ANOTHER NEW NIGHT LIZARD (*XANTUSIA*) FROM DURANGO, MEXICO

*By Robert G. Webb*
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ANOTHER NEW NIGHT LIZARD *(XANTUSIA)* FROM DURANGO, MEXICO

*By Robert G. Webb*

**ABSTRACT:** Ten specimens of *Xantusia* from a desert habitat in eastern Durango, Mexico are described as a new subspecies of the previously monotypic *X. henshawi*. The Durango population of *X. henshawi* is known only from the type locality; individuals occur in cracks and crevices of igneous (andesite) outcrops.

*Xantusia extorris* Webb is regarded as a subspecies of *X. vigilis*.

In May 1969, Dr. Charles C. Carpenter sent me one xantusiid lizard from the area in eastern Durango from which I had previously described *Xantusia extorris* (Webb, 1965). The specimen sent by Carpenter was not *X. extorris*, but resembled *X. henshawi*. Field work in August, 1969, yielded nine additional specimens from igneous outcrops and thereby revealed the presence of another disjunct population of *Xantusia* in eastern Durango. Its morphology suggests a subspecific relationship with *X. henshawi*.

I am grateful to Dr. Carpenter for sending me the specimen obtained by his field party in April, 1969; to Robert M. Kinniburgh for field assistance, and to the University of Texas at El Paso University Research Institute for defraying expenses in the field in August, 1969; to Dr. John W. Wright, Los Angeles County Museum of Natural History, and Drs. Alan E. Leviton and Steven C. Anderson, California Academy of Sciences, for the loan of comparative material; and to Dr. Jerry M. Hoffer, Department of Geology, University of Texas at El Paso, for analysis of rock samples.

Preserved specimens are in the collections of the following institutions, to which the abbreviations in parentheses refer in the text: The California Academy of Sciences (CAS), the Los Angeles County Museum of Natural History (LACM), and the University of Oklahoma (OU). The terminology for scales follows Savage (1963).

*Xantusia henshawi bolsonae*, new subspecies

*Type material:* Holotype: LACM 55956 (Fig. 1), obtained 6-6.5 road miles NE Pedriceña on Mexican Highway 40, at an elevation of 4400 feet, Durango, México, by Robert G. Webb and Robert M. Kinniburgh (original field number, RGW 5365) on August 24-25, 1969. Paratypes: Eight specimens (LACM 55957-64) with same data as holotype. One specimen (OU 32848)

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from same locality as holotype, obtained by Jan Sassaman (member of field party headed by Charles C. Carpenter) on April 1, 1969.

*Diagnosis:* A subspecies of *X. henshawi* differing from *X. h. henshawi* in having fewer longitudinal rows of dorsal scales (averaging 50 rather than 63), seven (instead of six) supralabials, fewer femoral pores (averaging 7 rather than 11), in mostly lacking microscopic dark peppering laterally on the belly, in having a narrower head in relation to body length (head width/body length averaging 0.16 rather than 0.18), and probably in attaining a smaller (body length 57 rather than 68 mm) maximal size. For further detail, see comparisons and relationships.

**Description of Holotype**

Female (on basis of relatively small size of femoral pores) with normal xantusiid body proportions; snout pointed, rounded at tip; nostrils partly visible in dorsal view; eye relatively large, slightly closer to nostril than to ear opening; ear opening ovoid and slightly diagonal; anterior preaural fold indicated only by smaller scales that form two transverse rows medially; posterior preaural fold, four scale rows anterior to gular fold, indicated only by short intercalary row of scales on either side; distinct gular fold with enlarged scales on edge abruptly differentiated from scales of fold immediately posterior; limbs relatively short, fingers and toes overlapping when limbs adpressed to body.

*Measurements* (in mm from dial calipers): Snout-vent or body length, 56.8; tail (seemingly regenerated), 61.9; head length, from tip of snout to upper anterior margin of ear opening, 12.0; maximal width of head, 8.7; depth of head, 4.4; length of large-scaled part of head, 11.5; diameter of eye, 2.4; distance from eye to tip of snout, 4.2; distance from tip of snout to gular fold, 9.1; length of leg, about 22.0; length of fourth toe, about 6.4; axilla-groin length, 28.3.

*Squamation:* Rostral broader than high, followed in order by two nasals, a frontonasal, two prefrontals, a median, two frontals, a hexagonal interparietal that separates two parietals, and two large postparietals; interparietal with obscure parietal eyespot; postparietals separated posteriorly by small, wedge-shaped interpostparietal that touches nuchals; nasals, prefrontals, frontals, and postparietals in contact; labials, loreal region and dorsal head scales minutely pustulose (pustules confined to edges of posterior head scales); nostril pierced in suture between rostral, nasal, postnasal, and first supralabial; nostril followed on side of head by postnasal, anterior loreal, large posterior loreal, two loreolabials, uppermost smallest, and small preocular scales of ocular ring; postnasal touching nasal and frontonasal above and first supralabial below; anterior loreal touching frontonasal and prefrontal above and first and second supralabials below; posterior loreal touching prefrontal and first supraocular above and second (barely) and third supralabials below; small, upper loreolabial touching first supraocular and posterior loreal; large,
triangular, lower loreolabial touching posterior loreal and fourth supralabial; scales of ocular ring small, two postoculars largest; uppermost postocular touching fifth supraocular; five supraoculars, first touching upper loreolabial, posterior loreal, prefrontal, median, and frontal (first supraocular divided into two scales on right side); fifth supraocular touching uppermost postocular, pretemporal and first temporal; pretemporal, touching fourth and fifth supraoculars, frontal, and parietal, followed by four (left) and five (right side) temporals that border parietal and postparietal; seven supralabials; four (left) and five (right side) infralabials; pretympanic scales variable in size, largest bordering temporal and auricular scales; five to seven small auricular scales; mental about as broad as long; three large pairs of postmentals, first pair touching medially; anteriormost preregular scale largest, between second pair of postmentals; 35 transverse rows (some intercalary from either side) of preregulars; 15 rows of preregulars between first pair of postmentals and anteriormost preregular fold; 17 rows between preregular folds, and four rows (curved from either side) of preregulars between posteriormost preregular fold and gular fold, excluding 13 enlarged scales on edge of gular fold; five rows of small scales in gular fold, posteriormost scales smallest.

Small, roundish, granular scales on back, sides, and limbs; some radials and femorals enlarged; 14 longitudinal rows of squarish ventrals at middle of body, lateralmost scales with curved outer edges and slightly smaller than adjacent ventrals; transverse rows of ventrals alternating along midline in some places, so that number is 32 on right and 34 on left side; two pairs of enlarged preanal scales, posteriormost pair largest; about 49 longitudinal dorsal scale rows at midbody; about 118 transverse rows of middorsal scales (from postparietals to level above posterior surface of thighs); 25 lamellae under fourth toe of left foot; seven femoral pores on each side; caudal scales rectangular, squarish proximally underneath tail.

Coloration and pattern (recently preserved, in alcohol): Dorsal ground color of head, body, limbs, and tail pale yellow-buff; sides of body whitish; ventral surfaces pale yellow-white; ground colors showing uneven distribution of minute black peppering under magnification; black peppering absent on postorbital head stripes, and mostly lacking proximally underneath tail and on chest and belly.

Dorsal surface having pattern of dark markings; dark brown spotlike markings on head, largest posteriorly; brown markings (paler than elsewhere) on limbs; dark brown-black markings on back, some markings lineate or of irregular shape; ground color of back less extensive than markings; dark brown-black markings on tail, tending to form ringed pattern; distinct, pale postorbital stripes extending posteriorly from upper margin of eye along juncture of temporals, and parietal and postparietal to small granular nuchal scales of neck; postorbital stripe with wide (as wide as pale stripe), continuous, brown-black lower border, but having border of two dark spots above; two,
pretympanic dark spots (right) or distinct, barlike mark (left side) between eye and ear opening; dark markings on side of neck and body paler and smaller than those dorsally; dark markings on side of head; labial region heavily suffused with dark punctations.

**Variation**

The general morphology of the nine paratypes closely approximates that of the holotype, except that the anterior pregular fold is indicated by a fold of skin in OU 32848. The limbs seem to overlap more than in the holotype with the fourth toe reaching the region of the elbow when the limbs are addressed to the body.

The measurements (in mm, means with ranges in parentheses) are based on the holotype and nine paratypes. The body length of the smallest specimen is 34.4. The body length of the largest female (holotype) is 56.8, and of the largest male is 50.8. Severed tails that have undergone complete regeneration are often difficult to distinguish from tails that have never been broken. The body length/tail length ratio of three specimens that appear to have original tails is 0.69 in one female with a body length of 51, and 0.74 and 0.75 in two males with body lengths of 50 and 51, respectively. The head length/body length ratio is 0.22 (0.21-0.24); the head width/body length ratio is 0.16 (0.15-0.17); the head width/head length ratio is 0.72 (0.68-0.79); and the head depth/head length ratio is 0.38 (0.35-0.42).

The squamation of the paratypes resembles that of the holotype. The size of the small interpostparietal is often variable; the scale is either lacking or very small, or in LACM 55957, it is especially elongate. Four specimens have either one or two small intercalary scales at the rear of the interparietal; in LACM 55961 the intercalary scale touches the small interpostparietal, and in LACM 55964 the two scales nearly touch. In LACM 55963 the postparietals are completely separated by a large interpostparietal. The nasals, prefrontals, frontals, and postparietals touch mediially in all specimens. An incomplete longitudinal suture partly divides the posterior loreal (right side) in LACM 55961. All specimens have minutely pustulose head scales. The supraoculares are five, in one case four (second and third supraoculares fused). There is often one (sometimes two) intercalary scale between the first and second supraoculares and the adjacent median head scales; the intercalary scale seems to represent a fragment of the first supraocular. The temporals, variable in size, are usually five, in some cases four or six. The supralabials are usually seven, in one case six, and the infra labials are usually five, in one case four, and in another six. The largest postmental are usually three, in one case four.

The transverse rows of ventrals average 32.8 (31-34), excluding the two (usually) or three rows (each of two scales) of enlarged preanals, and small intercalary rows, usually in the chest region. The longitudinal rows of dorsal granular scales across the middle of the back average 49.6 (48-52), and the
femoral pores average 6.9 (6-8). The femoral pores in females are often not well developed being marked by shallow depressions. The average number of transverse rows of preglar roses between the anterior preglar fold and gular fold is 20.8 (19-23), and of the enlarged scales on the gular fold is 11.8 (10-13).

The nine paratypes resemble the holotype in general features of pattern. All specimens have distinct pale postorbital stripes, which are accentuated by lacking microscopic black peppering and by having blackish borders that may be narrowly interrupted, especially the upper border. The black peppering is usually lacking proximally on the underside of the tail, is lacking or diffusely scattered on the underside of the head, and is mostly lacking on the chest and belly. The pattern on the neck and back of the largest specimens consists of small, irregularly shaped, dark blotches (generally intermeshed in jigsaw fashion) with the total area of blotching about equal to or slightly exceeding that of the ground color. However, ontogenetic variation is suggested since the corresponding pattern of the smallest specimen (LACM 55964, 34 mm body length) is obscure, consisting of small, mostly punctate, dark markings. See Figure 1 for variation in dorsal pattern.
Living individuals had pale yellow to buff ground color on the back, with the color somewhat more intense on the head. The tails were pale yellow, whereas the limbs and sides of the body were white. The dorsal markings on head, body, limbs and tail were dark brown-black. The ventral surfaces were white with the belly and tail tinged with yellow, especially ventrolaterally. The irises were orange with black reticulations concentrated anteriorly and posteriorly.

*Etymology:* The name *bolsonae* refers to the geographic position of this race in a southern outlier of the Bolson de Mapimi.

**Comparisons and Relationships**

Based on gross morphological similarities there are two distinct species of *Xantusia*—*vigilis* and *henshawi*. Hitherto, *X. vigilis* contained six subspecies, *vigilis, gilberti, wigginsi, utahensis* (Savage, 1963:35), *sierrae* (Bezy, 1967a), and *arizonae* (Bezy, 1967b). *Xantusia extorris* closely resembles *X. vigilis*, but because of its geographic isolation and because of the status of the morphologically similar *arizonae* as a distinct species at that time, *extorris* was considered a distinct species (Webb, 1965). The degree of morphological difference between the subspecies of *X. vigilis* and between *X. henshawi* and *X. vigilis* indicates that relationships within the genus are best expressed by considering *X. extorris* as a subspecies of *X. vigilis*, and the isolated population described herein as *bolsonae* as a subspecies of the previously monotypic *X. henshawi*.

The distinct species, *X. henshawi*, is most readily distinguished from the other species in the genus, *X. vigilis*, by 14 longitudinal rows of ventral scales (instead of 12), and a dorsal pattern of relatively large, black blotches (instead of small dark dots).

The 108 specimens examined from throughout the range of *X. h. henshawi* do not seem to show any geographic variation, except in the number of femoral pores, and possibly in the number of temporals. In 54 specimens from the northernmost part of the range in the vicinity of the San Jacinto Mountains, Riverside County, California, the femoral pores average 11.9 (8-16), whereas the femoral pores in 54 specimens from the other localities to the south average 9.7 (7-12); the combined number of femoral pores averages 10.7. The number of temporals shows a slight increase from north to south. In populations to the north the number averages 5.2 (4-8), whereas the temporals in other populations to the south average 5.9 (4-7); the combined average number of temporals is 5.6. There seems to be no significant geographic difference in the number of dorsal granules across the back (62.8, 56-71), transverse rows of ventral scales (32.7, 30-36), enlarged scales on edge of gular fold (10.3, 7-14), transverse rows of regulars between the anterior regular and gular folds (22.6, 19-29), infralabials (5.1, 4-7), supralabials (6.2, 5-8), in the ratio, head width/body length (0.18, 0.16-0.28), and in dorsal pattern. The average
body length of the 10 largest males is 60.4 (59-62), and of the 10 largest females is 65.3 (63-68).

*Xantusia h. bolsonae* has fewer longitudinal rows of dorsal granules (49.6, 48-52) than *X. h. henshawi* (62.8, 56-71). The average number of femoral pores is fewer in *X. h. bolsonae* (6.9, 6-8) than in *X. h. henshawi* (10.7, 7-16). The number of supralabials is usually seven in *X. h. bolsonae* (95%) rather than six as in *X. h. henshawi* (72%); the frequency of seven supralabials is 25%. In some specimens of *X. h. henshawi* it is difficult to determine which scale is the last supralabial. *Xantusia h. bolsonae* seems to have a slightly narrower head in relation to body length (head width/body length averaging 0.16, 0.15-0.17) than *X. h. henshawi* (0.18, 0.16-0.28). The two lateralmost longitudinal scale rows of the belly have a few scattered dots but are mostly devoid of microscopic black peppering in *X. h. bolsonae*. The ventral black peppering is extensive in *X. h. henshawi* but is diffuse and absent medially and most concentrated laterally; the two, and often the four, lateralmost scale rows are usually liberally black-peppered in *X. h. henshawi*. The postorbital stripes are distinct in all specimens of *X. h. bolsonae*; when present in *X. h. henshawi* the stripes are often indistinct. A comparison of the dorsal patterns on the back is difficult to evaluate, but generally the pattern is of relatively smaller, more often irregular-shaped, dark markings in *X. h. bolsonae* than in *X. h. henshawi* (see comparison in Fig. 1). *Xantusia h. bolsonae* may be a smaller subspecies (maximum size, 57) than *X. h. henshawi* (maximum size, 68).


**Geographic Range and Habitat**

The ten known specimens of *X. henshawi bolsonae* are from within about a one-half mile radius, 6-6.5 road miles (Mexican Highway 40) NE Pedriceño, Durango, México. The nearest localities for *X. henshawi*, some 800 miles to the northwest, are in southern California and adjacent northern Baja California (see map 72 in Stebbins, 1966). The extent of geographic range of *X. h. bolsonae* is not known. Apparent habitat was intensively examined only at the type locality. Perhaps *X. h. bolsonae* is restricted, at least in Durango, to the general desert habitat south of the Río Nazas where *X. vigilis extorris*, *Sceloporus maculosus*, and *Cnemidophorus inornatus paululus* also have restricted distributions in Durango.

The general desert habitat in this part of the Chihuahuan Desert has been
Figure 2. Type locality of *Xanthusia henshawi bolsonae*, 6-6.5 road miles NE Pedriceña, elevation 4400 ft., Durango. Photographs taken August 25, 1969. Top: General view of hills and low mountains showing isolated, small, andesitic outcrops. Bottom: Outcrop of large weathered boulders of andesite.
described elsewhere (Webb, 1965). The general area is of relatively low elevation and physiographically is part of the extensive Bolson de Mapimí to the north; the topography is mostly irregular consisting of hills and low mountains. At the type locality there is a series of low hills with rock outcrops (Fig. 2). The principal vegetation covering the low hills includes lechuguilla (Agave lecheguilla), a maguey (Agave sp.), a treelike yucca (Yucca sp.), ocotillo (Fouquieria splendens), cholla (Opuntia sp.), small prickly pear (Opuntia sp.), and leatherplant (Jatropha cuneata). A shrubby legume (resembling Mimosa) and a small-leaved shrub (resembling Rhus) are often associated with the rock outcrops.

Rock outcrops in the area are not extensive and generally form either a cluster of large boulders (Fig. 2) or a rim-rock escarpment of limited extent up to 10 feet in height. Xantusia h. bolsonae is associated with these igneous outcrops; the rock is best described as a porphyritic andesite (with phenocrysts of biotite and feldspar) and may have either a gray or pink hue. Most of the rock exposures in this desert are gray dolomitic limestone; these outcrops frequently are extensive and have rough corrugated surfaces. Although collecting activities were limited, X. henshawi was not found to be associated with the limestone. The andesite weathers mostly into large chunks. The lizards were found in both vertical and horizontal crevices. They occurred in some horizontal crevices that had small amounts of soil. All individuals occurred singly, and were observed only after moving large chunks of andesite by using a large crowbar. Temperatures at 2 pm on August 24 were: rock surface in sun, 48°C; air in sun, 37°C; and air in shade of rock crevice, 34°C. Three species of rock-dwelling Sceloporus—S. poinsetti, S. jarrovi, and S. maculosus—are associated with both the andesite and limestone outcrops. One specimen of S. poinsetti and one of X. henshawi were found in the same rock crevice.

Xantusia h. bolsonae is sympatric with X. vigilis extorris in eastern Durango; one specimen of X. vigilis was found under a fallen yucca a few feet below an andesitic outcrop. Both populations are disjunct from the species in the southwestern United States and northwestern Mexico. The two Durangan populations occur east of the continental divide, and their ranges appear to be limited to the west by grasslands at higher elevations. The morphological differences between the two subspecies of X. henshawi seem to be greater than those between X. vigilis extorris and X. vigilis gilberti (the subspecies that extorris most closely resembles).

**Resumen**

Dios especímenes del género Xantusia de la habitación del desierto en el este de Durango, México, están descritos como una nueva subspecie del previo monotípico X. henshawi. La población de Durango de X. henshawi es
conocida solamente por el tipo local; individuos ocurren en grietas y hendiduras en las pretuberancias de andesita ígnea.

*Xantusia extorris* es ahora considerada como una subespecie de *X. vigilis*.

**LITERATURE CITED**


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