

A FLORISTIC SURVEY OF THE PROPOSED ROTARY CLUB PARK
MONTGOMERY COUNTY, TENNESSEE

A Research Paper

Presented to

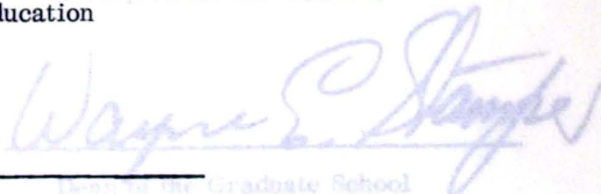
The Graduate Council of
Austin Peay State University


Major Professor

In Partial Fulfillment
of the Requirements for the Degree

Master of Arts
in Education

Accepted for the Council:


Dean of the Graduate School

by

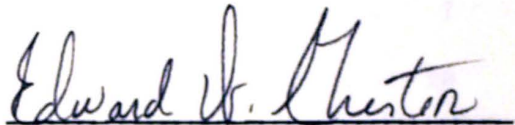
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August 1969

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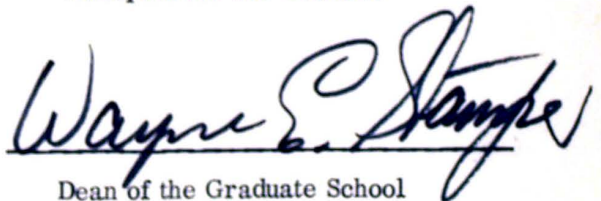
To the Graduate Council:

I am submitting herewith a Research Paper written by Bernadine Powell Francis entitled "A Floristic Survey of the Proposed Rotary Club Park, Montgomery County, Tennessee." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts in Education, with a major in Biology.

A handwritten signature in dark ink, reading "Edward W. Heston". The signature is written in a cursive style with a horizontal line underneath the name.

Major Professor

Accepted for the Council:

A handwritten signature in dark ink, reading "Wayne E. Stamps". The signature is written in a cursive style with a horizontal line underneath the name.

Dean of the Graduate School

ACKNOWLEDGEMENTS

The author wishes to express sincere appreciation to Dr. Edward W. Chester, Austin Peay State University, who suggested the problem and who aided and counseled her during the course of the study; to Dr. Haskell Phillips and Dr. Fred Bunger, the other members of the graduate committee, for their counsel and help; to Mrs. Wilmoth Wallace, principal of the Fort Campbell Middle School, for allowing the use of school facilities; and to her three sons, Steven, Clarence, and Wesley, who assisted in the field work.

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I. INTRODUCTION

Several recent studies have been conducted concerning the flora of the Northwestern Highland Rim of Tennessee, specifically, Montgomery County. These include papers by Duncan (1965), Yarbrough (1966), Scott (1967), and Scott (1967). In addition, Shanks (1952) summarized the woody flora of the entire state and Clebsch (1957) published a report on the trees of the area. None of these however, were floristic studies of relatively small areas. This investigation attempts such a study in a newly created park in the Western Rim area.

The Rotary Club Park is located southeast of Clarksville in District Eleven of Montgomery County, Tennessee, adjacent to the junction of U.S. 41-A and the 41-A Bypass (Figure 1). The park consists of about fifty acres purchased for the people of Montgomery County and will constitute a general recreational area upon completion.

It was the purpose of this investigation to determine the floristic elements of the park before major disturbances were initiated. The result will be an annotated checklist of the vascular species present. Such a checklist will be valuable as a permanent record of the flora of the area and will be available as a reference list for future work and for the park visitors. In addition, the author will gain knowledge of the vegetation of the area and mastery of this phase of biology that cannot be gained in any other way.

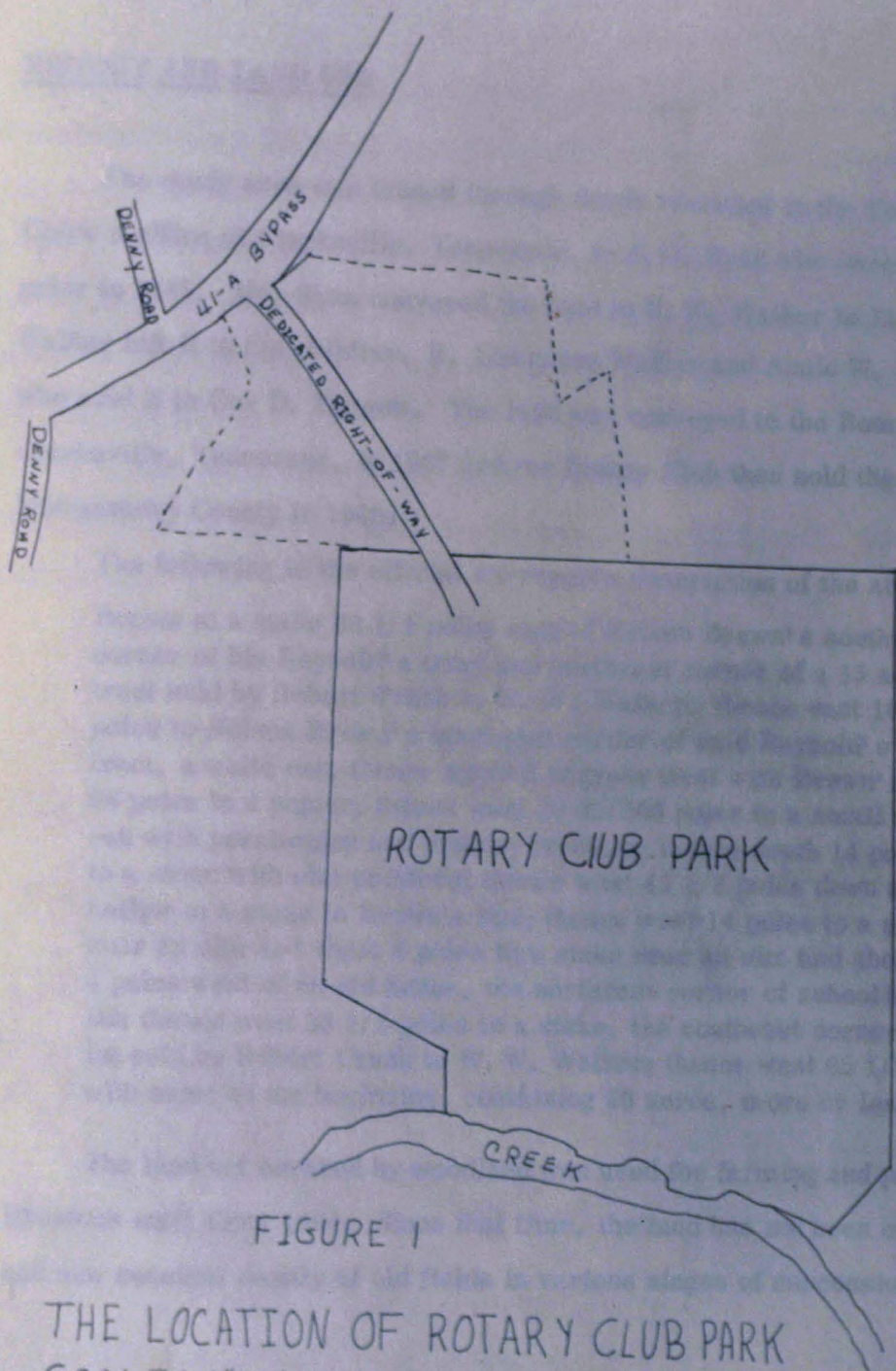


FIGURE 1

THE LOCATION OF ROTARY CLUB PARK
SCALE: 1"=400'

II. THE STUDY AREA

HISTORY AND LAND USE

The study area was traced through deeds recorded in the County Court Clerk's office at Clarksville, Tennessee, to J. G. Ryan who owned the land prior to 1885. Mr. Ryan conveyed the land to R. W. Walker in 1885 and Mr. Walker left it to his children, R. Lawrence Walker and Annie W. Hutchison, who sold it to Coy D. Baggett. The land was conveyed to the Rotary Club of Clarksville, Tennessee, in 1967 and the Rotary Club then sold the land to Montgomery County in 1969.

The following is the official surveyor's description of the area:

Begins at a stake 38 1/2 poles east of Nelson Brown's southwest corner of his Reynold's tract and northeast corner of a 15 acre tract sold by Robert Crank to W. W. Walker, thence east 103 1/2 poles to Nelson Brown's southeast corner of said Reynold's tract, a white oak; thence south 2 degrees west with Brown's line 66 poles to a poplar; thence west 29 95/100 poles to a small white oak with persimmon and hickory pointers; thence south 14 poles to a stone with elm pointers; thence west 41 1/2 poles down a hollow to a stone in Brown's line; thence west 14 poles to a stake near an elm and about 4 poles to a stake near an elm and about 4 poles west of an old house, the northeast corner of schoolhouse lot; thence west 33 1/2 poles to a stake, the southeast corner of a lot sold by Robert Crank to W. W. Walker; thence west 65 1/2 poles with same to the beginning, containing 50 acres, more or less.

The land not covered by woodland was used for farming and pasturing livestock until about 1960. Since that time, the land has not been cultivated and now consists mostly of old fields in various stages of succession.

DESCRIPTION OF THE AREA

The topography of the area includes rolling slopes and a small amount of bottomland along the creek on the southern boundary. The elevation ranges from 450 to 530 feet. A large part of the land is old fields while a smaller portion is covered in woodland. An area about one hundred feet wide and extending from the southwest boundary northeastward across the property is kept relatively clear of large plant growth due to the presence TVA power lines (Figure 2).

A discussion of the geology, soils, and climate of this area may be found in works by Duncan (1965), Yarbrough (1966), Scott (1967), and Scott (1967).

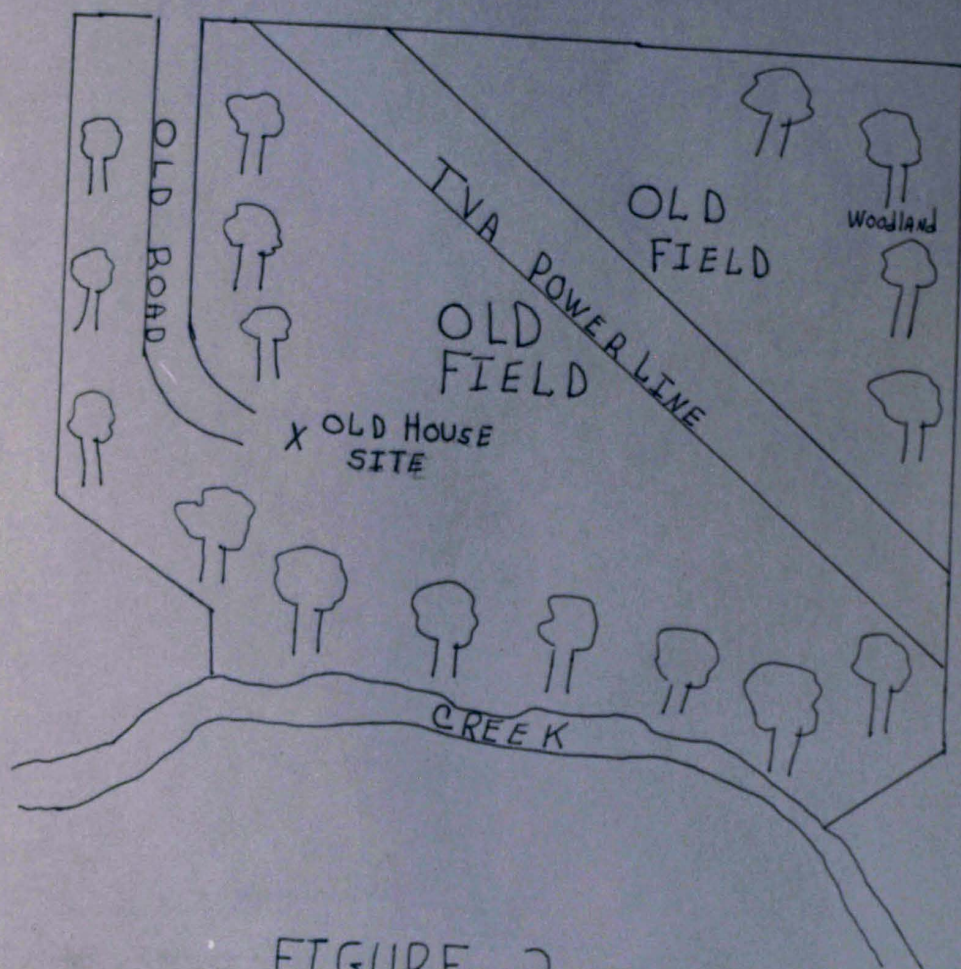


FIGURE 2

MAP OF THE STUDY AREA

III. METHODS AND PROCEDURES of the study:

The survey was begun in August 1968 and periodic visits were made to the area from that time until July 1969. A map of the park was used to give an accurate picture of the terrain and to designate the areas from which the specimens were collected.

Specimens were collected and prepared according to standard field and herbarium procedures. Voucher specimens identified by the author have been deposited in the herbarium of Austin Peay State University. Scientific names and arrangement of taxa follow Fernald (1950).

IV. ANNOTATED CHECKLIST

The following plants were collected during the course of the study:

POLYPODIACEAE

Polystichum acrostichoides (Michx.) Schott. Christmas Fern. Moist woodland.

Asplenium platyneuron L. Elbony Spleenwort. Moist Woodland.

PINACEAE

Juniperus virginiana L. Red Cedar. Woodland.

GRAMINEAE

Bromus purgans L. Brome grass. Old field.

Elymus canadensis L. Wild rye. Bottomland.

Digitaria ischaemum var. mississippiensis (Gatt) Fern. Crab-grass. Old field.

Panicum capillare L. Old-witch-grass. Old field.

Panicum linearifolium var. Wernerii (Scribn.) Fern. Linear-leaved panic grass. Old field.

Panicum laxiflorum Lam. Loosely flowered panic grass. Old field.

Setaria glauca (L.) Beauv. Foxtail grass. Old field.

Erianthus alopecuroides (L.) Ell. Woolly beardgrass. Old field.

Andropogon virginicus var. glaucus Hack. Beardgrass. Old field.

Sorghum halepense (L.) Pers. Johnson-grass. Old field.

CYPERACEAE

Cyperus strigosus L. Sedge. Along creek.

Carex Frankii Kunth. Sedge. Along creek.

COMMELINACEAE

Tradescantia virginiana L. Spiderwort. Woodland.

LILIACEAE

Allium vineale L. Field garlic. Old field.

Hemerocallis fulva L. Orange day-lily. Along creek.

Smilacina racemosa (L.) Desf. False Solomon's seal. Woodland.

Ornithogalum umbellatum L. Star of Bethlehem. Along creek.

Polygonatum biflorum (Walt.) Ell. Solomon's seal. Woodland.

Trillium cuneatum Raf. Purple trillium. Woodland.

Smilax ecirrhata (Engelm.) S. Wats. Greenbrier. Open woods.

Smilax Bon-nox var. hederaefolia (Beyrich) Fern. China-brier. Old field.

Smilax tamnoides var. hispida (Muhl.) Fern. Bristly catbrier. Low woods.

Smilax glauca Walt. Sawbrier. Old field.

SALICACEAE

Salix nigra Marsh. Black willow. Along creek.

JUGLANDACEAE

Juglans nigra L. Black walnut. Woodland.

Carya tomentosa Nutt. Mockernut hickory. Woodland.

FAGACEAE

Fagus grandifolia Ehrh. Beech. Woods.

Quercus alba L. White oak. Woodland.

Quercus prinus L. Chestnut oak. Woodland.

Quercus rubra L. Northern Red oak. Woodland.

Quercus coccinea Muenchh. Scarlet oak. Edge of old field.

Quercus palustris Muenchh. Pin oak. Woodland.

Quercus velutina Lam. Black oak. Woodland.

Quercus falcata Michx. Southern Red oak. Woodland.

Quercus imbricaria Michx. Shingle oak. Edge of old field.

ULMACEAE

Ulmus rubra Muhl. Slippery elm. Woodland.

Ulmus pumila L. Chinese elm. Woodland.

Ulmus alata Michx. Winged elm. Old field.

Celtis occidentalis L. Hackberry. Woodland.

MORACEAE

Morus rubra L. Red mulberry. Woodland.

POLYGONACEAE

Rumex verticillatus L. Water-dock. Along creek.

Rumex acetosella L. Sheep-sorrel. Old field.

Polygonum persicaria L. Smartweed. Along creek.

CHENOPODIACEAE

Chenopodium album L. Pigweed. Old field.

PHYTOLACCACEAE

Phytolacca americana L. Poke. Old field.

CARYOPHYLLACEAE

Agrostemma githago L. Purple cockle. Old field (bottomland).

RANUNCULACEAE

Anemonella thalictroides L. Rue-anemone. Woodland.

Anemone caroliniana Walt. Anemone. Along creek.

BERBERIDACEAE

Podophyllum peltatum L. May-apple. Woodland.

MENISPERMACEAE

Calycocarpum lyoni (Pursh) Gray. Lyon's cupseed. Woodland.

MAGNOLIACEAE

Liriodendron tulipifera L. Yellow poplar. Woodland.

Asimina triloba (L.) Dunal. Pawpay. Along creek.

LAURACEAE

Sassafras albidum (Nutt.) Nees. White sassafras. Old field.

Lindera benzoin L. Spicebush. Woodland.

CRUCIFERAE

Lepidium campestre (L.) R. Br. Cow-cress. Old field.

Capsella Bursa-pastoris (L.) Medic. Shepherd's purse. Old field.

Sisymbrium officinale var. leiocarpum DC. Mustard. Old field.

Arabis laevigata (Muhl.) Pour. Sickie pod. Old field.

CRASSULACEAE

Sedum ternatum Michx. Stonecrop. Moist hillside along creek.

SAXIFRAGACEAE

Hydrangea arborescens L. Wild hydrangea. Along creek.

PLATANACEAE

Platanus occidentalis L. Sycamore. Woodland.

ROSACEAE

Potentilla simplex Michx. Five-fingers. Open woods.

Rubus nefrens Bailey. Dewberry. Along creek.

Rubus argutus Link. Blackberry. Old field.

Rosa carolina L. Carolina rose. Along creek.

Prunus serotina Ehrh. Black cherry. Woodland.

LEGUMINOSAE

Gleditsia triacanthos L. Honey-shuck. Woodland.

Cercis canadensis L. Redbud. Woodland.

Trifolium pratense L. Red clover. Old field along creek.

Lespedeza virginica (L.) Britt. Slender bush clover. Old creek.

Lespedeza intermedia (S. Wats.) Britt. Intermediate lespedeza. Dry open woods.

Lespedeza cuneata (Dumont) G. Don. Bush-clover. Old field.

Lespedeza stipulacea Maxim. Korean clover. Old field.

OXALIDACEAE

Oxalis stricta L. Wood-sorrel. Old field.

GERANIACEAE

Geranium carolinianum L. Wild geranium. Old field.

EUPHORBIACEAE

Croton monanthogynus Michx. Prairie-tea. Old field.

Euphorbia maculata L. Eyebane. Old field.

ANACARDIACEAE

Rhus glabra L. Smooth sumac. Old field and woodland.

Rhus copallina L. Winged sumac. Old field.

CELASTRACEAE

Euonymus atropurpureus Jacq. Burning-bush. Along creek.

Euonymus obovatus Nutt. Running strawberry-bush. Along creek.

ACERACEAE

Acer saccharum Marsh. Sugar maple. Woodland and along creek.

Acer negundo L. Boxelder. Old field.

PASSIFLORACEAE

VITACEAE

Passiflora L. Passion flower. Old field.

Parthenocissus quinquefolia (L.) Planch. Virginia creeper. Woodland.

Vitis Cinerea Engelm. Pigeon grape. Along creek.

Vitis palmata Vahl. Cat-grape. Woodland.

Vitis bicolor L. Evening primrose. Old field.

Vitis laciniata Hill. Evening primrose. Old field.

TILIACEAE

Tilia americana L. American basswood. Woodland.

Tilia parvifolia L. Black snakeroot. Woodland.

MALVACEAE

Malva L. Queen Anne's Lace. Old field.

Sida spinosa L. Prickly mallow. Old field.

CORNACEAE

GUTTIFERAE

Cornus L. Dogwood. Woodland.

Ascyrum Hyericoides var. multicaule (Michx.) Fern. St. Andrew's cross.
Old field.

ERICACEAE

Erica Torr. Sugar. Along creek.

VIOLACEAE

Viola Kitabelliana var. Rafinesquii (Greene) Fern. Field pansy. Woods.

NYSSACEAE

Nyssa sylvatica var. dilatata Fern. Black gum. Woodland.

PASSIFLORACEAE

Passiflora incarnata L. Passion flower. Old field.

ONAGRACEAE

Oenothera biennis L. Evening primrose. Old field.

Oenothera laciniata Hill. Evening primrose. Old field.

UMBELLIFERAE

Sanicula canadensis L. Black snakeroot. Woodland.

Daucus carota L. Queen Anne's Lace. Old field.

CORNACEAE

Cornus florida L. Dogwood. Woodland.

ERICACEAE

Vaccinium vacillans Torr. Sugar-huckleberry. Along creek.

EBENACEAE

Diospyros virginiana L. Persimmon. Old field.

OLEACEAE

Fraxinus americana L. White ash. Woodland.

ASCLEPIADACEAE

Asclepias tuberosa L. Butterfly weed. Old field.

CONVOLVULACEAE

Ipomea hederacea (L.) Jacq. Morning-glory. Old field.

Cuscuta cephalanthi Engelm. Dodder. Old field.

VERBENACEAE

Verbena simplex Lehm. Narrow-leaved verian. Old field.

LABIATAE

Scutellaria elliptica Muhl. Hairy skullcap. Dry woodland.

Pycnanthemum virginianum (L.) Durand & Jackson. Virginia mint. Dry woodland.

SOLANACEAE

Physalis heterophylla Nees. Ground cherry. Old field.

SCROPHULARIACEAE

Verbascum thapsus L. Common mullein. Old field.

Veronica peregrina L. Speedwell. Along creek.

BIGNONIACEAE

Campsis radicans (L.) Seem. Trumpet-creeper. Old field.

ACANTHACEAE

Ruellia strepens L. Ruellia. Wooded bottomland.

PLANTAGINACEAE

Plantago major L. Large plantain. Old field.

Plantago lanceolata L. English plantain. Roadside.

Plantago aristata Michx. Bracted plantain. Old field.

Plantago virginica L. Hoary plantain. Old field.

RUBIACEAE

Galium aparine L. Goosegrass. Woodland along creek.

Galium trifolium Michx. Sweetscented bedstraw. Woodland.

Galium cireaezans Michx. Woodland along creek.

Diodia teres Walt. Buttonweed. Old field.

Houstonia purpurea L. Purple houstonia. Open woods.

CAPRIFOLIACEAE

Lonicera japonica Thunb. Honeysuckle. Old field and woodland.

Symphoricarpos orbiculatus Moench. Coralberry. Open woods.

Viburnum rufidulum Raf. Black haw. Woodland along creek.

Sambucus canadensis L. Elder. Old field.

VALERIANACEAE

Valerianella radiata (L.) Dufr. Corn-salad. Along creek.

COMPOSITAE

Vernonia noveboracensis (L.) Michx. New York ironweed. Along creek.

Elephantopus carolinianus Willd. Carolina elephant's foot. Open woods.

Eupatorium fistulosum Barratt. Joe-pye-weed. Along creek.

Eupatorium serotinum Michx. Thoroughwort. Border of woodland.

Eupatorium coelestinum L. Mistflower. Along creek.

Solidago juncea Ait. Early goldenrod. Old field.

Solidago altissima L. Tall goldenrod. Old field.

Aster pilosus Willd. Starwort. Dry open woods.

Erigeron strigosus Muhl. Daisy fleabane. Old field.

Erigeron canadensis L. Horseweed. Old field.

Antennaria plantaginifolia (L.) Hook. Field pussytoes. Open woods.

Gnaphalium obtusifolium var. praecox Fern. Catfoot. Open woods.

Ambrosia trifida L. Buffalo-weed. Bottomland.

Ambrosia artemisiifolia var. elator (L.) Descourtils. Common ragweed. Old field.

Rudbeckia hirta L. Black-eyed Susan. Old field.

Helianthus annuus L. Sunflower. Old field.

Helianthus divaricatus L. Sunflower. Old field.

Helenium tenuifolium Nutt. Fine-leaved sneezeweed. Old field.

Achillea millefolium L. Yarrow. Old field.

Chrysanthemum Leucanthemum L. Ox-eye-daisy. Old field.

Carduus nutans L. Nodding thistle. Old field.

Taraxacum officinale Weber. Dandelion. Old field.

Lactuca canadensis var. latifolia Ktze. Wild lettuce. Old field.

Lactuca hirsuta Muhl. Hairy lettuce. Old field.

V. DISCUSSION

A floristic survey of the proposed Rotary Club Park in Montgomery County, Tennessee indicated that the Compositae was the most abundant family in the area. Solidago juncea, Erigeron strigosus, Helianthus divaricatus, Taraxacum officinale, Rudbeckia hirta, and Chrysanthemum Leucanthemum were the most abundant of the twenty-four composites found. The remaining one hundred twenty-eight species found represented fifty-seven other families. The abundance of composites indicates the old-field nature of most of the area.

Few unique habitats or distributions were observed in the study area. Some species were limited to specific areas, however. For example, Sedum ternatum was found only on the north bank of the creek which forms one of the park boundaries. Asplenium platyneuron was found in abundance only along the edge of a woodland near the northeast boundary and was one of the two ferns found. Salix nigra and Tradescantia virginiana were the least common species observed. Both were observed near the creek boundary.

The woodlands of the area were found to consist of second-growth timber with little previous management. The most abundant tree species were oaks and included Quercus alba, Q. Prinus, Q. rubra, Q. coccinea, Q. palustris, Q. velutina, Q. falcata, and Q. imbricaria. Red cedar, Juniperus virginiana, was also found to be abundant on limestone outcroppings. Podophyllum peltatum and Anemonella thalictroides were found to be the most abundant species on the forest floor during the spring and were replaced by numerous composites during the summer and fall.

Generally it may be stated that the flora of the area is rather sparse due to successional nature of the land and a lack of diverse habitats. The influence of major disturbances on the vegetation as the area is developed for its intended purposes will undoubtedly further reduce the floristic components present.

VI. SUMMARY

A floristic study was made of the proposed Rotary Club Park, Clarksville, Tennessee. Collections were made from August, 1968 to July, 1969. An annotated checklist was prepared which included fifty-eight families, one hundred seventeen genera, and one hundred fifty-two species. All specimens were placed in the herbarium of Austin Peay State University.

The proposed Rotary Club Park consists of fifty acres, more or less, located southeast of Clarksville, Tennessee. The study area was traced through deeds recorded at the County Court Clerk's office in Clarksville to 1885 which was the earliest written record for that property.

In 1885 the land was conveyed from Mr. J. G. Ryan to W. W. Walker and Mr. Walker left the land to his children, R. Lawrence Walker and Annie W. Hutchison, who sold it to Coy D. Baggett. Mr. Baggett conveyed the land to the Rotary Club in 1967 and 1969 the Rotary Club sold it to Montgomery County. Upon its completion the park is to be a general recreational facility for the people of Montgomery County.

The study area was found to consist mostly of old cultivated fields in various stages of succession. The woodlands present were mostly second-growth oak-hickory with red cedar abundant on limestone outcroppings. The most abundant old-field species observed were Plantago virginica, Andropogon virginicus, Erigeron strigosus, Sassafras albidum, Solidago juncea, Potentilla simplex, and Smilax glauca.

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