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NOTES ON BAHAMAN REPTILES AND AMPHIBIANS

BY KARL P. SCHMIDT
ASSISTANT CURATOR OF AMPHIBIANS AND REPTILES

A small collection of amphibians and reptiles made in the Bahamas by Dr. L. A. Hodsdon, of Miami, has been presented by him to Field Museum of Natural History at the suggestion of Dr. Jay F. W. Pearson of the University of Miami, duplicate specimens being retained by the university. Identification of this material reveals an apparently well-characterized new insular subspecies of *Leiocephalus carinatus*, the most widespread of the ground lizards of the Bahama group. Of special interest, also, is the second known specimen of a rock iguana from White Cay which makes it possible to re-establish the species *Cyclura cristata*, which was described by myself in 1920.

I take the occasion to list other Bahaman specimens of reptiles in Field Museum, which were obtained by collectors employed by the late Charles B. Cory between the years 1879 and 1892, in the course of their extensive collecting of birds, and purchased by Field Museum with the West Indian bird collections. The museum numbers of this collection (listed below) fall between 68 and 413, those of the Hodsdon collection between 22739 and 22756.

Hyla septentrionalis Boulenger (Great Exuma, No. 22739, Long Island, Nos. 22740–3); *Sphaerodactylus decoratus* Garman (Long Island, Nos. 22744–6); *Sphaerodactylus gibbus* Barbour (Long Island, No. 22747); *Sphaerodactylus notatus* Baird (Long Island, No. 22748); *Anclis smaragdinus* Barbour and Shreve (Eleuthera, Nos. 216 (16), 218); *Anolis distichus* Cope (Watling's Island, Nos. 222, 225–6, 263; Long Island, No. 22750); *Anolis ordinatus* Cope (Bemini Islands, No. 261; Watling's Island, Nos. 271–8; New Providence, No. 22749); *Cyclura rileyi* Stejneger (Watling's Island, Nos. 290–2); *Cyclura cristata* Schmidt (White Cay, No. 22755); *Leiocephalus inaguae* Cochran (Great Inagua Island, Nos. 227–230); *Leiocephalus loxo-*

grammus parnelli Barbour and Shreve (Watling's Island, No. 262); *Leiocephalus carinatus armouri* Barbour and Shreve (Abaco, No. 391; Green Turtle Cay, Abaco, Nos. 22753–4); *Leiocephalus carinatus coryi* subsp. nov. (see below) (Bemini Islands, Nos. 259–260); *Leiocephalus carinatus hodsdoni* subsp. nov. (see below) (Long Island, Salt Pond, Nos. 22751–2); *Ameiva thoracica* Cope (Bahama Islands, No. 68; New Providence, No. 22756); *Epicrates striatus strigilatus* (Cope) (New Providence, No. 197); *Tropidophis pardalis canus* (Cope) (Great Inagua, Nos. 233, 279, 412); *Alsophis vudii vudii* Cope (Andros Islands, Nos. 235, 265, 286; Eleuthera Island, Nos. 199, 200; Great Abaco Island, No. 413).

The specimen of *Cyclura cristata*, and a second specimen in the University of Miami collection, require special comment. Dr. Hodsdon informs me that the White Cay from which these specimens came is the last islet of the Exuma chain to the south. Since they correspond closely with the description of *Cyclura cristata*, I believe that the type locality designated as "White Cay (north of Watling's Island)" was in error and that the true type locality is the White Cay above mentioned. The original label of the type bears no information other than "White Cay, Bahamas." *Cyclura cristata* has been dropped from recent lists of Bahaman reptiles partly at my own suggestion, as I felt that differences between the sexes of these lizards had not been adequately considered in establishing the characters of the species. In the larger specimen, a male, the dorsal crest contains 69 spines, which are much higher than in *Cyclura rileyi*. The three skins of *rileyi* listed above bear collector's labels stating that they are from the "Interior of Watling's Island." The number of spines in the dorsal crest is 75 in two and 77 in one; in ten specimens of *rileyi* in which this count is available, the range is from 71 to 79, averaging 75.3. A further difference between the male available from White Cay and the Watling's Island specimens before me lies in the much greater distinctness of the caudal verticils in the former, especially toward the base of the tail. The digital combs are composed of three scales each in *cristata*, and of four in *rileyi*. Further material is required to place these distinctions beyond question, and the species now requires comparison with *Cyclura figginsi*, of Bitter Guana Cay in the Exuma chain, rather than with *rileyi*, but on the basis of the material available, *cristata* may be provisionally retained.

The descriptions of the two new forms of *Leiocephalus* follow.

Leiocephalus carinatus coryi subsp. nov.

Type from Bemini Islands, Bahamas. No. 260 Field Museum of Natural History. Female. Collected before 1892.

Diagnosis.—A small race with a high number of supraoculars, no longitudinal dorsal lines, mid-dorsal region with small black spots, temporal scales more sharply keeled than in *Leiocephalus carinatus armouri* of the northern Bahamas.

Description of type.—Head-shields not raised, smooth except for the parietals, which are very obscurely ridged; four scales in a row from rostral to first frontal, a pair of internasals, two pairs of enlarged

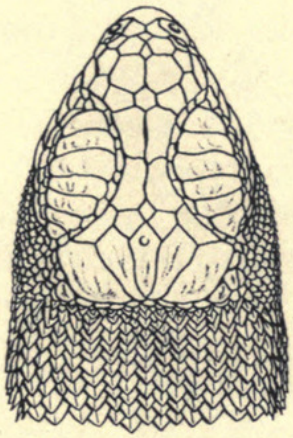

FIG. 11. Head of *Leiocephalus carinatus coryi*, paratype. ×2.

prefrontals, and a transverse row of four scales which may be designated as the posterior prefrontals; internasals and paired prefrontals separated by two median scales; prefrontals and internasals separated from the canthals by a series of four scales; two canthals; five superciliaries; seven smooth supraoculars, separated from the frontals by a single row of scales and from the superciliaries by two rows; frontals (the enlarged supraorbitals), subequal, broadly in contact; occipital as long as the adjacent inner parietals; these about half as broad as the outer parietals; a pair of frontoparietals; a single posterior orbital on one side, two on the other; a transverse series of very small postoccipitals; two somewhat irregularly disposed rows of sharply keeled supratemporals adjacent to the outer parietals, ending posteriorly in an enlarged scale; six upper and six lower labials to a point below the center of the eye; four loreals in a vertical line; temporal scales small, uniform, sharply keeled; anterior border of ear with five projecting scales; dorsal and ventral scales subequal, scarcely mucronate anteriorly, slightly denticulate, the

dorsals sharply keeled, the ventrals smooth, lateral scales a little smaller; mid-dorsal row forming a conspicuous dorsal keel, extending on the tail; forty-two scales around mid-body, fifty-five from the occipital to the base of the tail; no lateral fold; a deep pocket bounded by folds anterior to the shoulder; twenty-four tricarinate lamellae beneath the fourth toe; caudal scales keeled above, smooth below, not in verticils.

General color (in alcohol) dark greenish gray; obscure dark dorsolateral bands extend from the eye to the shoulder; dorsal area between these bands with small spots in obscure transverse rows; lower surfaces paler greenish, with numerous brownish spots.

Measurements.—Length from tip of snout to anus 67 mm., tail (reproduced) 75, arm 29, leg 52, tip of snout to posterior border of ear 17.8, width of head 12.8.

Notes on paratype.—Field Museum No. 259 from the same locality agrees very closely with the type in size, color pattern, and general arrangement of the head-shields; there are three prefrontals instead of four, and the median scales on the snout are reduced so that the internasals are in contact, as are the anterior prefrontals.

Leiocephalus carinatus hodsdoni subsp. nov.

Type from Salt Pond, Long Island, Bahamas. No. 22752 Field Museum of Natural History. Adult male. Collected by Dr. L. A. Hodsdon in 1935.

Diagnosis.—Smaller than *Leiocephalus carinatus carinatus* of Cuba, with head-shields less swollen, a larger number of supraoculars, body scales somewhat smaller, and with conspicuous black vertical bars on the flanks.

Description of type.—Body stout, limbs strong; head-shields well developed, the anterior ones entirely smooth; four scales in a row from rostral to frontal; a pair of small internasals, a pair of small anterior prefrontals, an enlarged middle pair of prefrontals, and a transverse row of four subequal posterior prefrontals; internasals separated by a small scale, but anterior and middle prefrontals broadly in contact on the mid-line, enclosing a second small median scale; two scales on one side, three on the other, separate the prefrontals from the canthals; two canthals, five superciliaries; seven supraoculars on each side, faintly ridged, separated from the frontals by a single row of small scales and from the superciliaries by a partly double row; two pairs of frontals, the anterior a little larger than the

posterior; two supraorbitals on each side behind these; occipital narrow, as long as the adjacent inner parietals; outer parietals twice as wide as the inner, distinctly ridged; three frontoparietals; a group of enlarged supratemporals adjacent to the parietals, distinguishable from the more flattened keeled temporals; four small postoccipitals between the corners of the parietals; five upper and five lower labials to a point below the center of the eye; four loreals in a vertical line; anterior border of ear with six projecting scales; dorsal and ventral scales subequal, the dorsals sharply keeled and some of them mucronate and denticulate; ventrals mostly with rounded posterior edge,

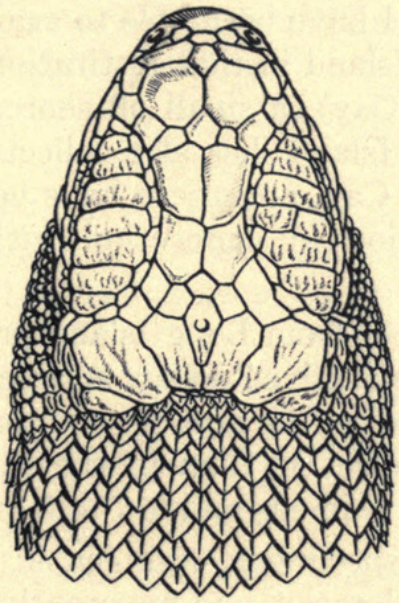

FIG. 12. Head of *Leiocephalus carinatus hodsdoni*, paratype. ×2.

faintly denticulate; lateral scales much smaller; mid-dorsal row forming a conspicuous keel; forty-seven rows of scales around the body, fifty-five from the occipital to the base of the tail; a deep pocket bounded by folds anterior to the shoulder; twenty-two tricarinate lamellae beneath the fourth toe; caudal scales not in verticils, sharply keeled, mucronate and denticulate above, smooth beneath on the basal half, beyond which all the caudals are keeled.

General color greenish-gray, the lower surfaces spotted with black, obscure transverse black bars on the back, a broad black band from the eye along the flanks, below which there are conspicuous vertical black bars.

Measurements.—Snout to vent 97 mm., tail 167, arm 41, leg 75, tip of snout to posterior border of ear 24.6, width of head 18.3.

Notes on paratypes.—In Field Museum No. 22751 the supraoculars are seven on each side and in a second paratype in the University of Miami collection they are six on one side, eight on the other; the scales around mid-body are fifty in both. The vertical black bars on the flanks are conspicuous.

Two additional specimens, Nos. 23748–9, likewise from Long Island, collected by J. V. Malone, February, 1936, have been presented to Field Museum by Dr. Pearson. These agree in color pattern and in having supraoculars 7–7 with the specimens above described.

Through the courtesy of Dr. Thomas Barbour, of the Museum of Comparative Zoology, I have been able to examine a series of eleven specimens from Long Island in that institution, and nine from Pinder's Cay (or Iguana Cay), a small off-shore islet. Commissioner J. V. Malone, of Long Island, has also collected specimens of *Leiocephalus* from Pinder's Cay, and these have been forwarded by Dr. Pearson for examination in connection with the description of *hodsdoni*.

The eleven specimens from Long Island proper in the collection of the Museum of Comparative Zoology agree closely in color pattern with the description above; the number of supraoculars is somewhat fewer in this series, however, than in the five specimens first examined, 6–6 in seven specimens and 6–7 in four.

The Pinder's Cay specimens, eighteen in all, differ from those from Long Island in coloration and apparently in certain scale characters. Thus, the scales bordering the ante-humeral pocket appear to be more enlarged, and the auricular scales are flatter and fewer in number. The supraoculars are 5–5 in one, 6–6 in seventeen. The flanks are much darker, and may be described as black with light spots rather than light with dark bars. I refrain from giving a name to this form, with the feeling that it perhaps represents a sub-race of *hodsdoni*, and that to give it a trinomial, putting it upon apparently equal footing with the principal races of these lizards in the Bahamas, would be misleading. The status of such races can scarcely be elucidated without a uniform survey of the genus as a whole in the Bahama group. The principal requirement for such a survey is more adequate field notes than are at present available, with a renewed accumulation of well-preserved, and especially of uniformly preserved, material.

There is no trace of the longitudinal dorsal striping of *Leiocephalus carinatus armouri* in these specimens, and the supraoculars in *armouri*

are 5–5 in two, 5–6 in one, and 6–6 in two, in the five specimens available for comparison. The first row of prefrontals in *armouri* consists of three scales, which tend to be separated by a contact of the middle prefrontals with the frontals, instead of the transverse row of *hodsdoni*. *Leiocephalus carinatus punctatus*, from Acklin's and Crooked Island, has a conspicuously white-spotted head, and does not have vertical lateral bars, and both *L. c. helenae* and *L. c. picinus* are compared directly with it by the describers.

Remarks.—Even with the addition of the two forms here described there is a conspicuous hiatus in our knowledge of the Bahaman *Leiocephalus*, for what is presumably the main population of these lizards allied to *L. carinatus*, on Andros Island and New Providence, is still without subspecific designation.

It is impossible to examine the growing list of island forms of *Leiocephalus* in the West Indies without observing that this genus compares with *Lacerta* in the Mediterranean islands, and with *Ameiva* elsewhere in the West Indies, in active speciation correlated with its isolation on islands of varying size and age.

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