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Terry Keith McKay  
*Ouachita National Forest*

Daniel L. Marsh  
*Henderson State University*

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# A Ouachita Mountain Population of *Diphasiastrum digitatum* (Dillenius ex. A. Braun) Holub Reported in Montgomery County on the Ouachita National Forest

Terry Keith McKay  
Ouachita National Forest  
912 Smokey Bear Lane  
Glenwood, AR 71943

Daniel L. Marsh  
Department of Biology  
Henderson State University  
Arkadelphia, AR 71999-0001

*Diphasiastrum digitatum* or southern running-pine as a North American endemic is the most abundant species of *Diphasiastrum* on the continent. This species of club moss is known to occur in coniferous or mixed forests, with varying degrees of disturbance, and at elevations up to 1500 meters. Cranfill (Ferns & fern allies of Kentucky, Kentucky Nature Preserves Commission Scientific and Technical Series No.1, 1980) states that it can be found in a wide variety of situations from wet acidic seeps to dry oak-pine or oak-hickory woods. The sporophytes require only a sandy or gravelly, slightly acidic substrate on which to grow, but Cranfill believes the gametophytes are dependant upon some amount of disturbance. The horizontal stems creep in the leaf litter on the soil surface and root at intervals. The plants are readily recognized by the fan-shaped branch complements.

The main range of *D. digitatum* is Newfoundland south to Georgia and west to Minnesota and Alabama (Wagner & Beitel, Flora of North America Vol. 2, p. 30-31, 1993). Disjunctive populations have been reported in northern Arkansas in Baxter, Benton, and Stone counties in the Ozark Mountains (Peck & Taylor, Proc. Ark. Acad. Sci., 49:130-137, 1995). The population discovered in the Ouachita Mountains represents a range extension of approximately 220 km or about 140 miles southward.

The new population, found during a survey of last winter's ice storm damage, occurs on a revegetated road bank in the southern portion of Montgomery County, Arkansas in Section 35, Township 4 South, Range 27 West. We have made the following observations at this site. There are seven patches of club moss in this population and patches range in size from approximately 40 square meters to 20 square centimeters. The cones of the last season are still present indicating fertility on the two largest patches, and these seem to be expanding by up to one meter of new growth of horizontal stems. The site is on a 35% slope on a road bank constructed approximately 20 years ago that is now covered in pine, sweetgum and maple saplings, low-bush blueberry, greenbrier, Christmas fern, and other plants, with leaf litter approximately 10 cm deep. We did an extensive search on the surrounding area and found no other populations of *Diphasiastrum* present.

This population is on a north aspect toe slope of Paul Mountain at approximately 310 m in elevation. Soils on this

area are shallow, gravelly, shaley loam overlain with 10 to 15 cm of decomposed organic matter and leaves. The densest patches are in better sunlight, but establishment seems to occur even in the semi-shade. Many roadsides, gravel pits, and other similarly disturbed habitats offer such exposure for this ancient survivor.

Vouchers for this reported population were collected by Theo Witsell of the Arkansas Natural Heritage Commission, collection number TW-O 1-002, and will be deposited in the herbarium of the University of Arkansas at Little Rock. We appreciate Theo Witsell and Jason Haley for digitizing, collecting, and processing some of this information and for their good company in the field.