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A new montane lizard *(Sceloporus jarrovi cyaneus)* from Nuevo León, México

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Abstract: A new subspecies of the *jarrovi* complex genus *Sceloporus,* is described from the Sierra Madre Oriental, at Santiago and Villa Juárez, Nuevo León, México. *Sceloporus jarrovi cyaneus* n. ssp. is of medium size (85.2 mm male adult), collar 2-4 wide scales rows, dorsal scales 38-45 (ave 41. 4), femoral pores 26-36 (ave 30.8), two rows of supraoculares, with a prussian blue color in life. The new subspecies is compared with related forms and its general habitat is reported.

The state of Nuevo León has three physographic regions, one of wich is the Sierra Madre Oriental, caracterized by rugged canyons, slopes and hills that support a great diversity of species; it is also a bridge (corridor) between the tropical south and the temperate north.

From 1964 to 1978, several collectors contributed specimens identified as *Sceloporus cyanogenys,* from Cañón de la Boca, Santiago, Nuevo León. Based on 50 specimens from the same and other localities, I argue that this is a distinct and undescribed form of the *jarrovi complex, torquatus* group, for which I propose the name *Sceloporus jarrovi cyaneus* Treviño-Saldaña, n. sspp.

Blue Mountain Spiny Lizard, Lagartija Espinosa Azul de Montaña.

Diagnosis. The subspecies is of moderate size (85.2 mm), prussian blue to greenish blue above (on body) in adult males; females dark grey with spotts on black; young resembling females; the gular region blue in males and whitish in females; collar width, 2-4 scales; dorsal scales, 38-45 (x41.4); (femoral pores, 26-36 (x30.8); light collar width, 0.25-2 scales; supraoculars in two rows; scales between postanals 2-3.

Holotype. Universidad Autónoma de Nuevo León (UANL) 332, adult male, Cañón de la Presa de la Boca, Santiago, November 2, 1966, Juan José Velasco-Torres (collector) field no. JJVT 66-9. Paratypes. Forty eight, all UANL, including no. 43, cerca de la Villa Juárez, Sierra de la Silla; 80-83, 103, Presa de la Boca, Villa de Santiago; 241, 245-248, camino Presa de la Boca cerca del río, Villa de Santiago; 330, 331, 333-335, Cañón de la Presa de la Boca, Santiago; 407-409, Cañón de la Boca, 2 kms SE de la Cortina, Santiago; 1865-1868, 500 mets, hacia dentro del Cañón de la Boca, Santiago, 1874-1877, 1 km dentro, de la Boca, Santiago; 2003 Cañón de las Cristalinas, Santiago; 2450, 1 km dentro del Cañón de la Boca, Santiago; 2511-2513, Presa La Boca, 2 kms SE de Santiago, Santiago; 2514-2525, 2551-2555, 4.5 kms de San Roque, por el Río San Roque, Villa Juárez.

Description of Holotype. Dorsal crown scales smooth, with numerous scale pits in prefrontal and frontal regions, also on the supraoculars; rostral three times wider than long, median dorsal region convex; 6 postrostrals; 4 internasals; 3 frontonasals, medium frontonasal slightly larger than lateral, left lateral divided longitudinally; 2 scales separating the laterals from nasals; 2 prefrontals, in contact, frontonasals, separated from anterior frontal; frontal divided, anterior frontal slightly longer than posterior; 1 frontoparietal on each side, separated by an azygous scale; interparietal 2 times wider than parietals, with parietal eye slightly forward of center; parietals, subtriangular (one on each side); 2 supraocular rows, the inner row slightly larger than exterior; one scale row

separating supraoculars from the supraciliaries; 5-5 supraciliaries; 2-3 canthals, posterior largest; preocular single, slightly keeled, reaching lorilabials; right preocular divided; suboculars elongated and keeled; lorilabials under eye in 2 rows on each side; 5-6 supralabials, to below middle of eye.

Mental pentagonal, about as wide as long; 7-7 infralabials; first pair of postmentals, in contact with mental and reaching middle of first infralabial on each side; labiomentals, reaching suture between second and third infralabials; gular scales smooth and imbricate, truncate apically in midgular region and lateral there from, except for posterior region of mandible; pits present on anterior gular scales.

Three enlarged auricular lobules, smooth, first largest, lower right ending with a spine, lower left divided into two scales; lateral temporals keeled and slightly mucronate, increasing in siexe toward ear opening, postauricular scales granular, longer, keeled, pointed, imbricate toward anterior part of gular lobule; ear opening large 4.1 mm long, 2.7 mm wide; innermost part of nuchal fold nonscaled; keeled and mucronate scales out part of fold.

Dorsal scales on body weakly keeled, 45 occiput to base of tail, with a terminal spine, also with 2-3 mucrons on each side; spines more erect laterally; dorsal scale in parallel rows, lateral scales in obligue rows toward venter; axillary and inguinal scales small (less than 1:4 size of dorsal scales); ventral scales half size of dorsals, apices truncated, 48 from posterior part or shoulder to anus. Tail with keeled and mucronate scales, somewhat erect and largest on tail base, decreasing in size toward tip; subcaudals smooth truncate in anal region, becoming larger keeled and mucronate distally; 2 small scales between enlarged postanals. Dorsal and lateral scales of forelimbs keeled, mucronate, decreasing in size toward manus, ventrals, keeled and mucronate; dorsal and lateral scales of hind limbs keeled, mucronate, with erect spines, decreasing in size toward dorsum of digits; scales on shank slightly larger than on thigh; ventral scales of thigh smooth, truncate slightly pointed on shank; scales smooth, keeled and mucronate on ventral surface of foot; lamellar count for left foot (hallux first), 8, 12, 20, 23, 17; right foot destroyed; subdigital lamellae with three rows of keels, mucronate; 17-16 femoral pores.

Measurements (in mm). - Snout to vent, 77.2; snout to posterior edge interparietal, 16.4; head height (front parietal suture to bottom of lower jaw), 8.15; head width at widest point (parietal region) 15; tail length, 140.6 (complete), foreleg length, 32.1; hind leg, 54.76; total length, 217.8.

Coloration (in alcohol). - Blue greenish on head (supraocular, prefrontal, and rostral regions); prefrontal and internasal region with sky blue light spot; light line from snout through lorilabials and supralabials, reaching anterior edge of ear opening, continuing above it and changing to series of pale blue dots posteriorly, to anterior edge of collar; one light stripe back from the eye, extending 3 to 5 scales; parietal eye surrounded by a sky blue spot; a pale blue stripe from center of interparietal to 2 scales in front of anterior light edge of collar (interrupted); 2 light dorsolateral spots, on a imaginary line between ear openings; greenish blue frontal, with 2 light stripes bounding it laterally; black collar, 4 scales wide, extending on to shoulders and across venter, at same width; anterior border of collar, sky blue, as 4 spots; posterior border a light line interrupted at the middorsally line; both borders 2 scales wide, gular region intense ultramarine blue; body ultramarine blue dorsally, including neck and limbs; dorsal surfaces of body and limbs covered with sky blue spots; belly with 2 ultramarine blue lateral patches (one on each side) from axial to inguinal region, each bordered medially by a black band contacting each other anteriorly but separated by cream color in posterior half of venter; ventral surfaces of forelimbs greenish blue, of hind limbs grey, of manus and pes cream; preanal region grey; basal part (dorsum) of tail ultramarine blue changing to a pale blue extending 2/3 of total length, thence grey to end of tail; light blue rings dorsally on tail 2 scales wide, reduced to 1 from middle to end of tail; rings on posterior 2/3 of tail cream; postanal and subcaudal surface, cream; subcaudals keels light blue, changing to grey on posterior half of tail.

Variation. Fifty specimens (30 males, 20 females), from the three localities mentioned, show the following variation. Maximum snout-vent lenght of males 85.2 mm, females 80.8 mm; forelimbs average 43.5$^{0}/_{00}$ of S-V in males, 65.1% in females. There is no sexual dimorphism

TABLE 1

Comparation of Sceloporus jarrovi cyaneus *with other species of* Sceloporus *of the* torquatus *group occurring in the area*

	S. J. cyanenus	*S. cyanogenys*	*S. torquatus*	*S. ornatus*	*S. poinsetti*
	n = 50	n = 24	n = 14	n = 89	n = 16
Maximun ♂	85.2	128.0	109.0	90.4	120.0
S–V length ♀	80.0	108.0	106.5	74.8	114.2
Width of collar	2–4	3–6	5–6	3–7	3–6
Dorsal Scales	38–45 (X 41.4)	33–39 (X 37.0)	26–29 (X 27.4)	45–66 (X 55.3)	32–39 (X 36.0)
Femoral Pores	26–36 (X 30.8)	24–33 (X 26.5)	25–30 (X 27.1)	25–46 (X34.4)	18–30 (X21.9)

Data partly from Axtell & Axtell 1971.

in scale counts, hence the following variations was summed for both sexes: postrostrales 4(1), 5(11), 6(32), 7(4) destroyed (2); frontonasals in contact, 44%; frontonasa divided, 56% 2 prefrontals 100% in contact (39), separated by one scale (2) by two scales (1), by the frontal (6), destroyed region (2); divided frontal 100% anterior frontal divided lengthwise (2), transversely divided (2) larger than posterior (40); posterior frontal divided lengthwise (1), transversely divided (1), larger than anterior (5); anterior and posterior frontal same size (3); frontoparietals 1-1 (94%), 1-2 (2%), 2-2 (4%), in contact medially (26%), separated by one scale (38%), separated by interparietal and/or frontal (34%), 1 destroyed (2%), preocular single, occasionally divided; canthals 2-2; number of rows of lorilabials under subocular (L and R side) 1-1 (20), 1-2 (11), 2-1 (1), 2-2 (18); width of posterior border of collar (in scales) .25 (1), .75 (2), 1 (32), 1.5 (10), 1.75 (1), 2(3); border interrumpted at middle in 42 specimens (84%); supraoculars in 2 rows, the inner row larger than outer; supraciliaries generally 5-5; supralabials 5-5; infralabials 6-6; dorsal scales (occiputanus) 38-45 (x41.5) in 48 specimens, 2 destroyed dorsally; femoral pores 26-36 (x30.9) in males, 27-35 (x30.8) in females.

Sexual dimorphism. In males the color more pronounced whereas the young and females are grey dorsally; all specimens posses a light spot surrounding the parietal eye; belly patches occur only in males, ocasionally they are in contact by their borders medially. Females have a cream spot on parietal, occipital, neck and dorsal region. The light rings on tail are separated by two black rows in males and one row in females.

Comparisons. Other members of the *torquatus* group in nearby localities are: *Sceloporus cyanogenys, S. torquatus, S. ornatus,* and *S. poinsetti,* although *S. cyanogenys* and *S. torquatus* are nearest. *Sceloporus jarrovi cyaneus* is compared with all 4 species in table 1. Other populations of *S. jarrovi* that are similar morphologically, but geographically isolated from *S. j cyaneus*, are: *Sceloporus jarrovi oberon,* found south of the type locality (about 4 kms. airline), over the southern area of Sierra Madre Oriental, and *S. j. cyaneus* occuping the northern area on low hills, out-side the Montane Range; *Sceloporus jarrovi immucronatus* ocurring to the southeast in the Sierra Madre Oriental Mountains (about 312 kms. airline); and *Sceloporus jarrovi cyanostictus* to the northwest (about 125 kms. airline, at La Muralla, Coah.). *Sceloporus jarrovi cyaneus* is compared with 6 subspecies in Table 2. In coloration *S. j. cyaneus* can be distinguished from other populations of *S. jarrovi* by the blue prussian color on body in male adults, *S. j. cyaneus* resembles *S. j. immucronatus,* but lacks the blue gray coloration of the dorsum; also *S. j. cyaneus* is smaller in size. Differences from *S. j. cyanostictus* are: 80.4 mm in SVL., vs 85.2 mm; collar width 1-4 vs 2-4 scales; dorsal scales 41-49 (x45.4) vs 38-45 (x41.4), for *S. j. cyanostictus* and *S. j. cyaneus* respectively.

TABLE 2

Comparison of Sceloporus jarrovi cyaneus *with other subspecies of* S. jarrovi

	cyaneus n = 50	*immucronatus* X	*cyanostictus* n = 25	*jarrovi* n = 243	*oberon* n = 116	*lineolateralis* X	*erythrocyaneus* X
Maximum ♂	85.2	95.0	80.4	102.0	100.0	82.0	90.0
S–V length ♀	80.0	85.0	73.7	91.9	85.1	73.0	87.0
Width of collar	2–4	2–3	1–3	3–6	3–5 or Indistinct	1–4	4–5
Dorsal scales	38–45 (X 41.4)	36–48 (X 41,0)	41–49 (X 45.4)	36–53 (X41.1)	34–43 (X 38.3)	38–50 (X 44.0)	43–50 (X 46.1)
Femoral pores	26–36	24–42	28–42	24–39	24–38	28–42	23–32
Width light line collar	.25–2	2	1–2	1–1.5	0–1	–	1–2
Supraocular rows	2(100%)	2	2(90%)	1–2	2(100%)	1(100%)	2
Scales between postanals	2–3	2	2	3–4	–	1	1–2
Dorsal color	Prussian blue (in life) Ultramarine blue (in alcohol)	Cobalt blue with variation to metal grey	Blue with green spots on scales	Dark green or blue greenish with spots brown	Black or dark brown	Dark greyish blue	Brick red

X = Data from References. Axtell and Axtell (1971) and Chrapliwy (1964).

Relationships. There seems to be a clinal variation in *Sceloporus jarrovi,* from *Sceloporus j. minor* of Central México (Guanajuato), and *S. J. erythrocyaneus* in Querétaro nortward, through the Sierra Madre Oriental *S. j. inmucronatus, S. j. cyaneus* and *S. j. cyanostictus* are the most similar, and they diminish in size from *S. j. immucronatus* to *S. j. cyanostictus* with *S. j. cyaneus* intermediate. The dorsal scales increase in number from *S. j. immucronatus* with 36-48, through *S. j. cyaneus* with 38-45, to *S. j. cyanostictus* with 41-49, although *S. j. cyaneus* and *S. j. immucronatus* show little difference. Axtell (1971:96) regarded *S. j. oberon* which is alopatric, as representing a different evolutionary line from *S. j. cyanostictus* and so does *S. j. cyaneus,* but *S. j. immucronatus, S. j. cyaneus* and *S. j. cyanotictus* clearly belong to a continuous evolutionary line.

Habitat. Found on limestone rocks, on Montane slopes, between canyons, at altitudes from 500 to 700 m. The vegetation there is 5 m. high, most commonly consisting of *Acacia berladieri* (Huajillo), but including a few others such as *Esenbeckia berlandieri, Coesalpina mexicana* (hierba del patro) *Helieta parvifolia* (barreta), *Agave* sp. (lechugilla) and *Opuntia* spp. (prickly pear). Other lizard species in the same area: *Sceloporus variabilis marmoratus, Sceloporus olivaceus, Cnemidophorus gularis gularis, Scincella* sp. and *Lepidophyma flavimaculatum.*

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RESUMEN

Se describe una nueva subespecie del complejo *Sceloporus jarrovi*, encontrada en la Sierra Madre Oriental, en algunas localidades de los Municipios de Santiago y Villa Juárez, Nuevo León, México. *Sceloporus jarrovi cyaneus* n. spp. es de tamaño medio (85.2 mm. macho adulto); anchura collar 2-4; escamas dorsales 38-45 (prom. 41.4); poros femorales 26-36 (prom. 30.8); dos hileras de supraoculares; con un color azul pruzia en vivo. Se compara la

nueva subespecie con las subespecies de *Sceloporus jarrovi* en la región, y con algunas especies cercanas y pertenecientes al grupo *torquatus;* se describen características de hábitat y vegetación.

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