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THE REPTILES OF THE DUTCH LEEWARD
ISLANDS

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The Museum of Zoology has recently received three collections of reptiles from the Dutch Leeward Islands. In 1920, the University of Michigan-Williamson Expedition to Venezuela touched at Curaçao and collected for a short time on that island. In 1922, Mr. M. A. Carriker, Jr., collected on Curaçao for a few days and sent the reptiles to this Museum. The largest collection was made by Dr. H. Burrington Baker, who was sent to Curaçao, Klein-Curaçao, Aruba, Bonaire, and Klein-Bonaire in the summer of 1922 to collect mollusks, reptiles and amphibians.

These collections do not represent the entire fauna of the five islands, but they contain apparently new records, and several of the species are represented by large series which permit a more accurate description of the forms than has hitherto been possible. As the published lists (see bibliography) are evidently incomplete, and inaccurate owing

to mistakes in the identification of the forms, the present list has been made to include the published records, even though there are many duplications. The writer has had for study, through the courtesy of the Field Museum of Natural History, some of the specimens referred to by Meek; but he has not been able to examine Cope's specimens.

LIST OF SPECIES

Gonatodes albogularis (Duméril and Bibron). — Although Cope records this species both from Aruba and Curaçao, and there are, according to Stejneger (1917), numerous specimens from Curaçao in the United States National Museum, Baker secured but one specimen on Curaçao. This is an old male and is quite typical of *G. albogularis* as distinct from *G. fuscus* and *G. vittatus*.

Gonatodes vittatus (Lichtenstein).—*Aruba* (three specimens taken at Oranjestad).

Cope lists the species from Aruba; and Boulenger (1885 a, p. 60) records a Curaçao specimen in the British Museum under this name. Although carefully searched for elsewhere this species was only found in and about the town, where it was taken under rocks and in a house.

Gymnodactylus antillensis (Van Lidth de Jeude).—*Curaçao* (Willemstad; El Hato; Valley at Seroe Domi; Schaarlo; Campo Knip; Ronde Klip; Overzijde; Landhuis Knip; Tafelberg of St. Hyronimus, 229.9 m.): *Bonaire* (hills of Santa Barbara, back of El Hato de Bonaire; between Tanki Maraka and Porta Spaño; near Pos Frances; Seroe Wassau): *Klein-Bonaire*: *Klein-Curaçao*. Some of the specimens of Van Lidth de Jeude were said to have come from Aruba, the others from Curaçao.

Common on all four islands, under rocks and in houses; a few were under the loose bark of trees.

Phyllodactylus pulcher (Gray).—Curaçao (Valley at Seroe Domi; Landhuis Knip; Schaarlo): *Aruba* (Sero Canashito; Baranca Alto; near Malmok; near Oranjestad; near Perkiëntenboseh): *Bonaire* (between Tanka Maraka and Porta Spaño; Santa Barbara beyond El Hato; Seroe Wassau): *Klein-Bonaire*. Recorded from Aruba by Cope, under the name *P. julienni*, and from Curaçao by Werner and Van Lidth de Jeude.

Not infrequent on Aruba, Bonaire and Klein-Bonaire, in the better wooded places; rare on Curaçao; found under rocks and loose bark of dead trees.

Boulenger (1887) has pointed out that *P. martini* Van Lidth de Jeude is synonymous with *P. julienni* Cope. Werner has listed a *Phyllodactylus* from Curaçao as *P. pulcher* (type-locality tropical America), and Miss Joan Proctor has pronounced one of our specimens from Aruba identical with the type of *P. pulcher*. It is evident that the three names apply to one species which occurs on Aruba, Curaçao, Bonaire, and Klein-Bonaire, and which should be known as *Phyllodactylus pulcher* (Gray).

Thecadactylus rapicaudus (Houttuyn).—*Curaçao* (Campo Knip; Landhuis Knip): *Aruba* (Campo West Punt; Baranca Alto; Nooi Hundoe; near Perkiëntenboseh): *Bonaire* (between Tanki Maraka and Porta Spaño; Santa Barbara beyond El Hato di Bonaire). Listed from Aruba and Curaçao by Van Lidth de Jeude, from Aruba by Cope, and from Curaçao by Meek.

Under the bark of trees and in buildings; sometimes under rocks at the base of trees.

Anolis bonairensis, new species

Diagnosis: Tail moderately compressed, with serrated upper edge. Dorsal scales small, those of the vertebral region larger than the laterals, smaller than the ventrals. Occipital scale large, larger than the ear opening, in contact with the scales of the supraorbital semicircles or separated from them by a row of granules, surrounded laterally and posteriorly by granules scarcely larger than the largest dorsals — at least much smaller than the scales of the forehead; scales of the supraorbital semicircles enlarged, separated or last one or two pairs in contact; supraocular scales enlarged, without keels. Tibia much shorter than the distance between end of snout and ear opening.

Habitat: Bonaire and Klein-Bonaire, Dutch Leeward Islands.

Type Specimen: Cat. No. 57221, Museum of Zoology, University of Michigan; Seroe Grandi, 4½ km. northeast of Kralendijk, Bonaire; August 23, 1922; H. Burrington Baker, collector.

Description of Type Specimen: Head moderate, about once and a half as long as broad, the length to the posterior border of the orbit equal to the length of the tibia; the hind limb extended forward reaches the temporal region. Snout rather strongly depressed, forehead concave, no frontal ridges. Upper head scales smooth, scales of the supraorbital semicircles large, last two pairs in contact with each other and the occipital scale; about ten enlarged smooth supraoculars; loreal rows three; occipital scale large, surrounded laterally and posteriorly by granules scarcely larger than the enlarged dorsals, much smaller than those of the forehead; dorsal scales small, keeled,

those of the vertebral region larger than those on the sides; ventral scales larger than the dorsals, smooth. Tail compressed, with serrated upper edge (regenerated). About 26 lamellae under the second and third phalanges of the fourth toe. Gular pouch rather large. Brown above with black crossbars bordered with yellow, and somewhat interrupted on the flanks; ventral surfaces white, the sides of the abdominal region with faint spots, the chin mottled with dark brown, the gular pouch uniformly white (in alcohol).

Length of head and body..... 66.5 mm.

Length of head 19 mm.

Length of hind leg 50 mm.

Notes on Paratypes: The supraorbital semicircles in nineteen specimens are entirely separated in six, in contact by one pair in ten and by two pairs in three. The enlarged supraoculars are smooth in all specimens, and the occipital is separated from the supraorbitals by small scales in two specimens.

The localities are as follows: *Bonaire* (Santa Barbara; Montagne; Punta Blanco; Seroe Wassau; Seroe Grandi): *Klein-Bonaire*. Usually found upon trees. Also recorded from Bonaire by Meek under the name *A. alligator*. Common everywhere on trees and cliffs.

Remarks: As is well known, anoles from a number of islands in the Caribbean Sea have been referred to *Anolis alligator*. Barbour (1914, p. 281) has asserted that the Martinique form is distinct from the one on Trinidad, an assertion that has been supported by a study of specimens from both localities. A well marked difference is to be found in the size of the scales about the occipital plate. In a series of specimens these scales are as large as the scales of the forehead in those

from Trinidad and much smaller, scarcely larger than the vertebral scales, at any rate much smaller than those of the forehead, in those from Martinique.

The Bonaire specimens agree with those from Martinique and differ from Trinidad specimens in having small scales about the occipital scale, and they differ from the Martinique form in having smooth supraoculars, and from both in having the supraorbital semicircles more widely separated. As stated above, in a series of nineteen specimens the semicircles are entirely separated in six, in contact by one pair in ten and by two pairs in three. In Martinique specimens and in some of those from Trinidad the enlarged supraoculars have a short keel, sometimes reduced to a low tubercle; and again in the Martinique and Trinidad specimens examined the semicircles are broadly in contact by three or four scales, the forward point of contact being about on a level with, or a little posterior to, a line connecting the anterior margin of the first enlarged supraoculars.

It is very probable that there are also differences in the coloration of the three forms, but this cannot be satisfactorily determined with preserved material.

It may be remarked here that the name¹ of the Martinique form is apparently *Anolis roquet* (Bonnaterre), Enc. Meth. Erpet., 1789, p. 54, pl. 9, fig. 5. This name is based on Le Roquet Lacépède and antedates Merrem's *Anolis cepedii*. That the Trinidad form is to be known as *Anolis aeneus* Gray (Cat. Liz., 1845, p. 205), and that this name is not available for the Bonaire form, seems to be established by the fact that the

¹I am indebted to Dr. Leonhard Stejneger for assistance with the nomenclature of these forms, and to Miss Mina Winslow for the examination of the type of *Anolis aeneus* Gray.

type of *A. aeneus* has smooth supraoculars and large scales about the occipital plate: both characters distinguish it from *Anolis roquet*, and the second separates it from *Anolis bonairensis*.

Anolis lineatus (Daudin).—*Curaçao* (Valley at Seroe Domi; Willemstad; Tafelberg of Santa Barbara; El Hato; Seroe Salinja Abau; Scharlo; Seroe Djerimi; Seroe Mansinga; Valley between Seroe Palomba and Seroe Baha Hoendoe; Hills south of Sint Willebrordus; St. Christoffelberg, 500-1200 ft.): *Aruba* (shore cliffs near Oranjestad; Seroe Canashito; Baranca Alto and Isla; near Boedoei; Hudishibana; near Perkietenboseh). Listed from Aruba and Curaçao by Meek and Van Lidth de Jeude, from Aruba by Cope, and from Curaçao by Boulenger (1885 b, p. 39). Common everywhere on trees and bushes.

A study of large series has failed to reveal any constant differences between the specimens from Curaçao and Aruba.

Iguana iguana (Linnaeus). — *Curaçao* (observed, but not collected, on cliffs along the ocean at Campo Knip; on cliffs and nearby trees on Sint Christoffelberg, 1200 ft.; on cliffs south of Sint Willebrordus; and on cliffs and adjacent trees of the Tafelberg of Santa Barbara): *Aruba* (on a brush fence in Rooi Lamoenchi; on trees and in a sink-hole at Campo West Punt): *Bonaire* (observed, but not collected, on cliffs of Seroe Wassau, and at Fontein of Bonaire). Listed by Cope, Meek, and Van Lidth de Jeude, from Aruba, and by Meek from Curaçao.

Ameiva bifrontata Cope. — *Aruba* (Oranjestad; Rooi Lamoenchi; Boedoei; Campo West Punt; between Sint Nicolaas and Culebra; near Perkietenboseh; Seroe Canashito). Recorded from Aruba by Cope.

Common in all parts of the island but not as abundant as *Cnemidophorus arubensis*.

Ten specimens are typical in scalation and show no tendency toward the subspecies *divisus*. The ground color is more uniform and paler than in mainland series, black spots being absent or very few in number.

Cnemidophorus murinus (Laurenti).—Curaçao (Schaarlo; Sint Willebrordus; Ronde Klip): *Bonaire* (Seroe Grandi, near Playa Makosji; Seroe Grandi, 4½ km. northeast of Kralendijk; Santa Barbara; Pos Frances; Seroe Wassau): *Klein-Bonaire*: *Klein-Curaçao*. Listed from Curaçao by Van Lidth de Jeude, Meek, and Cope, and from Bonaire by Meek. Cope's *C. murinus* from Aruba is probably *C. arubensis*.

Abundant, according to Baker's notes.

Cnemidophorus arubensis (Van Lidth de Jeude). — *Aruba* (Oranjestad; Rooi Lamoenchi; Boedoei; Campo West Punt; near Perkietenboseh).

Described from Aruba by Van de Lidth de Jeude.

Abundant in all localities.

This is Meek's *Cnemidophorus nigricolor*, from Aruba; and it is probably Cope's *C. murinus* from the same island. Although resembling *C. murinus* in coloration, *C. arubensis* is apparently most closely related to *C. lemniscatus*. It has eight rows of ventrals, as pointed out by Van Lidth de Jeude, and the subcaudal scales at the base of the tail are keeled as in *C. l. lemniscatus* and *C. l. gaigei*. It differs from *C. lemniscatus* in having smaller brachial and collar scales, and in coloration. The pale spots are much larger and fewer in number in *C. arubensis* and the pale lines disappear, or are only faintly indicated, in old specimens. *C. nigricolor* from Los Roques is easily distinguished from *C. arubensis* by the color, by the

smooth scales beneath the base of the tail, and by the smaller brachial scales.

Gymnophthalmus quadrilineatus (Linnaeus).—*Curaçao* (1 km. from Landhuis towards St. Christoffelberg; St. Christoffelberg, 1200 ft.; Landhuis Knip). Also listed by Van Lidth de Jeude from Curaçao.

Taken in grassy areas in thickets of acacias, and in humus among rocks.

Tretioscincus bifasciatus (Duméril).—*Aruba* (one specimen in ant nest under rocks on hill between Rooi Spoki and Rooi Hundoe). Also recorded from Aruba by Cope.

Dromicus antillensis (Schlegel). Recorded from Curaçao by Van Lidth de Jeude.

Leimadophis triscalis (Linnaeus).—*Curaçao* (a small specimen taken at Landhuis Knip). Also recorded from Curaçao by Boulenger (1894, p. 129).

Leptodeira annulata (Linnaeus).—*Aruba* (Campo Bubali; Mon Plaisir). Recorded from Aruba by Van Lidth de Jeude.

The dorsal scale rows are 19-17-15 in six specimens.

Found only in the matted clumps of branches of the older divi-divi trees.

Crotalus terrificus (Laurenti). According to Baker, rattlesnakes are still to be found on Aruba. Meek has recorded a specimen, and Van Lidth de Jeude lists several under the name *Crotalus horridus unicolor*.

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