

the back, these however are lacking in the largest specimen. From *glutinosus* it differs in the pale, unmottled throat, the lack of slime, and the absence of white spotting on the sides.

The type specimen will be deposited in the U. S. National Museum, paratype 7762 will be retained in my collection, and the other two paratypes will be returned to Mr. Sherman, State Entomologist of South Carolina, at Clemson College, to whom I am indebted for the privilege of examining and describing these specimens and whose property they are.

C. S. BRIMLEY

Raleigh, N. C.

AMPHIBIANS AND REPTILES OF DONIPHAN COUNTY, KANSAS

As a part of a survey of the land vertebrates of a small area in eastern Kansas which the writer carried on between 1921 and 1925 specimens were secured and habitat notes taken for the amphibians and reptiles. All the specimens collected were given to the University of Kansas Museum.

All observations herein recorded were made within one mile of Geary, Kansas. The area studied included a typical section of the valley of the Missouri River in that region. In addition to the river the area included a creek, a portion of the timbered bluff, several springs, an old saucer lake, several hundred acres of uncultivated bottom-land, and some cultivated ground.

AMPHIBIANS

Bufo woodhousei Girard.

Toads were found commonly in the moist parts of the area throughout the summer. Early in the morning or late in the evening individuals were often seen near houses under which they rested during the day to emerge and hunt for insects at night. An open pit that was made in constructing an ice house was a

favorite resort for this animal and several spent the whole summer of 1923 there. They were found in small holes and crevices of the vertical banks.

On April 19, 1924, a half grown toad was taken from a garter snake that was on the bank of the creek and which had nearly swallowed the toad.

Two males were seen at the edge of the water on the west side of the lake on April 25, 1925. A small toad was taken on the bluff near the lake on May 3, 1924.

Thousands of young and recently emerged toads were seen along a path near the lake on July 6, 1923. They were about half an inch long. One or two were disturbed at nearly every step along the path.

The latest fall record is October 11, 1924, when one was seen at the side of the road on the bluff.

Hyla versicolor LeConte. Common tree toad.

Several were heard calling on the bar and on the bluff and especially near the lake on April 25, 1925.

One was taken from a weed one foot high on the bar near the lower edge of the bluff on May 3, 1924. Another was found on a small bush near the top of the bluff on July 19, 1923.

Acris gryllus (LcConte). Cricket frog.

This species was the most abundant amphibian within the limits of this area. It was found most abundantly at the edges of bodies of water in all parts of the area in spring although some were found on the shores of the lake through the summer and until late in the fall.

On February 2, 1924, several were found in the creek above the bridge. They were in the water above some old ice and below a top layer of new ice. All the frogs were stiff and floating and apparently they were dead.

In the warm water of the springs and just below the springs a few frogs of this species were found throughout the winter.

In the spring the number of individuals present at the edge of the water began to decrease after the first of May.

Pseudacris triseriata (Wied).

One was taken from the edge of the water in a marshy place below a spring on April 4, 1925.

Rana pipiens Schreber. Leopard frog.

The leopard frog was found commonly wherever there was water either in standing pools or in running streams.

One was seen at the edge of a pool in the creek on March 1, 1924. Others were seen in the same pool, hiding among the leaves on the bottom, on November 17, 1923. On November 29 when there was nearly half an inch of ice on the pool the frogs moved stiffly on the bottom and under the edges of the stones. One was caught in a net in weeds in the bottom of the lake on March 2, 1924.

On April 6, 1924 one was seen near the edge of the lake that was so filled with air that it could not go under the water although it made an effort to do so.

Eggs were found in the lake and in the creek on April 19, 1924.

Rana catesbeiana Shaw. Bullfrog.

Bullfrogs were found in pools of the creek and in cut-off pools of the river but they were much more frequent in the lake.

On January 22, 1924 hundreds of tadpoles of this species were swimming at the surface of holes where the ice had been removed from the center of the lake. This was the most active animal in the water at that time.

Gastrophryne carolinensis (Holbrook).

Narrow-mouthed toad.

A narrow-mouthed toad was found on the area in the summer of 1923.

REPTILES

Plestiodon fasciatus (Linnaeus). Blue-tailed skink.

This skink was found over all of the bluff. When disturbed it usually ran under stones, leaves, or logs or climbed over stumps and trunks of trees. The earliest record of activity for this animal is April 6, 1924 when one was found on the bluff near the lake.

Young were seen under logs as early as June 12, 1923.

On May 6, 1923 two were seen on a large rock on the bluff which were holding one another by the mouth and moving back and forth across the rock. When they were disturbed they separated and ran into holes in the rock.

One was found hibernating in a pile of sawdust late in the winter of 1924.

Carphophis vermis (Kennicott). Ground snake.

One that was about one foot long was found on wet leaves on the ground near a spring on the lower part of the bluff on June 27, 1922.

Diadophis punctatus (Linnaeus). Ring-neck snake.

Two adults were found under boards in June of 1923. One was in a barnlot and the other was at the edge of a field near the creek.

Several young were found in a hole in the ground at the side of a road by road workers on September 1, 1923.

Coluber constrictor flaviventris (Say.) Blue racer.

This snake was found on the bluff, on the bar, and in the fields. It was frequently found in trees. One was coiled in a Phoebe's nest in an old building on the bluff on July 7, 1923.

Elaphe laeta (Baird & Girard).

One was found in a small tree on the bluff on June 14, 1923. One was found later in the season in the top of a hay barn. It may have been brought in from the field in a load of hay.

Elaphe obsoleta obsoleta (Say). Pilot blacksnake.

The pilot blacksnake was found all summer in all parts of the area. It was often seen in trees and in holes in trees. This was one of the most numerous as well as one of the larger snakes of this region and was probably the most destructive to bird life. Individuals were found in nests of the Cardinal and the Blue Jay.

Pituophis sayi (Schlegel).

A large bullsnake was eating young rabbits in a nest on the lower part of the bluff on April 25, 1925. The snake was coiled over the nest to prevent the escape of the rabbits and had one of the young mammals in its jaws. As soon as the snake was moved the rabbits ran in every direction.

A few snakes of this species were seen along roads and on the bar in June of 1923.

Lampropeltis triangulum (Lacepede). Milk snake.

One was found in a hole in the ground, at the side of a road, by road workers on September 1, 1923.

Natrix sipedon fasciata (Linnaeus).

Common water snake.

This snake was found at the edge of the water of the river, creek, and lake. During flood seasons it was frequently seen on drift at the edge of the river. One was found under a board at the edge of Doniphan Lake on May 18, 1924.

Storeria dekayi (Holbrook).

Dekay's snake; brown snake.

One was found under a board near the mouth of the creek on the bar on April 7, 1923. Another was found near the water of the creek on April 21, 1924. It was fourteen inches long. One was found on the side of the bluff on November 15, 1923 and another was seen in a small hole in the creek bank on December 2, 1922.

Thamnophis sirtalis parietalis (Say).

Common garter snake.

This snake was usually found near the water of the creek or of the lake. One was seen eating a half grown toad on April 19, 1924. On January 31, 1924, one was seen in a spring along the lower part of the bluff. When it was disturbed it crawled back into a crack of a rock. Another was seen in the water of a spring on February 23, 1924. A few were seen in trees near the water.

Thamnophis proximus (Say).

This species was found near the water and sometimes on the drier ground near the top of the bluff. It was frequently found near the ground in the smaller trees.

One was seen on the lower part of the bluff on April 6, 1924. On November 30, 1922 one that was about two feet long was found in a spring.

Agkistrodon mokasen (Beauvois). Copperhead.

Individuals were seen among the rocks on the bluff and near the lake on April 14, 1923 and April 19, 1923. On July 2, 1923 one was found under a pile of cottonwood slabs in the E. V. Roundy yard.

Crotalus horridus (Linnaeus). Common rattlesnake.

A rattlesnake was found half way to the top of the bluff north of the lake on May 3, 1924. One was shot from a limb of a tree on the lower part of the bluff and fifteen feet from the ground on May 20, 1923. On June 12, 1923, one about three feet long was found coiled in a patch of sumac near the top of the bluff. A small one was killed six feet from the ground in a tree and near the creek on June 13, 1923. One that had recently shed was killed in a chicken coop just after dark on June 25, 1922. One was killed near the river on the bar on June 26, 1922.

Chelydra serpentina (Linnaeus). Common snapper.

On March 29, 1924 a large adult that was in the

water above the bridge of the creek was too cold to move rapidly. When it was placed on its back it did not right itself. There were several leeches on the under side of this animal.

A small snapper, about ten inches long, was crawling in the road on April 25, 1925. On May 19, 1923 one was crawling over the mud at the edge of the lake and toward the shore. In the afternoon one was seen crawling up the creek in shallow water. Its head was under water part of the time but its back was showing all of the time.

A female that was caught on June 4 was filled with eggs. It was in the creek. On July 12, 1923 a young turtle about one and one half inches long was seen in a small puddle of water along a road. Its gullet was filled with the remains of a cricket frog.

On September 1, 1924 two large snappers, in a pool in the creek, were swimming near the surface, in the center, and were fighting. Each tried to catch hold of the other in its jaws. Finally one went down and in a few minutes the other retired below the surface.

A rather sluggish adult that was worn and appeared to be very old was seen crawling on the bar near the bluff and at least a quarter of a mile from any water on October 29, 1922. On December 1, one was found, near this location, that was dead and which was probably the same that was seen on October 29.

Pseudemys elegans (Wied).

On January 22, 1925 two were taken from a hole in the ice of the lake. Each was about ten inches long. Both were killed.

A female was picked up in a pasture near the creek on June 15, 1923 which contained eggs not yet covered with shells.

Amyda spinifera (LeSueur). Soft-shell turtle.

Individuals were caught, swimming under water in the creek, on the bar on April 20 and 21, 1924.

Berkeley, California.

JEAN M. LINSDALE