

# Distribution of the Barking Treefrog in Kentucky<sup>1</sup>

BURT L. MONROE, JR. AND RAYMOND W. GIANNINI

Department of Biology, University of Louisville, Louisville, Kentucky 40208

## ABSTRACT

Discovery of a second population of *Hyla gratiosa* in Caldwell County, Kentucky, isolated from the only other known population in the state (Todd County and adjacent Montgomery County in Tennessee), suggests that the disjunct nature of the northern populations is a result of range contraction and the natural occurrence of relict populations rather than from artificial introductions by man.

North of the central Gulf states, from northern Alabama and northwestern Georgia through central Tennessee, the barking treefrog *Hyla gratiosa* is represented by disjunct, apparently relict populations. At the extreme north-central limit of the range in north-central Tennessee and south-central Kentucky, the species has been heretofore known from a single population in Montgomery County, Tennessee (Scott and Harker 1968), and adjacent Todd County, Kentucky (Monroe and Taylor 1972). The discovery of an additional isolated population about 60 km northwest of the foregoing extends the range of the species toward southwestern Kentucky and further illustrates the peculiar disjunct nature of its distribution.

On 3 July 1976, Giannini obtained a single specimen about 12 km south of Princeton, Caldwell County, Kentucky. It was taken about 50 m from the nearest water on a warm, drizzly night; no frogs were heard calling at that time. The specimen is presently in the Herpetological Collections of the Department of Biology, University of Louisville (#UL 6779).

Following considerable rainfall, Giannini located a breeding area on 5 July about 75 m from the site of the original specimen. The area was a flooded slough with much submergent grass and weedy growth, approximately 10 by 75 m in size. On that night, 2 specimens were obtained (#UL 6780, 6781) from about 25 calling males.

Most frogs were sitting on vegetation at surface level in water less than 1 m in depth.

On 6 July, about 40 individuals were calling in the area. In addition, 10 were calling from a similar flooded area some 100 m distant from the first, and 10 more in a permanently wet area some 10 m in diameter and about 200 m distant from the first location. All 3 areas contained much submergent vegetation. No specimens were taken but recordings were obtained.

Two more individuals were captured on 8 July, one of which is still alive in captivity at this time (18 Feb 1977). About 50 frogs in all were calling on 8 July at the original site, with but 6 at the permanent wet area and none at the third location.

On 10 and 12 July, following several days without rainfall, a total of about 30 calling males was noted at the 3 locations. Some 10 individuals were heard on 14 July and none after that date.

The newly discovered area is in a different drainage system than that involving the other Kentucky population. In addition, it is but 30 km east of the Land Between the Lakes region, one of the most thoroughly studied regions herpetologically within Kentucky. Although we are sure other populations remain undiscovered in parts of Kentucky and Tennessee, it is evident that the range is highly disjunct through those states.

The most significant feature of the distribution of *H. gratiosa* is the absence from southwestern Kentucky along the Mississippi River bottomlands; virtually all Gulf coastal plain species ranging north to Ken-

<sup>1</sup> Contribution No. 186 (New Series) from the Department of Biology, University of Louisville, Louisville, Kentucky 40208.



tucky occur in that floodplain. As a result, the overall distribution of the species forms a unique geographical pattern among eastern amphibians. A somewhat similar pattern could be obtained in the mud salamander *Pseudotriton montanus* if the midland race *P. m. diasticus* were relict and disjunct in central Kentucky and Tennessee rather than widespread, but there is no species displaying the particular distributional peculiarities of *H. gratiosa*. Furthermore, the existence of several sizable disjunct breeding populations suggests that the distribution is a natural one, resulting from range contraction and relict populations, rather than possibly being produced

through artificial or accidental introductions by man.

Further studies of the Caldwell County population will be conducted in the summer of 1977. Field herpetologists in Kentucky and Tennessee should be alerted to the possible occurrence of this species elsewhere in the region.

LITERATURE CITED

MONROE, B. L., JR., AND R. W. TAYLOR. 1972. Occurrence of the barking treefrog, *Hyla gratiosa*, in Kentucky. *J. Herpetol.* 6:78.  
SCOTT, A. F., AND D. F. HARKER. 1968. First records of the barking treefrog, *Hyla gratiosa* Le Conte, from Tennessee. *Herpetologica* 24: 82-83.



Monroe, Burt L. and Giannini, Raymond W. 1977. "Distribution of the barking treefrog in Kentucky." *Transactions of the Kentucky Academy of Science* 38(3-4), 143–144.

**View This Item Online:** <https://www.biodiversitylibrary.org/item/107531>

**Permalink:** <https://www.biodiversitylibrary.org/partpdf/337043>

**Holding Institution**

Smithsonian Libraries and Archives

**Sponsored by**

Biodiversity Heritage Library

**Copyright & Reuse**

Copyright Status: Permission\_to\_digitize\_granted\_by\_rights\_holder

Rights Holder: Kentucky Academy of Science

Rights: <https://www.biodiversitylibrary.org/permissions/>

This document was created from content at the **Biodiversity Heritage Library**, the world's largest open access digital library for biodiversity literature and archives. Visit BHL at <https://www.biodiversitylibrary.org>.