

1947

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Recommended Citation

Parker, Malcolm V. (1947) "Notes on the Herpetology of Clay and Greene Counties, Arkansas," *Journal of the Arkansas Academy of Science*: Vol. 2 , Article 10.

Available at: <http://scholarworks.uark.edu/jaas/vol2/iss1/10>

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NOTES ON THE HERPETOLOGY OF CLAY AND GREENE COUNTIES, ARKANSAS

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The collecting of snakes in Greene County, Arkansas, was started in 1928, during residence at Paragould, and was discontinued with removal to Memphis, Tennessee, in July, 1934. The amphibians and other reptiles received little attention by the author prior to 1933. Some notes and specimens for Clay County secured on several short summer trips to the Black River east of Corning during 1932 and 1933 are well supplemented by records for Greenway obtained by Dr. S. E. Meek. The results of Julius Hurter's work at Paragould are included as published in Hurter and Strecker (1909), in which is also a list of Meek's specimens. Schwardt (1938) gives records by counties, while Burt (1935) lists a few species from the region. Dellinger and Black (1938) and Black and Dellinger (1938) include published records and museum specimens in two state lists. Parker (1939) incidentally lists several species in another report, and a few species have been included individually in other papers.

Meek's collection in the Field Museum of Natural History has been examined by the author, but Hurter's specimens have not been located. Some of the material collected by the author are in the Museum of Zoology of the University of Michigan, others are in the United States National Museum, and a few are in the Field Museum of Natural History and the Chicago Academy of Sciences, but most of the material remains in the author's collection. Specimens in museums are indicated by the following abbreviations: AUM (Arkansas University Museum); CAS (California Academy of Science); FMNH (Field Museum of Natural History); UMMZ (University of Michigan Museum of Zoology); USNM (United States National Museum); and SDSNH (Museum of the San Diego Society of Natural History). No specimens of *Lampropeltis calligaster*, *Natrix cyclopion cyclopion*, or *Natrix grahamii* from Clay or Greene Counties, Arkansas, have been examined by the author.

Clay County is the northeasternmost county of Arkansas, and Greene County lies just southward. The plan of the general topography is rather simple. From the northeast corner of Clay County, a low range of outlying hills from the Ozarks, Crowley's Ridge, extends south-southwest through the southwestern corner of Greene County. The relief is nowhere much more than 200 feet, with very few steep declivities. The surface soil of the hills is generally clayey, but gravel deposits are fairly numerous. There are few large boulders and no extensive exposed bed rock. East of the border of Crowley's Ridge at Paragould, there are eight miles of level land to the St. Francis River, which is the eastern border of both counties. In Greene County, the same conditions exist west of Crowley's Ridge, where Cache River bounds the lower half of the county, but the river lies more eastward in Clay County. West of Cache River, and paralleling it at a distance of about ten miles, Black River flows southwest to the southwestern corner of Clay County. These three rivers are all generally slow-flowing and have mud or sand bottoms. Black River is largest; the other two are bordered, especially in the south, with drainage ditches of varying size and efficiency.

Crowley's Ridge in the heights is timbered with pine and scattering growths of *Juniperus*. The lower hills and the lowlands away from the rivers are partly deciduous-wooded, with oak and hickory predominating, but deforestation is well under way. There is much land under cultivation or recently deserted or cleared, and these conditions are becoming increasingly evident even in the

hills. Near the waterways are willow and cypress forests which are being slowly removed. Several small, irregular lakes are the remains of old river channels.

The author is deeply indebted to a number of friends who live in Greene County for specimens they have secured and for other assistance at various times. To Dr. Howard K. Gloyd, many thanks are due for identification of several species, for advice during the work, and for criticism of the manuscript. Mr. Karl P. Schmidt has kindly supplied a revised list of the Meek collection from Greenway, Clay County, in the Field Museum of Natural History.

LIST OF SPECIES

AMPHIBIANS

1. *Necturus maculosus* (Rafinesque). Mudpuppy or Water-dog.

GREENE COUNTY: (Viosca, 1937).

The mudpuppy was collected only in a brook in the wooded hills 2-3 miles northwest of Paragould. On June 20, 1934, about ten eggs were discovered under a small log imbedded in the mucky bottom of the brook. The eggs hatched through the next few days. Fishermen reported taking several specimens on trot lines in the St. Francis River east of Paragould.

Black and Dellinger's (1938) record for Craighead County, Arkansas, is doubtless based on the author's Greene County specimens mapped by Viosca.

2. *Amphiuma means tridactylum* (Cuvier). The Three-toed Congo Eel.

CLAY COUNTY: Greenway (Hurter and Strecker, 1909), FMNH (1).

GREENE COUNTY.

A specimen was seined in a ditch by the highway at Black River, 2 miles east of Corning; while in Greene County this salamander has been found in streams and sloughs of both the St. Francis and the Cache River lowlands. In April, 1931, a large specimen taken in backwaters of the St. Francis River east of Paragould contained a great number of small and medium sized crayfish. Several instances of the horn snake (*Farancia abacura reinwardtii*) feeding upon these salamanders were reported by friends. It was noted that the horn snake and *Amphiuma* were always found in the same environment.

3. *Triturus viridescens louisianensis* (Wolterstorff). Louisiana Newt.

GREENE COUNTY: Paragould, UMMZ (1).

The newt was collected only in 1934. It was found in and about wooded ponds within five miles north, east, and southeast of Paragould. The land form was found in early June.

A male and a female taken in the same pool on March 6th and kept in a small aquarium clasped most of the afternoon of March 25th. The next day they floated near the top of the water and clasped vigorously. This continued on March 27th, with the two facing in opposite directions and with anals approximated. Several

eggs were noted later, mostly on the sides of the jar rather than on the few weeds placed in the water. The eggs failed to hatch.

4. *Ambystoma maculatum* (Shaw). The spotted salamander.

CLAY COUNTY: Greenway (Hurter and Strecker, 1909), FMNH (2).

GREENE COUNTY: 3 miles east of Paragould, UMMZ (1) (Black and Dellinger, 1938).

One specimen was collected in lowland woods near the Black River 2 miles east of Corning. This species has been taken in a number of places in Greene County, but in no great quantities. It was found only in wooded lowlands, in logs or under pieces of wood in damp places. Few were found in the western half of the county.

5. *Ambystoma opacum* (Gravenhorst). The Marbled Salamander.

CLAY COUNTY: Greenway (Hurter and Strecker, 1909), FMNH (5); 22 miles north of Paragould, UMMZ (4) (listed as in Greene County in Black and Dellinger, 1938).

GREENE COUNTY: Paragould (Hurter and Strecker, 1909); 3 miles east of Paragould, UMMZ (4) (Black and Dellinger, 1938); 4 miles southeast of Paragould (Burt, 1935), FMNH (9); 14 miles west-northwest of Paragould, UMMZ (2); 17 miles northwest of Paragould, FMNH (8); 3½ miles east of Paragould, UMMZ (2). A few specimens have been taken in wooded lowlands near the Black River 2 miles east of Corning. In Greene County this was generally the most abundant salamander. Like *A. maculatum*, it was found under logs or other debris in wooded lowlands. Specimens were seldom found near the rivers and were always rare in the river bottoms.

6. *Ambystoma talpoideum* (Holbrook). The Mole Salamander.

CLAY COUNTY: Greenway, FMNH (2).

Although Hurter and Strecker (1909) did not record these specimens, they were apparently a part of Meek's collection, having similar tags and data.

7. *Ambystoma texanum* (Matthes). The Texas Salamander.

CLAY COUNTY: Greenway (Hurter and Strecker, 1909, listed as *A. jeffersonianum*, FMNH (2); 2 miles east of Corning, UMMZ (1).

GREENE COUNTY: 3 miles east of Paragould, UMMZ (2) (Black and Dellinger, 1938).

Specimens have been taken in wooded lowlands at Black River 2 miles east of Corning. The species was quite common in some localities of Greene County. It was found with *A. maculatum* and *A. opacum*, but was relatively more abundant near the rivers. Particularly in the Cache River bottoms, it seemed to favor a habitat slightly different from that of the other two species, being found in forest floors which did not have nearly so deep a humus layer nor so much undergrowth or down timber. Sawn planks lying on the ground were a favored concealment.

8. *Siren intermedia* Le Conte. The Two-legged Dwarf Eel, or Dwarf Siren.

CLAY COUNTY: Greenway (listed as *S. lacertina* in Hurter and Strecker, 1909), FMNH (1).

GREENE COUNTY: Paragould, UMMZ (1); Marmaduke, AUM (1) (listed as *S. lacertina* in Black and Dellinger, 1938).

A specimen collected near the Black River two miles east of Corning seemed identical with Greene County *S. intermedia*. East of Paragould, these animals were found in small woodland ponds with leafy bottoms.

9. *Scaphiopus holbrookii holbrookii* (Harlan). Spadefoot Toad.

CLAY COUNTY: Greenway (Hurter and Strecker, 1909), FMNH (1).

10. *Bufo americanus americanus* Holbrook. The American Toad.

GREENE COUNTY: 2 miles northwest of Paragould, UMMZ (1).

This record, (based on a rather small specimen) is included with some hesitation, as the call of this toad was not noted in northeastern Arkansas by the author. However, the species probably occurs there.

11. *Bufo fowleri* Hinckley. Fowler's Toad.

CLAY COUNTY: Greenway (listed as *Bufo americanus* in Hurter and Strecker, 1909), FMNH (12); near Corning, UMMZ (5) (Black and Dellinger, 1938); 22 miles north of Paragould, UMMZ (1) (listed as in Greene County in Black and Dellinger, 1938).

GREENE COUNTY: Cache River bottoms, MVZ (2); Bolton, MVZ (2); near Paragould, UMMZ (1) (all in Black and Dellinger, 1938); 8 miles east of Paragould, USNM (1) (Burt, 1935); 17 miles northwest of Paragould, UMMZ (1); 13 miles west-northwest of Paragould, UMMZ (1); just east of Paragould, UMMZ (1). A number of specimens have been taken east of Corning, a few near Knobel, and several in the eastern end of Clay County.

This is an abundant animal throughout Greene County, probably found most commonly in the lowlands near the hills. In 1933 and 1934, the toads first appeared about the first of April and started breeding in less than a week.

12. *Acris crepitans* Baird. Cricket Frog.

GREENE COUNTY: Paragould (Hurter and Strecker, 1909); 4 miles northwest of Beech Grove, UMMZ (3).

The cricket frog is fairly common near the Black River 2 miles east of Corning, especially about the edges of woods ponds. It is common in the bottom lands near the rivers of Greene County, being found most often along the wooded shores of lakes, ponds and sloughs. Calls were first noted about the middle of April in 1934, but the cricket frogs were doubtless active before that date.

13. *Pseudacris nigrita triseriata* (Wied). The Three-striped Tree Frog.

GREENE COUNTY: 5 miles southwest of Paragould, USNM (4) (Burt, 1935); near Paragould, UMMZ (1) (Black and Dellinger, 1938); just north of Paragould, UMMZ (14).

During the early spring, this little frog was found very abundantly in the hills and nearby lowlands within a fifteen mile radius of Paragould. The species appeared during the first week of March, in 1934, started egg-laying in a week, and were found often for about a month and a half.

14. *Pseudacris ornata* (Holbrook). The Ornate Tree Frog.

CLAY COUNTY: Greenway (listed as *Hyla squirellia* in Hurter and Strecker, 1909), FMNH (1).

In comparison with several Mississippi specimens and a series of Texas and Oklahoma *P. streckeri* in the Field Museum of Natural History, this specimen is somewhat anomalous. It is a female, noticeably larger than the *streckeri* and considerably larger than the Mississippi specimens of *ornata*. However, the relatively long hind legs and the vomerine teeth situated between the internal nares ally it with the latter species. In view of the comparative paucity of collections from the region just west of the Mississippi River, it may well be that the two forms intergrade.

15. *Hyla cinerea cinerea* (Schneider). The Green Tree Frog.

GREENE COUNTY: 17 miles northwest of Paragould, UMMZ (1).

A few specimens have been taken in the St. Francis River bottoms and in the lowlands east of Paragould. Some were congregated about a pool near the Cache River, northwest of Paragould, on June 13, 1934.

16. *Hyla crucifer* (Wied). The Spring-peeper.

GREENE COUNTY:

The published record for Clay County (Greenway, Hurter and Strecker, 1909) is doubtless based on Dr. Meek's "*Hyla pickeringii*" which were reidentified as *Hyla versicolor* before being discarded by the Field Museum of Natural History. However, *Hyla crucifer* undoubtedly occurs throughout the county. In Greene County, it was found fairly commonly in spring in much the same places as *Pseudacris n. triseriata*, and emerged nearly as early in the spring. Specimens were also taken in the forested bottom lands of the St. Francis and Cache Rivers.

17. *Hyla versicolor versicolor* (Le Conte). Common Tree Frog.

CLAY COUNTY: Greenway (listed as *Hyla pickeringii* in Hurter and Strecker, 1909; and as *Hyla crucifer* in Black and Dellinger, 1938).

GREENE COUNTY: 17 miles northwest of Paragould, UMMZ (1).

A few specimens have been found along the banks of the Black River 2 miles east of Corning. On the night of June 13, 1934, the tree toads were mating in a pond near the Cache River in northwestern Greene County. Specimens have also been found in the St. Francis River bottoms east of Paragould.

18. *Rana catesbeiana* (Shaw). Common Bull Frog.

CLAY COUNTY: 1 mile east of Corning, UMMZ (1) (Black and Dellinger, 1938); Greenway, FMNH (2).

GREENE COUNTY: 2 miles west (?) of Paragould, UMMZ (1); Cache River, USNM (1) (both in Black and Dellinger, 1938).

The bullfrog was found to be common about the Black River 2 miles east of Corning and on the Little River near Knobel. It was a common stream and pond frog in Greene County. Besides inhabiting sloughs and rivers, it was found in sandy streams that contained few or no other frogs. The half-grown specimens came out in the spring with *Rana pipiens*, just a few days later than *Pseudacris n. triseriata* and *Hyla crucifer* appeared. Adults were not collected before the middle of March.

19. *Rana clamitans* (Latreille). The Green Frog.

CLAY COUNTY: 2 miles east of Corning, UMMZ (1) (Black and Dellinger, 1938).

GREENE COUNTY: Paragould (Hurter and Strecker, 1909); 3 miles east of Paragould, UMMZ (2) (given as 2 miles west of Paragould in Black and Dellinger, 1938).

The green frog was fairly common near the Black River 2 miles east of Corning. In Greene County, this frog was plentiful only in a few woodland streams, ponds and swamps with muddy or mucky bottoms. Specimens were taken in both hills and lowlands.

20. *Rana palustris* (Le Conte). The Pickerel Frog.

GREENE COUNTY: 15 miles west-northwest of Paragould, UMMZ (1).

In addition to the above record, specimens have been taken near the St. Francis River east of Paragould, in brooks in the wooded hills 8 miles west of Paragould, and in the Cache River lowlands south of Beech Grove.

21. *Rana pipiens* (Schreber). Common Leopard Frog.

CLAY COUNTY: Greenway (Hurter and Strecker, 1909), FMNH (1); 1 mile northeast of Datto (Burt, 1935), FMNH (1); 4 miles west of McDougal (Burt, 1935); 1 mile east of Corning, UMMZ (6) (listed as *R. sphenoccephala* in Black and Dellinger, 1938); 2 miles east of Corning, UMMZ (4) (listed as *R. sphenoccephala* in Black and Dellinger, 1938); 22 miles north of Paragould, UMMZ (5) (listed as *R. sphenoccephala* in Greene County in Black and Dellinger, 1938).

GREENE COUNTY: 10 miles southeast of Paragould (Burt, 1935); 5 miles east of Paragould, UMMZ (4) (listed as *R. sphenoccephala* in Black and Dellinger, 1938); Cache River, USNM (2) (Black and Dellinger, 1938).

The leopard frog was abundant in the vicinity of Black River 2 miles east of Corning. It was common in a variety of habitats in both hills and lowlands of Greene County. In 1934, eggs were first found on March 13th and transforming young on May 1st.

22. *Microhyla carolinensis* (Holbrook). The Carolina Toad.

CLAY COUNTY: Greenway (Hurter and Strecker, 1909), FMNH (4); 2 miles east of Corning, UMMZ (1); Greenway, CAS (1); 22 miles north of Paragould, UMMZ (1) (listed as in Greene County in Black and Dellinger, 1938).

GREENE COUNTY: 3½ miles southeast of Paragould, UMMZ (2) (Black and Dellinger, 1938); 3 miles south-southeast of Paragould,

UMMZ (1); 6 miles southwest of Paragould, UMMZ (2).

This species has been found in stumps in forests along the Black River 2 miles east of Corning. A considerable number has been found under stones and boards about ponds in the hills southwest of Paragould. Some were also found under stumps and logs in or near woods in the lowlands east of Paragould.

REPTILES

23. *Sceloporus undulatus fasciatus* (Green). The Common Swift called Fence Swift in Eastern States.

CLAY COUNTY: Greenway (Hurter and Strecker, 1909), FMNH (3); near Corning, UMMZ (1).

GREENE COUNTY: Paragould (Hurter and Strecker, 1909); $3\frac{1}{2}$ miles east of Paragould, UMMZ (2); near Paragould, UMMZ (1).

A very few specimens have been taken in forests near the Black River 2 miles east of Corning. In Greene County, it is a rather common lizard in the wooded hills, but is less abundant in the lowlands and is rare in the river bottoms.

24. *Cnemidophorus sexlineatus* (Linné). Six-lined lizard; Race runner.

GREENE COUNTY: $6\frac{1}{2}$ miles southwest of Paragould, UMMZ (1) (given as $6\frac{1}{2}$ mi. N. W. Paragould in Dellinger and Black, 1938).

Several specimens were seen in the sandy lowlands between Black River and Corning. Specimens have been collected only in the hills near Village Creek, 5 to 8 miles southwest of Paragould.

25. *Leiolopisma unicolor* (Harlan). The Ground Lizard.

CLAY COUNTY: 1 mile east of Corning, UMMZ (1) (Dellinger and Black, 1938).

GREENE COUNTY: Paragould (Hurter and Strecker, 1909); 10 miles southeast of Paragould, USNM (1) (Burt, 1935); $3\frac{1}{2}$ miles southeast of Paragould, UMMZ (1).

In Greene County, this is a common lizard in the deciduous-wooded hills and in the bottoms along the rivers, and is even more abundant in the lowland forests between these two regions.

26. *Eumeces fasciatus* (Linné). The Blue-tailed Lizard, or Skink.

GREENE COUNTY: 10 miles southwest of Paragould, USNM (3) (Burt, 1935); $3\frac{1}{2}$ miles southeast of Paragould, UMMZ (1); $14\frac{1}{2}$ miles west-northwest of Paragould, UMMZ (2).

Published records for Greenway (Hurter and Strecker, 1909; etc.) are based on specimens of *E. laticeps*. The author took a number of specimens of *fasciatus* along the Black River 2 miles east of Corning. This skink was found to be abundant throughout Greene County, particularly in the lowlands near watercourses. It was not restricted so much to forests as *Sceloporus* and *Leiolopisma*, but showed a greater tendency to burrow in rotten logs. Tall,

dead stumps were a favored habitat for this species and *E. laticeps*.

27. *Eumeces laticeps* (Schneider). Large Skink. Red-headed Lizard.

CLAY COUNTY: Greenway (listed as *Plestiodon quinquelineatus* in Hurter and Strecker, 1909; and as *Eumeces fasciatus* in Dellinger and Black, 1938; and Schwardt, 1938), FMNH (1); 2 miles east of Corning, UMMZ (1) (Dellinger and Black, 1938).

GREENE COUNTY:

As identified by the greater spread and softer color of head and the greater size, this species was found occasionally in the lowlands and lower hills near Paragould. It was not very common. A young specimen was taken under bark on a log in woods 5 miles south-southeast of Paragould on April 11, 1934.

28. *Carpophis amoena vermis* (Kennicott). Worm snake.

GREENE COUNTY: $3\frac{1}{2}$ miles east of Paragould, UMMZ (1).

The specimen listed above was found under the bark of a fallen sapling in a lowland forest.

29. *Farancia abacura reinwardtii* (Schlegel). Red-bellied Snake.

CLAY COUNTY: Greenway (Hurter and Strecker, 1909), FMNH (1); Rector, USNM (1) (Dellinger and Black, 1938); 22 miles north of Paragould (Smith, 1938), UMMZ (1) (listed as in Greene County in Dellinger and Black, 1938).

GREENE COUNTY: 10 miles southeast of Paragould (Burt, 1935); $2\frac{1}{2}$ miles southeast of Paragould, UMMZ (1) (Dellinger and Black, 1938).

A specimen with only the posterior third of the body exposed was found in a pile of dead sticks and leaves at the edge of a woods pond east of Black River 2 miles east of Corning. From the St. Francis River west nearly to Paragould, specimens were found occasionally in swampy regions, where friends observed its feeding upon *Amphiuma* on several occasions.

30. *Diadophis punctatus stictogenys* (Cope). Eastern Ring-necked Snake.

CLAY COUNTY: Greenway (Hurter and Strecker, 1909), FMNH (1).

31. *Heterodon contortrix* (Linné). Hognose Snake or Puff Adder.

CLAY COUNTY: Greenway (Hurter and Strecker, 1909), FMNH (2); Greenway, CAS (1) (Dellinger and Black, 1938).

GREENE COUNTY:

These snakes were common in the sandy and gravelly localities of Greene County, particularly in and near the hills, where the black phase was as abundant as the spotted phase. The hog-nose snake seemed to come out of hibernation slightly earlier in the year than any other snakes. For example, two specimens were found on a cold, cloudy day in early March, 1928, at least a week before any other species were observed.

32. *Ophedryx aëstivus* (Linné). The Rough Green Snake.

CLAY COUNTY: Greenway (Hurter and Strecker, 1909), FMNH (2).

GREENE COUNTY: 1½ miles northwest of Paragould, UMMZ (1); 3½ miles southwest of Paragould, UMMZ (4) ("Paragould", Dellinger and Black, 1938); near Paragould, UMMZ (3).

This snake was abundant near Paragould in 1928 and 1929, but was found in smaller numbers in succeeding years. The usual habitat was wooded and brushy places in and near the lower hills.

33. *Coluber constrictor constrictor* (Linné). American Black Snake or Eastern Blue Racer.

CLAY COUNTY: Greenway (Hurter and Strecker, 1909) (listed as *C. c. flaviventris* in Schwardt, 1938), FMNH (3).

GREENE COUNTY: 3 miles east of Paragould, UMMZ (1) (listed as *C. c. flaviventris* from Paragould in Dellinger and Black, 1938); Paragould, UMMZ (1); 2 miles northwest of Paragould, UMMZ (2); 9½ miles west of Paragould, UMMZ (1) (all in Dellinger and Black, 1938).

The blacksnake was abundant and well-known in the vicinity of Paragould, where it was often found near and in the hills, in fields and thinly-wooded regions. During the first two years of collecting near Paragould, the author observed several specimens which approached the western *C. c. flaviventris* in coloration, but none was preserved.

34. *Elaphe obsoleta obsoleta* (Say). The Pilot Black Snake.

CLAY COUNTY: Greenway (listed as *Coluber guttatus* by Hurter and Strecker, 1909; as *Elaphe guttata* by Schwardt, 1938, and as *Elaphe laeta* by Dellinger and Black, 1938. Cf. Evans, 1940), FMNH (3).

GREENE COUNTY: 5 miles northeast of Paragould, UMMZ (1); 8 miles south of Paragould, UMMZ (2); 16 miles northwest of Paragould, UMMZ (1); 3½ miles southeast of Paragould, UMMZ (1) (listed as *E. o. confinis*), (all in Dellinger and Black, 1938).

Several specimens have been taken on the wooded banks of Black River 2 miles east of Corning. Unlike the chicken snakes of eastern Greene County, these adults showed little or no approach to the pattern of *E. o. confinis*. This was apparently the most uniformly distributed snake of Greene County. Specimens were taken from the tops of the highest hills to the wooded shores of St. Francis and Cache Rivers, but were seldom found away from forests.

35. *Lampropeltis calligaster* (Harlan). The Evans King Snake.

CLAY COUNTY: Greenway (Hurter and Strecker, 1909).

Although no specimens have been located, there seems no particular reason to doubt the record given above.

36. *Lampropeltis getulus holbrooki* (Stejneger). King Snake or Salt and Pepper King Snake.

CLAY COUNTY: Greenway (Blanchard, 1921), FMNH (1).

GREENE COUNTY: 4 miles southeast of Paragould, UMMZ (1); 3½ miles south of Paragould, UMMZ (1); 16 miles northwest of Paragould,

UMMZ (1) near Paragould, UMMZ (1), (all in Dellinger and Black, 1938).

Several specimens were taken near the Black River 2 miles east of Corning. In Greene County, this common snake was usually found near pond, slough, swamp, or stream, and never at any great distance from forests. The juveniles, particularly, were often found under bark on logs or burrowing in rotten logs. The species was found over nearly as wide a range of terrain as *Eliaphe o. obsolata*, but was not so plentiful on the higher hills and in the immediate proximity of rivers.

37. *Lampropeltis triangulum sypsiia* (Cope). The House King Snake.

GREENE COUNTY: 3½ miles southeast of Paragould, UMMZ (1) (Dellinger and Black, 1938).

38. *Cemophora coccinea* (Blumenbach). The Scarlet Snake.

GREENE COUNTY: 3½ miles southwest of Paragould, UMMZ (1) (given as 3½ mi. S. E. Paragould in Dellinger and Black, 1938).

The above specimen was found in a tiny crevice twelve feet underground when a section of gravel pit bank was pried away by workmen. This was in a hilly area with some woods nearby.

39. *Natrix cyclopion cyclopion* (Duméril and Bibron). Green Water Snake.

GREENE COUNTY: Paragould (Hurter and Strecker, 1909).

40. *Natrix erythrogaster erythrogaster* (Forster). Copper-bellied Water Snake.

CLAY COUNTY: 1 mile east of Corning, UMMZ (1); 22 miles north of Paragould (listed as in Greene County in Dellinger and Black, 1938), UMMZ (1); 2 miles east of Corning, UMMZ (1), (all in Dellinger and Black, 1938).

GREENE COUNTY: Paragould, UMMZ (16); 3½ miles southeast of Paragould, UMMZ (1); 3 miles east of Paragould (listed as 2 mi. W. Paragould in Dellinger and Black, 1938), UMMZ (2), ("Paragould, 28 MU; 10 mi. S. E. Paragould, (Burt, 1935) 1 USNM; S. Marmaduke, 1 MU" in Dellinger and Black, 1938).

This species was found to be fairly common near the Black River 2 miles east of Corning. Several were observed on the Little River near Knobel. Although it was one of the more common water snakes in Greene County, this species was never found in numbers at all comparable to *N. r. rhombifera*. It was, however, found in a greater variety of aquatic habitats and showed a greater tendency to roam from the immediate vicinity of water than the other species of *Natrix*.

41. *Natrix erythrogaster transversa* (Hallowell). Transverse Copper-belly.

GREENE COUNTY: Paragould, UMMZ (1).

One specimen which seems assignable to this subspecies was taken on a road ditch near the Black River 2 miles east of Corning.

42. *Natrix fasciata confluens* (Blanchard). Banded Water Snake.

CLAY COUNTY: Greenway (listed as *Tropidonotus s. sipedon* in Hurter and Strecker, 1909), FMNH (2).

GREENE COUNTY: 10 miles southeast of Paragould (Burt, 1935); near Paragould, UMMZ (1); 3 miles east of Paragould (listed as 2 mi. W. Paragould in Dellinger and Black, 1938), UMMZ (1); 3 miles southeast of Paragould, UMMZ (1), (all in Dellinger and Black, 1938).

Specimens have been taken in the vicinity of Black River 2 miles east of Corning. A commonly-occurring snake, it was more often found in colonies than the other water snakes of Greene County.

43. *Natrix grahamii* (Baird and Girard). Graham's Water Snake.

GREENE COUNTY: Paragould (Hurter and Strecker, 1909).

44. *Natrix rhombifera rhombifera* (Hallowell). Diamond-backed Water Snake.

CLAY COUNTY: 2 miles east of Corning, UMMZ (1) (Dellinger and Black, 1938).

GREENE COUNTY: Paragould (Hurter and Strecker, 1909); 1 mile northwest of Paragould, UMMZ (1); 3 miles east of Paragould (given as 2 mi. W. Paragould in Dellinger and Black, 1938), UMMZ (9); $3\frac{1}{2}$ miles southeast of Paragould, UMMZ (1); just east of Paragould, UMMZ (1); ("near Paragould, 7 MU" in Dellinger and Black, 1938).

This was the most common water snake near the Black River 2 miles east of Corning, and also throughout Greene County. It stayed close to water, but surprisingly large snakes were found on very small streams and ditches.

45. *Storeria dekayi* (Holbrook). Dekay's Snake; Brown Snake; Ground Snake.

GREENE COUNTY: $3\frac{1}{2}$ miles southeast of Paragould, UMMZ (1) (Dellinger and Black, 1938).

46. *Haldea striatula* (Linné). The Ground Snake or Brown Snake; Worm Snake.

GREENE COUNTY: $3\frac{1}{2}$ miles southeast of Paragould, UMMZ (1) (Dellinger and Black, 1938).

A gravid female was found under a large plank on the bank of Black River 2 miles east of Corning on May 27, 1934. A second Greene County specimen has been taken in the wooded lowlands near Stanford.

47. *Thamnophis sauritus proximus* (Say). The Ribbon Snake.

CLAY COUNTY: Greenway (Ruthven, 1908), FMNH (1); 1 mile east of Corning, UMMZ (1); 22 miles north of Paragould, UMMZ (1), (all in Dellinger and Black, 1938, latter listed as in Greene County).

GREENE COUNTY: 4 miles southeast of Paragould, UMMZ (1); Paragould, UMMZ (1), (both in Dellinger and Black, 1938).

Specimens have been taken on the Black River 2 miles east of Corning. In Greene County, this common species was usually, but not always, found in the vicinity of water. It was most abundant in swampy areas near the river bottoms.

48. *Agkistrodon mokasen mokasen* (Beauvois) Copperhead.

CLAY COUNTY: Greenway (Hurter and Strecker, 1909).

GREENE COUNTY: Paragould, UMMZ (1); 4 miles southeast of Paragould, UMMZ (1); near Paragould, UMMZ (1), ("Paragould, 1 MU" in Dellinger and Black, 1938).

Dellinger and Black (1938) list a specimen in the Field Museum of Natural History, but this cannot now be located. However, there is very little doubt that the copperhead occurs in Clay County. It is a common snake in the wooded hills and lowlands of Greene County, though the continued deforestation has considerably reduced the number in recent years. In the lumbering of a small area in the hills west of Paragould, over fifty were reported killed during two months of the autumn of 1933. Some of the farmers called the snakes "ground rattlers".

49. *Agkistrodon piscivorus* (Lacepede). Cottonmouth or Water Moccasin.

CLAY COUNTY: 1 mile east of Corning, UMMZ (1); 22 miles north of Paragould, UMMZ (1), (both in Dellinger and Black, 1938, latter listed as in Greene County).

GREENE COUNTY: Paragould (Hurter and Strecker, 1909); 3½ miles southeast of Paragould, UMMZ (1); 3 miles east of Paragould (listed as 2 miles west of Paragould in Dellinger and Black, 1938), UMMZ (2), (all in Dellinger and Black, 1938); Paragould, UMMZ (3).

Specimens have been taken in the Little River near Knobel. The moccasin was reported by residents, but not found by the author, at the Black River 2 miles east of Corning. In Greene County, this was a fairly common snake along all the watercourses except in the hills, but the harmless water snakes were considerably in the majority.

50. *Crotalus horridus atricaudatus* (Latreille). Banded or Timber Rattlesnake.

GREENE COUNTY: Paragould (Hurter and Strecker, 1909).

The rattlesnake has been rare for the past 25 years, though it was apparently quite common in the early settlement period. It is yet reported fairly common in some of the timber slashes east of the Cache River, and occasional specimens are still found in the hills north of Paragould. A specimen caught north of Paragould early in 1934 showed in coloration a distinct leaning toward the northern subspecies.

Throughout the author's residence at Paragould, no reports were received of more than one kind of large of medium-sized rattlesnake occurring or having occurred there in the past; and it is partly for this reason that the record of *Crotalus atrox* in Clay County (Perkins and Lentz, 1934) is not admitted. Dellinger and

Black (1938) list a specimen of *C. atrox* from Piggott in the San Diego Society of Natural History Museum, but the museum has no record of such a specimen.

51. *Sternotherus odoratus* (Latreille). The Common Musk Turtle.

CLAY COUNTY: 1 mile east of Corning, UMMZ (1) (Dellinger and Black, 1938).

GREENE COUNTY: 16 miles northwest of Paragould, UMMZ (1); 7½ miles southeast of Paragould, UMMZ (5); 3 miles northwest of Paragould, UMMZ (1), (all in Dellinger and Black, 1938).

Specimens have been taken along the Black River and in woodland ponds, 2 miles east of Corning. This is an abundant turtle in eastern Greene County, and some were also collected in the Cache River region of the western half of the county.

52. *Kinosternon subrubrum hippocrepis* (Lacépède). The Louisiana Mud Turtle.

GREENE COUNTY: 3 miles northwest of Beech Grove, UMMZ (1) (Dellinger and Black, 1938); 1 mile northeast of Paragould, USNM (1); 5 miles east of Paragould, USNM (1); 4 miles southeast of Paragould, USNM (1).

The mud turtle seemed somewhat less abundant than the preceding species, but it was more uniformly distributed. The subspecific classification is primarily on the basis of head striping.

53. *Macrochelys temminckii* (Troost). The Alligator Snapper.

CLAY COUNTY: Greenway, AUM (1) (Hurter and Strecker, 1909).

GREENE COUNTY: St. Francis River, near Paragould, AUM (1) (Dellinger and Black, 1938).

A skull was found at the Black River 2 miles east of Corning. In the spring of 1926, two specimens were taken in nets in the Lake Ditch, 7 miles east of Paragould. They weighed 121 and 64 pounds, respectively. There is a reliable report of a 160 pound specimen from the same locality.

54. *Chelydra serpentina* (Linné). Common Snapping Turtle.

GREENE COUNTY: Paragould (Hurter and Strecker, 1909); 3 miles northwest of Paragould, UMMZ (1) (Dellinger and Black, 1938).

This a fairly common turtle in Greene County. It often wanders into flood pools during spring, and travels up small ditches that are far removed from any sizeable body of water.

55. *Terrapene carolina triunguis* (Agassiz). Box Turtle.

GREENE COUNTY: ½ mile southeast of Paragould, UMMZ (3); 6 miles southwest of Paragould, UMMZ (2); 3 miles northwest of Paragould, UMMZ (1) (all in Dellinger and Black, 1938); 10 miles north-northwest of Paragould, UMMZ (1); 5 miles north of Paragould, USNM (4).

The box turtle was often found in wooded valleys and nearby lowlands in the vicinity of Paragould. Of seven specimens taken from a small brook in the hills seven miles southwest of Paragould,

two had four claws on each hind foot. No others exhibited this variation.

56. *Graptemys pseudogeographica pseudogeographica* (Gray). The Saw-back Turtle.

GREENE COUNTY: 18 miles northwest of Paragould, USNM (1).

This turtle was fairly common in the Black River 2 miles east of Corning. Specimens have been observed in eastern Greene County, but have been collected only in the Cache River northwest of Paragould.

57. *Chrysemys picta dorsalis* (Agassiz). Painted Terrapin.

GREENE COUNTY: Paragould (Hurter and Strecker, 1909).

In addition to the literature record, the painted turtle has been taken in Eight-mile Creek at Paragould, and in the Cache River.

58. *Pseudemys floridana hieroglyphica* (Holbrook). The Hieroglyphic Terrapin.

GREENE COUNTY: 18 miles northwest of Paragould, USNM (1).

The above-listed example was quite similar to specimens from western Tennessee.

59. *Pseudemys scripta troostii* (Holbrook). The Elegant Turtle.

CLAY COUNTY: Greenway (Hurter and Strecker, 1909), FMNH (1); "Corning, 1 USNM" (Dellinger and Black, 1938).

GREENE COUNTY: Paragould (Hurter and Strecker, 1909); 2 miles south-southeast of Paragould, UMMZ (1) (Dellinger and Black, 1938); Eight-mile Creek $3\frac{1}{2}$ miles southeast of Paragould, UMMZ (4); $7\frac{3}{4}$ miles east of Paragould, USNM (1); 18 miles northwest of Paragould, USNM (3); $3\frac{1}{2}$ miles southeast of Paragould, USNM (1).

This species was abundant at the Black River 2 miles east of Corning. In Greene County, it was abundant in the larger, slow-flowing and motionless bodies of water.

60. *Amyda spinifera spinifera* (Le Sueur). The Northern Soft-Shelled Turtle.

CLAY COUNTY: "Clay County", UMMZ (1) (Dellinger and Black, 1938).

GREENE COUNTY: 18 miles northwest of Paragould, USNM (1).

A large specimen was taken from the Black River 2 miles east of Corning, where the species was apparently abundant. Some of the specimens observed may have been *A. mutica*, but none of this species was captured. In Greene County, the soft-shelled turtle was fairly common in lowland streams.

Eliminations From And Additions To The Published Record

ADDITIONS.

No published records for either Clay County or Greene County, Arkansas, have been found for the following species recorded in this paper:

- Triturus viridescens louisianensis* (Wolterstorff).
- Ambystoma talpoideum* (Holbrook).
- Pseudacris ornata* (Holbrook).
- Hyla cinerea cinerea* (Schneider).
- Hyla versicolor versicolor* (Le Conte).
- Rana palustris* (Le Conte).
- Carpophis amoena vermis* (Kennicott).
- Graptemys pseudogeographica pseudogeographica* (Gray).
- Pseudemys floridana hieroglyphica* (Holbrook).

ELIMINATIONS.

"*Ambystoma jeffersonianum* Green" (Hurter and Strecker, 1909). Two specimens of the Meek collection in the Field Museum of Natural History, early label *Amblystoma microstomum*, are *Ambystoma texanum* (Matthes).

"*Ambystoma tigrinum* (Green)" (Parker, 1939). The correct locality record for this specimen is Fayetteville, Arkansas.

"*Siren lacertina* (Linne)." (Hurter and Strecker, 1909). A single Meek specimen in the Field Museum of Natural History has 35 costal grooves and a length of $8\frac{1}{2}$ inches. It is *Siren intermedia* (Le Conte).

"*Hyla squirella* (Daudin)" (Hurter and Strecker, 1909). A single Meek specimen in the Field Museum of Natural History is labeled *Hyla squirella* but is here assigned to *Pseudacris ornata* (Holbrook).

"*Rana sphenocephala* (Cope)" (Black and Dellinger, 1938). All the spotted leopard frogs of this region are conspecific, and for them the name *Rana pipiens* (Schreber) seems most applicable.

"*Coluber constrictor flaviventris* (Say): (Schwardt, 1938). Of the numerous blacksnakes examined, none showed a preponderance of *C. c. flaviventris* characteristics in both coloration and scutellation; consequently all specimens are considered to be *Coluber c. constrictor* (Linne).

"*Coluber guttatus* (Linne)." (Hurter and Strecker, 1909; in Dellinger and Black, 1938). As Evans (1940) has pointed out, this is a juvenile *Elaphe o. obsoleta* (Say).

"*Tropidonotus sipedon sipedon* (Linne)." (Hurter and Strecker, 1909). Dr. Meek's specimens in the Field Museum of Natural History are *Natrix fasciata confluens* (Blanchard).

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