

A REPORT UPON AMPHIBIANS HITHERTO UNKNOWN FROM KANSAS

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The southeastern corner of Kansas, particularly the area included within the borders of Cherokee County typified by numerous creeks, rivers, ponds and wayside pools, is a region which possesses more pronounced eastern ecological factors than any other in Kansas. It has been included for this reason within the Austroriparian life zone, and obviously it possesses also some of the characters of the Ozark region, on the extreme northwestern border of which it is located.

This area, within a state largely arid or semi-arid, theoretically should, and has been proved to, possess faunal life as typical of it as is the faunal life of the more arid southwestern region.

A complete list of the reptiles and amphibians of the southwestern region was published in 1929 by Taylor (1), and in 1931 Hill (2), added another species to the list. It is hardly surprising, in view of the fact that Kansas has been so little explored herpetologically, that these new records, together with the ones reported in this paper should appear. Nearly half of the counties have not even a single record from them of even the commonest amphibians, and several have but one or two records.

Many of such counties are situated in areas which are known, or may prove to be of critical importance in solving such problems as range limits, intergradation and effect of ecological conditions upon life history and physiology. With the hope that persons living or visiting in these regions may be stimulated to collect specimens of the various species of amphibians, the following list of counties with no records is given: Atchison, Barton, Brown, Chase, Chautauqua, Cheyenne, Clark, Cloud, Comanche, Decatur, Edwards, Gray, Greeley, Hamilton, Harper, Harvey, Haskell, Jackson, Jewell, Kearney, Kingman, Kiowa, Lincoln, Lynn, McPherson, Meade, Mitchell, Nemaha, Neosho, Ness, Norton, Osborne, Ottawa, Pawnee, Rice, Saline, Scott, Sedgwick, Seward, Shawnee, Sheridan, Smith, Stanton, Stevens, Sumner, Thomas, Wabaunsee, Wichita, and Wyandotte. Identifications will gladly be made of specimens from the above or other counties of the state.

The southeastern corner, previous to 1931, was comparatively unknown herpetologically, as studies since then have revealed, although Burt (3) and Cragin (4) recognized its true character and significance. Early in the spring of 1931, from April 3rd to 5th, and in 1932 from March 24th to the 27th, field studies of reptiles

and amphibians of Cherokee County were made by the various members of the two expeditions. As a result, four amphibians hitherto unknown from the state were four *Typhlotriton spelaeus* Stejneger, *Eurycea melanopleura* Cope, *Rana clamitans* Latrielle and *Rana palustris* Le Conte. All were collected at various localities about three to five miles north of Baxter Springs near Spring River.

1. ***Typhlotriton spelaeus* Stejneger.** About 60 specimens of the "Veil-eyed" or "Blind" salamander, all larvae, were secured in the two years. Almost all were taken from two pools fed from the bottom by springs, and isolated in position by about 1000 feet. Pool number 1 was about 14-15 feet in diameter, perhaps about two feet deep, thickly congested with algae and other water plants, and situated in a comparatively clear area in a moderately heavily wooded, hilly region.

Considerable numbers of the larvae were collected by removing to the grassy margin of the pool quantities of the loose, fine silt at the bottom, together with the entangled mass of roots and leaves. The larvae could be found by searching through the mud, or by awaiting the appearance of their wriggling bodies as they attempted to escape into the water. After clearing the pool of debris, dip nets were used to obtain more specimens, and the remainder were secured after the pool had settled and it was possible to observe the larvae swim about. No specimens were found in the stream fed by the pool.

Pool number 2 was much like the first, except that it was less choked with plant matter, slightly smaller in diameter, deeper, and with steeper margins. Investigations here made it very obvious that most of the larvae were in the deepest, coolest place possible, near the source of the spring. Some individuals were found in the stream fed by the pool, but within 25 feet of the same, and in small numbers. It was found that, by removing the boards and rocks from the bottom where the spring entered, and subsequently dipping with a net, considerable numbers of the larvae could be collected.

If adults were present in any numbers, they most certainly would have been found in the thorough search which was made of the pools and the immediate adjacent areas. It is possible, however, that each of these pools have underground chambers in which the adults live, the larvae remaining for the most part above ground. In regions from which this species has previously been recorded, the adults seem to live entirely in the caves which are near or perhaps connected with the pools and springs in which the larvae are found (Hurter, 5; Noble, 6). However, according to the various residents of the region in question, no caves are to be found in the vicinity.

Structurally, the specimens are typical, except that some of them have very definite, clear eyes which, in preservative, except for size appear much like those of *Eurycea melanopleura*, in associa-

tion with which they are found. The largest specimen measured 80 mm. total length, body 30.5, head 8.5, tail 40.0.

Dunn (7) records this species from Missouri and Arkansas; the Kansas record extends the range not more than 50 miles.

2. *Eurycea melanopleura* Cope. Thirteen specimens of this salamander, all adults, were collected under rocks at the edge of pool number 2 described above.

The largest specimen measured 78.0 mm. total length, head 9.0, body 24.0, tail 45.0. Coloration and other characters apparently are typical.

The discovery of this species in Kansas does not extend the range greatly; other records have been made very near in Missouri and Arkansas by Hurter (5) and Dunn (7).

3. *Rana clamitans* Latrielle:—Specimens of the "Green Frog" were found under as unique conditions as were the salamanders mentioned above. In the region in question there was a large number of abandoned mining pits, vertically-sided, and some very deep. Several were rather shallow, having caved in or been otherwise partly filled, and rain water had collected there to form permanent pools. It was only in such pools that *R. clamitans* was found.

A number of larvae were collected in 1931, and 3 adults were secured sitting on the sides of the pools at night in 1932. Although not rare, they were so wary and difficult to collect that only by extreme perseverance were these specimens obtained. During the day none were seen, all probably having hidden themselves among the leaves and other debris of the pools.

One specimen from Miami County in the Kansas University Museum adds another record to the distribution of this frog in Kansas. Its western range limit was previously Missouri, over all of which, according to Hurter (5), it is found in abundance.

4. *Rana palustris* Le Conte: Two specimens of the "Pickerel Frog", one of them very small, were collected together with *Rana pipiens* Schreber in the deepest portion of pool number 2 described above. The characters are typically those of *R. palustris*.

Hurter (5) records *R. palustris* from Stone County, Missouri, not more than 100 miles eastward; this record previously represented the western limit of the range.

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LITERATURE

1. Taylor, Edward H. 1929. List of reptiles and batrachians of Morton County, Kansas, reporting species new to the state fauna. *Kans. Univ. Sci. Bul.* 19:63-65.
2. Hill, Eric. J. 1931. An addition to the herpetological fauna of Kansas. *Science* 74 (1926):547-548.
3. Burt, Charles E. 1928. The lizards of Kansas. *St. Louis Acad. Sci., Trans.* 26(1):85 pp., 14 figs.
4. Cragin, F. W. 1885. The faunal relations of Kansas. *Washburn College Lab. Nat. Hist., Bul.* 1(3):103-105.
5. Hurter, Julius, Sr. 1911. Herpetology of Missouri. *St. Louis Acad. Sci., Trans.* 20(5):59-274, pls. 18-24.
6. Noble, G. Kingsley. 1927. Creatures of perpetual night. *Nat. Hist.* 27(5):405-419, ill.
7. Dunn, Emmett Reid. 1926. The salamanders of the family Plethodontidae. *Smith College 50th Anniv. Publ.* XII, 441 pp., frontis., 2 pls., 89 figs.

