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Article XVIII.—THE HERPETOLOGY OF NAVASSA ISLAND

By Karl Patterson Schmidt

Plates XXV and XXVI

The small island of Navassa is situated about one-third the distance between the southern peninsula of Haiti and Jamaica. Its topography recalls that of Mona Island, in the passage between Santo Domingo and Porto Rico, at least in its sheer sea cliff. It differs from Mona Island chiefly in the fact that there is a broad terrace at the top of the sea cliff, with a rising mound in the center, while the slightly undulating surface of Mona appears quite flat from a distance. Like Mona, the island is arid, and the vegetation scanty. The "phosphate" deposits on Navassa were found in surface pockets, which, after the removal of the phosphate, make travel on the surface of the island extremely difficult and dangerous. The origin of these surface deposits offers a difficult problem. It is possible that the roofs of caves in which bat guano accumulated have been eroded away, leaving the cave floors as the present land surface. The surface rock is as rough as that of Mona, or the "diente perro" country of Cuba described by Barbour (1914, p. 308).

For the above brief description and the accompanying photographs I am indebted to Mr. Frederick C. Hingsburg, under whose direction the Navassa Island lighthouse was built.

The herpetology of Navassa Island has been very imperfectly known. The Beck collection, on which the present account is based, increases the number of species of reptiles recorded from Navassa Island from five to thirteen.

Bibliography

1868. Cope, E. D. 'An examination of the Reptilia and Batrachia obtained by the Orton Expedition to Ecuador and the Upper Amazon, with notes on other Species.' Proc. Acad. Nat. Sci. Phila., pp. 96–140. (Describes *Leiocephalus eremitus*, *Celestus badius*, *Typhlops sulcatus* and *Ungalia bucculenta*, and lists *Metopoceros cornutus* from Navassa Island, W. J. Rasin collection).

1885. Cope, E. D. 'The Large Iguanas of the Greater Antilles.' American Naturalist, XIX, pp. 1005–1006. (Describes *Cyclura nigerrima* and *C. onchiopsis* from Navassa).

1886. Cope, E. D. 'On the species of Iguaninæ'. Proc. Amer. Philos. Soc., XXIII, pp. 261–271. (Refers *Cyclura nigerrima* and *C. onchiopsis* to *C. cornuta*).

1914. Barbour, Thomas. 'A Contribution to the Zoogeography of the West Indies, with special reference to Amphibians and Reptiles.' Mem. Mus. Comp. Zool., Cambridge, XLIV, pp. 209–359, Pl. (Records *Leiocephalus eremitus*, *Cyclura cornuta*, and *Tropidophis maculata* from Navassa Island, from Cope's records).

1916. BARBOUR, THOMAS AND NOBLE, G. K. 'A Revision of the Lizards of the Genus *Cyclura*.' Bull. Mus. Comp. Zool., Cambridge, LX, pp. 139–164, Pls. I–XV. (Describes and reestablishes *Cyclura nigerrima* Cope).

1919. BARBOUR, THOMAS. 'Herpetological Notes.' Proc. New England Zool. Club, VII, pp. 7–13. (Lists *Celestus badius* Cope, referring to the original record).

1919. BARBOUR, THOMAS. 'A New Rock Iguana from Porto Rico.' Proc. Biol. Soc. Wash., XXXII, pp. 145–148. (Lists *Cyclura nigerrima* from the original records).

1919. SCHMIDT, KARL PATTERSON. 'Description of New Amphibians and Reptiles from Santo Domingo and Navassa.' Bull. Amer. Mus. Nat. Hist., XLI, pp. 519–525. (Describes *Sphaerodactylus becki*, *Anolis longiceps*, *A. latirostris*, *Chamaelinorops barbouri*, and *Ameiva navassæ* from Navassa Island, and records *Anolis olssoni*).

ANNOTATED LIST OF REPTILES OF NAVASSA ISLAND

1. **Sphaerodactylus cinereus** MacLeay

A Cuban and Hispaniolan species, recorded for the first time from Navassa Island, in the R. H. Beck collection.

2. **Sphaerodactylus becki** Schmidt

Related to *S. scaber* in Cuba and *S. picturatus* in Haiti.

3. **Anolis semilineatus** Cope

A single specimen, referred to *A. olssoni* in my description of that species. Additional specimens of this form might prove to be distinct from the Hispaniolan species, and it seems preferable to record it provisionally as *A. semilineatus*.

4. **Anolis distichus** Cope

A single specimen in the R. H. Beck collection adds this species to the fauna of Navassa Island.

5. **Anolis longiceps** Schmidt

A remarkable species in the extreme acumination of the snout, apparently related to the Cuban *Anolis porcatus* through *Anolis maynardi* Garman from Little Cayman Island.

6. **Anolis latirostris** Schmidt

This species represents the opposite extreme, in the shape of its snout, from *A. longiceps*. It is not closely related to any of the Greater Antillean anoles.

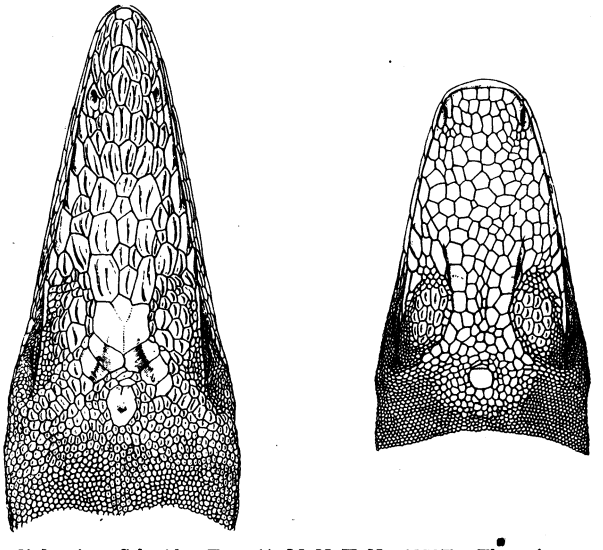


Fig. 1. *Anolis longiceps* Schmidt. Type (A. M. N. H. No. 12597). Three times natural size.
Fig. 2. *Anolis latirostris* Schmidt. Type (A. M. N. H. No. 12598). Three times natural size.

7. **Chamaelinorops barbouri** Schmidt

(Figs. 3 and 4)

The occurrence of this remarkable lizard on the small island of Navassa may be regarded as a case of relict distribution, the Navassa species being the surviving remnant of a more widely distributed form.

8. **Leiocephalus eremitus** Cope

(Figure 5)

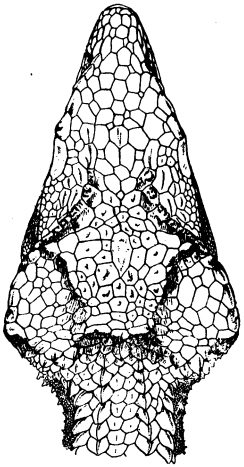
In coloration this species is closely allied to *L. personatus* Cope from Hispaniola, but in the larger number of anterior head scales it is quite distinct from other West Indian species of the genus.

9. **Cyclura nigerrima** Cope

Recorded and figured by Barbour and Noble, 1916, p. 162, Pls. XI and XV, figs. 1 and 2.

10. **Celestus badius** Cope

The Beck collection contains a single small specimen of this species, unfortunately insufficient to settle the status of the Navassa form.



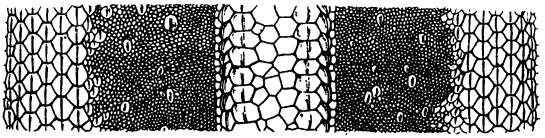


Fig. 3. *Chamaelinorops barbouri* Schmidt. Type (A. M. N. H. No. 12603). Three times natural size.

Fig. 4. *Chamaelinorops barbouri* Schmidt. Type (A. M. N. H. No. 12603). Scales around the body midway between the front and hind limbs. Three times natural size.

11. **Ameiva navassæ** Schmidt

This handsomely colored *Ameiva* appears to be related to *Ameiva auberi* of Cuba, more closely than to the Hispaniolan species.

12. **Typhlops sulcatus** Cope

Probably referable to *Typhlops lumbricalis* (Linnæus) but I have retained Cope's name pending a verification of the status of the Hispaniolan form.

13. **Tropidophis bucculenta** (Cope)

The only specimen of *Tropidophis* recorded from Navassa was described by Cope as a subspecies of *maculata*. I have retained the species as distinct partly because the status of the Hispaniolan *maculata* is unsettled, partly because of the high degree of peculiarity of the Navassa fauna.

The fauna of Navassa Island is a considerably larger one than would be expected from the size of the island and from analogy with Mona Island. It does not appear to be by any means exhausted. A species of *Eleutherodactylus* and a skink should certainly be found there and probably one or two additional species of snakes.

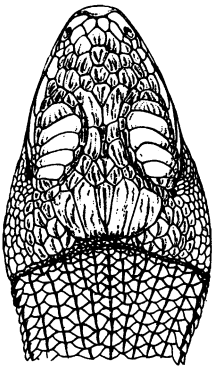


Fig. 5. ***Leiocephalus eremitus*** **Cope. (A. M. N. H. No. 16919). Three times natural size**

Several of the species are still imperfectly known, and inferences as to the relations of the fauna are consequently uncertain. Taken in a broad sense, however, the relations with the surrounding islands are about as follows

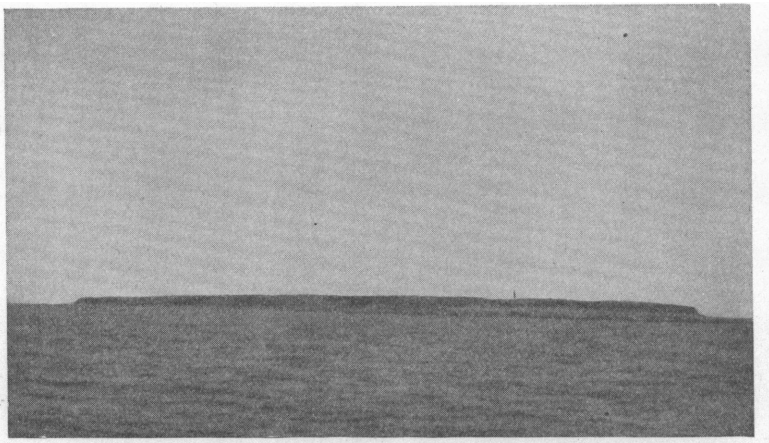
Species related to or identical with Jamaican forms.....3.
(*Celestus badius, Typhlops sulcatus, Tropidophis bucculenta*).

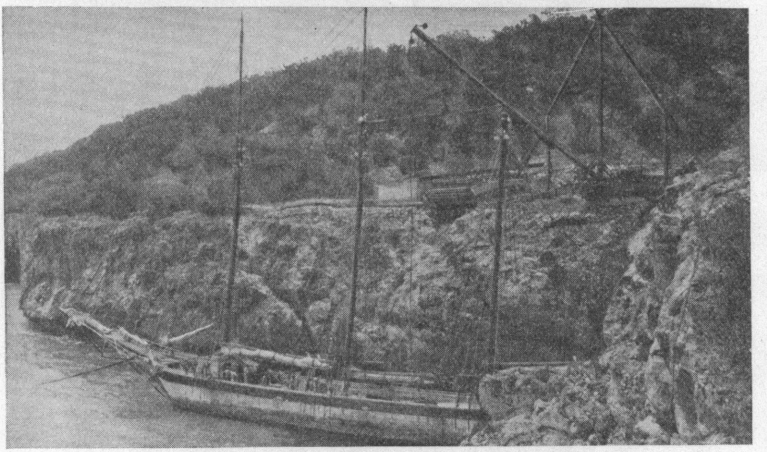
Species related to or identical with Cuban forms.....7.
(*Sphaerodactylus cinereus, S. becki, Anolis longiceps, Chamaelinorops barbouri, Ameiva navassæ, Typhlops sulcatus, Tropidophis bucculenta*).

Species related to or identical with Hispaniolan forms.....10.
(*Sphaerodactylus cinereus, S. becki, Anolis semilineatus, A. distichus, Leiocephalus eremitus, Cyclura nigerrima, Celestus badius, Ameiva navassæ, Typhlops sulcatus, Tropidophis bucculenta*).

PLATE XXV

Fig. 1. Navassa Island from the sea.
Fig. 2. Schooner unloading cargo.
Fig. 3. The surface of the terrace.
(Photos by Mr. Frederick C. Hingsburg)





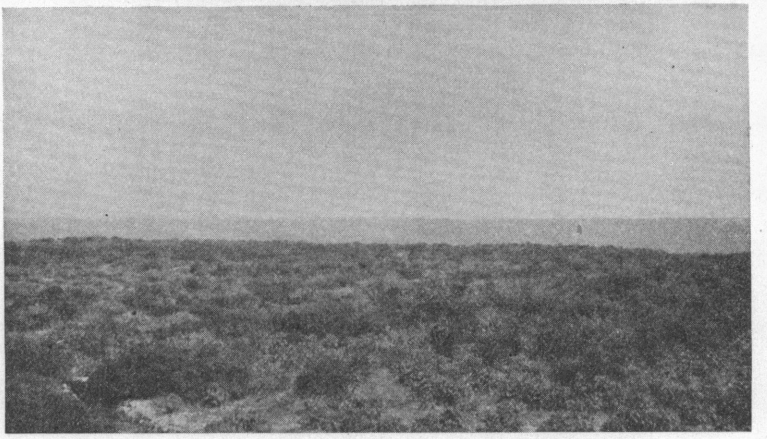


PLATE XXVI

Fig. 1. The rocky coast of Navassa.

Fig. 2. The Navassa Lighthouse under construction.

Fig. 3 The completed lighthouse, showing the rocky surface and vegetation of the highest part of the island.

(Photos by Mr. Frederick C. Hingsburg)