.M. Pellegrino, and Y. Yonenaga-Yassuda. 2004. Occurrence of B chromosomes in lizards: a review. Cytog. Genome Res. 106:243–246.
Bettelheim, M.P. 2005. The California Legless Lizard (*Anniella pulchra*) and the Baja California Legless Lizard (*Anniella geronimensis*): a natural history of the species. Nature Booklets Volunteer Project, Walnut Creek, California.
–. 2006. The contemporary value of historical herpetological illustrations. Bibliotheca Herpetol. 6:6–16.
– and C.H. Thayer. 2006. Natural history notes. *Anniella pulchra pulchra* (Silvery Legless Lizard). Habitat. Herpetol. Rev. 37:217–218.
Bezy, R.L. and J.W. Wright. 1971. Karyotypic variation and relationships of the California Legless Lizard *Anniella pulchra* Gray (Reptilia: Anniellidae). Herpetol. Rev. 3:71–72.
Block, W.M. and M.L. Morrison. 1998. Habitat relationships of amphibians and reptiles in California oak woodlands. J. Herpetol. 32:51–60.
– and –. 2005. Influence of scale on the management of wildlife in California oak woodlands, p. 96–104. *In* S.J. Frankel, P.J. Shea, and M.I. Haverty (tech. coord.), Proceedings of the Sudden Oak Death Second Science Symposium: the State of our Knowledge. USDA For. Serv. Pacific Southwest Res. Sta., Gen. Tech. Rep. PSW-GTR-196).
–, –, and P.E. Scott. 1998. Development and evaluation of habitat models for herpetofauna and small mammals. For. Sci. 44:430–437.
–, –, J.C. Slaymaker, and G. Jongejan. 1988. Design considerations for the study of amphibians, reptiles, and small mammals in California's Oak Woodlands: temporal and spatial patters, p. 247–253. *In* R.C. Szaro, K.E. Severson, and D.R. Patton (Tech. Coord.), Management of amphibians, reptiles, and small mammals in North America: proceedings of the symposium. USDA For. Serv. Gen. Tech. Rep. (RM-166):[vi] + 458 p.
Bogert, C.M. 1930. An annotated list of the amphibians and reptiles of Los Angeles County, California Bull. So. California Acad. Sci. 29:3–14.
– and R.B. Cowles. 1947. Results of the Archbold Expeditions. No. 58. Moisture loss in relation to habitat selection in some Floridian reptiles. Amer. Mus. Novitates (1358):1–34.
Bostic, D.L. 1975. A Natural History Guide to the Pacific Coast of North Central Baja California and Adjacent Islands. Biological Educational Expeditions, Vista, California.
Boulenger, G.A. 1885. Catalogue of the Lizards in the British Museum (Natural History). 2nd ed., Vol. 2. Trustees of the British Museum (Nat. Hist.), London.
–. 1887. Descriptions of new reptiles and batrachians in the British Museum (Natural History). - Part III. Ann. Mag. Nat. Hist., ser. 5, 20:50–53.
Brandes, K. (ed.). 1974. Vanishing Species. Time-Life Books, New York.
Brattstrom, B.H. 1965. Body temperatures of reptiles. Amer. Midl. Nat. 73:376–422.
Brehme, C.S. 2003. Responses of small terrestrial vertebrates to roads in a coastal sage scrub ecosystem. M.S. Thesis, San Diego St. Univ.
Breininger, D.R. 1989. Review of Wildlife Resources of Vandenberg Air Force Base, California. NASA Tech. Memo. (TM 102146): iii + 64 p.
Brode, J.M. and R.B. Bury. 1984. The importance of riparian systems to amphibians and reptiles, p. 30–36. *In* Warner, R.E. and K.M. Hendrix (eds.), California Riparian Systems: Ecology, Conservation, and Productive Management. Univ. California Press, Berkeley.
Burg, R. 2007. Santa Susana Pass State Historic Park Natural Resource Inventory. California St. Parks, So. Serv. Center, San Diego.
Burt, C.E. 1931. An interpretation of certain experimental and observational data on the limbless lizard, *Anniella pulchra* Gray. Copeia 1931:105–106.
–. 1935. A key to the lizards of the United States and Canada. Trans. Kansas Acad. Sci. 38:255–305.

Bury, R.B. 1972. Status report on California's threatened amphibians and reptiles. Resource Agency California, Inland Fisheries Admin. Rep. (72–2): 1–31.
–. 1983. Geographic distribution: *Anniella nigra argentea* Silvery Legless Lizard. Herpetol. Rev. 14: 83–84.
–. 1985. *Anniella pulchra nigra* Fischer, Black Legless Lizard (Anniellidae: Sauria) in central California. Final Rep., U.S. Fish Wildl. Serv., Office Endangered Species, Portland, Oregon.
–. 2006. Natural history, field ecology, conservation biology and wildlife management: time to connect the dots. Herpetol. Conserv. Biol. 1:56–61.
– and T.G. Balgooyen. 1976. Temperature selectivity in the Legless Lizard, *Anniella pulchra*. Copeia 1976:152–155.
California Department of Fish and Game. 2006. Special Animals. State of California, Resources Agency, California Nat. Diversity Database.
California Department of Parks and Recreation. 2004. Fort Ord Dunes State Park: preliminary general plan and draft environmental impact report. California Dept. Parks Rec., Sacramento.
Calsbeek, R., J.N. Thompson, and J.E. Richardson. 2003. Patterns of molecular evolution and diversification in a biodiversity hotspot: the California Floristic Province. Mol. Ecol. 12:1021–1029.
Center for Biological Diversity. 2002. A Conservation Alternative for the Management of the Four Southern California National Forests: Los Padres, Angeles, San Bernardino, Cleveland.
Chew, R.M. 1961. Water metabolism of desert-inhabiting vertebrates. Biol. Rev. 36:1–31.
City of Lompoc. 2004. Riverbend Park and Trail Draft Master Plan and EIR, December 2004, Vol. 1. Lompoc, California.
Cochran, D.M. and C.J. Goin. 1970. The New Field Book of Reptiles and Amphibians. G.P. Putnam's Sons, New York.
Coe, W.R. and B.W. Kunkel. 1904. The reproductive organs of the limbless lizard *Anniella*. Am. Nat. 38:487–490.
– and –. 1905. The female urogenital organs of the limbless lizard *Anniella*. Anat. Anz. 26:219–222.
– and –. 1906. Studies on the California Legless Lizard, *Anniella*. Trans. Connecticut Acad. Arts Sci. 12:349–403, pl. XLI–XLVIII.
Collins, J.T. 1990. Standard Common and Current Scientific Names for North American Amphibians and Reptiles. SSAR Herpetol. Circ. (19):iii + 41 p.
– and T.W. Taggart. 2002. Standard Common and Current Scientific Names for North American Amphibians, Turtles, Reptiles, and Crocodilians, 5th ed. Center North Amer. Herpetol., Lawrence, Kansas.
Conroy, C.J., R.W. Bryson, Jr., D. Lazcano, and A. Knight. 2005. Phylogenetic placement of the Pygmy Alligator Lizard based on mitochondrial DNA. J. Herpetol. 39:142–147.
Cook, L.H. 1930. Notes on an *Arizona elegans occidentalis* Blanchard. Copeia 1930:158.
Cooper, W.S. 1967. Coastal Dunes of California. Geol. Soc. Amer. Mem. (104):xi + 131 p.
Cope, E.D. 1875. Check-list of North American Batrachia and Reptilia, with a systematic list of the higher groups and an essay on geographic distribution. Based on the specimens contained in the U.S. National Museum. Bull. U.S. Natl. Mus. (1): 1–104.
–. 1883 [1884]. Notes on the geographical distribution of Batrachia and Reptilia in western North America. Proc. Acad. Nat. Sci. Philadelphia 1883:10–35.
–. 1896. The geographic distribution of Batrachia and Reptilia in North America (continued). Am. Nat. 30:1003–1026.
–. 1900. The Crocodilians, Lizards, and Snakes of North America. Ann. Rep. U.S. Natl. Mus. 1898: 153–1270 + 36 pl.
Cornett, J.W. 1979. Geographic distribution: *Anniella pulchra* (California Legless Lizard). Herpetol. Rev. 10:118.
Court, D., J. Glatzer, S. Hard, K. Keith, J. McDonald, and F. Ogushi. 2000. Prioritizing sites along the Santa Clara River for conservation of threatened and endangered species. Joint M.S. Thesis, Univ. California - Santa Clara.
Crawford, B.W. 1958. Two new California locality records for *Arizona elegans occidentalis*. Herpetologica 14:183.
Crawford, Multari & Clark Associates. 2004. Los Osos Habitat Conservation Plan species accounts, appendix D. multiple pp. San Luis Obispo, California.
Crother, B.I., J. Boundy, J.A. Campbell, K. de Quieroz, D.R. Frost, R. Highton, J.B. Iverson, P.A. Meylan, T.W. Reeder, M.E. Seidel, J.W. Sites, Jr., T.W. Taggart, S.G. Tilley, and D.B. Wake. 2000. Scientific and standard English names of amphibians and reptiles of North America north of Mexico, with comments regarding confidence in our understanding. SSAR Herpetol. Circ. (29):iii + 82 p.
–, –, –, –, –, D.M. Green, R. Highton, J.B. Iverson, R.W. McDiarmid, P.A. Meylan, T.W. Reeder, M.E. Seidel, J.W. Sites, Jr., S.G. Tilley, and D.B. Wake. 2003. Scientific and standard English names of amphibians and reptiles of North America north of Mexico: update. Herpetol. Rev. 34:196–203.
Cunningham, J.D. 1959. Notes on *Anniella*. Herpetologica 15:19–20.
Della Santa, E. 1956. Revision du genre *Oochoristica* Lühe (Cestodes). Rev. Suisse Zool. 63:1–113.
Denneen, B. 2002. Nipomo Dunes: a home to the threatened Snowy Plover. Wild. Rec. 27:12.
Ditmars, R.L. 1936. The Reptiles of North America: A Review of the Crocodilians, Lizards, Snakes, Turtles and Tortoises Inhabiting the United States and Northern Mexico. Doubleday, Doran and Co., Inc., Garden City, New York.
Dixon, J.R. 1967. Amphibians and reptiles of Los Angeles County California. Los Angeles Co. Mus. Sci. Ser. 23, Zool., (10):1–63.
Dudek and Assoc. 2003. Western Riverside County Multiple Species Habitat Conservation Plan

(MSHCP). Riverside Co. Trans. Land Manag. Agency, Riverside, California.
Duellman, W.E. 1982. Reptilia, p. 955–966. *In* S. Parker (ed.), Synopsis and classification of living organisms. Vol. 2. McGraw-Hill Book Co., New York.
Dufaure, J.-P. and H. Saint Girons. 1984. Histologie comparee de l'epididyme et de ses secretions chez les reptiles (Lezards et serpents). Arch. Anat. Microsc. 73(1):15–26.
Dugas, B., C. Boudreau, J. McGarry, and B. Samayoa. 2001. Habitat management plan for species enrichment of Lower Brizziolari Creek, San Luis Obispo, California. Senior Thesis Wildl. Manag., California Poly. St. Univ., San Luis Obispo.
Duméril, M.A., M. Bocourt, and M. Mocquard. 1870–1909. Étude sur les Reptiles. Mission Scientifique au Mexique et dans l'Amérique Centrale. Recherches Zoologiques. Troisième Partie – 1re Section. Impr. Nat., Paris.
East Bay Regional Park District. 2007. Las Virgenes Creek Watershed Plan. Planning/Stewardship/GIS Serv. Dept., Oakland, California.
Eddy, R.D. 1906. The brain of *Anniella pulchra*. Anat. Anz. 29:634–638.
Edwards, C.L. 1929. Lizards. Los Angeles City School Dist., School Publ. (176):1–29.
Edwards, S.R. and G.R. Pisani (eds.). 1976. Endangered and threatened amphibians and reptiles in the United States. SSAR Herpetol. Circ. (5):v + 65 p.
Fischer, J.G. 1885. Ueber eine neue Art der Gattung *Anniella* Gray. *Anniella nigra* sp. n. aus Kalifornien. Abh. Naturwiss. Ver. Hamburg 9:9–10.
Fisher, E.M. 1934. Color in *Anniella nigra* Fischer. Copeia 1934:47–49.
Fisher, R.N. and T.J. Case. 2000. Distribution of the herpetofauna of coastal southern California with reference to elevation effects, p. 137–143. *In* Keeley, J.E., M. Baer-Keeley, and C.J. Fotheringham (eds.), 2nd Interface between Ecology and Land Development in California. U.S. Geol. Surv. Open-File Rep. (00–62).
Fisher, W.K. 1901. Shrike notes. Condor 4:48.
Fitch, H.S. 1970. Reproductive cycles in lizards and snakes. Misc. Publ. Mus. Nat. Hist. Univ. Kansas (52):1–247.
–. 1981. Sexual size differences in reptiles. Misc. Publ. Mus. Nat. Hist. Univ. Kansas. (70):1–72.
Flores-Villela, O.A. 1993. Herpetofauna Mexicana: annotated list of the species of amphibians and reptiles of Mexico, recent taxonomic changes, and new species. Carnegie Mus. Nat. Hist. Spec. Publ. (17):iv + 73 p.
Frank, N. and E. Ramus. 1995. A complete guide to scientific and common names of reptiles and amphibians of the world. N G Publ., Inc., Pottsville, Pennsylvania.
Fusari, M.H. 1982. The oxygen consumption and water balance of the California Legless Lizard, *Anniella pulchra*. Ph.D. Diss., Univ. California, Los Angeles.
–. 1983. The water balance of the California Legless Lizard, *Anniella*. Amer. Zool. 23:917 (abstract).
–. 1984. Temperature responses of standard, aerobic metabolism by the California Legless Lizard, *Anniella pulchra*. Comp. Biochem. Physiol. 77A: 97–101.
–. 1985. Drinking of soil water by the California Legless Lizard, *Anniella pulchra*. Copeia 1985:981–986.
–. 1997. Ft. Ord's Black Legless Lizard (*Anniella pulchra nigra*). NRS Transect 15(1):7.
Gander, F.F. 1931. Observations on an alligator lizard. Copeia 1931:14–15.
Gans, C. 1975. Reptiles of the World. Ridge Press/Bantam Books, Toronto, Canada.
–, W.K. Morgan, and E.S. Allen. 1992. Surface locomotion of the elongate and limbless lizard *Anniella pulchra* (Anguidae). Herpetologica 48:246–262.
Garman, S. 1884. The North American reptiles and batrachians. A list of the species occurring north of the Isthmus of Tehuantepec, with references. Bull. Essex Inst. 16:1–46.
Germano, D.J. and D.J. Morafka. 1996. Diurnal aboveground activity by the fossorial Silvery Legless Lizard, *Anniella pulchra*. Great Basin Nat. 56: 379–380.
Gevirtz, E., M. Carroll, K. Burton, P. Collins, M. Holmgren, L. Spanne, and A. Nelson. 2007. Final land management plan Burton Mesa Ecological Reserve. Condor Env. Plan. Serv., Inc., Santa Barbara, California.
Glaser, H.R.S. 1970. The distribution of amphibians and reptiles in Riverside County, California. Nat. Hist. Ser. Riverside Mus. (1):1–40.
Goldberg, S.R. and C.M. Miller. 1985. Reproduction of the Silvery Legless Lizard, *Anniella pulchra pulchra* (Anniellidae), in southern California. Southwest. Nat. 30:617–619.
Gorman, G.C. 1973. The chromosomes of the Reptilia, a cytotaxonomic interpretation, p. 347–424. *In* A.B. Chiarelli and E. Capanna (eds.), Cytotaxonomy and Vertebrate Evolution. Academic Press, New York.
– and J. Renzi, Jr. 1979. Genetic distance and heterozygosity estimates in electrophoretic studies: effects of sample size. Copeia 1979:242–249.
–, A.C. Wilson, and M. Nakanishi. 1971. A biochemical approach towards the study of reptilian phylogeny: evolution of serum albumin and lactic dehydrogenase. Syst. Zool. 20:167–185.
Gorman, J. 1957. Recent collections of the California Limbless Lizard *Anniella pulchra*. Copeia 1957: 148–150.
Graber, D.M. 1996. Status of terrestrial vertebrates, p. 709–734. *In* Sierra Nevada Ecosystem Project, Final Report to Congress, vol. II. Assessments and Scientific Basis for Management Options. Cent. Water Wildl. Res., Univ. California, Davis.
Gray, J.E. 1852. Descriptions of several new genera of reptiles, principally from the collection of H.M.S. Herald. Ann. Mag. Nat. Hist., Ser. 2, 10: 437–440.
Greene, H.W. 1973. The Food Habits and Feeding

Behavior of New World Coral Snakes. M.A. Thesis, Univ. Texas - Arlington.
Gregory, P.T. 1980. Physical factor selectivity in the fossorial lizard, *Anguis fragilis*. J. Herpetol. 14: 95–99.
Grinnell, J. and C.L. Camp. 1917. A distributional list of the amphibians and reptiles of California. Univ. California Publ. Zool. 17:127–208.
– and H.W. Grinnell. 1907. Reptiles of Los Angeles County, California. Throop Inst. Bull. Sci. Ser. (1):1–64.
Grismer, L.L. 1993. The insular herpetofauna of the Pacific Coast of Baja California, Mexico. Herpetol. Nat. Hist. 1:1–10.
–. 1994a. The origin and evolution of the peninsular herpetofauna of Baja California, Mexico. Herpetol. Nat. Hist. 2:51–106.
–. 1994b. Ecogeography of the peninsular herpetofauna of Baja California, Mexico and its utility in historical biogeography, p. 89–125. *In* P.R. Brown and J.W. Wright (eds.), Herpetology of the North American Deserts. Southwest. Herpetol. Soc. Spec. Publ. (5), Van Nuys, California.
–. 1994c. The evolutionary and ecological biogeography of the herpetofauna of Baja California and the Sea of Cortes, Mexico. Ph.D. Diss., Loma Linda Univ., Loma Linda, California.
–. 2001. An evolutionary classification and checklist of amphibians and reptiles on the Pacific islands of Baja California, Mexico. Bull. So. California Acad. Sci. 100:12–23.
–. 2002. Amphibians and Reptiles of Baja California, Including its Pacific Islands and the Islands in the Sea of Cortés. Univ. California Press, Berkeley.
– and E. Mellink. 2005. Historical and ecological biogeography of the terrestrial herpetofauna of northern Baja California, p. 167–178. *In* Cartron, J.-L.E., G. Ceballos, and R.S. Felger (eds.), Biodiversity, Ecosystems, and Conservation in Northern Mexico. Oxford Univ. Press, Cambridge, United Kingdom.
Groombridge, B. 1983. World checklist of threatened amphibians and reptiles. Wildlife Advisory Branch, Nature Conservancy Council, London.
Gundy, G.C. and G.Z. Wurst. 1976. Parietal eye-pineal morphology in lizards and its physiological implications. Anat. Rec. 185:419–432.
Gutberlet, R.L. 2003. Alligator lizards, galliwasps, glass lizards, and relatives (Anguidae), 339–345. *In* M. Hutchins, J.B. Murphy, and N. Schlager (eds.), Grzimek's Animal Life Encuclopedia, 2nd Ed., Vol. 7. Gale Group, Farmington Hills, Michigan.
Guttman, S.I. 1971. An electrophoretic analysis of the hemoglobins of Old and New World lizards. J. Herpetol. 5:11–16.
Hamilton, D.W. 1964. The inner ear of lizards. I. Gross structure. J. Morphol. 115:255–271.
Hanley, G.H. 1943. Terrarium notes on Californian reptiles. Copeia 1943:145–147.
Hathaway, S.A. 2000. An exploratory analysis of the biogeographic distribution of herpetofauna (reptiles and amphibians) and environmental variation in San Diego County using museum records and survey data. M.A. Thesis, San Diego St. Univ., San Diego, California.
Henson, P. and D.J. Usner. 1993. The Natural History of Big Sur. Univ. California Press, Berkeley.
Hill, H.R. 1948. Amphibians and reptiles of Los Angeles County. Los Angeles Co. Mus. Sci., Ser. Zool. (5):3–30.
Hole, R.B. Jr. 1990. An annotated checklist of the amphibians and reptiles of San Luis Obispo County, California. Unpubl. Rept., Dept. Biol. Sci., California Polytechnic St. Univ., San Luis Obispo.
Honegger, R.E. (ed.). 1979. IUCN Red Data Book, Vol. 3: Amphibia/Reptilia. 3rd ed. IUCN, Morges, Switzerland.
Hunsaker, D., II and C. Johnson. 1959. Internal pigmentation and ultraviolet transmission of the integument in amphibians and reptiles. Copeia 1959: 311–315.
Hunt, L.E. 1983. A nomenclatural rearrangement of the genus *Anniella* (Sauria: Anniellidae). Copeia 1983:79–89.
–. 1984. Morphological variation in the fossorial lizard *Anniella*. M.S. Thesis, Univ. Kansas, Lawrence.
–. 1997. Geostatistical modeling of species distributions, implications for ecological and biogeographical studies, p. 427–438 *In* A.O. Soares, J. Gómez-Hernández, and R. Froidevaux (eds.), Geostatistics for Environmental Applications. Kluwer Academic Publ., Boston, Massachusetts.
– and M. Zander. 1997. Status of the Black Legless Lizard (*Anniella pulchra nigra*) on the City of Marina lands, Monterey County, California. City of Marina Planning Dept., Marina, California
Hunsaker, D., II and C. Johnson. 1959. Internal pigmentation and ultraviolet transmission of the integument in amphibians and reptiles. Copeia 1959: 311–315.
Hutchins, M., J.B. Murphy, and N. Schlager (eds.). 2003. Grzimek's Animal Life Encyclopedia, 2nd ed. Vol. 7, Reptiles. Gale Group, Farmington Hills, Michigan.
International Commission on Zoological Nomenclature 1993. Opinion 1735. *Anniella pulchra* Gray, 1852 (Reptilia, Squamata): neotype designated. Bull. Zool. Nomen. 50:186–187.
Jennings, M.R. 2004. An annotated check list of the amphibians and reptiles of California and adjacent waters. 3rd, revised ed. California Fish and Game 90:161–213.
– and M.P. Hayes. 1994. Amphibian and reptile species of special concern in California. California Dept. Fish Game Final Rep. Contr. (8023):iii + 255 p.
–, R.G. Sprackland, H. Griffith, and R.G. Zweifel. 1992. Comments on the proposed conservation of the specific name of *Anniella pulchra* Gray, 1852 and designation of a neotype (Reptilia, Squamata) (Case 2552). Bull. Zool. Nomen. 49: 234–235.
Jockusch, E.L. and D.B. Wake. 2002. Falling apart and merging: diversification of slender salamanders (Plethodontidae: *Batrachoseps*) in the Amer-

ican West. Biol. J. Linn. Soc. 76:361–391.
Johnson, D.L. 1978. The origin of island mammoths and the Quaternary land bridge history of the northern Channel Islands, California. Quatern. Res. 10:204–225.
Jones & Stokes. 2006. East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan. Prep. for E. Costra Costa Co. HCP Assoc.
Kamel, S. and R.E. Gatten, Jr. 1983. Aerobic and anaerobic activity metabolism of limbless and fossorial reptiles. Physiol. Zool. 56:419–429.
Kavanau, J.L. and K.S. Norris. 1961. Behavior studies by capacitance sensing. Science 134:730–732.
Klauber, L.M. 1924. Notes on the distribution of snakes in San Diego County, California. Bull. Zool. Soc. San Diego 1:1–23.
–. 1929. Range extensions in California. Copeia (170):15–22.
–. 1932. Notes on the Silvery Footless Lizard, *Anniella pulchra*. Copeia 1932:4–6.
–. 1934. Annotated list of the amphibians and reptiles of the southern border of California. Bull. Zool. Soc. San Diego 11:1–28.
–. 1939. Studies of reptile life in the arid Southwest. Part III. Notes on some lizards of the southwestern United States. Bull. Zool. Soc. San Diego 14: 80–100.
–. 1940. Notes from a herpetological diary, II. Copeia 1940:15–18.
Kuhns, W.A., Jr. 1961. A new food item for *Hypsiglena torquata nuchalata* Tanner. J. Ohio Herpetol. Soc. 3:16.
Kuhnz, L.A. 2000a. Microhabitats and home range of the California Legless Lizard using biotelemetry. M.S. Thesis, California St. Univ., San Jose.
–. 2000b. Passive integrated transponders as a method for relocating legless lizards in underground habitats, p. 509–516. *In* J.H. Eiler, D.J. Alcorn, and M.R. Neuman (eds.), Biotelemetry 15: Proc. 15th Intl. Symp. Biotelemetry, Juneau, Alaska.
–, R.K. Burton, P.N. Slattery, and J.M. Oakden. 2005. Microhabitats and population densities of California Legless Lizards, with comments on effectiveness of various techniques for estimating numbers of fossorial reptiles. J. Herpetol. 39:395–402.
Lawrence, G.E. 1966. Ecology of vertebrate animals in relation to chaparral fire in the Sierra Nevada foothills. Ecology 47:278–291.
Leviton, A.E. n.d. Reptiles and amphibians of North America. Doubleday, New York.
Liner, E.A. 1994. Scientific and common names for the amphibians and reptiles of Mexico in English and Spanish. Nombres científicos y comunes en Inglés y Español de los anfibios y reptiles de México. SSAR Herpetol. Circ. (23):v + 113 p.
–. 2007. A checklist of the amphibians and reptiles of México. Occ. Pap. Mus. Nat. Sci. Louisiana St. Univ. (80):1–60.
Linsdale, J.M. 1932. Amphibians and reptiles from Lower California. Univ. California Publ. Zool. 38: 345–386.
Loomis, R.B., S.G. Bennett, S.R. Sanborn, C.H. Barbour, and H. Wiener. 1974. A handlist of the herpetofauna of Baja California, Mexico and adjacent islands. Privately printed, California St. Univ., Long Beach.
Lowe, C.H., Jr. 1948. Effect of venom of *Micruroides* upon *Xantusia vigilis*. Herpetologica 4:136.
Matthey, R. 1931a. Chromosomes de sauriens: Helodermatidae, Varanidae, Xantusiidae, Anniellidae, Anguidae. Bull. Soc. Vaud. Sci. Nat. 57:269–270.
–. 1931b. Chromosomes de Reptiles Sauriens, Ophidiens, Cheloniens. L'evolution de la formule chromosomiale chez les Sauriens. Rev. Suisse Zool. 38:117–186
–. 1948. L'évolution de la formule chromosomiale chez les vertébrés. Experientia 1:78–86.
Mattison, C. 1989. Lizards of the World. Facts on File, New York.
McAllister, C.T., S.E. Trauth, and J.E. Ubelaker. 1985. *Oochoristica crotaphyti* n. sp. (Eucestoda: Linstowiidae) from *Crotaphytus collaris* (Lacertilia: Iguanidae) in northern Arkansas. J. Parasitol. 71: 803–807.
McPeak, R.H. 2000. Amphibians and Reptiles of Baja California. Sea Challengers, Monterey, California.
Meek, S.E. 1905. An annotated list of a collection of reptiles from southern California and northern Lower California. Zool. Ser. Field Mus. Nat. Hist. 7:1–19.
Miller, C.M. 1943. An intergradient population connecting *Anniella pulchra pulchra* and *Anniella pulchra nigra*. Copeia 1943:2–6.
–. 1944. Ecologic relations and adaptations of the limbless lizards of the genus *Anniella*. Ecol. Monogr. 14:271–289.
Morafka, D.J. and B.H. Banta. 1972. Herpetozoogeography of the Gabilan Range, San Benito and Monterey counties, California. Wasmann J. Biol. 30:197–240.
– and –. 1976. Ecological relationships of the recent herpetofauna of Pinnacles National Monument, Monterey and San Benito counties, California. Wasmann J. Biol. 34:304–324.
Morey, S.R. 1988. California Legless Lizard, *Anniella pulchra*, p. 176–177. *In* D.C. Zeiner, W.F. Laudenslayer, Jr., and K.E. Mayer (eds.), California's Wildlife, Vol. 1: Amphibians and reptiles. The Resource Agency, California Dept. Fish and Game, Sacramento, California.
–. 1998. Endangered and threatened wildlife and plants: withdrawal of proposed rule to list the Black Legless Lizard as endangered. Fed. Regis. 63:43129–43135.
Mosauer, W. 1932. Adaptive convergence in the sand reptiles of the Sahara and California: a study in structure and behavior. Copeia 1932:72–78.
–. 1935. The reptiles of a sand dune area and its surroundings in the Colorado Desert, California: a study in habitat preference. Ecology 16:13–27.
Mullen, D.A. 1989. Geographic distribution: *Anniella p. pulchra* (Silvery Legless Lizard). Herpetol. Rev. 20:12.
Murphy, R.W. 1983. Paleobiogeography and genetic

differentiation of the Baja California herpetofauna. Occ. Pap. California Acad. Sci. (137):1–48.
– and H.M. Smith. 1985. Conservation of the name *Anniella pulchra* for the California Legless Lizard. Herpetol. Rev. 16:68.
– and –. 1991. Case 2552. *Anniella pulchra* Gray, 1852 (Reptilia, Squamata): proposed designation of a neotype. Bull. Zool. Nomen. 48:316–318.
Murray, K.F. 1955. Herpetological collections from Baja California. Herpetologica 11:33–48.
Musgrave, M.E. 1930. A note on *Anniella nigra* Fischer. Copeia (173):95–96.
Natural Resources Defense Council, Friant Water Users Authority. 2002. Special-status plants and wildlife. San Joaquin River Restoration Study Final Background Report.
Nelson, E.W. 1922. Lower California and its natural resources. Mem. Natl. Acad. Sci. (16, 1st Mem.): 1–194, 35 pl., 1 map.
Olalla-Tárraga, M.Á., M.Á. Rodríguez, and B.A. Hawkins. 2006. Broad-scale patterns of body size in squamate reptiles of Europe and North America. J. Biogeogr. 33:781–793.
Oliver, J.A. 1959. The Natural History of North American Amphibians and Reptiles. D. Van Nostrand Co., Inc., Princeton, New Jersey.
Olmo, E. 2005. Rate of chromosome changes and speciation in reptiles. Genetica 125:185–203.
Owens, B.B. 2001. A protection and revitalization plan for Las Virgenes Creek. California St. Poly. Univ., Pomona.
Parker, K.C., A.J. Parker, and T.R. Vale. 2001. Vertebrate feeding guilds in California's Sierra Nevada: relations to environmental condition and change in spatial scale. An. Assoc. Amer. Geogr. 91:245–262
Peabody, F.E. and J.M. Savage. 1958. Evolution of a Coast Range corridor in California and its effect on the origin and dispersal of living amphibians and reptiles. Zoogeography (AAAS) 51:159–186.
Pearse, D.E. 1996. Long-term drift versus short-term adaptation: a phylogenetic analysis of the California Legless Lizard (*Anniella pulchra*) using mitochondrial DNA sequencing. M.S. Thesis, Univ. California, Santa Cruz.
– and G.H. Pogson. 2000. Parallel evolution of the melanic form of the California Legless Lizard, *Anniella pulchra*, inferred from mitochondrial DNA sequence variation. Evolution 54:1041–1046.
Peralta-García, A., A. Samaniego-Herrera, and J.H. Valdez-Villavicencio. 2007. Registros nuevos de reptiles en islas del noroeste de México. Acta Zool. Mex. (n.s.) 23:179–182.
Pianka, E.R. 1989. Desert lizard diversity: additional comments and some data. Am. Nat. 134:344–364.
– and L.J. Vitt. 2003. Lizards: Windows to the Evolution of Diversity. Univ. California Press, Berkeley.
Pickwell, G. 1947. Amphibians and Reptiles of the Pacific States. Stanford Univ. Press, Stanford, California.
Porter, K.R. 1972. Herpetology. W.B. Saunders Co., Philadelphia, Pennsylvania.
Pough, F.H. 1969. The morphology of undersand respiration in reptiles. Herpetologica 25:216–223.
Powell, R., J.T. Collins, and E.D. Hooper, Jr. 1998. A Key to Amphibians and Reptiles of the Continental United States and Canada. Univ. Press of Kansas, Lawrence.
Powers, A. 1974. Death-feigning behavior in *Anniella pulchra pulchra*. Kentucky Herpetol. 5:11–13.
Pregill, G.K. and J.E. Berriam. 1984. Type specimens of amphibians and reptiles in the San Diego Natural History Museum. Trans. San Diego Soc. Nat. Hist. 20:151–164.
Rainey, W.E. 1984. Genetic variation in *Anniella nigra*. Report to the U.S. Fish and Wildlife Service, Denver Wildlife Res. Ctr., Denver, Colorado.
Ramirez, M.G. 1995. Natural history of the spider genus *Lutica* (Araneae, Zodariidae). J. Arachnol. 23: 111–117.
Read, C.P. and Y.U. Amrein. 1952. Some new oxyurid nematodes from southern California. J. Parasitol. 38:379–384.
Richardson, J. 1852. Reptiles, Part 1, p. 143–156 + x–xi, errata, pls. 25-28. *In* E. Forbes (ed.), The Zoology of the Voyage of H.M.S. Herald, under the command of Captain Henry Kellett, R.N., C.B., during the years 1845–1851. Reeve and Co., London.
Rieppel, O. 1978. The braincase of *Anniella pulchra* Gray (Lacertilia: Anniellidae). Rev. Suisse Zool. 85:617–624.
–. 1981. The hyobranchial skeleton in some little known lizards and snakes. J. Herpetol. 15:433–440.
–, J. Gauthier, and J. Maisano. 2008. Comparative morphology of the dermal palate in squamate reptiles, with comments on phylogenetic implications. Zool. J. Linn. Soc. 152:131–152.
Rivers, J.J. 1902. Silvery Footless Lizard or snake. Bull. So. California Acad. Sci. 1:27.
Roberts, W.G., J.G. Howe, and J. Major. 1980. A survey of riparian forest flora and fauna in California, p. 3–19. *In* A. Sands (ed.), Riparian Forests in California: Their Ecology and Conservation. Inst. Ecol., Univ. California Davis, Publ. (15).
Rodriguez-Robles, J.A., D.A.Good, and D.B. Wake. 2003. Brief history of herpetology in the Museum of Vertebrate Zoology, University of California, Berkeley, with a list of type specimens of recent amphibians and reptiles. Univ. California Publ. Zool.(131):xv + 119 p.
–, D.G. Mulcahy, and H.W. Greene. 1999. Feeding ecology of the Desert Nightsnake, *Hypsiglena torquata* (Colubridae). Copeia 1999:93–100.
Rogers, D.L. C.I. Millar, and R.D. Westfall. 1996. Genetic diversity within species, p. 759–828. *In* Case, T.J., M.L. Cody, and E. Ezcurra (eds.), A New Island Biogeography of the Sea of Cortes. Sierra Nevada Ecosys. Proj., Final Rep. to Congr, vol. II, Assessments and scientific basis for management options. Centers for Water Wildland Res., Univ. California at Davis.
Rosenblum, E.B., H.E. Hoekstra, and M.W. Nachman. 2004. Adaptive reptile color variation and

the evolution of the *MC1R* gene. Evolution 58: 1794–1808.
Rutherford, C. and J. Rorabaugh. 1995. Endangered and threatened wildlife and plants: proposed rule to determine five plants and a lizard from Monterey County, California, as endangered or threatened. Fed. Regis. 60:39336–39337.
Sanders, R.M. 1950. A herpetological survey of Ventura County, California. M.S. Thesis, Stanford Univ., Stanford, California.
Savage, J.M. 1960. Evolution of a peninsular herpetofauna. Syst. Zool. 9:184–212.
–. 1967. Evolution of the insular herpetofaunas, p. 219–227. *In* R.N. Philbrick (ed.), Proceedings of the Symposium on the Biology of the California Islands. Santa Barbara Botanic Garden, Santa Barbara, California.
Schmidt, K.P. 1922. Scientific results of the expedition to the Gulf of California in charge of C.H. Townsend, by the U.S. Fisheries steamship 'Albatross' in 1911. Commander G.H. Burrage, U.S.N., Commanding. VIII. The amphibians and reptiles of lower California and the neighboring islands. Bull. Amer. Mus. Nat. Hist. 46:607–707, pl. XLVII–LVII.
–. 1953. A Check List of North American Amphibians and Reptiles. 6th ed. Amer. Soc. Ichthyol. Herpetol., Univ. Chicago Press, Chicago, Illinois.
–. 1954. Omissions from the Sixth Edition of the Check List of North American Amphibians and Reptiles. Copeia 1954:304–306.
Schoenherr, A.A. 1976. The herpetofauna of the San Gabriel Mountains, Los Angeles County, California including distribution and biogeography. Southwest. Herpetol. Soc. Spec. Publ. (1):1–95.
Schulte, J.A. II, J. Melville, and A. Larson. 2003. Molecular phylogenetic evidence for ancient divergence of lizard taxa on either side of Wallace's Line. Proc. R. Soc. Lond. B 270:597–603.
Senn, D.G. 1969. Über den Bau von Zwischen- und Mittelhirn von *Anniella pulchra* Gray. Acta Anat. 69:239–261.
Shaw, C.E. 1940. A new species of Legless Lizard from San Geronimo Island, Lower California, Mexico. Trans. San Diego Soc. Nat. Hist. 9:225–228.
–. 1950. The lizards of San Diego County with descriptions and key. Bull. Zool. Soc. San Diego (25):1–63.
–. 1953. *Anniella pulchra* and *A. geronimensis*: sympatric species. Herpetologica 8:167–170.
Slavens, F.L. and K. Slavens. 1998. Reptiles and Amphibians in Captivity: Breeding - Longevity, and Inventory, Current January 1, 1997. Slaveware, Seattle, Washington.
Slevin, J.R. 1934. A handbook of reptiles and amphibians of the Pacific States, including certain eastern species. Spec. Publ. California Acad. Sci.
Smith, H.M. 1946. Handbook of Lizards: Lizards of the United States and of Canada. Comstock Publ. Assoc., Ithaca, New York.
– and E.G. Brodie. 1982. Reptiles of North America: A Guide to Field Identification. Golden Press, New York.
–, D. Chiszar, and M.J. Frey. 1983. The terminology of amniote temporal vacuities. Trans. Kansas Acad. Sci. 86:48–54.
– and R.B. Smith. 1976. Synopsis of the Herpetofauna of Mexico. Source Analysis and Index for Mexican Reptiles. Vol. III. John Johnson, North Bennington, Vermont.
– and E.H. Taylor. 1950a. An annotated checklist and key to the reptiles of Mexico exclusive of the snakes. Bull. U.S. Natl. Mus. (199):v + 253 p.
– and –. 1950b. Type localities of Mexican reptiles and amphibians. Univ. Kansas Sci. Bull. 33:313–380.
Sprackland, R.G. 1995. California's legless lizards (genus *Anniella*). San Diego Herpetol. Soc. Newsl. 17(5):1–3
–. 1996. California's legless lizards. Reptile & Amphibian Magazine July-August 1996:119–123.
Stebbins, R.C. 1954. Amphibians and Reptiles of Western North America. McGraw-Hill Book Co., New York.
–. 1959. Reptiles and Amphibians of the San Francisco Bay Region. Univ. California Press, Berkeley.
–. 1966a. A Field Guide to Western Reptiles and Amphibians. Houghton Mifflin Co., Boston, Massachusetts.
–. 1966b. Reptiles and amphibians of the San Francisco Bay Region. California Nat. Hist. Guides (3): 1–71 p.
–. 1972. Amphibians and Reptiles of California. California Natural History Guides (31):1–152 p.
–. 2003. A Field Guide to Western Reptiles and Amphibians. 3rd ed. Houghton Mifflin Co., Boston Massachusetts.
Stejneger, L. and T. Barbour. 1943. A Check List of North American Amphi-bians and Reptiles. Fifth Ed. Bull. Mus. Comp. Zool. (93):xix + [1] + 260 p.
Stephens, F. 1921. An annotated list of the amphibians and reptiles of San Diego County, California. Trans. San Diego Soc. Nat. Hist. 3:57–69.
Stewart, G.R. and R.S. Daniel. 1973. Scanning electron microscopy of scales from different body regions of three lizard species. J. Morphol. 139: 377–388.
Stoops, E.D. and A. Wright. 1993. Snakes and other reptiles of the Southwest. 2nd. ed. Golden West Publ., Inc., Phoenix, Arizona.
Stunkard, H.W. and W.F. Lynch. 1944. A new anoplocephaline cestode, *Oochoristica anniellae*, from the California Limbless Lizard. Trans. Amer. Micros. Soc. 63:165–169.
Telford, S.R., Jr. 1965. Some *Thelandros* (Nematoda: Oxyuridae) from southern California lizards. Jap. J. Exp. Med. 35: 463–472
–. 1970. A comparative study of endoparasitism among some southern California lizard populations. Amer. Midl. Nat. 83:516–554.
Tempel, D.J., W.D. Tietje, and D.E. Winslow. 2005. Vegetation and small vertebrates of oak woodlands at low and high risk for Sudden Oak Death in San Luis Obispo County, California, p. 211–

232. *In* S.J. Frankel, P.J. Shea, and M.I. Haverty (tech. coord.), Proceedings of the Sudden Oak Death Second Science Symposium: the State of our Knowledge. USDA For. Serv. Pacific Southwest Res. Sta., Gen. Tech. Rep. PSW-GTR-196).

Thorne, J., D. Cameron, and V. Jigour. 2002. A Guide to Wildlands Conservation in the Central Coast Region of California. California Wilderness Coalition, Oakland.

Tietje, W.D. and J.K. Vreeland. 1997. The use of plywood coverboards to sample herpetofauna in a California oak woodland. Trans. West. Sec. Wildl. Soc. 33:67–74.

–, –, N.R. Siepel, and J.L. Dockter. 1997. Relative abundance and habitat associations of vertebrates in oak woodlands in coastal-central California, p. 391–399. *In* ?????, USDA For. Serv. Gen. Tech. Rep. PSW-GTR-160.

Toerien, M.J. 1950. The cranial morphology of the Californian lizard—*Anniella pulchra* Gray. So. Afr. J. Sci. 46:321–342.

Turner, F.B. 1977. The dynamics of populations of squamates, crocodilians and rhynchocephalians, p. 157–264. *In* C. Gans and D.W. Tinkle (eds.). Biology of the Reptilia, Vol. 7, Ecology and Behaviour A. Academic Press, New York.

U.S. Dept. Interior, Bur. Land Manag. 2007. Southern Diablo Mountain Range and central coast of California Resource Management Plan. Record of Decision. Hollister Field Off., Hollister, California.

United States Fish and Wildlife Service. 1995. Endangered and threatened wildlife and plants: proposed rule to determine five plants and a lizard from Monterey County, California, as endangered or threatened. Federal Register 50 CFR, Part 17, Vol. 60(148):39326–39337.

–. 1998. Endangered and threatened wildlife and plants: withdrawal of proposed rule to list the Black Legless Lizard as endangered. Federal Register 50 CFR, Pt. 17. Vol. 63(155):43129–43135.

Van Denburgh, J. 1895. A review of the herpetology of Lower California. Part I-Reptiles. Proc. California Acad. Sci., Ser. 2, 5:77–162, 11 pl.

–. 1897. The reptiles of the Pacific Coast and Great Basin. Occ. Pap. California Acad. Sci. 5:1–236.

–. 1905. The species of the reptilian genus *Anniella*, with especial reference to *Anniella texana* and to variation in *Anniella nigra*. Proc. California Acad. Sci., Ser. 3., Zool. 4:40–49.

–. 1922. The reptiles of western North America Vol. I. Lizards. Occ. Pap. California Acad. Sci. (10):1–611.

– and J.R. Slevin. 1914. Reptiles and amphibians of the islands of the West Coast of North America. Proc. California Acad. Sci., Ser. 4, Vol. 4(5):129–152.

– and –. 1921. A list of the amphibians and reptiles of the peninsula of Lower California, with notes on the species in the collection of the Academy. Proc. California Acad. Sci. 11:49–72.

Vitt, L.J. and H.J. Price. 1982. Ecological and evolutionary determinants of relative clutch mass in lizards. Herpetologica 38:237–255.

Voge, M. and W. Fox. 1950. A new anoplocephalid cestode, *Oochoristica scelopori* n. sp., from the Pacific Fence Lizard, *Sceloporus occidentalis occidentalis*. Trans. Amer. Micros. Soc. 69:236–242.

von Bloeker, J.C., Jr. 1942. Amphibians and reptiles of the dunes. Bull. So. California Acad. Sci. 41: 29–38.

Vreeland, J.K. and W.D. Tietje. 2000. Numerical response of small vertebrates to prescribed fire in California Oak Woodland, p. 100–110. *In* Ford, W.M., K.R. Russell, and C.E. Moorman (eds.), The Role of Fire in Nongame Wildlife Management and Community Restoration: Traditional Uses and New Directions. USDA For. Serv. Gen. Tech. Rep. NE-288.

Walgren, M., L. Andreano, J. Beaulieu, S. Christopher, and C. Jackson. 2005. Resource Inventory for Morro Strand State Beach. California Res. Agen cy, Dept. Parks Rec., San Luis Obispo Coast District.

Walton, A.C. 1941. Distribution of the genus *Thelandros* (Nematoda: Oxyuroidea). Proc. Helminthol. Soc. Washington 8:15–18.

Webb, J.E., J.A. Wallwork, and J.H. Elgood. 1978. Guide to Living Reptiles. Macmillen Press, Ltd., London.

Welsh, H.H., Jr. 1988. An ecogeographic analysis of the herpetofauna of the Sierra San Pedro Martir Region, Baja California, with a contribution to the biogeography of the Baja California herpetofauna. Proc. California Acad. Sci. 46:1–72.

Werner, H.W. 2004. Vertebrate survey for Sequoia and Kings Canyon National Parks and Devils Postpile National Monument. Unpubl. Rep., Sequoia and Kings Canyon National Parks, Three Rivers, California.

Wilcox, B.A. 1980. Species number, stability, and equilibrium status of reptile faunas on the California Islands, p. 551–564. *In* D.M. Power (ed.), The California Islands: Proceedings of a Multidisciplinary Symposium. Santa Barbara Mus. Nat. Hist., Santa Barbara, California.

Wood, W.F. 1935. Some observations on the intestinal protozoa of Californian lizards. J. Parasitol. 21:165–174.

Woods, C. 1982. An inventory of the terrestrial vertebrates of the Carrizo Plain, San Luis Obispo County, California. M.S. Thesis, California Polytechnic St. Univ., San Luis Obispo.

WRA Environmental Consultants. 2006. Coyote Valley Specific Plan DEIR Biological Resources Technical Report. San Rafael, California.

Yanev, K.P. 1980. Biogeography and distribution of three parapatric salamander species in coastal and borderland California, p. 531–550. *In* D.M. Power (ed.), The California Islands: Proceedings of a Multidisciplinary Symposium. Santa Barbara Mus. Nat. Hist., Santa Barbara, California.

Yarrow, H.C. 1882. Check list of North American Reptilia and Batrachia, with catalogue of specimens in U.S. National Museum. Bull. U.S. Natl. Mus. (24): v +[i] + 249 p.

Zim, H.S. and H.M. Smith. 1956. Reptiles and Amphibians: A Guide to Familiar American Species. Golden Press, New York.
Zweifel, R.G. 1952. Notes on the lizards of the Coronados Islands, Baja California, Mexico. Herpetologica 8:9–11.
–. 1958. Results of the Puritan-American Museum of Natural History Expedition to western Mexico. 2. Notes on reptiles and amphibians from the Pacific coastal islands of Baja California. Amer. Mus. Novitates (1895):1–17.

Lawrence E. Hunt, Department of Ecology, Evolution and Marine Biology, University of California, Santa Barbara, CA 93106 (anniella@silcom.com).

Primary editor for this account, Andrew H. Price