

American Museum Novitates

PUBLISHED BY THE AMERICAN MUSEUM OF NATURAL HISTORY
CENTRAL PARK WEST AT 79TH STREET, NEW YORK 24, N.Y.

NUMBER 2231

SEPTEMBER 10, 1965

A New Night Lizard (Genus *Xantusia*) from Durango, Mexico

BY ROBERT G. WEBB¹

INTRODUCTION

The genus *Xantusia* has been known previously from the southwestern United States and from northwestern Sonora and Baja California in México. The approximate distribution of the lizards of the genus has been mapped recently by Savage (1963, p. 34, fig. 24). It was somewhat surprising, therefore, to find lizards of the genus *Xantusia* in eastern Durango, México, about 600 miles southeast of the nearest records of their occurrence in Arizona and Sonora, and roughly 400 miles eastward across the Gulf of California from the nearest records in Baja California. Night lizards were collected in Durango during July, 1963, and in late May, 1964, in a desert habitat, where they were fairly abundant in the association of dead treelike yuccas and small magueys (agaves). The Durangan night lizard resembles *Xantusia vigilis* in many respects, but it is nevertheless distinctive enough to be described as a new species. The name "*extorris*" (Latin, "banished" or "exiled") selected for the species refers to its geographic isolation from other members of the genus.

I am grateful to Dr. Rollin H. Baker and the Michigan State University Development Fund for the opportunity to conduct field work and for financial assistance in the summer of 1963; to Dr. Rollin H. Baker, Mr. Bruce Baker, Mr. Daniel R. Womochel, and Dr. Artie L. Metcalf, who helped me collect night lizards; to Dr. Arnold G. Kluge and Dr.

¹ Department of Biological Sciences, Texas Western College, El Paso.

Wilmer W. Tanner for the loan of comparative material; and to Dr. Ralph W. Axtell for photographic aid. I am especially indebted to Dr. Metcalf for aid in the field in the summer of 1964, to Dr. Kluge who sent me live individuals from California, and to Dr. Jay M. Savage and Mr. Charles M. Bogert for helpful suggestions and criticism of the manuscript. The terminology of scales follows Savage (1963).

Preserved specimens have been deposited in the collections of the following institutions, to which the abbreviations in parentheses refer in the text: the American Museum of Natural History (A.M.N.H.), Los Angeles County Museum (L.A.C.M.), and the Museum, Michigan State University (M.S.U.). Comparative material was from collections at Arizona State University (A.S.U.), Brigham Young University (B.Y.U.), and the Los Angeles County Museum.

***Xantusia extorris*, new species**

DURANGAN NIGHT LIZARD

TYPE MATERIAL: Holotype, M.S.U. No. 6866 (figs. 1, 2A), obtained 3 miles southwest of Chocolate, at an elevation of 4550 feet, Durango, México, by Robert G. Webb (original field number, R.G.W. 3031) on July 8–9, 1963. The small village of Chocolate, shown on few maps, is situated beside a railroad near latitude 25° 18' N., longitude 103° 38' W., about 21 road miles north of Pedriceña and 13 road miles south of the intersection of Mexican Highway 40 and the Río Nazas. Paratypes: Fifty-four specimens from 7 miles north of Chocolate (A.M.N.H. Nos. 92944–92947), 3 miles southwest of Chocolate (M.S.U. Nos. 6867–6882), ½ mile north of Pedriceña (A.M.N.H. Nos. 92948–92951), and 6 miles south of Pedriceña (L.A.C.M. Nos. 2014–2043). M.S.U. Nos. 6867–6882 with same data as holotype; other paratypes obtained by Robert G. Webb and Artie L. Metcalf on May 28, 1964.

DIAGNOSIS: *Xantusia extorris*, having 12 longitudinal rows of ventrals (rather than 14) and a dorsal pattern of small dark marks (rather than large black blotches), more closely resembles *Xantusia vigilis* and *Xantusia arizonae* than *Xantusia henshawi*. *Xantusia extorris* is readily distinguished from *X. arizonae* in having fewer (34 to 41 rather than 43 to 50) longitudinal rows of dorsal scales, fewer (5 to 8 rather than 9 to 13) femoral pores; fewer (17 to 22 rather than 25 to 30) lamellae under the fourth toe; in having (rather than lacking) femoral pores in females, and in attaining a smaller (43 rather than 57 mm.) maximal size.

Xantusia extorris most closely resembles *Xantusia vigilis*. A pale, dark-bordered, posttympanic stripe is the only character that distinguishes

extorris from all four subspecies of *X. vigilis* (*vigilis*, *wigginsi*, *gilberti*, and *utahensis*). Three characters of *extorris* that are shared only with *X. vigilis gilberti* are the dark smudges and punctations (rather than immaculate areas) on the throat below the angle of the jaw, the absence (rather than presence) of an enlarged pretympanic wedged in above the sixth and seventh supralabials (fig. 2A), and the presence, usually, of more than 30 transverse rows of ventrals. *Xantusia extorris* differs from *X. vigilis gilberti* in having more (34 to 41 rather than 30 to 34) longitudinal rows of granular scales. For further detail, see Comparisons, below.

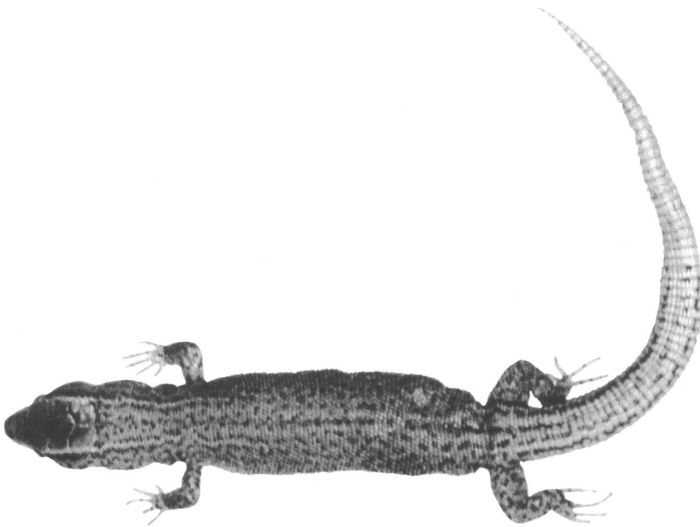


FIG. 1. Dorsal view of holotype of *Xantusia extorris* (M.S.U. No. 6866) from 3 miles southwest of Chocolate, Durango, México. Photograph by Ralph W. Axtell.

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, about equidistant between nostril and ear opening; ear opening elliptical and diagonal; anterior pregular fold between ear openings indicated only by slightly smaller scales; posterior pregular fold, three or four scale rows anterior to gular fold, indicated only by smaller scales; distinct gular fold just anterior to insertions of arms; middorsal groove extending from level of arms to base of tail; limbs short, fingers and toes slightly overlapping when adpressed to body.

MEASUREMENTS (IN MM. WITH DIAL CALIPERS): Snout-vent length,

31.1; tail, 41.5 (regenerated part, 21.8); head length, from tip of snout to anterior margin of ear opening, 7.3; maximal width of head, 6.3; depth of head, 4.3; length of large-scaled part of head, 8.3; diameter of eye, 1.5; distance from eye to lower anteriormost part of ear opening, 3.1; distance from eye to tip of snout, 3.2; distance from tip of snout to gular fold, 12.5; length of arm, about 10.0; length of leg, about 12.9; axilla-groin length, 20.7.

SQUAMATION: Rostral broader than high, followed in order by two nasals, a frontonasal, two prefrontals, a median, two frontals, a large, hexagonal interparietal that separates two parietals, and two postparietals; nasals, prefrontals, frontals, and postparietals in contact; nostril pierced in suture between rostral, nasal, postnasal, and first supralabial; nostril followed on side of head by postnasal, anterior loreal, posterior loreal, two loreolabials, and three small preoculars; 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 first supraocular and prefrontal above and second and third supralabials below; two loreolabials, upper small, touching first supraocular and anterior loreal, lower loreolabial large and triangular, touching anterior loreal and third and fourth supralabials; three preoculars, uppermost smallest, middle one triangular, separating two loreolabials on left side; intercalary scale on right side touching large lower loreolabial and fourth and fifth supralabials; three elongate suboculars, posteriormost on left side fused with lowermost postocular; three postoculars, about same size as pretympanics, slightly smaller than supraoculars; uppermost postocular touching fifth supraocular; five supraoculars, second largest, first touching prefrontal, anterior loreal, and uppermost loreolabial and preocular; fifth supraocular touching uppermost postocular, pretemporal, and first temporal; pretemporal touching fourth and fifth supraoculars, frontal, and parietal, and followed by seven temporals bordering parietal and postparietal; eight supralabials, seventh highest, slightly higher than sixth; five enlarged infralabials; pretympanic scales smaller than supraoculars, larger than body scales; five auricular scales, uppermost smallest, blackish; mental as broad as long, separating first pair of infralabials; four postmentals, first pair in contact, second pair separated by one preregular scale; preregulars about same size as pretympanics, largest anteriormost preregulars separating second and third pair of postmentals; about 32 transverse rows of preregulars, about 14 rows between first pair of postmentals and anteriormost preregular fold (two rows of smaller scales), about 14 rows between preregular folds, and two rows of preregulars be-

tween posteriormost pregular fold and gular fold, excluding six enlarged scales on edge of gular fold; about five rows of small scales in gular fold, anteriormost scales smallest.

Small, roundish, granular scales on back, sides, and limbs; some radials and femorals enlarged; 12 longitudinal rows of squarish, platelike ventrals, lateralmost rows smallest; 31 transverse rows of ventrals (third row on right side divided into two rows), posteriormost row of squarish scales smaller than rectangular scales of preceding row; two pairs of enlarged preanal scales; about 38 longitudinal dorsal scale rows at mid-body; about 111 transverse rows of dorsal scales (from postparietals to level above posterior surface of thighs); 19 lamellae, in two rows, underneath fourth toe of left foot (fourth toe severed on right foot); 15 lamellae under fourth finger of right hand (fourth finger severed on left hand); seven femoral pores on each side, distalmost two (left side) and three (right side) small; caudal scales rectangular on top and sides of tail, squarish underneath tail; 29 whorls of scales on unregenerated part of tail.

COLORATION AND PATTERN: Back and limbs brownish, slightly darker on sides of body; pretympanic region of head and neck buffy brown; tail buff, paler than body; top of head mostly brownish, buff around edges; snout and loreal region grayish; ventral surfaces whitish (belly bluish owing to preservation) having pale yellowish tint; above-mentioned ground colors showing uneven distribution of minute blackish peppering (more widely dispersed on belly than dorsum) under magnification.

Dorsal surfaces having numerous, small blackish spots; smallest spots confined to one granular scale; spots in some cases fused, forming irregular flecks or short streaks; whitish stripe extending posteriorly from upper margin of eye along juncture of temporals and parietal and postparietal onto neck, terminating above arm insertions; short whitish stripe extending posteriorly from lower margin of ear, terminating anterior to arm insertions; posttympanic and dorsolateral stripes on neck having arrangement of pigment that suggests dark upper and lower borders; dorsolateral stripe on head lacking dark border above, but having heavy blackish border below; arrangement of pigment and ground color suggesting dark-bordered postlabial (pretympanic) stripe, especially on right side; some dark markings on tail oriented to suggest two dorsolateral, dark-bordered stripes; upper and lower labials heavily suffused with dark punctations; smudges and small spots at sides of throat below tympanum and angle of jaw; peritoneum black.

VARIATION: The general morphology of the 54 paratypes closely approximates that of the holotype, except that in some cases the pregular

fold is indicated by slight tucks of skin, and the fingers and toes are separated when the limbs are adpressed to the body.

The measurements (in millimeters, averages with ranges in parentheses) are based on the holotype and 54 paratypes, excluding three newborn young with body lengths of 22, 23, 23, and a juvenile with a body length of 29 that may have been born the year preceding its capture. The average body length of the 10 largest males is 35.7 (34–39), and of the 10 largest females is 40.6 (39–43). The body length/tail length ratio averages 1.4 (1.3–1.6) in nine specimens, ranging from 32 to 40; the ratio is 1.1 in one of the newborn young of 23, and 1.2 in one, supposedly a year old, that had a body length of 30. The average head length/body length ratio is 5.2 (4.8–5.6); the head width/head length ratio is 1.2 (1.1–1.4). The head depth/head length ratio is 1.9 (1.6–2.2), and the length of the hind limb averages 12 (11–15) in 48 specimens 35.3 (31–43) in body length.

The squamation of the paratypes closely resembles that of the holotype. The frontals and prefrontals are occasionally separated, and both frontals are longitudinally divided in one specimen (A.M.N.H. No. 92947). The preoculars are three or four and the suboculars, which range from two to four, are small, and divisions between them difficult to discern. The temporals are usually seven or eight, in some cases six or nine. The anterior loreolabial is fused with the posterior loreal, and the third and fourth supraoculars are fused with the frontal on the right side of the head in one specimen (L.A.C.M. No. 2028). The infralabials are usually five, in some cases four or six, and the supralabials are usually eight, with the sixth most elevated. The seventh and eighth supralabials vary in size. Both are of approximately the same size as the sixth, or the seventh is intermediate in size between the sixth and eighth, in some cases smaller than the sixth and eighth, or the eighth is small and of approximately the same size as the adjacent pretympans (seven supralabials), or both the seventh and eighth are subdivided into scales approximating the size of the pretympans (six supralabials). Usually one or two pretympans are slightly larger than the others and immediately above the sixth supralabial, touching the seventh and eighth. An interpostparietal, occurring in three specimens, is small and elongate in one of them (A.M.N.H. No. 92947), and an anterior intercalary scale touches the interparietal in one specimen (L.A.C.M. No. 2039).

The transverse rows of ventrals average 32.6 (30–33), excluding intercalary rows in the chest region, two rows (four scales) of enlarged preanals, and intercalary scales that in some cases suggest an additional row between the last row of ventrals and the preanals (see diagram in

Fisher, 1936, p. 195, fig. 2h). The longitudinal rows of dorsal granular scales across the middle of the back average 36.9 (34–41), the transverse rows of dorsals average 105.1 (98–111), the lamellae under the fourth toe average 19.8 (17–22), and the femoral pores average 6.8 (5–8), with the distalmost pores very small. The average number of transverse rows of preguars is 34.1 (31–37), and of the enlarged scales on the gular fold is 4.3 (2–7), with some scales only slightly larger than the adjacent scales.

Specimens 28 mm. or larger have dark dorsal marks (circular or irregular in shape) on dark or pale brown, with the markings sparse or indistinct middorsally (mostly pale brown) in some specimens. The dark-bordered dorsolateral pale stripes on the base of the tail and neck are usually indistinct posterior to the arm insertions but extend, ill defined, the length of the body in some specimens. The short, pale, posttympanic stripes, rarely obscure or broken into pale spots, usually terminate anterior to the arm insertions and usually extend anteriorly through the lower margin of the tympanum and along the upper margin of the supralabials, partly interrupted but simulating a continuous pale stripe. The dark ventrolateral pigmentation on the throat below the tympanum and the angle of the jaw is sparse and mostly absent, or extensive, occurring midventrally. The three newborn young are uniformly dark brown (lacking dark dorsal markings), having continuous whitish dorsolateral stripes on the head, neck, and tail (extending the length of one unregenerated tail), with linearly arranged, whitish dots (obscure in two specimens) on the body, connecting the dorsolateral stripes on the neck and tail. The postlabial (pretympanic) stripes are interrupted with scattered whitish marks on the sides of the neck, shoulder, and in the region of the arm insertions.

In living individuals the ground color (recorded in the afternoon) of the back was pale orange-brown to tan or dark gray, with the sides pale grayish, lacking an orange tint. The top of the head was pale brown to orange-brown, the loreocanthal region was blackish, the dorsolateral head stripes were buffy orange, the dorsal surface of the limbs was orange-tan, paler than the body, and the tail was pale orange. The venter was pale yellow to cream, especially yellowish on the throat. The iris was partly black, but mostly pale orange, having scattered yellow patches. The smallest individuals are dark brown, having a pale orange tint on the snout and tail.

COMPARISONS

The genus *Xantusia* previously contained three species—*henshawii*, *arizonae*, and *vigilis*, with four subspecies, *vigilis*, *gilberti*, *wigginsi*, and

utahensis (Savage, 1963, p. 35). The distinct species *Xantusia henshawi*, characterized by 14 longitudinal rows of ventrals and a dorsal pattern of large blackish blotches, need not be considered further. The other forms (*arizonae*, *utahensis*, *wigginsi*, *gilberti*, *vigilis*, and *extorris*) resemble one another more closely than any of them resembles *Xantusia henshawi*.

Xantusia extorris differs from *X. arizonae* (data from Klauber, 1931, and Tanner, 1957) in having fewer (36.9, 34–41) longitudinal rows of granular scales across the middle of the back (46.3, 43–50 in *arizonae*); fewer (19.8, 17–22) lamellae under the fourth toe (25–30 in *arizonae*); fewer (6.8, 5–8) femoral pores (9–13 in *arizonae*); a smaller (43 mm.) maximal size (57 in *arizonae*); and in having femoral pores in females (absent from females of *arizonae*; Savage, personal communication).

Xantusia extorris more closely resembles *X. vigilis* than *X. arizonae*. Only one character distinguishes *extorris* from all four subspecies of *vigilis*—the presence of pale, posttympanic stripes—although a few specimens of *X. v. vigilis* from near Willow Springs, Kern County, California, have obscure indications of pale posttympanic stripes. Despite a slight overlap, *X. extorris* usually has more (32.6, 30–33) transverse rows of ventrals than *X. v. vigilis* (28.6, 26–31).

Variation in the widespread *X. vigilis vigilis* has been noted by Stebbins (1948, p. 100) and Savage (1952, p. 478). In the 66 specimens of *vigilis* available for comparison, there seems to be no significant geographic difference in the number of transverse rows of ventrals (28.6, 26–31), dorsal granules across the back (35.4, 32–40), femoral pores (8.2, 6–9), and lamellae under the fourth toe (19.9, 18–22), with the exception of four specimens from the vicinity of Granite Station, Kern County, California, which have more dorsal granules across the back (40, 42, 42, 44) and lamellae under the fourth toe (22, 23, 24, 25). Preserved specimens of *vigilis* vary from dark brown (nearly black), pale brown, tannish, and gray to orange-brown; the pattern of dark markings on the back varies from a coarse marbling or reticulation (Granite Station, Kern County, California) through a “normal” pattern of closely set spots and short streaks, to one of mostly small, often indistinct, dots (Imperial County, California). The dorsolateral whitish stripes on the neck seem least developed in specimens of *vigilis* from Utah and the vicinity of Granite Station, Kern County, California, but are indicated (obscure with dark borders interrupted) on the length of the body in some specimens from near Willow Springs, Kern County, California. Caution should be exercised in using color in comparative studies, judging from the pale and dark phases (Atsatt, 1939, p. 262; Caswell, 1950), and individual variation in the ground color in the pale phase (Fisher, 1936, pp. 172–173),

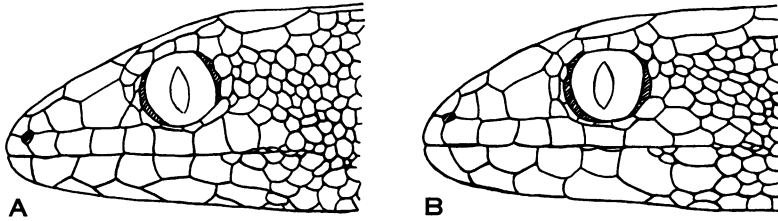


FIG. 2. Squamation of left side of head (pattern omitted), showing difference in configuration of sixth and seventh supralabials. A. Holotype of *Xantusia extorris* (M.S.U. No. 6866). B. *Xantusia vigilis vigilis* (A.M.N.H. No. 92952).

in *Xantusia v. vigilis*. The dorsal pattern and coloration of captive *vigilis* from the vicinity of Willow Springs were dark in daytime (pale at night), resembling those of the preserved specimens from near Granite Station.

Xantusia extorris differs from *X. vigilis utahensis* (data from Tanner, 1957) in having fewer (19.8, 17–22) lamellae under the fourth toe (24, 23–25 in *utahensis*); fewer (34.1, 31–37) transverse rows of pregulars (37–40 in *utahensis*); a smaller (43 mm.) maximal size (50.5 in *utahensis*); and in having a brownish ground color (buff, reddish buff in *utahensis*).

Xantusia extorris differs from *X. vigilis wigginsi* (data from Savage, 1952) in having more (32.6, 30–33) transverse rows of ventrals (27.4, 25–29 in *wigginsi*), and the dorsal dark spots often fused, forming small blotches or short streaks (dorsal dark spots not fused in *wigginsi*).

Xantusia extorris differs from *X. vigilis gilberti* (data from Savage, 1952) in having more (36.9, 34–41) longitudinal rows of granular scales across the middle of the back (32.2, 30–34 in *gilberti*) and the dorsal dark spots often fused, forming small blotches or short streaks (dorsal dark spots large, widely separated, not fused in *gilberti*). *Xantusia extorris*, however, shares three characters with *gilberti* only: the usually more than 30 transverse rows of ventrals, the enlarged seventh supralabial that is usually as high as the sixth, the absence of an enlarged pretympanic (fig. 2A), and the dark-marked lateral region of the throat below the tympanum and the angle of the jaw. In the other forms of *Xantusia*, the seventh supralabial is not elevated, since an enlarged, usually roundish pretympanic is wedged in above the sixth and seventh supralabials (fig. 2B), and the lateral region of the throat below the tympanum and the angle of the jaw is devoid of pigmentation. The enlarged pretympanic in forms other than *extorris* and *gilberti* touches the lowermost postocular, and is larger than the postoculars, often as large as the sixth or seventh supralabial (fig. 2B); variations occur in the shape and size of these scales and their relationships to the surrounding scales.

Of possible importance in distinguishing *extorris* are the fewer enlarged gulars (4.6, 2–7), some of which are only slightly larger than the adjacent scales.

COMPARATIVE MATERIAL (74 SPECIMENS): *Xantusia arizonae*: Arizona: Globe, Gila County (A.S.U. No. 60–005). *Xantusia vigilis gilberti*: Baja California: Sierra Laguna, La Laguna (L.A.C.M. Nos. 1934–1937). *Xantusia vigilis utahensis*: Utah: Twenty miles northwest of Hite in North Wash (B.Y.U. No. 11732), and 200 yards south of Trachyte Creek (B.Y.U. Nos. 11739, 12646), Garfield County. *Xantusia vigilis vigilis*: Baja California: El Rosarito (L.A.C.M. Nos. 1938–1940). Arizona: Kingman, Mohave County (A.S.U. No. 58–562). California: One mile west of Whitewater Canyon Road, Imperial County (L.A.C.M. Nos. 1941–1946); 1 mile north of Granite Station (L.A.C.M. No. 1954), 3 miles north-northeast of Granite Station (L.A.C.M. Nos. 1955–1957), and 10 miles north of Willow Springs (A.M.N.H. Nos. 92952–92958, L.A.C.M. Nos. 1958–1982), Kern County; 2 miles west of Little Rock (A.S.U. Nos. 62–326–62–328), and end of Soledad Canyon Pass Drive above Folding Hills Ranch, San Gabriel Mountains (L.A.C.M. Nos. 1947–1953), Los Angeles County. Utah: Eight miles west-northwest of Castle Rock, Washington County (B.Y.U. Nos. 11205–11210, 11213, 12648, 12650, 12676).

RELATIONSHIPS

Xantusia extorris seems to be most closely related (based on morphological resemblance) to *X. vigilis gilberti* in southern Baja California, México. Both *extorris* and *gilberti* share characters that differentiate them from the other populations of *Xantusia*. Both forms usually have more than 30 transverse rows of ventrals (usually more than 30 also in *Xantusia arizonae*), and they differ from the other forms in the configuration of the sixth and seventh supralabials and in the dark blotches and punctations on the lateral part of the throat. Also, the relatively scattered, mostly spotted pattern on the back of many specimens of *extorris* resembles the pattern of *gilberti*. Savage (personal communication) states that the number of transverse rows of pregulars in *extorris* is close to that of *gilberti*.

Because *extorris* is geographically isolated from other populations of *Xantusia*, it is considered a species. Otherwise, the morphological similarities of *extorris* and *vigilis* and its subspecies would suggest a subspecific relationship with *vigilis*.

GEOGRAPHIC RANGE

The discovery of *Xantusia extorris* in the Chihuahuan Desert provides

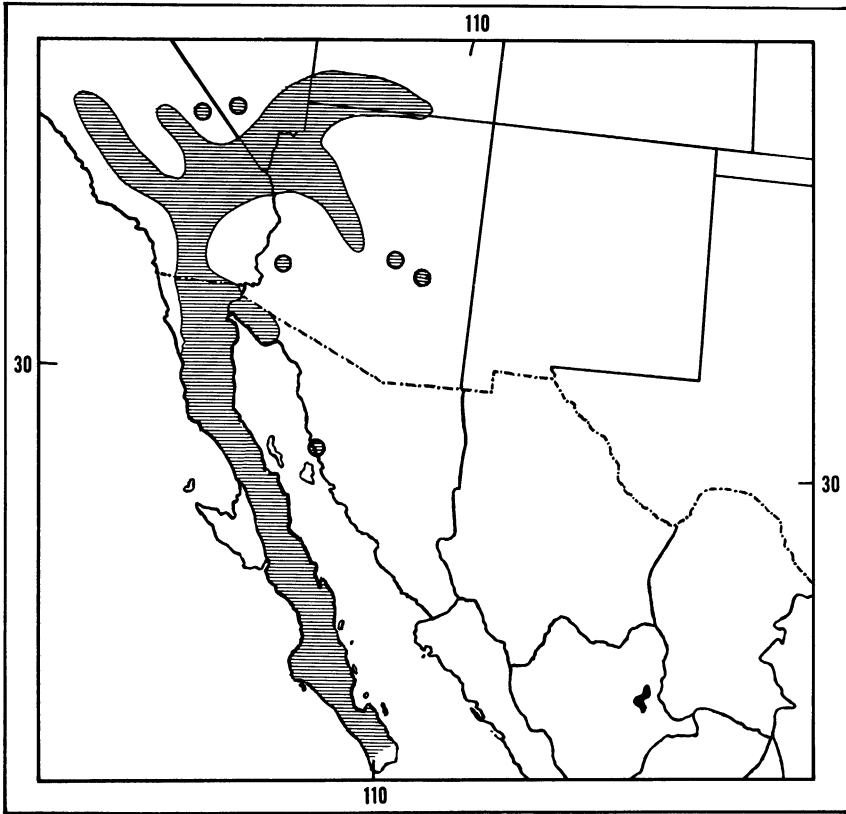


FIG. 3. Map of southwestern United States and northwestern México, showing known range of *Xantusia extorris* (small black area) and distribution of other members of the genus *Xantusia*. Large hatched area based on map shown by Savage (1963, p. 34, fig. 24). Hatched circles represent records from the Kofa Mountains (Lowe, 1964, p. 164) Tonto National Monument (A.M.N.H. Nos. 88327, 88328), and Globe (A.S.U. No. 60-005), Arizona; near Mercury, Nye County, Nevada (Tanner and Jorgensen, 1963, pp. 12, 17); Death Valley National Monument, California (Turner, 1959, pp. 172-173); and Desemboque, Sonora (Malkin, 1962, pp. 22, [62] appendix).

the first record of the genus east of the continental divide. The nearest records, some 600 miles to the northwest, are Desemboque on the coast of Sonora, México (Malkin, 1962, pp. 22, [62] appendix), and Globe, Gila County, Arizona (A.S.U. No. 60-005). The known range of *extorris* in eastern Durango is south of the Río Nazas, extending for approximately 35 miles along Mexican Highway 40 from the Río Nazas to

about 12 miles north of Cuencamé (fig. 3). *Xantusia extorris* occurs in association with plants of the genera *Yucca* and *Agave* in a desert habitat. Night lizards were sought in seemingly suitable habitats north of the Río Nazas, but none was found. The probability that *extorris* does not occur north of the Río Nazas is strengthened by the studies of Baker and Greer (1962, p. 49), who found the Río Nazas to be a prominent filter barrier preventing the north-south dispersal of many mammals in Durango. To the south and west where the terrain gradually rises, prickly pears (*Opuntia*) become larger and more abundant and the xerophytic vegetation is gradually replaced by a mesquite-grassland. Here, large, treelike yuccas also occur where the large, mostly arboreal *Sceloporus spinosus* is often associated with them, but xantusiids have not been found. Thus, the evidence suggests that the specimens of *extorris* thus far obtained are from localities at the northwestern periphery of range for the species.

HABITAT AND HABITS

In the general desert habitat occupied by *extorris* the topography varies from flat alluvial plains to gently rolling hills and prominent cliffs. The elevation ranges from approximately 3900 to 4600 feet. Two types of habitat (flat plains and foothills) prevail, but the vegetational components that identify each habitat merge in some places. The flat plains are characterized by creosote bush (*Larrea*) and mesquite (*Prosopis*) and in many places some cholla (*Opuntia*), catclaw (*Acacia*), and a white-flowered shrub (*Cordia greggi*). The vegetation in most areas is widely spaced, and the barren, hard-packed clay substratum has few rocks. In the foothills of uplifts or on low hills, the principal vegetation includes lechuguilla (*Agave lecheguilla*), a small maguey (*Agave* sp.), a treelike yucca (*Yucca* sp.), ocotillo (*Fouquieria splendens*), waxplant or candelilla (*Euphorbia antisyphilitica*), and leatherplant (*Jatropha cuneata*). The vegetation is more dense and the terrain tends to be more rocky here than it is in the intervening flat plains. *Xantusia extorris* occurs in the foothill habitat. The two plant species, occurring together or separately, indicating the presence of *extorris* are the small magueys and the treelike yuccas (fig. 4). Reptiles obtained at the same time in the habitat occupied by *Xantusia extorris* include *Phrynosoma modestum*, *Holbrookia texana*, *Uta stansburiana*, *Cnemidophorus inornatus*, and *Cnemidophorus scalaris*.

Individuals of *extorris* occur underneath, or among the attached dead leaves of, yuccas and magueys; one of the lizards was shaken from a dead but upright yucca. Rarely were individuals associated with dead lechuguillas. Suitable habitat of dead magueys is provided in places by the

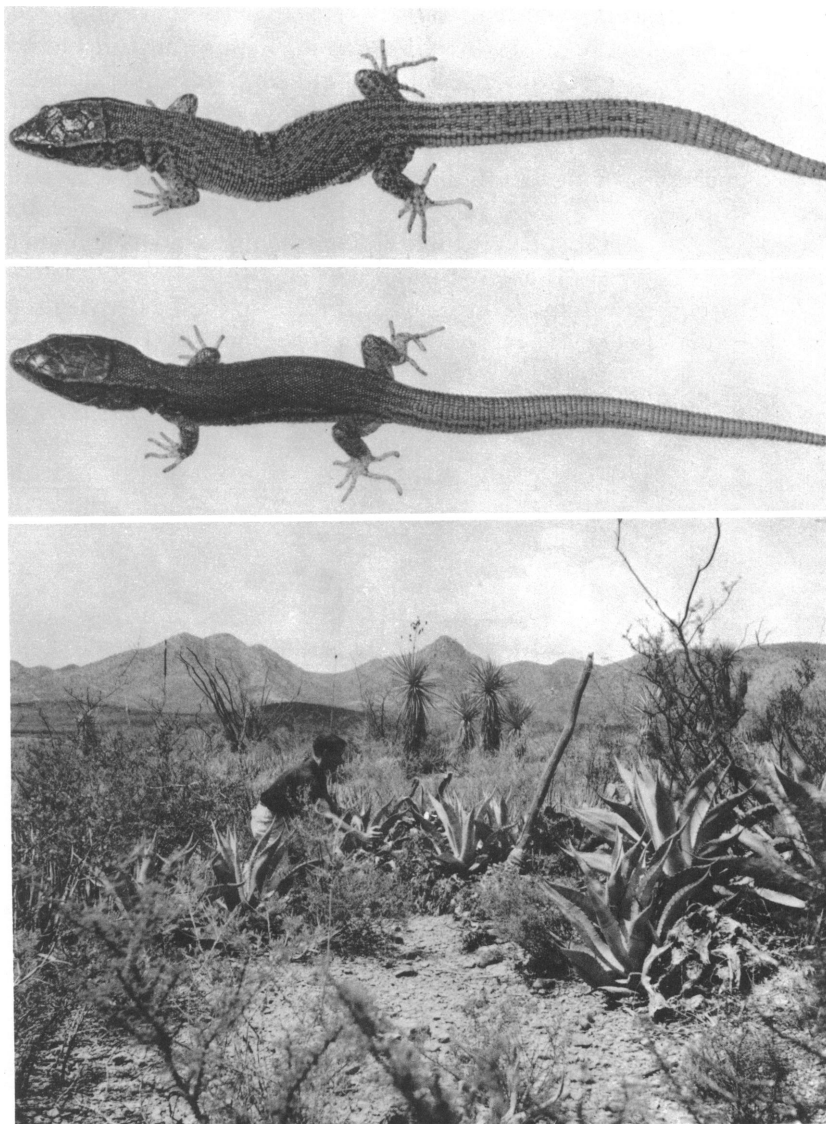


FIG. 4. Habitat of *Xantusia extorris*, 6 miles south of Pedriceña, Durango, México, showing magueys in foreground and treelike yuccas in background, and two living individuals of *extorris*, with different dorsal patterns, from that habitat. The lizards shown here (two of six specimens) are not discussed in the text and were obtained by the author, Ralph W. Axtell, and Michael P. McKelvey on July 18, 1964. Photographs by Ralph W. Axtell.

activities of gophers (*Thomomys umbrinus goldmani*), which feed on the roots of the plants. Night lizards were found in daytime (air temperature 36° C. at 12:30 P.M. on May 28) as well as at night (air temperature 26° C. at 11:30 P.M. on July 8) and were all under cover. Individuals of the species are abundant in a presumably optimal habitat of rather closely spaced yuccas and magueys (6 miles north of Pedriceña, fig. 4) as indicated by the collection of 29 (about seven or eight individuals seen but not collected) in approximately three and one-half man-hours at midday from an area of approximately half an acre.

Information concerning growth and reproduction can be derived from the two samples of *extorris* represented by 17 specimens obtained on July

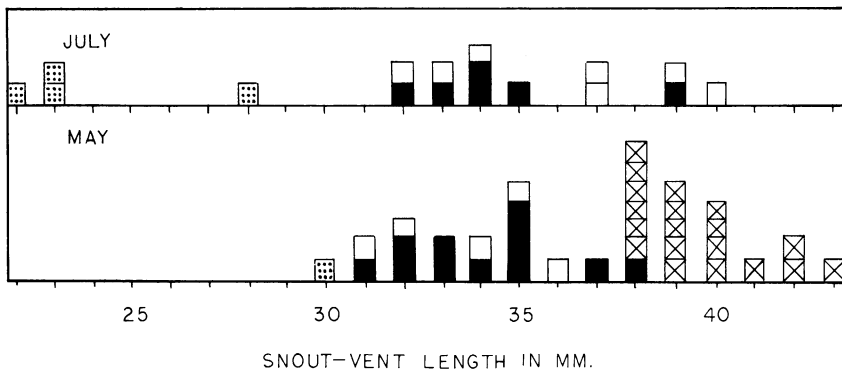


FIG. 5. Size distribution of individuals of *Xantusia extorris* collected on May 28 and July 8-9. Each square represents one individual. Dotted squares indicate unsexed specimens; solid squares indicate males; open squares indicate females; and open squares with diagonals, females containing embryos.

8-9, 1963, and 37 taken on May 28, 1964. Comparison of the distributions of individuals of all sizes represented in each of the two months (fig. 5), reveals three groups, individuals less than 28 mm. in snout-vent length, those ranging from 28 to about 36 mm., and those exceeding 36 mm., which probably represent first-, second-, and third-year age groups, respectively, judging from what is known for *Xantusia v. vigilis* (Miller, 1951, pp. 118-119, fig. 1). The juveniles collected in July (none obtained in May when most night lizards were collected) probably represent young born in late May or early June.

None of the females obtained in July contained embryos, whereas embryos were present in all females 38 mm. or larger taken in May. At this time, large pale areas (yolk), visible externally, indicate the presence

of embryos. Apparently, therefore, the offspring arrive in late May or early June. Excessive pressure applied in the capture of one female forced it to expel one of its offspring from the cloaca. It had a body length of 18 mm., a tail length of 15 mm., and a head width of 3 mm., and its birth was probably premature. The number of young produced by each female is one or two. Only the smallest sexually mature females (38 and 39 mm.) contained one embryo, but some females similar in size contained two.

LITERATURE CITED

ATSATT, SARAH

1939. Color changes as controlled by temperature and light in lizards of the desert regions of southern California. Publ. Univ. California at Los Angeles, Biol. Sci., vol. 1, pp. 237-276, figs. 1-9, pls. 8-12.

BAKER, ROLLIN H., AND J. KEEVER GREER

1962. Mammals of the Mexican state of Durango. Publ. Mus. Michigan State Univ., biol. ser., vol. 2, pp. 25-154, figs. 1-6, pls. 1-6, tables 1-6.

CASWELL, HERBERT H.

1950. Rhythmic color change in the lizard *Xantusia vigilis*. Copeia, pp. 87-91, figs. 1-2, 1 table.

FISHER, EDNA M.

1936. Some observations on *Xantusia vigilis* Baird. Copeia, pp. 172-176, figs. 1-2.

KLAUBER, LAURENCE M.

1931. A new species of *Xantusia* from Arizona, with a synopsis of the genus. Trans. San Diego Soc. Nat. Hist., vol. 7, pp. 1-16, pl. 1, 1 map.

LOWE, CHARLES H.

1964. An annotated check list of the amphibians and reptiles of Arizona. In Lowe, Charles H. (ed.), The vertebrates of Arizona. Tucson, the University of Arizona Press, pp. 153-174.

MALKIN, BORYS

1962. Seri ethnozoology. Occas. Papers Idaho State College Mus., no. 7, pp. 1-59, appendix.

MILLER, MALCOLM R.

1951. Some aspects of the life history of the yucca night lizard, *Xantusia vigilis*. Copeia, pp. 114-120, 1 fig.

SAVAGE, JAY M.

1952. Studies on the lizard family Xantusiidae I. The systematic status of the Baja California night lizards allied to *Xantusia vigilis*, with the description of a new subspecies. Amer. Midland Nat., vol. 48, pp. 467-479, figs. 1-2.

1963. Studies on the lizard family Xantusiidae IV. The genera. Contrib. Sci. Los Angeles County Mus., no. 71, pp. 1-38, figs. 1-24.

STEBBINS, ROBERT C.

1948. New distributional records for *Xantusia vigilis* with observations on its habitat. Amer. Midland Nat., vol. 39, pp. 96-101, figs. 1-4.

TANNER, WILMER W.

1957. A new *Xantusia* from southeastern Utah. *Herpetologica*, vol. 13, pp. 5-11, pls. 1-3, 1 table.

TANNER, WILMER W., AND CLIVE D. JORGENSEN

1963. Reptiles of the Nevada test site. *Brigham Young Univ. Sci. Bull., biol. ser.*, vol. 3, no. 3, pp. 1-31, figs. 1-12, tables 1-7.

TURNER, FREDERICK B.

1959. *Xantusia v. vigilis* in Death Valley National Monument, California. *Copeia*, pp. 172-173.