Journal of the Arkansas Academy of Science

Volume 41 Article 41

1987

Arkansas Pteridophyte Flora Update: A New Checklist and Additional County-level Occurrence Records

James H. Peck
University of Arkansas at Little Rock

Carol J. Peck
University of Arkansas at Pine Bluff

W. Carl Taylor
Milwaukee Public Museum

These taxa are part of the *Lycopodium inundatum*-complex, a group of species plus their hybrids which are cryptic, difficult to tell apart morphologically (Bruce, 1975; Beitel, 1979; Lellinger, 1985). They maintain their distinctness across their range, in spite of their co-occurrence as a genus community and their propensity to hybridize. The use of pteridophyte genus communities (communities of many species of one genus) to expand the recognition of taxonomically useful characteristics (such as comparisons of vegetative and reproductive phenology) for cryptic species of pteridophytes was summarized by Wagner and Wagner (1983), who noted that much comparative data which validates the distinctness of species can only be ascertained when the taxa co-occur.

All of these newly reported *Lycopodium* taxa were found occurring in genus communities across Calhoun Co., at locations where disturbance was pronounced, including barrow pits, gravel/sand quarries, roadside ditches, cleared pine plantations, and in the midst of refuse of a landfill operation. The permanence of these populations is open to study; Amason showed us one location where a large stand once flurished, but where only a few stems were presently evident, apparently having been invaded and replaced by various grasses and sedges. Although presently known in Arkansas from one county, we fully expect that additional search will establish that they occur throughout the Gulf Coastal Plain in Arkansas.

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PECK, JAMES H., CAROL J. PECK, STEVE L. ORZELL, EDWIN BRIDGES, and CARL AMASON, Biology Department, University of Arkansas at Little Rock, Little Rock, AR 72204; Department of Natural Sciences, University of Arkansas at Pine Bluff, Pine Bluff, AR 71601; Texas Natural Heritage Program, Austin, TX 78701; Institute Botanical Research, Austin, TX 78746; Calion, AR 71724.

ARKANSAS PTERIDOPHYTE FLORA UPDATE: A NEW CHECKLIST AND ADDITIONAL COUNTY-LEVEL OCCURRENCE RECORDS

This note announces the publication of a new state checklist of pteridophytes (Peck, Peck, and Taylor, 1987) and of a compilation of county occurrence record from specimens deposited at the UALR Herbarium (Peck and Peck, 1986). Over the last 152 years, 14 checklists or floras of the Arkansas pteridophytes (ferns plus fern allies) were published (Taylor, 1984). Our new checklist of 85 taxa (species plus hybrids) provides a timely update, summarizing the numerous changes in Arkansas pteridophyte floristic information that have developed through the efforts of several workers over the last 10 years. As part of his doctoral studies on the Arkansas pteridophyte flora, Taylor (1976) inspected herbarium material and conducted numerous field trips with D. Demaree to relocate populations of taxa rare in Arkansas (Taylor and Demaree, 1979). Various staff members of the Arkansas Natural Heritage Commission and Arkansas Nature Conservancy have continued to relocate rare pteridophyte populations and have located taxa previously unknown to Arkansas (Peck, Orzell, Sundell, and Peck, 1985; Peck, Peacock, and Shepherd, 1985; Peck, Peck, Orzell, Bridges, and Amason, 1987). Over the last six years, two of us (JHP and CJP) have conducted research on the reproductive biology of disjunct fern populations (Peck, 1985; Peck, 1986; Peck and Peck, 1987) and have encouraged our students to collect ferns, resulting in additions of county records from under-collected areas of the state. The summary (Peck and Peck, 1986) of county-occurrence records was compiled from a 1986 inventory of pteridophyte collections deposited at the UALR Herbarium (LRU). A total of 287 new county records belonging to 48 taxa were added to the distributional data presented in the atlas of the Arkansas flora (Smith, 1978). The authors welcome notification of other additions to the pteridophyte flora of Arkansas.

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PECK, JAMES H., CAROL J. PECK, and W. CARL TAYLOR, Department of Biology, University of Arkansas at Little Rock, Little Rock, AR 72204; Department of Natural Sciences, University of Arkansas at Pine Bluff, Pine Bluff, AR 61901; and Botany Division, Milwaukee Public Museum, Milwaukee, WI 53233.

NEW LOCATIONS FOR PONDBERRY *(LINDERA MELISSIFOLIA)* IN ARKANSAS

Pondberry *(Lindera melissifolia)* belongs to the Laurel Family *(Lauraceae)* and is closely related to Spicebush *(Lindera benzoin)*. These two shrubs occupy low-wooded moist habitats with Pondberry occurring in water and forming dense vegetative colonies. Pondberry reaches two meters in heighth with little branching whereas Spicebush can attain heights of five meters and branches frequently.

Before 1985, Pondberry *(Lindera melissifolia)* was known in Arkansas from a few locations in northern Clay County. One of the original sites in Arkansas is the Hartwig site in Clay County discovered by Tucker in 1972 (Tucker, 1974a). Pondberry is known from adjacent Ripley County in Missouri (Steyermark, 1949).

Pondberry is cited by Steyermark (1963) as one of the rare shrubs in the United States. This plant is verified as occurring in four to six states outside of Arkansas. The U.S. Fish and Wildlife Service classifies Pondberry as a Category 2 species, classified as endangered or threatened, pending further information. Ayensu and DeFilipps (1978) recommended Pondberry for national endangered status, Tucker (1974b) classified Pondberry as endangered in Arkansas, Berger and Neuner (1979) listed Pondberry as threatened in Louisiana.

Pondberry occurs in Arkansas in the Mississippi Embayment Region which has a varied topography of depressions and sandy knolls. Saucier (1978) discusses sand dunes and related eolian features of the lower Mississippi River Valley, including such areas in the St. Francis River Basin of Arkansas and Missouri. The Arkansas Natural Heritage Commission contracted an aerial survey over this area in March, 1984 to look for potential Pondberry sites. The Commission analyzed the results of this survey and determined the depressions with standing water and forest cover as the best areas to conduct a ground survey.

Seventeen such sites were selected as potential Pondberry locations with an additional 12 subdivisions from the original areas in a nine county area of Arkansas. The counties include: Clay, Greene, Jackson, Lawrence, Lee, Monroe, Phillips, Randolph and Woodruff. A ground survey was initiated in the spring of 1985 to search for this plant. All of the above areas were checked by walking through the sites to determine the presence or absence of Pondberry. This small shrub was found in seven of the 17 main areas and four of the 12 subdivisions in the above counties. The results were positive for one area each for Lawrence and Woodruff Counties and four areas were found with Pondberry in Jackson County. An additional site was also found in Clay County. This increases the county distribution from one to four for *Lindera melissifolia* in Arkansas.

Pondberry habitats in Arkansas are threatened by land clearing and many small populations have been damaged or destroyed since 1970 (personal communication from the Arkansas Natural Heritage Commission). One site of historical occurrence in Clay County for this shrub could not be verified in this study. Klomps (1980) mentions the destruction of an additional Arkansas site where land was converted to row crops. Clearing, levelling and destruction of mounds and depressions is currently taking place. It is hoped with the finding of additional sites during this study that some areas can be permanently preserved. Thanks are due the Arkansas Natural Heritage Commission for financial support for this research.

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EDWARD L. RICHARDS, Dept. of Biological Sciences, Arkansas State University, State University, Arkansas 72467, and STEVE L. ORZELL, Texas Natural Heritage Program, 1700 N. Congress Ave., Austin, Texas 78701.