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A NEW SPECIES OF MONTANE *ANOLIS* (SAURIA, IGUANIDAE) FROM HISPANIOLA

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The West Indian island of Hispaniola is becoming increasingly well known as a center of diversity of the iguanid lizards of the genus *Anolis*. It is curious that this diversity had long gone unrecognized. Williams and Rand (1969:10) noted that seven new species of anoles have been named from Hispaniola since 1960. It is instructive to trace the history of new anoline discoveries on Hispaniola. Between 1837 and 1870, eight species of *Anolis (brevirostris* Bocourt, *chlorocyanus* Dumeril and Bibron, *coelestinus* Cope, *cybotes* Cope, *dominicensis* Reinhardt and Lütken, *ricordi* Duméril and Bibron, *baleatus* Cope, *semilineatus* Cope) were named. In the above list, I have made two deliberate nomenclatorial changes. First, I and others regard *dominicensis* Reinhardt and Lütken as subspecies of the Bahamian *A. distichus* Cope, 1861. The subspecies *dominicensis* was the first-named of several Hispaniolan subspecies (Schwartz, 1968), and for the sake of consistency, I have used the name *dominicensis* in the present context to emphasize my temporal point of view. The 1861 date for *distichus* would have done equally as well. Secondly, I regard *baleatus* as a species distinct from *ricordi*. Rationale for this division is to be found in Schwartz *(in press)*. These species are either abundant and widespread in the Hispaniolan lowlands, conspicuous and almost always of moderate-to-large size (exception—*semilineatus),* or readily encountered around buildings. Thus, one might expect to encounter these lizards on a casual visit to Hispaniola.

In the period between 1919 and 1939 there was a resurgence of interest in Hispaniolan field work, with subsequent anole descriptions. The result was the naming of nine species of *Anolis (aliniger* Mertens, *altavelensis* Noble and Hassler, *longitibialis* Noble, *darlingtoni* Cochran,

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etheridgei Williams, *hendersoni* Cochran, *monticola* Shreve, *olssoni* Schmidt, *shrevei* Cochran). This list requires two comments. Although *longitibialis* is usually considered a subspecies of *cybotes,* I have taken the two taxa syntopically on the Peninsula de Barahona and have no doubt that they are specifically distinct. The name *etheridgei* Williams, 1962, is antedated by *darlingtoni* Cochran, 1939. The Cochran name had to be replaced by Williams because of potential homonymy by Etheridge's inclusion of *Xiphocercus darlingtoni* Cochran, 1935, in *Anolis.* Thus, although the name *etheridgei* was not proposed within the time span here under discussion, the species was recognized as new and named within the 1919-1939 period. It is probably not coincidental that the terminal date for this series of names just precedes the appearance of Cochran's *Herpetology of Hispaniola* (1941), and that 21 years were to pass before Hispaniola once more became an area of herpetological interest. The species of this second list show an interesting difference in trend. One species is from an offshore islet that has been, and still is, very difficult of access *(altavelensis* from Isla Alto Velo). Another is from a more accessible, but still fairly remote island *(longitibialis* from Isla Beata). Six species are montane lizards primarily or exclusively from the Cordillera Central in the Dominican Republic *(aliniger, etheridgei, shrevei)* or the southern Haitian massifs *(hendersoni, monticola, darlingtoni).* Only one *(olssoni)* is a lowland species widespread in xeric areas. Of this entire second series, none is rare (I have had no personal field experience with *altavelensis* or *monticola).* But obviously it must have required more careful planning and greater energy to reach the less accessible regions where this second group of lizards was discovered—the generally upland or Hispaniolan satellite island distributions. With two exceptions *(hendersoni, olssoni)* these are not lizards that one might casually encounter on a brief or unspecialized visit to Hispaniola.

A second resurgence of interest in Hispaniolan anoles has been occurring since 1960, under the direct influence of Ernest E. Williams at Harvard University. Pursuing this interest, he and his students have been extremely active on the island, and their discoveries have increased our knowledge of the diversity of Hispaniolan *Anolis.* Between 1960 and 1969, eight new species were named *(christophei* Williams, *cochranae* Williams, *insolitus* Williams and Rand, *koopmani* Rand, *barahonae* Williams, *rimarum* Thomas and Schwartz, *singularis* Williams, *whitemani* Williams). Of these eight species, *barahonae* was named as a subspecies of *ricordi,* but I now consider it as a distinct species (Schwartz, *in press).* Most of this third group of anoles is restricted to montane habitats *(christophei, insolitus, koopmani, rimarum). Anolis whitemani* is a lowland lizard of xeric habitats. None of these species is rare, although their ranges may be restricted *(koopmani, rimarum).*

Examination of the three lists of anoles, in historical perspective, shows that the earliest named species were conspicuous and widespread. With increased ability of collectors to reach remote regions (primarily satellite islands or high mountian ranges), the number of upland species, often with either restricted ecological requirements or geographical distribution, has increased. There is nothing striking in this gradual change in the past century-and-a-quarter. It reflects increased mobility of collectors and increased interest in the Antillean uplands. These are the areas where new taxa are most likely to be encountered, since they had either been ignored previously or were simply inaccessible.

Generally speaking, there is remarkable similarity between the temporal situation for Hispaniola and the history of *Anolis* discovery on each of the other three Greater Antillean islands. Cuban *Anolis* number 29 species, of which 15 were named between 1820 and 1870, 10 between 1916 and 1939, but only four between 1960 and 1972. Jamaica has seven species, of which six were named between 1820 and 1899, and only one between 1959 and the present. Finally, Puerto Rico has nine species, of which five were named between 1837 and 1876, three between 1904 and 1939, and one between 1960 and the present. The number of species of *Anolis* on the three islands differs greatly. The largest island, Cuba, has 29 species; Hispaniola, second largest in size, has 25; Jamaica, the third largest, has seven; and Puerto Rico, the smallest, has nine. One strong trend shown by Cuba, Jamaica, and Puerto Rico is that the majority of species descriptions falls in the early period of the nineteenth century, and that numbers of species named since then have steadily declined. In addition, early-named taxa include some with restricted distributions *(cyanopleurus* Cope and *spectrum* Gundlach and Peters, in Cuba), and some with specialized habits *(vermiculatus* Duméril and Bibron, in Cuba). The group of species on the other Greater Antilles that were named during the early portion of the present century likewise shows a gradual shift to upland forms *(clivicola* Barbour and Shreve, in Cuba; *evermanni* Stejneger, in Puerto Rico) and to forms with limited distributions *(poncensis* Stejneger and *cooki* Grant, in Puerto Rico; *ahli* Barbour, *bartschi* Cochran, *quadriocellifer* Barbour and Ramsden, *mestrei* Barbour and Ramsden, and *noblei* Barbour and Shreve, in Cuba).

Two conclusions may be reached: (1) Hispaniolan herpetological explorations have lagged behind those of the other Greater Antillean islands; (2) with the passage of time, new species of *Anolis* discovered in the Greater Antilles tend either to live in upland areas or have limited geographic distributions. It follows that Cuba, which is much larger in area than Hispaniola (114,500 versus 77,000 km^2) but paleogeographically and structurally a much more simple island than Hispaniola, probably has several undiscovered species of *Anolis* in its largely unexplored upland areas (primarily the Sierra Maestra, and other less well-

known montane massifs in eastern Oriente Province). The probability is lower for either Jamaica or Puerto Rico, whose herpetofaunas are now much better known than are those of the two larger islands. In addition, there is a good possibility that remote lowland areas, especially those that are ecologically distinctive or disjunct, and satellite islands and *cayerias,* may harbor further distinctive species of *Anolis.*

That the roster of Hispaniolan *Anolis* is incomplete is manifested by the collection there of two undescribed species in 1971. Both species were secured in upland areas, one in the Sierra de Baoruco and the other in the Cordillera Central. Both ranges are in the Dominican Republic, but they lie in historically quite different areas. The Sierra de Baoruco is on the south island *(sensu* Williams, 1961) and the Cordillera Central is the interior montane massif of the north island. The two species are unrelated. The Baoruco species will be treated in a separate paper, since it presents some intriguing phenomena within the primitive *darlingtoni* complex of Greater Antillean species *(darlingtoni-occultus-insolitus).* The second species, which is a quite spectacular and fairly large anole, is described herein. My work in Hispaniola has been sponsored by National Science Foundation grants G-7977 and B-023603. I had the very capable field assistance of Danny C. Fowler and Bruce R. Sheplan. The illustrations are the work of Christopher L. Lane, to whom I am very grateful. Mr. Fowler secured the first two specimens of the new species named in his honor.

Anolis fowleri, new species

HOLOTYPE: Carnegie Museum (CM) 54131, an adult male, from 18.5 km. S.E. Constanza, 5800 feet (1769 meters), La Vega Province, Dominican Republic, one of two collected October 6, 1971, by Danny C. Fowler. Original number Albert Schwartz Field Series (ASFS) V31583.

Paratypes: ASFS V31584, same data as holotype; National Museum of Natural History (USNM) 194002, same locality as holotype, October 8, 1971, D. C. Fowler; Museum of Comparative Zoology (MCZ) 125640, same locality as holotype, October 17, 1971, D. C. Fowler; ASFS V31951, USNM 194003, same locality as holotype, October 18, 1971, D. C. Fowler; ASFS V31975, 6.5 mi. (11.7 km.) N.W. La Horma, 5400 feet (1647 meters), Peravia Province, Dominican Republic, October 19, 1971, A. Schwartz.

DIAGNOSIS: A moderately large (adults to 77 mm snout-vent length), strongly sexually dichromatic species of *Anolis,* characterized by the combination of 5 or 6 rows of loreal scales, supraorbital semicircles usually in contact, usually 1 (occasionally 2) scale between the interparietal scales and the supraorbital semicircles, subocular scales and supralabial scales in broad contact, postmental scales usually 2, 6-8 small scales in contact with the rostral scale, and 4-6 enlarged canthal scales; dorsal scales small, keeled middorsally, becoming smaller and stud-like laterally, then slightly larger and smooth ventrally, the ventral scales more or less arranged in transverse rows; all large dorsal limb scales, including supradigital scales, multicarinate; tail verticillate, caudal scales unicarinate dorsally and ventrally; males apparently not capable of complete metachrosis, having a dorsal pattern of various shades of brown and green to give a mottled or camouflage effect, females with metachrosis and dorsum strikingly patterned either (1) emerald green with middorsal brown-to-tan stripe, with two (or three, the third fragmented) slightly

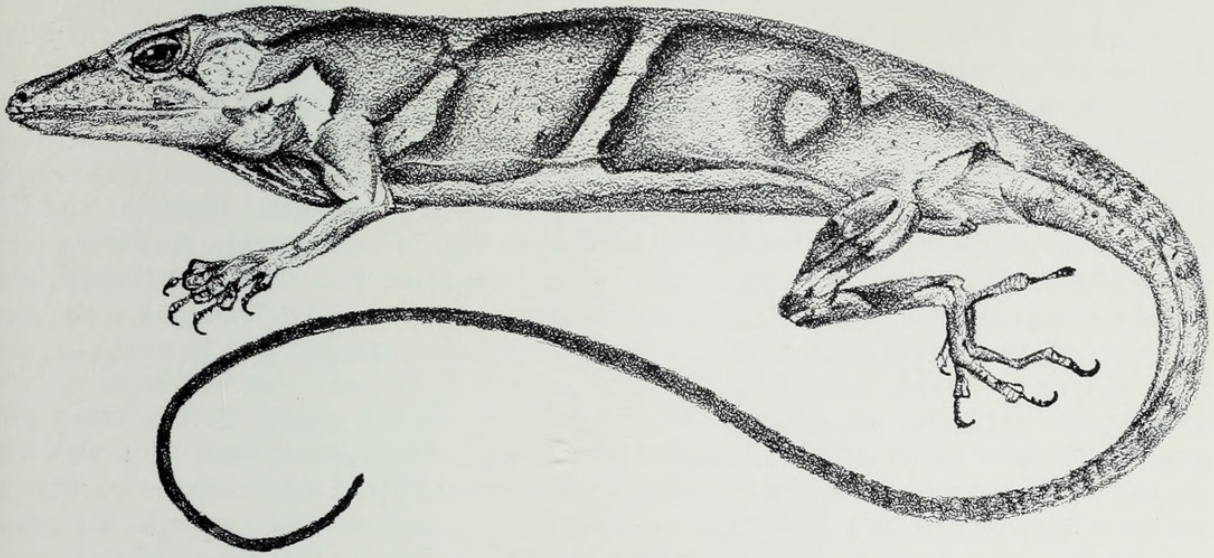

Fig. 1. Lateral view of adult female *Anolis fowleri* (ASFS V31584).

diagonal (posterior to anterior) tan stripes or bars which are connected ventrolaterally by a longitudinal brown-to-tan stripe, or (2) brown with the above pattern paler brown or tan in contrast to the dark ground color (fig. 1); juveniles patterned like females; both sexes and juveniles with a prominent pale lateronuchal blotch; dewlap brown centrally, yellow peripherally in males, rich chocolate brown in females; iris blue-green in adults.

DISTRIBUTION: The Cordillera Central in the Dominican Republic, in deciduous forest between elevations of 5400 and 5800 feet (1647 and 1769 meters).

DESCRIPTION OF HOLOTYPE: An adult male with a snout-vent length of 77 mm and tail length of 185 mm; snout scales at level of second canthal scales 7, 6 rows of loreal scales, supraorbital semicircles in contact, 1 scale on each side between the interparietal scales and the supraorbital semicircles, vertical dorsal scales in distance between tip of snout and anterior margin of orbit 24, ventrals in snout-eye distance 27, subocular scales in contact with supralabial scales, 2 postmental scales, 6 scales in posterior contact with the rostral scale, 6 and 5 enlarged canthal scales on the left and right sides of the head, respectively; subdigital lamellae on phalanges II and III of fourth toe 21. Coloration in life: dorsal ground color varying shades of brown to give a mottled or camouflage effect, the most prominent features being a dark brown occipitonuchal triangle with its apex pointed posteriorly, a yellow lateronuchal blotch which is most clearly defined (=sharp-edged) posteriorly, and indications of the lateral diagonal "female" bars in the form of a series of small grayish-tan scallops, darker-edged posteriorly; top and sides of head and upper surface of forelimbs mottled in browns, the upper surface of the hindlimbs with three broad darker brown bands (one across the knee, one on the thigh, and one on the shank); tail irregularly and inconspicuously banded and mottled with browns; entire ventral surface brown and basically continuing the dorsal pattern in a diluted fashion; dewlap brown centrally, dull yellow peripherally; iris blue-green.

VARIATION: The series consists of two adult males, one of which is the holotype and another that is somewhat damaged, two adult females, and three juvenile females. The males have snout-vent lengths of 73 and 77 mm, the females 68 and 75 mm; and the juveniles 32, 42, and 54 mm. The sexes are easily distinguished not only by the distinctive dorsal patterns in adults but also by the presence of a pair of enlarged postanal scales in males. Scutellar variation may be summarized as follows (I follow the schema used by Williams and Rand, 1969).

Head (figs. 2 & 3): Short, moderately broad posteriorly. Head scales large, papillose to rugose in males, smooth to weakly rugose in females, smallest on snout, 5 to 7 (mode 6) scales across snout at level of second canthal scale; enlarged canthals 4 to 6 (mode 5).

Nostril oval, nasal scale separated from rostral scale by two small scales. Rostral scale wide and low, 3.5 times as wide as high, in contact with 6 to 8 (mode 6) scales posteriorly.

Supraorbital semicircles large, strongly convex centrally, raised and tuberculate in males, low and smooth in females, usually in contact but separated by 1 row of smaller scales in two of six specimens. A fairly distinct row of supraciliary scales of which the anteriormost four or five are larger than the more posterior of the series, the first (=most anterior) being the largest, but not particularly elongate. Posterior and internal to the supraciliary row, about 2 to 4 irregular rows of smaller scales that blend into the enlarged scales of the supraocular disk, which has about 6 to 14 enlarged scales, the gradation between the disk scales making decisions of what is an "enlarged scale" extremely difficult. Loreal rows 5 or 6 (mode 5), regularly arranged and generally of the same rectangular shape. Temporal scales small and almost granular, but with some surface irregularities becoming almost boss-like (especially in males), about 15-18 between enlarged postocular scales and external auditory meatus. Interparietal scale lying within a deeply (in males) or moderately (in females) entrenched steep-sided depression that is confluent anteriorly with a weak frontal depression via an interocular trough, the interparietal depression bounded posteriorly by supratemporal scales that are somewhat boss-like in males, less so in females. Interparietal moderate, very much larger than the very tiny external auditory meatus which lacks a posterior entrenched area; interparietal separated from supraorbital semicircles by 1 or 2 scales (1 scale a strong mode), surrounded by relatively large scales that are papillate in males and weakly rugose in females. External auditory meatus tiny, about 6 times the size of the largest bordering temporal scale, placed ventrally but slightly above the level of the oral commissure.

Suboculars always in contact with the supralabials, anteriorly grading into the loreals, posteriorly into the temporals. Eight to 10 supralabials to center of eye.

Mental scale large, semidivided, wider than deep, in contact with 2 (modally) or 3 postmental scales; one sublabial and one infralabial in contact with mental on each side. Throat scales smallest at midthroat (transversely), becoming larger both anteriorly and posteriorly, and weakly keeled.

Trunk: Dorsal scales small, more or less granular, keeled to stud- or boss-like middorsally, becoming smaller on flanks, and somewhat larger ventrally, the ventrals smooth; no middorsal crest scales; ventrals in more or less irregular transverse rows. Vertical rows of dorsal scales 24-32 in snout-eye distance, ventral scales 23-29 in snout-eye distance.

Dewlap: Large, present in both sexes and not inset or "slotted"; dewlap scales elongate, ridged, larger than midthroat scales, more elongate than dorsal scales and larger than ventral scales; dewlap scales arranged in well-spaced longitudinal rows, the scales along the edge of the dewlap smaller and more crowded than those on the dewlap proper, and the rows on the male dewlap more widely spaced than those on the female dewlap.

Limbs and digits: Limbs long, tibial length about equal to distance between the snout and external auditory meatus. Seventeen to 21 lamellae under phalanges II and III of fourth toe. All enlarged dorsal limb scales multicarinate, including supradigital scales. Anterior thigh scales much larger than ventral scales.

Tail: Round and uncrested in both sexes, length in adults equal to about 2.5 times snout-vent length; no enlarged middorsal caudal crest scales; tail weakly verticillate dorsally, each verticil with 4-6 scales basally; caudal scales unicarinate. Scales around base of tail and behind vent smooth and slightly larger than ventral scales; no enlarged rows of ventral caudal scales.

Hemipenis: Large, bifurcate for about the distal one-third of its length, the sulcate surface smooth with the sulcus deeply entrenched, the non-sulcate surface strongly calyculate on the apical bifurcations and flounced on their basal portions; a prominent and smooth lobe at the bifurcation of the organ on the non-sulcate surface.

Coloration and pattern: As noted in the definition, *A. fowleri* is strongly sexually dichromatic. Basically, adult males are brown (and are not known to show striking metachrosis) with a camouflage pattern of various shades of browns, tans, greens, and grays.

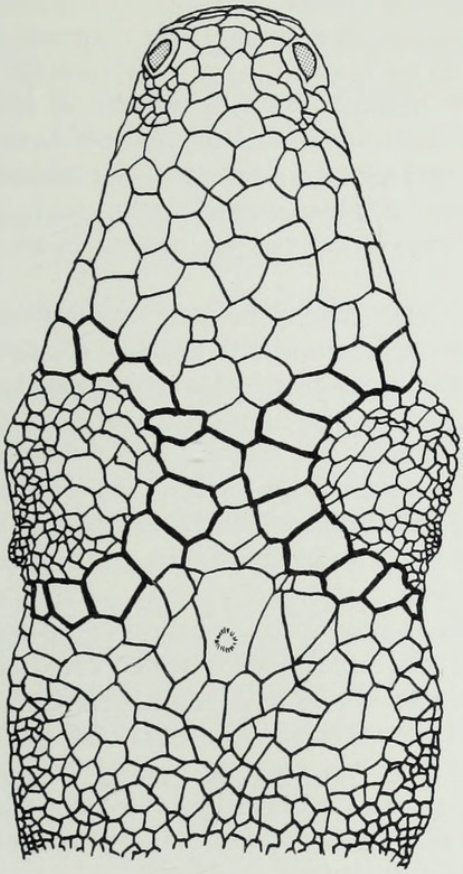

Fig. 2. Dorsal view of head of adult female *Anolis fowleri* (ASFS V31584).

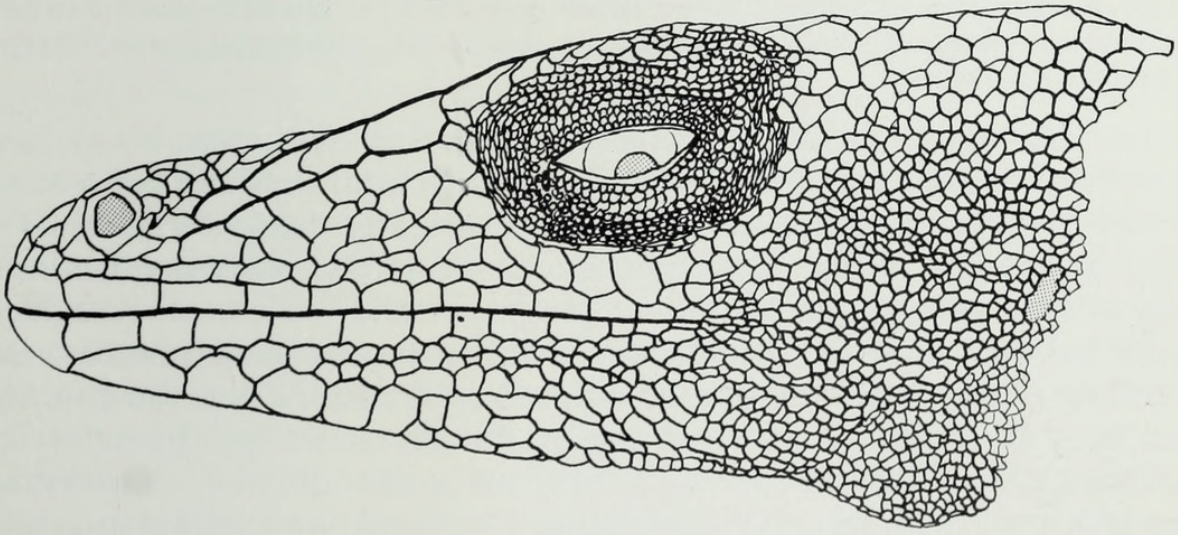

Fig. 3. Lateral view of head of adult female *Anolis fowleri* (ASFS V31584).

Adult females and juveniles (all known juveniles are females) have metachrosis and a pattern of a median dorsal stripe that sends three diagonal bars across the flanks, these bars joined ventrolaterally to each other by a ventrolateral stripe. The ground color is bright emerald green or dark brown. Since the number of specimens is few, I quote field-color notes for each in full. Those for the holotype male have already been given.

ASFS V31951 (male): Dorsal ground color green to brown with obliterative pattern of more or less irregular crossbars; a cream nuchal spot; a dark green occipitonuchal triangle; hindlimbs banded dark and pale green, the two colors separated by cream; dewlap (lizard dead) dull gray.

ASFS V31584 (female): Dorsal ground color emerald green (changing to dark brown) with a paler middorsal brown stripe and three pairs of diagonal lateral bars (the posterior pair reduced to a pair of subcircular blotches on each side in the position of the bar, the anterior pair not quite connected to the middorsal stripe), all these markings outlined with black; a yellow lateronuchal blotch; iris blue-green; dewlap rich chocolate; in dark phase, venter orange-brown, in light phase bright green, the ventral color sharply set off from the dorsal color by a ventrolateral pale (tan) stripe between the axilla and the groin; a fine pale stripe from the angle of the jaws to the yellow lateronuchal blotch; no occipitonuchal triangle present (fig. 1).

MCZ 125640 (female): Dorsal ground color bright green with a tan median dorsal stripe and narrow diagonal lateral bars on flanks; a cream lateronuchal blotch; occipitonuchal triangle present but not strikingly obvious; dewlap brown.

USNM 194003 (juvenile female—snout-vent length 54 mm): Dorsal ground color green with brown middorsal stripe and two diagonal lateral bars (third pair absent) connected ventrolaterally by a longitudinal brown stripe; lateronuchal blotch cream and a cream suborbital spot; ventral ground color green, paler than dorsum; dewlap rich chocolate.

USNM 194002 (juvenile female—snout-vent length 42 mm): Dorsal ground color bright emerald green with brown middorsal stripe, and upper surface of head with a green and contrasting occipitonuchal triangle; a white lateronuchal blotch and a white subocular spot; tail dull mottled greenish gray, limbs emerald green and gray-brown; venter pale yellow-green; dewlap dark brown.

ASFS V31975 (juvenile female—snout-vent length 32 mm): Dorsum very dark brown (almost black); head red-brown; lateronuchal blotch bright orange; a middorsal brown stripe and two pairs of diagonal brown lateral bars (third pair absent); a dark brown occipitonuchal triangle; tail pale brown basally, darker distally; venter rusty brown, brightest on throat; iris brown.

The brighter colors of the smallest juvenile and the brown iris suggest that there is ontogenetic change in basic hues from very young to adult *A. fowleri*. On the other hand, the small, brightly colored individual is from a different locality than the rest of the series, and the differences may not be ontogenetic but rather geographically correlated. Although three pairs of diagonal lateral bars seem to be the basic number, the posterior pair is often missing or reduced to remnants; and the anterior pair may be disconnected from the median dorsal stripe. Females are strikingly beautiful lizards, with brilliant green dorsum, contrasting tan-to-brown markings, at times outlined by black, and yellow-to-cream lateronuchal blotch.

COMPARISONS: *Anolis fowleri* is so striking in coloration and pattern that one is left in doubt as to what species of Hispaniolan (or indeed Antillean) anoles require comparison with it. Although males are much less strikingly colored and patterned than females, they are quite dis-

tinctive in comparison with other Hispaniolan anoles.

Richard E. Etheridge kindly offered to examine (by radiographs) specimens of *A. fowleri* in an attempt to place it in some frame of Antillean anoline reference. He stated *(in litt.,* June 9, 1972) that *"Anolis fowleri* is an *alpha* anole with autotomic caudal vertebrae, a T-shaped interclavicle, and an incriptional rib formula of 3:1. On this basis it is a member of my rather large *'carolinensis'* series. This series includes the *monticola* subseries *(christophei, etheridgei, monticola, rimarum, koopmani . . . fide* Williams)." In addition to the *monticola* subseries, the *carolinensis* series includes (on Hispaniola) *chlorocyanus, hendersoni, olssoni,* and *semilineatus,* and the Cuban species *alutaceus, argenteolus, bartschi, carolinensis, cyanopleurus, isolepis, lucius,* and *spectrum.* This list is modified and brought up-to-date nomenclatorially from Etheridge (1960:144).

The Cordillera Central in the Dominican Republic has 10 species of anoles, of which four (excluding *fowleri)* are endemic to this montane region. Non-endemic species of *Anolis* include *aliniger, chlorocyanus, christophei, cybotes, distichus,* and *baleatus.* This series includes four species *(chlorocyanus, cybotes, distichus, baleatus)* that are basically lowland species invading the mountains. None reaches an elevation of more than 6000 feet (1830 meters). Even this elevation is exceptional for these lowland species, since it is reached only at the very uppermost limit of *distichus* and *cybotes. Anolis baleatus* extends only to 4000 feet (1220 meters) and *chlorocyanus* to about the same altitude.

The four endemic species are of unusual interest. *Anolis shrevei* is restricted to very high, cool, pine-clad, windswept slopes at elevations above 6000 feet (1830 meters). *Anolis cochranae* is an elongate "grass anole" whose distribution centers in the Valle de Constanza region. This species is incompletely understood, since it may occur elsewhere outside the Cordillera Central. As presently understood, *A. cochranae* occupies suitable habitats between elevations of 1550 feet (475 meters) and about 4200 feet (1281 meters). *Anolis insolitus* is a small, primitive anole of upland deciduous forests. Its distribution lies between 3500 feet and 5800 feet (1068 and 1769 meters). Finally, *A. etheridgei* is an elongate herb-and-shrub-dwelling anole of mesic deciduous forested regions between elevations of 1800 and 6100 feet (549 and 1861 meters). *Anolis fowleri* has been taken sympatrically with *etheridgei, insolitus, cybotes,* and *distichus.* These species, along with *fowleri,* are lizards of shaded forested situations, although *distichus* and *cybotes* also occur in more open areas.

When the first pair of *A. fowleri* was collected, two characteristics were at once evident: marked sexual dichromatism, and blue-green irises. Since *A. etheridgei* is sympatric with *fowleri* and far more common (although occupying a quite different niche), I was at once struck by

similarities between the two. The blue iris of *A. etheridgei* is very striking in life, as is that of *fowleri.* Secondly, *A. etheridgei* is sexually dichromatic (Thomas and Schwartz, 1967:10). Males in this species are transversely crossbanded, whereas females have a middorsal bronzy zone but without any diagonal lateral bars. Such striking sexual dichromatism is unusual in Hispaniolan (or indeed Greater Antillean) anoles. Some species of Antillean anoles have brighter colors in males than in females *(A. allisoni* on Cuba is an example), and many species have the females differently patterned, usually with a dorsal series of rhombs or diamonds in contrast to a more lineate or unpatterned dorsum in males *(A. cybotes, sagrei, shrevei,* and many other species). In the latter group, however, there is strong sexual dimorphism in size, with females much smaller than males. Only four Greater Antillean species in addition to *fowleri* and *etheridgei* are sexually dichromatic with a dorsal stripe and with both sexes about the same size. These are *hendersoni* and *rimarum* (weakly dichromatic) in Hispaniola, and *clivicola* and possibly *cyanopleurus* in Cuba. I question the situation in *cyanopleurus* since what has been interpreted as dichromatism in that species may be explained by the fact that *cyanopleurus auct.* is composed of two species.

I have presented these data in an effort to narrow the possible relatives of *fowleri.* Although *fowleri* is a large anole, its affinities with other large Hispaniolan species *(coelestinus, chlorocyanus, ricordi, baleatus, barahonae)* seem very remote. Karyotypic and electrophoretic evidence may well prove me incorrect, but for the moment I can offer nothing better on the available evidence than that *fowleri* is a member of the *monticola* complex, possibly most closely related to *etheridgei,* with which it is sympatric. I readily admit that the evidence is slim and that the presence of a well-developed dewlap in both sexes is unusual for the *monticola* series.

REMARKS: *Anolis fowleri* is associated with upland deciduous forest. The elevation at the two known localities is 1647 and 1769 meters, but I have a sight record for a lizard in a forested situation at 1586 meters.

The road between Constanza, which lies in the Cordillera Central uplands at an elevation of 1251 meters, travels southeast to San José de Ocoa at an elevation of 475 meters at the foot of the Central. Along this 87-kilometer transect of the range, the road crosses a low ridge just southeast of Constanza, then ascends the main ridge of the Cordillera to an elevation of 2379 meters in the Valle Nuevo-Alto Bandera-La Nevera area, and then once more descends to 1068 meters at the village of La Horma on the Río Ocoa. South of La Horma, the road once more ascends a relatively low ridge and then descends to San José de Ocoa. The vegetational aspect of about the first 20 kilometers southeast of Constanza is especially bleak. Slopes are generally bare, either from cultivation or naturally, with scattered pines and little or no herb or shrub understory,

and are well drained by small tributary creeks and streams that are deeply entrenched in steep-sided ravines. The road approximately parallels, but for the most part lies high above, the Río Grande, and crosses that river at one point. The vegetation of the ravines is quite different from that of the adjacent open slopes. The ravines have restricted and often fairly dense stands of hardwood gallery forest. As the road begins its ascent of the main ridge of the Cordillera Central there are increasingly large areas of hardwood forest, usually still associated with streams and ravines. At an elevation of 2196 meters the vegetational picture has changed completely. The open and barren lower pine forests and ravine deciduous woods give way to extensive stands of pines with a dense understory of bracken and other herbs and shrubs, and to small, low-banked streams with very limited deciduous shrubby growth along their margins. This upland floral picture continues across the higher elevations of the mountains until the road begins to descend to La Horma where once more it enters areas of open pine forest, barren slopes, and ravine hardwoods.

As one ascends the main ridge of the Cordillera Central after crossing the Río Grande, gradually the open slopes give way to patches of hardwoods. At one such place (the type-locality) there is a small stream that has partially eroded the roadway, which here is precariously cut into the steep montane slope. The stream is under dense forest cover on the inner side of the road, and the forest ascends the mountainside between two of the road's switchbacks. We had been accustomed in previous years to visit with a Dominican family at this locality and to ask its members to collect for us. During the winter of 1970 we encountered *Anolis insolitus* at this locality, the second for that species. Collecting is limited to walking along the edge of the road and ascending the stream along a very short path constructed by the family for securing water. On the night of October 6, 1971, we sought more specimens of *A. insolitus*. This small species sleeps at night on exposed branches and twigs and, because of its pale color, is easily seen. During the evening's collecting, Fowler secured the first two specimens of *A. fowleri*. Both were adults found sleeping on tree branches of small diameter along the edge of the road and the adjacent swampy area formed here by a small spring.

Of the other *A. fowleri* obtained at the type-locality, a juvenile female (snout-vent length 42 mm.) was taken by Fowler as it was sleeping across the branches of a shrub, 8 feet (2.4 meters) above the ground, at the edge of the roadside swamp adjacent to the forest on the rising slope above. An adult female was taken by Fowler while it slept 6 feet (1.8 meters) above ground on a dead limb suspended from a vine within the edge of the forest. An adult male was encountered by Fowler and Sheplan while it slept on the vertical stem of a shrub, and a juvenile female (snout-vent length 54 mm.) was found the same night draped across the leaves of a

shrub—both at the edge of the forest adjacent to the swampy area.

It seemed logical to assume that *A. fowleri* was a canopy anole and that we were sampling marginal habitats along the roadway. Accordingly, we asked the members of the family to chop a path for us up the slope through the hardwood forest. This was done, and we visited and walked this newly made path during the day and at night, but to no avail. Although the forest is dense, the evidence against *A. fowleri* being a canopy anole is negative at best. We could easily have overlooked individuals high in the canopy, since the green coloration of females blends very well with the surrounding greenery. On the other hand, all sleeping *A. fowleri* we had seen previously were readily observed.

The second locality for *A. fowleri* in some ways resembles the type-locality, but in others is remarkably different. The locality northwest of La Horma is a broadly open ravine with a creek, but lacking deciduous woods. The slopes well above the ravine are wooded, but the single juvenile taken here (snout-vent length 32 mm.) was found sleeping exposed on the top of a two-foot-high shrub in a streamside shrubby thicket. There were no trees in the immediate area. Once this juvenile was found, we searched the forest on the steep upper ravine slopes. We encountered *A. insolitus* and *A. etheridgei,* both of which are associated with *A. fowleri* at the type-locality, but we found no other specimens of the new species. The forest at the La Horma locality is somewhat more open than that at the type-locality, but it is equally mesic with ample undergrowth of vines, and trees varying from moderately high to tall.

Fowler and Sheplan saw but did not succeed in collecting what they felt certain was an adult *A. fowleri* at a locality 6.4 mi. (10.2 km.) southeast of Constanza. The situation here is much like that of the type-locality, except that the ravine woods are very narrow and the elevation lower (1586 meters). The lizard was sleeping on a diagonal dead limb with many dead leaves, about 10 feet (3.1 meters) above the ground on a sloping hillside at the edge of the ravine, where the forest gave away promptly to an open mountainside. They saw only the venter of the lizard, and when it was shot, it fell into the leaf litter and was lost.

In summary, *Anolis fowleri* appears to be associated with upland hardwood forests and their margins, where it sleeps exposed on tree limbs and shrubs between 2 feet and 10 feet (0.6 and 3.1 meters) above the ground, either oriented along the branch or draped across the leaves.

The distribution of *A. fowleri* is surely more extensive than the region from which it is presently known. Its presence at two localities well within the interior of the Cordillera Central and at the single locality near the southern edge of that massif suggests that the species is widespread in suitable situations within these mountains. Probably *A. fowleri* also occurs in the Haitian affiliates of the Cordillera Central, primarily the Massif du Nord. If this is the case, then *A. fowleri* may also be