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# A NEW SCELOPORINE LIZARD FROM OAXACA, MEXICO

Marlene M. Dasmann<sup>1</sup> and Hobart M. Smith<sup>1</sup>

ABSTRACT.— *Sceloporus megalepidurus halli*, subsp. nov., is described from San José Lachiguiri, Oaxaca, Mexico, from one adult male.

Among specimens recently collected for the University of Colorado Museum by the late Thomas B. MacDougall in a remote sector of the Sierra Madre del Sur of Oaxaca, Mexico, is a single specimen of a distinct, unnamed race of *Sceloporus megalepidurus*. Despite an appeal for search for more material before his death, he was unable to secure it. The senior author attempted to reach the locality with directions provided by Mr. MacDougall only a week before his death but was unable to do so. Since additional material is not now likely to be acquired for at least several years, we here describe and name

## *Sceloporus megalepidurus halli*, subsp. nov.

HOLOTYPE.— University of Colorado Museum 41137, adult male, collected by Thomas MacDougall in October 1967 at San José Lachiguiri, Oaxaca, Mexico.

DIAGNOSIS.— A *Sceloporus megalepidurus* of small size, maximum snout-vent measurement 47 mm; dorsal scales 46 from occiput to base of tail; no ventral coloration.

DESCRIPTION OF HOLOTYPE.— Head scales above (Fig. 1) smooth, weakly pitted on frontonasals and prefrontals; interparietal about 3 mm wide, broader posteriorly than anteriorly, posterior edge fairly straight; parietals divided in two, each about one-sixth size of interparietal; a moderately large scale posterior to parietal, considered to be a secondary parietal; a pair of moderate-sized rectangular frontoparietals, separated medially by broad contact of frontal and interparietal; frontal transversely divided, posterior section three-fourths as large as anterior section; prefrontals moderate in size, narrowly contacting each other medially; median frontonasal somewhat larger than either lateral frontonasal; a pair of square scales in front of median frontonasals, preceded by another, similar pair of scales; four postrostrals; four enlarged supraoculars on each side, separated from median head scales by a complete row of small scales; one complete and another incomplete row of scales separating supraoculars from superciliaries; six superciliaries on each side, normal; one canthal on each side; subnasal present, about same size as loreal; preocular not divided; subocular long, single, followed posteriorly around margin of orbit by two postoculars; two incomplete rows of lorilabials (Fig. 2), reduced to one row below subocular; one row of

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Fig. 1. Dorsal head scales of the holotype of *S. m. halli*.

lorilabials continuous around end of snout; five supralabials to a point at posterior margin of eye.

Mental pentagonal, with a labial border about half that of rostral; outer row of labiomentals separated from mental by narrow contact of first postmental and first infralabial; four pairs of well-differentiated postmentals, followed by several scales not well differentiated from adjoining gular scales; first pair of postmentals in contact

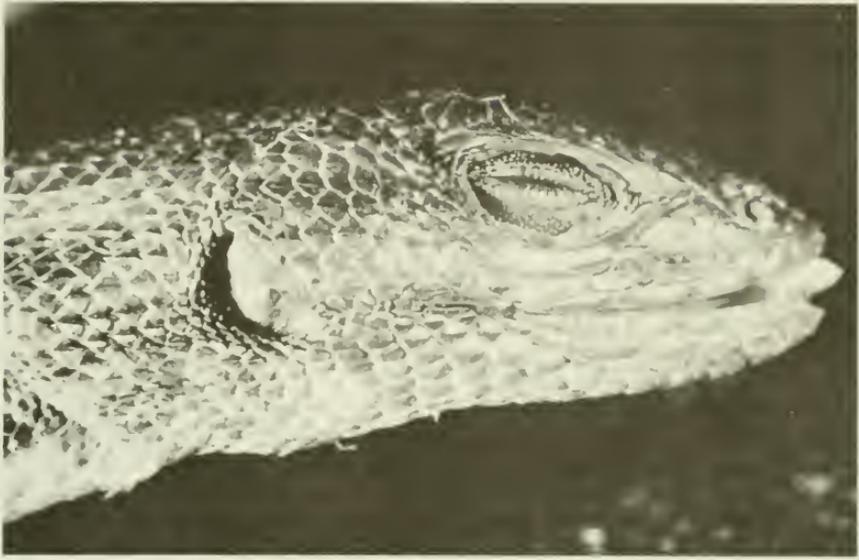


Fig. 2. Lateral head scales of the holotype of *S. m. halli*.

medially; gular scales all nearly equal in size, somewhat smaller than scales on chest, smallest below ear and between postmentals.

Auricular lobules three-four; about six scales between auricular lobules and postoculars; temporal scales keeled, larger than scales between ear and lateral nuchal fold, smaller than largest auricular lobule; scales between ear and lateral nuchal fold keeled, mucronate.

Dorsal scales 46 from occiput to base of tail, not reduced in size on nape, weakly keeled, weakly mucronate; lateral scales about one-third smaller than dorsals, not abruptly differentiated from them; lateral scales in oblique rows converging posterodorsally; most ventral scales with a single apical notch; scales in axilla and groin imbricate, some notched; scales on chest slightly larger than midventral scales; preanal scales somewhat smaller than lateral abdominal scales, subequal in size to smallest midventral scales; dorsal scales on rump somewhat reduced; dorsal caudal scales at least twice as large as scales on rump; scales around middle of body 54.

Dorsal scales of upper foreleg keeled, mucronate, equal in size to dorsal scales on body, slightly larger than largest dorsals on lower foreleg; scales on ventral surface of upper foreleg very small, keeled, weakly mucronate, those of lower foreleg larger, keeled, mucronate; lamellar formula for fingers 8-12-16-19-12 (9-11-16-18-12).

Dorsal scales of shank keeled, mucronate, equal in size to median dorsal scales, those of thigh slightly smaller; scales on anterodorsal surface of shank near tibiotarsal joint greatly reduced in size; ventral scales of shank smooth, smaller than dorsal scales of same member, decreasing in size on ventral surface near femoral pores; scales preceding femoral pores subequal to preanal scales; median scales on posterior surface of thigh keeled, mucronate, subequal to scales in preanal region, decreasing toward series of femoral pores;

femoral pores 13-14, the two series separated by four scales; no postfemoral dermal pocket; enlarged postanals present, broader than long, separated narrowly by two small scales; lamellar formula for toes 9-13-17-20-13 (10-14-16-20-13).

*Color and Pattern* (Fig. 3). Dorsal surface brown gray; a broad, clove brown band from posterior margin of orbit to rump, bordered on each edge by a light line; below this, irregular spots of clove brown, absent toward ventral surface; black area on shoulder; limbs with narrow clove brown bands; posterior surface of thigh irregularly reticulated with clove brown; tail with narrow clove brown bands.

Male with immaculate ventral surface; gular scales brown gray, appearing banded toward throat.

**DISCUSSION.**— The present specimen is placed in the *megalepidurus* group of Smith (1939). Its only major physical distinction in comparison with *Sceloporus pictus* is its lack of ventral color. This characteristic is also found in *Sceloporus megalepidurus*, a close relative of *S. pictus*. However, the specimen has fewer scales from occiput to base of tail (46) than does *S. megalepidurus* (52-63). Indeed the new taxon probably will prove to have a lower mean dorsal scale count than even *pictus*, perhaps even diagnostically lower. Comparisons are given in Table 1, from our own counts. The differences between the present type and both *megalepidurus* and *pictus* are such that we believe its accorded rank should be subspecific despite the extensive isolation presently indicated. There is no particular resemblance to either *S. subpictus* or *S. cryptus*, the only other taxa of the *megalepidurus* group; each has distinct lateral belly patches, dorsals no more than 37 from occiput to base of tail, and other distinctions.

If *S. pictus* were regarded as specifically distinct from *S. megalepidurus*, the taxon here described would most reasonably be regarded as a subspecies of the former (*S. pictus halli*). However,

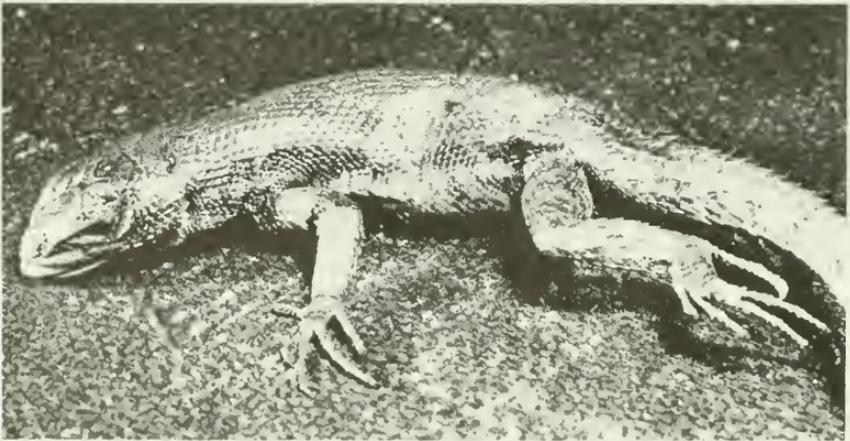


Fig. 3. Dorsolateral view of the holotype of *S. m. halli*.

TABLE 1. Selected scale counts (means and ranges) in *S. megalepidurus*.

Name	Sample size	Dorsal scales	Ventral scales	Scales around midbody	Femoral pores	Scales between femoral pores
<i>Sceloporus m. pictus</i>	13	50.6 46-54	49.4 45-54	56.9 53-61	15.0 12-18	4.8 3-7
<i>S. m. megalepidurus</i>	45	56.7 52-63	56.2 45-69	57.4 46-68	14.7 13-17	5.7 4-7
Hybrids ( <i>pictus</i> <i>megalepidurus</i> )	51	57.8 52-63	53.6 46-70	55.2 45-65	14.5 12-18	5.9 4-8
<i>S. m. halli</i>	1	46	50	54	13-14	4

recently Dr. William P. Hall discovered an apparent intergradation zone between the ranges of *S. pictus* and *S. megalepidurus*. The specimens collected from this area are quite similar to *megalepidurus* in numbers of dorsal scales, ventral scales, scales around the mid-belly, femoral pores, and scales between the femoral pore series. However, the males have distinct blue belly patches, much as in *pictus*, although they are not as clearly defined as is typical of the latter race. Some of the hybrid males have thin black lines outlining these blue belly patches. We thus conclude that indeed *megalepidurus* and *pictus* do intergrade and should be ranked as conspecific subspecies; accordingly our new taxon must fall as a subspecies of *S. megalepidurus*.

*Sceloporus m. pictus* and *S. m. megalepidurus* probably evolved from the same ancestral race, and, due to geographic isolation, became phenotypically (and presumably genetically) distinct. The present zone of intergradation appears to be secondary, with reunion of the populations occurring after a number of differences between them had evolved. Because the specimens from this intergradation zone have the *S. m. pictus* ventral coloration and *S. m. megalepidurus* scale counts, we assume that *S. m. halli* was not of a similar origin (i.e., not a result of interbreeding between *pictus* and *megalepidurus*). It appears more likely that the new taxon is an offshoot of a common ancestral population. *S. m. halli* occurs in southern Oaxaca far removed from the present ranges of *S. m. pictus* or *S. m. megalepidurus* and far from the intergradation zone (Fig. 4). A founder population could conceivably have been displaced this far from its natural range by human agency, but it seems unlikely. Probably the range of the common ancestral population once maintained continuity from northern Oaxaca into this area, and has since contracted, leaving this population isolated to evolve on its own. Since all of the present subspecies of *megalepidurus* are so closely related, they probably carry many of the same genes. It would appear that *S. m. halli* has paralleled some of the mutations or combinations phenotypically expressed in *S. m. megalepidurus*, becoming like it in being immaculate ventrally but otherwise remaining similar to *S. m. pictus*, which presumably is more like the ancestral population than is either of the peripheral subspecies. Unfortunately, only one

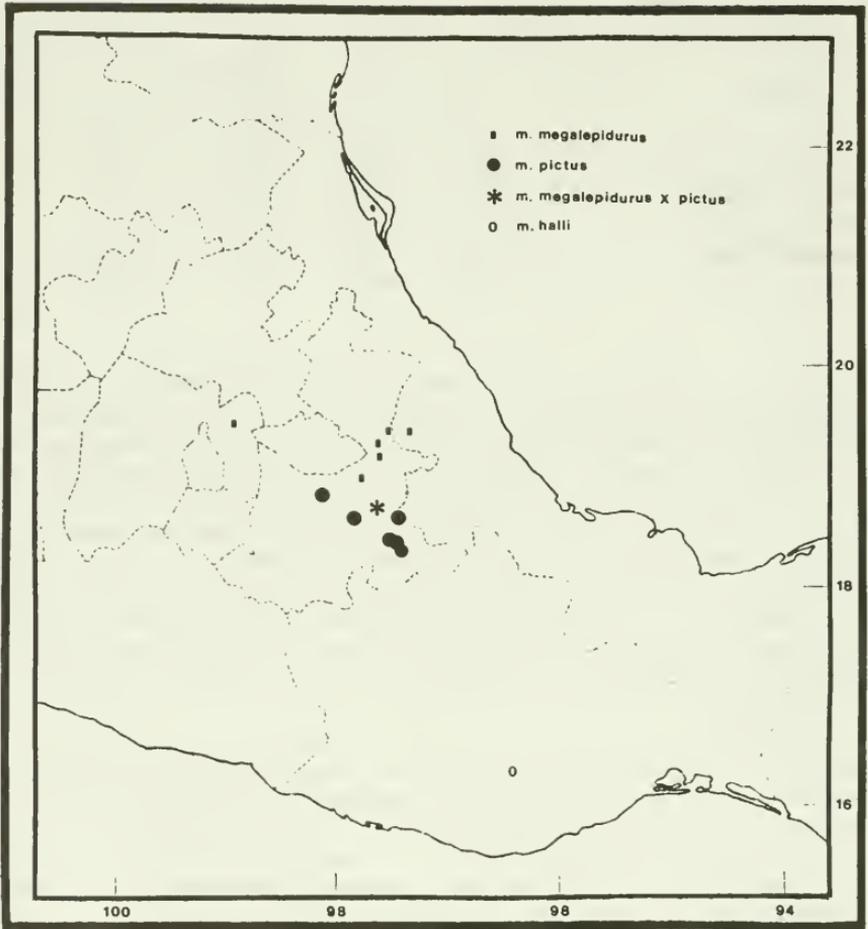


Fig. 4. Distribution of the subspecies of *S. megalapidurus*.

specimen of *S. m. halli* is available; it is hoped that future collecting efforts will concentrate on the area where the holotype was found.

The area around San José Lachiguiri, Distrito Miahuatlán, Oaxaca, is unusual in several ways other than serving as the habitat of *S. m. halli*. Unexpected taxa of the genera *Phrynosoma* and *Barisia* are also found here, all far removed from their close relatives. At one time the ranges of these and other species could have extended in continuity to this area. Due to climatic change, or some other limiting factor, their ranges contracted, leaving relic populations isolated in this area, where they became to some degree differentiated from their parental stock. Why this area appears to contain so many relictual populations is not yet understood. Whatever the reason, it constitutes an unusually distinctive faunal district.

**SPECIMENS EXAMINED.**— Specimens have been examined in the Museum of Comparative Zoology (MCZ), University of Colorado

Museum (CUM), the private collection of Edward H. Taylor (EHT) (now in part in the University of Illinois Museum of Natural History) and the private collection of Earl Olson (EO), as follows:

*S. m. megalepidurus* - VERACRUZ: Mt. Orizaba (MCZ 14157); Mal Paiz (CUM 50383). PUEBLA: Lago Alchichica (CUM 29111-21, 29123-39); 4 mi. NE Entronque Zacatepec (MCZ 133158-65); 32 km SE Perote (MCZ 122162-3); 6 mi ESE San Salvador el Seco (MCZ 133155-7). MEXICO: Teotihuacan Valley (MCZ 133166).

*S. m. pictus* - VERACRUZ: Acultzingo (EHT 7623, 7629A); Cumbres de Acultzingo (CUM 48372-6; EO 764, 1191). PUEBLA: near Alseseca (EHT 7620A, 7620-2); 20 km N Tehuacán (EHT 7624-5, 7625A, 7626-9); Tehuacán (MCZ 42140-1); 15 km SSE Amozoc de Mota (MCZ 121885-8).

*S. m. megalepidurus* X *S. m. pictus* - PUEBLA: 5 km SE Ciudad Serdán (MCZ 133123-54); 8 km SE Ciudad Serdán (MCZ Y-25591, 122164-81).

*S. m. halli* - OAXACA: San José Lachiguirí (CUM 41137).

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