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HERPETOLOGICAL COLLECTIONS FROM THE WEST INDIES
MADE BY DR. PAUL BARTSCH UNDER THE WALTER
RATHBONE BACON SCHOLARSHIP, 1928-1930

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During 3 successive years, from 1928 to 1930, the Walter Rathbone Bacon Scholarship of the Smithsonian Institution was awarded to Dr. Paul Bartsch, of the United States National Museum, primarily for the extension of his studies of West Indian mollusks. In addition to obtaining vast series of mollusks, he was able to make valuable collections in many vertebrate groups, the lizards being of especial interest scientifically, as diagnoses of five new species and subspecies from his collection have already been published, and three other new species are being described in the present report.

In the first excursion Cuba was thoroughly worked for mollusks, and in addition nearly 100 amphibians and reptiles were obtained. On the second trip, in 1929, the party touched at Cuba and Puerto Rico, then continued eastward to the Virgin Islands and down the chain of the Lesser Antilles to Margarita and Orchilla and the Dutch Leeward Islands just north of Venezuela. Over 400 amphibians and reptiles were collected, many of them considerably extending the ranges of known species. The last expedition, in 1930, yielded nearly 600 specimens taken in the Bahamas, Cuba, and the Cayman Islands. Seven of the eight forms new to science came from this collection of 1930.

Class AMPHIBIA
Order SALIENTIA
Suborder LINGUATA
Family HYLIDAE

HYLA SEPTENTRIONALIS Boulenger

Hyla septentrionalis Boulenger, Cat. Batr. Sal., p. 368, 1882.

The only species of amphibian taken in the Bahamas by Dr. Bartsch is *Hyla septentrionalis*. It is exceedingly common in Acklins Island,

79 specimens, now U.S.N.M. nos. 81570-648, having been taken on Pinnacle Hill on July 9, 1930, and two others, nos. 81650-1 from Indian Wells on the same date. From Crooked Island we have two examples, no. 81490 from Land Rail Point, July 14, 1930, and no. 81491 from Pitch Point on the same date.

Pinnacle Point, Acklins Island.—While hunting for mollusks among the huge bromeliads I discovered a small frog. With careful searching of many plants we secured about 50 frogs of this species tucked away in the moist appressed basal portion of the leaves Our next stop was at Pinnacle Hill, where we made a careful search through the brush but found only a few specimens of a little brown Cerion. . . . also two frogs.

Several examples were obtained in Cuba, as follows:

U.S.N.M. nos. 75751-2 from one-half mile south of La Guira Mansion, near San Diego de los Baños, Pinar del Río Province, Cuba, June 16, 1928; nos. 75791-2 from Baños San Vicente, Pinar del Río Province, Cuba, June 26-27, 1928; nos. 75817-24 from one-fourth mile northwest of Vega Alta, Santa Clara Province, Cuba, August 12, 1928; no. 75841 from Jumagua Hills, west of Sagua La Grande, Santa Clara Province, Cuba, August 1, 1928.

Jumagua Hills. At station 2 we caught a huge tree toad nestling in a cavity in a small tree which he completely filled and which he rendered flush, matching beautifully the color scheme.

Family BUFONIDAE

BUFO EMPUSUS (Cope)

Peltaphryne empusa Cope, Proc. Acad. Sci. Philadelphia, 1862, p. 344.

U.S.N.M. no. 75864 from Remedio, Santa Clara Province, Cuba, August 11, 1928.

BUFO MARINUS (Linnaeus)

Rana marina Linnaeus, Syst. Nat., ed. 10, vol. 1, p. 211, 1758.

U.S.N.M. nos. 78995-7 from Monserrat, July 28, 1929; nos. 79032-7 from Grand Terre, Guadeloupe, on July 30-31, 1929; nos. 79198-202 from Mineral Springs, northeast Grenada, August 27, 1929.

Family LEPTODACTYLIDAE

ELEUTHERODACTYLUS JOHNSTONEI Barbour

Eleutherodactylus johnstonei Barbour, Mem. Mus. Comp. Zoöl., vol. 44, no. 2, p. 249, 1914.

U.S.N.M. no. 79192 from the Annandale Estate, Grenada, August 25, 1929.

ELEUTHERODACTYLUS LOCUSTUS Schmidt

Eleutherodactylus locustus Schmidt, Ann. New York Acad. Sci., vol. 28, p. 174, 1920.

U.S.N.M. no. 78925 from El Yunque, Puerto Rico, June 27, 1929, I assign with some hesitation to the above species, the type of which I have not seen. The specimen in hand agrees with Schmidt's description except for the tympanum, which in the type is said to be "scarcely distinct, one-fourth the diameter of the eye", while in the present specimen it is quite distinct and is over one-third the eye diameter. My specimen measures 21 mm from snout to vent. It is dark brown, with only faint traces of the dark interorbital band and some dark rhombic markings on the labial regions.

ELEUTHERODACTYLUS PORTORICENSIS Schmidt

Eleutherodactylus portoricensis Schmidt, Amer. Mus. Novit., no. 279, p. 2, 1927.

U.S.N.M. nos. 78923-4, an adult female with a number of hatching eggs taken at El Yunque, Puerto Rico, June 27, 1929:

. . . . The strangest find was a frog—tree-toad—with a mass of eggs in a rolled-up palm leaf, which she seemed to guard. The eggs were on the point of hatching and began at once, on being exposed, to vibrate, and yielded their young, which turned out to be not tadpoles but small jumping frogs. I gathered a number of these, as well as the parent.

This observation as to the egg mass being guarded by the female has been made by two collectors—by Gundlach (Peters, Monatsb. Akad. Wiss. Berlin, 1876(1877), p. 709) and by Bello y Espinosa (Martens, Zool. Garten, vol. 12, p. 351, 1871)—and the dates on which they found the developing eggs, May 24 and July 8, are borne out by the date of the present find, June 27.

LEPTODACTYLUS VALIDUS Garman

Leptodactylus validus Garman, Bull. Essex Inst., vol. 19, p. 14, 1887.

U.S.N.M. nos. 79068-75 from Brighton, St. Vincent, August 14, 1929; nos. 79076-7 from Mount St. Andrews, St. Vincent, August 15, 1929.

Family BRACHYCEPHALIDAE

PHYLLOBATES TRINITATIS Garman

Phyllobates trinitatis Garman, Bull. Essex Inst., vol. 19, p. 13, 1887.

U.S.N.M. nos. 79203-4, a half-grown specimen and tadpoles from the summit of a road leading north from Arima, Trinidad, September 1, 1929.

Class REPTILIA
 Subclass DIAPSIDA
 Order SQUAMATA
 Suborder SAURIA
 Family GEKKONIDAE

GYMNODACTYLUS ANTILLENSIS Lidth de Jeude

Gymnodactylus antillensis Lidth de Jeude, Notes Leyden Mus., vol. 9, p. 129, 1887.

U.S.N.M. no. 79225 from Bonaire Island, September 12, 1929; no. 79231 from Orchilla Island, September 10, 1929. The latter appears to be the first specimen of this species taken on Orchilla Island.

GONATODES ALBOGULARIS (Duméril and Bibron)

Gymnodactylus albogularis Duméril and Bibron, Erpét. Gén., vol. 3, p. 415, 1836.

U.S.N.M. no. 79952, a very young and somewhat damaged specimen from Otra Banda, near Red Sark, Curaçao, taken on September 17, 1929, shows a body pattern of four narrow white bands edged anteriorly with deep brown. The back of the head bears a broad U-shaped light mark, edged anteriorly and on the sides with brown. A few white dots appear on the upper labials.

PHYLLODACTYLUS PULCHER Gray

Phyllodactylus pulcher Gray, Spic. Zool., p. 3, 1830.

U.S.N.M. nos. 79256-7, two very young specimens from Bonaire Island, September 12, 1929; nos. 79315-6, two adults from Aruba Island, September 17, 1929.

HEMIDACTYLUS MABOUIA (Moreau de Jonnés)

Gekko mabouia Moreau de Jonnés, Bull. Soc. Philom., 1818, p. 138.

U.S.N.M. no. 75843 from Havana, Cuba, July 18, 1928.

THECADACTYLUS RAPICAUDUS (Houttuyn)

Gekko rapicauda Houttuyn, Verhandl. Zeeuw. Genoot. Wet. Vlissingen, vol. 9, p. 323, 1782.

U.S.N.M. no. 79132 from Carriacou Island, Grenadines, August 21, 1929.

ARISTELLIGER PRAESIGNIS (Hallowell)

Hemidactylus praesignis Hallowell, Proc. Acad. Nat. Sci. Philadelphia, 1856, p. 222.

Three geckos of this species were taken on Six Hill Cay off South Caicos on August 3, 1930, now U.S.N.M. nos. 81444-6. They do not differ essentially from the 16 Jamaican *praesignis* in the national collection. All the Caicos lizards have eight upper labials and seven lower labials. Their subdigital lamellae are really 20 to 21 in number, although only 13 to 16 of these are enlarged beyond the width of the surrounding granules. The largest specimen measures 72 mm from snout to beginning of tail; the tail itself has been partly reproduced, but now measures 86 mm.

These lizards were found by turning over rocks.

TARENTOLA CUBANA Gundlach and Peters

Tarentola cubana Gundlach and Peters, Monatsb. Akad. Wiss. Berlin, 1864, p. 384.

A young individual, U.S.N.M. no. 81721, was taken on Cachiboca Cay, Doce Leguas, Province of Camagüey, Cuba, on September 8, 1930 and a larger specimen, no. 81826, came from Puerto Portillo in the Province of Oriente, Cuba, on August 29, 1930.

SPHAERODACTYLUS ARGIVUS Garman

Sphaerodactylus argivus Garman, Bull. Essex Inst., vol. 20, p. 3, 1888.

U.S.N.M. nos. 81754-5 from Cayman Brac, September 11, 1930.

SPHAERODACTYLUS BARTSCHI, n. sp.

Diagnosis.—Dorsals keeled, imbricate, no differentiated middorsal zone; about nine dorsals in the standard distance between center of eye and tip of snout; lateral grooves more or less apparent on the rostral; faintly or distinctly spotted on the posterior part of body and on tail; sometimes a light dark-bordered stripe on each flank extending onto the tail; adult size rather small.

Type.—U.S.N.M. no. 81759, an adult male from Little Cayman Island, taken September 12-13, 1930.

Description of the type.—Snout moderately long but not very acutely pointed, its length two and one-half times the diameter of the eye; eye slightly nearer ear than tip of snout; rostral moderate, with a long median cleft behind, with merely a trace of lateral crescentic grooves; nostril between rostral, first supralabial, two postnasals (the upper the smaller) and a large supranasal which is separated from its

fellow by a single small scale followed by another of about the same size; superciliary spine moderate in size; three large supralabials to a point below the center of the eye; a very large anterior infralabial, a smaller second and part of a third infralabial to the same point; top of head covered with granules which are relatively large, hexagonal, and very faintly keeled or smooth on the snout, more elongate and heavily keeled between the eyes, and much smaller but still distinctly keeled on the occiput; scales of back keeled, imbricate, nine in the distance between tip of snout and center of eye; no middorsal granular zone; laterals irregular, only slightly larger than dorsals, about seven to seven and a half lateral scales in the standard distance; mental a trifle longer than rostral, followed by two enlarged postmentals; scales of gular region small, slightly tubercular and indistinctly keeled only at the level of the commissure of the jaws, becoming smooth and imbricate on the throat; scales of chest and belly smooth, rounded, imbricate, about seven ventral scales to the standard distance, not perfectly regular in size; scales of limbs anteriorly and below like those of the belly, much smaller and granular posteriorly; 14 smooth lamellae under the fourth toe; scales of tail (reproduced) above keeled, imbricating, below smooth, enlarged transversely into a series of wide, rather irregular plates. A triangular "escutcheon" of differentiated scales about five scales long by nine wide, which projects only for a distance of one or two scales on the femur.

Dimensions.—Head and body, 25 mm; tail (reproduced), 21 mm; width of head, 5 mm; tip of snout to ear, 6.5 mm; foreleg, 7 mm; hind leg, 10 mm.

Coloration in alcohol.—Head drab, upper part of body mouse-gray, tail pale olive-buff; numerous sepia spots one scale in width beginning between the shoulders, indistinct on the anterior half of the back but becoming very apparent on the tail. Lower parts pale olive-buff, with very minute dark punctulations on the belly and on the posterior edges of the transversely enlarged plates beneath the tail. Fore limbs very indistinctly, hind limbs rather distinctly spotted above.

Paratypes.—Five specimens, a female (U.S.N.M. no. 81758), three males (nos. 81757, 81760, 81761) and a very young one (no. 81756) were taken at the same place and time as the type.

Variation.—In size of scales there is little variation, all of the adults having nine dorsals in the standard distance. The keels on the scales of the throat below the corner of the mouth are as distinct in two adults as they are in the type, but are less distinct in the other two examples. The crescentic grooves on the rostral are fairly well developed in two specimens, but are scarcely apparent in the others. In

coloration, one male (no. 81760) most nearly resembles the type, although the spots are much less apparent. The other three specimens, including the female, have scarcely a trace of spotting, but there is a distinct dark-bordered light stripe on the flank beginning just anterior to the groin and continuing for some distance onto the tail. The very young specimen, unfortunately too mutilated to be of use in scale comparison, nevertheless shows these posterolateral light lines very plainly, as its body color tends toward sepia, instead of the pale drab or gray characteristic of the adults.

Relationships.—The new species agrees with *argus* and *caicosensis* in general in scalation as well as in having at least the traces of crescentic grooves on the rostral. It differs from *caicosensis* in having the throat scales entirely smooth, and from *argus* in having three instead of four supralabials to a point below the center of the eye, and from both these species in its much reduced pattern. It is interesting to note that the new species is not closely related to *argivus*, the only Sphaerodactyl heretofore known from the Cayman group, and which is apparently confined to Cayman Brac.

SPHAERODACTYLUS CAICOSENSIS, n. sp.

Diagnosis.—Dorsals imbricate, very heavily keeled, about 11 to the standard distance between tip of snout and eye; no differentiated middorsal zone; lateral crescentic grooves on rostral more or less apparent; throat scales keeled, at least laterally; female with dark stripes on head; body with dark irregular spots arranged transversely; flanks and tail with a dark light-edged stripe. Coloration of male unknown.

Type.—U.S.N.M. no. 81443, an adult female from South Caicos Island, Bahama Islands, July 29, 1930.

Description of the type.—Snout moderately short and broad, its length twice the diameter of the eye; eye slightly nearer ear than tip of snout; rostral large, with a median groove behind, bordered by faintly indicated crescentic grooves; nostril between rostral, an enlarged supranasal, a pair of postnasals of which the upper is the smaller, and the first supralabial; supranasals separated from each other by a single small scale; superciliary spine rather small; three subequal supralabials to a point below the center of the eye; a very large first infralabial and a much smaller second and third infralabial to the same point; top of head covered with keeled scales, larger and hexagonal on the snout, smaller and more elongate between the eyes, very small and nearly round on the occiput; scales of back small, very

heavily keeled, imbricate, about 11 equalling the standard distance from snout to center of eye; no middorsal differentiated zone; laterals like the dorsals, 11 in the standard distance; mental moderately large, followed by two enlarged postmentals; scales of gular region small, smooth, not imbricate anteriorly, but becoming imbricate and decidedly keeled on the throat; scales of chest and belly smooth, rounded, imbricate, about 9 ventral scales to the standard distance, not perfectly regular in size; scales of limbs anteriorly and below like those of the belly, much smaller and granular posteriorly; 10 smooth lamellae under the fourth toe; scales of proximal part of tail above keeled, regular and obtusely pointed, on reproduced part smooth, irregular and rounded; below on the proximal part with a larger median and two smaller bordering rows of enlarged hexagonal scales, on the reproduced part with a median series of transversely enlarged plates, rather irregularly arranged.

Dimensions.—Head and body, 26 mm; tail (reproduced) 20 mm; width of head, 5 mm; tip of snout to ear, 7 mm; fore leg, 7 mm; hind leg, 9 mm.

Coloration in alcohol.—Female: body color above pinkish buff; head with a lateral sepia stripe beginning at the nostril, passing through the eye, widening behind the eye and passing upward to meet its fellow in a pair of diamond-shaped spots on the occiput; a dark median stripe beginning on the rostral, narrowing between the eyes, widening again and ending in a diamond-shaped spot on the posterior part of the head; traces of a dark stripe leading from the corner of the mouth onto the sides of the neck and then dorsally; back with numerous wide, dark, wavy crossbands which tend to break up posteriorly into very irregular transversely arranged spots; tail with a continuation of the posterior dorsal coloration; a wide, dark, light-edged stripe beginning on the flanks just anterior to the groin and continued onto the tail where there are traces of a dark line bordering it below; ventral surfaces pale olive-gray, suffused with very minute gray punctulations which are especially numerous on the posterior part of the belly and beneath the legs and tail; upper surfaces of limbs with alternating light and dark crossbars. The coloration of the male is not known.

Paratype.—A single paratype, U.S.N.M. no. 81447, also a female, was taken on Long Cay, off South Caicos, on the same day as the type. It is essentially the same in scalation, having 11 dorsals to the standard distance. Only the lateral scales of the throat of the paratype appear to be keeled; the central ones are smooth, like the gulars which precede them. There are nine lamellae on the fourth toe. The color pattern on the head is very similar to that of the type; the body however, is

much paler because of the great reduction in the size and intensity of the spots. The lateral stripe on the flanks and tail is quite prominent.

Relationships.—This species falls in the key near to *corticulus* and *argus*. It differs from *corticulus*, however, in having the traces of crescentic grooves on the rostral, while its keeled throat scales serve to distinguish it from *argus*, as well as from *bartschi*, one of the other new forms described in this paper.

SPHAERODACTYLUS CINEREUS Wagler

Sphaerodactylus cinereus Wagler, Syst. Amph., p. 143. 1830.

U.S.N.M. nos. 81722-5 from the Cayo east of Boca Juan Gria, Camagüey Province, Cuba, September 8, 1930; nos. 81726-7 from Grande Cay, Doce Leguas, Camagüey, Cuba, September 9, 1930.

SPHAERODACTYLUS FESTUS Barbour

Sphaerodactylus festus Barbour, Proc. Biol. Soc. Washington, vol. 28, p. 13, 1915.

A young individual, apparently a female, U.S.N.M. no. 79061 from Diamond Hill, South Martinique, taken August 9, 1929, shows a characteristic pattern of light chevron-shaped markings across the back.

I shot 16 lizards, mostly tree-climbing, but I got a small dark fellow under the muck and rubbish, probably a young one. . . . Diamond Hill is a conical eminence rising quite abruptly to an elevation of 1,568 feet. It is rough and rocky near the summit, and in spots carries still a bit of woods. Very little of living stuff was found but we did get a splendid lot of muck and rubbish adding many things to our catch of yesterday.

SPHAERODACTYLUS MARIGUANAE, n. sp.

Diagnosis.—Dorsals imbricate, elongate, keeled; no differentiated middorsal zone; scales of middorsal region very slightly smaller than those of flanks, about 13 middorsals and about 11 dorsolateral scales in the standard distance between tip of snout and center of eye; supranasals large, normal, separated by one small scale; a more or less distinct crescentic groove on each side of median rostral groove; ventrals smooth; anterior gular scales faintly keeled; head relatively short and broad, body heavily built, size relatively large. Sexual dichromatism scarcely evident; males usually rather faintly spotted above, females somewhat more heavily spotted, both sexes with a more or less distinct light-centered, dark-edged nuchal crescent and several chevron-shaped bars across the tail.

Type.—U.S.N.M. no. 81381, an adult male from Booby Island, east of Marignana Cay, Bahama Islands, taken July 21, 1930. Snout relatively short, its length only twice the diameter of the eye; eye slightly nearer ear than tip of snout; rostral large, with a median groove and a more or less distinct crescentic lateral groove; nostril between rostral, one large supranasal, two postnasals and the first supralabial; supranasals separated from each other by a single scale; superciliary spine moderate in size; three large supralabials to a point below the center of the eye, with a very small fourth one terminating the series; three infralabials to the same point, the first one very greatly enlarged, this series terminated likewise by a very small fourth scale; top of snout covered with keeled polygonal scales which decrease considerably in size between the eyes and become almost granular on the occiput, about 25 in a straight line across the head just anterior to the superciliary spine; scales of back small, keeled, imbricate, the middorsals slightly smaller than those of flanks; about 13 middorsals and about 11 dorsolaterals equalling the standard distance from tip of snout to center of eye; no middorsal granular zone; mental large, followed by two postmentals which are only slightly enlarged; scales of anterior gular region small, very faintly keeled, very slightly imbricate; scales of chest and belly smooth, rounded, imbricate; about 13 ventral scales to the standard distance, fairly regular in size; scales of limbs keeled above, smooth below, almost granular posteriorly; 14 smooth lamellae under the fourth toe; scales of tail above keeled, imbricating, below on the median line enlarged transversely into a series of irregular hexagonal plates; "escutcheon" of male prominent and wide, extending on the femur two-thirds of the distance to the knee, composed of thickened white scales in which traces of pigment appear only at the extreme posterior borders of those on the femur.

Dimensions.—Head and body, 38 mm; tail, 48 mm; width of head, 7 mm; tip of snout to ear, 9 mm; fore leg, 8.5 mm; hind leg, 11 mm.

Coloration in alcohol.—Upper parts fawn color with indistinct dorsal punctulations of sepia; a trace of a sepia-edged nuchal crescentic marking; tail with pronounced light chevrons edged with sepia, and with an interrupted lateral sepia stripe; top and side of head pale drab, immaculate; underparts pale olive-buff with very minute gray dots on the throat, and heavier dots below the thighs and on the edges of the enlarged plates beneath the tail; limbs immaculate, drab above, pale drab below.

Paratypes.—Seven specimens—three adult males (U.S.N.M. nos. 81379, 81380, and 81382), three females (nos. 81376-8) and a half-

grown individual (no. 81383) were collected at the same time as the type. A field note follows:

One of the interesting finds of the day was a small, very dark brown, finely spotted lizard, probably a *Sphaerodactylus* of which we obtained eight specimens by quick work in turning over rocks and grabbing them before they could again slip under cover.

Variation.—The head scalation is similar in all the specimens, except in no. 81378, in which both supranasals are abnormally divided longitudinally, so that there are five subequal scales bordering the rostral between the nostrils, instead of an enlarged pair separated by a small scale, as in normal cases. The keels on the anterior gular region are faint but definite in all but one specimen, no. 81377; in this individual they are present on one or two transverse series of scales at the middle of the throat and must be looked for carefully even at that point. The crescentic grooves on the rostral plate are well marked in all the specimens but one (no. 81380). The number of dorsal scales in the standard distance varies between 11 and 13 depending on where the count is made; the middorsal scales are slightly smaller than those on the flanks, but not otherwise differentiated in any way. The ventral scales are likewise 11 to 13 in the standard distance, but are more irregular in size than the dorsals, so that different counts may be obtained by shifting a single scale-row in any direction.

As to color variation it appears that little if any sexual dichromatism appears in this species. Except for the nuchal crescent, three of the males are almost devoid of pattern, but so is the largest female. The fourth male has a definitely spotted and reticulated dorsum, intermediate between the remaining two females. The pattern is most highly developed in one of these females, no. 81377—there is a dark stripe beginning at the nostrils, passing through the eye and merging with the crescentic nuchal marks, here greatly elaborated. An anastomosing pattern of sepia lines covers the top of the head, and this is broken up on the body into an irregular series of spots and bars, which becomes more definite on the tail, where the crossbars have acquired light centers. The nuchal marking on some of the other specimens is not a true crescent; it may be represented by a pair of dark spots surrounded by an irregular indented parallelogram of dark lines. The dark stripe on the side of the head is apparent only in those specimens in which the pattern is well developed.

Relationships.—In the key this species falls near *oxyrhinus* and *argivus*, but differs from both of them in having the anterior gular scales faintly keeled, and even more radically in size and in color pattern. In fact, it cannot be said to be very close to any of the known species of the genus.

SPHAERODACTYLUS NOTATUS Baird

Sphaerodactylus notatus Baird, Proc. Acad. Nat. Sci. Philadelphia, 1858, p. 254.

A well-preserved male, U.S.N.M. no. 81270, from Mathewtown, Great Inagua, was collected on August 9, 1930. While Mathewtown is the type locality of the indigenous *Sphaerodactylus inaguae* Noble and Klingel, it is a port for West Indian shipping as well, and hence the occurrence of a form like *notatus*, known to be an inveterate traveler, is to be expected occasionally.

Another male, no. 81471, came from the cays adjacent to the South Channel cays of the Ragged Island group, collected on June 28, 1930.

In Cuba the species is rather common, as the following list will show:—U.S.N.M. nos. 81764-5 from the cay west of Channel, Havana Province, Cuba, September 20, 1930; nos. 81767-74 from Cayo Avillon, near Canapachi, Havana Province, Cuba, September 21, 1930; no. 81775 from the balconies of Cayo Contelos, Havana Province, Cuba, on the same date.

SPHAERODACTYLUS TORREI Barbour

Sphaerodactylus torrei Barbour, Mem. Mus. Comp. Zool., vol. 44, p. 260, 1914.

A banded female apparently referable to this species was collected at Rio Puerco in the Province of Oriente, Cuba, on August 29, 1930 (U.S.N.M. no. 81670).

A pair (U.S.N.M. nos. 81822-3) from Boqueron, Cuba, August 19, 1930, shows very well the sexual dichromatism occurring in this species. Unlike most vertebrates, in which the male shows the brilliant and spectacular coloring if such coloring is to appear at all in the species, it is the female of *Sphaerodactylus torrei* which is characterized by the brilliantly contrasting crossbands of black and yellow or red, while the male is without any trace of any such crossbands when fully adult, having at most only a spotting of irregular brown dots. In the case of the Boqueron male, the dorsal surfaces are a uniform dull drab without punctulations of any kind.

Another pair, U.S.N.M. nos. 81827-8, came from Puerto Portillo in Oriente Province, Cuba, August 29, 1930. In the female the characteristic pattern of bands appears as usual, but the male has a heavy spotting of coarse brown dots covering the entire dorsal surface from between the eyes to the beginning of the reproduced tail.

Two mutilated females, U.S.N.M. nos. 78921-2, from Rio Yaleritas, Oriente Province, are referred to this species also. They both are heavily crossbanded.

SPHAERODACTYLUS VINCENTI Boulenger

Sphaerodactylus vincenti Boulenger, Proc. Zool. Soc. London, 1891, p. 354.

A male, U.S.N.M. no. 79067, from Brighton, St. Vincent, August 14, 1929, measures 22 mm from snout to vent. It has a very distinct escutcheon of differentiated scales on the posterior surface of the abdomen. The epidermis covering this patch of differentiated scales in *Sphaerodactyli* is more opaque when drying than is the epidermis of the surrounding ventral parts. When the epidermis is removed, the differentiated scales appear coarser and thicker than do the ordinary ventral scales, and they are unpigmented and hence usually lighter in color than the other ventral scales.

Family IGUANIDAE

IGUANA IGUANA (Linnaeus)

Lacerta iguana Linnaeus, Syst. Nat. ed. 10, vol. 1, p. 206, 1758.

U.S.N.M. nos. 79211-6 from Los Robles, Margarita Island, September 8, 1929; no. 79229 from Orchilla Island, September 10, 1929; nos. 79321-2 from Aruba Island, September 17, 1929. In these examples there is a range of 46 to 58 in the number of enlarged scales in the dorsal crest, and the femoral pores are between 13 and 17. None of the individuals shows a tendency to have any of the median snout scales enlarged into the conical, soft tubercles which supposedly characterize the variety *rhinolopha*. The following color notes were made from living examples from Los Robles, Margarita Island, by Dr. Bartsch:

Head most intense green with a dark brown, almost black, spot on the middle of the top, another below and a third behind the eye, tympanum gray. Neck green gold and striped with dark brown. Body green gold, marbled with white and almost black spotted. Comb warm red on neck, tending gradually toward green on the back. Underside of belly pale green spotted with various shades of brown. Dewlap faintly rose, edged with green and dotted and dashed with dark brown. Sides of body with zigzag, oblique bands of green, brown and white in the order mentioned, from the back forward. Scales of front legs green and brown, greener inside, with a whitish, greenish band on the shoulder, edged by dark dorsally. Hind legs like the front, whitish below. Tail green with broad bands of brown, usually edged with whitish or light brown on the posterior part, the light area being on the outer parts of the bands. The posterior half of the tail has alternating broad bands of light and dark brown.

DEIROPTYX BARTSCHI Cochran

Deiroptyx bartschi Cochran, Proc. Biol. Soc. Washington, vol. 41, p. 169, Oct. 15, 1928.

U.S.N.M. nos. 75797-806 from Baños San Vicente, Pinar del Río Province, Cuba, June 25, 1928; no. 75805 is the type of this species.

ANOLIS ACUTUS Hallowell

Anolis acutus Hallowell, Proc. Acad. Nat. Sci. Philadelphia, 1856, p. 228.

U.S.N.M. nos. 78929-39 from St. Croix, July 15, 1929.

ANOLIS ALLIACEUS Cope

Anolis alliaceus Cope, Proc. Acad. Nat. Sci. Philadelphia, 1864, p. 175.

U.S.N.M. nos. 79004-21 from Danes, east of Portsmouth, Dominica, August 4, 1929; nos. 79026-9 from East Cabrite Island, Dominica, taken on the same day.

ANOLIS ANGUSTICEPS Hallowell

Anolis angusticeps Hallowell, Proc. Acad. Nat. Sci. Philadelphia, 1856, p. 228.

U.S.N.M. no. 75816 from Sitio Perdido, Havana Province, Cuba, July 28, 1928.

ANOLIS ARGENTEOLUS Cope

Anolis (Gastrotropis) argenteolus Cope, Proc. Acad. Nat. Sci. Philadelphia, 1861, p. 213.

U.S.N.M. no. 81679 from the mouth of the Magdalena River, Oriente Province, Cuba, August 29, 1930; no. 81825 from Puerto Portillo, Province of Oriente, on the same date.

ANOLIS BIMACULATA Sparrman

Anolis (Lacerta) bimaculata Sparrman, Nya Handl. Sv. Vet. Akad. Stockholm, vol. 5, p. 169, 1874.

U.S.N.M. nos. 78981-7 from Mount Nevis, Nevis, July 27, 1929; nos. 78988-94 from St. Eustacius, July 25, 1929. Regarding the living coloration of this lizard on St. Eustacius the following color note has been drawn up from Dr. Bartsch's description: The top of the head in front of the eyes is peacock-blue, the larger scales with a pinkish flush that becomes intensified behind the eyes and on the temporal region. The pineal eye is gray brown. The side of the head anterior to the eyes is peacock-blue. The area about the eyes is intense, brilliant green. The top of the nape is blue with a pinkish flush. The main dorsal part of the body is yellowish green from the nape to the tail. This color extends from the base of the tail over the fore and hind legs, but these have a yellowish pink superimposed, which gradually fades into yellow-green on the belly. On the throat, and from there to the fore leg, are irregularly distributed spots of orange, the posterior portion being uniform in color. The inside of the legs corresponds in

color with the belly. The posterior half of the upper side and the outside of the hind legs are marked with obscure spots of blue. An inch behind the base of the tail the same peacock-blue seen on the forehead reappears, slowly grading from the general dorsal color. The last 2 inches of the tail is pale brown. Here spots and splashes of dark brown, blue, and various shades of rose are irregularly scattered about. The median under part of the tail is a little paler than the ground color of the rest, and free from spots on the outer half, the posterior inch of the coarse, scaled portion being brown.

It may be noted here that the seven St. Eustacius lizards have a dark brown spot just above the white shoulder stripe. This is lacking in the 7 lizards from Nevis, but is slightly apparent in 12 from St. Kitts, according to the alcoholic specimens that I have examined. Color differences between the Nevis and St. Eustacius lizards were observed by Dr. Bartsch in the living animals, for in his field notes written after his excursion to Mount Nevis on July 27, he writes: “. . . on the return I shot . . . a bunch of lizards—two kinds. The blue-green one is not so beautiful here as on St. Eustacius. I got one with two tails”.

ANOLIS BONAIRENSIS Ruthven

Anolis bonairensis Ruthven, Occ. Pap. Mus. Zool. Univ. Michigan, no. 143, p. 4, July 9, 1923.

U.S.N.M. nos. 79258-70 from Bonaire Island, September 12-13, 1934. The gular fan of no. 79267 was primrose-yellow after having been preserved for 2 months.

ANOLIS BRUNNEUS (Cope)

Anolis principalis brunneus Cope, Proc. Acad. Nat. Sci. Philadelphia, 1864, p. 432.

Some scattered examples of this much disputed species were taken at the following places: U.S.N.M. nos. 81449-50 from Flamingo Cays of the Ragged Island Group on June 25, 1930; no. 81561 from Castle Island, south of Acklins Island, on July 8, 1930; no. 81649 from Pinnacle Hill, Acklins Island, on July 9, 1930; nos. 81525-27 from Cay Sal on June 17, 1930; nos. 81558-9 from Cotton Cay of the Cay Sal Group on June 23, 1930.

The lizards from the Cay Sal group have distinctly larger dorsal granules than do the others listed above. In other respects they seem to be very similar. An examination of the type of *Anolis brunneus*, or, lacking that, the careful study of topotypic material from Crooked Island must be made before a positive statement regarding the actual status of the species can be issued.

ANOLIS CONSPERSUS Garman

Anolis conspersus Garman, Proc. Amer. Philos. Soc., vol. 24, p. 273, 1887.

A good series, U.S.N.M. nos. 81732-41, was secured on Grand Cayman, September 15-16, 1930.

ANOLIS CRISTATELLUS Duméril and Bibron

Anolis cristatellus Duméril and Bibron, Erpét. Gén., vol. 4, p. 143, 1837.

U.S.N.M. nos. 78926-7 from Bordeaux Hill, St. John's, July 13, 1929, elevation 1,277 ft.; nos. 78940-8 from Bellevue Hill, Road Harbor, Tortola, July 17, 1929; nos. 78949-56 from Virgin Gorda, July 19, 1929.

ANOLIS EQUESTRIS Merrem

Anolis equestris Merrem, Syst. Amph., p. 45, 1820.

U.S.N.M. nos. 75811-5 from San Diego de los Baños, Pinar del Río Province, Cuba, June, 1928.

ANOLIS GENTILIS Garman

Anolis gentilis Garman, Bull. Essex Inst., vol. 19, p. 35, 1888.

U.S.N.M. nos. 79094-6 from Quatres Island, Grenadines, August 17, 1929; nos. 79106-7 from Mustique Island, Grenadines, same date; no. 79108 from Petit Nevis, same date; nos. 79109-10 from Petit Mustique, August 18, 1929; nos. 79113-7 from Baliceaux Island, August 18, 1929; nos. 79118-30 from Petit Martinique, August 21, 1929; nos. 79133-4 from Carriacou Island, same date; nos. 79150-1 from Frigate Island, August 22, 1929; nos. 79152-8 from Ronde Island, August 22, 1929; nos. 79159-60 from Caille Island, August 24, 1929; nos. 79162-5 from Diamond Island, August 23, 1929; no. 79196 from Mineral Springs, northeast Grenada, August 27, 1929.

A careful comparison of all these specimens with one of Garman's cotypes from Petit Martinique does not reveal any characters on which a different species could be based, and lizards from rather widely separated islands, such as Ronde and Mustique, appear to be identical in scalation.

ANOLIS GINGIVINUS Cope

Anolis gingivinus Cope, Proc. Acad. Nat. Sci. Philadelphia, 1864, p. 170.

U.S.N.M. nos. 78958-73 from St. Martin, July 22, 1929; nos. 78978-80 from St. Bartholomew, July 25, 1929.

ANOLIS HOMOLECHIS Boulenger

Anolis homolechis Boulenger, Cat. Lizards Brit. Mus., vol. 2, p. 28, 1885.

U.S.N.M. nos. 75766-70 from one-fourth mile south of La Guira Mansion near San Diego de los Baños, Pinar del Río Province, Cuba, June 16, 1928; nos. 75794-5 from Baños San Vicente, Pinar del Río Province, Cuba, June 25, 1928; no. 81655 from the north side of Guantanamo Bay, Cuba, August 14, 1930; nos. 81660-4 from Cusco Valley, Province of Guantanamo, Cuba, August 16, 1930; nos. 81675-7 from Rio Puerco, Province of Oriente, Cuba, August 29, 1930; no. 81686 from Cabo Cruz, Province of Oriente, Cuba, August 31, 1920; nos. 81817-20 from Boqueron, Oriente Province, Cuba, August 19, 1930.

ANOLIS LEACHII Duméril and Bibron

Anolis leachii Duméril and Bibron, Erpét. Gén., vol. 4, p. 153, 1837.

U.S.N.M. nos. 79030-1 from Grande Terre, Guadeloupe, July 30-31, 1929. This species differs noticeably from its relative *A. bimaculata* in having coarse scales on the occipital and temporal regions and coarser granules on the body. The weak ventral keels often seen in half grown examples of *A. leachii* are not found at any age in *A. bimaculata*.

ANOLIS LEUCOPHAEUS LEUCOPHAEUS (Garman)

Anolis leucophaeus Garman, Bull. Essex Inst., vol. 20, p. 109, 1888.

Between August 7 and 9, 1930, an excellent series of lizards of this species was collected on Great Inagua Island; U.S.N.M. nos. 81246-9 from a small islet in the center of Ocean Bight Bay, no. 81250 from Man of War Bay, nos. 81251-6 from Carmichael Point, nos. 81257-68 from Northwest Point, and no. 81269 from the vicinity of Mathewtown.

The ground color of the entire ventral surface of no. 81251 is canary-yellow, most intense on the hind legs and beginning of the tail, lightest on the chin. The skin of the gular fan is grayish wax-yellow, the scales on it being canary-yellow. The top of the head is lavender-gray, and the dorsal region is olive-buff, but the canary-yellow tone is found intermingled with the gray, especially on the limbs and tail, which are yellow above. The numerous black dots and splotches which are present all over the body excepting on the chin and on the lumbar region make a vivid and beautiful contrast to the soft yellowish tones of the ground color. The variation in pattern is great, however, and led Cope to give two names, *cinnamoncus* and *moorei*, to this Great Inagua lizard. There are sometimes pale brown stripes in the younger

specimens, interspersed with a darker hue, the whole being overlaid with a fine dark reticulation. The underparts are olive-drab, and there are several longitudinal series of dark dots beginning on the labials and chin, and leading backwards to the sides of the neck. The number of subdigital lamellae on the third and fourth phalanges of the fourth toe vary from 19 to 25 in number. The supraorbitals are always in contact. The supraocular plates may be large or small, keeled or smooth. When large there are five or six. When small there may be as many as 11, of which 2 or 3 are conspicuously greater than the rest. The largest male, no. 81269, is 70 mm in length from snout to beginning of tail.

One example of *Anolis leucophaeus* Garman, now U.S.N.M. no. 81245, was collected on August 5, 1930, on Little Inagua Island. It is a half-grown male and cannot be distinguished from those on the larger neighboring island.

ANOLIS LEUCOPHAEUS ALBIPALPEBRALIS (Barbour)

Anolis albipalpebralis Barbour, Proc. Biol. Soc. Washington, vol. 29, p. 215, 1916.

From the Turks Island Group on July 31 and August 1, 1930, came a series of lizards, belonging to a species which Dr. Thomas Barbour described as *Anolis albipalpebralis* in 1916, but which he recently synonymized with *leucophaeus*,—U.S.N.M. no. 81285-9 from Long Cay; nos. 81290-8 (topotypes) from Grand Turks Island; nos. 81299-301 from Salt Cay; and no. 81302 from Cotton Cay of the Salt Cay group. None of the adults are as heavily spotted with black as are the adults from Great Inagua. The largest male, no. 81285, measures 74 mm from snout to beginning of tail. The skin and scales of the dewlap are olive-yellow posteriorly, becoming olive-gray anteriorly, where a small patch of the fan scales on either side is heavily dotted with slate color. The center of the throat and the malar region are ochraceous buff. The remainder of the ventral surface is olive-buff. The top of the head is light clay color and the upper surface of back, limbs, and tail are drab-gray, with a few indistinct sepia vermiculations on the nuchal region and behind the axilla. Some of the young and half-grown lizards show a distinct longitudinal striping of the back, consisting of a pale middorsal area and a double line of sepia on each side. Some show a light lateral stripe, which puts an abrupt termination to the clay color characteristic of the upper surfaces of the young lizards. Sometimes there are widely spaced square sepia spots down this middorsal light area, about six of them between occiput and tail, a suggestion of which we sometimes find in the young *leucophaeus* from Great Inagua.

The same subspecies appears again in the Caicos group, where the following localities are represented by lizards obtained from July 24 to August 4, 1930: U.S.N.M. nos. 81413-4 from French Cay; nos. 81415-28 from South Caicos; no. 81429 from Fort George Cay; nos. 81430-1 from Step Guano Cave on Cape Comete on East Caicos; no. 81432 from Pine Cay; 81433-7 from West Caicos; and nos. 81438-42 from Lorimer Creek on Grand Caicos. The largest male, no. 81419, measures 63 mm from snout to beginning of tail. The coloration of these Caicos lizards agrees with that of the neighboring Turks Island form, both being much paler than many of the Mariguana lizards, and much less spotted than the typical Inaguan form.

ANOLIS LEUCOPHAEUS MARIGUANAE Cochran

Anolis leucophaeus mariguanae Cochran, Journ. Washington Acad. Sci., vol. 21, no. 3, p. 40, Feb. 4, 1931.

Diagnosis.—Similar in form to *Anolis leucophaeus leucophaeus* (Garman), but differing from it in coloration. Ground color drab-gray above, lavender-gray beneath, often with a wide clove-brown lateral band which originates on the loreal region, passes through the eye and above the ear, and widens above the shoulder, continuing onto the base of the tail and gradually fading out; a light area usually bounding its lower border; a second dark lateral stripe beginning on the malar region just behind the mental, continuing back beneath the ear and merging in front of the shoulder with the upper lateral stripe in some cases, in other cases widening and suffusing the entire side of the throat and upper arm region with a dusky mottling; skin of gular fan lavender-gray, the scales white or olive-yellow. The young have dark latero-ventral reticulations, and the throat usually has a series of dark longitudinal lines. In adult males the tail fin is large and its upper edge is indistinctly mottled with dark in the region of the rays. Limbs sometimes unmarked, sometimes with wide, irregular dark bars. Scales on limbs a little smaller than in *leucophaeus* proper; scales of tail a little larger.

Type.—U.S.N.M. no. 81346, an adult male from Mariguana Cay, July 18, 1930.

Description of the type.—Top of head with two curving frontal ridges which enclose a shallow median depression; head scales very unequal in size, the small ones flat, the larger ones with a very indistinct ridge or keel; rostral low, much narrower than the mentals; four scales in a series between the nostrils; a median row of four or five transversely elongate scales on the prefrontal region, the

last of which is in contact with the first scale of the supraorbital semicircle; supraocular disks composed of seven enlarged scales, the inner ones either in contact with the scales of the supraorbital semicircles or separated from them by an incomplete series of granular scales; supraorbital semicircles broadly in contact with each other, separated from the occipital by two very irregular series of scales; occipital a little smaller than the ear-opening; the scales of the occipital region considerably larger than the dorsals; canthus rostralis sharp, consisting of four elongated scales, the anterior small; superciliary ridge consisting of one long anterior scale followed by a double series of very small scales; three or four rows of granules separating the superciliaries from the supraocular disk; two medium-sized scales on the inner border of the elongate superciliary and just in front of the granules; loreal rows four, the scales keeled; subocular semicircles keeled, broadly in contact with the supralabials; supralabials eight or nine, the suture between the sixth and seventh being under the center of the eye; seven infralabials; temporals granular, with a bare indication of a supratemporal line; dorsals granular, keeled, with a median double series of slightly larger ones; ventrals imbricate, small posteriorly and with a very faint indication of a keel, larger anteriorly and with a somewhat more pronounced keel especially on the chest scales; those on the throat very small, rounded and elongate; fore legs above covered with sharply keeled scales, those on the upper arm as large as the posterior ventrals, those on the lower arm a little larger than the anterior ventrals; anterior face of femur and underside of tibia similarly covered, the scales of the former gradually decreasing on the underside, the upper side of both being covered with granules like those on the back; scales on fingers and toes sharply carinate; digital expansion moderate, about 22 lamellae on the second and third phalanges of the fourth toe; tail long, compressed, the proximal half with a high fin supported by about 14 bony rays; caudal verticils distinctly indicated by a vertical series of scales a little wider than those surrounding them and with straighter posterior margins, those between being pointed and narrower, in about seven irregular series, all imbricate and keeled; the scales covering the upper edge of the tail raised and slightly spinous, forming a serrated ridge, about five spines corresponding to each verticil in the basal portion; dewlap large, with distant series of scales, the anterior edge thickened; postanal scales well developed; a distinct nuchal and dorsal skin fold.

Dimensions.—Snout to beginning of tail, 54 mm; tail, 103 mm; snout to posterior border of ear, 18 mm; width of head, 11 mm; fore leg, 25 mm; hind leg, 48 mm.

Color (in alcohol).—Drab-gray above, lighter beneath; traces of a clove-brown lateral stripe beginning on the loreal region, continuing behind the eye over the ear to the shoulder region where it intensifies in hue, then widening and gradually fading out posteriorly; a second clove-brown stripe beginning on the malar region, continuing backward below the ear, and joining the upper stripe in front of the shoulder; upper parts of limbs and base of tail irregularly mottled with large clove-brown blotches; skin of gular fan lavender-gray, the scales white with a very fine powdering of minute black dots. Eyelid white, the inner edge dark clove-brown.

Paratypes.—U.S.N.M. nos. 81344-5 and 81347-50 from Mariguana Cay collected on July 18, 1930; nos. 81351-72 from Betsy Bay, Mariguana Cay, July 18-20, 1930; nos. 81373-5 from Booby Island, east of Mariguana Cay, July 21, 1930.

Variations.—Like its near relative *Anolis leucophaeus leucophaeus* from Inagua, and its more distant relative *A. cristatellus* from Puerto Rico and the Virgin Islands, the new subspecies is subject to considerable variation in the minor details of the head-plate arrangement, as well as in coloration. There may be only four scales between the nostrils, or twice that number. The supraocular disk may be in contact with the supraorbital semicircles, or separated by one or two rows of granules. The occipital may be set off from the supraorbital semicircles by two to four very irregular scales. The median transversely enlarged scales on the snout are often subdivided and scarcely enlarged, and may or may not touch the anterior supraorbitals. The color pattern is often much more distinct than it is in the type, especially in half-grown specimens. On the other hand, it may be obscured by a highly melanistic condition, in which the whole upper surface is suffused with blackish brown, extending even onto the ventral regions. Very rarely the whole body is pale drab.

Relationships.—The subspecies from Mariguana Island is more closely related to *leucophaeus albipalpebralis* than to the typical Inaguan *leucophaeus*, since the first two forms are without the leopard spots so characteristic of the last-named.

The two previously described forms seem to attain a larger size than the new subspecies, the largest individual of which is only 65 mm long from snout to vent, out of 33 examples. Several of the Inaguan and Turks Island lizards measure at least 70 mm, and appear to be heavier in structure, although the difference here is scarcely measurable. The Turks Island form is very light in color and does not have the broad dark lateral stripe which almost always appears on Mariguanan lizards.

The young of *leucophaeus mariquanae* are very similar to the adults, except that their colors are intensified. They have a very broad lateral stripe of black, set off at its lower margin by a narrow sepia lateral band. The middorsal area is chocolate-brown, with very few reticulations. The young of *leucophaeus albipalpebralis* have on the neck a few large light blotches edged with a fine dark line. A pale dorsal stripe is in some instances crossed by three or four large squarish blotches; in other cases these are much lightened, and the dark pigment is concentrated at the edges of the light stripe as two or more narrow lines. The young of typical *leucophaeus* are distinct from either of the others in having a very fine pattern of dark reticulations and spots all over the body and sides, which now have a light sepia tone, but which later in life fade to pale drab or olive-buff and leave the black spots standing out very markedly. Some of them have traces of four longitudinal light stripes separating slightly darker areas, and some have faintly delineated transverse dorsal blotches, but these are never so prominent as they are in the young from Turks Island.

ANOLIS LINEATUS Daudin

Anolis lineatus Daudin, Hist. Nat. Rept., vol. 4, p. 66, 1802.

U.S.N.M. nos. 79317-20 from Aruba Island, September 17, 1929. Two months afterward the gular fold of no. 79318, having retained its color in preserving fluid, was cadmium orange on the edges, turning to wax-yellow toward the throat, with several heavy black longitudinal stripes.

ANOLIS LUCIAE Garman

Anolis luciae Garman, Bull. Essex Inst., vol. 19, p. 44, 1887.

U.S.N.M. nos. 79062-5 from Mount Grenier, Santa Lucia, August 10, 1929.

ANOLIS LUCIUS Duméril and Bibron

Anolis lucius Duméril and Bibron, Erpét. Gén. vol. 4, p. 105, 1837.

U.S.N.M. nos. 75834-5 from El Salto de la Tinaga, Camagüey Province, Cuba, August 28, 1828; no. 75842 from Jumagua Hills, west of Sagua La Grande, Santa Clara Province, Cuba, August 2, 1928.

ANOLIS LUTEOSIGNIFER Garman

Anolis luteosignifer Garman, Bull. Essex Inst., vol. 20, p. 4, 1888.

One example, U.S.N.M. no. 81728, was taken on Cayman Brac, September 10, 1930.

ANOLIS MAYNARDII Garman

Anolis maynardii Garman, Bull. Essex Inst., vol. 20, p. 7, 1888.

Three lizards, U.S.N.M. nos. 81729-31 are from Little Cayman, taken September 12-13, 1930.

ANOLIS MESTREI Barbour and Ramsden

Anolis mestrei Barbour and Ramsden, Proc. Biol. Soc. Washington, vol. 29, p. 19, 1916.

U.S.N.M. no. 75796 from Baños San Vicente, Pinar del Río Province, Cuba, June 25, 1928; no. 75829 from El Rinconada, Sierra Camagua, Camagüey Province, Cuba, August 27, 1928; nos. 75832-3 and nos. 75836-7 from El Salto de la Tinaga, Camagüey Province, Cuba, August 28, 1928; no. 75838 from the Santa Cruz Mountains, Camagüey Province, Cuba, September 1, 1928.

ANOLIS ORDINATUS Cope

Anolis ordinatus Cope, Proc. Acad. Nat. Sci. Philadelphia, 1864, p. 175.

This species may be represented by the following examples: U.S.N.M. nos. 81528-32 from Cay Sal on June 17, 1930; nos. 81533-5 from Elbow Cay of the Cay Sal Group on June 19, 1930; nos. 81537-57 from Cotton Cay of the Cay Sal Group on June 23, 1930; no. 81474 from Knife Cay of the Ragged Island Group on June 28, 1930; no. 81480 from Margaret Island of the Ragged Island Group on July 2, 1930; nos. 81499-501 from Crooked Island on July 14, 1930.

The true status of this species is very doubtful and this identification is to be considered as provisional until specimens from all the places from which it is now recorded have been minutely compared.

ANOLIS PORCATUS Gray

Anolis porcatus Gray, Ann. Nat. Hist., vol. 5, p. 112, 1840.

U.S.N.M. nos. 75753-8 from one-fourth mile south of La Guira Mansion, near San Diego de los Baños, Pinar del Río Province, Cuba, June 16, 1928; no. 75825 from one-quarter mile northwest of Vega Alta, Cuba, August 12, 1928. To the last named specimen the following field note applies:

A heavy rain fell about 3:30 so we went under a cow shelter near a farmhouse. While waiting for the rain to stop we collected eight frogs [see 75817-24 *Hyla septentrionalis*] and one lizard under the eaves of this shelter.

ANOLIS PULCHELLUS Duméril and Bibron

Anolis pulchellus Duméril and Bibron, *Erpét. Gén.*, vol. 4, p. 97, 1837.

U.S.N.M. no. 78957 from Virgin Gorda, July 19, 1929.

ANOLIS RICHARDII Duméril and Bibron

Anolis richardii Duméril and Bibron, *Erpét. Gén.*, vol. 4, p. 141, 1837.

U.S.N.M. nos. 79090-3 from Admiralty Bay, Bequia Island, August 16, 1929; nos. 79135-8 from Carriacou Island, August 21, 1929; nos. 79139-46 from High Hill, about 2 miles east of Hillsborough, Big Carriacou Island, August 21, 1929; nos. 79167-89 from the Annandale Estate, Grenada, August 25, 1929; no. 79197, a young one taken at Mineral Springs, northeast Grenada, August 27, 1929.

A detailed comparison of the lizards from Bequia and Carriacou with specimens from Grenada, including one of the cotypes of *Anolis trossulus* Garman, makes it apparent that they are alike in every essential of scalation. If any valid color differences exist, they are not apparent in the material at hand.

ANOLIS ROQUET (Lacépède)

Lacerta roquet Lacépède, *Hist. Nat. Quad. Ovip. Serp.* vol. 1 (synopsis-méthod., div. 4), 1778.

U.S.N.M. nos. 79038-9 from High Mountains, Martinique, August 8, 1929; nos. 79040-55 from Diamond Hill, South Martinique, August 9, 1929; nos. 79056-9 from the north shore of Fort de France Harbor, Martinique, August 7, 1934. "Tree-climbing lizards".

ANOLIS SAGREI Duméril and Bibron

Anolis sagrei Duméril and Bibron, *Erpét. Gén.*, vol. 4, p. 149, 1837.

U.S.N.M. nos. 75759-65 and nos. 75771-89 from one-fourth mile south of La Guira Mansion near San Diego de los Baños, Pinar del Río, Cuba, June 16, 1928; nos. 81690-4 from Palomito Cay, Oriente Province, Cuba, September 1, 1930; nos. 81695-6 from Blanco Cay, Camagüey Province, Cuba, September 6, 1930; nos. 81697-8 from Doce Leguas in Camagüey Province, Cuba, September 7, 1930; no. 81699 from Cachiboca Cay, Camagüey Province, Cuba, September 8, 1930; nos. 81762-3 from Sandy Cay, Cuba, September 19, 1930; no. 81824 from Puerto Portillo, Oriente Province, Cuba, August 29, 1930; no. 81891 from East Point, Second Cay, Cuba, September 19, 1930. A few weeks after being preserved, the gular skin of no. 75765 was burnt sienna, and the gular scales were light chrome-yellow; the

dorsal light stripe was vinaceous-cinnamon, while the head, nuchal region, and shoulders were clove-brown. The sides of the body, as well as the limbs, were drab. The ventral surfaces were palely iridescent with blue, pink and green. In no. 75762, only the scales on the edge of the dewlap were chrome-yellow, the other gular scales being clove-brown like the gular skin itself.

ANOLIS STRATULUS Cope

Anolis stratulus Cope, Proc. Acad. Nat. Sci. Philadelphia, p. 209, 1861.

U.S.N.M. no. 78928 from Bordeaux Hill, St. John's, July 13, 1929; elevation 1,277 feet.

ANOLIS TERRAE-ALTAE Barbour

Anolis terrae-altae Barbour, Proc. Biol. Soc. Washington, vol. 28, p. 76, 1915.

U.S.N.M. nos. 78998-79001 from St. George (= Cabritt Island), Saints Islands, August 1, 1929; nos. 79002-3 from Mount Chameau, St. Peter, same date. A note with the St. George specimens states the dewlap was pale orange in life.

Since not all scientific collections may have examples of *Anolis leachii* (= *ferreus*) from Gaudeloupe, to which Barbour compared the Saints Island *A. terrae-altae* in his original diagnosis, it will not be amiss to include here a more detailed description of one of the six specimens of *A. terrae-altae* listed above:

An adult male, U.S.N.M. no. 79002, has the top of the head with two low diverging frontal ridges, disappearing before they reach the level of the nostrils and enclosing a feebly pronounced frontal hollow; head scales smooth, only the scales of the supraorbital disk showing faint keels; the distance between the anterior parts of the orbits very nearly equalling that from the orbit to the end of the snout; rostral low, slightly narrower than the mentals; four scales in a row between the narrow scales bordering each nostril above, the median pair somewhat enlarged; the median snout scales immediately behind these internasal scales in a single series, transversely enlarged; supraorbital semicircles composed of six or seven enlarged scales, the third the largest, the fourth and fifth separated from their fellows by a single row of small scales; occipital about two-thirds the size of the ear opening, separated from the supraorbital semicircles by two rows of scales rather irregular in shape; those posterior to the occipital more regular in shape and smaller than those in front of it; supraorbital disk composed of five polygonal, faintly keeled scales, narrowly

separated from the semicircle by one row of granules, which in front of the disk form a patch of granules; canthus rostralis very sharp, consisting of three subequal elongated shields, merging with the superciliary ridge which also has three scales, of which the middle one is much the longest, the posterior one followed in turn by a double row of granules; five loreal rows; subocular semicircles keeled, widely in contact with the posterior supralabials; seven enlarged supralabials, the seventh under the center of the eye, followed by three or four granular labial scales; temporal granules a little larger than the dorso-laterals; a well-marked double series of small scales forming the supra-temporal line; dorsal and lateral granules minute, tubercular; four or five median rows of slightly enlarged, keeled scales down the center of the back beginning on the nuchal region, continuing on the tail as a crest of considerably enlarged scales; ventral scales medium-sized, smooth, rectangular, those on the throat small and bluntly tuberculate; anterior face of fore and hind legs covered with large, weakly keeled scales much larger than the ventrals; scales covering the hands and feet above very faintly unicarinate; digital expansion wide, with about 24 lamellae under the second and third phalanges of the fourth toe, 39 under the entire toe; tail long, compressed, with very poorly-marked verticils of aligned scales; those between similar in size but not in alignment, in about five or six irregular rows, all imbricate, keeled and distinctly mucronate at the tips, surmounted by a strongly serrate edge of enlarged, keeled scales triangular in profile, four (sometimes three) to every verticil, the last of each group distinctly enlarged; dewlap with many closely set series of scales, whose posterior borders are projecting and mucronate; postanal plates large and well developed; a slight skin fold along the neck and back.

Dimensions.—Snout to vent, 59 mm; tail, 114 mm; orbit to tip of snout, 9.5 mm; orbit to orbit, 7 mm; snout to posterior ear, 19 mm; snout to center of eye, 12 mm; width of head, 11.5 mm; fore leg, 26 mm; hind leg, 42 mm; tibia, 15 mm.

Color in alcohol.—Entire head olive-buff; upper parts of body and limbs very pale immaculate glaucous-blue; lower surfaces and tail ecru-drab.

Variation.—The other specimen from St. Peter, U.S.N.M. no. 79003, a young female, differs slightly from the described specimen in having even weaker indications of keels on the supraocular disk, the supraocular semicircles mutually in contact for a short distance, larger preoccipital scales, and only one scale between the occipital and the semicircles.

The four specimens from St. George (= Cabritt Island), U.S.N.M. nos. 78998-79001, an adult male and three young females, show a much browner cast of coloring. The male ranges from a wood-brown on the head to burnt umber and seal-brown on the back and sides, the tail dark fawn color, the throat and chest drab, the posterior underparts pale ecru-drab. One female, no. 79000, is almost the same in tone, while the other two are lighter. There is a faint suggestion of latero-ventral mottling on two of the females, but otherwise the lizards are immaculate.

ANOLIS VINCENTII Garman

Anolis vincentii Garman, Bull. Essex Inst., vol. 19, p. 46, 1887.

U.S.N.M. no. 79066 from Brighton, St. Vincent, August 14, 1929; nos. 79078-89 from Mount St. Andrews, St. Vincent. August 15, 1929.

NOROPS OPHIOLEPIS (Cope)

Anolis (Dracontura) ophiolepis Cope, Proc. Acad. Nat. Sci. Philadelphia, p. 211, 1861.

U.S.N.M. no. 75790 from one-fourth mile south of La Guira Mansion, near San Diego de los Baños, Pinar del Río Province, Cuba, June 16, 1928.

CYCLURA CARINATA CARINATA (Harlan)

Cyclura carinata Harlan, Journ. Acad. Philadelphia, vol. 4, p. 242, 1824.

An excellent series of nine lizards, U.S.N.M. nos. 81785-93, was collected on Long Cay of the Turks Island Group, on July 28, 1930; two more, nos. 81781-2, came from Long Cay south of South Caicos, July 29, 1930; another, no. 81783, from the west end of East Caicos on July 29, 1930; another, no. 81218, from Water Cay of the Fort George isles in the Caicos group on July 25, 1930; a series of 20, nos. 81219-33, nos. 81776-80, of all ages from Big Iguana Cay, East Caicos, July 28, 1930.

CYCLURA CARINATA BARTSCHI Cochran

Cyclura carinata bartschi Cochran, Journ. Washington Acad. Sci., vol. 21, no. 3, p. 39, Feb. 4, 1931.

Diagnosis.—Nasals broadly in contact with the rostral and with each other; a pair of supranasals also closely in contact with each other; the scales of the prefrontal region rather uniform in size and shape, and grading into the smaller frontal and parietal scales; supra-

orbital semicircles barely differentiated by an occasional somewhat enlarged scale; scales of the supraocular region distinctly smaller than the other upper head scutes; two to four enlarged vertical canthals on each side of the head; nuchal and caudal crests widely separated from the dorsal crest, which is 12 mm high (in adult males) and is composed of 60 to 73 spines (average in 6 specimens, 63.5); nuchal crest composed of 16 to 20 spines (average 17.1), the highest of which measures 15 mm; four vertical rows of small scales between the fifth and sixth verticils of the tail; eight supralabials (rarely nine) to a point below the center of the eye; rostral wider than the mental; three to four enlarged tibial scales equaling the vertical diameter of the tympanic membrane.

Type.—U.S.N.M. no. 81212 (collector's number 172), an adult male from Booby Cay, east of Mariguana Island, Bahamas, collected on July 21, 1930.

Description of the type.—Rostral wider than the mental and broadly in contact with the nasals, which are broadly in contact with each other; a pair of slightly enlarged triangular supranasals likewise in contact with each other, and lying in the angle behind the two nasals; no enlarged prefrontal, frontal or parietal scales; supraorbital semicircles barely differentiated by an occasional somewhat enlarged scale; scales of the supraocular region distinctly smaller than the other upper head scutes, with a very slight indication of a supraocular disk; occipital rather large and located well forward, surrounded by irregular scales which are smallest behind it and a little larger to the right and the left; all the scales of the head, except those on the snout, keeled but not tubercular; two or three enlarged, vertical canthals on each side of the head; a well-developed series of slightly keeled supraoculars carried back a little beyond the orbit; eight upper and nine lower labials to a point directly below the center of the eye; three or four rows of small scales separating the supralabials from the suboculars; no swollen scales in the temporal region, only a few slightly enlarged and spinose scales in front of the ear, and some enlarged smooth scales below the angle of the mouth; about two rows of faintly keeled scales separating the infralabials from the three or four rows of more heavily keeled malar scales; dorsal scales small, ventrals slightly larger; a nuchal crest composed of 16 spines, the longest of which measures 15 mm; a dorsal crest, completely separated from both nuchal and caudal crests, composed of 60 spines which are conspicuously uneven in basal width and in height, the longest of which measures 12 mm; the caudal crest low, the highest spine only 6 mm in length, every third spine being enlarged

to correspond to the verticils of enlarged and highly spinose scales; four rows of small rectangular scales between the fifth and sixth verticils; upper surface of limbs with slightly imbricated, keeled, posteriorly pointed scales which are considerably larger than the body scales; on the upper arm about 9, on the lower arm about 7 of these scales to the vertical diameter of the tympanum; the scales on the outer tibia the largest, spinose, hexagonal, about four to the vertical diameter of the tympanic membrane; 18 and 20 femoral pores arranged in a single row; inner side of second toe with one comb, of third toe with two combs each consisting of three prominent and two small lobes; tail slightly compressed.

Color (in alcohol).—Head and scales of crest dull pea-green; skin of upper parts mouse-gray to dull olive-green with a very indistinct fine reticulation of lighter hue; skin of lower parts dull sage-green; under surfaces of feet and tail dark olive-buff.

Dimensions.—Head to posterior border of ear, 64 mm; width of head, 44 mm; vertical diameter of tympanum, 11 mm; head and body, 300 mm; tail (reproduced), 260 mm.

Variation.—There are five paratypes (U.S.N.M. nos. 87213-17), four of them adult females, and the fifth a very young one of indeterminate sex, all taken at the same time and place as the type specimen. The extreme variations are given in the specific diagnosis. In only one specimen do the nasals fail to touch; in this animal the inner border of each nasal plate is cut off by a suture, so that there are two small internasals abnormally formed. The femoral pores are rather low in number ranging between 16 and 20 in the present series, and averaging 17.9 for all. The only lizard with an approximately complete tail has a head and body length of 250 mm, the tail with tip missing measures 320 mm. The coloration in the adult females is much like that of the type. The young has a few light transverse dorsal saddles outlined with a darker tone.

Relationships.—The subspecies from Booby Cay is obviously a link between the typical *carinata* from Turks Island and *nuchalis* from Fortune Island. Booby Cay, east of Mariguana Cay, from which the new subspecies was collected, is just about midway between the other two type localities.

Cyclura carinata proper may be readily distinguished from *C. carinata bartschi* by a combination of several characters. True *carinata* has the nasals separated by a good-sized wedge-shaped scale; in *bartschi* the nasals are ordinarily in contact, agreeing in this respect with *nuchalis*. The new subspecies has as a rule more scale-rows between the caudal verticils, as well as larger tibial scales, more scales in the

dorsal crest, and fewer supralabials than does the Turks Island form. Nevertheless, it is much closer to *carinata* than it is to *nuchalis* which has swollen enlarged scales on the snout and hence is at once separable from the other two forms under discussion.

We had been told upon inquiry all along Mariguana Cay that Booby Cay had iguanas upon it, and this information was confirmed, for shortly after our arrival we started off a huge fellow who went crashing through the brush and took refuge in a hole, for these iguanas den like rabbits and when pursued slip underground. We had made nooses of wire and tried to catch some of them alive, but the heavy weight of the animals quickly caused my copper wire to untwist at the loop and the old fellow went crashing through the brush scared by this new experience. Nye had a similar experience, only his wire parted at the stick and the iguana carried it off. I am afraid this will be a dead iguana, for I saw him choking. Further efforts to obtain these animals alive resulted in a waste of a great amount of time, and caused us to decide to give up this achievement. Later in the afternoon Chittick and Nye went iguana-hunting and secured four. I had shot one in the morning and we had caught a baby alive, which will give us six specimens for scientific study.

CYCLURA MACLEAYII Gray

Cyclura MacLeayii Gray, Cat. Lizards Brit. Mus., p. 190, 1845.

Examples of this handsome species are still fairly common on some of the cays, judging by the numbers brought back in recent collections. It is represented in the present collection by U.S.N.M. no. 81784 from Savilla Cay, Oriente Province, Cuba, September 4, 1930; nos. 81794-8 from Cabeza del Este, Caya Blanca, Doce Leguas, Cuba, September 8, 1930; nos. 81799-805 from Cachiboca Bay, Cuba, same date; no. 81806 from the cay east of Anclitos Cay, Cuba, September 8, 1930; no. 81810 from Cantillos Cay, Cuba, September 21, 1930, and no. 81811 from Mathias Cay, Cuba, September 22, 1930.

CYCLURA NUCHALIS Barbour and Noble

Cyclura nuchalis Barbour and Noble, Bull. Mus. Comp. Zoöl., vol. 60, p. 156, 1916.

Eleven examples of this interesting species (U.S.N.M. nos. 81234-44) were taken on Fish Cay of the Fortune Island Group on July 11, 1930. The number of spines in the dorsal crest ranges between 62 and 72, averaging 67.7. The nuchal crest has 15 to 19 spines, averaging 16.7, and these are irregular both in length and in basal width, as Barbour and Noble indicated. The femoral pores are numerous, running from 21 to 28, and averaging 24.7. On the distal part of the tail the verticils are not very distinct, but when they can be seen there are five rows of small scales separating them. The coloration of the adult

male, U.S.N.M. no. 81239, is as follows: Ground color dull indigo-blue above lightening to glaucous blue beneath, with coarse reticulations of brick-red on the sides and back; posterior part of head indigo-blue, with the snout and frontal portions coral-red to rufous; the malar and labial scales orange chrome to coral-red, with a suggestion of these colors on the chin, which is mostly dull china-blue; nuchal spines pale olive-buff slightly tinged with flesh color; dorsal spines mostly light coral-red, with occasionally a dull china-blue one; tail light indigo, a few of the anterior caudal spines tinged with pink; upper surfaces of fore and hind feet black. The other adult specimens are similar in coloration, although they are not so bright in hue. A young specimen, no. 81242, is uniformly dull indigo, without any dorsal crossbands whatever or any indication of a reticulated pattern.

The largest specimen, no. 81239, measures 270 mm from snout to end of body; unfortunately its tail is reproduced. A smaller lizard measuring 215 mm in head and body has a complete tail 360 mm long. The young specimen already referred to is 140 mm from snout to vent.

We have been told repeatedly upon inquiring about iguanas that we would find them on Fish Cay, and so we did. We obtained a dozen good-sized specimens among the bushes by snaring them with string nooses on the end of a stick. We were considerably surprised, however, when we took them from our bag on board the ship to find that four of them were dead; evidently they have a way of committing suicide, similar to the ones we collected in the Gulf of California on Angel de la Guardia Island (*Sauromalus hispidus* now in the American Museum of Natural History). We have saved the eight remaining and hope to carry them through alive to Washington. Peters shot four more. The dead specimens I have injected with strong formalin-alcohol mixture and they have been put in alcohol. These iguanas are vegetable feeders. They are fairly tame and persisted in chasing the noose on the end of our sticks, instead of running their heads through them, or letting us place it around their necks. When hard pressed they finally dash into holes that look like huge sand crab burrows, or when near the coast, where there is a hurricane rampart, they seek refuge in the crevices of the rocks.

LEIOCEPHALUS CARINATUS CARINATUS (Gray)

Leiocephalus carinatus Gray, Philos. Mag., vol. 2, p. 208, 1837.

U.S.N.M. no. 75793 from Baños San Vicente, Pinar del Río Province, Cuba, June 21, 1928; no. 75810 from Puerta del Ancon, Pinar del Río Province, Cuba, June 29, 1928; no. 81658 from Macola Hill, Province of Guantanamo, Cuba, August 15, 1930; no. 81673 from Rio Puerco, Province of Oriente, August 30, 1930; no. 81687 from Cabo Cruz, Oriente, Cuba, August 31, 1930; nos. 81708-9 from

Doce Leguas, Camagüey Province, Cuba, September 7, 1930; no. 81710 from Grenada Cay, Doce Leguas, Cuba, September 9, 1930; nos. 81711-2 from Caballones, Doce Leguas, collected on the same day; nos. 81715-7 from Grande Cay, Doce Leguas, also on September 9, 1930; nos. 81742-9 from Cayman Brac, September 10 and 11, 1930.

At the present time it is not practicable to distinguish between the Cuban *carinatus* and the specimens listed below. A very detailed study of the variations of *carinatus* in Cuba will be necessary for an understanding of the status of the forms on some of the outlying islands.

These lizards came from cays in the Ragged Island Group as follows: U.S.N.M. nos. 81455-63 from Flamingo Cays on June 25, 1930; nos. 81465-70 from cays adjacent to South Channel Cays on June 28, 1930; nos. 81472-73 from Knife Cay on June 28, 1930; nos. 81476-78 from Johnson's Cay on July 2, 1930; no. 81479 from Double Breasted Cay on July 2, 1930.

Johnson's Cay.—We took a couple of lizards of the curled tailed type but the tail seems to be more spiny on the back than the previous type, but this may be pure imagination on my part.

As a matter of fact, the tail is very spiny in every adult specimen from all of the cays mentioned above. Those from Johnson's Cay, three in number, have an unusually enlarged middle supraocular, which appears to have come through the fusion of the third and fourth, or the second and third, as there is one less than the usual number of supraocular scales (six) found in specimens from the surrounding cays. A great many specimens from every cay will have to be studied before a definite decision as to the stability of this character can be made.

LEIOCEPHALUS CARINATUS PUNCTATUS Cochran

Leiocephalus carinatus punctatus Cochran, Journ. Washington Acad. Sci., vol. 21, no. 3, p. 39, Feb. 4, 1931.

Diagnosis.—Closely resembling the Cuban *Leiocephalus carinatus*, but differing from it in having a larger scale at the upper anterior region of the ear, as well as in possessing a more vivid color pattern with a somewhat different arrangement of light and dark pigment especially on the head.

Type.—U.S.N.M. no. 81560 (collector's no. 135) a male from the north shore of the bay at Jamaica Wells, Acklins Island, July 6, 1930.

Description of the Type.—Head shields large, the anterior smooth, the posterior very faintly ridged; four scales (an internasal and three prefrontals) in a line between the rostral and the beginning of the supraorbital ring; prefrontals and internasals embracing a partly

discontinuous medial series of three scales, the first small and touching the rostral; the second prefrontal the largest, in contact with its fellow, separated from the canthals by a series of scales; two canthal scales, the second the larger, followed by five elongate superciliaries, the last one the smallest; six slightly ridged supraoculars, partially separated from the frontals by an incomplete series of small scales and from the superciliaries by two series except posteriorly where there is a single row; frontals moderate in size, mutually in contact along their entire inner borders; occipital small, with a small scale immediately following it, the two scales bordered on each side by two distinct parietals, the inner about half the size of the outer, which is about five times the area of the anterior occipital; an enlarged, heavily ridged scale at the outer posterior margin of the outer parietal; no other conspicuously enlarged post-parietals; five upper and five lower labials to a point below the center of the eye; malar scales large and conspicuous, the first two subequal and separated from the infralabials by a single row of scales; temporal scales small and mostly uniform in size, those just in front of the ear gradually enlarging, the upper one about three times as large as the surrounding scales; anterior border of the ear with five or six unequal projecting scales, the longest reaching one-third of the distance across the tympanum. Dorsal scales moderately large, imbricate, very slightly mucronate; laterals smaller than the dorsals, the gradation in size being very gradual; ventrals slightly smaller than the dorsals, smooth, their posterior borders slightly denticulate; about 61 dorsal scales from the occiput to a point directly above the vent; about 14 dorsal scales equivalent to the distance from snout to occiput; nuchal scales moderately small, those behind the ear and in the shoulder folds like the dorsals but very small; no lateral fold. The adpressed hind limb reaches to the center of the eye. Digits compressed, the fourth toe with 24 tricarinate lamellae, the scales on the upper surfaces of the limbs relatively small; a very distinct but low dorsal crest beginning at the occiput and continuing without interruption to the end of the tail, increasing on the posterior part of the body and becoming much higher on the tail; the caudal scales keeled and highly mucronate; no verticils; tail slightly compressed. The keels of the dorsals and laterals converge posteriorly. A pair of widely-separated and very inconspicuous postanals in the male.

Dimensions.—Snout to vent, 72 mm; head to posterior ear, 20 mm; tail (reproduced), 112 mm; fore leg, 28 mm; hind leg, 60 mm; width of head, 15 mm.

Color (in alcohol).—Body and limbs dull bottle green above, highly iridescent; top of head sepia, the supraocular region deep clove-brown;

a brilliant pattern of white spots on the prefrontals and frontals and a large white spot on the occipital; a white line beginning in front of the first supraocular and continuing backward on the outer edges of the supraoculars to the outer parietals, behind which the line widens and turns to an iridescent olive-green dorsolateral stripe, much invaded by darker pigment until it finally vanishes on the side of the tail; a similar much interrupted median dorsal line along the crest; a sepia lateral stripe beginning behind the eye, and widening and gradually losing itself about midbody; loreal region, lips, and anterior lower surfaces pea-green to sage-green; a faint sepia mottling on the throat; the posterior part of the body and under surfaces of hind legs lightening to olive-buff; some indistinct, transverse, lateroventral bars of pale china-blue, and a few small light spots of the same hue on the upper surfaces of the limbs; tail with alternate rings of sepia and white, widening distally.

Paratypes.—An excellent series of lizards of all sizes and ages was obtained on Acklins Island, U.S.N.M. nos. 81482-9 from the hills near Cornucopia taken on July 7, 1930, and no. 81481 from Jamaica Bay. From Castle Island, just south of Acklins came U.S.N.M. nos. 81562-9, taken July 8, 1930. The same form occurs on Crooked Island, for U.S.N.M. nos. 81492-6 were taken there on July 14, 1930.

Variation.—About the usual amount of variation is seen in the head plates of this new form. The second pair of prefrontals is usually larger than the others, and in broad contact, although sometimes the presence of an unusually large median snout scale prevents much contact. The frontals and supraoculars may be fully separated by a complete series of small scales, or this series may be much reduced and interrupted. As to coloration, the light longitudinal stripes are usually in evidence, while the dark head with the contrasting brilliance of the light markings is an almost invariable condition. The females resemble the males in color. The very young ones, however, do not show such a definite pattern. U.S.N.M. nos. 81488 and 81489, respectively 36 mm and 32 mm snout to anus, have the top of the head drab-gray, with small sepia dots scattered uniformly over the head plates. The body likewise is drab-gray, with the light longitudinal lines plainly showing, and the dorsal region and upper limb surfaces are spotted with sepia, like the head. The throats of most of the adults have dark narrow lines converging anteriorly; in the type this pattern is greatly obscured and interrupted by the numerous very light-colored scales, which tend to form short transverse groups of three or four scales all over the throat and chest regions. One very old male, no. 81481 measuring 105 mm, has lost practically all traces of color pattern. Its

scales are much more mucronate than is the case in other smaller ones, even the ventrals being angulate and bristling.

Relationships.—As one might expect, the new form is very closely related to the Cuban *carinatus*. The coloration is the most obvious distinguishing feature, but close examination reveals the fact that the scale above the ear is usually prominent in the Acklins and Crooked Island forms, while in the Cuban lizard it is seldom enlarged at all. The malar scales of the new subspecies are larger also, while the first two pairs are especially well marked and nearly square in shape. The Cuban form has shorter anterior malars. The scales on the upper surfaces of the limbs in the new form seem to be slightly smaller and less continuously keeled than in the Cuban lizard, although this feature is very difficult to express by scale counts. The similarities of the two forms outweigh these minor differences, and it is preferable to bestow only a trinomial on the new lizard until further study can be made of the typical *carinatus* from Cuba.

LEIOCEPHALUS CUBENSIS (Gray)

Tropidurus (Leiolaemus) cubensis Gray, Ann. Nat. Hist., vol. 5, p. 110, Apr., 1840.

U.S.N.M. no. 75831 from El Salto de la Tinaga, Camagüey Province, Cuba, August 28, 1928.

LEIOCEPHALUS INAGUAE Cochran

Liocephalus schreibersii (not of Gravenhorst) Garman, Bull. Essex Inst., vol. 20, p. 110, 1888; extr. p. 10 (Inagua, Bahamas).—Barbour, Mem. Mus. Comp. Zool., vol. 44, no. 2, p. 301 (part), 1914.

Liocephalus sp. Cope, Proc. Acad. Nat. Sci. Philadelphia, 1894 (1895), p. 436 (probably *L. schreibersii* Great Inagua).

Liocephalus inaguae Cochran, Journ. Washington Acad. Sci., vol. 21, no. 3, p. 38, Feb. 4, 1931.—Noble, Amer. Mus. Novit., 549, p. 18, Aug. 11, 1932.

Since Garman concluded that the lizards from Inagua Island were identical with those from Hispaniola described by Gravenhorst as *Pristinotus schreibersii*, no fresh material had come under the observation of a student of West Indian herpetology until Dr. Bartsch brought back a large and well-preserved collection of *Liocephali* from Inagua, an examination of which left no doubt whatever that the species merits full recognition and separation from the neighboring forms found on Hispaniola, Cuba, and the Bahama Islands.

Diagnosis.—A distinct lateral fold; four scales (an internasal and three prefrontals) between the rostral and the supraorbital ring; the second prefrontal large and in contact with its fellow; body scales

moderately large, 70 to 82 dorsals between occiput and beginning of tail, 16 to 20 in the distance between end of snout and occiput; males with a row of large squarish black blotches on the shoulder region continuing down the sides and fading out rapidly; faint traces of two more rows of squarish blotches on the back.

Type.—U.S.N.M. no. 81277, an adult male from Man of War Bay, Great Inagua Island, collected on August 8, 1930.

Description of the type.—Head shields large, slightly ridged excepting those which border the rostral; four scales (an internasal and three prefrontals) in a line between the rostral and the beginning of the supraorbital ring; prefrontals and internasals embracing a partly discontinuous medial series of three scales, the first small and not touching the rostral; prefrontals separated from the canthals by a series of rather small scales; two canthal scales, the second much the larger, followed by four superciliaries, the third the longest, the last two rather small; seven bluntly ridged supraoculars, separated from the frontals by a single row of keeled scales and from the superciliaries by two rows of scales except posteriorly where there is a single row; frontals moderate in size, mutually in contact along their entire inner borders; occipital small, bordered on each side by two distinct parietals, the inner about half the size of the outer, which is about three times the size of the occipital; a transverse series of about eight postparietal scales, smallest at the nape, enlarging and becoming ridged and tubercular laterally, the outermost one lying along the posterior border of the outer parietal and nearly as large as the occipital; four upper and five lower labials to a point below the center of the eye; temporal scales rather uniform in size, those above the ear not enlarged; anterior border of the ear with three unequal projecting scales, the longest reaching one-third of the distance across the tympanum; dorsal scales moderately large, imbricate, mucronate; laterals very much smaller than the dorsals, the gradation in size being rather rapid; ventrals very slightly smaller than the dorsals, smooth, their posterior borders scarcely denticulate; about 70 dorsal scales from the occiput to a point directly above the vent; about 16 dorsal scales equivalent to the distance from snout to occiput; nuchal scales moderately small, those behind the ear very minute and sharply tubercular; those in the shoulder folds keeled like the dorsals but small; a distinct lateral fold present. The adpressed hind limb reaches to the anterior corner of the eye. Digits compressed, the fourth toe with 25 tricarinate lamellae. A very distinct dorsal crest beginning at the occiput and continuing unbroken to the end of the tail, increasing slightly on the posterior part of the body and highest on the distal half of the tail; the caudal scales keeled

and mucronate; no verticils; tail compressed. The keels of the dorsals and of the laterals are directed backward and slightly upward, so that the rows of scales converge slightly. There are about 20 longitudinal rows of dorsals across the back. A transverse series of six conspicuously enlarged postanals in the male.

Dimensions..—Snout to vent, 83 mm; head to posterior ear, 22 mm; tail, 142 mm; fore leg, 37 mm; hind leg, 75 mm; width of head, 15 mm.

Color (in alcohol)..—Body color olive-buff, the dorsal scales with a metallic greenish iridescence; a lateral series of about nine large, rectangular black spots, beginning behind the ear and continuing to above the groin, the posterior ones becoming much lighter; those behind the arm bordered above by traces of a scarlet vermilion stripe; from the lower borders of these spots issue narrow transverse bands of scarlet vermilion with pale blue scales scattered regularly in them; these transverse bands becoming very light towards the center of the belly and finally fading out; traces of paired dark spots down the back; head immaculate above; upper and lower labials with vertical pearl-gray markings on the sutures of the scales; throat with longitudinal pearl-gray broken stripes, which become much darker on the sides of the neck and are nearly black beneath the ear; fore legs faintly barred with pearl-gray; hind legs irregularly barred with scarlet vermilion, pale blue and olive-buff; tail with faint widely spaced bars of pale gray above, immaculate below. Posterior femur with a broad white stripe bordered by scarlet vermilion above and below.

Paratypes..—In addition to the specimen designated as the type, I have examined 13 paratypes from Great Inagua Island, as follows:—U.S.N.M. no. 81278, an adult female from Carmichael Point, August 7, 1930; no. 81256, a very young male from the same locality; no. 81279, an adult male from the center of Ocean Bight Bay; no. 81280, an adult male from the northeast peninsula, August 6, 1930; no. 81281, a young female from Northwest Point, August 8, 1930; and nos. 81282-4, an adult male and two young females from Mathewtown, August 9-10, 1930. I have likewise examined a fine series of five males, Mus. Comp. Zool. no. 6234 labeled simply "Inagua". These are the specimens to which Garman erroneously applied the name *schreibersii*.

Variations..—In the series of 14 specimens, the canthals and prefrontals do not touch in any instance. The supraocular plates vary from six to eight in number, six being unusual, eight fairly frequent, and seven the most frequent. There are always three prefrontals, the second of which is usually the largest. In one case the internasals are transversely divided. The median snout scales are three to six in

number; when more than three are present, it is usually because one or more of the original series has longitudinally divided. The first of the series are usually in contact, but the third is usually separated from the second by the second prefrontals which are in contact. There are 70 to 82 dorsal scales between the occiput and the beginning of the tail, and from 16 to 20 dorsals in the distance from snout to the occiput. The adpressed hind leg reaches to the center of the eye or to its anterior corner in adults; in the very young male it reaches nearly to the nostril. The subdigital lamellae of the fourth toe number from 25 to 29. The tail when perfect is about one and three-quarters times the length of the head and body.

In coloration the variation between the sexes is at once apparent. The males have the very distinct square black patches on the shoulder region, with a sudden diminution in the intensity of these blotches both dorsally and posteriorly, so that they can hardly be discerned. The females, on the contrary, lack the black color entirely, the four rows of quadrangular blotches on back and sides being uniformly sepia, as are the transverse latero-ventral stripes, which in the males are so handsomely edged with scarlet vermilion. The very young male has a brilliant pattern of black blotches which appears even on the tail as widely spaced bars; on the middle of the back, however, the blotches are already beginning to lose their intensity and fade out gradually.

Dr. Noble has given additional notes on color and habits in his recent paper.

Relationships.—From the West Indian islands five species of *Lciocephalus* with a lateral fold have been described up to the present time. They are *schreibersii* and *melanochlorus* from Hispaniola, *raviceps* and *macropus* from Cuba, and *loxogrammus* from Rum Cay in the Bahamas. The new species from Great Inagua Island makes the sixth belonging to this group. It is intermediate in the size of its scales between *melanochlorus*, the largest-scaled species, and the other four known species, all of which have rather small scales. In coloration it suggests *loxogrammus* somewhat in the presence of the black blotches on the sides of the neck, but otherwise the patterns are not alike. It is true that *melanochlorus* has four sets of blotches on back and sides, as does *inaguae*, but in adult males of the former species those above the shoulder are not more prominent than those elsewhere on the body.

The prefrontals of *loxogrammus* are vastly different from those of the new species—the prefrontals of *loxogrammus* being only two in number, the posterior ones very large and elongate. Practically this same arrangement is found in *raviceps* of Cuba. In *macropus* of

Cuba, and *schreibersii* and *melanochlorus* of Hispaniola, the prefrontals, while three in number, are relatively small and uniform in size and as a rule are completely, or nearly completely, separated by the median series of scales on the snout. In *inaguae*, the second prefrontals are prominent, fairly large and usually in contact with each other.

LEIOCEPHALUS MACROPUS Cope

Liocephalus macropus Cope, Proc. Acad. Sci. Philadelphia, 1862, p. 184.

U.S.N.M. nos. 81671-2 and no. 81674 were collected at Rio Puerco, Province of Oriente, Cuba, on August 29 and 30, 1930; no. 81680 at the mouth of the Magdalena River in Oriente on August 29, 1930; nos. 81681-4 from Punta Icacos, Oriente Province, on August 30, 1930; nos. 81688-9 from Cabo Cruz on August 31, 1930.

LEIOCEPHALUS PSAMMODROMUS Barbour

Liocephalus psammodromus Barbour, Copeia, vol. 85, p. 73, 1920.

Two series of almost topotypic lizards were collected in the Turks Island Group—U.S.N.M. nos. 81303-28 from Long Cay, August 1, 1930 and nos. 81329-43 from Sand Cay, August 2, 1930.

Several localities from the neighboring Caicos Group yielded the following specimens: U.S.N.M. nos. 81384-7 from Fort George Cay on July 24, 1930; nos. 81388-92 from Stubb Cay, Fort George Group, on July 25, 1930; nos. 81393-6 from Water Cay, Fort George Group, on July 24, 1930; nos. 81397-8 from Pine Cay on July 24, 1930; nos. 81399-409 from Long Cay near South Caicos on July 29, 1930; nos. 81410-11 from Lorimer Creek on Grand Caicos on July 26, 1930; no. 81412 from Sugar Loaf Island of the Providenciales Group on August 4, 1930.

On all the cays (Pine Cay, Water Cay, Fort George Cay) we found lizards and wherever possible secured specimens. There is a ground species that partly curls its tail, probably a relative of the curled tail lizard.

LEIOCEPHALUS RAVICEPS Cope

Liocephalus raviceps Cope, Proc. Acad. Nat. Sci. Philadelphia, 1862, p. 183.

As late as the publication of Barbour's "Herpetology of Cuba" in 1919, the scarcity of this species in collections made its distribution in Cuba a matter of uncertainty. Since that date, however, the species has been collected rather abundantly, and the following records of it

for this particular collection are: U.S.N.M. nos. 81652-3 from the north side of Guantanamo Bay, Cuba, August 14, 1930; nos. 81656-7 from Macola Hill in Guantanamo Province, Cuba, August 15, 1930; no. 81659 from Cusco Valley in Guantanamo Province, Cuba, August 16, 1930; nos. 81713-4 from Cayo west of Cachiboca, Doce Leguas, Province of Camagüey, Cuba, September 8, 1930; and 81812-6 from Boqueron, Cuba, August 19, 1930.

The examination of the prefrontal scales makes this species rather easy to tell apart from the other three members of the genus likewise occurring on Cuba. *Leiocephalus raviceps* has two prefrontals between the internasal and the supraorbital semicircle—the anterior prefrontal small, the posterior considerably enlarged—while the other Cuban species have three more or less subequal prefrontals.

LEIOCEPHALUS VARIUS Garman

Leiocephalus varius Garman, Proc. Amer. Philos. Soc., vol. 24, p. 274, 1887.

U.S.N.M. nos. 81750-3 from Grand Cayman, September 15 and 16, 1930.

TROPIDURUS TORQUATUS HISPIDUS (Spix)

Agama hispida Spix, Spec. Novae Lacert. Bras., p. 12, 1825.

U.S.N.M. nos. 79205-10 from the hill east of Pampater, Margarita Island, September 8, 1929; no. 79228 from Los Robles, Margarita Island, same day. The scales of the hands and feet appear to be elongated into spines to a much greater extent in the Margarita Island lizards than is the case in Venezuelan representatives, supposedly of the same subspecies. A very thorough generic revision is necessary before deciding how much weight can be attached to such a character in a genus subject to considerable specific variations as to structure of scales.

TROPIDODACTYLUS ONCA (O'Shaughnessy)

Norops onca O'Shaughnessy, Ann. Mag. Nat. Hist., Ser. 4, vol. 15 p. 280, 1875.

U.S.N.M. nos. 79226-7 from Los Robles, Margarita Island, September 8, 1929.

The larger of these two specimens has been compared with the types in the British Museum by H. W. Parker. He thinks that they are the same, although he notes that in both type specimens the scales of the sides are subimbricate and rather more lanceolate than in the United States National Museum example.

Family ANGUIDAE

CELESTUS SAGRAEI (Cocteau)

Diploglossus sagrae Cocteau, in R. de la Sagra, Hist. Cuba, Rept., p. 180, 1838.

U.S.N.M. no. 75840 from Senado, Camagüey Province, Cuba, September 2, 1928.

Family TEIIDAE

AMEIVA AQUILINA Garman

Ameiva aquilina Garman, Bull. Essex Inst., vol. 19, p. 3, 1887.

U.S.N.M. nos. 79111-2 from Petit Mustique Island, Grenadines, August 18, 1929; nos. 79147-9 from Frigate Island, Grenadines, August 22, 1929; nos. 79194-5 from Mineral Springs, northeast Grenada, August 27, 1929. In their "Revision of the Lizards of the Genus *Ameiva*" in 1915, Barbour and Noble say regarding this species that "it is probable that it also occurs in some of the Grenadines". This prediction is justified by the first two records given above. Comparative measurements and scale counts of all these specimens, including three additional Grenada specimens in the national collection, have been made as follows:

U. S. N. M. No.	Locality	Head and body	Ventrals		Femoral pores	Tail at 15th verticil	Lamel- lae under 4th toe
			Trans- verse	Longitu- dinal			
		<i>mm</i>	<i>Rows</i>	<i>Rows</i>		<i>Scale rows</i>	
43222	Grenada	88	32	10+2	20-20	40	37
43223	"	73	32	10+2	18-17	41	37
67234	"	62	33	10+2	18-18	41	36
79194	"	77	32	10+2	18-19	38	36
79195	"	82	32	10+2	17-17	41	35
79111	Petit Mustique Island	138	35	12	19-20	46	36
79112	"	129	35	10+2	20-21	42	37
79147	Frigate Island,	139	33	10+2	20-21	43	33
79148	"	133	32	10+2	20-21	45	35
79149	"	150	33	10+2	21-21	44	34

The two adults from Petit Mustique Island show a pattern of relatively large pale dorsal spots surrounded by a heavy black reticulation, while the adults from Frigate Islands have the pale spots somewhat smaller and more sparsely scattered, and the black pigment is reduced to a narrow rim around the light spots and to some small patches between them and along the middle of the back.

Although the number of transverse rows of ventrals was given as 14 by Garman, and this count was later repeated by Barbour and Noble,

I find only 10 rows of uniform-sized scales flanked by a row of much smaller scales at each side in most of the specimens before me.

Dr. Bartsch gives the following note on living coloration of the Petit Mustique lizards:

Punctations on sides greenish yellow; head, etc., marbled with brown streaks. Throat gray. Belly bright peacock-blue, most intense on the under side of tail. Upper side of tail dark, variegated.

AMEIVA AUBERI Cocteau

Ameiva auberi Cocteau, in R. de la Sagra, Hist. Cuba, Rept., p. 74, 1838.

Examples of this lizard are U.S.N.M. no. 81654 from the north side of Guantanamo Bay, Cuba, obtained August 14, 1930; nos. 81665-7 from Cusco Valley in the province of Guantanamo, Cuba, August 16, 1930; no. 81678 from Rio Puerco in Oriente, Cuba, August 29, 1930; no. 81700 from Doce Leguas, cay at longitude 78° 33' W. on September 7, 1930; nos. 81701-3 from the southeast end of Doce Leguas, Cuba, on the same date; 81704 from Doce Leguas on September 8, 1930; nos. 81705-6 from Pilot Point on Anclitos Bay, Doce Leguas, on September 9, 1930; no. 81707 from Caballones, Doce Leguas, on the same day; nos. 81718-9 from Mathias Cays on September 22, 1930; no. 81766 from Cayo Avillon near Canapachi on September 21, 1930; no. 81821 from Boqueron, Cuba, on August 19, 1930.

AMEIVA FUSCATA Garman

Ameiva fuscata Garman, Bull. Mus. Comp. Zoöl., vol. 19, p. 5, 1887.

U.S.N.M. no. 79023 from Danes, east of Portsmouth, Dominica, August 4, 1929; no. 79024 from the Botanic Gardens in Rousseau, Dominica, August 6, 1929.

AMEIVA MAYNARDII MAYNARDII (Garman)

Ameiva maynardii Garman, Bull. Essex Inst., vol. 20, p. 10, 1888.

Four lizards belonging to this species were taken from August 7 to 10, 1930, on Great Inagua Island,—U.S.N.M. nos. 81271-2 from Mathewtown, and 81275-6 from Man of War Bay.

The scale formulae for these lizards are very similar. The femoral pores vary between 10 and 14; the subdigital lamellae are 34 to 39; the tail at the fifteenth verticil has in every case 23 rows of scales; the transverse rows of ventrals number 33 to 35, and the longitudinal rows are 8 in all cases.

AMEIVA MAYNARDII UNIFORMIS Noble and Klingel.

Ameiva maynardii uniformis Noble and Klingel, Amer. Mus. Novit. no. 549.
p. 23, 1932.

U.S.N.M. nos. 81373-4 from the center of Ocean Bight Bay, August 7, 1930, are referred to this subspecies. They are a uniform drab-gray above, slightly bluer on the limbs, and lightening to immaculate pearl-gray on the under parts. There are absolutely no traces of the three wide black stripes which characterize Garman's *Ameiva maynardii*. There are 12 femoral pores in both specimens of *A. m. uniformis*; subdigital lamellae 36; the tail at the 15th verticil with 20 and 22 scales respectively; the transverse rows of ventrals 31 and 35, and the longitudinal rows 8.

AMEIVA PLEI Duméril and Bibron

Ameiva plei Duméril and Bibron, Erpét. Gén., vol. 5, p. 114, 1839.

U.S.N.M. nos. 78974-7 from St. Martin, July 22, 1929.

AMEIVA THORACICA Cope

Ameiva thoracica Cope, Proc. Acad. Nat. Sci. Philadelphia, 1862, p. 64.

This lizard is represented by examples from the following places: U.S.N.M. nos. 81451-4 from Flamingo Cays of the Ragged Island Group, June 25, 1930; no. 81475 from Raccoon Cay of the Ragged Island Group, June 30, 1930; nos. 81497-8 from Crooked Island, July 14, 1930. The three from Flamingo Cays are much lighter in coloration than is the usual case, the black dorsolateral line being barely in evidence on the posterior part of the body, and not present at all anteriorly. Since the lizard from the not-far-distant Raccoon Cay presents an entirely normal style of coloration, and since there seems to be no urgent reason for describing a subspecies from so few specimens, which likewise are considerably mutilated by the small shot used to obtain them, it is best to consider them as aberrant individuals.

SCOLECOSAURUS ALLENI Barbour

Scolecosaurus allenii Barbour, Mem. Mus. Comp. Zoöl., vol. 44, p. 315, 1914.

U.S.N.M. no. 79190 from the Annandale Estate, Grenada, August 25, 1929.

CHEMIDOPHORUS MURINUS ARUBENSIS (Lidth de Jeude)

Cnemidophorus arubensis Lidth de Jeude, Notes Leyden Mus., vol. 9, p. 132, 1887.

U.S.N.M. nos. 79323-5, 79327-31 from Aruba Island, September 17, 1929. One of the original series, no. 79326, was sent to the Museum of Comparative Zoölogy as an exchange.

CNEMIDOPHORUS MURINUS MURINUS (Laurenti)

Scps murinus Laurenti, Synops. Rept., p. 63, 1768.

U.S.N.M. nos. 79271-2 from a hill 1½ miles west of Kralendijk, Bonaire Island, September 12; 79273-303 from Bonaire Island, September 13-14, 1929; nos. 79304-14 from Curaçao, September 16, 1929.

CNEMIDOPHORUS LEMNISCATUS LEMNISCATUS (Linnaeus)

Lacerta lemniscata Linnaeus, Syst. Nat., ed. 10, p. 209, 1758.

U.S.N.M. nos. 79219-23 from Los Robles, Margarita Island, September 8, 1929.

CNEMIDOPHORUS LEMNISCATUS NIGRICOLOR (Peters)

Cnemidophorus nigricolor Peters, Sitz. Ber. Ges. Nat. Freunde Berlin, p. 76, 1873.

U.S.N.M. no. 79230 from Orchilla Island, September 10, 1929; nos. 79232-54 from El Roque, September 11, 1929. Most of the adults of the latter series are dull black in color, either uniform or with minute white dots.

The low trailing shrubbery on the beach south of the village [on the leeward side of El Roque Island] had many lizards of two kinds, or probably three: one sooty, one plain brownish, and one spotted. These, when followed, would dive in the crab burrows for shelter and thus elude the pursuer.

Family AMPHISBAENIDAE

AMPHISBAENA CUBANA Peters

Amphisbaena cubana Peters, Mon. Berlin Acad. Wiss., p. 780, 1878.

U.S.N.M. no. 75861 from Santa Cruz Mountains in Camagüey Province, Cuba, September 1, 1928.

Family SCINCIDAE

MABUYA AENEA (Gray)

Tiliqua aenea Gray, Griffith's Cuvier's Animal Kingdom, vol. 9, Synops. Rept., p. 70, 1831.

U.S.N.M. no. 79131, from Petit Martinique, Grenadines, August 21, 1929. This handsome specimen has the supranasals separated, 28 scale rows, and 54 scales from vent to chin.

MABUYA SLOANII (Daudin)

Scincus sloanei Daudin, Hist. Nat. Rept., vol. 4, p. 287, 1803.

A much mutilated lizard, U.S.N.M. no. 81448, apparently of this species was taken on West Caicos on August 4, 1930. Its coloration is much like that of the type of *nitida* from San Domingo described by Garman. The supranasals in *nitida* are barely in contact; in the lizard from West Caicos they are slightly separated; in the Puerto Rican examples of *sloanii* they are very broadly in contact. In the Puerto Rican and Hispaniolan forms the first supraocular is very minute, while the second is very large indeed. The specimen from West Caicos, although badly damaged about the head, nevertheless shows a fairly large first supraocular and a correspondingly reduced second supraocular. In this specimen one pair of enlarged nuchal scales is present, with a trace of a second pair in some fused scales on one side of the neck. With so little material from Hispaniola, and with this single injured specimen from the Bahamas, it is best to let the name *Mabuya sloanii* cover these forms until more material has given a conclusive decision about their status.

Suborder SERPENTES

Family BOIDAE

EPICRATES ANGULIFER Bibron

Epicrates angulifer Bibron in R. de la Sagra's Hist. Cuba, Rept., p. 215, 1843.

U.S.N.M. no. 75865, a shed skin of a snake of this species, was found at La Caridad de Mendoza, Senado, Camagüey Province, Cuba, on September 2, 1928.

BOA HORTULANA COOKII (Gray)

Corallus cookii Gray, Zool. Misc., p. 42, 1842.

For the two specimens, U.S.N.M. nos. 79097-8 from Quatres Island, Grenadines, taken August 17, 1929, I adopt the name proposed by Amaral (Mem. Inst. Butantan, vol. 4, p. 143, 1929). A careful inspection of scale counts of 29 West Indian examples of *Boa* appears to establish the fact that the number of scale rows in this region lies between 39 and 47, with over half of the specimens having either 41 or 43 scale rows. Those from the mainland appear to fall into two groups, one having 43 to 47 scale rows, the other 51 to 55. These two groups are found in separate geographical ranges, the first group occurring in Venezuela, British Guiana and Colombia, the second in Surinam, Brazil and Peru. As an intergrading probably occurs where the ranges come together in the Guianas, subspecific names are desir-

able for both forms. The name of the northern mainland form appears to be applicable to the island species as well, since they do not seem to be separable by any valid characteristic. No. 79097, a male, has 39 scale rows, 260 ventrals, and 107 subcaudals; no. 79098, a half-grown specimen, has 39 scale rows, 258 ventrals, and 108 subcaudals.

. . . The surprise, however, came when Pasqual came to me in consternation, saying that he had seen a snake, so I hastened to the place and sure enough there was a slender black snake [see *Drymobius boddaertii*, U.S.N.M. no. 79099]. Later I asked Pasqual to get me an orchid in a large tree some distance above ground, and he almost fell off when he discovered another snake in the bunch of orchids. I could scarcely believe him, but handing him a stick had him poke it out and sure enough a slender, beautifully colored animal slipped out and sped along the branch. My .22 game-getter stopped him, but his tail was wound so tightly about a small limb that we had considerable trouble unwinding it. This species is evidently a splendid climber. Not 10 minutes later Pasqual, peeping into a broken-off limb hollowed out by decay, came near a second tumble as he bounced back with an "Ave Maria—una utra calebra." He again poked him out and a shot from the .22 also dropped him. I hope we have a pair.

TROPIDOPHIS MACULATUS MACULATUS (Bibron)

Leionotus maculatus Bibron, in R. de la Sagra's Hist. Cuba, Rept., p. 212, 1840.

U.S.N.M. no. 75826 from La Sierra, north of Vega Alta, Santa Clara Province, August 14, 1928.

TROPIDOPHIS MELANURUS (Schlegel)

Boa melanura Schlegel, Ess. Phys. Serp., vol. 2, p. 399, 1837.

U.S.N.M. no. 75828 from El Rinconada, Sierra Camagua, Cuba, August 27, 1928; no. 75839 from the Cubitas Mountains near Senado, Cuba, September 5, 1928; no. 76879 from Central Senado, Camagüey Province, Cuba, September 6, 1928.

TROPIDOPHIS PARDALIS PARDALIS (Gundlach)

Boa pardalis (part) Gundlach, Arch. Naturg., 1840, p. 359.

A young snake attributed to this species is now U.S.N.M. no. 81536, from Double Headed Shot Cay of the Cay Sal Group taken on June 20, 1930. There are 23 scales around the middle of the body, 157 ventrals, a single anal, and 32 subcaudals.

Family COLUBRIDAE

TRETANORHINUS VARIABILIS Duméril and Bibron

Tretanorhinus variabilis Duméril and Bibron, Erpét. Gén., vol. 7, p. 349, 1854.

U.S.N.M. no. 75807 from Baños San Vicente, Pinar del Río Province, Cuba, June 21, 1928.

DRYMOBIUS BODDAERTII BODDAERTII (Sentzen)

Coluber boddaertii Sentzen, Meyer's Zool. Arch., vol. 2, p. 59, 1796.

U.S.N.M. no. 79225 from Los Robles, Margarita Island, September 8, 1929, has 17 scale rows, 181 ventrals, a divided anal, 82 subcaudals, 9 supralabials, oculars 1 + 2, temporals 2 + 2.

DRYMOBIUS BODDAERTII BRUESI (Barbour)

Alsophis bruesi Barbour, Mem. Mus. Comp. Zoöl., vol. 44, no. 2, p. 337, 1914.

U.S.N.M. no. 79099, a female from Quatres Island, Grenadines, August 17, 1929; scales 17, ventrals 201, anal divided, caudals 125, supralabials 8, oculars 1 + 2, temporals 1 + 2.

U.S.N.M. no. 79166, a male from Union Island, Grenadines, August 20, 1929; scales 17, ventrals 201, anal divided, caudals 125 + tip, supralabials 9, oculars 1 + 2, temporals 1 + $\frac{1}{2}$.

U.S.N.M. no. 79161, a male from Caille Island, Grenadines, August 24, 1929; scales 17, ventrals 197, anal divided, caudals 128, supralabials 9, oculars 1 + 2; temporals 1 + 2.

U.S.N.M. no. 79191, a female from the Annandale Estate, Grenada, August 25, 1929; scales 17, ventrals 199, anal divided, caudals 115, supralabials 9, oculars 1 + 2, temporals 1 + 2.

U.S.N.M. no. 79193, a female from Baltazar, near the east coast of Grenada, August 25, 1929; scales 17, ventrals 204, anal divided, caudals 122, supralabials 9, oculars 1 + 2, temporals 1 + 2.

This species, when found on the mainland, ordinarily has two anterior temporals, and Barbour's original series of *Alsophis bruesi* from near St. George's, Grenada, had "a large anterior temporal with almost always a small scale intercalated above it, anteriorly". In all of the National Museum specimens listed above—three of them from the Grenadines and two from Grenada—there is but one anterior temporal, and the intercalated small scale is lacking in every instance.

ALSOPHIS ANGULIFER Bibron

Alsophis angulifer Bibron, in R. de la Sagra's Hist. Cuba, Rept., p. 222, 1840.

U.S.N.M. no. 75830 from El Salto de la Tinaga, Camagüey Province, Cuba, August 28, 1928.

ALSOPHIS VUDII Cope

Alsophis vudii Cope, Proc. Acad. Nat. Sci. Philadelphia, 1862, p. 74.

On Flamingo Cays of the Ragged Island Group a snake of this species was collected on June 27, 1930, U.S.N.M. no. 81464. It has 17 scale rows, 164 ventrals, a divided anal, 128 caudals, 8 upper labials, oculars 1 + 2, temporals 1 + 3. It seems to be a normal individual in every way.

LEIMADOPHIS ANDREAE Reinhardt and Lütken

Leimadophis andreae Reinhardt and Lütken, Vid. Med. Nat. For. Kjöbenhavn, p. 214, 1862, (1863).

U.S.N.M. no. 75808 from Baños San Vicente, Pinar del Río Province, Cuba, June 1, 1928; no. 75809 from Puerta del Ancon, Pinar del Río Province, Cuba, June 29, 1928; no. 75827 from Macomento del Río, Cuba, August 7, 1928; nos. 75844-5 from Río San Juan, Pinar del Río Province, Cuba, June 9, 1928.

LEIMADOPHIS JULIAE (Cope)

Aporophis juliae Cope, Proc. Amer. Philos. Soc., vol. 18, p. 274, 1879.

A young individual, U.S.N.M. no. 79022 from Danes, east of Portsmouth, Dominica, August 4, 1929. Its scale formula is: Scales 17, ventrals 156, anal divided, caudals 82, supralabials 8, oculars 1 + 2, temporals 1 + $\frac{1}{2}$.

A female, no. 79025 from the Botanic Gardens in Rousseau, Dominica, August 6, 1929, has the following scale count: Scales 17, ventrals 159, anal divided, caudals 78, supralabials 8, oculars 1 + 2, temporals 1 + 2.

RHINOSTOMA GUIANENSE (Troschel)

Heterodon guianensis Troschel in Schomb. Reise Brit. Guiana, vol. 3, p. 653, 1848.

U.S.N.M. no. 79224 from Los Robles, Margarita Island, September 8, 1929. This appears to be the first insular record for this species. The specimen in hand has 19 scale rows; 191 ventrals; anal undivided; subcaudals 51+, the tail tip being defective; temporals 2 + 3.

Subclass SYNAPSIDA

Order TESTUDINATA

Family TESTUDINIDAE

TESTUDO TABULATA Walbaum

Testudo tabulata Walbaum, Chelonogr., p. 122, 1782.

Unfortunately no example of this species reached the United States National Museum. As to its occurrence on two of the Grenadines, I quote the field notes made by Dr. Bartsch:

Aug. 17, 1929. Quatres Id., off Cheltenham. . . . On returning, the pilot told us that there were land tortoises here and an enquiry brought three to me on our return, large clumsy beasts, for which I paid 50 cents. . . . *Aug. 18, 1929. West side of Baliceaux Id. . . .* I was greatly surprised to find here many of the land tortoises. I turned over half a dozen large ones, hoping to find them upon our downward trip, but we didn't. They had righted themselves and taken shelter in the grass tufts or shrubbery. As it was, we carried five aboard.