

HOST SPECIFICITY OF MISTLETOE IN MIDDLE TENNESSEE III: DAVIDSON COUNTY

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ABSTRACT

Seventeen species of deciduous trees were reported as serving as hosts of *Phoradendron flavescens* in Davidson County. The most commonly infested host species was *Ulmus americana*, which accounted for almost half of the host trees identified.

INTRODUCTION

Phoradendron flavescens (Pursh) Nutt. (Loranthaceae), the common mistletoe of the southeastern United States, has been found to infest preferentially various host species within different portions of its wide range (Gleason, 1963). James (1958) demonstrated that mistletoe occurred most often on *Carya* in eastern Tennessee; Statler (1971) found that *Carya ovata* was the most common host in a North Carolina forest. Eleuterius (1976) reported a high incidence of infection of *Quercus nigra* by the parasite in southern Mississippi.

This is the third of a series of county surveys dealing with the host specificity of *Phoradendron flavescens* in middle Tennessee. In the first (Rucker and Hemmerly, 1976), fourteen species of trees were reported as serving as hosts for mistletoe in Rutherford County. In the second (Ferguson and Hemmerly, 1976), eighteen species of trees were found as hosts for the parasite in Maury County. Both of these counties lie entirely within the Central Basin.

The present study, conducted winter 1975 and spring 1976, deals with the host specificity of *P. flavescens* in Davidson County, which lies principally within the northwestern portion of the Central Basin. A representative selection of major highways lying in all four quadrats of the county were traveled from the center of the county to their outer limits.

RESULTS

The following list includes all trees which were found to be parasitized to any degree by mistletoe.

1. *Acer saccharinum* L.—one tree.
2. *A. saccharum* Marsh.—seven trees.
3. *Carya glabra* (Mill.) Sweet.—one tree.
4. *C. ovata* (Mill.) K. Koch.—seven trees.
8. *Fraxinus americana* L.—fourteen trees.
5. *C. tomentosa* Nutt.—five trees.
6. *Celtis laevigata* Willd.—two trees.
7. *Cercis canadensis* L.—one tree.

9. *Juglans nigra* L.—two trees.
10. *Liquidambar styraciflua* L.—two trees.
11. *Maclura pomifera* (Raf.) Schneid.—three trees.
12. *Plantanus occidentalis* L.—one tree.
13. *Quercus falcata* Michx.—three trees.
14. *Q. rubra* L.—five trees.
15. *Q. meulenberghii* Engelm.—five trees.
16. *Ulmus americana* L.—sixty-five trees.
17. *U. rubra* L.—eight trees

The above includes 132 trees, of 17 species belonging to 11 genera, which serve as hosts of *P. flavescens* in Davidson County. Almost half (49%) were of a single species, *Ulmus americana*; the second most common host species, *Fraxinus americana*, was considerably less common (11%). All hosts were native deciduous trees.

The heaviest concentration of mistletoe was found in residential areas of the southern portion of the county, between Franklin Road and Granny White Pike. The parasite was conspicuously absent both within the Nashville city limits previous to Metropolitan government, and also within the northwestern portion of the county which lies within the Highland Rim.

Although it is recognized that *P. flavescens* damages various native trees within the western part of its range (Gill and Hawksworth, 1961), and also adversely affects water oaks in southern Mississippi (Eleuterius, 1976), no apparent damage to the hosts was observed in this study.

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