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A NEW SUBSPECIES OF THE IGUANID LIZARD
SCELOPORUS SERRIFER
FROM TAMAULIPAS, MEXICO*

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THE only member of the *torquatus* group inhabiting tropical lowlands, *Sceloporus serrifer*, ranges from southern Tamaulipas through Veracruz to Guatemala and across the Yucatán Peninsula. In Central Veracruz and in the Alta Verapaz region of Guatemala it may range above 1,000 meters, but apparently the species never reaches high elevations in the Mexican or Guatemalan plateaus. Two subspecies are recognized at present, *S. s. serrifer* from Yucatán and *S. s. plioporus* of eastern Mexico and Guatemala.

In his description of *S. s. plioporus*, Smith (1939) noted that a single specimen from southern Tamaulipas differed in several respects from typical *plioporus* and suggested that it might represent a new subspecies. As a result of subsequent collecting done in the southern part of Tamaulipas by several parties engaged in faunal studies, 20 additional specimens were obtained. Examination of this series seems to justify Smith's suggestion.

Sceloporus serrifer cariniceps, new subspecies

TYPE.—Five miles northeast of Gómez Farías at Rancho Pano Ayuctle along the Río Sabinas, Tamaulipas (see map by Eaton and Edwards, 1948). No. 101537, University of Michigan Museum of Zoology. Male. Collected by C. Richard Robins. Paratopotypes: UMMZ 101533-36, 104047, 104049-52, 104061, 104336-44.

DIAGNOSIS.—Similar to *S. s. serrifer*, differing mainly in its keeled or ridged, rather than smooth, flat head scales, in lacking a complete row

* Arthur Loveridge and George H. Lowery, Jr., kindly loaned specimens from the collections in their care; James E. Mosimann assisted in treating much of the data; for valuable assistance and criticism I am especially indebted to Charles F. Walker.

of small scales separating the median head shields from the supraoculars, and in a lower mean number of fourth toe lamellae. From *S. s. plioporus* it differs in lower femoral pore count (16–22, av. 19.68), lower number of toe lamellae (31–38, av. 35.24), and keeled head scales (see Table I).

DISTRIBUTION.—Lowlands of southwestern Tamaulipas, eastern San Luis Potosí, and possibly northern Veracruz. In addition to the type locality, the species is recorded from 26 kilometers north of Limón, Tamaulipas; Chocoy, Tamaulipas; and Ebano, San Luis Potosí.

DESCRIPTION OF HOLOTYPE.—Head scales pitted, keeled (especially the internasals, frontonasals, prefrontals, and frontoparietals); all convex except anterior frontal and interparietal, which are slightly concave; parietals single on each side, pentagonal, about one-half size of interparietal; latter roughly pentagonal, doubly indented posteriorly; frontoparietal on each side subrectangular, two-thirds the size of either parietal; posterior section of frontal about two-thirds size of anterior section, in contact with interparietal; prefrontals in contact medially, slightly larger than the posterior section of the frontal; median frontonasal hexagonal, larger than either lateral frontonasal; separated from rostral by two pairs of obliquely oriented internasals, each conspicuously keeled; nasals slightly longer than wide; naris almost circular on left side, somewhat elliptical on right; subnasal slightly smaller than first canthal; first canthal smaller than second, in contact with lorilabials on left side, not on right; supraoculars 4–4, fourth supraocular in contact with parietal on each side, the other supraoculars separated from median head scales by a single row of small keeled scales; preocular single; subocular followed by one postocular on left, two on right side; two rows of lorilabials not reduced below subocular; four supralabials and four and one-half infralabials to a point below middle of eye; total length 98 mm.

Mental triangular, its labial border about two-thirds that of rostral; mental followed by three pairs of postmentals, the anterior pair in contact; first anterior labiomenal separated from mental by contact of first postmental and first infralabial; gular scales smaller and sharply convex anteriorly, larger and slightly concave posteriorly; posterior scales near angle of jaw with as many as four apical notches.

Ear with four auricular lobes, each pointed, not spiny tipped, the lower three much larger than the uppermost; scales between ear and lateral nuchal fold more strongly keeled and mucronate than those in the temporal region; skin fold between nuchal pocket and lower edge of ear covered by strongly mucronate scales; dorsal scales weakly keeled,

TABLE I

Variation in Populations of Sceloporus serrifer

Based on 20 specimens from Pano Ayuctle, Tamaulipas, 101533-37, 104047, 104049-52, 104061, 104336-44; 9 from Veracruz, 89313 (8), 89314; 11 from La Primavera, Alta Verapaz, Guatemala, 91252 (6), 91251 (2), 91254 (3); 12 from Zotz, El Petén, Guatemala, 74956; and 17 from Yucatán, 71771 (6), 72881-90, 80865. All are in the collections of the Museum of Zoology, University of Michigan.

	Pano Ayuctle	Veracruz	La Primavera	Zotz	Yucatán
1. Femoral pores					
Mean $\pm 2 \sigma_{\bar{x}}$	19.68 \pm 0.65	24.67 \pm 1.15	24.55 \pm 0.79	21.75 \pm 0.74	19.06 \pm 0.92
Range	16-22	21-27	22-26	20-24	16-22
N	19	9	11	12	17
2. Fourth toe lamellae					
Mean $\pm 2 \sigma_{\bar{x}}$	35.24 \pm 0.95	40.13 \pm 1.39	39.50 \pm 1.04	38.10 \pm 0.63	37.59 \pm 0.64
Range	31-38	38-43	37-42	36-40	35-40
N	17	8	10	10	17
3. Dorsal scales					
Mean $\pm 2 \sigma_{\bar{x}}$	31.85 \pm 0.67	32.78 \pm 1.36	33.64 \pm 0.94	30.67 \pm 0.96	30.38 \pm 0.66
Range	28-34	30-35	32-36	29-34	28-32
N	20	9	11	12	16
4. Head scales	Keeled in adults	Mostly smooth	Smooth	Smooth	Smooth
5. Specimens with parietal and 4th supraocular in contact	20 (100 per cent)	5 (56 per cent)	0	1 (8 per cent)	3 (18 per cent)
6. Specimens with azygous head scales	14 (70 per cent)	5 (56 per cent)	11 (100 per cent)	0	1 (6 per cent)

strongly mucronate, with as many as six lateral denticulations on a side; lateral scales smaller than dorsal scales; ventral abdominal scales smooth, about one-half the size of median dorsals, most with a single apical notch, some with two notches; median gular scales about two-thirds size of median abdominals, slightly larger than preanals; subcaudals keeled and strongly mucronate on the posterior part of the tail; postanals enlarged, separated by two small scales; dorsal caudals near base of tail larger than median dorsals on body; femoral pores 10-10; dorsal scales 32; ventral scales 40.

Dorsal scales of foreleg keeled, mucronate, denticulate, those on upper foreleg about two-thirds size of median dorsals on body and almost twice as large as the dorsal scales on the lower foreleg; ventral scales of foreleg smooth, slightly mucronate, those on lower foreleg much larger than ventral scales of upper foreleg; lamellar formula for forelegs 7-12-?-16-12 (8-13-?-16-12).

Dorsal scales of hind leg keeled, strongly mucronate, less denticulate than those of the median dorsals, about two-thirds the size of the median dorsals, scales of shank not denticulate, slightly smaller than the dorsals on body; ventral scales on shank smooth, notched, smaller than dorsals of the same member, ventral scales of thigh smooth, notched, those immediately preceding femoral pores slightly larger than preanal scales; scales on posterior surface of thigh keeled, mucronate, denticulate, subequal in size to those immediately preceding femoral pores, abruptly decreasing in size near femoral pores; no post-femoral dermal pocket, lamellar formula for toes 8-11-15-18-13 (8-11-16-18-13).

COLOR.—Ground color varies from pale dusky tan to metallic bluish green. Black nuchal collar two to four, usually three, scales in width; both anterior and posterior light borders interrupted medially. Males with bright blue belly patches, edged medially with a heavy black border two or three scales wide; throats tinged with varying amounts of blue or purple. Dorsal keels of females black tipped, producing a characteristic streaked appearance; throats and bellies dull white or cream.

DISCUSSION.—In addition to the type series small samples of four other populations of *Sceloporus serrifer* were available for comparison, and the following characters were studied:

1. Femoral pores. Both *S. s. cariniceps* and *S. s. serrifer* differ significantly from typical *plioporus* in their low femoral pore counts. The El Petén population is intermediate in this respect. Within the type series of *cariniceps* the mean femoral pore number of nine males is 20.4, the mean of nine females is 19.0; however, a larger sample must

be studied to determine whether this difference is significant ($t=2.04$; $0.90 < P < 0.95$).

2. Fourth toe lamellae. In its low lamellar count *S. s. cariniceps* differs considerably from the two populations of *plioporus* sampled. To a lesser degree the Yucatán population also has a reduced number of lamellae; however, a significant mean difference remains between the Tamaulipas and Yucatán samples ($t=13.06$, $P > 0.005$).

3. Dorsal scales. This feature is useful mainly in distinguishing between populations of *serrifer* and *plioporus*; however, a significant mean difference was also found between *cariniceps* and Yucatán *serrifer* ($t=9.80$, $P > 0.005$). The El Petén series is very close in mean value to Yucatán *serrifer*.

4. Head scales. The Pano Ayuctle series of *cariniceps* consistently possesses sharply ridged or keeled head scales, a feature that may be characteristic of this population rather than of the subspecies as a whole. Two of three individuals from Ebano, San Luis Potosí, which resemble *cariniceps* closely in certain other features, lack prominent ridges. Another individual from Chocoy, Tamaulipas (MCZ 17493), also lacks prominent ridges. Only one individual from Veracruz resembles the type series in ridging of head scales.

5. Parietal and fourth supraocular. There is contact between these two scales in each specimen in the type series; however, as is the case in head scale rugosity, two of three San Luis Potosí specimens and the Chocoy individual lack this feature.

6. Azygous head scales. These may be present between the prefrontals, the frontoparietals, or both. This feature is mainly useful in distinguishing between *plioporus* of Alta Verapaz, Guatemala, and *serrifer* of El Petén, Guatemala.

In addition to the type series, which represents only a single population of the subspecies *cariniceps*, the following individuals representing other populations should be mentioned.

The single specimen described by Smith (1939) from north of Limón probably was taken close to the type locality and resembles the type series in possessing strongly keeled head scales and a low femoral pore count (19). An individual described by Taylor (1949), from Ebano, San Luis Potosí, about 80 miles south of the type locality, has a femoral pore count of 21 and was referred by him to *plioporus* "despite certain differences from the type"; another (Taylor 1950), with a femoral pore count of 20, is listed without comment as *plioporus*. I have examined a female and two males from near Ebano, LSU 2392, 2574, 2575, reported by Taylor (1952), and find that their femoral pore counts (21,

19, 20) and number of toe lamellae (34, 34, 36) are very close to mean values for the type series of *cariniceps*. One (LSU 2392) has sharply ridged head scales and the supraocular-parietal contact; as mentioned previously the other two lack these features. I would, therefore, consider the Ebano population as *cariniceps* approaching *plioporus*. Finally, a male (MCZ 17493) from Chocoy, Tamaulipas, 60 miles southeast of the type locality, resembles *cariniceps* in low number of toe lamellae; however, like the Ebano males it lacks the fourth supraocular-parietal contact and the heavily keeled head scales. In femoral pore count (22) it lies within the extreme range for either subspecies.

REMARKS.—Eight of the nine specimens cited in Table I for Veracruz (UMMZ 89313) are catalogued "Alchichica, Puebla," probably in error, as no plateau records of this species are known. This series, collected by Forbes and García, may have come from the vicinity of Jalapa.

Smith (1939) considered the Zotz, Guatemala, series as representing *S. s. plioporus*; actually, these specimens seem to resemble *serrifer* more closely, at least with respect to the characters listed in Table I.

Finally, mention should be made of a specimen listed by Taylor (1952) from Arriaga, San Luis Potosí (LSU 2576), a locality high in the Mexican Plateau. In femoral pore count (19–19), dorsal scales (30), and divided nuchal collar this badly discolored individual resembles *Sceloporus torquatus melanogaster*; it definitely is not *S. serrifer*.

HABITAT.—Four specimens including the type collected by C. Richard Robins, William B. Heed, and the author at Rancho Pano Ayuctle in 1949 were all seen on trees bordering sugar cane fields. One was shot from a cypress in gallery forest along the Río Sabinas. This locality lies close to the foot of the Sierra Madre Oriental, and the vegetation is considerably more luxuriant than it is a few miles farther east along the Pan American Highway. Smith's record was of a specimen collected on a tree in palm forest.

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