

Variation in the Crevice Spiny Lizard, *Sceloporus poinsettii* Baird and Girard

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Abstract

This report updates information on variation and distribution of the Crevice Spiny Lizard, *Sceloporus poinsettii* Baird and Girard. Five intergrading subspecies of *S. poinsettii* (scalation and pattern features) are recognized (two described as new). The holotype of *S. poinsettii polylepis* is regarded as a morphological variant or intergrade; the name *polylepis* is reassigned to a distinctive population that lacks any other name. This large, rock-dwelling lizard of the *S. torquatus* species-group occurs generally in the southwestern United States and northern Mexico.

The initial discovery of some smallish *Sceloporus poinsettii*-like lizards in northeastern Zacatecas in 1975 and from other nearby localities in later years (and their uncertain identification over the past several years) prompted study of *S. poinsettii* to determine the extent of variation throughout its geographic range. Familiarity with *S. poinsettii*, both in the field at various locales and from examination of museum specimens, has provided some insight into character trends and geographically recognizable populations. Smith ("1936"[1938], 1939) provided a working definition of the then monotypic species. Smith and Chrapliwy (1958) described two subspecies, *S. p. macrolepis* and *S. p. polylepis*, both recognized in this report. Tanner (1987) described *S. p. robisoni*, which is not here recognized (see Remarks, *S. p. macrolepis*). Auth et al. (2000), following the lead of Olson (1998), used name-combinations reflecting conspecificity of *S. poinsettii* and *S. mucronatus*; Olson's material and specimens subsequently studied from the states of Hidalgo and Mexico were assigned to *S. mucronatus* (Webb et al., 2002; Bell et al., 2003:146).

Specimens with small dorsal scales in the eastern desert parts of Durango, Chihuahua (including holotype of *S. p. polylepis* as well as other near topotypic specimens), and adjacent Coahuila have been referred to *polylepis* for many years, but their collective variant array of patterns (with some not unlike those of the adjacent Texas subspecies) has contributed to a festering, unsatisfactory concept of the taxon *polylepis*. The holotype of *S. p. polylepis* has small dorsal scales (41-42, *polylepis*) but a rear-of-head pattern with a black cruciform blotch (characteristic of Texas subspecies) and is regarded as an intermediate morphological variant. Specimens previously assigned to *S. p. polylepis* are now regarded as variants or intergrades. This revelation of regarding the holotype of *S. poinsettii polylepis* as part of a large intergrading population (Fig. 11) requires inquiry into the status of the name *polylepis*.

The Code (ICZN, 1999) declares that [Art. 23.8] "A species-group name established for an animal later found to be a hybrid must not be used as the valid name for either of the parental species." Unfortunately, Art. 23.8 (and the Code otherwise) seems

not to deal with intergrades between subspecies (although using “species-group name”). Rather than clutter the literature with a new name, stability and continued use of *polylepis* (since 1958) as a valid name is maintained.

The small *S. poinsettii*-like lizards (discovered in Zacatecas in 1975, mentioned above), with geographical integrity and consistent morphological features, also have small dorsal scales and are considered the genetic donor of small dorsal scales that currently characterize specimens assigned to *S. p. polylepis*; also, the consistent, black rear-of-head with whitish markings occurs in some specimens currently passing as *polylepis*. These small-sized and small-scaled *S. poinsettii*-like lizards are described as *S. poinsettii polylepis*.

This non-phylogenetic study focuses only on intraspecific (spatial, phenetic) variation of *S. poinsettii*. The author, at the risk of being scorned and scoffed as an old-fashioned fuddy-duddy, admits to the general acceptance of subspecies and the need to at least expose and describe the discrete kinds of geographic variation of the wide-ranging *S. poinsettii* (see discussion in Smith et al., 1997). Of course, there are different kinds of subspecies (degrees of distinctness) with recognition dependent on the whims of the investigator. The two most distinctive populations, *S. p. macrolepis* and *S. p. polylepis* (not mere “pattern classes”), would seem to reflect corresponding genetic differences (perhaps two species) if not for the interposed continuum of morphological variants. The five subspecies of *S. poinsettii* (two described herein as new) are peripherally oriented with each having geographical integrity and exhibiting intergradation in mutual contact zones (Fig. 11).

Methods

Data recorded for each specimen included sex, snout-vent length (SVL), and numbers of dorsal scales, scales around midbody, femoral pores, scales between pore series, canthals, loreals, preoculars, and frontoparietals. Other features included notation of the anterior part of the frontal (entire or longitudinally divided), the arrangement of scales (symmetrical or irregular) in the posterior part of the frontal-frontoparietal area, the frequency of contact of the two prefrontals and of the anteriormost sublabial (outer row) and mental, and aspects of dorsal head and body pattern. The approximate color pattern in life of several individuals has been preserved for reference on 2 x 2 color slides. Lee (1990) heralded the potential error fraught with meristic counts. Counts of dorsal scales have been repeated more than once for some specimens and performed only by the author; although the numbers of dorsal scales are employed in making taxonomic decisions, the possible error of one or two scales is negligible when considering the overall disparate ranges of variation in conjunction with other taxonomic features.

A description of the species that encompasses range-wide variation is followed by the accounts of subspecies, a discussion of intergradation, and a final comparison of taxonomic characters (with key). Photographs of dorsal head and body patterns accompany the descriptive comments of each subspecies. The original spelling of *poinsettii* is retained (rather than the incorrect subsequent spelling, *poinsetti*, ICZN, 1999, Art. 33.4). Locality data for specimens examined are listed, and many reference citations (Literature

Cited) that document examined specimens appear only, in the Appendix. Eponyms used there and elsewhere in the text denote specimens in the following institutions: **AMNH**, American Museum of Natural History, New York, New York; **ASNHC**, Angelo State Natural History Collection, San Angelo, Texas; **ASU**, Arizona State University, Tempe, Arizona; **BYU**, Monte L. Bean Museum, Brigham Young University, Provo, Utah; **CAS**, California Academy of Sciences, San Francisco, California; **CM**, Carnegie Museum, Pittsburgh, Pennsylvania; **EAL**, Ernest A. Liner, private collection (now AMNH); **FMNH**, Field Museum of Natural History, Chicago, Illinois; **GNHC** (formerly WNMU), Gila Natural History Collection, Western New Mexico University, Silver City, New Mexico; **KU**, Museum of Natural History, University of Kansas, Lawrence, Kansas; **LACM**, Los Angeles County Museum of Natural History, Los Angeles, California; **MCZ**, Museum of Comparative Zoology, Harvard University, Cambridge, Massachusetts; **MSB**, Museum of Southwestern Biology, University of New Mexico, Albuquerque, New Mexico; **MSUM**, The Museum, Michigan State University, East Lansing, Michigan; **MVZ**, Museum of Vertebrate Zoology, University of California, Berkeley, California; **NMSU**, New Mexico State University, Las Cruces, New Mexico; **RWA**, Ralph W. Axtell, private collection (number of uncataloged specimens in brackets); **SDSNH**, San Diego Society of Natural History, Balboa Park, San Diego, California; **SMBU**, Strecker Museum, Baylor University, Waco, Texas; **TCWC**, Texas Cooperative Wildlife Collection, Texas A&M University, College Station, Texas; **TNHC**, Texas Natural History Collections, Texas Memorial Museum, University of Texas, Austin, Texas; **UAZ**, University of Arizona, Tucson, Arizona; **UBIPRO**, Laboratorio de Herpetología, Unidad de Biotecnología y Prototipos, Escuela Nacional de Estudios Profesionales Iztacala, UNAM, Los Reyes Iztacala, Tlalnepantla, Edo. de Mexico, México (cited numbers same as "JLE" [J. Lemos-Espinal] field numbers indicated in publications; some specimens may be at UCM); **UCM**, University of Colorado Museum, Boulder, Colorado; **UIMNH**, University of Illinois Museum of Natural History, Urbana, Illinois; **UMMZ**, University of Michigan, Museum of Zoology, Ann Arbor, Michigan; **USNM**, National Museum of Natural History, Washington, D.C.; **UTA**, University of Texas at Arlington, Arlington, Texas; **UTEP**, University of Texas at El Paso, El Paso, Texas.

Species Description

Sceloporus poinsettii Baird and Girard

Crevice Spiny Lizard

Etymology. The species name honors Joel R. Poinsett, first Minister of the United States to Mexico (appointed 1825), Secretary of War (1837-1841), and influential in targeting the Smithsonian endowment for the establishment of the ultimate National Museum of Natural History (USNM).

Types. The original type-material consisted of five specimens from two different localities. Webb (1988) described the five syntypes, restricted the two localities, and designated the two specimens of USNM 2952 (both since recataloged as USNM 292580) from Grant County, New Mexico, as lectotype (adult male) and paralectotype (adult fe-

male). The other three Texas syntypes (= paralectotypes) from the Río San Pedro represent a different subspecies. Smith and Taylor (1950a:125, 1950b:363) had previously restricted the type locality to the Río San Pedro (= Devils River, Val Verde County), Texas, without comment (see Bell et al., 2003:149).

Description

Color and Pattern. The top of the head may be mostly patternless pale brown or black, or have a contrasting white-speckled pattern. The rear of the head may be blackish with postocular white bars and a few scattered white spots or the pattern consists of narrow, postocular dark stripes (below) and enlarged pale postocular blotches (above) that indent the sides of a dark, medial, cruciform (X-shaped) blotch. A pale band across the rear of the head between the ear openings (hereafter as the intertympanic band) is usually either complete across the neck, narrowly interrupted medially, or broken into a series of closely aligned pale spots, but may be almost absent. A dark transversely oriented nape blotch separates the pale intertympanic band and pale anterior border of the black collar. Pale longitudinal segments may flank the dark nape blotch interconnecting the pale intertympanic band and the anterior border of the black collar. A pale supralabial stripe, extending posteriorly through the ear opening, may be confluent with the lateralmost parts of the pale anterior border of the black collar. The uninterrupted, black, white-bordered collar is of varying width (two to six scales middorsally) with the widest collars having the posterior margin curved or gently angled. A small pale (blue in life) scale (or scales, spot) usually occurs just above the shoulder on the side of the neck within the black collar. White markings occasionally occur within the black collar. The whitish borders (both usually about two scales wide) of the black collar may be narrowly interrupted medially (often by short black streaks, see Fig. 2 in Webb, 1988); the anterior border may be disrupted into a series of spots.

Dark crossbands on the back (two to five, usually three or four, excluding sacral band) are of varying width and may be either complete across the back, bifurcated laterally to varying degrees, confined to vertebral blotches, disrupted into a non-banded, irregular pattern of small dark marks, or dorsal surfaces are mostly patternless. Sides of the body (in life) may be yellow, pale orange, or reddish; some body scales otherwise may be reddish, or pale orange, or blue-green. Dorsal body scales may have black edges aligned to form narrow longitudinal lines. Tails are usually marked with contrasting black (widest) and white alternating bands with black bands forming rings (less distinct ventrally) toward the tip of the tail.

The underside of the head (throat pattern) in young and subadults of both sexes has a dark blue irregular barred/spotted, or mottled pattern of varying distinctness, often with a pale longitudinal medial streak; this juvenile pattern may persist in both sexes exceeding 100 mm SVL, but may be mostly absent in some juveniles depending on geographic occurrence. Usually belly patches in females are indicated by either a pale blue wash or are relatively distinct with dark medial borders and with some dark pigment across the throat, on the chest, midventrally, and in the groin; these color patterns are

brightest and most extensive in the largest males. The blue-black belly patches may be confluent midventrally in places. The distinctness of blue belly patches is variable in some Chihuahuan females; patches may be almost absent (UBIPRO 4024, SVL 92 mm; UBIPRO 4306, SVL 100 mm SVL), restricted posteriorly (UBIPRO 4303, SVL 99 mm), but may be well-developed (UBIPRO 4310, SVL 105 mm). A male (UBIPRO 3707, SVL 84 mm, Chihuahua, enlarged postanal scales) lacks blue belly patches. Lemos-Espinal et al. (2001) also commented on ventral blue coloration in some other Chihuahuan females (absent to strong), and a male (111 mm SVL) having the entire median area black. Adults of both sexes often have (in life) a pale orangish wash concentrated in the preanal-base of tail area (extending onto femora). The peritoneum is black.

Scutellation. The supraocular scales are divided, but the size of the scales of the medial row is variable. The scales of the lateral and medial rows are either subequal in size (Fig. 1A) or those of the medial row are often noticeably larger than those of the lateral row tending toward undivided supraoculars (Fig. 1B, C; also in Smith, "1936"[1938]:608, Fig. 15, same in Smith, 1939:223, Fig. 30); one specimen at least (UTEP 14630, east Escalón, Chihuahua) does have undivided supraoculars (Fig. 1D). Adjacent scales of the two rows may be fused forming one undivided supraocular. Two adjacent scales of the enlarged medial row of supraoculars may be fused (UTEP 14657). Occasionally a gap in the row of circumorbitals permits contact of a supraocular and a medial head scale. Dorsal snout scales consist of usually four postrostrals, followed by irregular arrangement of supranasals and internasals (usually four scales between nasals), three frontonasals, and two prefrontals (separated, often by azygous scale, or in medial contact). The frontal is usually transversely divided (entire in UBIPRO 1924, 1933, 1944, 1954). The anterior frontal is either entire or longitudinally divided. The posterior frontal is either entire, divided (longitudinally or transversely), or scutellation is irregular (often subdivided into three scales). Frontoparietals usually number one (or two) and may touch medially (often separated by azygous scale). The posterior dorsal head scales (posterior frontal-frontoparietal area) are frequently and variably irregularly fragmented (Fig. 1B, D); some medial head scales may be irregularly fused (Fig. 1C). The maximal extent of head-scale irregularity noted for the species occurs in a male (UTEP 14655, SVL 115 mm, Sierra Jardin, Coahuila) in which many named scales (canthal-loreal region, frontonasals, prefrontals, anterior half of frontal, parietals) are unrecognizable and fragmented into small irregularly arranged scales.

Lateral head scales consist of a subnasal, one or two canthals (counted as two if both touch loreal), one (usually) or two loreals, one or two (rarely fragmented into three) preoculars, and usually two rows of lorilabial scales. Occasional fusion of lateral head scales may involve the anterior canthal and subnasal (MSB 6327, 20504, 20510), the posterior canthal and loreal (RWA 5223), one canthal and loreal (NMSU 6301-02), the lower preocular and loreal (UTEP 8878, 9461), and the lower preocular and subocular (ASNHC 3818, 3823, 3825); the anterior canthal may contact a supralabial thus separating the subnasal and loreal scales (UTEP 13693). The anteriormost sublabial (outer row) infrequently contacts the mental (postmental usually touches first infralabial). Snout scales are usually pitted (variable in extent), except in young.

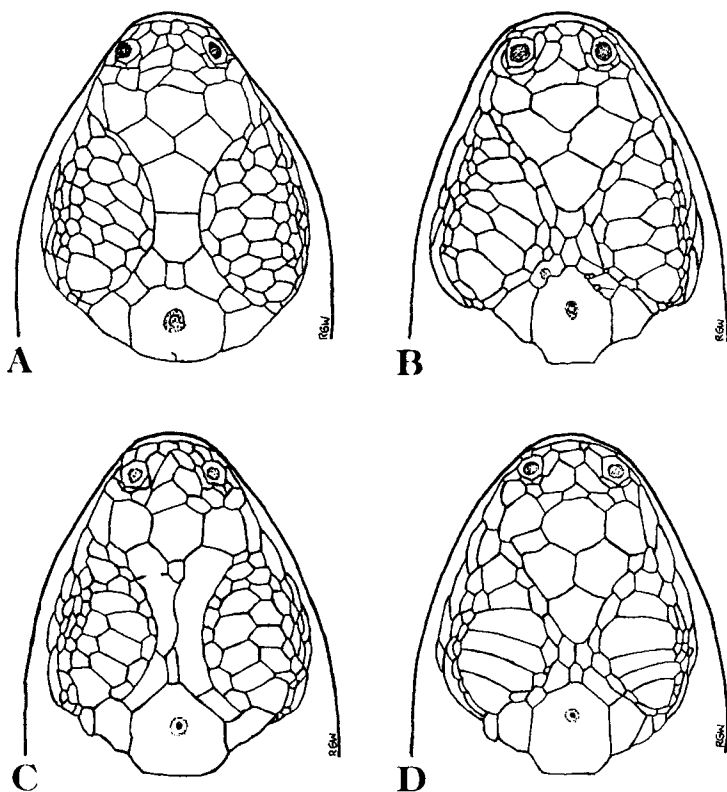


Fig. 1. Dorsal head scutellation of *Sceloporus poinsettii* showing variation in size of divided supraoculars and configuration of scales in posterior frontal-frontoparietal region. Divided supraoculars either usually equal-sized (A) or medial row enlarged (B, C), and posterior medial head scales either symmetrical (A) or usually subdivided and irregularly arranged (B, D); extensive fusion of medial head scales (C) and undivided supraoculars (D) are rare variants. A, UTEP 4831, *S. p. macrolepis*; B, UTEP 13735, *S. p. axtelli*; C, UTEP 9230 and D, UTEP 14630, intergrades.

Dorsal body scales along the middle of the back (about 6-7 longitudinal rows) in large adults (exceeding about 110 mm SVL, but occurring at smaller sizes) are mostly smooth (keeled in smaller individuals); Baird and Girard (1852) noted smooth scales in the original description of *S. poinsettii*. Dorsal scales range from 25 to 43, scales around midbody 31 to 47, femoral pores 7 to 16 (one leg) with extremes of 7-7 and 14-16, and fewest number of scales between pore series 6 to 17. Males (with pair of enlarged postanal scales, and larger femoral pores in adults than in adult females) attain a larger size than females (Fitch, 1978, 1981). The largest male examined is 133 mm SVL (UTEP 4457), female 123 mm SVL (UTEP 14599); Ballinger (1973:273) recorded 128 mm for a Texas female. The maximal size of adults of *S. poinsettii polylepis* is not known to exceed 100 mm SVL.

Distribution. *Sceloporus poinsettii* is widespread in suitable rocky habitat from southern New Mexico and central and western Texas south into northern México through Chihuahua and Durango (and the eastern highland parts of Sonora and Sinaloa) and Coahuila into northern Zacatecas and San Luis Potosí, and eastern Nuevo León. The species may occur farther south in Jalisco (see Distribution, *S. poinsettii macrolepis*). A distribution map (Fig. 11) accompanies the list of localities in the Appendix.

Preferred habitat is rock outcrops or large boulders (igneous or sedimentary) with suitable cracks and crevices of either low, dry, isolated, desert hills or more mesic, pine-oak forested, mountainous terrain. On occasion individuals may climb trees. Known elevations range from 231 m or 700 ft (Comal County, Texas, Axtell, 1987) to near 2743 m or 9200 ft (near Las Adjuntas, Durango).

Accounts of Subspecies

The following accounts of the five subspecies of *Sceloporus poinsettii* provide proposed common names (two for Mexican taxa follow Liner, 1994), recognition features (those in combination most diagnostic), descriptions (color and pattern, and scutellation), and a statement of distribution. Taxonomic characters and recognition features that differentiate subspecies (with key) are discussed beyond in the section Comparisons.

Sceloporus poinsettii poinsettii Baird and Girard

New Mexico Crevice Spiny Lizard

Sceloporus poinsettii Baird and Girard, 1852:126. Lectotype, USNM 292580, adult male in fluid, from either the southern part of the Big Burro Mountains or the vicinity of Santa Rita, Grant County, New Mexico; obtained in late August 1851 by John H. Clark in company with James D. Graham during tenure with the U.S.- Mexican Boundary Commission. The lectotype, a male of about 115 mm SVL, was redescribed by Webb (1988), and dorsal pattern features were illustrated by Baird (1859) and Webb (1988). The lectotype and female paralectotype, originally USNM 2952 (n = 2), were both recatalogued as USNM 292580 on 13 December 1989.

S[celoporus]. p[oinsettii]. poinsettii, Smith and Chrapliwy, 1958:268.

Recognition. A subspecies of *Sceloporus poinsettii* recognized by combination of: (1) distinct crossbands on body (usually four), but most scales pale and dark-edged, (2) dark top of head with distinct, small white spots and markings, (3) dorsal body scales not less than 29 or more than 35, and (4) anterior frontal longitudinally divided (98%).

Description. Color and pattern. *Sceloporus p. poinsettii* is most readily identified by the distinct, pale-speckled, dark (may be near black) top of the head and pale-streaked dark crossbands on the body. Indication of a black cruciform blotch may occur on the rear of the head (Fig. 2, see Comparisons). The pale intertympanic band (one or two scales wide) is complete or interrupted (at least medially) and may be faded or dis-

tinct. The anterior and posterior white borders (usually two scales wide) of the black collar may be entire, but both are often narrowly interrupted, at least medially. The posterior margin of the collar is either mostly straight (collar relatively narrow) or curved (collar slightly widened vertebrally); the width of the collar generally encompasses three or four (rarely five) black scales. The black collar may enclose whitish marks (UTEP 9602, Fig. 2). Distinct, dark (usually black) crossbands on the body (usually four, or three) are relatively straight (or slightly undulating), and may be interconnected with narrow dark (near vertebral) segments (Fig. 2). These body crossbands are usually pale-streaked (pale scales with black edges or encircled by black). Pale interspaces between crossbands usually lack dark-edged scales, but such scales may be aligned with those of the crossbands to form continuous longitudinal black lines (AMNH 109129, Fig. 2). Large males have the medial black borders of the blue ventrolateral belly patches attenuated anteriorly from large black groin patches; dusky to blackish pigment may be extensive across the chest and confluent midventrally in places. Adults of both sexes may have the sides of the body washed with pale orange or yellow-orange. New-born young (31-33 mm SVL, UTEP 9605, $n = 8$, young born to UTEP 9603, both in Fig. 2) have dark dots in the posterior parts of the pale brown crossbands and an indistinct dark-streaked pattern; the juvenile streaked and marbled pattern on the throat is mostly faded and diffuse, but with a few distinct bars. Illustrations of dorsal patterns are in Smith ("1936"[1938]:685, Pl. 51, Fig. 1), Behler and King (1979:Pl. 354, color), Stebbins (1954:237, Pl. 358; 1966:Pl. 23, color [same 1985:Pl. 27, and 2003:Pl. 31, both color] based on specimen from north-west Antelope Wells fide Philip A. Medica, see Appendix, Additional records), Williamson et al. (1994:91, color), and Degenhardt et al. (1996:Pl. 51, color).

Scutellation. The scales of the medial and lateral rows of the divided supraoculars generally are subequal in size; occasionally the scales of the inner (medial) row are somewhat larger than the scales of the outer (lateral) row (e.g., UTEP 10048, 11155, 12429), especially so in UTEP 12418 suggesting undivided supraoculars. The posterior dorsal head scales (posterior frontal-frontoparietal area) are usually irregular in varying degrees; this kind of variation is highlighted by UTEP 12428 in which the two parietal scales are subdivided and UTEP 12429 having the frontoparietals longitudinally divided.

The mean number of dorsal scales is 31.9 (29-35, 98% 34 or less, $n = 202$), midbody scales 37.3 (34-42, $n = 172$), femoral pores 22.0 (18-26, $n = 187$, both legs) or 11.0 (8-13, $n = 382$, one leg), and scales between femoral pore series 9.6 (7-12, $n = 194$). Canthal scales (each side of head, $n = 405$) are more frequently two (61%) than one (39%), occurring in combinations (both sides of head, $n = 202$) of 1-1 (28%), 1-2 (23%), and 2-2 (49%). Preocular scales (each side of head, $n = 408$) most often number one (95%), with combinations (both sides of head, $n = 204$) of 1-1 (92%), 1-2 (5%), and 2-2 (3%). The anterior frontal is longitudinally divided (98%, $n = 205$). The prefrontals ($n = 195$) are either separated (53%, most often by an azygous scale) or are in broad medial contact (47%, rarely partly separated by a small azygous scale). The separation of the anteriormost sublabial scale (outer row) and the mental (each side of head, $n = 200$) is slightly more frequent (56.5%) than contact of those two scales (43.5%). The largest male is 128 mm SVL (MSB 4212) and female 115 mm SVL (ASNHC 10643).

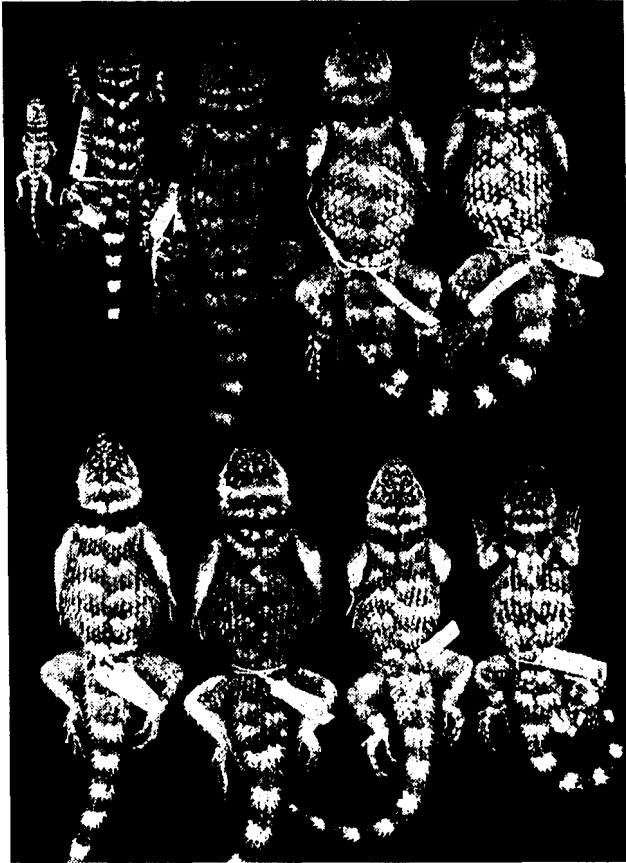


Fig. 2. Dorsal patterns of *Sceloporus p. poinsettii* (southwestern New Mexico, all Hidalgo County except as indicated). **Upper**, left to right (all females): UTEP 9605 (n = 8), hatchling, 32 mm SVL; UTEP 13752, 69 mm SVL; AMNH 109129, 94 mm SVL; UTEP 11507, 104 mm SVL (Grant Co.); UTEP 11155, 102 mm SVL. **Lower**, left to right: UTEP 9603, female, 97 mm SVL; UTEP 9602, male, 104 mm SVL; UTEP 8714, male 88 mm SVL (Socorro Co.); UTEP 495, female, 82 mm SVL (Grant Co.)

Some minor differences in scutellation occur when the geographic isolate in Hidalgo County (see Distribution) is compared with the large segment of *S. p. poinsettii* to the north. This Hidalgo sample is centered in the southern Animas Mountains area (includes all specimens from Hidalgo County except those from just west of Animas and Cotton City). The size of the dorsal scales is about the same in the Hidalgo sample (averaging 31.7, 29-34, n = 51) and in the more northern population (32.1, 29-35, n = 145). In the Hidalgo sample the anteriormost sublabbial is separated from the mental (each side of head, n = 54) more frequently (72%) than the two scales are in contact (28%), whereas the respective values, reversed for the northern sample of *S. p. poinsettii* (n = 134), are

47% and 53%. The frequency of one or two preoculars (usually one), increases slightly between the Hidalgo sample (each side of head, $n = 102$) and the northern sample ($n = 294$) with respective values of one preocular 82% and 99%. The prefrontals in the Hidalgo sample ($n = 43$) are in medial contact (58%) or separated, usually by an azygous scale (42%), but in the northern population ($n = 146$) the respective values are 44% and 56%. These respective values for the two New Mexico samples (except prefrontals) fit into an overall pattern of north-south geographic variation in the Sierra Madre Occidental (see discussion of Morphological Intermediate Variants).

Cole et al. (1967) cited UAZ specimen numbers 15972 (male) and 15976 (female) as vouchers for illustrations of karyotypes; these specimens represent *S. p. poinsettii* and are from near Pinos Altos, Grant County, New Mexico (see Appendix).

Distribution. *Sceloporus p. poinsettii* occurs west of the Rio Grande in southwestern New Mexico. Individuals occur in hilly landscapes with scattered juniper or piñon pine and juniper, and in pine-oak forests in the Black Range, Mimbres, San Mateo, Magdalena, and to the west, the Burro, Mogollon, and Tularosa mountains. They seem to be absent north of the San Augustine Plains (Datil-Gallinas mountains) and to the west in the San Francisco and Gallo mountains. One of the easternmost specimens from Socorro County (SW Socorro, MSB 4220) is recorded from a habitat of creosote, mesquite and grass. In some areas *S. p. poinsettii* seems to be replaced at lower elevations by *Sceloporus clarkii* (on rock outcrops, trees). *Sceloporus poinsettii* (UTEP 16078, on rock outcrops) and *S. clarkii* (UTEP 16080-81, on trees) occur together at least in Sierra County, New Mexico (Mimbres Mts, Pierce Canyon, ca. 13 air km NW Lake Valley).

Two populations to the south in Hidalgo County may be isolated from those to the north and from each other. These isolates are from low, foothill areas of the southern Animas Mountains, and the black-bouldered lava fields (malpais) that cover flatlands in the north-south trending Animas Valley between the Animas and Peloncillo mountains (west of Animas and Cotton City, ca. 1304 m or 4280 ft). The species is not known from the northern drier part of the Animas Mountains (*S. clarkii*, UTEP 11264, occurs here on rock outcrops) or in the Pyramid Mountains immediately adjacent to the north.

The entire range of *S. p. poinsettii* seems to be largely disjunct; this isolation was alluded to by Lowe (1955) and indicated on an inset map in Axtell (1987). The species is not known to occur in the Peloncillo Mountains immediately adjacent to the west of the Animas Mountains (*S. clarkii* here on rock outcrops, low elevations) or in Arizona (but see Additional records in Appendix). To the south *S. poinsettii* seems to be absent in the east-west trending Sierra de San Luís in México that straddles the Sonora-Chihuahua border just south of the Animas Mountains (David Barker and Charles Painter, pers. convers.; none observed by author at two different sites in summer of 1983); the occurrence of *Sceloporus grammicus* in the Sierra de San Luís (Degenhardt et al., 1996:360) and absence in the Animas Mountains further highlights this geographic break. Also *S. poinsettii* does not seem to occur in the sizeable, mountainous uplift of suitable rocky habitat (Sierra del Fresnal) about 24 road miles northeast of Ascención, Chihuahua (site

east microondas entrance, Hwy 2; several visits by author and Ralph W. Axtell). The record of occurrence nearest to those of *S. poinsettii* in Hidalgo County, New Mexico is west of Janos, Chihuahua (Tanner, 1987).

Eastward *S. p. poinsettii* is limited by the Río Grande drainage, and is seemingly absent in suitable habitat of isolated, dry mountainous uplifts across southwestern New Mexico (see Appendix, Additional records). The species is not known to occur in the north-south trending Big and Little Hatchet and Alamo Hueco mountains, but individuals are abundant in the Cedar Mountains adjacent eastward. The species is absent farther east in the Tres Hermanas, Florida, West and East Potrillo mountains, and (east of Río Grande) the San Andres-Organ-Franklin mountain chain. Thus, in New Mexico, *S. p. poinsettii* is rather widely separated from the different subspecies to the east in the Sacramento Mountains (eastern New Mexico) and the Hueco Mountains (El Paso and Hudspeth counties, Texas) and eastward (Fig. 11). This east-west hiatus in range of *S. poinsettii* probably relates to the history of the ancestral Río Grande and extensive interposed early Pleistocene Lake Cabeza de Vaca (see Axtell, 1977). Of corroborative interest are the different helminth species noted for Texas and western New Mexico populations of *S. poinsettii* (Goldberg et al., 1993).

Sceloporus poinsettii macrolepis Smith and Chrapliwy

Largescale Crevice Spiny Lizard

Sceloporus poinsettii macrolepis Smith and Chrapliwy, 1958:268. Holotype, UIMNH 35455, adult male in fluid, from El Salto, Durango, ca. 2469 m (8100 ft), obtained 1952-1953, by [given names unknown] Barden and I. Lester Firschein. Three paratypes (UIMNH 35453-54, 35456) are listed as topotypes. The holotype (examined by author) is a male of about 98-100 mm SVL, having large (26-27) dorsal scales, an entire anterior frontal, and characteristic dorsal patterns.

Sceloporus p[oinsettii]. robisoni Tanner, 1987:398. Holotype, BYU 14287, adult male in fluid, from Cuiteco, Chihuahua; obtained 19 July 1958 by Wilmer W. Tanner and W. Gerald Robison, Jr.

Recognition. A subspecies of *Sceloporus poinsettii* identified by combination of: (1) broad dark (mostly solid color) crossbands (usually two or three) on body, (2) top of head mostly patternless, uniformly dark, often black, (3) black collar often enlarged and curved posteriorly, (4) large dorsal body scales not more than 31, and (5) anterior frontal entire (93%), not longitudinally divided.

Description. Color and pattern. *Sceloporus p. macrolepis* has a mostly patternless top of the head, often wide black collar, and broad, unicolor, dark crossbands on the body. The top of the head is pale to dark brown, often black; some scales may have indistinct pale flecks. Pale postocular blotches are rather indistinct in young, and absent or nearly so in large adults. Pale intertympanic bands are usually interrupted into white spots, but may be faded and indistinct (or almost absent). Anterior and posterior white borders of the black collar (both about two scales wide) are usually entire, not interrupted

medially. The black collar is usually lengthened vertebrally (five to six black scales), the posterior border gently curved to somewhat angular. Dark crossbands on the body, usually two or three, are broad and distinct and of solid color, and separated by narrow pale interspaces (one or two scales wide). Rarely crossbands are narrower and four in number, or some adjacent crossbands are interconnected (MSUM 9334). The posteriormost crossband may be partly fused with the sacral blotch. Pale body scales of interspaces may have dark edges that align with those of crossbands to form longitudinal dark lines. In life the eye is rimmed in pale red and body scales may have a pale orange tinge. Young have a bold, dark blue marbled pattern (mostly irregular barring) on the underside of the head. Variation in dorsal patterns is shown in Fig. 3.

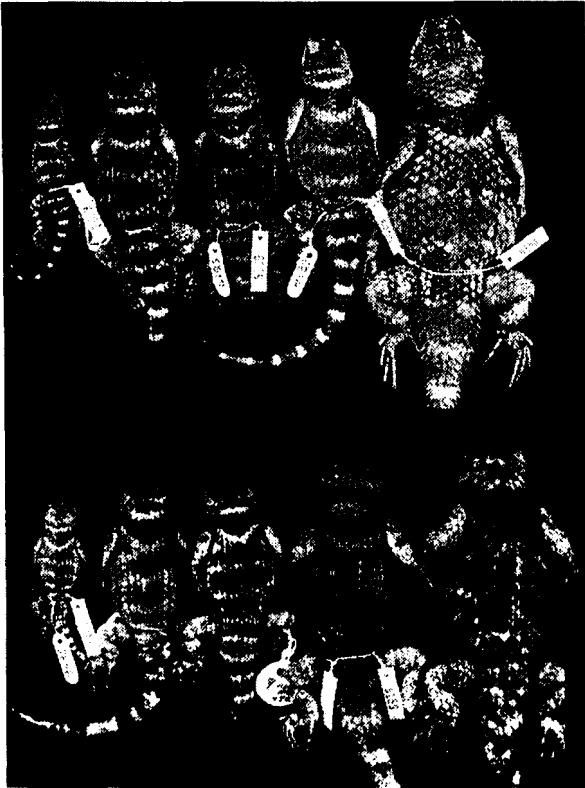


Fig. 3. Dorsal patterns of *Sceloporus p. macrolepis* (all Durango, Mexico). **Upper**, left to right: UTEP 6203, male, 43 mm SVL (SE Llano Grande); UTEP 1317, female, 72 mm SVL (SW El Salto); UTEP 6206, female, 75 mm SVL (SE Llano Grande); UTEP 6205, female, 75 mm SVL (SE Llano Grande); UTEP 6165, female, 117 mm SVL (Rio Chico). **Lower**, left to right: UTEP 6211, male, 48 mm SVL (E Llano Grande); UTEP 6175, female, 75 mm SVL (E Las Adjuntas); MSUM 9340, female, 75 mm SVL (S Tepehuanes); UTEP 6159, male, 104 mm SVL (W Metates); MSUM 3140, female, 112 mm SVL (ESE Cajones). See Morphological Intermediate Variants regarding UTEP 6159 and 6165.

Scutellation. Scales of the divided supraoculars are generally subequal in size, and the posterior frontal and frontoparietals often are not irregularly subdivided (Fig. 1A). The mean number of dorsal scales is 28.6 (25-31, $n = 97$), midbody scales 35.4 (31-38, $n = 87$), femoral pores 21.3 (14-27, $n = 76$, both legs) or 10.6 (7-14, $n = 152$, one leg), and scales between femoral pore series 9.4 (7-12, $n = 66$). Canthals (each side of head, $n = 148$) are usually two (91%), occurring in combinations (both sides of head, $n = 74$) of 1-1 (8%), 1-2 (1%), and 2-2 (91%). Preocular scales (each side of head, $n = 148$) are most often one (70%) rather than two (30%), with combinations (both sides of head, $n = 74$) of 1-1 (65%), 1-2 (11%), and 2-2 (24%); in three counts of two preoculars, the area is divided into three scales. The anterior frontal is entire, not divided longitudinally (93%, $n = 98$). The prefrontals ($n = 74$) are usually in broad contact medially (89%) or are separated (11%, by an azygous scale only in two). The anteriormost sublabial scale (outer row) and the mental are separated (each side of head, 94%, $n = 112$). Boulenger (1897:480) reported 11-12, 11-12, and 12-12 femoral pores, 29, 27, and 27 dorsal scales, and 36, 37, and 34 midbody scales for three specimens from La Ciudad, Durango. The largest male is 110 mm (UCM 20947, maximal size doubtless much larger) and female 120 mm SVL (RWA 5232); McDiarmid et al. (1976:9) recorded 125 mm SVL (in error) for JFC 69-135 (= CAS 155909), a male of about 100-103 mm SVL (verified by Jens Vindum, pers. comm.).

Distribution. *Sceloporus p. macrolepis* is confined to the pine-oak forested highlands and the higher eastern slopes of the Sierra Madre Occidental. Records of occurrence in Durango and southern Chihuahua are at approximate elevations between 1981 m (6500 ft) and 2804 m (9200 ft); the lowest elevation recorded is 1800 m (5904 ft) in Sinaloa (see below). The northernmost limits seem to be just north of the Barranca del Cobre in the vicinity of Mojárachic and Maguarichic; farther north with gradual decrease in elevation the change in the suite of recognition characters of *S. p. macrolepis* suggests intergradation in northern Chihuahua and adjacent Sonora with *S. p. poinsettii* (see discussion of Morphological Intermediate Variants). The species is limited to the west by tropical landscapes (Mixed Boreal-Tropical habitat in Durango; here replaced by *S. bulleri*, Webb, 1984). However, *S. p. macrolepis* occurs near 1800 m in an isolated forested outlier, the Sierra Surutato in northern Sinaloa (McDiarmid et al., 1976), and is to be expected elsewhere in the easternmost, non-tropical, highland parts of the Sierra Madre in Sinaloa. *Sceloporus poinsettii* is presumably absent in suitable pine-oak woodland of some outlier ranges to the east of the southern part of the Sierra Madre Occidental, at least the Sierra de Valparaiso, Zacatecas (visited by author), and the Sierra Fria, Aguascalientes and the Sierra Morones, Zacatecas (Wilson and McCranie, 1979); *S. poinsettii* is not mentioned in the herpetofaunal account of Aguascalientes by McCranie and Wilson (2001).

However, one specimen of *S. poinsettii* (CAS 169632) is currently geographically isolated in southern Jalisco in the Sierra de Manantlán, 2.9 mi S Asseradero Manantlán [= Rincon de Manantlán, ca. 19°36'N, 104°12'30"W] or 14.2 [road] mi S El Chante on road from El Chante [19°43'N, 104°12'W] to El Guisar [not located], 17 August 1980, J.F. Copp, D.E. Breedlove, and F. Ameda. The collection site is some 395 air km (245 mi)

south of the nearest locality to the north in the Sierra Madre Occidental (Rancho Las Margaritas, Durango, 23°18'N, 104°17'W, south of the Río Mezquital near the Zacatecas border). The composite descriptive aspects of the one male (enlarged pair of postanal scales, 89 mm SVL, Fig. 4) with large dorsal scales (ca. 30-31), 38 around midbody, 12-13 femoral pores (series separated by 8 scales) are encompassed by the range of variation of *S. p. macrolepis*. Unusual is the divided anterior frontal (usually entire in *S. p. macrolepis*, 93%, n = 98), the 1-1 canthals (usually two in *S. p. macrolepis*, 91%, n = 148), and the near loss of blue-black ventral pigmentation (only indistinct dark throat markings and slightly darkened sides and midventral area of the belly). This Jalisco specimen is not further discussed or plotted on the distribution map (Fig. 11).

Remarks. Tanner (1987) described *Sceloporus poinsettii robisoni* based on 14 specimens from three localities (Cuiteco, Cerocahui, and near Maguarachic), which generally are in pine-oak forested highlands of the Sierra Madre Occidental in southwestern Chihuahua. I examined these specimens prior to Tanner's description of *robisoni* at which time I identified them as *S. p. macrolepis* based on the characteristic dorsal patterns and especially all specimens having an entire (not longitudinally divided) anterior frontal (but divided northward). Tanner mentioned four traits in his diagnosis: (1) adults large, 110-115 mm SVL. The maximal size of all populations of *S. poinsettii* is large, except for the distantly removed *S. p. polylepis* (southeasternmost subspecies, Fig. 11) with maximal sizes less than 100 mm SVL. (2) dorsal scales, 29-32. In my examination of these specimens the highest count was 31. Tanner's data (30.4, 29-32) are encompassed by, but at the upper limits of, the range of variation of *S. p. macrolepis* as here defined (28.6, 25-31, n = 97); however the mean number of dorsal scales increases northward in the Sierra Madre Occidental to 31.7 and 32.1 in the two New Mexico populations of *S. p. poinsettii* (see descriptive account of *S. p. poinsettii* and discussion of Morphological Intermediate Variants). (3) postmentals not in contact with infralabials. This character is expressed here relative to the contact or separation of the anteriormost sublabial and mental; contact of these two scales is equivalent to separation (prevents contact) of the postmental and first infralabial (on either side). This feature of scutellation was not recorded by me for the 14 specimens of *robisoni*; however, Tanner recorded labiomental [= sublabial]-mental contact in 50% of the 14 specimens of *robisoni* (including the holotype). My data for *S. p. macrolepis* indicate these scales in contact in only 6% (n = 112); however this value increases northward and is maximized in the two New Mexico *S. p. poinsettii* populations (28% and 53%, see discussion of Morphological Intermediate Variants). (4) fewer femoral pores, 85% with 20 or less. Tanner recorded a femoral pore count (both legs) of 14 (7-7) in the holotype with a mean of 18.6 (14-21) for the 14 specimens of *robisoni*. Seven is the lowest number of femoral pores (one leg) recorded for *S. poinsettii* and is of rare occurrence; in my data that number is recorded elsewhere for only four specimens (7-7, UAZ 39421, [NW] Yécora, Sonora; 7-8, UAZ 35182, La Mesa Tres Rios, Sonora; 7-9, UTEP 1837, Hueco Mts, El Paso County, Texas; and 7-9, UBIPRO 2331, Rancho El Setenta, NE Chihuahua). My data for femoral pores of *S. p. macrolepis* are means of 21.3, both legs (16-27, n = 76) and 10.6, one leg (8-14, n = 152) with 25 of 76 (33%) having 20 femoral pores or less, and are about the same in *S. p. poinsettii*, respectively, 22.0 (18-26,

n=187) and 11.0 (8-13, n = 382).

Tanner's sample of 14 specimens was fortuitous in having a combination of a somewhat high frequency of low femoral pore counts and contact of labiomental (= sublabial) and mental. Based on overall trends of geographic variation of *S. poinsettii* range-wide, I choose not to recognize *S. p. robisoni*, and regard *robisoni* as a synonym of *macrolepis*. Lemos-Espinal et al. (2001:206) and Bell et al. (2003:111) also regarded *S. p. robisoni* as invalid.

Sceloporus poinsettii amydrus subsp. nov.

Clouded Crevice Spiny Lizard

Sceloporus poinsettii amydrus. Holotype, UTEP 6190, female in fluid, 3.7 road miles (unpaved) south of González Ortega [site is ca. 23°54'30"N, 103°27'25"W], Zacatecas, ca. 2210 m (7249 ft); obtained 15 July 1977 by Robert G. Webb (original field number 6522) in company with Rollin H. Baker and Mary W. Baker. One other topotype (UTEP 6189, male, 40 mm SVL) has same collection data as the holotype.

Description of holotype. Female, 86 mm SVL; dorsal body scales 28 and scales around midbody 36; both anterior and posterior frontal entire; frontoparietals 2-2 and in medial contact; prefrontals in medial contact; canthals 2-2, loreals 1-1, preoculars 1-2, and anteriormost sublabial not touching mental; femoral pores 14-14 with eight scales

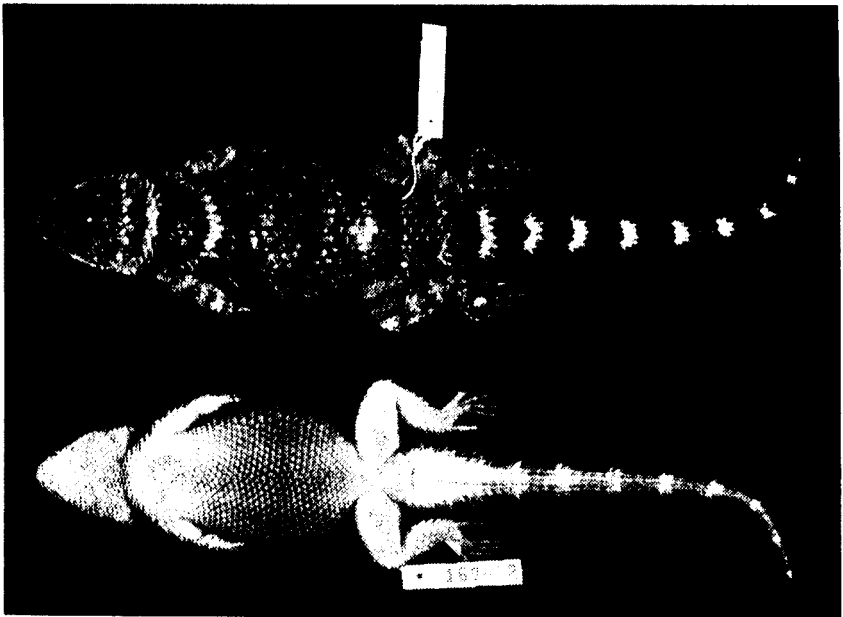


Fig. 4. Dorsal and ventral views of *Sceloporus poinsettii* (CAS 169632, male, ca. 89 mm SVL) from the Sierra de Manantlán, Jalisco, Mexico.

between pore series. The dorsal pattern of the holotype (overall pale brownish body with slightly darker patternless head, and only dim crossbands on the back) is illustrated in Fig. 5.

Etymology. The subspecies (and common) name is from the Greek *amydros* (*amydr-*, indistinct, dim, obscure) in allusion to the indistinct or disrupted (or absent) crossbanded pattern on the body.

Recognition. A subspecies of *Sceloporus poinsettii* having combination of: (1) top of head pale to dark brownish (or near black) and usually patternless, (2) black collar 2 to 3 scales wide; (3) dorsum in adults mostly uniformly brownish, or an indistinct pattern of faded crossbands (usually four), or with an irregular pattern of dark marks, (4) large dorsal body scales not more than 33, (5) anterior frontal entire (88%), not longitudinally divided, and (6) high average number of femoral pores (12.2, one leg; 24.4 both legs).

Description. Color and pattern. The top of the head is pale to dark brown or near black and is relatively patternless (occasional indistinct white speckling, TNHC 30477-78); the rear of the head may be noticeably darkened. Prominent pale postocular blotches are absent, at most indistinct, in adults, but may be evident in young (UTEP 6184, RWA 6450, MCZ 136442 [Fig. 5]). The pale intertympanic band is either poorly developed or absent in adults (series of white dots in young); this band may be interrupted by two paravertebral dark streaks (UTEP 6045 [Fig. 5], KU 38098). Pale anterior and posterior borders of the black collar are usually entire, but either may be narrowly interrupted medially (MSB 39949). The collar is relatively narrow (about uniform in width) or with a slightly curved posterior border; the black collar usually is two or three, no more than four, scales wide. Pale brownish bodies may be mostly uniform or have either indistinct crossbands (usually four; distinct in MCZ 136437-38, see Fig. 5), often staggered and broken, or a disrupted, irregular pattern of dark marks and spots (scales may be pale with black edges, TNHC 30477). Body crossbands in young are of variable distinctness (see Fig. 5). Dark scale edges aligned to form longitudinal dark lines on the body are usually lacking (present in MSUM 363, 368, 372 of La Pila series). Specimens of the La Pila series overall are dark dorsally owing to occurrence on black boulders (malpais) of the Guadiana Lava Field (Baker, 1960). The underside of the head in young has a dark blue-barred pattern and midventral pale streak (may be slightly faded). Large males (MCZ 136436, about 122 mm SVL, Fig. 5) acquire uniformly blue throats and dark pigment midventrally between blue, black-bordered belly patches. The eye rim of at least some large individuals is reddish in life.

Scutellation. Scales of the divided supraoculars are subequal in size or the scales of the inner (medial) row are larger than those of the outer (lateral) row. Scales of the posterior frontal-frontoparietal area are often not irregularly subdivided. The mean number of dorsal scales is 28.9 (26-33, $n = 80$), midbody scales 35.8 (32-39, $n = 77$), femoral pores 24.4 (19-30, $n = 79$, both legs) or 12.2 (9-16, $n = 159$, one leg), and scales between femoral pore series 8.9 (6-12, $n = 74$). Canthals (each side of head, $n = 152$) are usually two (83%), occurring in combinations (both sides of head, $n = 76$) of 1-1 (12%), 1-2

(10%), and 2-2 (78%). Preocular scales (each side of head, $n = 152$) are most often one (81%) rather than two (19%), with combinations (both sides of head, $n = 76$) of 1-1 (74%), 1-2 (14%), and 2-2 (12%). The anterior frontal is entire, not longitudinally divided (88%, $n = 78$). The prefrontals ($n = 76$) are in medial contact (88%) or are separated (12%, by an azygous scale in four of nine). The anteriormost sublabial scale (outer row) and the mental are usually separated (each side of head, 87%, $n = 150$). The largest male is 123 mm (BYU 13857), largest female 115 mm SVL (UCM 12935).

Distribution. *Sceloporus p. amydrus* has a rather restricted geographic range in



Fig. 5. Dorsal patterns of *Sceloporus p. amydrus* (all Zacatecas, México). **Upper**, left to right: UTEP 6214, male, 40 mm SVL (S Gonzales Ortega); UTEP 6045, female, 67 mm SVL (NW Fresnillo); UTEP 6190, holotype, female, 86 mm SVL (S Gonzales Ortega); RWA 5228 [$n = 7$], male, 92 mm SVL and female, 110 mm SVL (ESE El Sauz). **Lower**, left to right (all MCZ): 136442, male, 50 mm SVL (WNW Fresnillo); 136441, female, 50 mm SVL (WNW Fresnillo); 136437, male, 96 mm SVL (El Arenal); 136434, female, 90 mm SVL (W Fresnillo); 136431, female, 97 mm SVL (W Fresnillo); 136432, female, 100 mm SVL (W Fresnillo); 136436, male, 122 mm SVL (El Arenal).

western Zacatecas and adjacent southeastern Durango. The eastern terminus of range may have been influenced by the historical barrier of the large water-volumed, north-south flowing Río Aguanaval (see Morphological Intermediate Variants). Aside from the slightly hilly, black-bouldered malpais area near La Pila, Durango, individuals occur among rock outcroppings of low hills (and on rock walls, holotype and paratopotype) that may be landscaped in pinón pine, juniper, and oak. Elevations are rather high ranging from near 1906 m (6253 ft) at La Pila and 2001 m (6565 ft) at Francisco I Madero, Durango to 2438 m (8000 ft) recorded at the collecting site of El Calabazal, Zacatecas.

Sceloporus poinsettii axtelli subsp. nov.

Texas Crevice Spiny Lizard

Sceloporus poinsettii axtelli. Holotype, UTEP 10613, male in fluid, 21.5 road miles south (St. Hwy 118) Alpine, Brewster County, Texas (road cut, dark igneous outcrops), obtained 17 May 1985 by Jerry D. Johnson (original field number, CSL [Carl S. Lieb] 7177). The holotype and two topotypes (UTEP 10612, male and UTEP 10614, female, same collection data) are vouchers for tissue samples (heart, liver, muscle, CSL). The type material also includes UTEP 10615 (n = 19, born 10 July 1985), young of UTEP 10614, 111 mm SVL.

Description of holotype. Male, 110 mm SVL; dorsal body scales 35 and scales around midbody 41; anterior frontal longitudinally divided; posterior frontal fragmented into three scales with frontoparietals 1-1 separated by an azygous scale; prefrontals in medial contact; canthals 2-2, loreals 1-1, preoculars 2-2 (3, irregular on left side), and anteriormost sublabial not touching mental on either side; femoral pores 11-11 with 10 scales between pore series. The dorsal pattern (Fig. 6) has indistinct crossbands but dark vertebral blotches on the back and the characteristic head patterns (dark postocular streaks and X-shaped blotch). The belly has a midventral slit and the entire right leg (right foot missing) is internally excised (skin only).

Etymology. The subspecies name honors Ralph W. Axtell, long-time summer field companion since the early 1960s, who provided most vehicular transportation, who donated many specimens of *Sceloporus poinsettii* (UTEP) from his private collection, and whose industry has contributed to our knowledge of Texas lizards.

Recognition. A subspecies of *Sceloporus poinsettii* having a combination of: (1) enlarged pale blotch-like area behind each eye above dark postocular stripe, (2) dark cruciform (X-shaped) blotch on rear of head (sides indented by pale postocular blotches), (3) sexual pattern dimorphism on body (but variable), adult females crossbanded and males with dark vertebral blotches, and (4) dorsal body scales usually about 33-34 (not less than 30, usually less than 36).

Description. Color and pattern. *Sceloporus poinsettii axtelli* has a contrasting rear-of-head pattern of dark, narrow postocular stripes, enlarged pale postocular blotch-like areas, and a dark cruciform occipital blotch. The pale (whitish) postocular blotches (above the dark postocular stripes) that form the lateral indentations of the dark cruciform

or X-shaped occipital blotch, are usually open posteriorly separating (may be only indistinctly connected) the dark postocular stripes and dark X-shaped blotch. The top of the head may be mostly uniformly pale brown with pale and dark shadings, or have darkened supraocular areas. The dark, cruciform blotch may be either interrupted medially or disrupted with pale areas. The moderately distinct, pale intertympanic band, usually complete, may be interrupted by paravertebral black streaks (UTEP 8879, 13735, Fig. 6). The black collar has relatively straight borders, is about three or four scales wide, and each of the whitish borders is about two scales wide. The whitish anterior and posterior borders of the black collar are usually entire, but either may be narrowly interrupted medially by black streaks. The anterior pale border of the black collar may be interrupted by a pair of paravertebral dark streaks or by a pair of lateral dark streaks (that connect black collar and dark nape blotch). Body patterns are variable, usually with three (or four) crossbands that may be faded, or have the pigment restricted to dark vertebral blotches (with interspaces of whitish spots, single or paired); crossbands may be of mostly solid color or have some scales pale with black edges. The back may have narrow black longitudinal lines (scale edges black). Although variable, dorsal body patterns of adults (at least exceeding 100 mm SVL) tend to segregate by sex; males have the lateral parts of the crossbands faded with prominent dark (black) vertebral blotches separated by white spots or bars, whereas females have mostly crossbanded patterns but often with vertebral areas also blackened (compare these sexual differences in pattern in Fig. 6). In this regard, all three specimens illustrated in Webb (1988, Fig. 2) from the Río San Pedro (= Devils River) are males. Newborn young have brownish crossbands. The juvenile pattern on the underside of the head is reduced and indistinct (may be mostly absent), consisting of a fine blue and white marbling, and may have a semblance of a pale midventral streak. Descriptive aspects of new-born Texas young are in Ramsey and Donlon (1949) and Axtell (1950). Photographs of some Texas specimens are in Smith (1946: 199, Pl. 42), Greene (1970, neonate), Garrett and Barker (1987: Pl. 41, color), and Vermersch (1992, color Pl.).

Scutellation. The supraoculars are divided, but the medial row of scales may be larger than those of the lateral row, and scales of the frontoparietal-posterior frontal region are frequently irregular (Fig. 1B). Scale irregularity is extreme for the species in a male *S. p. axtelli* (UTEP 14655) with some named head scales unrecognizable (see species account). The mean number of dorsal scales is 33.6 (30-37, 98% 36 or less, $n = 307$), midbody scales 38.0 (33-43, $n = 237$), femoral pores 20.5 (16-30, $n = 280$, both legs) or 10.3 (7-16, $n = 577$, one leg), and scales between femoral pore series 10.3 (7-13, $n = 275$). Canthal scales (each side of head, $n = 580$) are more frequently two (67%) than one (33%), occurring in combinations (both sides of head, $n = 290$) of 1-1 (28%), 1-2 (9%), and 2-2 (63%). Preocular scales (each side of head, $n = 584$) are more frequently two (62%) than one (38%), with combinations (both sides of head, $n = 292$) of 1-1 (32%), 1-2 (12%), and 2-2 (56%). The anterior frontal ($n = 292$) is entire (54%) or longitudinally divided (46%, irregular on occasion). The prefrontals ($n = 286$) are usually in medial contact (80%, rarely partly separated by small azygous scale) or are separated (20%, most often by a large azygous scale). The separation of the anteriormost sublabial scale (outer row) and the mental (each side of head, $n = 484$) is more frequent (84%) than

contact of those two scales (16%). The largest male (MSB 21272) is 132 mm, the largest female (ASNHC 1018) 120 mm SVL; Ballinger (1973:273) recorded 128 mm SVL for a Texas female.

Comparison of the three largest geographically restricted samples indicates variation in some features of scutellation. The westernmost sample consists of 66 specimens (all UTEP) from the Hueco Mountains, vicinity of Hueco Tanks State Park, El Paso County, Texas. The other Texas sample of 57 specimens (all ASNHC) is east of the Pecos River from 7 mi SW and 11-15 mi NW Mertzton, Irion County (Ballinger, 1973). The third

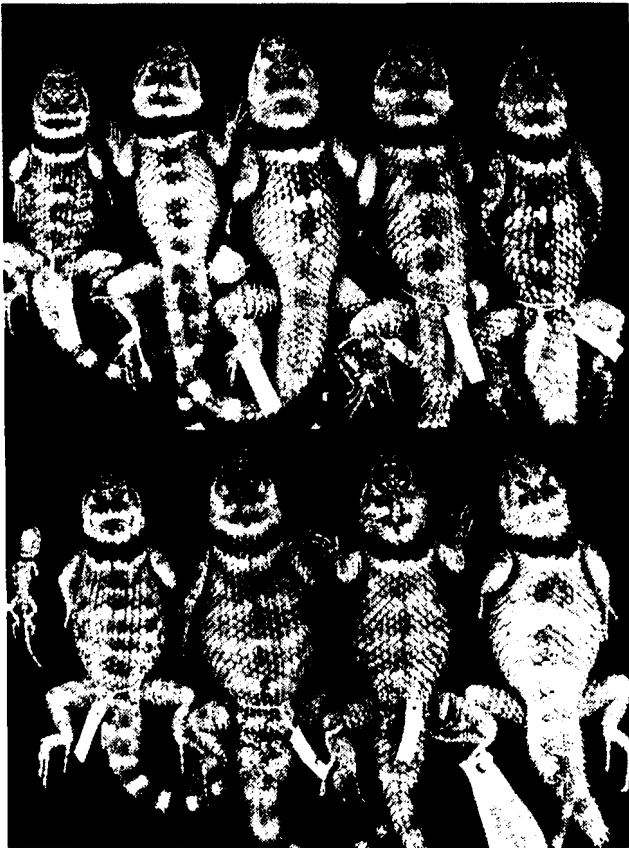


Fig. 6. Dorsal patterns of *Sceloporus p. axtelli*. **Upper**, left to right (all males): UTEP 11524, 82 mm SVL (Texas, Hudspeth Co.); UTEP 13735, 100 mm SVL (Texas, Culberson Co.); UTEP 12309, 109 mm SVL (New Mexico, Otero Co.); UTEP 10613, holotype, 110 mm SVL (Texas, Brewster Co.); UTEP 9220, 111 mm SVL (Chihuahua, S La Mula). **Lower**, left to right (all females): UTEP 6638, hatchling, 30 mm SVL (Chihuahua, NNE Samalayuca); UTEP 11510, 95 mm SVL (New Mexico, Otero Co.); UTEP 11525, 107 mm SVL (Texas, Reeves Co.); UTEP 8879, 106 mm SVL (Texas, Bexar, Co.); UTEP 2855, 107 mm SVL (Texas, El Paso Co.).

along US Hwy 190, 12.3 mi E Pecos River (author sight record only); ca. 21.2 air km NE Fort Lancaster (UTEP 14167). **Culberson County:** Guadalupe Mountains National Park, McKittrick Canyon (UTEP 6698); Guadalupe Mountains, Frijoles (Mosauer, 1932-2, KU 18425); Delaware Mts, ca. 6-7 air mi SE jct US Hwy 62-180 and St. Hwy 54 [31°42'N, 104°47'W] (UTEP 15884); Rustler Hills, along Farm Road 2185, 9.0 road mi S jct with Ranch Road 652 (UTEP 12310-11); N end Apache Mountains, along Farm Road 2185, 21.3 road mi NW jct with Farm Road 2809 [38°18'48"N, 104°32'07"W] (UTEP 13735). **El Paso County:** Huaco Mountains, within two-mile radius Huaco Tanks State Park (UTEP 170-71, 604-06, 611-15, 623, 641-49, 800, 1041-42, 1046-47, 1067, 1246, 1648, 1832-42, 2318, 2586-87, 2590, 2620-22, 2949-54, 3364, 4131-32, 6170, 10678, 10742); 6.3 mi W Huaco Tanks [31°53'50"N, 106°09'10"W] (UTEP 2796-97); 1.2 air mi S Helms's West Well [31°45'05"N, 106°01'45"W] (UTEP 2854-55); 1 mi S US Hwy 62-180 on Gasline Road [this intersection 0.8 mi W jct US 62-180 and Huaco Tanks road, St. Rd 2775] (UTEP 2650); 6.4-6.6 mi S and 1/2 mi E jct US Hwy 62-180 and Gasline Road (UTEP 197-98, 1068); ca. 2 mi N and 1/2 mi E jct Gasline Road and Fabens cutoff road (UTEP 10033); 4 mi W Huaco Pumping Station (in Hudspeck County) near jct Gasline Road (UTEP 4133, 5305). **Hudspeth County:** N slope Sierra Blanca Mt. (UTA 400); Quitman Mts, 8.7 mi W (via Interstate-10) Sierra Blanca (UZA 40656); Comudas Mountains, NW side San Antonio Mountain, just across New Mexico state line [32°00'02"N, 105°33'36"W] (UTEP 11524); Sierra Tinaja Pinta Mts, ca. 5.1 air mi NNE Comudas [31°51'30"N, 105°28'W] (UTEP 16061); Eagle Mountains, Wind Canyon [30°54'30"N, 105°04'W] (UTEP 8171-72); Spar Valley mining area [30°56'15"N, 105°03'W] (UTEP 1873), and Siphon Canyon [30°55'30"N, 105°04'W] (UTEP 1874); Indio Mountains, vicinity Indio Ranch Research Station [headquarters ca. 30°45'30"N, 105°00'18"W] (UTEP 11385, 11482, 12007, 13693-94, 13889-90, 14027, 14079); Ojo Caliente, 30° on Rio Grande [rancho, 30°49'30"N, 105°19'W] (Yarrow, 1882 [1883]-58, Cape, 1900:353, Smith, 1936 [1938], USNM 2958 [n = 3, two recataloged as USNM 328738-39]). **Irion County:** 7 mi SW Mertzon (ASNH 10261, 10265), 11 mi SW Mertzon (ASNH 2765, 10697, 10699), 13 mi W-NW Mertzon (ASNH 544-46, 1018, 2778, 2782-84, 2813-25, 2872-73, 3680-83, 3818, 3820, 3824-25, 3832, 4016, 4039-46, 4711-16, 4727-30); 15 mi NW Mertzon (ASNH 10264). **Jeff Davis County:** Davis Mountains, 0.3 mi S-0.7 mi W McDonald Observatory [30°40'N, 104°02'W] (UTEP 14578); W edge Fort Davis (UTA 17245-55, neonates); near Fort Davis, HNH 118 (UTA 8692); 1/2 mi N (Hwy 17) Fort Davis (UTEP 2812); 2 mi NW (Hwy 118) Fort Davis (UTEP 6173, 6177-78); Davis Mountains State Park (NMSU 3184); ca. 30 mi W (St. Hwy 166) Fort Davis (ASNH 10263, 10696). **Llano County:** 7 mi S-6.1 mi W [air] Oxford [30°30'15"N, 98°48'05"W] (RWA 4437-38); 2 mi W Llano (UTA 617); Houston Ranch, 12.8 km N Llano (UTA 15019-25); 19 mi SW Llano (TCWC 58470). **Mason County:** near Pontotoc (UTA 1703); 2 mi E Katelym (ASNH 10453); 1 mi S Katelym (ASNH 10757); 6 mi S-3.8 mi W Mason, Llano River (ASNH 10206); 9 mi SW (Ranch Road 1871) Mason (ASNH 81, 84, 86); 15 mi S (Ranch Road 2389) Mason (ASNH 82, 85); Hilda, "10 mi E Mason" [Ranch Road 783, ca. 14 air mi SE Mason] (ASNH 83); 18 mi E (St. Hwy 29) Mason [close to Llano County line] (UZA 2875). **Medina County:** 4 air km SSE Mico on Lake Medina (UTEP 9461). **Pecos County:** 20 mi SW McCamey, Upton County (ASNH 10493); 6.7 mi N Fort Stockton (UTEP 11509); ca. 6 mi W-0.8 mi N Fort Stockton [30°54'30"N, 103°00'37"W] (UTEP 16067); along St. Hwy 290, 2 mi E jct with US Hwy 67 (UZA 2874). **Presidio County:** 13.4 mi N-15.6 mi W [air] Terlingua Post Office, Brewster County [29°30'15"N, 103°49'05"W] (UTEP 14579, RWA 5057); 7.8 mi S-1.8 mi E [air] Candelaria [30°01'15"N, 104°29'20"W] (RWA 5142). **Reagan County:** Ted Harris Ranch, 12 mi S Best (ASNH 4803). **Roeyes County:** 1.8 mi S Balmorhea [30°11'52"N, San Saba County]; Gorman Falls Fishing Camp, 6.8 mi SE Bend (ASNH 5196). **Upton County:** King Mt., 4.6 mi NW (US Hwy 385) and 3.2 mi E McCamey (UTEP 14235). **Val Verde County:** N side Amistad Reservoir, near US Hwy 90 (UTA 16297, 18369-70; 10.6 mi N and 1.3 mi E jct US Hwy 90 and US 277-371 [29°35'N, 100°53'W] (UTEP 14572); 0.2 mi N Pecos River along US Hwy 90 (UZA 35609); 5 mi N Pecos River along US Hwy 90 at railroad crossing (UZA 36340); Rio San Pedro [= Devils River] (Webb, 1988, USNM 2948 [n = 2, both recataloged as USNM 29581, 131668]; this indefinite locality for many USNM specimens here map-plotted as restricted [30°03'40"N, 101°07'22"W] by Axtell, 2000). **Yuma County:** **Chihuahua:** Sierra del Presidio, 51.2 mi NNE Samalayuca [31°18'N, 106°24'W] (UTEP 6636-38); Rancho Cerros Colorado (ca. 31°11'N, 106°22'W), 22 air km SE Samalayuca (UBIPRO 1848) and Sierra del Presidio, 10 km E Cerros Colorado (UBIPRO 2067-70) (Lemos-Espinal et al., 1997:198, 199; other specimens at UCM); Rancho El Setenta, 17 km S Samalayuca on Hwy 45 (UBIPRO 2331, 2426, 2440-42); Sierra Rica, 3.4 mi S-23.7 mi E [air] La Mula [= Porrero del Llano] [29°09'30"N, 104°03'W] (RWA 2556); 24.3 road mi S La Mula [28°53'10"N, 104°28'13"W] (UTEP 9219-20); 12.7 km S-34 km E [air] Chilicote [28°53'N, 104°29'15"W] (RWA 6426, UTEP 14589); 1 mi S San Carlos [= Benavides, ca. 29°06'30"N, 103°54'30"W] (SRSU 1547); 6 km SE Manuel Benavides at 29°05'27.7"N, 103°51'16.3"W (Lemos-Espinal et al., 2000:185, UBIPRO 4378); 1 mi N El Porvenir Salcaies (SRSU 2829); 66 mi S S Ojinaga (SRSU 2824-25); 1 mi S [Rancho los] Hechicero[s] [28°37'N, 103°39'W] (Chrapliwy and Fugler, 1955, KU 33811). **Coahuila:** 10 road km S road jct in San Miguel [28°32'53"N, 102°56'30"W] (UTEP 14611); 3 mi S-8 mi E [Rancho los] Hechicero[s], Chihuahua (Chrapliwy and Fugler, 1955; Smith and Chrapliwy, 1958; KU 33856); east slopes of Sierra Jardin [three sites encompassing 29°06'10"N, 102°33'38"W] (UTEP 14644-70); Sierra del Carmen (FMNH 25304-06); Sierra del Carmen, Carboneras Canyon (Gloyd and Smith, 1942:32, USNM 103693-95), El Jardín [Rancho, 29°07'30"N, 102°36'W] (FMNH 42386-88), and Tanque de Santo Domingo [Rancho, 28°56'40"N, 102°24'W] (Schmidt and Owens, 1944:104, FMNH 47103-05); Rancho Buena Vista [28°26'30"N, 102°28'W] (Cañon del Hillcoat, FMNH 47106), La Serrento (FMNH 47111), and La Palma [Rancho, 29°20'N, 102°36'W] (Mesa de Hillcoat, FMNH 47107-10, Schmidt and Owens, 1944:104); Juarez, Rancho de los Borregos (Schmidt and Owens, 1944, FMNH 47117); Sierra de la Encantada, 81/2 air km NE Rancho La Encantada [28°38'55"N, 102°23'W] (RWA [1]); 4 mi SSE Rancho La Encantada [28°32'N, 102°22'10"W] (RWA 5971); 41/2-5 mi S Rancho La Encantada (UTEP 14636, 14638); Rancho Las Margaritas [28°42'N, 101°47'W] (Smith and Chrapliwy, 1958, KU 38305-06); 3 mi W Múzquiz (UTEP 14613); 2.3 mi SW Múzquiz [27°50'30"N, 101°32'57"W] (RWA [3]); 5 mi SW Múzquiz [27°48'N, 101°31'W] (RWA 1421); ca. 20 air mi ESE Zaragoza [28°23'55"N, 101°14'52"W] (RWA [1]); ca. 18 air mi ESE Zaragoza (3.7 mi from Rancho Las Cuevas) [28°23'26"N, 101°12'W] (RWA [1]); 17.2 mi SSW Villa Unión [28°03'N, 100°48'W] (TCWC 38947, 38951); 10 mi S Sabinas (FMNH 208105); 15 mi S Sabinas, Hwy 57 (Schmidt and Owens, 1944, FMNH 47118-22).

Additional records. An updated account of acceptable records of occurrence in southeastern New Mexico (*S. p. axtellii*) is mapped in Degenhardt et al. (1996). A detailed discussion of the distribution in Texas with a documented listing of localities (and map) is in Axtell (1987). **New Mexico:** **Chaves County:** 18 mi WNW Hope, Eddy County [32°52'25"N, 105°01'30"W] (AMNH 84640). **Eddy County:** Guadalupe Mts., 30 mi SW Carlsbad (CM 18303); 12 mi NW Carlsbad (CM 64850). **Lincoln County:** 19 3/4 mi E-6 mi N Capitan [T8S, R17E, Sec. 11] (Eastern New Mexico Univ. 4235, C. W. Painter, in litt.); 4.2 mi W Glencoe (TNHC 33462). **Otero County:** 2 mi N Cloudcroft (TNHC 11840). **Coahuila:** Sierra del Carmen, Juarez Canyon (Gloyd and Smith, 1942:232, FMNH 10497); Sierra del Carmen, Palau, and Hacienda La Encantada (Schmidt and Owens, 1944:104).

Sceloporus poinsettii polylepsis. **México:** **Nuevo León:** Microondas La Joya access road (Hwy 57 turnoff 1.8 road mi N Nuevo León state line) [23°49'40"N, 100°31'05"W] (RWA 5731-33, [1]); UTEP 6085, 14568-69; 6.3 road mi NE Los Medina [poblado ca. 24°01'N, 102°23'W] (Hwy 57 turnoff 13.9 road mi N Microondas La Joya turnoff) (UTEP 6224); 31/2 road mi NNW Santa Rita [ca. 24°12'30"N, 100°29'W] (RWA 6172, UTEP 4327); 1.1 mi E Hwy 57 turnoff to San Jose de las Raíces [24°33'57"N, 100°16'25"W] (RWA 6161, [1]). **San Luis Potosí:** Huertillas [ca. 24°04'30"N, 101°08'W], 5.3 road mi (Hwy 62) W Ignacio Zaragoza (RWA [1], UTEP 3729-30); San Antonio on Hwy 62 (10.6 mi E jct Hwy 57-62 in Matehuala, or 1.3 road mi W Nuevo León state line) [23°41'30"N, 100°23'30"W] (RWA 6194, UTEP 3632-33, 3702). **Zacatecas:** Sierra de las Iglesias, 31/2 road mi W La Presa de Junco (ca. 151/2 air mi NW San Tiburcio) [24°17'45"N, 101°41'45"W] (UTEP 3614); 15 road mi SW (Hwy 54) turnoff (Hwy jct) to San Tiburcio (UTEP 3615, 8911-19); 18 km SW (Hwy 54) San Tiburcio (UTEP 6751-52); 81/2 road mi E (Hwy 62) to Matehuala San Tiburcio (RWA [3], UTEP 3618-23).

