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Three Species of Trypethelium New to Arkansas

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Arkansas Academy of Science

OCCURRENCE OF THE PLAINS HARVEST MOUSE, *Reithrodontomys montanus* (Baird), IN ARKANSAS

In the five-year period from 1969 to 1973, three specimens of the plains harvest mouse, *Reithrodontomys montanus* (Baird), were obtained near Fayetteville, Washington County, Arkansas. An adult male was collected on 7 March 1969 in the sparse vegetation of a closely grazed pasture, and an adult female was obtained on 26 January 1973 in the dense grasses of a hay field. Both were hand captured. The third specimen, an adult female, was live-trapped in the hay field on 12 March 1973. None of the mice were in reproductive condition.

These specimens represent the easternmost known locality for the plains harvest mouse and the first records for Arkansas. Fayetteville is approximately 40 miles due east of the range limit estimated by Hall and Kelson (1959, The Mammals of North America, Ronald Press, N. Y.) and about 80 miles east-northeast of the easternmost Oklahoma record in Muskogee County (Blair, 1939, Am. Midl. Nat., 22:85-133) shown by Hall and Kelson (1959). However, since these publications the plains harvest mouse has been found in Ottawa County in extreme northeastern Oklahoma and further east in nearby McDonald County, Missouri, 7 miles northwest of Jane (Long, 1961, J. Mammal., 42:417-418). The Arkansas records are approximately 40 miles south and 10 miles east of the Missouri site.

The plains harvest mouse occurs in prairie habitats, and the earliest habitat descriptions in the mid-1800's mentioned extensive areas of original prairie in northwestern Arkansas (D. D. Owen, 1885, First Report of a Geological Reconnaissance [sic] of the Northern Counties of Arkansas, Johnson & Yerkes, State Printers, Little Rock; M. L. Lesquereux, 1860, Botanical and Palaeontological Report of the Geological State Survey of Arkansas, p. 295-400 in D. D. Owen, Second Report of a Geological Reconnaissance [sic] of the Middle and Southern Counties of Arkansas, C. Sherman & Son, Philadelphia). Most of the prairie has long been cultivated, yet numerous small but isolated prairie patches remain. This prairie country always could have been inhabited by plains harvest mice despite the long standing high intensity of small mammal trapping near Fayetteville. Hooper (1952, Univ. Mich. Mus. Zool., Misc. Publ. No. 77, p. 1-255) found that in parts of its range the plains harvest mouse is rare and seldom trapped. Furthermore, trapping near Fayetteville has been mainly in forests, or in old field successional stages dominated by broom-sedge grass (*Andropogon virginicus*), rather than in true prairie grasslands. Managed hay fields and overgrazed pastures where the present specimens were obtained largely have been ignored.

Plains harvest mice usually occupy dry uplands sparsely covered with short grasses (Blair 1939; Hooper 1952; Hall and Kelson 1959; Goertz, 1963, Proc. Okla. Acad. Sci., 43:123-125). This matches conditions in the heavily grazed, nearly denuded, pasture of fescue grass (*Festuca elatior*) where the first Arkansas specimen was obtained, but is totally unlike the dense growth of grasses in the hay field where the other two were found. Probably the hay field was formerly a managed pasture because fescue and Bermuda grass (*Cynodon dactylon*) dominated. However, grazing had been discontinued and the resulting growth was invaded by other grasses; primarily broom-sedge, Johnson grass (*Sorghum halepense*), fox-tail grass (*Setaria*) and others. The population of plains harvest mice in Muskogee County, Oklahoma, inhabited the usual xeric prairie situation (Blair, 1939). The Missouri site was described simply as a "grassy area" (Long, 1961).

The Arkansas specimens of *Reithrodontomys montanus* are deposited in the collection of the Department of Zoology at the University of Arkansas (Study Skins UADZ M69-31, M73-35 and M73-37). The existence of these records are acknowledged by Sealander and Gipson (1974, Threatened Native Mammals of Arkansas, p. 123-127 in C. T. Crow, Arkansas Area Plan, Ark. Dept. Planning, Little Rock) by McDaniel, Huggins, Huggins and Hinson (1978, Proc. Ark. Acad. Sci., 32:63-64) and by Sealander (1979, A Guide to Arkansas Mammals, River Road Press, Conway, Ark.).

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THREE SPECIES OF *Trypethelium* NEW TO ARKANSAS*

Stromatic pyrenocarp lichens whose perithecia open by an apical pore have been assigned to the family Trypetheliaceae. These lichens grow in the bark of trees, but they appear to do no damage to their host. *Trypethelium* is the type genus of the family; it is characterized by hyaline, longitudinally three- to many-septate ascospores. This paper reports the first collections of three species [*Trypethelium mastoideum* Ach., *T. tropicum* (Ach.) Müll. Arg., and *T. virens* Tuck.] in the state of Arkansas.

Trypethelium mastoideum Ach. is the most abundant of the three species found. It is relatively inconspicuous, with light- to dark-brown pseudostromata of medium height, perithecia with small ostioles, and medium-sized (18-28 x 6-9 μ), hyaline, three-septate spores. It is most frequent on *Quercus* in Arkansas, but it has also been collected on *Acer*, *Carya* and *Ilex*.

Collected from: Bradley, Clark, Cleveland, Columbia, Dallas, Grant, Hempstead, Jefferson, Montgomery, Pike, Polk, and Union Counties. Specimens cited: G. T. Johnson, Nos. 4086, 4966, 4971, 4974, 4978, 4983, 4985, 4988, 4990, 4994, 4995, 5004, 5116, 5121, 5124, 5135, 5140, 5145, 5151, 5156, 5167, 5448, 5452, 5458, 5461, 5467, 5474, 5509, 5515, 5522, 5526, 5531, 5540, 5544, 5548, 5551, 5713, 5746, 5750, 5753, 5758, 5761, 5764, 5769, 5772, 5775, 5778, 5781, 5784, 5787, 5792, 5799, 5803, 5810, 5816.

Trypethelium tropicum (Ach.) Müll. Arg. has jet black perithecia and pseudostromata. The pseudostromata of the Arkansas specimens of this species are not so well developed as in other species of *Trypethelium*, tempting one to assign them to *Pseudopyrenula*, where Müller-Argau (Flora, 66:248, 1883) did place this species at one time. The pseudostromata in *T. tropicum* are formed from the fusion of adjacent perithecial walls, the perithecia have conspicuous ostioles, usually with pruinose margins, and the asci contain medium-sized (20-26 x 6-8 μ), hyaline, three-septate spores. This is a comparatively rare species; it has been collected sparingly in the river valleys of southwestern Arkansas. *Acer* is the only host on which this species has been collected in the state.

Collected from: Clark, Garland, and Polk Counties.

Specimens cited: G. T. Johnson, Nos. 5500, 5504, 5512, 5518, 5748, 5751, 5754, 5759.

General Notes

Trypethelium virens Tuck. has yellow-brown to orange-brown pseudostromata. The ostioles appear as small black dots and the asci have quite large (38-52 x 7-10 μ), hyaline, seven- to nine-septate spores. This species is most frequent on *Ilex* in Arkansas, but it has also been collected on *Quercus*, *Fagus*, *Carya*, *Nyssa*, and *Prunus*. It is found in the Ouachita and Red River Valley areas in the southern portion of the state.

Collected from: Bradley, Calhoun, Clark, Cleveland, Columbia, Dallas, Garland, Grant, Hempstead, Lafayette, Montgomery, Pike, Polk, Sevier, and Union Counties.

Specimens cited: G. T. Johnson, Nos. 4936, 4940, 4944, 4949, 4953, 4957, 4961, 4964, 4968, 4972, 4975, 4979, 5106, 5110, 5114, 5117, 5122, 5125, 5133, 5139, 5143, 5146, 5438, 5444, 5449, 5453, 5456, 5459, 5494, 5498, 5502, 5507, 5514, 5520, 5528, 5712, 5747, 5755, 5762, 5770, 5777, 5788, 5798.

The known Arkansas distributions of *Trypethelium* spp. are presented in Figs. 1 - 3. Dots on the maps identify counties in Arkansas in which collections of each species have been made. These distribution maps have significance due to the relatively large number of collections at hand and the fact that there has been also considerable field experience in regions where the species have not yet been found. *Trypethelium mastoideum* (Fig. 1) and *Trypethelium virens* (Fig. 3) are widely distributed in southern Arkansas. *Trypethelium tropicum* (Fig. 2) has been collected only in the southwestern portion of the state. Apparently these species do not occur north of the Arkansas River, or north of the approximate latitude of Hot Springs, Garland County, Arkansas. It is hoped this note will stimulate other collectors to look for these lichens; the writer believes new county and new host records can be obtained in the southern portion of the state.

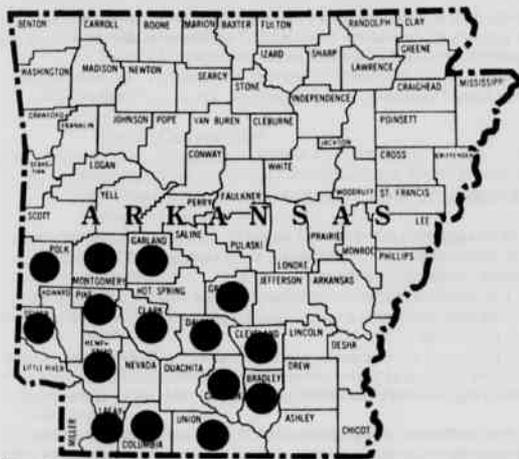


Figure 1. Arkansas distribution map of *Trypethelium mastoideum* Ach.



Figure 2. Arkansas distribution map of *Trypethelium tropicum* (Ach.) Müll. Arg.

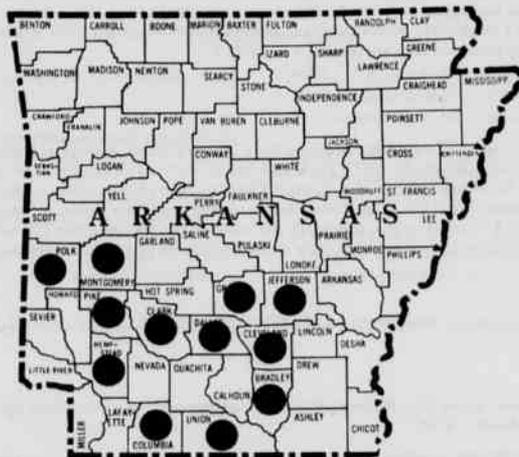


Figure 3. Arkansas distribution map of *Trypethelium virens* Tuck.

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