A Checklist of Ferns in Lincoln Parish, Louisiana

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This is the first of a series of studies on the ferns of north central Louisiana. Consideration of distribution of fern species in this region has been neglected except for incomplete references made by Brown and Correll (1942) and Moore (1956). The present study was initiated to prepare a checklist of species and their habitats within Lincoln Parish.

Lincoln Parish is located in the central part of north Louisiana (Lat. 32°27′ to 32°45′N and Long. 92°25′ to 92°55′W). The terrain consists of low, rolling, sandy or clay hills. The present vegetation is mainly second growth coniferous forest, with hardwood species restricted to small stream valleys and in related swampy or boggy regions.

A preliminary survey indicated the existence of a number of probable fern habitats, such as open fence rows, open woodland, dense woodland, open bogs, and shaded bogs. The selection of twelve sites for examination and collection of fern species was made to include all the habitat types.

Prior to 1962, ten fern species had been reported from this area. These were: *Osmunda cinnamomea, Athyrium filix-femina, Thelypteris hexagonoptera, Polystichum acrostichoides, Pteridium aquilinum* var. *pseudocaudatum* (Brown & Correll, 1938); *Botrychium virginianum, Botrychium dissectum* var. *obliquum, Woodwardia areolata, Onoclea sensibilis,* and *Polypodium polypodiodes* (Moore, 1956).

During the present study, six species previously unreported from this area were found: *Asplenium platyneuron, Osmunda regalis* var. *spectabilis, Woodwardia virginica, Thelypteris normalis, Ophioglossum vulgatum,* and *Cystopteris fragilis.* In addition, the reported, but unconfirmed, presence of the following species were noted: *Woodsia obtusa, Athyrium thelypterioides, Adiantum pedatum,* and *Lygodium japonicum.*

DISTRIBUTION OF FERNS IN LINCOLN PARISH

ASPLENIUM PLATYNEURON (L.) Oakes.—The Ebony Spleenwort was collected in seven of the selected stations, always restricted to open, well-drained sandy sites. It was often found growing with herbaceous species along fence rows.

ATHYRIUM FILIX-FEMINA (L.) Roth ex Mertens.—The Lowland Lady Fern occurred in ten stations. The individual habitats varied from steep, moist, well shaded slopes to shaded, very moist bogs.

BOTRYCHIUM DISSECTUM Spreng. var. OBLIQUUM (Muhl.) Fern.—The Grape Fern was observed in seven of the assigned stations. The common habitat was shaded, moist, humus-rich soil forming high level banks along small streams.

BOTRYCHIUM VIRGINIANUM (L.) Sw.—The Rattlesnake Fern was found in five collecting stations, generally occurring along steep, shaded slopes that extended away from a stream basin.

CYSTOPTERIS FRAGILIS (L.) Bernh.—The Fragile Fern was observed in six stations, generally found in cut-over areas near surface water sources.

ONOCLEA SENSIBILIS L.—The Sensitive Fern occurred in six of the selected stations, usually occurring near surface water in sparsely shaded areas. In one site, plants were found under a low bridge, completely shaded.

OPHIOGLOSSUM VULGATUM L.—The Common Adder's Tongue was collected in two widely separated stations, but in similar habitats: shaded, well drained, level soil with a high humus content.

OSMUNDA CINNAMOMEA L.—The Cinnamon Fern was found in eight of the collecting sites. The specific habitat was a shaded, very moist, humus-rich soil. The maximum development occurred in semi-swampy to boggy sites.

OSMUNDA REGALIS L. var. SPECTABILIS (Willd.) A. Gray.—The Royal Fern occurred in eight stations and exhibited the most varied habitats of the species observed in this study. The maximum development was noted in specimens that occupied shaded,

moist, boggy areas. Specimens that occupied more open, drier areas were smaller.

POLYPODIUM POLYPODIOIDES (L.) Watt.—The Resurrection Fern was observed in ten selected stations. All specimens collected were epiphytic on the larger stems of several hardwood species, including *Ulmus americana, Quercus phellos, Nyssa sylvatica,* and *Fraxinus americana.*

POLYSTICHUM ACROSTICHOIDES (Michx.) Schott.—The Christmas Fern was found in eleven of the selected stations. The preferred habitat appeared to be shaded, steep slopes with a north-facing exposure.

PTERIDIUM AQUILINUM (L.) Kuhn var. PSEUDOCAUDATUM (Clute) Heller.—The Bracken Fern occurred in ten collecting stations. The specific habitat varied from open forest to open meadow sites on well-drained, sandy soil.

THELYPTERIS HEXAGONOPTERA (Michx.) Weatherby.—The Broad Beech Fern was collected in five of the selected stations. The habitat varied from well-shaded hillhides to shaded, moist bogs.

THELYPTERIS NORMALIS (C. Chr.) Moxley.—The Southern Shield Fern was not found in any of the collecting stations, but was discovered in a shaded ditch near Ruston. The specimen could have been an escape from an ornamental planting, but has lived for at least three years in the natural state and in this study was considered native to this area.

WOODWARDIA AREOLATA (L.) Moore.—The Dwarf Chain Fern was found in seven of the stations. The only observed habitat was a well-shaded, moist bog.

WOODWARDIA VIRGINICA (L.) J. E. Sm.—The Virginia Chain Fern was observed in two widely separated stations, but of similar habitat type: shaded, moist bog.

This study has established the presence in Lincoln Parish of approximately 35 percent of the recognized fern species of Louisiana.

LITERATURE CITED

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Shorter Notes

A SELAGINELLA NEW TO MEXICO AND TWO NEW STATIONS.—Although Knobloch and Correll's *Ferns and Fern Allies of Chihuahua, Mexico* described most of the species and varieties known to occur in Chihuahua, the authors realized that other taxa would be found there in time. Being the largest state in Mexico, there are many areas yet untouched botanically. In August of 1964 I accompanied a small group of naturalists from El Paso, Texas into the Juarez Mountains (Sierra del Paso del Norte). This range borders the city of Juarez on the south and, in fact, the suburbs of the city have extended into the lower, northern part of the range. At the base of Cerro Bola in the shade of some large boulders I found *Selaginella mutica* D. C. Eaton var. *mutica* (*Knobloch 2110*). This is the first record of this species in Mexico. Its occurrence near the border in Mexico is not surprising in view of its presence in the Franklin Mountains just to the north across the Rio Grande River in the United States. The identification was kindly checked by Dr. Rolla Tryon, Jr., and specimens have been deposited at the Gray Herbarium and the herbarium of Michigan State University.

Five days earlier I made a small collection in the vicinity of the railroad station at Temoris on the line from Ojinaga, Chihuahua, to Topolobampo, Sinaloa. This is a new locality record for all of the specimens gathered there, including *Selaginella pallescens* (Presl) Spring (*Knobloch 2106*) and *S. rupincola*, (*Knobloch 2104*).—I. W. KNOBLOCH, *Department of Botany and Plant Pathology, Michigan State University, East Lansing, Michigan 48823.*

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