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A NEW SPECIES OF *UTA* (SAURIA: IGUANIDAE) FROM  
SALSIPUEDES ISLAND, GULF OF CALIFORNIA, MEXICO

By ROYCE E. BALLINGER\* AND DONALD W. TINKLE

RECENT STUDIES of the biology of the side-blotched lizards of the genus *Uta* (Tinkle, 1967, Misc. Publ. Mus. Zool. Univ. Mich., 132, and elsewhere) have advanced our knowledge of ecological and systematic relationships within the species *Uta stansburiana*. Collections of this and other species of utas throughout most of the range of the genus in North America provide material for a thorough systematic study of the genus. Ballinger (1967, MS thesis, Texas Tech. College), largely on the basis of this material, studied 37 continental and 32 insular populations of utas, involving detailed character analysis of 3055 specimens (including types of all previously described forms). At least one of the insular forms appears to be a hitherto unrecognized species which is named and described below.

*Uta antiquus*, new species

HOLOTYPE.—UMMZ 127386, a sexually mature male from Isla Salsipuedes, 28° 44'N, 112° 59'W, Golfo de California, Mexico; taken August 19, 1964, by Donald W. Tinkle and Orlando Cuellar.

PARATYPES.—UMMZ 127387(82) collected at the same time and place as the holotype. Paratypes from this series have been deposited in the collections of the California Academy of Sciences (106377-78), Field Museum of Natural History (167652-53), American Museum of Natural History (99959-60), and the U.S. National Museum (163484-85).

RANGE.—The populations of utas on Isla Salsipuedes, Isla San Lorenzo del Norte (Las Animas), and Isla San Lorenzo del Sur are referable to this species.

DIAGNOSIS.—Two scales between posterior canthal and supralabials; one or two scales between enlarged supraoculars and fourth superciliary; ventrals more than 65, dorsals fewer than 94; maxillary teeth 18-20; a relatively large

\* Department of Biology, Angelo State College, San Angelo, Texas.

uta with maximum snout-vent length of 69 mm in males; color and pattern of light spots over dark gray to brown background.

**DESCRIPTION OF HOLOTYPE.**—**Head:** Frontal twice divided longitudinally; prefrontals separated by a single small scale (3 prefrontals in the series); 4 frontoparietals in a series in contact medially; 18 circumorbitals, 1 circumorbital scale row between frontoparietal and enlarged supraoculars; 2 circumorbital scale rows between parietal and enlarged supraoculars; 1 circumorbital row between frontal and enlarged supraoculars; 25 total supraoculars, 5 enlarged; 2 scales between supraocular and fourth superciliary; 5 superciliaries; 3 frontonasals; 2 rows of internasals; 1 subnasal; 1 postrostral scale row; 1 loreal; 2 scales between posterior canthal and supralabial; 10 right supralabials; 14 orbital papillae; 1 smaller auricular lobule above 3 large ones; 3 occipital scale rows at midline behind interparietal; 16 circuminterparietals. **Body:** 90 dorsal scales from interparietal to a point above the posterior aspect of thigh; 20 non-keeled dorsals; dorsals at midbody carinate, mucronate to spiny, at tail base carinate and spinous; 35 gular scales; 19 gular fold scales; 69 ventrals; 15 interfemorals; 15 femoral pores on each leg; 27 lamellae on fourth toe; 2 interpostanals. **Ratios:** Dorsals/snout-vent length, 1.69; non-keeled dorsals/dorsals, 0.27; gulars/snout-gular length, 1.8; number of lamellae/length of fourth toe, 2.7. **Size and proportions:** Snout-vent length, 53 mm; snout-gular length, 18 mm; femur length, 12 mm; tibia length, 14 mm; hind-foot length, 17 mm; length of fourth toe, 10 mm; tail length, 83 mm; snout-gular/snout-vent, 0.34; femur length/snout-vent, 0.27; tibia length/snout-vent, 0.26; hind-foot length/snout-vent, 0.32; length of fourth toe/hind-foot length, 0.59.

**SKELETAL FEATURES OF HOLOTYPE.**—Cervical ribs, 3; sternal ribs, 3; single, forked xiphisternal rib; no posterior extension of xiphisternal rods beyond rib insertions; 23 presacral vertebrae; 4 or 5 preautonomous caudal vertebrae; 43 total caudal vertebrae. Skull length, 13 mm; maximum skull width, 8 mm; femur length, 13 mm; tibia length, 12 mm; foot length (heel to tip of longest toe), 20 mm; phalangeal formula, 2-3-4-5-3 (front) and 2-3-4-5-4 (rear); sternal fontanelle obovate; teeth obscured in x-ray. **Color in alcohol:** Small light spots dorsolaterally scattered sparsely over gray background (light spots = 1-4 scales); gular region blue; light spots along labial margin; venter blue laterally and anteriorly, light gray medially and posteriorly; axillary spot dark blue to black (7 mm long by 5 mm high).

**DESCRIPTION OF PARATYPES.**—**Head:** Like holotype, except frontal occasionally divided only once or divided three times; prefrontal often not separated by single scale (2 in series); frontoparietals occasionally separated by a single scale with 3 or 5 scales in contacting series or sometimes frontoparietals separated by posterior apex of frontal; circumorbitals 15-20 (mean 17.2); usually 2 (83%) circumorbital scale rows between frontoparietal and enlarged supraoculars; occasionally 4 (4%) enlarged supraoculars; 17-27 (mean 22.9) total supraoculars; sometimes 1 (10%) scale between enlarged supraoculars

and fourth superciliary; postrostral scale rows, 2 (51%); loreals occasionally 2 (20%) or 3 (7%); occasionally 3 (20%) scales between postcanthal and labial; right supralabials usually 9 (51%), rarely 8 (2%); 13–16 orbital papillae (mean 14.1); large auricular lobules sometimes 2 (37%); total auricular lobules occasionally 5 (34%) or 3 (6%); usually 2 (89%) occipital scale rows; 14–18 circuminterparietals (mean 16.6). **Body:** Dorsals, 79–94 (mean 86.5); non-keeled dorsals, 16–38 (mean 25.9); gulars, 31–37 (mean 33.7); gular fold scales, 13–20 (mean 16.6); ventrals, 66–76 (mean 70.0); interfemorals, 13–19 (mean 15.7); total femoral pores, 27–33 (mean 30.0); 24–30 lamellae on fourth toe (mean 26.8); interpostanal scales occasionally 3 (33%). **Ratios:** Dorsals/snout-vent average 1.79; non-keeled dorsals/dorsals average 0.30; ventrals/snout-vent average 1.45; gulars/snout-gular average 2.06; lamellae/fourth toe length average 3.04. **Size and proportions:** Maximum snout-vent length, 58 mm in males, 52 mm in females; snout-gular/snout-vent average, 0.34; femur length/snout-vent average, 0.22; tibia length/snout-vent average, 0.25; hind-foot length/snout-vent average, 0.32; fourth toe length/foot length average, 0.58.

**SKELETAL ANATOMY.**—Sixteen complete skeletons plus x-rays of 29 additional specimens are available. All counts and observations could not be made on some of the skeletons, so the sample sizes upon which the following observations are based are variable.

Cervical ribs always 3; sternal ribs always 3; xiphisternal rib always single and forked and there is no xiphisternal rod posterior to rib insertions; presacral vertebrae, 22(2), 23(25), or 24(2); non-autonomous caudal vertebrae, 4(1), 5(20), or 6(7); total caudal vertebrae, 42–43. Skull length/width ratio, 1.5–1.7; phalangeal formula, 2-3-4-5-3 (front) and 2-3-4-5-4 (rear) in all; sternal fontanelle always obovate (nearly round in one); maxillary teeth on each side 18–20; total premaxillary teeth always 6; dentary teeth on each side, 24–27; posterior teeth weakly cusped.

**KARYOTYPE.**—Eleven counts were made of mitotic figures from bone marrow smears of 4 males. Nine counts of  $2n = 34$  and 1 each of 31 and 32 were made. There are 6 pairs of macrochromosomes and 11 of microchromosomes. The males contain a tiny dot microchromosome and are presumably heterogametic.

**COLOR IN ALCOHOL.**—Little variation in coloration; spotting of females sometimes more dense and spots smaller than in holotype; dark chest coloration can be seen in even very young animals, but is especially conspicuous in half-grown and adult lizards.

**HABITAT.**—*Uta antiquus* may be found in a variety of habitats. On Salpuedes and San Lorenzo Norte it is found commonly along the rocky beach and on hillsides and has been observed feeding in the intertidal zone. On San Lorenzo Sur *antiquus* is common on the sandy flats and rocky arroyos as well as along the rocky beach and on cliffs directly above the beach.

VARIATION.—**Sexual:** There is little or no sexual dimorphism in coloration except as described above. Females are generally smaller and have slightly shorter appendages in relation to body length; they have smaller scales and higher ratios of scales per unit area than males although actual numbers of scales do not differ significantly between the sexes. There is more sexual dimorphism in the Salsipuedes population based on scale counts, external measurements, and ratios than in either of the San Lorenzo populations. The numbers of characters which differ between the sexes at the 0.01 level (*t* test) are 13 (Salsipuedes), 8 (San Lorenzo Sur) and 5 (San Lorenzo Norte). **Geographic:** Although there are slight differences in the sample means of scale counts between the Salsipuedes and two San Lorenzo populations (the greatest owing to reduction of interfemoral scale numbers in the latter), there are no taxonomically significant differences between the three populations as measured by coefficients of difference. There is a slight increase in the variance of several characters in lizards from San Lorenzo Sur, probably because of the relatively large size of this island and attendant large population of utas. The variance is slightly increased in many characters of the San Lorenzo Norte population, but this is likely attributable to a heterogeneous sample not comparable to those from Salsipuedes and San Lorenzo Sur which were taken in a single collection.

COMPARISONS.—*Uta antiquus* is most similar to *U. stellata* (Islas San Benito) and *U. nolascensis* (Isla San Pedro Nolasco) which are intermediate in most characters between *Uta stansburiana* and *Uta palmeri* (Ballinger, 1967). While *antiquus* is likewise more similar to *stansburiana* than to *palmeri* it is more similar to *palmeri* than is any other species of *Uta*. Therefore, because of its intermediate position morphologically, it seems appropriate to compare *antiquus* with all of the above species. In general appearance, however, *antiquus* would likely be confused primarily with *palmeri* from which it differs strongly in a number of characters.

*Uta antiquus* is distinguished from *U. stellata* in having significantly fewer dorsals (74–94 versus 101–132) and fewer non-keeled dorsal scales (9–38 versus 16–132). *Uta antiquus* usually has 2 scales between posterior canthal and supralabials while *stellata* has 3 or 4. *Uta antiquus* has 1 or 2 scales between the enlarged supraoculars and the fourth superciliary while *stellata* has 2–3. *Uta antiquus* has 1–2 loreals compared with 1–4 (mean 2.5) in *stellata*. The auricular lobules of *stellata* are reduced in size, the largest never longer than its basal width; the lobules of *antiquus* are always well developed, the largest always longer (usually 2×) than its basal width. The dorsal color and pattern is similar in the two species (spotted type, Ballinger, 1967), but *antiquus* has more spots per unit area than does *stellata*. No significant differences have been noted in the skeletons of the two species.

*Uta antiquus* differs from *nolascensis* in having fewer dorsal (74–94 versus 95–108) and usually fewer non-keeled dorsal scales (9–38 versus 17–41). *Uta antiquus* has 1–2 loreals, *nolascensis* 2–3. *Uta antiquus* has 2 scales

between the posterior canthal and the supralabials, *nolascensis* 3–4. *Uta antiquus* has 5 (rarely 4) superciliaries while *nolascensis* has 6 (63%) or 5 (37%). *Uta nolascensis* has a uniform green dorsum (no spots) with a dark blue to black venter and gular region; the coloration of *antiquus* is brown with light spotting; the venter is white posteriorly, dark to black in the chest region and throat.

*Uta antiquus* differs from *Uta palmeri* in having fewer dorsals, fewer non-keeled dorsals, fewer ventrals, and fewer gulars; usually fewer orbital papillae and fewer interfemorals. *Uta antiquus* has 2 scales between the enlarged supraoculars and the fourth superciliary while *palmeri* has 3 (86%) or 2 (14%). *Uta antiquus* has 2 scales between the posterior canthal and the supralabials while *palmeri* usually has 3 or 4 (rarely 2). The dorsal coloration of these two species is very similar, but *palmeri* has larger spots and more of them per unit area than *antiquus*. *Uta palmeri* does not have the dark chest coloration of *antiquus*, and usually (95% of skeletons) has 21 or more maxillary teeth (20–22); 80 per cent of *Uta antiquus* have 20 or fewer teeth (18–21). An ontogenetic increase in maxillary teeth is possible; if such occurs, *U. palmeri* because of its greater size would have more teeth than *antiquus*.

Of the subspecies of *Uta stansburiana*, *antiquus* is most similar to the nominate one. *Uta antiquus* may be distinguished from *Uta s. stansburiana* on the basis of fewer dorsals (74–94 compared with 91–117 in *U. s. stansburiana*), 2 scales between postcanthal and supralabials versus 3–5, and larger size (69 mm maximum versus 54 in adult males). The dorsal color pattern, though readily distinguishable in the two forms, is of the spotted type (Ballingier, 1967) in both. Males in both forms are light spotted over a darker background; *antiquus* has a sparse scattering of small light spots; *U. s. stansburiana* are densely spotted. The females of *antiquus* are like the males whereas females of *U. s. stansburiana* are distinctly dark spotted over a lighter background.

The name *antiquus* is from the Latin meaning earlier in time and hence relictual in a temporal sense. This stems from our conviction that this species is derived from an earlier stock of utas than that which spawned some of the other populations on islands in the Gulf of California.

MATERIAL EXAMINED.—Type and paratypes UMMZ 127386–87 (Isla Salsipuedes); CAS 51247–51256, 95103–95119; SDNHM 45054–45056, 44149–44150, 51210–51249 (Isla San Lorenzo Norte); UMMZ 127449 (47) (Isla San Lorenzo Sur).

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