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## A New Gecko (*Sphaerodactylus*) from the Sierra Maestra of Cuba

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**ABSTRACT.**—A new species of *Sphaerodactylus* is described from karst areas of the northern slopes of the Sierra Maestra of Cuba. It is most closely related to *S. nigropunctatus* and *S. torrei*, and is distinguished from those species and other members of the *nigropunctatus* group by having a narrower snout, a nearly uniform pattern with no cross-banding in any life stages (juveniles, adult males, and females), and by having a small escutcheon. It is most easily confused with the Cuban species *S. elegans*, from which it differs in head and toe pad scalation.

In the summer of 1989, while en route by plane from Havana to Santiago de Cuba, we noticed a distinctive region of karst terrain in the northern foothills of the Sierra Maestra. During that summer's field work we made a special effort to visit the area, which is roughly south of Jiguaní near the border of Granma and Santiago de Cuba provinces. There, we collected specimens of a new ring-necked gecko, *Sphaerodactylus cricoderus* (Thomas et al., 1992), and one of us (S.B.H.) also saw, but was unable to collect, a large plain-colored *Sphaerodactylus* that could not be identified to species. The following year we returned to the site, a coffee-growing settlement called La Pimienta, and collected a large, plain-colored female, which, in addition to being unpatterned, showed other differences in pigment distribution and scale configuration from any of the known species of *Sphaerodactylus*. We revisited La Pimienta in 1994 and collected several more specimens of this lizard, all showing the same distinctive features as the original. We also collected specimens from south of Guisa, some 18 km to the northwest of La Pimienta.

### MATERIALS AND METHODS

Snout–vent length (SVL) was measured to the nearest mm with a ruler. Measurements of the heads were made by tracing an outline on paper, using a camera lucida attachment to a Wild dissecting scope, and making appropriate measurements with a digital read-out micrometer caliper. A subvexate scale is one that is nearly granular but has a sloping anterior face, i.e., a tendency toward imbrication. The narial crescent is a crescent-shaped keratinized area on the posterior rim of the naris, connected to or separated from the rostral. Museum abbreviations follow standardized usage (Leviton et al., 1985), except for MNHNCU, which refers to the collection of the Museo Nacional de Historia Natural, Havana, Cuba. In addition to museum specimens listed herein, comparative material of Cuban *Sphaerodactylus* was examined in the Carnegie Museum of Natural History, the Museum of Comparative Zoology, and in the authors' private collections.

*Sphaerodactylus pimienta*, sp. nov.

Fig. 1

**Holotype.**—MNHNCU 4417, an adult female from near La Pimienta (1.5 km WSW La Tabla), 465 m elev., Santiago de Cuba Prov., Cuba, collected 24–27 June 1994 by Richard Thomas.

**Paratypes.**—USNM 512220, same locality as

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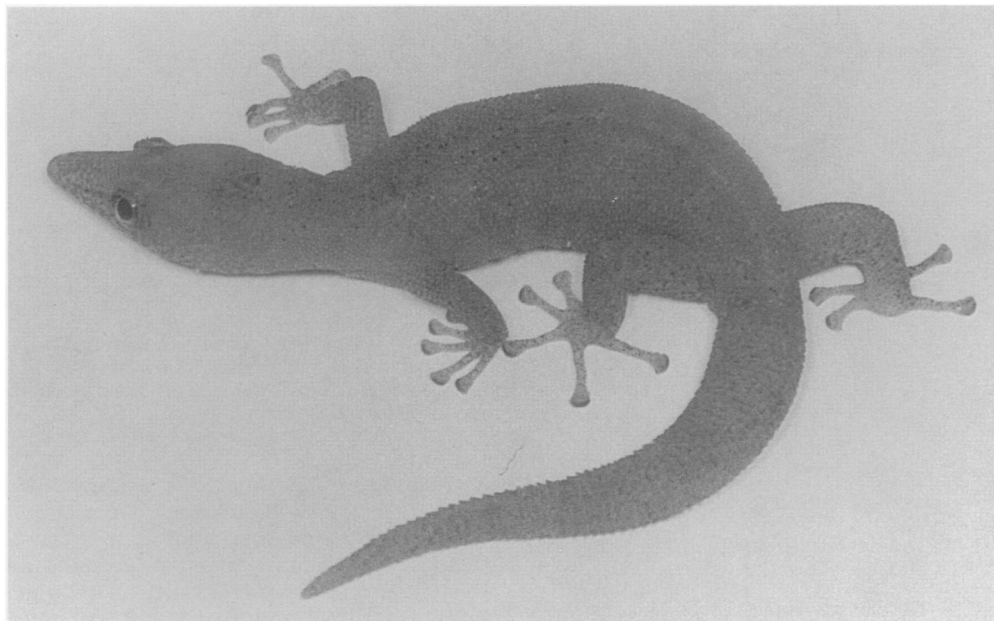


FIG. 1. *Sphaerodactylus pimienta* (USNM 512220), adult female from near La Pimienta, Santiago de Cuba Province, Cuba. Photograph by S.B.H.

holotype, 4 July 1990; MNHNCU 4418–419, USNM 512221–222, same data as holotype; USNM 512223–224, El Sordo, 7 km SE Guisa, 260 m, Granma Prov., Cuba, collected on 1 July 1994 by Richard Thomas.

*Diagnosis.*—A large species of *Sphaerodactylus*

(SVL to 36 mm) of the *nigropunctatus* group (Schwartz and Garrido, 1985; Hass, 1996) having numerous smooth, subvexate dorsal scales (48–61 axilla to groin, 74–80 around midbody), a narrow snout with prominent loreal grooves; two postnasal scales, the uppermost appearing as if split off from supranasal (Fig. 2); a nearly uniform gray-brown to tan color (head, body, and tail) in both sexes, with an irregular peppering of darker scales; juveniles similarly patterned but with some vermiculation on head and neck; melanophores on dorsal scales massed around base, apices of scales bare; interstitial keratin (between the scales) likewise unpigmented; no cross banding at any stage of life; two large, basal, toe pad bracket scales (Fig. 3); escutcheon of males small with no extensions onto thighs.

*Description.*—SVL 17–36 mm, the one known male being 30 mm SVL. Snout long, acuminate, with pronounced loreal and medial depressions near tip; rostral rounded with depressed central area not sharply set off by rim and median cleft through the depression; one internasal, flanked by subpentagonal supranasals each about as wide as long; two postnasals, uppermost triangular and closely set against supranasal, appearing as if split off from that scale; lower postnasal rounded and flattened; narial crescent scale prominent (raised) and partly divided; four upper labials to mid-eye; eyelid spine moderate; first supralabial rising sharply to high

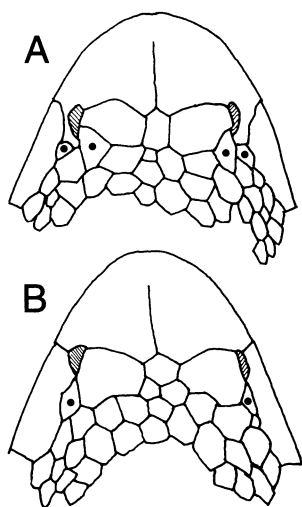


FIG. 2. Anterodorsal region of snout, showing configuration of the upper postnasal scale in *Sphaerodactylus pimienta* (A) and the absence of a comparable scale or its fusion to the supranasal in *S. elegans* (B). Narial openings are hatched; black dots denote postnasal scales.

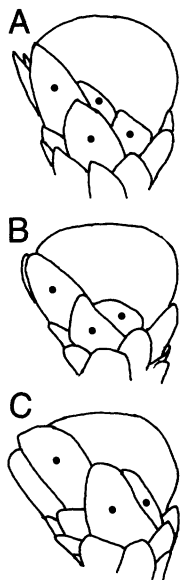


FIG. 3. Toe pad scalation in (A) *Sphaerodactylus elegans* (USNM 512247), (B) *S. nigropunctatus* (USNM 512262), and (C) *S. pimienta* (MNHNCU 4418). Black dots denote toe pad bracket scales.

point near anterior end; pupils oval with narrow pale edge; scales of snout granular and cobble-like, progressing onto head and neck, becoming more erected on back.

Dorsal body scales smooth, somewhat reduced along midline, forming an irregular zone of granules, not sharply set off from adjacent scales, 48–61 ( $\bar{x}$  = 54.0; N = 8) axilla to groin; gular scales very small but flattened and imbricate; ventral scales flattened, smooth, acute to rounded, and imbricate, 33–40 ( $\bar{x}$  = 37.7; N = 7) axilla to groin; scales around midbody 74–80 ( $\bar{x}$  = 77.5; N = 8); dorsal caudal scales verticillate, flattened, flat-lying, smooth, and imbricate; ventral caudals enlarged along midline, smooth, flat, flat-lying, and imbricate; dorsal scales with 3–4 hair-bearing scale organs on posterior face; subdigital lamellae of fourth toe 11–13; three toe pad bracket scales (two basal and one distal). Escutcheon very reduced with no extensions onto thighs; 20 total escutcheon scales in the only male (USNM 512221).

In life, dorsal color tan with a sparse peppering of darker scales, somewhat grouped near midline; not sexually dichromatic; tan scales with melanophores clustered basally, the apices uniform light tan; interstitial keratin (between the scales) with few or no melanophores resulting in a finely reticulate pattern visible only under magnification; tail slightly more yellow than body; venter pale, off-white in color; preocular dark stripe present in all specimens; juvenile (USNM 512222) with a reticular pattern of dark

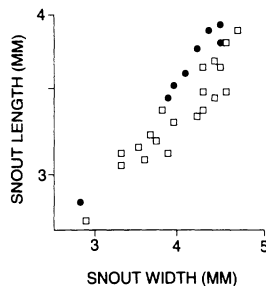


FIG. 4. Snout width (at level of anterior margin of the orbits) versus snout length (anterior level of orbit to tip of snout), comparing *Sphaerodactylus pimienta* (solid circles) with other species in the *nigropunctatus* group (hollow squares).

and light scales on head, also seen to a lesser degree in some of the other specimens.

*Data on Holotype.*—An adult, egg-bearing female, 34 mm SVL; tail missing; 52 dorsal scales axilla to groin; 39 ventral scales axilla to groin; 80 scales around midbody; one internasal; 2/2 postnasals; 4/4 upper labials to mid eye; 12 lamellae on fourth toe of left pes.

*Distribution.*—This species is known only from two localities in the northern foothills of the central Sierra Maestra, La Pimienta and El Sordo, separated by a distance of about 18 km. The elevational distribution is 260–465 m.

*Comparisons.*—Although we assess *Sphaerodactylus pimienta* to be more closely related to *S. nigropunctatus* and *S. torrei* based on scalation, the nearly uniform or slightly vermiculate coloration of adults and the slender snout make it particularly liable to be confused with *S. elegans*. The snout of *S. pimienta* is slender in comparison to other members of the *nigropunctatus* group (Fig. 4). Three features contribute to this shape difference: a narrower snout, a more pronounced loreal indentation, especially near the naris, and a pronounced central depression between the supranasal swellings.

*Sphaerodactylus pimienta* and other members of the *nigropunctatus* group are further distinguishable from *S. elegans* in scale characters, by lacking a scale of the toe pad bracket scales (Fig. 3), and by the condition of the upper postnasal (Fig. 2) which appears as though it had been split off from the large supranasal of *S. elegans*. Although we have only one escutcheon-bearing male of *S. pimienta*, the escutcheon has only 20 scales compared to males of other species in the *nigropunctatus* group, all of which have a similarly shaped, compact escutcheon lacking extensions onto thighs. The smallest male with an escutcheon, among specimens of the *nigropunctatus* group that we examined, has 57 escutcheon scales; among the other (larger) specimens the count ranges from 42 to 78. *Sphaerodactylus*

*elegans* is characterized by a large escutcheon with complete thigh extensions.

In *Sphaerodactylus*, there are two widespread sequences of color pattern ontogeny. In one, the juveniles have a basic pattern (plesiomorphic for the group) that becomes modified with age, changing less in females and often very drastically in males, so that the adults are sexually dichromatic. In the second type, usually leaf-litter dwellers, there is no change in body pattern from juveniles to adults of either sex, although there is usually some difference in the intensity of the throat pattern, which is more pronounced in males (Thomas, 1964, 1965; Thomas and Schwartz, 1966a, b).

Juveniles of *S. elegans* are prominently cross-banded (Barbour, 1921, pl. 2; Behler and King, 1979, pl. 396); in maturity the crossbanding is lost and a nearly uniform stippling of pigment appears, although frequently there is a finely reticulate or vermiculate pattern (Behler and King, 1979, pl. 398), and some adults retain strong vestiges of the juvenile banded pattern. Many individuals of *S. elegans* appear virtually unpatterned, particularly old preserved specimens. *Sphaerodactylus pimienta* differs from other species of the *nigropunctatus* group and *S. elegans* by lacking a banded pattern at any age. The other species of the *nigropunctatus* group all have a strongly cross-banded pattern in juveniles that is retained in a modified fashion in females. In males of those species, the banded juvenile pattern transforms into a spotted or plain-bodied pattern, often with a yellow or orange head (some of the subspecies of *S. nigropunctatus* differ in male pattern; Thomas and Schwartz, 1966a). Strikingly, *S. pimienta* lacks a pattern other than the peppering of dark scales and the anterior reticulation shown by the young specimens.

*Natural History.*—The type locality is in a region of steep-sided karst haystack hills (mogotes) with the low areas between the mogotes being cultivated, often in coffee, or used for pasture. The first specimen of *S. pimienta* was collected in a dead agave on the vertical face of a cliff bordering a coffee plantation. Intensive search in the coffee plantation failed to find any specimens. Specimens eventually were found in areas of relief on the limestone exposures. Some were found under dead agaves growing on a somewhat denuded mogote. The specimens from El Sordo were collected among limestone rocks at the base of limestone cliffs. *Sphaerodactylus pimienta*, like other species of the *nigropunctatus* group and *S. elegans*, seem to prefer 3-dimensional microhabitats: rock piles, rock crevices, or thick accumulations of dead vegetation such as agaves.

*Etymology.*—The specific name, *pimienta*, is the

Spanish word for pepper (usually black). It is used here as a noun in apposition, alluding to both the type-locality and the peppering of dark scales on the pale ground color of this species.

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