NOTES ON A COLLECTION OF BATRACHIANS AND REPTILES FROM CENTRAL AMERICA.

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It has been the privilege of the writer to look over a small collection of Batrachians and Reptiles made in Central America during January and February of 1905 by E. B. Williamson, Jas. S. Hine and Chas. Deam. There are seventy-two specimens in the collection, sixty-eight of which were collected in Guatemala, two in British Honduras, and two in Honduras.

Seven frog larvae and one young snake could not be determined specifically on account of their immaturity and the lack of descriptions of the young of the Central American species.

The eighteen specimens of Batrachians represent four genera and seven species (including the undetermined Rana sp.); the fifty-four specimens of Reptiles represent twelve genera and seventeen species. While none of the specimens present any great variations from the descriptions published, still there were a number of minor variations noted and recorded in the following notes. The known geographical range of several species is considerably extended by this collection. The measurements and some of the scale formulæ are given with most species of reptiles, as there is a lack of information along these lines.

BATRACHIA.

BUFO.

This genus is represented by six specimens, belonging to two species; all the specimens being adults except one.

(*a*) Bufo marinus (specimens No. 3 and 36). This is the large brackish water species, being one of the largest species of the genus, with very large and prominent parotid glands. No. 3 was collected at Gualan, Guatemala, Jan. 13, 1905; No. 36 was collected at Los Amates, Guatemala, Feb. 25, 1905. Both specimens are full grown and show the characteristic parotid development, but have much smoother skin than the specimens of the same species from the South American coast.

(*b*) Bufo valliceps. (Specimens No. 29, 51, 55, and 63.) No. 29, collected at Gualan, Guatemala, Jan. 16, 1905, is an adult specimen, typical coloration, and with very prominent tubercles for this species; No. 51 was collected at Los Amates, Guatemala, Feb. 25, 1905, adult specimen with very dark coloration; No. 55 was collected at Gualan, Guatemala, Jan. 13, 1905, adult, coloration and tubercles typical; No. 63, was collected at Gualan, Guatemala, January 13, 1905, and is a very young specimen, ¾ in. in length. The bony ridges on the head of No. 63 are very slightly developed, but the coloration and the tubercles are very similar to those of the adult.

HYLA.

This genus is represented in the collection by three specimens belonging to three species.

(*a*) Hyla nana, (specimen No. 62) was collected at Los Amates, Guatemala, January, 1905. It is a small adult specimen with a typical coloration and conforms closely to the description.

(*b*) Hyla taeniopus, (No. 52) was collected at Morales, Guatemala, March 8, 1905. It is an adult specimen which conforms to the anatomical descrpition, but presents a quite distinct coloration, lacking the line along the side and having only a few irregular spots on the back. Head markings fairly typical.

(*c*) Hyla quinquevittata (specimen No. 61) was collected at Los Amates, Guatemala, January, 1905. It is a small adult; the lines along the back are broken, giving it a spotted appearance

LEPTODACTYLUS.

Leptodactylus caliginosus, (specimens No. 60 and 70) were collected at Belize, British Honduras, January 9, 1905. Young specimens with typical markings.

REPTILIA.

CHELONIA, TURTLES.

CINOSTERNON.

Three turtles were in the collection, all belonging to this genus, but each one to a different species. Of the thirteen species of Cinosternon, nine are peculiar to Central America, according to Gunther.

(*a*) Cinosternon leucostomum (specimen No. 37) adult ♂ collected at Los Amates, Guatemala, February 25, 1905. This is the most abundant of the Central American species of this genus, occurring in Mexico, Guatemala, Costa Rico, Panama, and Columbia. In this specimen the gular plate is longer than usual, and the markings on the head are more prominent than in several other specimens of this species which were examined; length 4½ in.

(*b*) Cinosternon brevigulare (specimen No. 71) adult ♂. Length 5½ in., collected at Puerto Cortez, Honduras, February, 1905. This specimen was sent back alive and is still living (Dec., 1905). It eats vegetable matter and spends most of its time in the water. The femoral plates are broader than normal in the specimen, giving an oval shape.

(*c*) Cinosternon cobanum, (specimen No. 72), adult ♂. Length 4¼ inches. Collected at Puerto Cortez, Honduras, February, 1905. This specimen was also received alive, eats meat entirely, and spends a considerable portion of its time out of water. Nuchal is very small, and there are but twenty-one marginals.

LACERTILIA, LIZARDS.

ANOLIS.

The collection contains two specimens of this genus, representing two species.

(*a*) Anolis godmani (specimen No. 26) collected at Gualan, Guatemala, January 25, 1905. Total length, $4\frac{5}{8}$ in., length of body $1\frac{1}{2}$ inches, of tail $3\frac{1}{8}$ inches; markings very obscure.

(*b*) Anolis salvini (specimen No. 50) collected Los Amates, Guatemala, February 25, 1905. Total length, $4\frac{5}{8}$ inches, length of body $1\frac{7}{8}$ inches, of tail $2\frac{3}{4}$ inches.

CTENOSAURA.

The species of this genus are peculiar to Mexico and Central America; there was but one specimen of this genus in the collection.

(*a*) Ctenosaura complecta (specimen No. 53), adult ♂ Collected at Gualan, Guatemala, January 13, 1905. Length, $12\frac{1}{2}$ inches, body $3\frac{7}{8}$ inches, tail $8\frac{5}{8}$ inches. Coloration bright, showing the cross bands distinctly, dorsal crest smaller than normal.

BASILISCUS.

This genus is separated from the following one by the presence of a free dermal border on the toes and the absence of femoral pores. It is represented in the collection by fifteen specimens of one species, Basiliscus vittatus. The measurements and peculiarities of these specimens are given under the specimen numbers as follows:

No. 1. Collected at Gualan, Guatemala, January 13, 1905. Length 12 inches, tail damaged, body 7 inches, crest large.

No. 2. Collected at Gualan, Guatemala, January 13, 1905. Length of body, $6\frac{1}{4}$ inches, tail broken. Coloration dull.

No. 30. Collected at Gaulan, Guatemala, January 16, 1905. Length, $21\frac{1}{2}$ inches, body 6 inches in length, tail $15\frac{1}{2}$ inches.

No. 42. Gualan, Guatemala, January 25, 1905. Length of body, 6 inches, tail damaged.

No. 32. Collected at Gaulan, Guatemala, January 16, 1905. Length of body, $6\frac{3}{4}$ inches, tail damaged.

No. 31. Collected at Gaulan, Guatemala, January 16, 1905. Length of body, $6\frac{1}{4}$ inches, tail broken.

No. 40. Collected at Gualan, Guatemala, January 25, 1905. Total length, $24\frac{1}{4}$ inches; length of body, $6\frac{1}{4}$ inches; of tail, 18 in.

No. 24. Collected at Gualan, Guatemala, January 25, 1905. Length, 13 inches: body, $3\frac{1}{4}$ inches; tail $9\frac{3}{4}$, young ♂.

No. 54. Collected at Gualan, Guatemala, January 13, 1905. Length, $11\frac{1}{4}$ inches: body, $2\frac{3}{4}$ inches; tail $8\frac{1}{2}$ inches. Young ♂, color good, crests well developed, teeth normal.

No. 35. Collected at Los Amates, Guatemala, Feb. 25, 1905. Length of body, 2½ inches, tail broken off. This is the only specimen in the collection from this locality.

No. 47. Collected at Gualan, Guatemala, January 25, 1905. Length of body, 2¾ inches, tail damaged. Crests are but slightly developed, the free dermal border of the toes is quite distinct, the teeth well developed.

No. 39. Collected at Gualan, Guatemala, January 25, 1905. Length of body, 4¼ inches, tail broken off. The crests of this specimen are fairly well developed; the markings are plainer than in the adult specimens, especially the cross bands. It is an interesting transitional stage.

No. 59. Collected at Gualan, Guatemala, January 13, 1905. Length, 17½ inches: body, 5 inches; tail, 12½ inches. This specimen has the coloration of the adult ♂, crests and teeth well developed, coloration bright.

No. 58. Collected at Gualan, Guatemala, January 13, 1905. Length, 18¾ inches: body, 4½ inches; tail, 14¼ inches; young ♂.

No. 27. Collected at Gualan, Guatemala, January 25, 1905. Length, 14 inches: body, 3¾ inches; tail, 10¼ inches. Young ♂. The crests are not prominent, teeth well developed.

LAEMANCTUS.

Laemanctus deborrii (specimen No. 28). Collected at Los Amates, Guatemala, February 25, 1905. Length 13⅞ inches: body, 3⅜ inches; tail, 10½ inches. This specimen is rather dully colored for this species, having scarcely any markings.

GERRHONOTUS.

Gerrhonotus fimbriatus, (specimens No. 9 and 16). There were two specimens of this species in the collection. Specimen No. 9 collected at Los Amates, Guatemala, February 25, 1905. Length of body is 1⅜ inches, tail broken. Specimen No. 16 was collected at Gualan, Guatemala, January 25, 1905. Length, 3¾ inches; body, 1⅝ inches; tail, 2⅛ inches.

CNEMIDOPHORUS.

This genus is represented in the collection by twenty-one specimens, presenting two species.

(*a*) Cnemidophorus espentii. There are eight specimens of this species in the collection, two adults (No. 43 and 41), and six young in various stages. The adults have very indistinct markings, spots being more prominent than the longitudinal lines of which there is scarcely a trace. In the young this condition is reversed; the spots being indistinct, or absent in very young specimens, and the lines very distinct.

No. 41 is 11½ inches in length; No. 43 is 10 inches long; the young vary 4 inches to 7⅛ inches in length, and appear relatively slimer than the adults. The tail is relatively longer in the

young specimens. C. espentii, according to Cope, is "confined to certain islands of the eastern coast of Central America," but this collection would make it appear that the species occurs commonly on the mainland. The specimens were collected as follows:

No. 43. Gualan, Guatemala, January 25, 1905.
No. 41. Gualan, Guatemala, January 25, 1905.
No. 49. Los Amates, Guatemala, February 25, 1905.
No. 46. Gualan, Guatemala, January 25, 1905.
No. 19. Gualan, Guatemala, January 25, 1905.
No. 14. Gualan, Guatemala, January 25, 1905.
No. 25. Gualan, Guatemala, January 25, 1905.
No. 57. Gualan, Guatemala, January 13, 1905.

(*b*) Cnemidophorus deppii is represented in this collection by 13 specimens, 9 adults and 4 young. This species is restricted to Central America, and is closely allied to C. guttatus. In some of these specimens the anal scales are not entirely continuous with the abdominal scales as described by Cope, in four specimens there are some small scales between the larger abdominals and anals. Seven specimens have three pre-anal plates and six specimens have only two per-anals. The length varies from $3\frac{3}{4}$ inches to $9\frac{1}{4}$ inches; the average length of the adults is $7\frac{3}{4}$ inches, all above that length are males.

No. 13. Gualan, Guatemala, January 25, 1905.
No. 38. Gualan, Guatemala, January 25, 1905.
No. 22. Gualan, Guatemala, January 25, 1905.
No. 17. Gualan, Guatemala, January 25, 1905.
No. 15. Gualan, Guatemala, January 20, 1905.
No. 45. Los Amates, Guatemala, February 25, 1905.
No. 18. Gualan, Guatemala, January 16, 1905.
No. 56. Gualan, Guatemala, January 13, 1905.
No. 44. Gualan, Guatemala, January 25, 1905.
No. 21. Gualan, Guatemala, January 25, 1905.
No. 23. Los Amates, Guatemala, February 25, 1905.
No. 20. Gualan, Guatemala, January 25, 1905.
No. 8. Gaulan, Guatemala, January 16, 1905.

OPHIDIA, SNAKES.

DROMICUS.

This genus is represented in the collection by two specimens, each belonging to different species.

(*a*) Dromicus annulatus, collected at Los Amates, Guatemala, February 25, 1905. Length, $29\frac{1}{2}$ inches; tail $11\frac{1}{2}$ inches. Ventral scutes 153, anal bifid; sub-candal scutes 108 pair. This snake has an irridescent tinge along the sides, like some spieces of Lampropeltes.

(*b*) Dromicus omiltemanus collected at Gualan, Guatemala, January 22, 1905. Length, 14½ inches; tail 5⅛ inches. Ventral scutes 128, sub-caudal scutes, 81 pair. Scales on this specimen are in 17 rows, instead of in 19, as given in the Biologia Amer. Cen. by Gunther. Mr. H. H. Smith collected this species in Mexico at an altitude of 8,000 feet.

SPILOTES.

Spilotes salvini, collected at Gualan, Guatemala, January 22, 1905. Length 88¼ inches, tail 24½ inches; which is unusually large for this snake. Gunther gives 77 inches as the maximum. Gastrosteges 206, urosteges 129 pairs, and entire. In coloration it has much more black than the description or figure of this species in the Biol. Amer. Central, and a correspondingly less amount of yellow. The head plates are regular and correspond to the description very closely.

DRYMOBIUS.

Drymobius caeruleus, was collected at Gualan, Guatemala, January 25, 1905. Length, 39½ inches, tail 14½ inches. Ventral scutes 153, sub-caudals, 116 pair. Nine upper labials, 4th, 5th and 6th in the orbit.

DIPSAS.

Dipsas splendida, represented by two specimens (No. 33, and No. 12). The small caliber of the neck of this species in comparison with the size of the head and body make these specimens the most striking ones in the collection.

No. 12 was collected at Los Amates, Guatemala, February 12, 1905. Length, 28¼ inches, tail 8¼ inches, abdominal scutes 240, sub-caudal scutes 142 pairs, one ante-orbital; had 37 dark spots on the body, and 24 on the tail. Stomach contained the remains of three small lizards.

No. 33 was collected at Los Amates, Guatemala, February 23, 1905. Length, 33½ inches, tail, 10½ inches; sub-caudal scutes 147 pair, ventral scutes 231 pair; two ante-orbitals; the vertebral scales are longer than broad anteriorly, but broader than long posteriorly in both specimens; adult ♂; neck very slender. This snake contained six unincubated eggs, with a very light covering membrane, the species being in all probability ovoviviparous. The stomach contained the remains of three lizards and two beetles.

BOTHROPS.

Bothrops atrox; this sepcies is represented by two specimens, the only poisonous snakes in the collection; one in adult, which looks able to uphold the reputation of its insular relative, the Fer-de-lance; the other a young specimen.

No. 10 was collected at Los Amates, Guatemala, February 15, 1905. Length, 71 inches, tail 9½ inches; gastrosteges 215, urosteges 65 pairs, anal plate entire.

No. 11 was collected at Los Amates, Guatemala, February 11, 1905. Length, 21¼ inches, tail 3¼ inches; gastrosteges 197, urosteges 62 pairs. The tip of the tail of this specimen has the same bright green coloration that is seen in the young of the Copperhead (Ancistrodon contortrix) of North America. This specimen has also the horny point on the tail that is found in the adult.

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