# NOTES ON INDIANA AMPHIBIANS AND REPTILES.

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The following notes are supplemental to my synopsis of Indiana amphibians and reptiles in last year's "Proceedings" (pp. 277-294). A few new records are added, mostly from material collected personally.

In mentioning papers since Hay (1893), I omitted Blatchley's second report on the batrachians and reptiles of Vigo County, *24th Ann. Rept. Indiana Dept. Geol. Nat. Res.*, (1899) 1900, pp. 537-552. Evermann & Clark, *Lake Maxinkuckee*, 1920, give some records, mostly previously published in these "Proceedings." Blanchard has recently published an interesting paper on some southern Indiana material, *Papers Michigan Acad. Sci. Art. Lett.*, V, (1925) 1926, pp. 367-388. Dunn's *The Salamanders of the family Plethodontidæ*, Smith College, 1926, deals with all the Indiana Plethodonts and gives many records.

## AMPHIBIANS.

*Ambystoma tigrinum* (Green). Taken at Bloomington and Leonard's Springs near Bloomington.

*Ambystoma jeffersonianum* (Green). Bloomington.

*Triturus viridescens viridescens* (Rafinesque). Ponds near Bloomington. As McAtee has noticed, the red land form seems to be absent here. This is also true of *Triturus viridescens symmetricus* (Harlan)[1] at Wilmington, North Carolina, contrary to my report in *Copeia*, no. 131, 1924, p. 59. The "land forms" received from there were merely some of a large number of the water form that escaped when a vessel holding them was overturned, according to Mrs. Cummings. They had partially assumed the rough skin of the land form. Noble, *Amer. Mus. Novitates*, no. 228, 1926, has discussed this phase of the habits of the newt.

*Eurycea bislineata bislineata* (Green). Clifty Creek, Madison; Bloomington; common everywhere in southern Indiana along brooks.

*Eurycea lucifuga* Rafinesque. Cave at Leonard's Springs near Bloomington. One was found walking on the grass after a rain on the University campus at Bloomington.

*Plethodon cinereus* (Green). One with red back from above Bloomington city water-works.

*Plethodon dorsalis* (Cope). Very common about Bloomington. It is easily distinguished from the last by the scalloped border of the reddish dorsal band; the number of costal grooves varies to 18. In *cinereus* the edge of the dorsal band is even. Blanchard has treated *dorsalis* as a variety of *cinereus*, but the fact that they both inhabit

[1] Symmetricus is an older name than dorsalis.

"Proc. Ind. Acad. Sci., vol. 36, 1926 (1927)."

the same region in Indiana yet do not intergrade seems sufficient for holding them distinct.

*Desmognathus fuscus fuscus* (Rafinesque). Clifty Creek, Madison. The characteristic physiognomy of this species, not mentioned in the synopsis, distinguishes it from all other Indiana Plethodontidæ. The head is large, smooth, and rather pointed, while the eyes are very prominent. The under jaw is immovable and the mouth is opened by raising the head.

*Bufo fowleri* Garman. The common toad at Bloomington. I have heard it at Madison. I believe that it will be found throughout the state; I heard what seemed to be a faint *fowleri* call at Decatur. On the other hand *B. americanus* is not found at Bloomington and is probably confined to northern Indiana. Blanchard says that Hahn reported no Bufo from near Mitchell. This is an obvious error, for Hahn reported "*B. lentiginosus americanus*" from Mitchell, but in the footnote it is stated that the Mitchell specimens were identified as *B. fowleri* by Miss Dickerson (Hahn, 1908, p. 557).

*Acris gryllus* (LeConte). Bloomington; Helmsburg; Madison; common everywhere in the southern part of the state.

*Hyla (Pseudacris) triseriata* Wied. Swamp cricket frogs are heard sparingly about Bloomington when *H. crucifera* is in song, in early spring. They are very elusive; the few captured were of this species.

*Hyla crucifera* Wied. Bloomington. Peepers are heard from ponds and swamps everywhere in southern Indiana in early spring. The specific name should be spelled as here given.

*Hyla versicolor versicolor* (LeConte). Gray tree frogs are rather common about Bloomington, but almost never captured. They breed in the pond behind Residence Hall on the Indiana University campus. Heard in Clifty Falls Park, Madison.

*Rana pipiens pipiens* (Schreber). Bloomington. Seldom seen. Weed's *R. pipiens burnsi* from Minnesota seems to me worthy of recognition, hence the above name is used for the typical variety. I have examined a *burnsi* obtained from a Chicago dealer.

*Rana areolata* Baird and Girard. This extremely rare frog, known from only a few localities in the central states and but twice reported from Indiana, was discovered breeding in a small pond a mile west of Bloomington by Mr. Herman P. Wright and myself. It was once found in Benton County and two specimens were found in a sewer at Terre Haute and reported by Blatchley. The species has been seen alive in the field by scarcely a half dozen naturalists and no one has observed the breeding or obtained the eggs. Eggs were brought to the laboratory in Bloomington and the writer obtained a complete developmental series, with the exception of the early stages of the egg. The discovery has been reported in a more detailed manner in *Copeia* and an account of the development is in preparation.

The species may be known at all ages by the small, light edged spots over the back and sides, many being present below the lateral folds; the latter character is in marked contrast to *pipiens* and *palustris*, neither of these having so large a number below the folds. The very rough skin of the adults is unique among Indiana frogs. The newly

transformed young often show a slight greenish cast to the ground color, but never decidedly so, and the ground tone of the adults is always grayish.

*Rana clamitans* Latreille. Bloomington, common.

*Rana catesbeiana* Shaw. I heard no adult bullfrogs near Bloomington, but a single young specimen was taken.

## REPTILES.

*Sceloporus undulatus* (Latreille). One from below the University water-works, Bloomington. A lizard seen at Madison and described to me by Mr. Homer Bolen was without doubt this species.

*Cnemidophorus sexlineatus* (Linné). Blatchley has reported this species abundant in the Dunes, *22nd Ann. Rept. Indiana Dept. Geol. Nat. Res.*, (1897) 1898, p. 92.

*Eumeces fasciatus* (Linné). One small example from near Bloomington.

Section C2 of the key to lizards should have the following inserted: *Ear opening not denticulate.* To section C3 should be added: *Scales smooth, not enlarged on belly; ear opening denticulate along its anterior margin.*

*Sistrurus catenatus catenatus* (Rafinesque). One reliably reported from Winona Lake.

*Heterodon contortrix* (Linné). One near Friendship Cabin, Helmsburg.

*Opheodrys æstivus* (Linné). A green snake seen by Mr. Homer Bolen at Madison was probably this species.

*Natrix sipedon sipedon* (Linné). Bloomington.

*Carphophis amœna helenæ* (Kennicott). This name should supplant *C. amœna* in the synopsis.

*Coluber constrictor constrictor* (Say). One caught halfway between town and the University water-works, Bloomington.

*Lampropeltis getulus nigra* (Yarrow). A slow-moving blacksnake seen by Dr. N. E. Pearson and Mr. R. Voris in a tree near the University water-works, Bloomington, and described to me by them, must have been this snake rather than *Elaphe obsoleta obsoleta.* It is to be expected in this region.

*Amyda spinifera* (LeSueur). One half-grown in a tiny brook a mile below Helmsburg. The habitat was unusual.

*Amyda ferox* (Schneider). This southern species has been taken once at Madison and should be added to the synopsis. It resembles *spinifera* in the presence of conical tubercles on the anterior border of the "shell," but differs in having the head streaks uniting just in front of the orbits. The adults are plain in color, while the young are rather dark, with darker spots. The young *spinifera* has dark rings with light centers, these becoming indistinct with age.

*Terrapene carolina carolina* (Linné). Fairly common near Bloomington.

*Terrapene ornata* (Agassiz). Two live specimens are in the Steinhart Aquarium, San Francisco, Calif., taken at Lake Maxinkuckee in

the fall of 1926 by Mr. H. Walton Clark. The yellow markings on the carapace, never very brilliant in *carolina*, are more regular and extremely bright and pretty in these two specimens.

A good start has been given to an accurate survey of Indiana herpetology by Blanchard's work, mentioned above. The few records I have here given add a little more. It is hoped that a resident Indiana zoologist may be found to carry on the work. Certain regions will yield more immediate results than others. Posey County, in the southwest tip of the state, especially needs exploration, in order to determine whether or not certain southern species extend their ranges to within the state limits. The ranges of certain other southern species up the Wabash Valley need to be determined. The relationships of the frogs of the *Rana pipiens-Rana sphenocephala* group in southern Indiana should be worked out; they may intergrade along the lower Wabash. The *radix-butleri* group of Thamnophis should be investigated in the state, and the status of *Lampropeltis getulus nigra* examined. The limits of the ranges of *Bufo fowleri* and *B. americanus* and of the two subspecies of *Coluber constrictor* should be ascertained. These and many other problems only await an interested worker to be solved. And when the fundamental systematic basis is established there are numberless problems in life histories and ecologic relations to be cleared up. There is a variety of field open unknown in ornithology, in which it is rare to find a fact not already recorded by the hundreds of workers. How many papers have we on the recognized economic value of the toads and frogs? And on birds—?