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The Vascular Flora of Fort Eustis, City of Newport News, Virginia

Phyllis Ann Kline Appler

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THE VASCULAR FLORA OF FORT EUSTIS.
CITY OF NEWPORT NEWS, VIRGINIA

A Thesis

Presented to

The Faculty of the Department of Biology
The College of William and Mary in Virginia

In Partial Fulfillment
Of the Requirements for the Degree of
Master of Arts

by

Phyllis Kline Appler

1974

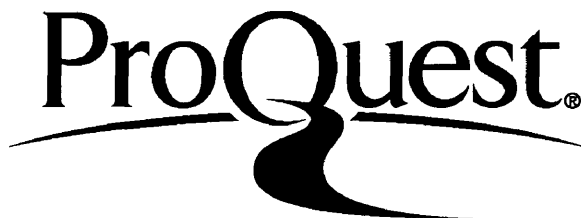
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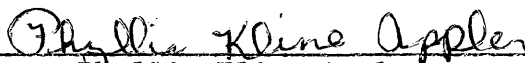
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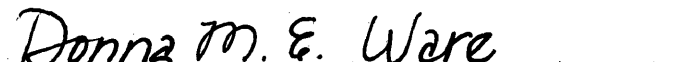
This thesis is submitted in partial fulfillment of
the requirements for the degree of


Master of Arts


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^a See pocket inside of back cover.

ABSTRACT

The area studied includes all of Fort Eustis, a total of 8,391 acres. It is bounded by the Warwick River and the Fort Eustis sanitary landfill north of Bailey Creek on the east and by the James River on all other sides. Major communities present are 1) brackish marshes 2) freshwater lakes and marshes 3) pine stands 4) pine-deciduous woods 5) mature beech-oak woods 6) roadsides and other mowed areas and 7) old homesites.

Collections were made from September 1972 through June 1974, and specimens were collected of 538 species of 322 genera, representing 107 families. Of these species, 404 have not previously been reported for the city of Newport News (formerly Warwick County) and 20 are records for the Peninsula of Virginia. Some specimens of particular interest are Myriophyllum pinnatum, Draba brachycarpa, Plantago heterophylla, and Verbesina virginica.

Climate and phytogeography of the study area are discussed. In the Appendix 1,129 species which have been recorded for the Peninsula of Virginia are listed.

THE VASCULAR FLORA OF FORT EUSTIS
CITY OF NEWPORT NEWS, VIRGINIA

INTRODUCTION

The area selected for this study was the United States Army Post of Fort Eustis, which covers a total of 8,391 acres. Fort Eustis is a peninsula in the James River about ten miles below Jamestown. The post is located in the northwest portion of the City of Newport News, which is one of the six cities and counties making up the Peninsula of Virginia. Fort Eustis is bounded by the Warwick River and the Fort Eustis sanitary landfill north of Bailey Creek on the east and by the James River on all other sides.

This area was chosen for study largely because it is located in the City of Newport News. No extensive floristic work had previously been done in Newport News (formerly Warwick County), and Massey (1961) lists few records for this political subdivision. Erlanson (1924) recorded a few Warwick County specimens and Harvill (1965) collected there to a limited extent. In preparation for the publication of a state-wide flora, the faculty of the Biology Department of the College of William and Mary has assumed responsibility for studying the vascular plants of the Peninsula of Virginia as its contribution toward the efforts of the Flora Committee of the Virginia Academy of Science. Students and faculty have worked in New Kent, Charles City, James City, and York Counties. A summary of their findings is included in the Appendix. A study in Newport News was needed to give a more complete inventory of Peninsula plants. Fort Eustis was well suited as a study area since it provided several community types which should be fairly representative of the City as a whole.

These plant communities are 1) brackish marshes 2) freshwater lakes and marshes 3) pine stands 4) pine-deciduous woods 5) beech-oak woods 6) roadsides and other mowed areas and 7) old homesites.

The total geographic range of each species was also recorded. Harvill has noted phytogeographic relationships of Peninsula plants in several articles (1965, 1972, 1973b), and in a similar though less detailed manner this study lists the geographic affinities of all of the plants found at Fort Eustis.

During the course of this study, 538 species of plants and two additional varieties were collected. They represent 322 genera of 107 families. This number includes slightly less than half the total species recorded for the Peninsula in the Appendix.

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HISTORY

Mulberry Island makes up a large part of the area now known as Fort Eustis. Although it appears on most maps as a peninsula, Mulberry Island is now separated from the rest of the post by a canal. Jester (1961) reports that the first records of Mulberry Island's existence appear in 1610. It has been inhabited since 1618 (Porter, 1936), by which time it had already acquired its name, apparently from native mulberries growing in the area. The planting of mulberries for silkworm culture did not occur until several years after the name of the area was in use. The most famous early settler on Mulberry Island was John Rolfe, known for his association with tobacco and Pochahontas. He was presumably killed on Mulberry Island in the Massacre of 1622. Only one of the early houses of the colonial period, the Matthew Jones House, remains standing. The other old homesites are numerous and recognizable by their characteristic persisting and successional vegetation.

The Civil War left visible traces at Mulberry Point where Fort Crafford, a Confederate fortification, was constructed. Much of the area was under cultivation until 1918 when the Federal Government acquired Mulberry Island and the tract to the northeast on which the main post is now located. The Fort Eustis area was used as an artillery training center during World War I, then abandoned and used for other Federal activities, including bombing practice, until its reactivation during World War II. Craters and other marks of wartime use persist.

The present function of Fort Eustis is chiefly as a Transportation Training Command Base. Most of the activity there has allowed the preservation of large wooded areas in various stages of succession, although some logging has taken place. The wooded tracts are professionally managed for wildlife utilization by the Office of Game Management. The future seems to include the protection of historically interesting sites at Fort Eustis, and it is hoped that the floristically valuable areas can be preserved as well.

CLIMATE

Fort Eustis is generally a low-lying area. Much of the Mulberry Island sector lies only slightly above sea level and seldom exceeds 10 feet in elevation. On the northeast segment of the post, however, elevation commonly reaches 30 to 35 feet in the vicinity of the Warwick River, Bailey Creek, and Lake Eustis, where considerable ravine formation has occurred.

The climate is a mild one, similar to that described by Barans (1973) for James City County. Temperatures given here (Table 1) are those recorded for the City of Newport News, so actual Fort Eustis readings could be slightly different. The climate of the whole area is tempered in winter by the presence of large bodies of water. Since Fort Eustis is a peninsula extending into the James, its weather might be expected to be somewhat less variable than that of the central recording station in Newport News. Temperatures reached an average high of 98.6° during the twenty-five year period from 1949 to 1973 and an average low of 14.8° . Average yearly temperature is 60.8° , about 5° higher than Barans recorded for the Williamsburg area. This may appear insignificant, but the longer period between frosts results in an average growing season of 235 days rather than the 195 days found in Williamsburg. Annual rainfall varied from 36.07 inches to 55.46 inches for the years between 1949 and 1973 with a mean of 45.82 inches, which is about the same as that listed for Williamsburg. The rainfall is well distributed throughout the year (Table 2).

TABLE 1
CLIMATOLOGICAL DATA ^a

Year	Annual mean temp. °F	High temp. °F	Low temp. °F	PPT. total annual in.	Date of last spring min. of 32°	Date of first fall min. of 32°	No. of days between frosts
1949	63.5	101	26	45.36	3-19	11-26	252
1950	--	--	--	--	--	--	-- b
1951	--	--	--	--	--	--	--
1952	62.8	105	17	41.19	3-16	10-29	227
1953	63.6	101	19	36.78	3-9	11-7	243
1954	--	--	20	42.47	4-1	11-4	217
1955	60.9	99	17	40.26	3-28	11-19	236
1956	--	100	24	51.80	4-21	11-23	216
1957	61.5	98	14	50.79	3-2	11-11	254
1958	59.1	98	11	55.46	3-10	11-30	265
1959	61.7	101	10	42.30	3-29	11-18	234
1960	60.4	97	14	48.81	3-25	12-1	251
1961	61.2	98	14	49.17	3-18	11-29	256
1962	60.0	97	12	51.96	3-8	12-7	274
1963	--	98	14	45.51	3-6	--	--
1964	--	100	15	48.85	3-31	--	--
1965	--	--	--	--	--	--	--
1966	58.9	97	12	42.17	4-3	11-29	240
1967	58.9	96	13	43.96	6-2	11-16	167
1968	60.5	102	11	36.07	3-24	11-21	242
1969	59.5	96	17	50.29	3-16	11-15	244
1970	60.3	97	7	42.36	3-31	11-24	238
1971	60.3	96	11	47.67	3-27	11-8	226
1972	--	96	19	52.15	4-9	10-20	194
1973	60.3	97	8	42.58	4-13	--	--
Avg.	60.8	98.6	14.8	45.82	3-27	11-19	236

^aAdapted from U. S. Dept. of Commerce National Oceanic and Atmospheric Administration. 1949-1973. Annual Summary of Climatological Data for Virginia.

^bData unavailable.

TABLE 2

FIVE YEAR AVERAGES OF MONTHLY PRECIPITATION^a
(inches)

	1949 to 1953	1954 to 1958	1959 to 1963	1964 to 1968	1969 to 1973
January	2.51	3.61	3.19	4.62	3.20
February	4.87	4.01	3.81	3.36	3.56
March	3.30	4.59	3.43	2.67	4.19
April	2.89	3.69	2.87	2.16	3.28
May	3.58	4.22	3.57	3.74	2.73
June	1.75	2.69	5.27	2.84	4.53
July	3.96	4.22	5.90	4.36	4.98
August	6.53	6.75	4.38	5.64	4.54
September	4.11	4.16	4.96	4.69	5.51
October	1.57	4.27	3.90	2.87	4.37
November	3.91	2.89	3.09	1.97	2.26
December	2.74	3.06	3.18	3.87	3.87
Average total	41.72	48.16	47.65	42.79	47.02

^aAdapted from U. S. Dept. of Commerce National Oceanic and Atmospheric Administration. 1949-1973. Annual Summary of Climatological Data for Virginia.

METHODS

The collection of specimens began on September 21, 1972 and continued until June 17, 1974. Approximately two collecting trips were taken each week during the growing season, with occasional trips in the spring of 1974. Collections were made in triplicate when possible. A complete set of voucher specimens is deposited in the Herbarium of the College of William and Mary. The other two sets will be deposited in the herbaria of the University of North Carolina at Chapel Hill and of Old Dominion University.

For identification of specimens, keys in the following manuals were used: Radford, Ahles, and Bell (1968), Fernald (1950), Harvill (1970), Gleason (1952), and Hitchcock (1950). Specimens of Poaceae and Cyperaceae were verified by A.M. Harvill.

In the annotated checklist, nomenclature and sequence of families and genera follow Radford, Ahles, and Bell (1968) as do common names. In addition to the common name, if applicable, the relative abundance, habitat, range, and collection number are listed for each species. If a plant is rare, its abundance is listed in terms of the number of plants or size of the colony. Otherwise abundance is defined as occasional, common, abundant, or very abundant. Geographic range is given according to the outline listed in the section on Phytogeography. Collection numbers appear in parentheses at the end of each entry. If a plant is not recorded by Massey (1961) Harvill (1965, 1973a), or Mazzeo (1972, 1973)

as occurring in Warwick County, it is considered a record for the City of Newport News. In order for a species to be considered a record for the Peninsula of Virginia, it must not have been reported by Massey (1961), Harvill (1965, 1973a), Mazzeo (1972, 1973) Barans (1973) or Davis (1971) or in the unpublished masters theses of Sheffy (1967), Gillespie (1970), Loetterle (1970), Salle (1972) or Nessler (1972).

COMMUNITY TYPES

The vegetation at Fort Eustis occurs in several patterns. It includes these community types: brackish marshes, freshwater lakes and marshes, pine stands, pine-deciduous woods, beech-oak woods, roadsides and other mowed areas, and old homesites.

Brackish marshes

Much of Mulberry Island is low and both the James and Warwick Rivers are brackish. Consequently, brackish marshes are abundant. Some species found in these marshes include Spartina alterniflora, S. cynosuroides, Scirpus spp., Juncus spp., Kosteletskyia virginica, Lilaeopsis chinensis, Samolus parviflorus, Iva frutescens, Baccharis halimifolia, Aster subulatus, A. tenuifolius, and Solidago sempervirens.

Freshwater lakes and marshes

Lake Eustis, a man-made impoundment, is the major freshwater lake on Fort Eustis. One other small pond has been constructed near Wilson Drive. Freshwater marshes occur occasionally on low spots on various parts of Mulberry Island. Common in the water are Lemna perpusilla and Spirodela polyrrhiza. A colony of Wolffiella floridana dominates a canal near the golf course, and Azolla caroliniana, Wolffia punctata, Proserpinaca palustris, Myriophyllum pinnatum, and Utricularia gibba are also present in freshwater locations. In shallower water or low, muddy edges or ditches, Typha latifolia, T. angustifolia, Saururus cernuus, Salix

nigra, Myrica cerifera, Rosa palustris, Impatiens capensis, Decodon verticillatus, Hydrocotyle umbellata, and H. verticillata. At slightly higher elevations on banks or the edges of low woods, Persea borbonia and Nyssa sylvatica are often encountered.

Pine stands

There are only a few stands of pine, and these are mainly Pinus taeda. In these stands Smilax spp. are often associated with the pines, and in low areas, Myrica cerifera occurs as an associate. These low pine-Myrica areas support other species such as Onoclea sensibilis, with Alnus serrulata at the periphery. Pine will probably become more common as reforestation of clear-cut areas proceeds.

Mixed pine-deciduous woods

Much of the land at Fort Eustis has not been disturbed since its purchase by the government in 1918, so there are many areas which have succeeded to the stage in which a few tall pines remain in a younger stand of oaks, maples, sweet-gum, and tulip poplar. Again, the pine is usually Pinus ^{lob.} taeda, but some P. virginiana and P. ^{sh. leaf} echinata are present. In addition to those canopy trees, an understory of Asimina triloba, Sassafras albidum, Aralia spinosa, Cornus florida, and Oxydendrum arboreum may be present. In one dry, disturbed mixed pine-deciduous stand located on a narrow peninsula north of Lake Eustis, a few young saplings of Magnolia grandiflora were encountered. In this area, Cypripedium acaule, the only observed location of Gentiana villosa, Galium uniflorum, and Erigeron pulchellus were located. Some of the more commonly encountered plants in these mixed areas include Polystichum acrostichoides, Desmodium spp., Gaylussacia spp., Vaccinium spp. and Lonicera japonica.

Beech-oak woods

There are a few mature mixed beech-oak woods. One is located between the movie theater on Madison St. and Lake Eustis; another is near the end of Stillwell St. above the Warwick River and extending along the river, and there are a few other scattered stands. The most common oaks in these woods are Quercus alba, Q. velutina, and Q. falcata. These woods are usually fairly open, with a sparse shrub layer of which Viburnum acerifolium is a member. Several interesting plants are located in the ravines in these woods, including Adiantum pedatum, Polygonatum biflorum, Tipularia discolor, Aplectrum hyemale (observed but not collected), Kalmia latifolia, and Galax aphylla. Panicum spp. and Carex spp. are also abundant here. Epigaea repens is fairly common on very steep ravine banks, but extensive searches did not reveal any Sanguinaria canadensis or Hepatica americana.

Roadsides and other mowed areas

Roadsides are heavily mowed at Fort Eustis, as are many fields. Railroad banks are scraped clean occasionally, so there is abundant habitat open to invasion by weedy annuals. Common roadside plants include Poa annua, Rumex acetosella, Stellaria media, Draba brachycarpa, Cardamine hirsuta, Trifolium spp., Medicago lupulina, Verbena brasiliensis, V. urticifolia, Lamium amplexicaule, Plantago spp., Lactuca spp., Pyrrhoppappus carolinianus, Taraxacum officinale, and Carduus discolor. Cytisus scoparius and Myrica cerifera are often found at edges of woods by roadsides, and Paulownia tomentosa quickly invades disturbed areas.

Old homesites

Little remains of most of the old homesites, but they have a characteristic vegetation which makes them easy to distinguish. Juglans nigra and Robinia pseudoacacia are the two tree species most often found in such areas. Ground cover plants may include Stellaria media, Glechoma hederacea, Senecio aureus, and Verbesina occidentalis. Plants which have been found persisting at old homesites include Narcissus pseudo-narcissus, Maclura pomifera, Melia azedarach, Ligustrum sinense, and Vinca minor. Since such persisting species have presumably survived for fifty years or more, they are included in the flora.

PHYTOGEOGRAPHY

An analysis of the geographic distribution of the plants of Fort Eustis, although less useful than a similar study for the entire Peninsula of Virginia, does show the relative importance of several distribution patterns in the flora of the area. The phytogeographic regions are adapted from those of Harvill (1972) and include the following patterns:

1. Circumboreal
2. North America and Eastern Asia
3. Ranging west to the Pacific coast
 - a. extending without interruption to the Pacific coast
 - b. Extending west of the Mississippi and also found on the Pacific coast
4. Ranging southward beyond the United States
5. Extending westward beyond the Mississippi River
 - a. Generally distributed north and south
 - b. Northern species
 - c. Southern species
 - d. Coastal plain and Mississippi Valley, extending westward in the north
 - e. Coastal plain and Mississippi Valley, extending westward in the south
6. Limited to North America east of the Mississippi River
 - a. Generally distributed north and south
 - (1.) Not limited to the coastal plain
 - (2.) Mostly coastal plain
 - (3.) Mostly coastal plain but extending inland in the south
 - b. Plants of mostly northern distribution
 - c. Plants of mostly southern distribution

7. Introduced species
8. Extending to tropical America and the Old World
 - a. Found in the American tropics and the northern hemisphere of the Old World
 - b. Found in the American tropics and the southern hemisphere of the Old World

Slightly more than 20% of the 538 species collected at Fort Eustis are not native to North America. Some of these 109 plants were once cultivated on Mulberry Island and have persisted for the fifty year period of government ownership. Most, however, are widespread weeds. These introduced species will not be considered in the following discussion of distribution. Plants in all but the largest categories will be listed completely either in the following paragraphs or in the subsequent tables.

The circumboreal component of the flora of Fort Eustis comprises only about 3% of the native plants. Of the thirteen species in this group, five are pteridophytes: Equisetum arvense, Botrychium virginianum, Ophioglossum vulgatum, Osmunda regalis, and Pteridium aquilinum. Typha latifolia and Juncus effusus are the only monocots, and the remaining dicots include Myosurus minimus, Ranunculus sceleratus, Potentilla norvegica, Mentha arvensis, Galium aparine, and G. triflorum.

Only six plants, slightly more than 1% of the native species, represent the link between the East Asian and North American floras. These are: Onoclea sensibilis, Aneilema keisak, Tovara virginiana, Circaea lutetiana, Monotropa uniflora, and Phryma leptostachya. If analysis had been done at the genus level, taxa in this category would probably be more numerous.

Twenty-five plants of Fort Eustis are also found on the Pacific coast (Table 3). Most range west without interruption, but four apparently skip the western mountains and reappear on the coast. The continuous species include such plants as Adiantum pedatum, Carex umbellata, Plantago heterophylla, and Bidens frondosa. The four disjunct species are Cyperus strigosus, Eleocharis obtusa, Draba brachycarpa, and Veronica peregrina. These two categories make up almost 6% of the native flora.

The importance of the tropical element in this area is demonstrated by the large number of native plants which are also found south of the United States (Table 4). Sixty-nine species, about 16%, show tropical affinities. Many range only to Mexico or the West Indies, but others are found throughout tropical America. All four representatives of the Lemnaceae are found south of the United States, as are four species of the genus Cyperus. Both species of Hydrocotyle collected at Fort Eustis are included here, and both members of the Haloragaceae fall into this category. Nine composites also show this distribution pattern.

Another group of plants which range to the south are listed in group 8. These plants are found in the Old World as well as in temperate and tropical America, and total less than 1% of the native flora. In the northern hemisphere of the Old World grow Scirpus americanus, Spergularia marina, and Veronica anagallis-aquatica. Typha angustifolia and Eclipta alba are found in the southern hemisphere of the Old World.

Over half of the native plants of Fort Eustis (52%) have ranges which extend from the eastern United States to the midwest and are found generally distributed north and south. The midwest is defined here as being west of the Mississippi but east of the Rocky Mountains. Many of

TABLE 3

3a. Plants Ranging Without Interruption to the Pacific Coast

<u>Adiantum pedatum</u>	<u>Apocynum cannabinum</u>
<u>Glyceria striata</u>	<u>Scutellaria lateriflora</u>
<u>Hordeum pusillum</u>	<u>Lycopus americanus</u>
<u>Danthonia spicata</u>	<u>Plantago aristata</u>
<u>Panicum lanuginosum</u>	<u>P. heterophylla</u>
<u>Cyperus erythrorhizos</u>	<u>P. virginica</u>
<u>Carex umbellata</u>	<u>Galium tinctorium</u>
<u>Carex vulpinoidea</u>	<u>Lactuca canadensis</u>
<u>Juncus tenuis</u>	<u>Erigeron annuus</u>
<u>Polygonum lapathifolium</u>	<u>Bidens frondosa</u>
<u>Geranium carolinianum</u>	

TABLE 4

4. Plants Ranging Southward Beyond the United States

<u>Osmunda cinnamomea</u>	<u>Setaria magna</u>
<u>Polystichum acrostichoides</u>	<u>Panicum dichotomiflorum</u>
<u>Azolla caroliniana</u>	<u>P. laxiflorum</u>
<u>Sagittaria falcata</u>	<u>P. virgatum</u>
<u>Sphenopholis obtusata</u>	<u>Andropogon virginicus</u>
<u>Leptochloa fascicularis</u>	<u>Cyperus flavescens</u>
<u>Leersia oryzoides</u>	<u>C. odoratus</u>
<u>Setaria geniculata</u>	<u>C. pseudovegetus</u>

TABLE 4, cont.

<u>Cyperus tenuifolius</u>	<u>Myriophyllum pinnatum</u>
<u>Fimbristylis autumnalis</u>	<u>Proserpinaca palustris</u>
<u>Scirpus cyperinus</u>	<u>Hydrocotyle umbellata</u>
<u>S. robustus</u>	<u>Hydrocotyle verticillata</u>
<u>Carex albolutescens</u>	<u>Cornus florida</u>
<u>C. lurida</u>	<u>Samolus parviflorus</u>
<u>Spirodela polyrrhiza</u>	<u>Calystegia sepium</u>
<u>Lemna perpusilla</u>	<u>Myosotis verna</u>
<u>Wolffia punctata</u>	<u>Monarda fistulosa</u>
<u>Wolffiella floridana</u>	<u>Lindernia anagallidea</u>
<u>Heteranthera reniformis</u>	<u>Linaria canadensis</u>
<u>Smilax bona-nox</u>	<u>Agalinis purpurea</u>
<u>Allium bivalve</u>	<u>Utricularia gibba</u>
<u>Boehmeria cylindrica</u>	<u>Cephalanthus occidentalis</u>
<u>Polygonum punctatum</u>	<u>Oldenlandia uniflora</u>
<u>Liquidambar styraciflua</u>	<u>Melothria pendula</u>
<u>Prunus serotina</u>	<u>Specularia biflora</u>
<u>Cercis canadensis</u>	<u>S. perfoliata</u>
<u>Oxalis dillenii</u>	<u>Ambrosia artemisifolia</u>
<u>Euphorbia maculata</u>	<u>Eupatorium serotinum</u>
<u>Callitriche heterophylla</u>	<u>E. coelestinum</u>
<u>Parthenocissus quinquefolia</u>	<u>Pluchea foetida</u>
<u>Hypericum hypericoides</u>	<u>P. purpurascens</u>
<u>Rotala ramosior</u>	<u>Gnaphalium purpureum</u>
<u>Ludwigia palustris</u>	<u>Baccharis halimifolia</u>

TABLE 4, cont.

<u>Erigeron canadensis</u>	<u>Bidens bipinnata</u>
<u>Solidago sempervirens</u>	

TABLE 5

5e. Plants Extending Westward Beyond the Mississippi River:
Coastal Plain and Mississippi Valley, Extending Westward in the South

<u>Pinus taeda</u>	<u>Magnolia grandiflora</u>
<u>Taxodium distichum</u>	<u>M. virginiana</u>
<u>Eragrostis hirsuta</u>	<u>Persea borbonia</u>
<u>Erianthus contortus</u>	<u>Strophostyles umbellata</u>
<u>Rhynchospora corniculata</u>	<u>Polygala mariana</u>
<u>R. inexpansa</u>	<u>Kosteletskya virginica</u>
<u>Juncus coriaceus</u>	<u>Lythrum lineare</u>
<u>Carex abscondita</u>	<u>Oenothera biennis</u>
<u>C. joorii</u>	<u>Ptilimnium capillaceum</u>
<u>C. gigantea</u>	<u>Symplocos tinctoria</u>
<u>Juncus roemerianus</u>	<u>Iva frutescens</u>
<u>Smilax laurifolia</u>	<u>Carduus spinosissimus</u>
<u>Myrica cerifera</u>	<u>Elephantopus nudatus</u>
<u>Quercus falcata</u>	<u>E. tomentosus</u>
<u>Q. michauxii</u>	<u>Aster subulatus</u>
<u>Q. nigra</u>	<u>A. vimineus</u>
<u>Q. phellos</u>	<u>Solidago fistulosa</u>
<u>Polygonum setaceum</u>	<u>S. microcephala</u>

the plants in this group only cross the Mississippi in one or two states, but they are included here rather in the range of strictly eastern plants. In this category are 222 species, including eight panicums, eight carices, and all seven orchids found at Fort Eustis. The Juglandaceae and Fagaceae are well represented, and eight species of Desmodium are found in this range. Twenty-eight composites also show this distribution pattern. Also extending past the Mississippi, but with a generally northern range are the three species Lycopodium flabelliforme, Carex swanii, and Luzula acuminata. Generally southern species with ranges which cross the Mississippi number fifteen, about 3.5% of the native flora. These include Athyrium asplenioides, Melica mutica, Erianthus giganteus, Juncus repens, Acer saccharum ssp. floridanum, Vitis rotundifolia, Chaerophyllum tainturieri, Callicarpa americana, Ruellia caroliniensis, Galium uniflorum, Lobelia puberula, Pyrrhopappus carolinianus, Elephantopus carolinianus, and Verbesina virginica.

A fairly unusual range is that of Carex hyalinolepis, which inhabits the coastal plain and Mississippi Valley states, and extends westward in the north. The corresponding southerly distribution is much more common. Thirty-six plants of Fort Eustis are found on the Atlantic and/or Gulf coastal plains and in the Mississippi River Valley, extending west of the Mississippi in the south (Table 5). This 8% fraction of the native flora includes both species of Rhynchospora, Myrica cerifera, Iva frutescens, four species of oak, Magnolia virginiana, M. grandiflora (which should probably be considered an introduction here), Persea borbonia, and Aster subulatus.

Thirty-five plants of Fort Eustis are found only east of the Mississippi. The largest group occurs in region 6 a, with plants generally distributed north and south. This most widespread of the eastern groups includes Pinus echinata, P. virginiana, four members of the Ericaceae, five composites, and totals seventeen species, almost 4% of the native plants (Table 6). Eight eastern plants are generally distributed along the coastal plain. Spartina alterniflora, S. cynosuroides, Sacciolepis striata, Cyperus filicinus, Amaranthus cannabinus, Lilaeopsis chinensis, Sabatia stellaris, and Aster tenuifolius show this distribution pattern. Uniola laxa inhabits the coastal plain, but ranges inland in the south. Rubus allegheniensis, also limited to eastern North America, is a species of mostly northerly distribution. Seven other species show mostly southerly distribution patterns. They are Dryopteris celsa, Hexastylis virginica, Hibiscus moscheutos, Rhexia ventricosa, Oxydendrum arboreum, Galax aphylla, and Solidago pinetorum.

In the checklist of plants which follows, the range of each species will be indicated by a number corresponding to the geographic regions listed in the beginning of this section. The predominance of plants endemic to North America east of the Rockies and the ranges of individual species of interest can then be noted.

TABLE 6

6a(1) Plants Limited to North America East of the Mississippi River:
 Generally distributed north and south
 Not limited to the coastal plain

Pinus echinata

Leucothoe racemosa

P. virginiana

Lysimachia quadrifolia

Luzula echinata

Semecio smallii

Liriodendron tulipifera

Vernonia noveboracensis

Amelanchier canadensis

Aster paternus

Baptisia tinctoria

Solidago puberula

Chimaphila maculata

Rudbeckia hirta

Rhododendron nudiflorum

DISTRIBUTION RECORDS

AND

ANNOTATED CHECKLIST OF THE VASCULAR FLORA OF FORT EUSTIS

Of the 538 species collected at Fort Eustis, 404 have not previously been recorded from the City of Newport News, formerly known as Warwick County. Of these, twenty are considered collection records for the Peninsula of Virginia. In the annotated checklist, county records are preceded by an asterisk (*), and Peninsula records by a double asterisk (**).

In addition to these county and Peninsula records noted in the checklist which follows, several species are new to Massey's (1961) middle coastal plain category. These include Bromus catharticus, Cyperus erythrorhizos, Rhynchospora inexpansa, Sagina decumbens, Potentilla simplex, and Myriophyllum pinnatum.

Other plants have been recorded only a few times for the state. Verbesina virginica is recorded by Massey as present only in James City County. Crepis japonica is only recorded in two counties by Nessler (1972). Massey likewise lists only two counties for Myriophyllum pinnatum. He reports Verbena brasiliensis from Warwick County and nowhere else in the state, and it does occur at Fort Eustis. Two other plants, Myosurus minimus and Plantago heterophylla, have not previously been reported north of the James River in Virginia.

ANNOTATED CHECKLIST

EQUISETACEAE

Equisetum arvense L., Field horsetail. One colony on sandy disturbed roadside; range 1; (1058).

LYCOPODIACEAE

*Lycopodium flabelliforme (Fern.) Blanchard, Running-pine. One large colony in disturbed deciduous woods near sanitary landfill; range 5 b; (970).

OPHI OGLOSSACEAE

Botrychium dissectum Sprengel, Common grapefern. One colony in pine-sweet gum woods; range 5 a; (903, 904).

*B. virginianum (L.) Swartz, Rattlesnake fern. Occasional; mixed deciduous woods; range 1; (681).

*Ophioglossum vulgatum L. var. pycnostichum Fern., Southern adder's-tongue. Occasional; low maple-sweet gum woods; range 1; (1053, 1090).

OSMUNDACEAE

Osmunda cinnamomea L., Cinnamon fern. Common; ravines in deciduous woods; range 4; (792).

*O. regalis L. var. spectabilis (Willd.) Gray, Royal fern. Common; low woods and edges of marshes; species range 1, variety range 4; (328, 288, 500).

PTERIDACEAE

*Adiantum pedatum L., Maidenhair fern. One small colony at bottom of wet ravine in mature beech woods near Stillwell St; range 3 a; (865).

Pteridium aquilinum (L.) Kuhn, Bracken. Common; dry deciduous woods; range 1; (767).

ASPIDACEAE

- *Athyrium asplenioides (Michaux) A.A. Eaton, Southern lady fern. Common; low pine-deciduous woods; range 5 c; (373, 667).
- *Dryopteris celsa (W. Palmer) Small, Log fern. One colony on shaded bank of Civil War dry moat at Fort Crafford; range 6 c; (1061).
- Polystichum acrostichoides (Michaux) Schott, Christmas fern. Common; deciduous woods, especially on banks; range 4; (222).
- Thelypteris hexagonoptera (Michaux) Weatherby, Broad beech-fern. Common; moist mixed pine-deciduous woods; range 5 a; (204).
- *T. noveboracensis (L.) Nieuwland, New York fern. Common; moist mixed deciduous and pine-deciduous woods; range 5 a; (275).
- *Onoclea sensibilis L., Sensitive fern. Common; wet wooded areas; range 2; (387, 785).

BLECHNACEAE

- *Woodwardia areolata (L.) Moore, Netted chain-fern. Occasional; low mixed woods; range 5 a; (323).
- *W. virginica (L.) Smith, Virginia chain-fern. One colony in wet ravine bottom; range 5 a; (1069).

ASPLENIACEAE

- Asplenium platyneuron (L.) Oakes, Ebony spleenwort. Common; mixed pine-deciduous woods; range 5 a; and South Africa; (272).

AZOLLACEAE

- *Azolla caroliniana Willd., Mosquito fern. One large colony floating in marshy pond; range 4; (883).

PINACEAE

- Pinus echinata Miller, Short-leaf pine. Occasional; disturbed mixed pine-deciduous woods near Lake Eustis; range 6 a (1); (993).

Pinus taeda L., Loblolly pine. Very abundant; few solid stands, often mixed with succeeding deciduous woods; range 5 e; (438).

P. virginiana Miller, Scrub pine. Common; disturbed areas and mixed deciduous woods; range 6 a (1); (367).

TAXODIACEAE

Taxodium distichum (L.) Richard, Bald cypress. Occasional; edge of Lake Eustis; range 5 e; (909).

CUPRESSACEAE

Chamaecyparis pisifera Sieb. & Zucc. Persisting from cultivation at edge of woods; range 7; (988).

Juniperus virginiana L., Red cedar. Common; field edges and disturbed woods; range 5 a; (358).

TYPHACEAE

*Typha angustifolia L., Narrow-leaved cat-tail. Occasional; marsh edges; range 8 b; (949).

T. latifolia L., Common cat-tail. Common; fresh-water marshes; range 1; (654).

ALISMATACEAE

*Sagittaria falcata Pursh. Occasional; marsh edges; range 4; (756).

POACEAE

Phyllostachys aurea ? Riv. Dense stand at edge of artificial lake; range 7; (652).

**Cynosurus echinatus L. One colony in opening in grassy road at old homesite near Warwick River; range 7; (624).

*Tridens flavus (L.) Hitchcock var. flavus, Purple top. Occasional; old homesites; range 5 a; (314).

*Uniola laxa (L.) BSP. Common; low, wet woods; range 5 a (3); (336).

*Eragrostis hirsuta (Michaux) Nees. Occasional; dry roadsides; range 5 e; (907).

*E. spectabilis (Pursh) Steudel. Occasional; roadsides; range 5 a; (908).

- *Bromus catharticus Vahl. One colony along open, sunny, occasionally mowed roadside; range 7; (610).
- *B. commutatus Schrad. One colony in opening on grassy road of old homesite; range 7; (630).
- *B. japonicus Thunberg. One small colony along gravel roadside at edge of mixed deciduous woods; range 7; (595).
- *Poa annua L. Abundant; mowed fields, roadsides, gravel parking lots; range 7; (398, 450, 541).
- *P. autumnalis Muhl. ex Ell. Occasional; slopes in deciduous woods range 5 a; (550).
- *P. pratensis L. Occasional; open, mowed fields; range 7; (535).
- *Melica mutica Walter Occasional; dry, disturbed woods; range 5 c; (584).
- *Glyceria striata (Lam.) Hitchcock. Occasional; wet ravines; range 3 a; (555).
- *Festuca elatior L. Occasional; roadsides and disturbed areas; range 7; (526, 611).
- *F. myuros L. Common; mowed roadsides and disturbed areas; range 7; (625, 651).
- *Lolium perenne L. Occasional; sandy roadsides and James River beach; range 7; (605).
- Hordeum pusillum Nutt. Abundant; mowed fields and roadsides; range 3 a; (520, 538, 577).
- *Elymus virginicus L. Common; edges of woods, roadsides; range 5 a; (284, 688, 737).
- *Sphenopholis obtusata (Michaux) Scribner. One colony in cut-over area near James River; range 4; (639).
- *Danthonia spicata (L.) Beauvois ex R. & S. Occasional; dry woods; range 3a; (650, 549).
- *Aristida oligantha Michaux. One colony on bulldozed dirt pile; range 5 a; (967).
- *Polypogon monspeliensis (L.) Desf. One colony in wet edge of pine woods; range 7; (715).
- *Muhlenbergia schreberi J.F. Gmelin. One colony in cleared area at old homesite; range 5 a; (313).

- Agrostis perennans (Walt.) Tuckerm. Occasional; oak-tulip poplar woods; range 5 a; (856a, 915).
- *Cinna arundinacea L. Common; wet mixed pine-deciduous woods; range 5 a; (341, 327, 877).
- **Leptochloa fascicularis (Lam.) Gray. One small clump at edge of pond; range 4; (952).
- Spartina alterniflora Loisel. Occasional; brackish marshes; range 6 a (2); (957).
- *S. cynosuroides (L.) Roth. Common; brackish marshes; range 6 a (2); (289).
- *Leersia oryzoides (L.) Swartz. Common; low grassy roads and roadside swales; range 4, and Europe; (305, 901).
- *L. virginica Willd. Occasional; low shaded clearings and roadsides; range 5 a; (311).
- *Setaria geniculata (Lam.) Beauvois, Foxtail grass. Abundant; roadsides, along railroad tracks, waste areas; range 4; (251, 750, 819, 898).
- *S. magna Grisebach. Occasional; brackish marshes; range 4; (937).
- Echinochloa crusgalli (L.) Beauvois, Barnyard grass. Abundant; roadside swales, marsh edges; range 7; (302, 857, 729).
- *Paspalum dilatatum Poiret, Dallis grass. Common; roadsides, edges of fields; range 7; (312, 732).
- *P. laeve Michaux. One colony in wet edge of woods; range 5 a; (233).
- Sacciolepis striata (L.) Nash. One colony in disturbed cut-over area near marsh; range 6 a (2); (887).
- *Panicum agrostoides Spreng. One colony on marshy roadside; range 5 a; (878).
- *P. anceps Michaux var. rhizomatum (Hitchcock & Chase) Fernald. Abundant; low woods and roadsides; range 5 a; (330, 826, 808).
- *P. boscii Poiret. Common; mixed deciduous woods; range 5 a; (575, 776).
- *P. capillare L. One colony in clearing at old homesite, but many other detached inflorescences observed; range 5 a; (315).
- *P. clandestinum L. One colony in opening in grassy road by marsh of Warwick River; range 5 a; (629).

- *Panicum commutatum Schultes. Abundant; mixed deciduous woods; range 5 a; (572, 498, 548, 809).
- *P. dichotomiflorum Michaux. Common; low, wet roadsides; range 4; (303, 895).
- *P. dichotomum L. Common; mixed deciduous woods; range 5 a; (590, 343).
- *P. lanuginosum Ell. One colony in pine-sweet gum woods; range 3 a; (944).
- *P. laxiflorum Lam. One colony in oak-beech woods; range 4; (547).
- *P. polyanthes Schultes. Abundant; mixed deciduous woods; range 5 a; (337, 677, 693, 761, 868).
- *P. virgatum L. Occasional; marsh edges; range 4; (304, 879).
- *Erianthus contortus Baldwin ex Ell. A few plants along shaded roadside; range 5 e; (955).
- *Erianthus giganteus (Walter) Muhl. Occasional; marshes; range 5 c; (287, 891).
- *Arthraxon hispidus Thunb. var cryptatherus (Hackel) Honda. Occasional; mowed fields, low roadsides; range 7; (301, 217).
- *Andropogon scoparius Michaux, Little blue-stem. One colony on open bank under mixed pine-oak; range 5 a; (370).
- A. virginicus L., Broom sedge. Abundant; open wooded areas, disturbed areas; range 4; (244, 342, 377, 936).

CYPERACEAE

- **Cyperus erythrorhizos Muhl. One colony on marshy area of drained pond; range 3a; (961).
- *C. filicinus Vahl. One colony on marshy area of drained pond; range 6 a (2); (963).
- *C. flavescens L. One colony in wet, mowed field; range 4; (981).
- *C. iria L. Occasional; damp roadsides; range 7; (334, 900).
- *C. lancastriensis Porter. One colony in occasionally cleared pine-oak woods; range 5 a; (800).
- *C. odoratus L. Common; marshes, sandy wet creek borders; range 4; (859, 919, 951).

- *Cyperus ovularis (Michaux) Torrey. Abundant; fields and roadsides; range 5 a; (232, 689, 739, 801).
- *C. pseudovegetus Steudel. One colony at edge of pine-sweet gum woods; range 4; (924).
- C. strigosus L. Occasional; low fields and by streams; range 3 b; (213, 918).
- *C. tenuifolius (Steud.) Dandy. One colony in low, wet area in field; range 4; (216).
- *Eleocharis obtusa (Willd.) Schultes. Common; wet fields and swales; range 3 b; (632, 709, 943).
- *E. quadrangulata (Michaux) R.&S. One colony in marshy area of flat, drained pond; range 5 a; (958).
- *Fimbristylis autumnalis (L.) R. & S. One colony in marshy area of flat, drained pond; range 4; (959) .
- *Scirpus americanus Persoon, Three-square. Occasional; brackish marshes; range 8 a; (619).
- *S. cyperinus (L.) Kunth. Occasional; low, wet woods and marshes; range 5 a; (345).
- *S. robustus Pursh. Occasional; marshes and edge of James River; range 4; (637).
- *Rhynchospora corniculata (Lam.) Gray. A few plants in low, wet edge of oak woods by railroad tracks; range 5 a; (934).
- **R. inexpansa (Michaux) Vahl. A few plants along path in mixed deciduous woods; range 5 e; (807).
- *Carex abscondita Mackenzie. One clump of plants at base of southern red oak on sandy, open slope; range 5 e; (1071a).
- C. albolutescens Schweinitz. One colony at edge of wet field; range 4; (733).
- *C. blanda Dewey. One colony in wet mowed field; range 5 a; (537).
- C. caroliniana Schweinitz. One colony at edge of pine-oak woods; range 5 a; (576).
- *C. cephalophora Muhl. Occasional; damp shaded slopes; range 5 a; (545).
- *C. digitalis Willd. One colony at base of oak in mixed deciduous woods; range 5 a; (1068).

- *Carex emmonsii Dewey. One clump at base of oak on sandy, open slope; range 5 a; (1071).
- C. gigantea Rudge. One colony along path in swamp woods; range 5 e; (745).
- *C. hyalinolepis Steudel. One colony in marsh on Warwick River; range 5 d; (621).
- C. joorii Bailey. A few plants along path in wet pine-oak woods; range 5 e; (346).
- *C. laevivaginata (Kukenth.) Mackenz. Occasional; wet fields and low woods; range 5 a; (516, 574).
- C. lurida Wahlenberg. One colony in clearing in wet woods; range 4; (573).
- *C. striatula Michaux. Occasional; fairly wet deciduous woods; range 5 a; (506, 1067).
- *C. swanii (Fern.) Mackenz. One colony in beech woods; range 5 b; (552).
- *C. typhina Michaux. A few plants in clearing in low oak woods; range 5 a; (932).
- **C. umbellata Schkuhr. One clump in beech-oak woods; range 3 a; (1064).
- *C. vulpinoidea Michaux. One colony under oak by roadside near marsh; range 3 a; (561).

ARACEAE

- *Arisaema triphyllum (L.) Schott, Jack-in-the-pulpit. Common; wet ravines and low woods; range 5 a; (455).

LEMNACEAE

- *Spirodela polyrrhiza (L.) Schleid. Occasional; floating in inlet of Lake Eustis and other quiet water; range 4; (692a).
- *Lemna perpusilla Torrey, Duckweed. Occasional; edge of Lake Eustis inlet and other quiet water; range 4; (692).
- *Wolffia punctata Griseb, Water meal. One colony covering most of surface of quiet pool in pine-sweet gum woods; range 4; (905).
- *Wolffiella floridana (J.D. Smith) Thompson. One nearly pure stand in canal through oak-sweet gum woods; range 4; (1094).

COMMELINACEAE

- *Commelina communis L. Common; edges of deciduous woods; range 7; (687).
- *C. virginica L. One colony at edge of stream flowing into Warwick River; range 5 a; (769).
- *Aneilema keisak Hassk. One large colony in swale in grassy road; range 2; (902).

PONTEDERIACEAE

- *Pontederia cordata L., Pickerelweed. Edge of Lake Eustis and Warwick River marshes; range 5 a; (669).
- *Heteranthera reniformis R. & P., Mud plantain. Common; swales in little used dirt roads; range 4; (719).

JUNCACEAE

- *Juncus canadensis J. Gay ex LaHarpe. One colony at edge of ditch in marsh; range 5 a; (948a).
- *J. coriaceus Mackenzie. One colony along path in swamp woods; range 5 e; (746).
- *J. effusus L. One colony in roadside ditch; range 1; (521).
- *J. repens Michaux. One colony in marshy area of flat, drained pond; range 5 c; (960).
- **J. roemerianus Scheele. One colony in brackish marsh of Warwick River; range 5 e; (618).
- *J. tenuis Willd., Path rush. Common; along paths in mesic deciduous woods; range 3 a; (627, 651).
- *Luzula acuminata Raf. var. carolinae (Watson) Fernald. One colony on steep side of mossy ravine; range 5 b for species, range 6 a for variety; (409).
- *L. bulbosa (Wood) Rydb. Common; open woods and roadsides; range 5 a; (435, 523, 543).
- *L. echinata (Small) Hermann. One colony on steep bank with trailing arbutus; range 6 a; (416).

LILIACEAE

- Asparagus officinalis L., Asparagus. Occasional; brushy, partly shaded bank and sandy fields; range 7; (539).
- *Smilax bona-nox L., Greenbrier. Common; mixed deciduous woods; range 4; (379).
- *S. hispida Muhl., Greenbrier. One colony in persimmon tree near marsh on Warwick River; range 5 a; (663).
- *S. laurifolia L., Bamboo. Large colony in woods at bottom of ravine near marsh on Warwick River; range 5 e; (1048).
- S. rotundifolia L., Greenbrier. Very abundant; woods and edges of woods; range 5 a; (243).
- *Smilacina racemosa (L.) Desf., False Solomon's seal. Common; beech-tulip poplar woods; range 5 a; (678).
- *Polygonatum biflorum (Walter) Ell., Solomon's seal. Occasional; oak-beech woods; range 5 a; (546).
- *Ornithogalum umbellatum L., Star of Bethlehem. Occasional; disturbed fields and roadsides; range 7; (469).
- *Muscari racemosum (L.) Miller, Blue-bottles. Occasional; lawns; range 7; (433).
- Hemerocallis fulva L., Daylily. Occasional; near old homesites; range 7; (674).
- *Allium bivalve (L.) Kuntze, False garlic. Occasional; dry disturbed fields and roadsides; range 4; (470).
- *A. canadense L., Wild onion. Common; weedy lawns and roadsides; range 5 a; (536, 606).
- *A. vineale L., Field garlic. Common; weedy roadsides; range 7; (600, 710).

DIOSCOREACEAE

- *Dioscorea villosa L., Wild yam. Occasional; low deciduous woods; range 5 a; (671).

AMARYLLIDACEAE

- Narcissus pseudonarcissus L., Daffodil. Common; near old homesites; range 7; (401).

*Hypoxis hirsuta (L.) Coville, Yellow stargrass. A few plants along path in mixed pine-sweet gum-beech woods; range 5 a; (587).

IRIDACEAE

*Sisyrinchium angustifolium Mill., Blue-eyed grass. Common; mixed deciduous woods and shaded roadsides; range 5 a; (505).

ORCHIDACEAE

Cypripedium acaule Aiton. Pink lady's slipper. Common; mixed pine-deciduous woods; range 5 a; (502).

*Isotria verticillata (Muhl. ex. Willd.) Raf., Large whorled pogonia. One small colony in pine-hickory-maple woods; range 5 a; (499).

Goodyera pubescens (Willd.) R. Brown, Downy rattlesnake plantain. Occasional; beech woods; range 5 a; (747).

Malaxis unifolia Michaux, Green adder's-mouth. Occasional; low woods; range 5 a; (856).

Liparis lilifolia (L.) Richard, Lily-leaved twayblade. Occasional; deciduous woods; range 5 a; (586, 818).

Tipularia discolor (Pursh) Nuttall, Crane-fly orchid. Common; mesic deciduous woods; range 5 a; (381, 793).

Corallorhiza odontorhiza (Willd.) Nuttall, Autumn coralroot. One small colony in low pine-maple woods; range 5 a; (954).

SAURURACEAE

*Saururus cernuus L., Lizard's tail. Very abundant; wet ravine bottoms and edges of lakes; range 5 a; (660).

SALICACEAE

Salix nigra Marshall, Black willow. Common; edges of marshes; range 5a; (443, 534).

MYRICACEAE

*Myrica cerifera L. var. cerifera, Wax myrtle. Very abundant; low woods, pine woods, marsh borders; range 5e; (439, 442, 240).

JUGLANDACEAE

- Juglans nigra L., Black walnut. Common; old homesites; range 5 a; (626).
- *Carya cordiformis (Wang) K. Koch, Bitternut hickory. Occasional; low mixed deciduous woods; range 5 a; (361, 989).
- **C. ovalis (Wang) Sargent, Sweet pignut hickory. One tree in cut over area, probably old homesite; range 5 a; (641).
- C. tomentosa (Poiret) Nutt., Mockernut. Occasional; mainly beech-oak woods; range 5 a; (368, 990).

BETULACEAE

- Alnus serrulata (Ait.) Willd., Tag alder. Common; banks of Lake Eustis, marsh edges; range 5 a; (241, 386).
- *Carpinus caroliniana Walter, Ironwood. Occasional; edge of wet field, low woods; range 5 a; (698).

FAGACEAE

- Fagus grandifolia Ehrhart, Beech. Abundant; slopes and upland woods around Lake Eustis and near Warwick River; range 5 a; (348).
- *Castanea pumila (L.) Miller, Chinquapin. Occasional; banks at edges of Lake Eustis and Warwick River; range 5 a; (371, 557).
- Quercus alba L., White oak. Common; drier ridges of woods; range 5 a; (356).
- *Q. coccinea Muenchh., Scarlet oak. A few trees on bank of Lake Eustis in mixed pine-deciduous woods; range 5 a; (992).
- *Q. falcata Michx.
 var. falcata, Southern red oak. Common; mixed with hickory, beech; range 5 e; (986).
 var. pagodaefolia Ell., Cherrybark oak. Common; mixed dry deciduous woods; range 5 c; (930).
- *Q. marilandica Muenchh., Black jack oak. Occasional; dry banks of mixed deciduous woods; range 5 a; (658).
- Q. michauxii Nutt., Swamp chestnut oak. Common; low woods; range 5 e; (362).

- *Quercus nigra L., Water oak. Occasional; low mixed pine-deciduous woods; range 5.e; (364).
- *Q. phellos L., Willow oak. Common; swamp woods; range 5.e; (889, 993).
- Q. rubra L., Northern red oak. A few trees in dry, disturbed area near buildings; range 5.a; (995).
- Q. stellata Wang., Post oak. Common; wet to dry woods, often in disturbed areas; range 5.a; (994).
- Q. velutina Lam., Black oak. Abundant; fairly dry soil; range 5.a; (926).

ULMACEAE

- *Ulmus americana L., American elm. Occasional; low woods; range 5.a; (623).
- *Celtis occidentalis L. var. georgiana (Small) Ahles, Hackberry. Occasional; low woods; range of species 5.a; range of var. 6.a; (631).

MORACEAE

- *Morus alba L., White mulberry. Occasional; roadsides; range 7; (935).
- *M. rubra L. Red mulberry. Common; in mesic mixed deciduous woods; range 5.a; (589, 640).
- *Maclura pomifera (Raf.) Schneider, Osage orange. Occasional; old homesites and James River beach; range 7; (636).

URTICACEAE

- *Boehmeria cylindrica (L.) Swartz, False nettle. Common; low, wet, shaded areas; range 4; (208).

LORANTHACEAE

- *Phoradendron serotinum (Raf) M.C. Johnston, Mistletoe. In two small Quercus michauxii behind Wilson Drive; range 5.a; (393, 394).

ARISTOLOCHIACEAE

- *Hexastylis virginica (L.) Small, Wild ginger. Common; ravine slopes mainly in beech woods; range 6.c; (411).

POLYGONACEAE

- Rumex acetosella L., Sheep sorrel. Common; disturbed fields and roadsides; range 7; (528).
- *R. conglomeratus Murray. Common; roadsides and disturbed areas; range 7; (597).
- *R. crispus L. One collection in wet field; range 7; (544).
- *R. verticillatus L., Swamp dock. Common; edges of James and Warwick Rivers and Lake Eustis; range 5 a; (607, 661a, 920).
- Tovara virginiana (L.) Raf., Jumpseed. Occasional; open low pine-hardwoods; range 2; (321).
- *Polygonum arifolium L., Tearthumb. One colony at edge of ditch in marsh on Morrison Creek; range 5 a; (948).
- P. aviculare L. Common; wet waste areas; range 7; (215, 727, 749).
- *P. cespitosum Blume var. longisetum (DeBruyn) Stewart. Occasional; marshy fields and wet roadsides; range 7; (285, 276).
- *P. pensylvanicum L. Occasional; wet roadsides at Fort Crafford; range 5 a; (280, 286).
- P. pensylvanicum L. Occasional; wet roadsides at Fort Crafford; range 5 a; (280, 286).
- P. persicaria L. A few plants in damp depression near conservation office yard; range 7; (219).
- P. punctatum Ell. A few plants in concrete dumps along James River; range 4; (751).
- *P. setaceum Baldw. ex Ell. A few plants in wet rut in old road near Lake Eustis; range 5 e; (810a).

CHENOPODIACEAE

- Chenopodium ambrosioides L., Mexican tea. A few plants in weedy roadside near firing range, Mulberry Island; range 7; (897).

AMARANTHACEAE

- *Amaranthus cannabinus (L.) J.D. Sauer., Water hemp. A few plants in concrete dumps along James River; range 6 a (2); (848).

PHYTOLACCACEAE

Phytolacca americana L., Pokeweed. Common; old homesites and roadsides; range 5 a; (324).

AIZOACEAE

Mollugo verticillata L., Carpet-weed. Occasional; open, weedy disturbed areas; range 7; (775).

CARYOPHYLLACEAE

*Scleranthus annuus Knawel. Common; roadsides and gravel parking lots; range 7; (432).

*Spergularia marina (L.) Grieseb., Sand spurrey. One collection in occasionally flooded dirt road at Fort Crafford; range 8 a; (726).

Stellaria media (L.) Cyrillo, Common chickweed. Very abundant; fields, roadsides, old homesites; range 7; (391).

*Cerastium glomeratum Thullier, Mouse-ear chickweed. Very abundant; fields, roadsides; range 7; (418, 511, 568).

*Holosteum umbellatum L., Jagged chickweed. One colony near Warwick Pier picnic area; range 7; (404).

**Sagina decumbens (Ell.) T. & G., Pearlwort. One collection in disturbed weedy lawn, but probably more common; range 5 a; (448).

*Dianthus armeria L., Deptford pink. One colony on occasionally mowed bank of railroad tracks near James River; range 7; (609).

RANUNCULACEAE

*Clematis dioscoreifolia Levl. & Vaniot. Occasional; on oak and other trees along Harrison Rd. near James River; range 7; (846).

**Myosurus minimus L., Mouse-tail. One colony in dried mud puddle in mowed field near Warwick Pier; range 1; (540).

Ranunculus abortivus L. Occasional; swamp woods; range 5 a; (513).

*R. bulbosus L. Abundant; mowed fields, lawns, and roadsides; range 7; (383).

*R. parviflorus L. Occasional; weedy lawns; range 7; (447, 510).

*R. pusillus Poiret. Occasional; swales and ditches; range 5 a; (425).

*Ranunculus sceleratus L. Occasional; Warwick River marsh and edge of pond; range 1; (642, 662).

*Anemone virginiana L., Thimbleweed. One colony in occasionally cleared pine-oak woods at end of Stillwell St.; range 5 a; (798).

BERBERIDACEAE

*Podophyllum peltatum L., May-apple. Common; rich, low woods; range 5 a; (504).

MAGNOLIACEAE

Liriodendron tulipifera L., Tulip tree. Abundant; mixed deciduous woods with oak and beech; range 6 a (1); (353).

*Magnolia grandiflora L., Bull bay. Several small plants on disturbed peninsula by Lake Eustis, under mixed pine-hardwoods; range 5 e; (376).

M. virginiana L. Sweet bay. One tree just above marsh of Warwick River; range 5 e; (984).

ANNONACEAE

*Asimina triloba (L.) Dunal., Pawpaw. Common; low woods near creeks and Lake Eustis; range 5 a; (372).

LAURACEAE

*Persea borbonia (L.) Sprengel, Red bay. Abundant; low pine-Myrica woods and marsh edges; range 5 e; (382, 768).

Sassafras albidum (Nuttall) Nees, Sassafras. Abundant; roadsides, edges of woods; range 5 a; (363, 429).

*Lindera benzoin (L.) Blume, Spicebush. Occasional; rich ravine bottoms; range 5 a; (406, 408).

BRASSICACEAE

**Draba brachycarpa Nutt. ex T. & G. Common; dry fields and roadsides; range 3 b; (397, 403, 405).

D. verna L. Occasional; roadsides; range 7; (396).

- Lepidium virginicum L., Poor-man's pepper. Abundant; dry soil, open areas; range 5 a; (461, 466, 527, 783).
- *Coronopus didymus (L.) Smith. A few plants by disturbed roadside near Fort Crafford; range 7; (440)
- *Arabidopsis thaliana (L.) Heynhold, Mouse-ear cress. Abundant; weedy lawns, sterile, disturbed soil; range 7; (419)
- *Nasturtium officinale R. Br., Watercress. One colony in partly dammed stream draining into Bailey creek; range 7; (1041).
- *Barbarea verna (Miller) Ascherson, Early winter-cress. Occasional; open, sunny, sterile soil; range 7; (464, 524).
- B. vulgaris R. Brown var. vulgaris, Winter cress. Occasional; roadsides; range 7; (464, 524).
- *Cardamine hirsuta L., Bitter cress. Very abundant; fields and roadsides; range 7; (384).

CRASSULACEAE

- *Penthorum sedoides L., Ditch stonecrop. One colony in partly shaded edge of swampy woods near Harrison Rd.; range 5 a; (255).

HAMAMELIDACEAE

- Liquidambar styraciflua L., Sweet gum. Abundant; low woods; range 4; (355).

PLATANACEAE

- Platanus occidentalis L., Sycamore. Common; low mixed deciduous woods; range 5 a; (360).

ROSACEAE

- *Fragaria virginiana Duchesne, Strawberry. Occasional; roadsides and edge of open woods; range 5 a; (451).
- Duchesnea indica (Andrz.) Focke, Indian strawberry. Common; fields and roadsides; range 7; (212).
- *Potentilla canadensis L., Five-fingers. Common; edges of woods, fields, golf course; range 5 a; (1054).
- *P. norvegica L. One small colony on partly shaded edge of picnic area at end of Stillwell St.; range 1; (686).
- **P. simplex Michaux. Common; under young pines and along roadsides; range 5 a; (566).

- *Rubus allegheniensis ? Porter, Blackberry. Occasional; edge of low oak woods; range 6 b; (567).
- *R. argutus Link, Blackberry. Common; fence rows, disturbed areas; range 5.a; (462, 560, 582).
- *Geum canadense Jacquin, White avens. Occasional; cleared edges of woods; range 5.a; (318, 685).
- *Agrimonia pubescens Wallroth var. microcarpa (Wallroth) Ahles. Occasional; open woods; range of both species and variety 5.a; (329, 790).
- *Rosa palustris Marshall, Swamp rose. Common; marsh edges; range 5.a; (664, 701).
- R. wichuraiana Crepin, Memorial rose. One colony on disturbed brushy bank across from Lake Eustis on Taylor Rd.; range 7; (601).
- *Pyrus communis L., Pear. One tree along roadside near Harrison Rd., range 7; (559).
- *Malus angustifolia (Aiton) Michaux, Crab apple. Common; brushy fields and low fence rows; range 5.a; (468, 703).
- *Sorbus arbutifolia (L.) Heynhold var. arbutifolia, Red chokeberry. Occasional; ravine slopes in pine-oak woods; range 5.a; (453)
- Amelanchier canadensis (L.) Medicus, Shadbush. Occasional; edge of Lake Eustis and Warwick River; range 6 a (1); (412).
- *Prunus cerasus L., Sour cherry. Occasional; roadside and old homesite; range 7; (422).
- P. serotina Ehrh. var. serotina, Black cherry. Common; fields and fence rows; range 4; (542, 1072).

FABACEAE

- *Albizia julibrissin Durazzini, Mimosa. Occasional; fence rows and marsh edges; range 7; (704).
- Cercis canadensis L., Redbud. Occasional; deciduous woods; range 4; (413).
- *Cassia fasciculata Michaux, Partridge-pea. One large colony in low, wet field near James River; range 5.a; (780).
- *C. nictitans L. Occasional; edges of deciduous woods; range 5.a; (230, 797).

- *Baptisia tinctoria (L.) R. Brown. Small colony on dry, shaded bank of Warwick River; range 6 a (1); (665).
- Cytisus scoparius (L.) Link, Scotch broom. Common; edges of woods, fields, and roadsides; range 7; (431).
- Trifolium arvense L., Rabbit-foot clover. Occasional; roadsides; range 7; (532).
- *T. campestre Schreber, Low hop clover. Occasional; disturbed weedy mowed areas; range 7; (518).
- *T. dubium Sibthorp, Low hop clover. Occasional; sandy roadsides; range 7; (457).
- T. pratense L., Red clover. Common; lawns and roadsides; range 7; (593).
- *T. repens L., White clover. Abundant; poor soil of lawns and roadsides; range 7; (459).
- *Melilotus alba Desr., White sweet clover. Abundant; disturbed areas and roadsides; range 7; (700).
- M. officinalis (L.) Lam., Yellow sweet clover. Common; roadsides; range 7; (596).
- *Medicago lupulina L., Black medic. Common; weedy roadsides; range 7; (742).
- Lotus corniculatus L. Birdsfoot trefoil. Very abundant; weedy fields, roadsides, railroad tracks; range 7; (565).
- *Stylosanthes biflora (L.) BSP, Pencil flower. Occasional; sandy roadsides; range 5 a; (613, 744a).
- *Desmodium canescens (L.) DC. A few plants in disturbed deciduous woods near Warwick pier; range 5 a; (738).
- *D. glabellum (Michaux) DC. Occasional; near roadside edges of deciduous woods; 5 a; (224, 853).
- *D. nudiflorum (L.) DC. Common; moist deciduous woods; range 5 a; (766, 866).
- *D. paniculatum (L.) DC. One colony near edge of deciduous woods at Stillwell Circle; range 5 a; (855).
- *D. pauciflorum (Nuttall) DC. A few plants under a beech near Stillwell St. Circle; range 5 a; (867).
- *D. perplexum Schubert. A small colony at roadside on edge of deciduous woods on Stillwell St.; range 5 a; (854).

- *Desmodium rotundifolium DC., Dollarleaf. Common; mixed deciduous woods; range 5 a; (223).
- *D. viridiflorum (L.) DC. One colony in open pine-oak woods; range 5 a; (320).
- Lespedeza bicolor Turcz. Several plants on disturbed roadside, possibly cultivated; range 7; (299).
- *L. cuneata (Dumont) G. Don, Sericea. One colony on roadside at edge of field; range 7; (211).
- *L. intermedia (Watson) Britton. One colony on steep slope above Warwick River marsh; range 5 a; (862).
- *L. procumbens Michaux. One colony at edge of pines on Pershing St.; range 5 a; (840).
- *L. repens (L.) Barton. Occasional; edges of mixed deciduous woods; range 7; (229, 839).
- *L. striata (Thunberg) H. & A., Japanese clover. Common; roadsides, forming mats; range 7; (838, 899).
- Robinia pseudoacacia L., Black locust. Common; roadsides and old homesites; range 5 a; (533).
- *Vicia angustifolia Reichard, Common vetch. Common; weedy roadsides; range 7; (436, 458).
- *V. dasycarpa Tenore, Smooth vetch. Occasional; disturbed, sterile soil; range 7; (616).
- *Clitoria mariana L., Butterfly pea. Occasional; mixed pine-deciduous woods; range 5 a; (788).
- *Strophostyles helvola (L.) Ell. Occasional; near ponds and Lake Eustis; range 5 a; (832).
- *S. umbellata (Muhl.) Britt., One colony at edge of mixed deciduous woods on Monroe St.; range 5 e; (815).
- Pueraria lobata (Willd.) Ohwi, Kudzu. Covering ground and trees over one acre of a disturbed ravine by Madison St.; range 5 a; (804).
- *Amphicarpa bracteata (L.) Fernald, Hog peanut. A few plants in low woods near Stillwell St.; range 5 a; (874).

LINACEAE

- *Linum virginianum L. var. floridanum Planchon. One colony in young pine stand near Back River Rd.; range 5 a. for species and var.; (706).

OXALIDACEAE

Oxalis dillenii Jacquin, Wood sorrel. Common; disturbed, weedy areas; range 4; (578, 772).

GERANIACEAE

*Geranium carolinianum L. Common; weedy roadsides; range 3a; (460, 507).

*G. dissectum L. Occasional; roadside banks; range 7; (427).

MELIACEAE

Melia azedarach L., China-berry. Persisting near old homesite on James River; range 7; (942).

POLYGALACEAE

*Polygala mariana Miller. Occasional; roadsides and edges of woods; range 5.e; (744, 816).

EUPHORBIACEAE

*Acalypha gracilens Gray, Three-seeded mercury. One colony along railroad tracks on Harrison Rd.; range 5.a; (931).

*A. rhomboidea Raf., Three-seeded mercury. A few plants by stream in mixed deciduous woods; range 5.a; (927).

*A. virginica L., Three-seeded mercury. A few plants on bank of shallow pond; range 5.a; (731).

*Euphorbia maculata L. Common; roadsides and banks; range 4; (805, 850).

*E. supina Raf. Occasional; damp waste areas; range 5.a; (830, 917).

CALLITRICHACEAE

*Callitriche heterophylla Pursh, Water starwort. One colony in sunny ditch; range 4; (424).

ANACARDIACEAE

Rhus copallina L., Dwarf sumac. Common; field edges and banks of Lake Eustis; range 5.a; (242).

Rhus radicans L., Poison ivy. Common; in low pine and mixed deciduous woods; range 5 a; (359, 530).

AQUIFOLIACEAE

*Ilex opaca Aiton, Holly. Common; low mixed pine-deciduous woods; range 5 a; (357).

*I. verticillata (L.) Gray, Black alder. A few plants at edge of sandy stream outlet into Lake Eustis; range 5 a; (916).

CELASTRACEAE

*Euonymus americanus L., Strawberry bush. Common; low woods and ravines; range 5 a; (591).

ACERACEAE

Acer rubrum L., Red maple. Abundant; low woods; range 5 a; (349, 389).

*A. saccharum L. ssp. floridanum (Chapman) Desmarais, Southern sugar maple. Rare; low deciduous woods above Bailey Creek; range 5 c; (992).

BALSAMINACEAE

*Impatiens capensis Meerb., Jewel-weed. Abundant; wet ravine bottoms; range 5 a; (752, 864).

VITACEAE

Parthenocissus quinquefolia (L.) Planchon, Virginia creeper. Abundant; climbing on trees and banks; range 4; (283).

*Vitis rotundifolia Michaux, Muscadine. Common; climbing at edges of woods and on large trees around old homesites; range 5 c; (817).

*V. vulpina L., Frost grape. Common; climbing in low woods; range 5 a; (720).

MALVACEAE

*Kosteletskya virginica (L.) Resl., Seashore mallow. Common; marshes of James River; range 5 e; (776a).

*Hibiscus moscheutos L. ssp. moscheutos, Rose mallow. Common; marshes and edges of Lake Eustis; range 6 c; (713, 758).

HYPERICACEAE

- Hypericum gentianoides (L.) BSE, Pineweed. One colony on dry roadbank near James River; range 5 a; (781).
- *H. hypericoides (L.) Crantz, St. Andrew's Cross. Occasional; mixed deciduous woods along trail and roadsides near Lake Eustis; range 4; (374).
- *H. mutilum L. Abundant; low woods and wet roadsides; range 5 a; (203, 218, 697, 741).
- *H. perforatum L. One colony in sandy soil at edge of pine woods near Fort Crafford; range 7; (707).
- H. punctatum Lam. One colony in occasionally cleared pine-oak woods; range 5 a; (796).

VIOLACEAE

- *Viola affinis LeConte. Occasional; mixed deciduous woods; range 5 a; (414).
- *V. emarginata (Nutt.) LeConte var. acutiloba Brainerd. A few plants in low pine-oak-Myrica woods behind golf course; range of sp. 5 a; range of var. 6 b; (1055).
- *V. palmata L. var. sororia (Willd.) Pollard. A few plants in low woods above General's pond, Mulberry Island; range 5 a; (1051).
- *V. rafinesquii Greene, Field pansy. Common; fields and roadside banks; range 7; (426).

PASSIFLORACEAE

- Passiflora incarnata L. Maypops. A few vines on shrubby, wet bank near Warwick Pier; range 5 a; (836).
- *P. lutea L., Passion flower. A few plants on Albizia on shrubby wet bank near Warwick Pier; range 5 a; (834).

ELEAGNACEAE

- *Eleagnus pungens Thunb., Silverberry. A few plants in mixed deciduous woods on slope behind Summerall St, probably escaped; range 7; (392).

LYTHRACEAE

- *Rotala ramosior (L.) Koehne. One colony in cattail swale by Back River Rd.; range 4; (332).
- *Decodon verticillatus (L.) Ell., Water willow. Common; edges of Lake Eustis and marshes; range 5 a; (239).
- *Lythrum lineare L. One colony in sandy marsh on James River; range 5 e; (753).

MELASTOMATACEAE

- *Rhexia ventricosa Fern. and Griseb., Meadow-beauty. Occasional; marshes and ditches; range 6 c; (253, 740).

ONAGRACEAE

- Ludwigia alternifolia L. Occasional; marshes and roadside ditches; range 5 a; (761).
- *L. palustris (L.) Ell. One colony in cattail swale at edge of golf course; range 4; (656a).
- *Oenothera biennis L., Evening primrose. Common; roadsides; range 5 e; (757, 928).
- *O. laciniata Hill. Occasional; disturbed, sterile soil; range 5 a; (525).
- *Circaea lutetiana Gray ssp. canadensis (L.) Ascherson & Magnus. Common; rich deciduous woods; range of sp. 2; range of ssp. 5 a; (680).

HALAGORACEAE

- **Proserpinaca palustris L. One large colony in marsh just beyond barrier to firing range, Mulberry Island; range 4; (881).
- **Myriophyllum pinnatum (Walter) BSP. One colony at edge of marsh between two pine stands near Fort Crafford; range 4; (718).

ARALIACEAE

- Hedera helix L., Ivy. Occasional; escaping near new homesites and persisting at old ones; range 7; (395).
- Aralia spinosa L., Hercules club. Common; rich deciduous woods; range 5 a; (369).

APIACEAE

- *Hydrocotyle umbellata L., Marsh pennywort. Common; edges of Lake Eustis and other ponds; range 4; (844).
- *H. verticillata Thunberg var. verticillata. Common; marshes; range 4; (661, 882).
- Sanicula canadensis L., Black snakeroot. One colony in ravine in mixed deciduous woods near Warwick River at Stillwell St.; range 5 a; (679).
- Daucus carota L., Queen Anne's lace. Common; dry roadsides; range 7; (705).
- *Chaerophyllum tainturieri Hooker, Wild chervil. Occasional; disturbed roadsides; range 5 c; (423).
- Foeniculum vulgare Miller, Fennel. Common; dry, disturbed fields and roadsides; range 7; (298).
- *Cryptotaenia canadensis (L.) DC., Honewort. One colony in sandy ravine bottom near Lake Eustis; range 5 a; (810).
- *Lilaeopsis chinensis (L.) Kuntze. One colony on border of Warwick River marsh; range 6 a (2); (634).
- *Ptilimnium capillaceum (Michaux) Raf. Occasional; low roadsides and marsh edges; range 5 e; (716, 777).

NYSSACEAE

- *Nyssa sylvatica Marshall var. sylvatica, Black gum. Common; low woods; range 5 a; (702).

CORNACEAE

- Cornus florida L., Flowering dogwood. Abundant; understory in mixed pine-deciduous woods; range 4; (274, 452).

CLETHRACEAE

- Clethra alnifolia L. var. alnifolia, Sweet pepperbush. Occasional; by marshes, edges of Lake Eustis; range 5 a; (670).

ERICACEAE

- *Chimaphila maculata (L.) Pursh, Spotted wintergreen. Common; rich mixed deciduous woods; range 6 a (1); (225, 647).

- Monotropa uniflora L., Indian pipe. Occasional; low pine-oak-sweet gum woods; range 2; (338).
- *Rhododendron nudiflorum (L.) Torr., Wild azalea. Common; low pine-deciduous woods; range 6 a (1); (454).
- *Kalmia latifolia L., Mountain Laurel. Common; deciduous woods near edges of Lake Eustis and by Warwick River; range 5 a; (588).
- Leucothöe racemosa (L.) Gray, Fetter-bush. Occasional; low pine-oak woods; range 6 a (1); (503).
- *Oxydendrum arboreum (L.) DC., Sourwood. Common; mixed deciduous woods; range 6 c; (676).
- *Epigaea repens L., Trailing arbutus. Common; steep banks around Lake Eustis; range 5 a; (410).
- *Gaylussacia baccata (Wang) K. Koch, Black huckleberry. Occasional; in open mixed pine-deciduous woods; range 5 a; (445).
- *G. frondosa (L.) T. & G., Dangleberry. Occasional; low wooded slopes; range 5 a; (553).
- *Vaccinium atrococcum (Gray) Heller, Black highbush blueberry. Occasional; beech-oak woods near Lake Eustis; range 5 a; (420, 407).
- V. stamineum L. var. stamineum, Deerberry. Occasional; beech-oak woods; range 5 a; (501).
- V. vacillans Torrey. Common; beech-oak woods near Lake Eustis and Warwick River; range 5 a; (444, 497, 551).

DIAPENSIACEAE

- *Galax aphylla L., Galax. One colony near top of steep ravine bank between trailer court and Warwick River; range 6 c; (622).

PRIMULACEAE

- *Lysimachia quadrifolia L., Whorled loosestrife. One colony at roadside under white oaks along Kells Rd.; range 6 a (1); (648).
- *Anagallis arvensis L., Scarlet pimpernel. Abundant in fields and roadsides; range 7; (628).
- Samolus parviflorus Raf., Water pimpernel. Common; marshes of Warwick and James Rivers; range 4; (617).

EBENACEAE

Diospyros virginiana L., Persimmon. Common; just above marshes; range 5 a; (297, 622).

SYMPLOCACEAE

*Symplocos tinctoria (L.) L'Her, Sweet leaf. One colony in rich ravine near Warwick River; range 5 e; (673).

OLEACEAE

Fraxinus sp. A few trees near edge of Lake Eustis. (921).

Ligustrum sinense Lour., Privet. Persisting around old homesites; range 7; (633, 831).

GENTIANACEAE

*Sabatia angularis (L.) Pursh, Rose-pink. Common; open pine-deciduous woods; range 5 a; (205, 799).

*S. stellaris Pursh, Marsh-pink. Depauperate specimen in marsh near drained pond by 1000 inch range, Mulberry Island; range 6 a (2); (966).

*Gentiana villosa L. Two plants in disturbed pine-deciduous stand on peninsula above Lake Eustis; range 5 a; (380).

*Bartonia virginica (L.) BSP. One colony on pine-maple-dogwood slope between sand pool and Lake Eustis; range 5 a; (814).

APOCYNACEAE

*Apocynum cannabinum L., Indian Hemp. Common; dry fields, roadsides, cutover areas; range 3 a; (385, 641).

*Vinca minor L., Periwinkle. Common; persisting at old homesites; range 7; (1059).

ASCLEPIDIACEAE

*Asclepias incarnata L. ssp. pulchra (Willd.) Woodson, Swamp milkweed. One large colony in low, wet field near James River; range 6 a (1); (779).

*A. tuberosa L. ssp. tuberosa, Butterfly weed. Occasional; roadside banks; range 5 a; (696).



*Asclepias variegata L. Common; cleared, disturbed areas; 5 a; (599, 638, 827).

*Cynanchum laeve (Michaux) Persoon. Occasional; wet banks; range 5 a; (786, 979).

CONVOLVULACEAE

*Cuscuta compacta Juss., Compact dodder. Common; on herbaceous plants in wet ravines and lake edges; range 5 a; (806).

*Calystegia sepium L., Hedge bindweed. Occasional; dry, disturbed roadsides; range 4; (603).

*Ipomoea lacunosa L. Occasional; above marsh and on wet bank; range 5 a; (833, 885).

BORAGINACEAE

*Cynoglossum virginicum L., Wild Comfrey. Occasional; mesic deciduous woods; range 5 a; (579).

*Hackelia virginiana (L.) I.M. Johnston. One colony above marsh bordering Ft. Crafford homesite; range 5 a; (310).

*Myosotis verna Nutt. A few plants in disturbed sterile soil by road to Ft. Crafford; range 4; (467).

VERBENACEAE

Verbena brasiliensis Vellozo. Occasional; dry to wet open roadsides; range 7; (249, 754).

V. urticifolia L., White vervain. Common; roadsides, old homesites; range 5 a; (317, 721, 760).

*Callicarpa americana L., French mulberry. Common; low, disturbed woods; range 5 c; (246, 695).

PHYRMACEAE

Phryma leptostachya L., Lop-seed. Occasional; low, wooded ravines; range 2; (794).

LAMIACEAE

*Scutellaria elliptica Muhl., Hairy skullcap. A few plants in mixed deciduous woods near trailer court; range 5 a; (675).

- *Scutellaria integrifolia L., Skullcap. Common; low, weedy roadsides; range 5 a; (615).
- *S. lateriflora L. A few plants in wet rut in road through low deciduous woods behind movie theater; range 3 a; (811).
- *Glechoma hederacea L., Ground ivy. Occasional; old homesites; range 7; (1045).
- Prunella vulgaris L. Occasional; disturbed roadsides and edges of woods; range 7; (236, 762).
- Lamium amplexicaule L., Henbit. Common; low fields, roadsides, and weedy lawns; range 7; (399).
- *Salvia lyrata L., Lyre-leaved sage. Abundant; roadsides; range 5a; (473).
- **Monarda fistulosa L. One colony in brushy edge of path between Fort Crafford and James River marsh; range 4; (725).
- *Cunila origanoides (L.) Britton. Occasional; scattered in mixed deciduous woods above Lake Eustis; range 5 a; (913).
- *Lycopus americanus Muhl. ex Barton. One plant on willow snag in pond near ammo dump, Mulberry Island; range 3; (906).
- *L. europaeus L. One colony in marshy area by railroad tracks; range 7; (851).
- *L. virginicus L. One colony in partly shaded marsh near Harrison Rd.; range 5 a; (257).
- *Mentha arvensis L. A few plants in weedy dump (abandoned garden?); range 1; (774).
- *M. spicata L., Spearmint. A few plants in weedy dump (abandoned garden?) by trailer court; range 7; (773).

SOLANACEAE

- *Solanum americanum Miller. A few plants in concrete dumps along shore of James River; range 5 a; (748).
- *S. carolinense L. Sandy or dry fields and roadsides; range 5 a; (282).
- *Datura stramonium L., Jimson weed. Occasional; disturbed roadsides; range 7; (843).

SCROPHULARIACEAE

- *Paulownia tomentosa (Thunberg) Steudel, Princess tree. Abundant; disturbed edges of woods; range 7; (375).
- *Gratiola virginiana L., Hedge hyssop. One colony in swampy stream on Wilson Dr.; range 5 a; (515).
- **Lindernia anagallidea (Michaux) Pennell. One colony in puddle at edge of dirt road near Fort Crafford; range 4; (708).
- *Verbascum blattaria L., Moth mullein. Common; roadsides; range 7; (594).
- V. thapsus L., Common mullein. Common; railroad tracks and disturbed roadsides; range 7; (824).
- Linaria canadensis (L.) Dumont, Old-field-toadflax. Occasional; roadsides and railroad tracks and banks; range 4; (570).
- *Veronica anagallis-aquatica L. One colony at edge of partly dammed fresh-water stream at sanitary landfill; range 8 a; (1086).
- *V. arvensis L. Common; mowed fields and lawns; range 7; (402).
- *V. peregrina L. Occasional; weedy disturbed lawns; range 3 b; (446).
- *V. persica Poiret. Common; weedy lawns; range 7; (430).
- *Aureolaria virginica (L.) Pennell. Downy false foxglove. One colony under white oaks on Kells Rd.; range 5 a; (691).
- *Agalinis purpurea (L.) Pennell. Common; open wet fields and roadsides; range 4; (231, 235, 307, 326).

BIGNONIACEAE

- Anisostichus capreolata (L.) Bureau, Crossvine. Occasional; on pines; range 5 a; (829).
- Campsis radicans (L.) Seeman, Trumpet creeper. Common; edges of woods and fence rows; range 5 a; (699).

OROBANCHACEAE

- Epifagus virginiana (L.) Barton, Beech-drops. Common; under beeches; range 5 a; (237).

LENTIBULARIACEAE

*Utricularia gibba L. One large colony in marshy pond between two pine stands near Ft. Crafford; range 4; (717).

ACANTHACEAE

*Ruellia caroliniensis (Walter) Steudel. Occasional; wet roadsides and edges of woods; range 5 c; (683, 755).

PLANTAGINACEAE

Plantago aristata Michaux, Long-bracted plantain. Common; dry, open fields; range 3 a; (614, 694).

**P. heterophylla Nuttall. One colony in weedy disturbed lawn by movie theater; range 3 a; (449).

P. lanceolata L., English plantain. Abundant; roadsides and sandy banks; range 7; (456, 495, 730).

*P. rugelii Dcne., Common plantain. Occasional; weedy roadsides; range 5 a; (690).

*P. virginica L. Abundant; roadsides, fields, and railroad tracks; range 3 a; (472).

RUBIACEAE

*Cephalanthus occidentalis L., Buttonbush. Common; edges of marshes and Lake Eustis; range 4; (646).

Diodia teres Walt., Buttonweed. Occasional; edges of fields; range 5 a; (925).

*D. virginiana L., Buttonweed. Common; edges of fields; range 5 a; (214, 173).

*Mitchella repens L., Partridge-berry. Common; mixed pine-deciduous and deciduous woods; range 5 a; (347, 571).

*Oldenlandia uniflora L. One colony in Juncus marsh behind 1000 inch range, Mulberry Island; range 4; (965).

*Houstonia caerulea L., Bluets. Abundant; deciduous woods and roadsides; range 5 a; (417).

*Sherardia arvensis L. Common; roadsides and weedy lawns; range 7; (509).

- *Galium aparine L., Cleavers. Common; woods and dry to wet roadsides; range 1; (465).
- *G. tinctorium L. One colony at edge of cattail swale by golf course; range 3 a; (653).
- *G. triflorum Michaux. One colony at edge of swamp woods; range 1; (985).
- *G. uniflorum Michaux. One small colony in mixed pine-deciduous woods on peninsula by Lake Eustis; range 5 c; (378).

CAPRIFOLIACEAE

- Lonicera japonica Thunberg, Japanese honeysuckle. Very abundant; woods, roadside banks; range 7; (273, 736).
- *Viburnum acerifolium L., Maple-leaved viburnum. Occasional; rich deciduous woods; range 5 a; (791).
- *V. nudum L., Possum-haw. Occasional; edges of swamps and Lake Eustis; range 5 a; (1070).
- *V. prunifolium L., Black haw. Occasional; low roadsides and marsh edges; range 5 a; (563).
- Sambucus canadensis L., Elderberry. Common; edges of Lake Eustis and low woods; range 5 a; (645).
- Weigelia japonica Thunb. A few plants apparently persisting from cultivation in brushy edge of fence row; range 7; (1073).

VALERIANACEAE

- *Valerianella locusta (L.) Betsche, Corn salad. Occasional; weedy lawns; range 7; (434).
- *V. radiata (L.) Dufur., Corn salad. Common; railroad tracks and fields; range 5 a; (471).

CUCURBITACEAE

- *Melothria pendula L., Creeping cucumber. Occasional; low fields and around old homesites; range 4; (723).

CAMPANULACEAE

- **Specularia biflora (R. & P.) F. & M. A few plants at brushy edge of Taylor Rd.; range 4; (602).
- S. perfoliata (L.) A. DC., Venus' looking-glass. Occasional; railroad tracks; range 4; (569).
- *Lobelia cardinalis L., Cardinal flower. Occasional; edges of Lake Eustis; range 5 a; (248).
- *L. inflata L., Indian tobacco. A few plants in disturbed shaded roadside along Kells Rd.; range 5 a; (759).
- L. puberula Michaux. Common; pine and deciduous woods; range 5 c; (206).

ASTERACEAE

- *Iva frutescens L., Marsh elder. Common; edges of James River marshes; range 5 e; (290).
- Ambrosia artemisiifolia L., Ragweed. Abundant; roadsides, fields, waste places; range 4; (896).
- *Cichorium intybus L., Chicory. Occasional; dry roadsides; range 7; (803).
- Lactuca canadensis L., Wild lettuce. Common; dry open fields and roadsides; range 3 a; (728, 770, 802).
- *L. floridana (L.) Gaertner, Wild lettuce. Occasional; rich deciduous woods; range 5 a; (871).
- *L. scariola L., Prickly lettuce. A few plants on dry bank near James River; range 7; (784).
- *Sonchus asper L., Sow thistle. Common; dry roadsides; range 7; (519, 847).
- Hieracium gronovii L. Common; pine and deciduous woods; range 5 a; (238, 271).
- *H. venosum L., Rattlesnake-weed. Common; banks at edges of woods; range 5 a; (556).
- *Crepis japonica (L.) Benth. Several plants in road through mixed deciduous woods near Lake Eustis; range 7; (581).
- C. pulchra L. One small roadside colony near James River; range 7; (604).

- Hypochoeris radicata L., Cat's ear. Common; roadsides; range 7; (608).
- Krigia virginica (L.) Willd., Dwarf dandelion. Occasional; roadside banks; range 5 a; (428).
- Pyrrhopappus carolinianus (Walter) DC. var. carolinianus. Abundant; railroad banks, woodland borders, and roadsides; range 5 c; (294, 612, 712).
- Taraxacum officinale Wiggers, Dandelion. Very abundant; roadsides, lawns, fields; range 7; (390).
- *Cacalia atriplicifolia L., Pale Indian-plantain. Occasional; low clearing near railroad tracks; range 5 a; (823).
- Senecio aureus L., Golden ragwort. Very abundant; low woods, ravine bottoms, old homesites; range 5 a; (415).
- S. smallii Britton. Occasional; edges of mesic woods; range 6 a (1); (598).
- Erechtites hieracifolia (L.) Raf., Fireweed. Common; disturbed areas in woods; range 5 a; (202, 869).
- *Carduus discolor (Muhl. ex Willd.) Nuttall. Common; roadsides and old homesites; range 5 a; (250, 309).
- *C. spinosissimus Walter, Yellow thistle. A few plants along railroad track on Harrison Rd.; range 5 e; (564).
- *Arctium minus (Hill) Bernh., Burdock. One colony on roadside by brackish marsh near Fort Crafford; range 7; (306).
- *Vernonia noveboracensis (L.) Michaux, Ironweed. A few plants in opening of deciduous woods at edge of Lake Eustis; range 6 a (1); (911).
- *Elephantopus carolinianus Willd. Common; open or brushy woods; range 5 c; (296, 835, 863, 893).
- *E. nudatus Gray. One colony in disturbed area near marsh beyond ammo dump, Mulberry Island; range 5 e; (890).
- *E. tomentosus L. Occasional; mixed deciduous woods; range 5 e; (228, 873).
- *Eupatorium aromaticum L. One colony in mixed deciduous woods, Kells Rd.; range 5 a; (221).
- E. capillifolium (Lam.) Small var. capillifolium, Dog fennel. Very abundant; roadsides, open fields, disturbed areas; range 5 a; (278).
- *E. coelestinum L., Mistflower. Common; along roadsides at edges of deciduous woods; range 4; (201, 220).

- Eupatorium hyssopifolium L. Common; edges of low woods; range 5 a; (821, 923, 941).
- *E. rotundifolium L. var. ovatum (Bigelow) Torrey. Occasional; low clearings in woods; range of species 5 a, of var. 6 c; (812, 822).
- *E. rugosum Houttyn. One colony in mixed deciduous woods near Monroe St.; range 5 a; (914).
- *E. serotinum Michaux. Common; low woods; range 4; (226, 860).
- *Mikania scandens (L.) Willd., Climbing hempweed. Common; marshes; range 5 a; (258).
- *Pluchea camphorata (L.) DC. Occasional; low mixed pine-deciduous woods; range 5 a; (209).
- *P. foetida (L.) DC. One colony on marshy roadside at ammo dump, Mulberry Island Rd.; range 4; (876).
- P. purpurascens (Swartz) DC., Camphorweed. Occasional; low woods; range 4; (207).
- *Antennaria plantaginifolia (L.) Richardson var. plantaginifolia, Pussy-toes. Large colony on shaded bank of Civil War moat at Fort Crafford; range 5 a; (1060).
- *Gnaphalium obtusifolium L., Rabbit tobacco. One colony on disturbed cut-over roadside near ammo dump, Mulberry Island Road; range 5 a; (894).
- *G. purpureum L. var. purpureum, Purple cudweed. Very abundant; roadsides, weedy lawns; range 4; (463, 496, 763).
- *Baccharis halimifolia L., Groundsel-tree. Abundant; edges of marshes and Lake Eustis; range 4; (240, 279, 300).
- *Erigeron annuus (L.) Persoon, Daisy-fleabane. Common; fields and roadsides; range 3 a; (635, 684).
- *E. canadensis L. var. canadensis, Horseweed. Occasional; roadsides; range 4; (842).
- E. philadelphicus L., Daisy fleabane. One colony on roadside through deciduous woods; range 5 a; (585).
- E. pulchellus Michaux, Robin's plantain. One colony on disturbed roadside in mixed deciduous woods; range 5 a; (583).

- *Aster lateriflorus (L.) Britton ? One collection in low woods near General's pond, Mulberry Island; range 5 a; (953).
- *A. paternus Cronquist, White-topped aster. Occasional; dry oak or pine-oak woods; range 6 a (1); (649, 666).
- *A. pilosus Willd. var. pilosus, Frost aster. Abundant; fields and roadsides; range 5 a; (234, 938, 968).
- *A. subulatus Michaux. Common; brackish marshes; range 5 e; (319, 939).
- *A. tenuifolius L. One colony in Juncus marsh behind 1000 inch range, Mulberry Island; range 6 a(2); (956).
- *A. vimineus Lam. One colony in mowed edge of marsh at the headwaters of Morrison Creek; range 5 e; (946).
- *Solidago altissima L. Common; wet fields and roadsides; range 5 a; (259, 292, 293).
- S. caesia L., Blue stem goldenrod. Common; mixed deciduous woods; range 5 a; (227).
- **S. fistulosa Miller. One colony at edge of marsh at headwaters of Morrison Creek; range 5 e; (947).
- *S. microcephala (Greene) Bush. One colony in partly shaded marsh near Harrison Rd.; range 5 e; (254).
- *S. nemoralis Aiton. Occasional; sandy soil under pines; range 5 a; (331).
- *S. pinetorum Small. One colony in low clearing near railroad tracks; range 6 c; (820).
- **S. puberula Nuttall. A few plants on bank in mixed pine-deciduous woods; range 6 a (1); (247).
- *S. rugosa Miller
- var. rugosa. Common; low roadsides and woods edges; range 5 a; (252, 339).
- var. celtidifolia (Small) Fernald. Occasional; in open, rich, deciduous woods; range 5 c; (252, 339).
- S. sempervirens L., Seaside goldenrod. Occasional; wet roadsides near brackish marshes; range 4; (291).

- *Heterotheca mariana (L.) Shinnars. Common; sandy roadsides; 5 a; (325, 982).
- *Polymnia uvedalia L., Bearsfoot. Occasional; low deciduous woods and railroad bank; range 5 a; (795, 852).
- *Eclipta alba (L.) Hassk. One small colony in wet, mowed edge of swampy woods, Wilson Dr.; range 8 b; (980).
- Rudbeckia hirta L., Black-eyed Susan. Common; roadsides and edges of woods; range 6 a (1); (682).
- *Verbesina occidentalis (L.) Walter. Very abundant; characteristic of old homesites; range 5 a; (316).
- *V. virginica L., Tickweed. One small colony along trail in deciduous woods near Stillwell St.; range 5 c; (872).
- *Bidens aristosa (Michaux) Britton. Occasional; edges of deciduous woods; range 5 a; (875).
- *B. bipinnata L., Spanish needles. Common; low woods and fields; range 4; (322, 837).
- *B. discoidea (T. & G.) Britton. A few plants in "swampy woods" near Harrison Rd.; range 5 a; (256).
- *B. frondosa L., Beggar ticks. One colony in small cattail marsh on Back River Rd.; range 3 a; (333).
- *Galinsoga ciliata (Raf.) Blake, Peruvian daisy. Occasional; sandy waste areas; range 7; (922).
- *Achillea millefolium L., Yarrow. Common; fields, roadsides, railroad tracks; range 7; (656).
- *Anthemis cotula L., Dog fennel. Common; roadsides and edges of woods; range 7; (644).
- *Chrysanthemum leucanthemum L., Ox-eye daisy. Common; lawns, fields, and roadsides; range 7; (592).

APPENDIX

CHECKLIST OF THE VASCULAR FLORA OF THE PENINSULA

The following checklist is a synthesis of studies of the flora of the Peninsula of Virginia by several individuals. Barans (1974) studied the flora of the College Woods of the College of William and Mary, and Loetterle (1970) studied the flora of Jamestown Island. Collections of both of these workers are entered in the James City County list. Gillespie (1970) collected in New Kent County, and Salle (1972) reported on the flora of York County along the Colonial Parkway. Like the author's present work on Fort Eustis in the City of Newport News, the results of these studies are contained in masters theses on file at the College of William and Mary. Their voucher specimens, plus those of D.M.E. Ware, are on deposit in the Herbarium of the College of William and Mary. Ware's collections include those from a continuing study in Charles City County and limited collections from Langley Air Force Base in Hampton and Newport News City Park in Newport News. The material collected by Ole Davis (1971) of Hampton is on file in the herbarium of Longwood College, Farmville, Virginia, and is comprised of collections from the Grandview Natural Preserve, Hampton.

The checklist includes the collector's initial, followed by his collecting number, if available. The collectors and their initials are listed below:

A Appler
B Barans
D Davis
G Gillespie
L Loetterle
S Salle
W Ware

The six counties or cities of the Peninsula are indicated by their initials at the top of each page (Figure 2). These collections total 1,129 species of 525 genera, representing 132 families. Nomenclature follows Radford, Ahles, and Bell (1968). This compilation should serve as a working checklist for the flora of the Peninsula.

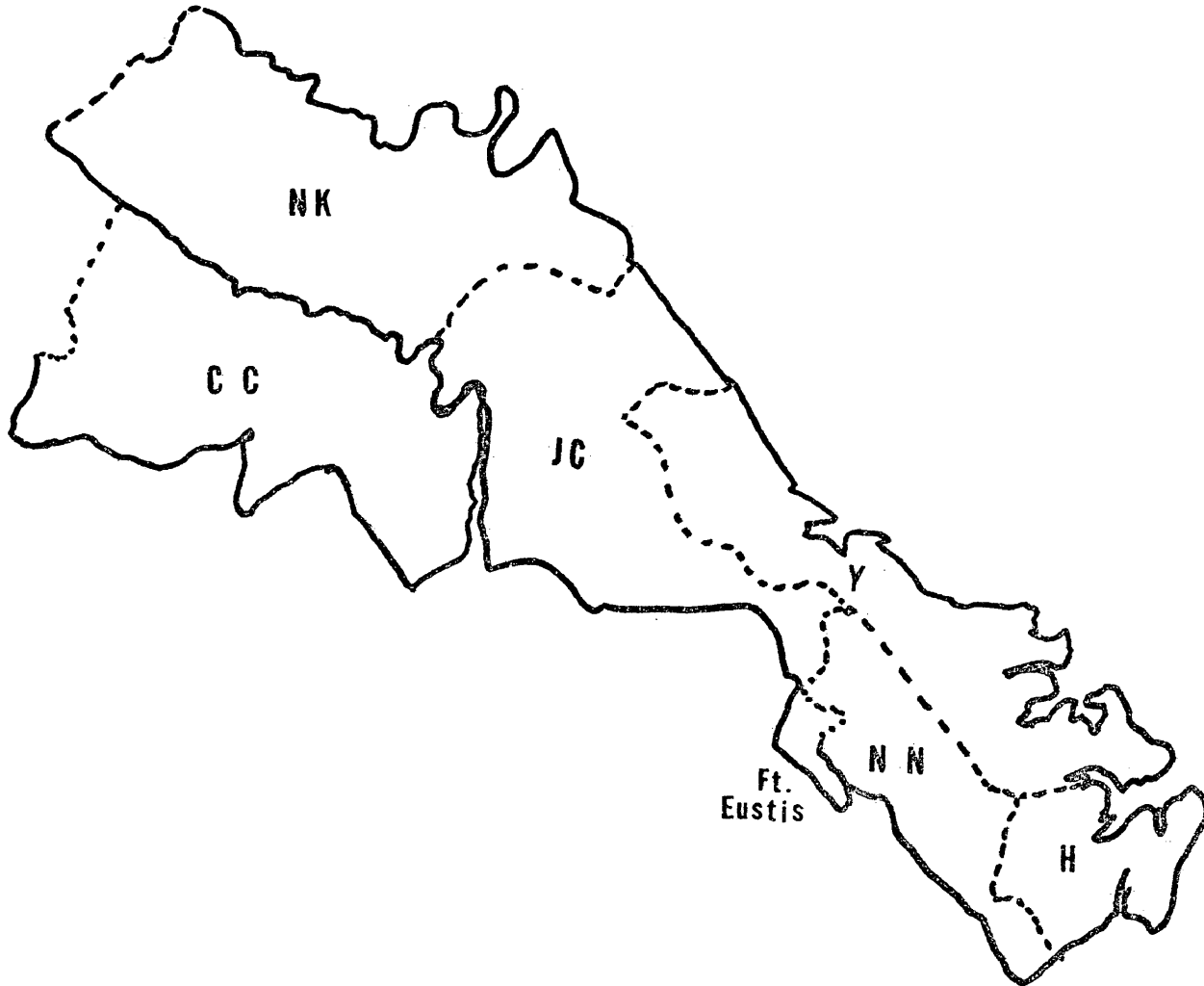


Figure 2

The Peninsula of Virginia

City or County	Abbreviation
New Kent County	NK
Charles City County	CC
James City County	JC
York County	Y
City of Newport News	NN
City of Hampton	H

	C.C.	N.K.	J.C.	Y.	N.N.	H.
EQUISETACEAE						
<u>Equisetum</u>						
<u>arvense</u>		G. 131	B. 743	S. 136	A.1058	
<u>hyemale</u>		G. 96	B. 734	S. 317		
LYCOPODIACEAE						
<u>Lycopodium</u>						
<u>flabelliforme</u>	W.2554	G. 6	B. 527 L. 118	S. 610	A. 970	
<u>lucidulum</u>	W.4070					
<u>obscurum</u>	W.3838					
SELAGINELLACEAE						
<u>Selaginella</u>						
<u>apoda</u>	W.3892	G. 14	B. 11	S. 780		
OPHIOGLOSSACEAE						
<u>Botrychium</u>						
<u>dissectum</u>	W.3939	G. 265	B. 532	S. 675	A. 903	W.4584
<u>virginianum</u>		G. 76	B. 203	S. 145	A. 681	W.4673
<u>Ophioglossum</u>						
<u>vulgatum</u>						
var. <u>pycnostichum</u>	W.2851	G. 111	L. 697		A.1090	W.4644
OSMUNDACEAE						
<u>Osmunda</u>						
<u>cinnamomea</u>	W.2478	G. 49	B. 173 L. 754	S. 846	A. 792	
<u>regalis</u>						
var. <u>spectabilis</u>	W.2642	G. 50	B. 616 L. 195		A. 328	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
PTERIDACEAE						
<u>Adiantum</u> <u>pedatum</u>			B. 436		A. 865 W. 4159	
<u>Dennstaedtia</u> <u>punctilobula</u>			B. 436 L. 504			
<u>Pellaea</u> <u>atropurpurea</u>		G. 614				
<u>Pteridium</u> <u>aquilinum</u>	W. 2458		B. 248 L. 345	S. 147	A. 767	
ASPIDIACEAE						
<u>Athyrium</u> <u>asplenioides</u>	W. 2712	G. 132	B. 540 L. 572	S. 461	A. 373	
<u>Woodsia</u> <u>obtusa</u>	*					
<u>Dryopteris</u> <u>celsa</u>	W. 5209		L. 605	S. 407	A. 1061	
<u>spinulosa</u>			L. 613			
<u>Polystichum</u> <u>acrostichoides</u>	W. 2512	G. 398	B. 186 L. 309	S. 159	A. 222	
<u>Thelypteris</u> <u>hexagonoptera</u>	W. 4131	G. 133	B. 716 L. 709		A. 204	
<u>noveboracensis</u>	W. 2479	G. 130	B. 612 L. 575	S. 612	A. 275	
<u>palustris</u>	W. 3861		L. 326	S. 832		
<u>Onoclea</u> <u>sensibilis</u>	W. 2690	G. 42	B. 738 L. 238	S. 818	A. 387	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
BLECHNACEAE						
<u>Woodwardia</u> <u>areolata</u>	W.2353	G. 221	B. 448 L. 568	S. 511	A. 323	
<u>virginica</u>	W.3587		L. 794		A.1069	
ASPLENIACEAE						
<u>Asplenium</u> <u>platyneuron</u>	W.2434	G. 48	B. 202 L. 25	S. 269	A. 272	
AZOLLACEAE						
<u>Azolla</u> <u>caroliniana</u>			L. 577	S.772B	A. 883	
PINACEAE						
<u>Pinus</u> <u>echinata</u>			B. 737		A. 993	
<u>taeda</u>	W.2561	G. 412	B. 741 L. 97	S. 3	A. 438	W.4600
<u>virginiana</u>	W.2383	G. 333	B. 487 L. 610	S. 61	A. 367	
TAXODIACEAE						
<u>Taxodium</u> <u>distichum</u>	W.2275	G. 5	L. 180	S. 664	A. 909	
CUPRESSACEAE						
<u>Chamaecyparis</u> <u>pisifera</u>					A. 998	
<u>Juniperus</u> <u>virginiana</u>	W.2733	G. 414	B. 170 L. 96	S. 4	A. 358	
TYPHACEAE						
<u>Typha</u> <u>angustifolia</u>			L. 34	S. 282	A. 949	D.

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Typha</u> <u>latifolia</u>	W.2468	G. 135	B. 682 L. 459	S. 359	A. 654	D.
ZOSTERACEAE						
<u>Zostera</u> <u>marina</u>				S. 825		D.
POTAMOGETONACEAE						
<u>Potamogeton</u> <u>crispus</u>			B. 727			
RUPPIACEAE						
<u>Ruppia</u> <u>maritima</u>						D.
NAJADACEAE						
<u>Najas</u> <u>flexilis</u>			B. 497			
<u>guadalupensis</u>				S. 828		
JUNCAGINACEAE						
<u>Triglochin</u> <u>striata</u>				S. 584		
ALISMATACEAE						
<u>Alisma</u> <u>subcordatum</u>	W.3931	G. 253				
<u>Sagittaria</u> <u>falcata</u>			L. 141		A. 756	
<u>graminea</u> var. <u>weatherbiana</u>		G. 135				W.4690
<u>latifolia</u>	W.3072			S. 779		

	C.C.	N.K.	J.C.	Y.	N.N.	H.
HYDROCHARITACEAE						
<u>Elodea</u> <u>canadensis</u>		G. 25	B. 93			
<u>Egeria</u> <u>densa</u>	W.3800					
POACEAE						
<u>Arundinaria</u> <u>gigantea</u>			L. 70			
<u>Phyllostachys</u> <u>aurea</u> ?					A. 652	
<u>Phragmites</u> <u>communis</u>						D.
<u>Cynosurus</u> <u>echinatus</u>				S. 339	A. 624	
<u>Distichlis</u> <u>spicata</u>				S. 490		D.
<u>Tridens</u> <u>flavus</u>	W.2578	G. 377	B. 418 L. 235	S. 633	A. 314 W.4163	
<u>Triplasis</u> <u>purpurea</u>						D.
<u>Uniola</u> <u>latifolia</u>				S. 379		
<u>laxa</u>	W.2547	G. 392	B. 402 L. 228		A. 336 W.4408	
<u>Eragrostis</u> <u>hirsuta</u>				S. 518	A. 907	
<u>pilosa</u>						D.
<u>spectabilis</u>	W.2531	G. 370	B. 509 L. 381	S. 444	A. 908	D.

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Dactylis</u> <u>glomerata</u>	W.2293	G. 558	B. 736 L. 797	S. 129	W.4171	
<u>Bromus</u> <u>carinatus</u>						D.
<u>catharticus</u>					A. 610	
<u>commutatus</u>			B. 546 L. 784		A. 630	
<u>japonicus</u>	W.2294		B. 340		A. 595	
<u>mollis</u>				S. 265		
<u>purgans</u>				S. 307		
<u>tectorum</u>				S. 226		
<u>Poa</u> <u>annua</u>	W.2868	G. 403	L. 846	S. 34	A. 398	W.4654 D.
<u>autumnalis</u>		G. 586	B. 182		A. 550	
<u>compressa</u>		G. 711	L. 846	S. 332		
<u>cuspidata</u>				S. 91B		D.
<u>pratensis</u>		G.556B	B. 181 L. 742	S. 82	A. 535	W.2697
<u>Melica</u> <u>mutica</u>	W.4718		B. 106	S. 196	A. 584 W.4164	
<u>Glyceria</u> <u>melicaria</u>				S. 293	W.4155	
<u>striata</u>	W.4185	G. 549	B. 134		A. 555	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Festuca</u>						
<u>elatior</u>	W.2338		B. 353 L. 808	S. 312	A. 526	W.4696 D.
<u>myuros</u>			L. 819		A. 625	W.4749
<u>obtusa</u>		G. 653		S. 248		
<u>octoflora</u> var. <u>tenella</u>			B. 814			
<u>Lolium</u>						
<u>multiflorum</u>	W.2284					
<u>perenne</u>			B. 278 L. 804	S. 275	A. 605	
<u>temulentum</u>			B. 277			
<u>Triticum</u>						
<u>aestivum</u>	W.2304		B. 827			
<u>Hordeum</u>						
<u>pusillum</u>		G. 550	B. 226 L. 773		A. 538	W.4773
<u>Elymus</u>						
<u>villosus</u>	W.4270		B. 510	S. 247		
<u>virginicus</u>	W.2697		B. 380 L. 75	S. 313	A. 737	
<u>Holcus</u>						
<u>lanatus</u>	W.2314		L. 12	S. 267		W. 4740
<u>Trisetum</u>						
<u>pensylvanicum</u>		G. 18	B. 133			
<u>Sphenopholis</u>						
<u>nitida</u>			B. 208	S.170B		
<u>obtusata</u>	W.3063		B. 245 L. 805		A. 639	D.

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Danthonia</u> <u>spicata</u>		G. 710	B. 303 L. 802		A. 650	
<u>Avena</u> <u>sativa</u>			B. 822			
<u>Aira</u> <u>caryophyllea</u>						W.4743
<u>elegans</u>			L. 873			
<u>Stipa</u> <u>avenacea</u>	W.4133	G. 618	B. 184	S. 222		
<u>Aristida</u> <u>oligantha</u>	W.3920				A. 967	
<u>Ammophila</u> <u>breviligulata</u>						D.
<u>Alopecurus</u> <u>carolinianus</u>	W.2869					W.4787
<u>Polypogon</u> <u>monspeliensis</u>					A. 715	W.4786 D.
<u>Phleum</u> <u>pratense</u>	W.3076		B. 339	S. 302		
<u>Sporobolus</u> <u>clandestinus</u>				S. 657		
<u>poiretii</u>	W.2344			S. 741		
<u>Muhlenbergia</u> <u>schreberi</u>				S. 696	A. 313	
<u>tenuiflora</u>			B. 645			

	C.G.	N.K.	J.C.	Y.	N.N.	H.
<u>Agrostis</u> <u>hyemalis</u>			L. 806			W.4774
<u>perennans</u>			B. 539 L. 389		A. 915	
<u>stolonifera</u>			B. 277	S. 330		
<u>Cinna</u> <u>arundinacea</u>	W.3818		B. 539 L. 391	S. 790	A. 341	
<u>Brachyelytrum</u> <u>erectum</u>			B. 577			
<u>Eleusine</u> <u>indica</u>	W.2618		B. 514			
<u>Cynodon</u> <u>dactylon</u>		G. 368	B. 230 L. 871	S. 257		
<u>Leptochloa</u> <u>fascicularis</u>					A. 952	
<u>filiformis</u>						D.
<u>Spartina</u> <u>alterniflora</u>			L. 526	S. 578	A. 957	D.
<u>cynosuroides</u>			L. 343	S. 503	A. 289	
<u>patens</u>				S. 475		D.
<u>Anthoxanthum</u> <u>odoratum</u>	W.2817	G. 458	B. 63 L. 636	S. 49	W.4179	W.4649 D.
<u>Leersia</u> <u>oryzoides</u>	W.3819		B. 626		A. 305	
<u>virginica</u>	W.3816		B. 516	S. 792	A. 311	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Zizaniopsis</u> <u>miliacea</u>		G. 161				
<u>Zizania</u> <u>aquatica</u>	W.2633		L. 611			
<u>Setaria</u> <u>geniculata</u>	W.2433	G. 378		S. 489	A. 898	D.
<u>glauca</u>	W.3881		B. 419 L. 81	S. 565		D.
<u>magna</u>				S. 567	A. 937	
<u>viridis</u>			L. 225			
<u>Cenchrus</u> <u>longispinus</u>			B. 548			
<u>tribuloides</u>			L. 418	S. 474		D.
<u>Echinochloa</u> <u>crusgalli</u>	W.3795		B. 730 L. 411	S. 691	A. 302	
<u>walteri</u>			L. 331			
<u>Paspalum</u> <u>dilatatum</u>	W.3937		B. 282 L. 91	S. 356	A. 312	D.
<u>floridanum</u>	W.2528	G. 380	L. 380	S. 690		
<u>laeve</u>					A. 233 W.4350	
<u>setaceum</u>	W.2510					
<u>Digitaria</u> <u>ischaemum</u> var. <u>ischaemum</u>				S. 765		
<u>sanguinalis</u>			B. 513	S. 553		

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Sacciolepis</u> <u>striata</u>	W.2634		L. 492		A. 887	
<u>Panicum</u> <u>agrostoides</u>					A. 878	
<u>amarulum</u>				S. 521		D.
<u>amarum</u>			L. 382			
<u>anceps</u>	W.2489		L. 224	S. 635	A. 330 W.4410	
var. <u>anceps</u>			B. 458			
var. <u>rhizomatum</u>			B. 547		A. 826	
<u>bosci</u>			B. 535	S. 483	A. 575	
<u>capillare</u>					A. 315	
<u>clandestinum</u>		G. 369	B. 301		A. 629	
<u>commutatum</u>		G. 604	B. 200	S. 636	A. 572	
<u>depauperatum</u>	W.4724		B. 817			
<u>dichotomiflorum</u>					A. 303	
<u>dichotomum</u>			B. 425 L. 304	S. 647	A. 590	
<u>lanuginosum</u>		G. 603	B. 669 L. 856	S. 471	A. 944	D.
<u>laxiflorum</u>				S. 646	A. 547	
<u>microcarpon</u>			L. 11			

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Panicum</u>						
<u>oligosanthes</u>				S. 727		
<u>polyanthes</u>			B. 297 L. 284		A. 677	
<u>scoparium</u>			L. 146	S. 648		
<u>sphaerocarpon</u>			L. 227			
<u>tenue</u>						D.
<u>villosissimum</u>						D.
<u>virgatum</u>				S. 519	A. 879	D.
<u>Microstegium</u>						
<u>vimineum</u>	W.2724					
<u>Erianthus</u>						
<u>contortus</u>	W.2614	G. 273			A. 955	
<u>giganteus</u>	W.2606	G. 374	L. 456		A. 891	
<u>Arthraxon</u>						
<u>hispidus</u>						
var. <u>cryptatherus</u>			L. 429	S. 717	A. 301	
<u>Andropogon</u>						
<u>gerardii</u>		G. 367				
<u>scoparius</u>	W.2655	G. 376	L. 481	S. 622	A. 370	
<u>ternarius</u>	W.2576	G. 381	B. 719	S. 737		
<u>virginicus</u>	W.3828		B. 595 L. 892	S. 621	A. 377	D.
<u>Sorghum</u>						
<u>halense</u>	W.2295	G. 160	B. 528	S. 334		

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Sorghastrum nutans</u>	W.3830		B. 576			
<u>elliottii</u>			B. 636			
<u>Tripsacum dactyloides</u>	W.2288		L. 72	S. 309		
CYPERACEAE						
<u>Cyperus dipsaciformis</u>	W.2406		B. 396 L. 63			
<u>erythrorhizos</u>					A. 961	
<u>esculentus</u>			B. 569	S. 568		D.
<u>filicinus</u>				S. 530	A. 963	
<u>filiculmis</u>	W.2318	G. 175				
<u>flavescens</u>				S. 583	A. 981	
<u>grayi</u>		G. 176	L. 396			D.
<u>iria</u>	W.3883		B. 542		A. 334	
<u>lancastriensis</u>	W.2529	G. 609		S. 420	A. 800	
<u>odoratus</u>				S. 667	A. 919	
<u>ovularis</u>	W.2520		B. 281 L. 21	S. 502	A. 232 W.4366	
<u>polystachyos</u>						D.
<u>pseudovegetus</u>	W.3888				A. 924 W.4350	
<u>retrofractus</u>				S. 348		

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Cyperus</u> <u>retrosus</u>			B. 623	S. 795		D.
<u>rivularis</u>				S. 701		
<u>strigosus</u>	W.2615	G. 373		S. 528	A. 918	
<u>tenuifolius</u>	W.2715		B. 515		A. 216	
<u>Eleocharis</u> <u>acicularis</u>	W.3558					
<u>engelmannii</u>			L. 820			W.4788
<u>fallax</u>			L. 48			
<u>obtusa</u>	W.3935	G. 136	B. 491		A. 632 W.4395	W.4784
<u>parvula</u>						D.
<u>quadrangulata</u>					A. 958	
<u>rostellata</u>		G. 689				
<u>Bulbostylis</u> <u>capillaris</u>	W.4277		B. 399			
<u>Fimbristylis</u> <u>autumnalis</u>					A. 959	
<u>spadicea</u>				S. 442		D.
<u>Scirpus</u> <u>americanus</u>	W.2270	G. 599	L. 49	S. 193	A. 619	D.
<u>atrovirens</u>			B. 275			
<u>cyperinus</u>			B. 594 L. 274		A. 345 W.4356	D.

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Scirpus</u> <u>lineatus</u>			B. 194			
<u>olneyi</u>		G. 86				
<u>robustus</u>			L. 149	S. 388	A. 637	D.
<u>validus</u>	W.3075	G. 690	L. 43	S. 285		
<u>Rhynchospora</u> <u>capitellata</u>		G. 382			W.4363	
<u>corniculata</u>	W.2659		L. 524		A. 934 W.4345	
<u>inexpansa</u>					A. 807	
<u>Scleria</u> <u>ciliata</u>			B. 816			
<u>Carex</u> <u>abscondita</u>					A.1071A	
<u>alata</u>			L. 53	S. 286		D.
<u>albolutescens</u>	W.2334	G. 20	B. 228 L. 812	S. 243	A. 733	
<u>annectens</u>	W.4707		L. 810			
<u>arenaria</u>						D.
<u>artitecta</u>	W.5211			S. 126		
<u>blanda</u>		G. 555	L. 887	S. 170	A. 537	
<u>bromoides</u>		G. 581	B. 124			
<u>caroliniana</u>	W.3065			S. 292	A. 576	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Carex</u>						
<u>cephalophora</u>			B. 807		A. 545	
<u>comosa</u>			B. 726 L. 841	S. 289		
<u>complanata</u>	W.4706	G. 642	L. 801			
<u>crinita</u>	W.2412	G. 638				
<u>cristatella ?</u>	W.2405					
<u>debilis</u>		G. 583				
<u>digitalis</u>					A.1068	
<u>divisa</u>				S. 195		
<u>emmonsii</u>	W.5288		B. 806		A.1071	
<u>festucacea</u>	W.4709					
<u>flaccosperma</u>	W.4705					
<u>grayii</u>		G. 62	L. 786			
<u>frankii</u>			B. 834			
<u>gigantea</u>					A. 745	
<u>grisea</u>		G. 707	B. 803			
<u>howei</u>		G. 708				
<u>hyalinolepis</u>			L. 668		A. 621	
<u>incomperta</u>	W.5276	G. 640				

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Carex</u>						
<u> intumescens</u>	W.2369					
<u> joorii</u>					A. 346	
<u> laevivaginata</u>	W.4723	G. 553	B. 804	S. 290	A. 574	
<u> laxiculmis</u>	W.5284					
<u> laxiflora</u>	W.5283					
<u> leavenworthii</u>				S. 187		
<u> lurida</u>	W.2356	G. 19	B. 162 L. 248	S. 382	A. 573	
<u> muhlenbergii</u>				S. 476		
<u> nigromarginata</u>	W.5273		B. 17			
<u> normalis</u>	W.2405					
<u> pennsylvanica</u>	W.5211					
<u> retroflexa</u>			L. 815			
<u> rosea</u>		G. 554	B. 256			
<u> seorsa</u>	W.4722	G. 521				
<u> squarrosa</u>	W.4704					
<u> stipata</u>		G. 585				
<u> striatula</u>	W.4112		B. 131	S. 923	A. 506	
<u> stricta</u>		G. 17				

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>styloflexa</u>	W.5282					
<u>swanii</u>	W.2340	G. 709	B. 808 L. 824		A. 552	
<u>typhina</u>	W.2402		L. 552		A. 933	
<u>umbellata</u>	W.5274				A.1064	
<u>vulpinoidea</u>	W.2380		B. 229 L. 840		A. 561	
ARACEAE						
<u>Acorus</u> <u>calamus</u>		G. 538				
<u>Orontium</u> <u>aquaticum</u>		G. 447	B. 73			
<u>Peltandra</u> <u>virginica</u>	W.3074	G. 169	L. 196	S. 283		
<u>Arisaema</u> <u>triphyllum</u>	W.2471	G. 75	B. 82 L. 698	S. 78	A. 455 W.4157	W.4660
LEMNACEAE						
<u>Spirodela</u> <u>oligorrhiza</u>	W.5296	G. 677				
<u>polyrrhiza</u>	W.3849	G. 676	B. 492 L. 576	S. 772	A.692A	
<u>Lemna</u> <u>perpusilla</u>	W.2875	G. 678	B. 493 L. 583	S. 771	A. 692	
<u>Wolffia</u> <u>papulifera</u>			B. 494 L. 843			
<u>punctata</u>		G. 680	B. 495			

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Wolfiella</u> <u>floridana</u>	W.5297	G. 679			A.1094	
XYRIDACEAE						
<u>Xyris</u> sp.	W.4066					
COMMELINACEAE						
<u>Commelina</u> <u>communis</u>		G. 213	B. 249 L. 424		A. 687	
<u>virginica</u>	W.3822			S. 322	A. 769	
<u>Aneilema</u> <u>keisak</u>	W.2629	G. 324	L. 466		A. 902	
PONTEDERIACEAE						
<u>Pontederia</u> <u>cordata</u>	W.3073	G. 157	L. 139		A. 669	
<u>Heteranthera</u> <u>reniformis</u>	W.3934				A. 719	
JUNCACEAE						
<u>Juncus</u> <u>acuminatus</u>	W.3062		B. 279 L. 799	S. 470		
<u>biflorus</u>			L. 68			
<u>brachycarpus</u>						D.
<u>bufonius</u>			L. 867			W.4777
<u>canadensis</u>	W.2596				A.948A	
<u>coriaceus</u>	W.4283		B. 731 L. 285	S. 793	A. 746 W.4355	
<u>dichotomus</u>			B. 347			D.

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Juncus</u>						
<u>effusus</u>	W.2381	G. 23	B. 733 L. 52		A. 521	D.
<u>elliottii</u>		G. 617				
<u>gerardi</u>		G. 691				
<u>marginatus</u>	W.2497 _b				W.4354	
<u>repens</u>					A. 960	
<u>roemerianus</u>					A. 618	D.
<u>scirpoides</u>			B. 732		W.4353	
<u>tenuis</u>	W.2371		B. 225 L. 29	S. 301	A. 627	W.4790
<u>Luzula</u>						
<u>acuminata</u>	W.2879	G. 427	B. 6	S. 43	A. 409	
<u>bulbosa</u>		G. 440	B. 30 L. 631	S. 35	A. 435 W.4175	
<u>echinata</u>	W.2820	G. 571			A. 416	
LILIACEAE						
<u>Asparagus</u>						
<u>officinalis</u>	W.2245	G. 245	L. 55	S. 188	A. 539	W.4766 D.
<u>Smilax</u>						
<u>bona-nox</u>	W.3856	G. 357	B. 588 L. 234	S. 602	A. 379	W.4767 D.
<u>herbacea</u>			B. 267			
<u>hispida</u>				S. 786	A. 663	
<u>laurifolia</u>	W.3492				A.1048	
<u>rotundifolia</u>	W.2855	G. 4	B. 588 L. 167	S. 160	A. 243	D.

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Smilax</u> <u>tamnoides</u>			L. 612			
<u>Trillium</u> <u>pusillum</u>	W.5285					
<u>Medeola</u> <u>virginiana</u>	W.4143	G. 120	B. 237			
<u>Smilacina</u> <u>racemosa</u>	W.2564	G. 84	B. 439		A. 678	
<u>Polygonatum</u> <u>biflorum</u>	W.2535	G. 531	B. 422 L. 796	S. 197	A. 546	
<u>Yucca</u> <u>filamentosa</u>	W.5161		L. 164	S. 625		
<u>Amianthium</u> <u>muscaetoxicum</u>			B. 425			
<u>Ornithogalum</u> <u>umbellatum</u>		G. 600	B. 437 L. 756	S. 128	A. 469	
<u>Muscari</u> <u>comosum</u>			B. 173			
<u>racemosum</u>		G. 446		S. 38	A. 433	
<u>Hemerocallis</u> <u>fulva</u>			B. 433	S. 319	A. 674	
<u>Uvularia</u> <u>perfoliata</u>	W.5278	G. 526	B. 742			
<u>Allium</u> <u>ampeloprasum</u>				S. 271		
<u>bivalve</u>			L. 339		A. 470	W.4674
<u>canadense</u>			L. 859		A. 536	W.4747 D.

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Allium</u> <u>vineale</u>		G. 129	B. 451 L. 13	S. 323	A. 600	
DIOSCOREACEAE						
<u>Dioscorea</u> <u>batatas</u>			B. 520	S. 398		
<u>villosa</u> <u>var. villosa</u>	W.2881	G. 115	B. 317 L. 912		A. 671	
AMARYLLIDACEAE						
<u>Narcissus</u> <u>biflorus</u>				S. 88		
<u>pseudonarcissus</u>			L. 619		A. 401	
<u>Leucojum</u> <u>aestivum</u>				S. 157		
<u>Zephyranthes</u> <u>atamasco</u>			L. 749			W.4681
<u>Lycoris</u> <u>radiata</u>	W. 3831					
<u>Hypoxis</u> <u>hirsuta</u>	W.4134	G. 283	B. 108 L. 65		A. 587	
IRIDACEAE						
<u>Belamcanda</u> <u>chinensis</u>		G. 215		S. 303		
<u>Sisyrinchium</u> <u>angustifolium</u>		G. 16	B. 108 L. 26		A. 505	
<u>mucronatum</u>				S. 203		
<u>Iris</u> <u>pseudacorus</u>		G. 36				

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Iris</u>						
<u>prismatica</u>			L. 781			
<u>verna</u>	W.3922	G.496				
<u>virginica</u>	W.4702	G. 38	L. 738			
ORCHIDACEAE						
<u>Cypripedium</u>						
<u>acaule</u>	W.4279	G. 535	B. 55 L. 728	S. 341	A. 502	
<u>calceolus</u>		G. 525	B. 71			
var. <u>pubescens</u>						
<u>Orchis</u>						
<u>spectabilis</u>	W.4128	G. 524		S. 144		
<u>Habenaria</u>						
<u>cristata</u>			B. 826 L. 213		W.4333	
<u>Listera</u>						
<u>australis</u>	W.2854		L. 653			
<u>Isotria</u>						
<u>verticillata</u>					A. 499	
<u>Ponthieva</u>						
<u>racemosa</u>			B. 584			
<u>Spiranthes</u>						
<u>cernua</u>						
var. <u>cernua</u>				S. 836		
var. <u>odorata</u>			L. 510			
<u>grayi</u>			B. 621			
<u>praecox</u>		G. 239				
<u>vernalis</u>				S. 353		D.

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Goodyera</u> <u>pubescens</u>	W.3839	G. 188	B. 421 L. 191	S. 481	A. 747	
<u>Malaxis</u> <u>spicata</u>			B. 598	S. 781		
<u>unifolia</u>		G. 106	B. 573 L. 314		A. 856	
<u>Liparis</u> <u>lilifolia</u>	W.5291	G. 608	L. 780		A. 586	
<u>Tipularia</u> <u>discolor</u>	W.2550	G. 227	B. 433 L. 306	S. 90	A. 381 W.4402	
<u>Aplectrum</u> <u>hyemale</u>	W.5220		*			
<u>Corallorhiza</u> <u>odontorhiza</u>			B. 657		A. 954	
SAURURACEAE						
<u>Saururus</u> <u>cernuus</u>	W.2415	G. 152	B. 271	S. 327	A. 660	
SALICACEAE						
<u>Salix</u> <u>alba</u>			B. 590			
<u>babylonica</u>				S. 23		
<u>fragilis</u>			B. 725			
<u>humilis</u>	W.4149					
<u>nigra</u>	W.2865	G. 31	B. 196 L. 101	S. 148	A. 443	D.
<u>sericea</u>		G. 453				

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	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Populus</u> <u>alba</u>	W.3927			S. 486		W.4752
<u>deltoides</u>		G. 698	B. 591	S. 413		
<u>heterophylla</u>	W.4150					
MYRICACEAE						
<u>Myrica</u> <u>cerifera</u>	W.2641	G. 287	B. 68 L. 292	S. 96	A. 439	W.4662 D.
JUGLANDACEAE						
<u>Juglans</u> <u>nigra</u>		G. 700	B. 638 L. 114	S. 177	A. 626	
<u>Carya</u> <u>cordiformis</u>		G. 339	B. 640	S. 670	A. 361	
<u>glabra</u>		G. 308	B. 313 L. 498			
<u>illinoensis</u>			L. 92			
<u>ovalis</u>					A. 641	
<u>pallida</u>		G. 322		S. 669		
<u>tomentosa</u>		G. 291	B. 334 L. 499		A. 368	
BETULACEAE						
<u>Alnus</u> <u>serrulata</u>	W.2346	G. 35	B. 1 L. 880		A. 386	
<u>Corylus</u> <u>americana</u>	W.2705	G. 337	B. 602			
<u>Betula</u> <u>nigra</u>	W.2379	G. 568				

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Ostrya</u> <u>virginiana</u>				S. 84		
<u>Carpinus</u> <u>caroliniana</u>	W.2732	G. 400	B. 352 L. 692		A. 698 W.4158	
FAGACEAE						
<u>Fagus</u> <u>grandifolia</u>	W.2532	G. 305	B. 614 L. 777	S. 253	A. 348	
<u>Castanea</u> <u>dentata</u>			B. 412			
<u>pumila</u>	W.4191	G. 58	B. 204		A. 371 W.4181	
<u>Quercus</u> <u>alba</u>		G. 299	B. 593 L. 484	S. 150	A. 356	
<u>coccinea</u>	W.2543		B. 686		A. 992	
<u>falcata</u> <u>var. falcata</u>		G. 325	B. 553 L. 471	S. 151	A. 986	
<u>var. pagodaefolia</u>	W.2310		L. 220	S. 69	A. 930	W.4645
<u>laurifolia</u>			L. 585			
<u>lyrata</u>	W.2345	G. 315				
<u>marilandica</u>	W.3583		B. 697 L. 830	S. 694	A. 658	
<u>michauxii</u>	W.2399	G. 313	B. 579		A. 362	W.4646
<u>muehlenbergii</u>			B. 610	S. 250		W.4803
<u>nigra</u>	W.2362	G. 320		S. 114	A. 364	
<u>palustris</u>		G. 331	L. 475			

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Quercus</u> <u>phellos</u>	W.2368	G. 594	L. 371	S. 357	A. 889	
<u>prinus</u>	W.2726	G. 334		S. 594		
<u>rubra</u> var. <u>rubra</u>		G. 300	B. 479		A. 995	
var. <u>borealis</u>				S. 739		
<u>stellata</u>	W.2394	G. 319	B. 655 L. 336	S. 146	A. 994	W.4684
<u>velutina</u>	W.2647	G. 294	B. 685 L. 448		A. 926	D.
ULMACEAE						
<u>Ulmus</u> <u>alata</u>	W.2382		L. 550			
<u>americana</u>	W.2264	G. 705	B. 647 L. 556		A. 623	W.4641
<u>rubra</u>	W.2282		B. 578 L. 569	S. 280		
<u>Celtis</u> <u>laevigata</u>	W.3083			S. 108		W.4754
<u>occidentalis</u> var. <u>georgiana</u>		G. 595			A. 631	
MORACEAE						
<u>Broussonetia</u> <u>papyrifera</u>			B. 729	S. 68		
<u>Morus</u> <u>alba</u>			B. 116 L. 305	S. 149	A. 935	W.4643 D.
<u>rubra</u>	W.4286	G. 289	B. 478 L. 112	S. 158	A. 589	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Maclura</u> <u>pomifera</u>					A. 636	W.4802
URTICACEAE						
<u>Urtica</u> <u>dioica</u>			B. 218			
<u>Boehmeria</u> <u>cylindrica</u>	W.2460	G. 189	B. 391 L. 133	S. 509	A. 208 W.4357	
<u>nivea</u>				S. 358		
SANTALACEAE						
<u>Comandra</u> <u>umbellata</u>		G. 189				
LORANTHACEAE						
<u>Phoradendron</u> <u>serotinum</u>	W.4068			S. 852	A. 393	
ARISTOLOCHIACEAE						
<u>Asarum</u> <u>canadense</u>			B. 83			
<u>Hexastylis</u> <u>virginica</u>	W.2742	G. 402	B. 4	S. 44	A. 411	
POLYGONACEAE						
<u>Rumex</u> <u>acetosella</u>	W.2311	G. 53	B. 31 L. 153	S. 60	A. 528 W.4169	W.4665
<u>altissimus</u>			B. 280			
<u>conglomeratus</u>			L. 42	S. 394	A. 597	
<u>crispus</u>	W.3080	G. 159	B. 191 L. 19	S.406a	A. 544	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Rumex</u>						
<u>obtusifolius</u>			B. 336			
<u>patientia</u>						D.
<u>pulcher</u>				S. 405		
<u>verticillatus</u>		G. 31	L. 41	S. 261	A. 607	
<u>Tovara</u>						
<u>virginiana</u>	W.2714		B. 459 L. 362	S. 514	A. 321	
<u>Polygonum</u>						
<u>arifolium</u>			L. 837		A. 948	
<u>aviculare</u>	W.2508			S. 535	A. 215	
<u>cespitosum</u> var. <u>longisetum</u>				S. 295	A. 285	
<u>erectum</u>	W.4205					
<u>hydropiperoides</u> var. <u>hydropiperoides</u>		G. 660				
var. <u>opelousanum</u>			L. 461			
<u>lapathifolium</u>					A. 884	
<u>pensylvanicum</u>	W.2689	G. 284	B. 663 L. 494	S. 581	A. 280	
<u>persicaria</u>	W.4308		B. 343	S. 447	A. 219	
<u>punctatum</u>			B. 501 L. 324		A. 751	D.
<u>sagittatum</u>	W.2590		B. 651 L. 870			
<u>setaceum</u>			B. 483	S. 504	A.810a	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
CHENOPODIACEAE						
<u>Chenopodium</u> <u>album</u>		G. 681	B. 594	S. 523		D.
<u>ambrosioides</u>	W.3891		B. 595 L. 405	S. 588	A. 897	D.
<u>Atriplex</u> <u>arenaria</u>						D.
<u>patula</u>				S. 579		D.
<u>Salicornia</u> <u>europaea</u>				S. 573		
<u>virginica</u>						D.
<u>Suaeda</u> <u>linearis</u>						D.
<u>maritima</u>						D.
<u>Salsola</u> <u>kali</u>				S. 497		D.
AMARANTHACEAE						
<u>Amaranthus</u> <u>cannabinus</u>			L. 318		A. 848	
<u>hybridus</u>			B. 624	S. 720		
<u>retroflexus</u>			B. 717			
<u>spinosus</u>	W.3077					
<u>Iresine</u> <u>rhizomatosa</u>						D.

	C.C.	N.K.	J.C.	Y.	N.N.	H.
PHYTOLACCACEAE						
<u>Phytolacca</u> <u>americana</u>	W.2651	G. 162	B. 241 L. 281	S. 335	A. 324	
AIZOACEAE						
<u>Mollugo</u> <u>verticillata</u>	W.2519				A. 775	D.
PORTULACACEAE						
<u>Claytonia</u> <u>virginica</u>	W.2823	G. 430	L. 626		W.4161	W.4585
CARYOPHYLLACEAE						
<u>Scleranthus</u> <u>annuus</u>	W.2313	G. 422			A. 432	W.4664
<u>Spergularia</u> <u>marina</u>					A. 726	D.
<u>arvensis</u>		G. 685				
<u>Stellaria</u> <u>caroliniana</u> var. <u>pensylvanica</u>			L. 669			
<u>graminea</u>	W.4193					
<u>media</u>	W.2738	G. 406	B. 26 L. 620	S. 32	A. 391	W.4655
<u>pubera</u>	W.4135					
<u>Cerastium</u> <u>glomeratum</u>	W.2846	G. 423	B. 25 L. 665		A. 418	W.4593
<u>holosteoides</u> var. <u>vulgare</u>			L.728b	S. 38b		

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Holosteum</u> <u>umbellatum</u>				S. 25	A. 404	
<u>Sagina</u> <u>decumbens</u>	W.2843				A. 448 W.4115	W.4595
<u>Arenaria</u> <u>serpyllifolia</u>		G. 562				
<u>Dianthus</u> <u>armeria</u>		G. 116	B. 313 L. 7	S. 298	A. 609	
<u>Agrostemma</u> <u>githago</u>		G. 56				
<u>Lychnis</u> <u>alba</u>		G. 110		S. 478		
<u>Saponaria</u> <u>officinalis</u>	W.3893	G. 166	L. 60	S. 376		
<u>Silene</u> <u>antirrhina</u>		G. 697				
<u>caroliniana</u>		G. 435				
<u>cucubalus</u>				S. 190		
<u>stellata</u>	W.3840		B. 499 L. 335			
CERATOPHYLLACEAE						
<u>Ceratophyllum</u> <u>demersum</u>		G. 24	B. 359	S. 773		
<u>echinatum</u>			L. 627			
NYMPHAEACEAE						

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Nuphar</u> <u>luteum</u> <u>ssp. macrophyllum</u>	W.3842	G. 22	B. 176			
<u>Nymphaea</u> <u>odorata</u>	W.3843					
CABOMBACEAE						
<u>Brasenia</u> <u>schreberi</u>	W.3802	G. 28				
RANUNCULACEAE						
<u>Aquilegia</u> <u>canadensis</u>	W.4096	G. 90		S. 70		
<u>Caltha</u> <u>palustris</u>			B. 69			
<u>Cimicifuga</u> <u>racemosa</u>			B. 311			
<u>Clematis</u> <u>dioscoreifolia</u>	W.3894	G. 490	B. 471 L. 330		A. 846	
<u>Myosurus</u> <u>minimus</u>	W.2864b				A. 540	W.4676
<u>Ranunculus</u> <u>abortivus</u>	W.3511	G. 515	* L. 663	S. 48	A. 513	W.4639
<u>bulbosus</u>	W.2816	G. 432	B. 180 L. 681	S. 1	A. 383 W.4168	W.4659
<u>hispidus</u>			B. 45			
<u>micranthus</u>	**					

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	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Ranunculus</u> <u>parviflorus</u>	W.2842	G. 499	L. 724	S. 98	A. 447	
<u>pusillus</u>	W.2841	G. 548	L. 673		A. 425	W.4594
<u>recurvatus</u>	W.4136	G. 616	B. 103			
<u>sardous</u>	W.2301		B. 191			
<u>sceleratus</u>	W.2864a	G. 593	B. 213 L. 748		A. 642	
<u>Hepatica</u> <u>americana</u>	W.5219	G. 274	B. 5	S. 91		
<u>Anemone</u> <u>lancifolia</u>				S. 507		
<u>virginiana</u>		G. 345	B. 265	S. 380	A. 798	
BERBERIDACEAE						
<u>Podophyllum</u> <u>peltatum</u>	W.2863	G. 153	B. 72 L. 763	S. 132	A. 504	W.4687
<u>Berberis</u> <u>thunbergii</u>			L. 506			
MENISPERMACEAE						
<u>Menispermum</u> <u>canadense</u>				S. 436		
MAGNOLIACEAE						
<u>Liriodendron</u> <u>tulipifera</u>	W.2354	G. 306	B. 154 L. 178	S. 191	A. 353	
<u>Magnolia</u> <u>grandiflora</u>			B. 318 L. 488	S. 845	A. 376	
<u>virginiana</u>	W.2472	G. 114	B. 332		A. 984	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
ANNONACEAE						
<u>Asimina</u> <u>triloba</u>	W.4209	G. 343	B. 634	S. 62	A. 372	W.4588
LAURACEAE						
<u>Persea</u> <u>borbonia</u>			L. 111	S. 378	A. 382	
<u>Sassafras</u> <u>albidum</u>	W.2347	G. 293	B. 59 L. 105	S. 58	A. 363	
<u>Lindera</u> <u>benzoin</u>	W.2743	G. 263	B. 3 L. 565	S. 13	A. 406	W.4581
PAPAVERACEAE						
<u>Sanguinaria</u> <u>canadensis</u>	W.5210	G. 418	B. 21 L. 711	S. 36	W.4156	
<u>Chelidonium</u> <u>majus</u>		G. 598				
<u>Papaver</u> <u>dubium</u>		G. 68				
FUMARIACEAE						
<u>Fumaria</u> <u>officinalis</u>			L. 783	S. 7		
BRASSICACEAE						
<u>Draba</u> <u>brachycarpa</u>					A. 405	
<u> </u> <u>verna</u>	W.4074		L. 634		A. 396	W.4580
<u>Thlaspi</u> <u>perfoliatum</u>				S. 9		

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Teesdalia nudicaulis</u>	W.2821	G. 74				
<u>Lepidium campestre</u>	W.3588	G. 542	B. 166	S. 200		
<u>virginicum</u>	W.2325	G. 557	B. 224 L. 406		A. 461	W.4686 D.
<u>Coronopus didymus</u>			B. 152		A. 440	W.4779
<u>Capsella bursa-pastoris</u>	W.3495		B. 466			W.3495
<u>rubella</u>			L. 761			
<u>Camelina microcarpa</u>		G. 572				
<u>Cakile edentula</u>				S. 411		D.
<u>Calepina irregularis</u>	W.3502					
<u>Raphanus raphanistrum</u>			B. 217	S. 333		
<u>Brassica napus</u>	W.2839	G. 431	B. 168 L. 720	S. 80		
<u>Alliaria petiolata</u>	W.4097					
<u>Sisymbrium officinale</u>	W.3078		B. 221			
<u>Arabidopsis thaliana</u>	W.2849	G. 407	B. 28 L. 633	S. 46	A. 419 W.4118	W.4604

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Nasturtium</u> <u>officinale</u>			B. 177	S. 231	A. 1041	
<u>Barbarea</u> <u>verna</u>	W. 2822	G. 60	B. 61 L. 15	S. 92	A. 464 W. 4174	W. 4603
<u>vulgaris</u> <u>var. vulgaris</u>			B. 113 L. 645		A. 562	
<u>var. arcuata</u>	W. 5280					
<u>Cardamine</u> <u>bulbosa</u>			B. 70		W. 4153	W. 4672
<u>concatenata</u>	W. 4079					
<u>flexuosa</u>			B. 151			
<u>hirsuta</u>	W. 2730	G. 404	B. 27 L. 616	S. 2	A. 384 W. 4120	W. 4583
<u>parviflora</u>						W. 4591
<u>pensylvanica</u>	W. 4082	G. 103	B. 801			W. 4605
<u>Arabis</u> <u>laevigata</u>				S. 27		
<u>lyrata</u>		G. 81				
CRASSULACEAE						
<u>Penthorum</u> <u>sedoides</u>	W. 2791				A. 255	
SAXIFRAGACEAE						
<u>Itea</u> <u>virginica</u>	W. 3804	G. 113				

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Decumaria</u> <u>barbara</u>			B. 216			
<u>Hydrangea</u> <u>arborescens</u>			B. 284			
<u>Heuchera</u> <u>americana</u>	W.4210	G. 635	B. 201	S. 324		
<u>Saxifraga</u> <u>virginiensis</u>		G. 636		S. 21		
HAMAMELIDACEAE						
<u>Liquidambar</u> <u>styraciflua</u>	W.2265	G. 295	B. 576 L. 104	S. 141	A. 355	W.4799
<u>Hamamelis</u> <u>virginiana</u>	W.4183		B. 408			
PLATANACEAE						
<u>Platanus</u> <u>occidentalis</u>	W.4218	G. 428	B. 486 L. 358	S. 121	A. 360	
ROSACEAE						
<u>Fragaria</u> <u>virginiana</u>	W.2819	G. 421	B. 37	S. 59	A. 451	W.4668
<u>Duchesnea</u> <u>indica</u>	W.3509		B. 62 L. 14	S. 29	A. 212	W.4651
<u>Potentilla</u> <u>canadensis</u>	W.2815	G. 439	B. 14 L. 682		A.1054	W.4657
<u>norvegica</u>					A. 686	
<u>recta</u>		G. 668				
<u>simplex</u>	W.2254	G. 540			A. 566	W.4658

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Agrimonia</u>						
<u>pubescens</u>						
var. <u>pubescens</u>		G.236?				
var. <u>microcarpa</u>	W.3812			S. 468	A. 329	
<u>rostellata</u>			B. 398 L. 298			
<u>Rosa</u>						
<u>carolina</u>		G. 704				
<u>eglanteria</u>		G. 118	L. 497			
<u>micrantha</u>			L. 791			
<u>multiflora</u>		G. 664	B. 171 L. 790			
<u>palustris</u>	W.3081		B. 270 L. 35	S. 310	A. 664	
<u>wichuraiana</u>			L. 8		A.601?	
<u>Gillenia</u>						
<u>trifoliata</u>			B. 205			
<u>Spiraea</u>						
<u>prunifolia</u>			L. 662			
<u>Pyrus</u>						
<u>communis</u>	W.3491			S. 404	A. 559	
<u>Malus</u>						
<u>angustifolia</u>					A. 468	W.4598
<u>pumila</u>		G. 436		S. 544		
<u>Sorbus</u>						
<u>arbutifolia</u>						
var. <u>arbutifolia</u>	W.2859	G. 503	B. 57 L. 10		A. 453 W.4112	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Crataegus</u>						
<u>flava</u>		G. 674				
<u>viridis</u>						W.4680
<u>Amelanchier</u>						
<u>arborea</u>			B. 22			
<u>canadensis</u>	W.4729	G. 444	L. 707		A. 412	
<u>obovalis</u>	W.5208					
<u>Prunus</u>						
<u>angustifolia</u>	W.2435			S. 354		
<u>armeniaca</u>			L. 617			
<u>avium</u>			L. 440	S. 52		
<u>cerasus</u>					A. 422	
<u>persica</u>	W.3486			S. 20		
<u>serotina</u>	W.2261	G. 302	L. 151 B. 109	S. 174	A. 542	W.4753 D.
FABACEAE						
<u>Albizia</u>						
<u>julibrissin</u>	W.3860		B. 361	S. 403	A. 704	
<u>Cercis</u>						
<u>canadensis</u>	W.4089	G. 351	B. 36 L. 356	S. 86	A. 413	
<u>Cassia</u>						
<u>fasciculata</u>		G. 222	B. 430 L. 316	S. 569	A. 780	D.
<u>marilandica</u>	W.2583					

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Cassia</u> <u>nictitans</u>	W.2507		B. 439 L. 265	S. 506	A. 230	
<u>Gleditsia</u> <u>triacanthos</u>	W.4217					W.4808
<u>Gymnocladus</u> <u>dioica</u>		G. 632				
<u>Baptisia</u> <u>tinctoria</u>			B. 306 L. 1		A. 665	
<u>Crotolaria</u> <u>purshii</u>			B. 394			
<u>sagittalis</u>			B. 395			
<u>Lupinus</u> <u>perennis</u>		G. 46	B. 56			
<u>Cytisus</u> <u>scoparius</u>	W.4101	G. 534	L. 674	S. 264	A. 431	
<u>Trifolium</u> <u>arvense</u>	W.2326	G. 127	B. 295 L. 211	S. 216	A. 532	W.4745
<u>campestre</u>		G. 547	B. 145 L. 39	S. 277	A. 518	
<u>dubium</u>	W.3560			S. 276	A. 457	
<u>hybridum</u>			B. 431			
<u>incarnatum</u>	W.2816	G. 512				
<u>pratense</u>		G. 546	B. 189 L. 120	S. 225	A. 593	
<u>repens</u>	W.4221	G. 560	B. 90 L. 74	S. 582	A. 459 W.4180	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Melilotus</u>						
<u>alba</u>			B. 263 L. 51	S. 259	A. 700	D.
<u>officinalis</u>			B. 292	S. 272	A. 596	W.4770
<u>Medicago</u>						
<u>lupulina</u>			B. 450 L. 172	S. 120	A. 742	
<u>minima</u>				S. 217		
<u>Lotus</u>						
<u>corniculatus</u>				S. 306	A. 565	
<u>Stylosanthes</u>						
<u>biflora</u>	W.2386	G. 119	L. 89		A. 613	
<u>Desmodium</u>						
<u>canescens</u>		G. 207	B. 374	S. 460	A. 738	
<u>cuspidatum</u>			B. 472			
<u>glabellum</u>					A. 853	
<u>lineatum</u>				S. 591		
<u>nudiflorum</u>	W.2485	G. 186	B. 371 L. 201		A. 766	
<u>paniculatum</u>	W.3898			S. 563	A. 855	
<u>pauciflorum</u>		G. 237	B. 414	S. 396	A. 867	
<u>perplexum</u>				S. 699	A. 854	
<u>rotundifolium</u>			B. 635		A. 223	
<u>viridiflorum</u>	W.2667		B. 832 L. 360		A. 320	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Lespedeza</u> <u>bicolor</u>			B. 367		A. 299	
<u>cuneata</u>	W.2598		B. 639 L. 357	S. 609	A. 211	
<u>intermedia</u>					A. 862	
<u>procumbens</u>	W.2660		B. 585		A. 844	
<u>repens</u>		G. 251	B. 506 L. 129		A. 229	
<u>stipulacea</u>			B. 565	S. 508	W.4364	
<u>striata</u>	W.3825			S. 550	A. 838	
<u>stuevei</u>			B. 426	S. 811		
<u>virginica</u>		G. 255	B. 550			
<u>Wisteria</u> <u>sinensis</u>	W.4151			S. 106		
<u>Robinia</u> <u>pseudo-acacia</u>	W.2277	G. 490	B. 92 L. 307	S. 176	A. 533	
<u>Tephrosia</u> <u>spicata</u>	W.2443					
<u>virginiana</u>		G. 99	B. 239			
<u>Vicia</u> <u>angustifolia</u>	W.2818	G. 479	B. 465 L. 672		A. 436	W.4667
<u>dasycarpa</u>	W.4734		B. 165 L. 883	S. 194	A. 616	
<u>grandiflora</u>		G. 612				
<u>hirsuta</u>	W.3557	G. 480	L. 788	S. 81		

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Vicia</u>						
<u>lathyroides</u>			B. 469 L. 664	S. 119		
<u>tetrasperma</u>	W.3793					W.4692
<u>villosa</u>		G. 606				
<u>Lathyrus</u>						
<u>hirsutus</u>	W.3061	G. 611	L. 884	S. 304		
<u>Apios</u>						
<u>americana</u>		G. 248	L. 332			
<u>Centrosema</u>						
<u>virginianum</u>	W.2441		L. 126	S. 480		
<u>Clitoria</u>						
<u>mariana</u>			B. 385 L. 130		A. 788	
<u>Rhynchosia</u>						
<u>tomentosa</u>			B. 457			
<u>Phaseolus</u>						
<u>polystachios</u>			B. 531			
<u>Strophostyles</u>						
<u>helvola</u>	W.3896		B. 416	S. 525	A. 832	D.
<u>umbellata</u>			L. 245		A. 815	
<u>Pueraria</u>						
<u>lobata</u>					A. 804	
<u>Amphicarpa</u>						
<u>bracteata</u>			B. 649 L. 361	S. 681	A. 873	
<u>Galactia</u>						
<u>volubilis</u>			B. 440			

	C.C.	N.K.	J.C.	Y.	N.N.	H.
LINACEAE						
<u>Linum</u>						
<u>virginianum</u>						
var. <u>floridanum</u>			B. 470		A. 706 W.4344	
OXALIDACEAE						
<u>Oxalis</u>						
<u>dillenii</u>	W.2686	G. 507	B. 144 L. 16	S. 127	A. 578	W.4746
<u>stricta</u>			B. 428 L. 109			
<u>violacea</u>	W.4192	G. 70	L. 375		W.4162	W.4683
GERANIACEAE						
<u>Geranium</u>						
<u>carolinianum</u>		G. 41	B. 110 L. 733		A. 460	
<u>dissectum</u>				S. 56	A. 427	W.4666
<u>maculatum</u>			B. 160			W.4671
<u>molle</u>		G. 477	L. 757	S. 26		
<u>Erodium</u>						
<u>cicutarium</u>	W.3514	G. 437	B. 744			
SIMAROUBACEAE						
<u>Ailanthus</u>						
<u>altissima</u>	W.3930		B. 643 L. 555	S. 784		
MELIACEAE						
<u>Melia</u>						
<u>azedarach</u>		G. 88	L. 850		A. 942	
POLYGALACEAE						
<u>Polygala</u>						
<u>curtissii</u>		G. 340				

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Polygala</u>						
<u>incarnata</u>			B. 838			
<u>mariana</u>	W.2495	G. 201	B. 444 L. 352		A. 744 W.4365	
<u>verticillata</u>	W.4315		L. 210			
EUPHORBIACEAE						
<u>Croton</u>						
<u>glandulosus</u>						
var. <u>septentrionalis</u>			B. 563	S. 623		
<u>Acalypha</u>						
<u>gracilens</u>	W.2455		B. 424 L. 441	S.427a	A. 931	
<u>rhomboidea</u>	W.2571		B. 424		A. 927	
<u>virginica</u>					A. 731	
<u>Ricinus</u>						
<u>communis</u>	W.3900					
<u>Euphorbia</u>						
<u>corollata</u>		G. 254	B. 328 L. 175			
<u>cyparissias</u>	W.4105	G. 3				
<u>ipecacuanhae</u>		G. 508				
<u>obtusata</u>						W.4695
<u>maculata</u>	W.2462		B. 564	S. 512	A. 805	W.2462
<u>marilandica</u>			B. 235			
<u>polygonifolia</u>				S. 824		D.
<u>supina</u>	W.2315		B. 481	S. 472	A. 830	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
CALLITRICHACEAE						
<u>Callitriche</u> <u>heterophylla</u>	W.3067				A. 424	
ANACARDIACEAE						
<u>Rhus</u> <u>copallina</u>	W.2329	G. 12	B. 452	S. 516	A. 242	W.4763 D.
<u>glabra</u>	W.4319	G. 217	B. 308			
<u>radicans</u>		G.601a	B. 700	S. 590	A. 359	D.
<u>toxicodendron</u>			B. 480			
AQUIFOLIACEAE						
<u>Ilex</u> <u>decidua</u>	W.4139	G. 383	L. 578			
<u>glabra</u>	*					
<u>opaca</u>	W.2727	G. 296	B. 10 L. 113	S. 205	A. 357	
<u>verticillata</u>	W.2640				A. 916	
CELASTRACEAE						
<u>Celastrus</u> <u>scandens</u>				S. 202		
<u>Euonymus</u> <u>americanus</u>	W.3834	G. 93	B. 188 L. 886	S. 782	A. 591	
ACERACEAE						
<u>Acer</u> <u>negundo</u>			L. 472			

* Wieboldt 1506

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Acer</u> <u>platanoides</u>			L. 102			
<u>rubrum</u>	W.2731	G. 332	B. 2 L. 103	S. 14	A. 349	W.4800
<u>saccharum</u> <u>ssp. floridanum</u>			L. 472	S. 221	A. 992	
BALSAMINACEAE						
<u>Impatiens</u> <u>capensis</u>	W.2605	G. 197	B. 464 L. 866	S. 559	A. 752	W.4795
RHAMNACEAE						
<u>Berchemia</u> <u>scandens</u>			L. 302			
<u>Ceanothus</u> <u>americanus</u>	W.2706		B. 302			
VITACEAE						
<u>Parthenocissus</u> <u>quinquefolia</u>	W.2267	G. 171	B. 518 L. 155	S. 251	A. 283	W.4762 D.
<u>inserta</u>			L. 390			
<u>Vitis</u> <u>aestivalis</u>			B. 609 L. 20	S. 252		
<u>baileyana</u>		G. 610				
<u>cinerea</u>						W.4758
<u>labrusca</u>		G. 659				
<u>rotundifolia</u>	W.4285	G. 663	B. 517	S. 346	A. 817	
<u>vulpina</u>		G. 633	B. 197 L. 399	S. 320	A. 720	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
MALVACEAE						
<u>Malva</u>						
<u>neglecta</u>	W.2681	G. 95				
<u>sylvestris</u>	W.3066					
<u>Sida</u>						
<u>spinosa</u>	W.2679					
<u>Abutilon</u>						
<u>theophrastii</u>	W.2680					
<u>Kosteletskya</u>						
<u>virginica</u>			L. 320	S. 522	A.776A	D.
<u>Hibiscus</u>						
<u>moscheutos</u>						
ssp. <u>moscheutos</u>	W.2565			S. 455	A. 713 W.4359	D.
ssp. <u>palustris</u>		G. 190	L. 203			D.
<u>syriacus</u>	W.3928			S. 402		
HYPERICACEAE						
<u>Hypericum</u>						
<u>gentianoides</u>	W.2499		B. 530		A. 781 W.4358	
<u>gymnanthum</u>			L. 84			
<u>hypericoides</u>	W.2638	G. 212	B. 349 L. 267		A. 374 W.4360	
<u>mutilum</u>	W.2676	G. 199	B. 403 L. 156		A. 203 W.4336	
<u>perforatum</u>			B. 342		A. 707	
<u>punctatum</u>	W.4312	G. 205	B. 321 L. 116	S. 383	A. 796 W.4340	
<u>setosum</u>					W.4411	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Hypericum</u> <u>stans</u>					W.4412	
<u>walteri</u>	W.3810					
CISTACEAE						
<u>Hudsonia</u> <u>tomentosa</u>			L. 415			
<u>Helianthemum</u> <u>canadense</u>		G. 621				
<u>Lechea</u> <u>racemulosa</u>	W.2483		B. 397 L. 209		W.4338	
VIOLACEAE						
<u>Viola</u> <u>affinis</u>			L. 680		A. 414	
<u>arvensis</u>		G. 67		S. 37		
<u>emarginata</u> <u>var. acutiloba</u>					A.1055	
<u>fimbriatula</u>			L. 651			
<u>palmata</u> <u>var. palmata</u>	W.4130					
<u>var. sororia</u>	W.3507	G. 474		S. 16	A.1051	
<u>var. triloba</u>	W.5292		B. 48 L. 687			
<u>papilionacea</u>	W.2872	G. 420	B. 143 L. 699			W.4682
<u>pedata</u>	W.4123	G. 494	B. 114			
<u>primulifolia</u>	W.4102	G. 492	B. 58			

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Viola</u>						
<u>rafinesquii</u>	W.2735	G. 409	B. 734 L. 623	S. 15	A. 426	
<u>sagittata</u>		G. 449	B. 29			
PASSIFLORACEAE						
<u>Passiflora</u>						
<u>incarnata</u>	W.2437	G. 139	L. 114	S. 417	A. 836	
<u>lutea</u>	W.2511		B. 456 L. 170	S. 408	A. 834	
CACTACEAE						
<u>Opuntia</u>						
<u>compressa</u>		G. 204	L. 5	S. 270		
ELAEAGNACEAE						
<u>Elaeagnus</u>						
<u>pungens</u>			B. 526		A. 392	
LYTHRACEAE						
<u>Rotala</u>						
<u>ramosior</u>	W.3932				A. 332	
<u>Decodon</u>						
<u>verticillatus</u>			B. 482 L. 839	S. 561	A. 239	D.
<u>Lythrum</u>						
<u>lineare</u>			L. 325		A. 753	
<u>salicaria</u>		G. 200				
<u>Lagerstroemia</u>						
<u>indica</u>			B. 417 L. 427			
MELASTOMATACEAE						
<u>Rhexia</u>						
<u>mariana</u>	W.2463	G. 183	B. 447			

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Rhexia</u>						
<u>ventricosa</u>			L. 123		A. 253	
<u>virginica</u>	W.3917					D.
ONAGRACEAE						
<u>Ludwigia</u>						
<u>alternifolia</u>	W.2711	G. 323	B. 350 L. 161	S. 527	A. 761 W.4342	
<u>decurrens</u>	W.2713	G. 172				
<u>hirtella</u>					W.4341	
<u>palustris</u>	W.2710	G. 326	L. 800	S. 801	A.656a	
<u>Oenothera</u>						
<u>biennis</u>	W.2546		B. 544 L. 338	S. 416	A. 757	D.
<u>humifusa</u>						D.
<u>laciniata</u>		G. 52	B. 828 L. 775		A. 525	
<u>speciosa</u>		G.624a				
<u>Epilobium</u>						
<u>coloratum</u>	W.2584					
<u>Circaea</u>						
<u>lutetiana</u>						
<u>ssp. canadensis</u>	W.4269	G. 143	B. 257 L. 110	S. 314	A. 680	
HALORAGACEAE						
<u>Proserpinaca</u>						
<u>intermedia</u>	W.4093					
<u>palustris</u>	W.3847				A. 881	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Myriophyllum</u> <u>brasiliense</u>		G. 26				
<u>pinnatum</u>					A. 718	
ARALIACEAE						
<u>Hedera</u> <u>helix</u>	W.5168		B. 572 L. 446	S. 803	A. 395	
<u>Aralia</u> <u>nudicaulis</u>			B. 415			
<u>racemosa</u>			B. 583			
<u>spinosa</u>	W.2469	G. 354	B. 477 L. 482	S. 539	A. 369	
APIACEAE						
<u>Hydrocotyle</u> <u>ranunculoides</u>	W.3586		B. 214			
<u>umbellata</u>		G. 37			A. 844	
<u>verticillata</u> var. <u>verticillata</u>			L. 125	S. 446	A. 661	
var. <u>triradiata</u>			L. 46			
<u>Centella</u> <u>asiatica</u>			L. 148			
<u>Sanicula</u> <u>marilandica</u>			B. 135			
<u>canadensis</u>			B. 252 L. 56	S. 315	A. 679	
<u>gregaria</u>			B. 819			

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Daucus</u> <u>carota</u>			B. 291 L. 40	S. 375	A. 705	D.
<u>Osmorhiza</u> <u>claytonii</u>				S.133a		
<u>longistylis</u>	W.4223		B. 123	S. 227		
<u>Chaerophyllum</u> <u>tainturieri</u>	W.2243	G. 478	L. 789	S. 229	A. 423 W.4166	W.4669
<u>Foeniculum</u> <u>vulgare</u>			L. 549	S. 392	A. 298	W.4737 D.
<u>Thaspium</u> <u>barbinode</u>		G. 648	B. 77			
<u>trifoliatum</u> <u>var. flavum</u>				S. 138		
<u>Cryptotaenia</u> <u>canadensis</u>		G.141b	B. 315		A. 810	
<u>Sium</u> <u>suave</u>			L. 197			
<u>Cicuta</u> <u>maculata</u>			L. 206			
<u>mexicana</u>	W.2630					
<u>Lilaeopsis</u> <u>chinensis</u>			L. 416		A. 634	
<u>Ptilimnium</u> <u>capillaceum</u>		G. 241	L. 142		A. 716 W.4361	
<u>Angelica</u> <u>venenosa</u>			B. 368			

	C.C.	N.K.	J.C.	Y.	N.N.	H.
NYSSACEAE						
<u>Nyssa</u>						
<u>aquatica</u>	W.3823					
<u>sylvatica</u>			B. 324 L. 18			W.4739
var. <u>sylvatica</u>				S. 526	A. 702	
var. <u>biflora</u>	W.3082			S. 274		
CORNACEAE						
<u>Cornus</u>						
<u>alternifolia</u>			B. 164			
<u>anomum</u>	W.2273	G. 656				
<u>florida</u>	W.2562	G. 301	B. 80 L. 98	S. 65	A. 274	W.4587
<u>stricta</u>			B. 580	S. 349		W.4792
CLETHRACEAE						
<u>Clethra</u>						
<u>alnifolia</u>	W.3915	G. 172			A. 670 W.4334	
ERICACEAE						
<u>Chimaphila</u>						
<u>maculata</u>	W.2364	G. 79	B. 259 L. 67	S. 297	A. 225	
<u>umbellata</u>			B. 258			
<u>Monotropa</u>						
<u>uniflora</u>		G. 396	B. 411 L. 308	S. 844	A. 338	
<u>Rhododendron</u>						
<u>atlanticum</u>	W.4125					

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Azalea</u>						
"Indian hybrid"						
cl. George Lindley						
Taber			B. 54			
cl. Formosa			B. 169			
<u>nudiflorum</u>	W.2877	G. 491	B. 43		A. 454	
<u>obtusum</u>						
f. <u>kaempferi</u>			B. 40			
<u>Kalmia</u>						
<u>latifolia</u>	W.2725	G. 98	B. 175		A. 588	
<u>Lyonia</u>						
<u>ligustrina</u>	W.5287		B. 331			
<u>mariana</u>	W.2392	G. 647	B. 138			
<u>Leucothoe</u>						
<u>racemosa</u>	W.2858	G. 1			A. 503	
<u>Oxydendrum</u>						
<u>arboreum</u>		G. 364	B. 310 L. 911	S. 678	A. 676 W.4413	
<u>Epigaea</u>						
<u>repens</u>	W.4084	G. 385	B. 12 L. 629		A. 410	
<u>Gaylussacia</u>						
<u>baccata</u>	W.4190	G. 8	B. 88 L. 350	S. 171	A. 445	
<u>frondosa</u>	W.2396	G. 607	B. 112 L. 727		A. 553	
<u>Vaccinium</u>						
<u>atrococcum</u>	W.2856	G. 451	B. 16 L. 666		A. 420	
<u>caesariense</u>			L. 693			
<u>corymbosum</u>	W.2830	G. 9	B. 60			

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Vaccinium</u> <u>elliottii</u>		G. 488				
<u>stamineum</u>	W.2397	G. 778	B. 97 L. 776	S. 240	A. 501 W.4182	
<u>vacillans</u>		G. 455	B. 94	S. 344a	A. 444	
DIAPENSIACEAE						
<u>Galax</u> <u>aphylla</u>	W.5298	G. 156	B. 407		A. 672	
PRIMULACEAE						
<u>Lysimachia</u> <u>ciliata</u>	W.2456					
<u>nummularia</u>	W.2702	G. 101				
<u>quadrifolia</u>	W.2612		L. 901		A. 648	
<u>terrestris</u>		G. 164				
<u>Anagallis</u> <u>arvensis</u>		G. 625	B. 254 L. 3	S. 816	A. 628	W.4778
<u>Samolus</u> <u>parviflorus</u>		G. 597	L. 847	S. 284	A. 617	W.4685
PLUMBAGINACEAE						
<u>Limonium</u> <u>nashii</u>				S. 541		D.
SAPOTACEAE						
<u>Bumelia</u> <u>lycioides</u>	W.4222			S. 423		
EBENACEAE						

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Diospyros</u> <u>virginiana</u>	W.2260	G. 701	B. 607 L. 93	S. 249	A. 297	
SYMPLOCACEAE						
<u>Symplocos</u> <u>tinctoria</u>	W.2832	G. 311			A. 674	
STYRACACEAE						
<u>Styrax</u> <u>americana</u>	W.2409					
OLEACEAE						
<u>Fraxinus</u> <u>americana</u>			B. 577 L. 531	S. 391		W.4601
<u>caroliniana</u>	W.2416					
<u>pennsylvanica</u>	W.2707		L. 75			
<u>tomentosa</u>		G. 658				
<u>Chionanthus</u> <u>virginicus</u>	W.2475	G. 11	B. 174			
<u>Ligustrum</u> <u>sinense</u>	W.2408	G. 706	B. 824 L. 598	S. 263	A. 633	W.4801
<u>vulgare</u>			L. 876b			
LOGANIACEAE						
<u>Gelsemium</u> <u>sempervirens</u>	W.2852	G. 497	B. 84			
<u>Polypremum</u> <u>procumbens</u>	W.2501	G. 198	B. 409 L. 121		W.4339	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
GENTIANACEAE						
<u>Sabatia</u>						
<u>angularis</u>		G. 224	B. 420 L. 158		A. 205 W.4352	
<u>dodecandra</u>			L. 321			
<u>quadrangula</u>	W.2491	G. 202				
<u>stellaris</u>			L. 323	S. 493	A. 966	D.
<u>Gentiana</u>						
<u>saponaria</u>	W.3879					
<u>villosa</u>					A. 380	
<u>Bartonia</u>						
<u>virginica</u>					A. 814	
<u>Obolaria</u>						
<u>virginica</u>	W.4127	G. 471	B. 7			
APOCYNACEAE						
<u>Trachelospermum</u>						
<u>difforme</u>	W.2438					
<u>Apocynum</u>						
<u>cannabinum</u>	W.3060	G. 138	B. 288 L. 269	S. 372	A. 385	
<u>Vinca</u>						
<u>major</u>	W.3505			S. 73		
<u>minor</u>	W.2737	G. 410	B. 49	S. 6	A.1059	
ASCLEPIADACEAE						
<u>Asclepias</u>						
<u>amplexicaulis</u>	W.2466	G. 124				

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Asclepias</u>						
<u>incarnata</u>						
<u>ssp. pulchra</u>	W.2632	G. 244	L. 322	S. 443	A. 779 W.4391	
<u>lanceolata</u>			L. 140			
<u>syriaca</u>	W.2303	G. 126				
<u>purpurascens</u>				S. 361		
<u>tuberosa</u>	W.2312	G. 149	B. 322 L. 59	S. 329	A. 696	
<u>variegata</u>	W.2530	G. 150	B. 243 L. 44		A. 599	D.
<u>verticillata</u>				S. 598		
<u>Cynanchum</u>						
<u>laeve</u>			B. 698		A. 786	
<u>Matelea</u>						
<u>carolinensis</u>				S. 369		
<u>gonocarpa</u>	W.3485					
<u>suberosa</u>			L. 188	S. 432		
CONVOLVULACEAE						
<u>Cuscuta</u>						
<u>campestris</u>	W.3884		L. 221			
<u>compacta</u>	W.3824	G. 384	B. 574		A. 806	
<u>gronovii</u>			B. 652	S. 564		
<u>Dichondra</u>						
<u>carolinensis</u>				S. 462		W.4652

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Bonamia</u> <u>humistrata</u>	W.3855	G. 170				
<u>Convolvulus</u> <u>arvensis</u>				S. 355		
<u>Calystegia</u> <u>sepium</u>	W.2268			S. 189	A. 603	W.4755 D.
<u>Ipomoea</u> <u>coccinea</u>	W.2620	G. 285		S. 629		
<u>hederacea</u>	W.2619	G. 355	B. 521 L. 354	S. 557		
<u>lacunosa</u>	W.2682		B. 559	S. 686	A. 833	
<u>pandurata</u>		G. 182	B. 449			
POLEMONIACEAE						
<u>Phlox</u> <u>divaricata</u>		G. 630				
<u>Polemonium</u> <u>reptans</u>		G. 482				
HYDROPHYLLACEAE						
<u>Hydrolea</u> <u>quadri-valvis</u>	W.3820					
<u>Nemophila</u> <u>microcalyx</u>				S. 76		
<u>Phacelia</u> <u>dubia</u>		G. 565	B. 255	S. 71		
BORAGINACEAE						
<u>Cynoglossum</u> <u>virginicum</u>			B. 107 L. 193	S. 242	A. 579	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Hackelia</u> <u>virginiana</u>			L. 168	S. 400	A. 310	
<u>Echium</u> <u>vulgare</u>				S. 328		
<u>Lithospermum</u> <u>arvense</u>	W.2814	G. 463		S. 24		
<u>Myosotis</u> <u>arvensis</u>			B. 800	S. 94		
<u>discolor</u>		G. 506				
<u>laxa</u>		G. 15	B. 212	S. 262		
<u>macrosperma</u>	W.4226			S. 134		W.4667
<u>micrantha</u>			L. 657			
<u>verna</u>			L. 735		A. 467	
VERBENACEAE						
<u>Verbena</u> <u>brasiliensis</u>					A. 249	
<u>urticifolia</u>	W.2461	G. 218	B. 383 L. 147	S. 849	A. 317	
<u>Lippia</u> <u>lanceolata</u>			L. 50	S. 562		
<u>Callicarpa</u> <u>americana</u>	W.2648	G. 208	B. 642 L. 166	S. 384	A. 246	
PHRYMACEAE						
<u>Phryma</u> <u>leptostachya</u>		G. 185	B. 375	S. 364	A. 794	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
LAMIACEAE						
<u>Trichostema</u> <u>dichotomum</u>	W.2611	G. 312	B. 537 L. 383			
<u>Teucrium</u> <u>canadense</u>			L. 131	S. 410		D.
<u>Scutellaria</u> <u>elliptica</u>		G. 147	B. 261 L. 899		A. 675	
<u>incana</u>			B. 370			
<u>integrifolia</u>	W.2335	G. 148	B. 250 L. 2		A. 615	
<u>lateriflora</u>	W.5159				A. 811	
<u>Glecoma</u> <u>hederacea</u>	W.2873	G. 573	B. 79 L. 642		A.1045	
<u>Prunella</u> <u>vulgaris</u>	W.2523	G. 206	B. 266 L. 119	S. 424	A. 236	
<u>Lamium</u> <u>amplexicaule</u>	W.2737	G. 408	B. 468 L. 638	S. 10	A. 399	W.4679
<u>purpureum</u>	W.2740			S. 79		
<u>Salvia</u> <u>lyrata</u>	W.2334	G. 21	L. 256	S. 173	A. 473 W.4176	
<u>Monarda</u> <u>fistulosa</u>					A. 725	
<u>punctata</u>	W.2575		B. 536			
<u>Melissa</u> <u>officinalis</u>				S. 389		

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Satureja</u> <u>calamintha</u> var. <u>nepeta</u>	W.2693b		L. 174	S. 429		
<u>Pycnanthemum</u> <u>tenuifolium</u>	W.2668		B. 362 L. 296		W.4399	
<u>Cunila</u> <u>origanoides</u>					A. 913	
<u>Lycopus</u> <u>americanus</u>				S. 838	A. 906	
<u>europaeus</u>				S. 619	A. 851	
<u>virginicus</u>	W.2665	G. 243	B. 500		A. 257	
<u>Mentha</u> <u>arvensis</u>			L. 328		A. 774	
<u>piperita</u>				S. 599		
<u>spicata</u>					A. 773	
<u>Perilla</u> <u>frutescens</u>			B. 575	S. 760		
SOLANACEAE						
<u>Lycium</u> <u>halimifolium</u>				S. 665		
<u>Physalis</u> <u>pubescens</u> var. <u>pubescens</u>	W. 2616					
var. <u>grisea</u>			B. 393			
<u>virginiana</u>	W.2683		L. 392	S. 367		

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Solanum</u> <u>americanum</u>	W.2587		L. 417	S. 426	A. 748	
<u>carolinense</u>	W.2278	G. 180	B. 286 L. 24		A. 282	
<u>nigrum</u>			B. 429			
<u>tuberosum</u>			B. 432			
<u>Lycopersicon</u> <u>esculentum</u>				S. 412		
<u>Datura</u> <u>stramonium</u>	W.3882		B. 246	S. 533	A. 843	
SCROPHULARIACEAE						
<u>Paulownia</u> <u>tomentosa</u>		G. 519	B. 390 L. 186	S. 281	A. 375	
<u>Mecardonia</u> <u>acuminata</u>			B. 455	S. 614		
<u>Gratiola</u> <u>neglecta</u>	W.3071					
<u>pilosa</u>					W.4346	
<u>virginiana</u>		G. 626			A. 515	
<u>Lindernia</u> <u>anagallidea</u>					A. 708	
<u>Mimulus</u> <u>alatus</u>			B. 524			
<u>Verbascum</u> <u>blattaria</u>		G. 94	B. 335 L. 28	S. 246	A. 594	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Verbascum</u> <u>thapsus</u>	W.2330	G. 703	B. 384 L. 183	S. 325	A. 824	
<u>Chelone</u> <u>glabra</u>	W.3806		B. 622			
<u>Penstemon</u> <u>canescens</u>	W.4206					
<u>laevigatus</u>				S. 256		
<u>pallidus</u>		G. 51		S. 300		
<u>Scrophularia</u> <u>marilandica</u>		G. 637				
<u>Linaria</u> <u>canadensis</u>	W.2847	G. 483	B. 115 L. 741		A. 570	D.
<u>Chaenorrhinum</u> <u>minus</u>	W.2454					
<u>Veronica</u> <u>agrestis</u>			B. 467			
<u>anagallis-aquatica</u>		G. 260		S. 232	A.1086	W.4804
<u>arvensis</u>	W.2824	G. 460	B. 42 L. 632	S. 95	A. 402 W.4117	W.4592
<u>hederaefolia</u>	W.2734		L. 640	S. 22		W.4694
<u>officinalis</u>	W.3068	G. 91		S. 236		
<u>peregrina</u>	W.2844		B. 153	S. 101	A. 446 W.4116	W.4781
<u>persica</u>	W.3508	G. 434	L. 767	S. 100	A. 430	W.4678
<u>serpyllifolia</u>			L. 759			

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Aureolaria</u> <u>virginica</u>	W.3799		B. 269 L. 793	S. 386	A. 691	
<u>Agalinis</u> <u>purpurea</u>	W.2591	G. 282	L. 376		A. 326	D.
<u>setacea</u>			L. 378			
<u>Pedicularis</u> <u>canadensis</u>			B. 44			
<u>lanceolata</u>			B. 625			
BIGNONIACEAE						
<u>Anisostichus</u> <u>capreolata</u>	W.4732	G. 47	B. 637 L. 787		A. 829	
<u>Campsis</u> <u>radicans</u>	W.2857	G. 168	B. 377 L. 31	S. 318	A. 699	D.
<u>Catalpa</u> <u>speciosa</u>		G. 659	L. 182	S. 689		
OROBANCHACEAE						
<u>Epifagus</u> <u>virginiana</u>	W.4071	G. 338	B. 597	S. 755	A. 237	
LENTIBULARIACEAE						
<u>Utricularia</u> <u>fibrosa</u>				S. 776		
<u>gibba</u>					A. 717	
ACANTHACEAE						
<u>Ruellia</u> <u>caroliniensis</u>		G. 209	L. 66	S. 387	A. 683	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Justicia</u> <u>americana</u>	W.2258		L. 874			
PLANTAGINACEAE						
<u>Plantago</u> <u>aristata</u>	W.2323	G. 174	B. 346 L. 30		A. 614	
<u>heterophylla</u>					A. 449	W.4783
<u>lanceolata</u>	W.2246	G. 517	B. 119 L. 32	S. 211	A. 456	D.
<u>major</u>				S. 366		
<u>rugelii</u>			B. 376 L. 134		A. 690	
<u>virginica</u>		G. 39	B. 65 L. 647	S. 102	A. 472 W.4122	W.4663
RUBIACEAE						
<u>Cephalanthus</u> <u>occidentalis</u>	W.2401	G. 167	B. 272 L. 402		A. 646	
<u>Diodia</u> <u>teres</u>	W.2445	G. 210	B. 549 L. 173		A. 925 W.4349	D.
<u>virginiana</u>	W.2439	G. 220	B. 505 L. 36	S. 345	A. 214	D.
<u>Mitchella</u> <u>repens</u>	W.2361	G. 145	B. 23 L. 455	S. 233	A. 347	
<u>Oldenlandia</u> <u>uniflora</u>					A. 965	
<u>Houstonia</u> <u>caerulea</u>	W.2827	G. 77	B. 236 L. 630		A. 417 W.4114	
<u>purpurea</u>	W.3865	G. 122	B. 199	S. 296		

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Sherardia</u> <u>arvensis</u>	W.2874	G. 513	L. 768	S. 105	A. 509	W.4653
<u>Galium</u> <u>aparine</u>	W.4198	G. 43	B. 118 L. 695	S. 123	A. 465	W.4689
<u>circaezans</u>	W.4276	G. 109	B. 252	S. 299		
<u>obtusum</u>	W.2349	G. 650				
<u>pilosum</u>	W.2450		B. 519 L. 192	S. 414		
<u>tinctorium</u>	W.4321		L. 37		A. 653	
<u>triflorum</u>			B. 422 L. 280	S. 434	A. 985	
<u>uniflorum</u>	W.2557		B. 661 L. 190		A. 378	
CAPRIFOLIACEAE						
<u>Lonicera</u> <u>fragrantissima</u>	W.3506					
<u>japonica</u>	W.2687	G. 92	B. 122 L. 27	S. 224	A. 273	W.4756
<u>sempervirens</u>	W.2878	G. 569	B. 158			W.4661 D.
<u>Triosteum</u> <u>perfoliatum</u>			B. 358			
<u>Viburnum</u> <u>acerifolium</u>	W.2552	G. 390	B. 155		A. 791	
<u>cassinoides</u>			B. 67			
<u>dentatum</u> var. <u>dentatum</u>		G. 223				
var. <u>lucidum</u>	W.2389					

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Viburnum nudum</u>		G. 330	B. 329		A.1010	
<u>prunifolium</u>	W.2684	G. 596	B. 67 L. 706	S. 107	A. 563	W.4597
<u>rufidulum</u>			B. 534			
<u>Sambucus canadensis</u>	W.2339	G. 117	L. 9	S. 268	A. 645	W.4760 D.
<u>Weigelia japonica</u>					A.1073	
VALERIANACEAE						
<u>Valerianella locusta</u>	W.4731	G. 459	B. 91 L. 721	S. 39	A. 434	W.4605
<u>radiata</u>	W.2876	G. 107	L. 731		A. 471 W.4165	W.4693
CUCURBITACEAE						
<u>Melothria pendula</u>	W.2646		L. 154	S. 401	A. 723	
CAMPANULACEAE						
<u>Specularia biflora</u>					A. 602	W.4769
<u>perfoliata</u>	W.2274	G. 69	B. 219 L. 22	S. 254	A. 569	D.
<u>Lobelia cardinalis</u>	W.2560	G. 247	B. 490 L. 247		A. 248 W.4405	
<u>inflata</u>	W.2677	G. 219	B. 404 L. 165		A. 759 W.4406	
<u>nutallii</u>	W.2664				W.4335	
<u>puberula</u>	W.2585		B. 474 L. 528	S. 672	A. 206	

	G.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Lobelia</u> <u>siphilitica</u>		G. 261	B. 581	S. 638		
ASTERACEAE						
<u>Iva</u> <u>frutescens</u>		G. 696	L. 329	S. 534	A. 290	D.
<u>Ambrosia</u> <u>artemisiifolia</u>	W.2577		B. 503	S. 620	A. 896	
<u>Xanthium</u> <u>strumarium</u>	W.2581		L. 401	S. 540		
<u>Cichorium</u> <u>intybus</u>			L. 127	S. 576	A. 803	
<u>Prenanthes</u> <u>altissima</u>			B. 658			
<u>serpentaria</u>	W.3817		B. 679			
<u>Lactuca</u> <u>canadensis</u>	W.2542		B. 438 L. 214	S. 453	A. 728	
<u>floridana</u>	W.3902		B. 525		A. 871	D.
<u>scariola</u>				S. 393	A. 784	
<u>Sonchus</u> <u>asper</u>		G. 661	B. 304 L. 798	S. 230	A. 519 W.4173	W.4765
<u>Hieracium</u> <u>gronovii</u>	W.2537	G. 89	B. 507 L. 257	S. 496	A. 238	
<u>pratense</u>			L. 782			D.
<u>venosum</u>		G. 102	B. 507 L. 353	S. 241	A. 556	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Crepis</u> <u>japonica</u>				S. 294	A. 581	
<u>pulchra</u>					A. 604	
<u>Hypochoeris</u> <u>radicata</u>	W.2384	G. 137	B. 147 L. 87	S. 415	A. 608	D.
<u>Krigia</u> <u>dandelion</u>		G. 539	L. 736			
<u>virginica</u>	W.2840	G. 438	B. 231 L. 79	S. 183	A. 428 W.4121	W.4785
<u>Pyrrhopappus</u> <u>carolinianus</u>	W.2465	G. 179	B. 348 L. 86	S. 445	A. 294	
<u>Taraxacum</u> <u>officinale</u>	W.2736	G. 405	B. 305 L. 291	S. 11	A. 390 W.4172	
<u>Cacalia</u> <u>atriplicifolia</u>	W. 4271		B. 301		A. 823 W.4409	
<u>Tussilago</u> <u>farfara</u>		G. 417				
<u>Senecio</u> <u>aureus</u>	W.2826	G. 108	B. 178 L. 671	S. 17	A. 415 W.4153	W.4586
<u>smallii</u>	W.2248	G. 55	B. 207 L. 792	S. 244	A. 598	W.4741
<u>tomentosus</u>	W.2862		L. 774		W.4108	W.4640 D.
<u>Erechtites</u> <u>hieracifolia</u>	W.2688		B. 541 L. 297	S. 605	A. 202 W.4401	
<u>Arnica</u> <u>acaulis</u>			L. 88			
<u>Centaurea</u> <u>cyanus</u>	W.3515	G. 570				

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Carduus</u> <u>discolor</u>	W.2595	.	B. 568 L. 434	S. 618	A. 250	
<u>lanceolatus</u>			L. 294	S. 787		
<u>spinosissimus</u>		G.601b	B.820a L. 4		A. 564	W.4742
<u>Arctium</u> <u>minus</u>					A. 306	
<u>Vernonia</u> <u>glauca</u>			B. 437			
<u>noveboracensis</u>	W.2604		L. 340		A. 911	
<u>Elephantopus</u> <u>carolinianus</u>	W.2526	G. 259	B. 529 L. 431	S. 545	A. 296	
<u>nudatus</u>		G. 234			A. 890	
<u>tomentosus</u>	W.2643		B. 463 L. 334	S. 604	A. 228	
<u>Liatris</u> <u>graminifolia</u>			B. 707 L. 501	S. 603		
<u>Eupatorium</u> <u>album</u>			L. 199			
<u>aromaticum</u>		G. 350	L. 540		A. 221	
<u>capillifolium</u>	W.2670	G. 341	B. 670 L. 439	S. 769	A. 278	D.
<u>coelestinum</u>	W.2717	G. 187	B. 498 L. 273	S. 441	A. 201	
<u>hyssopifolium</u>	W.3835	G. 250	B. 571	S. 659	A. 821 W.4347	D.
<u>leucolepis</u>		G. 252				

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Eupatorium</u> <u>perfoliatum</u>	W.2589					
<u>purpureum</u>			B. 294	S. 529		
<u>rotundifolium</u> var. <u>rotundifolium</u>	W.2663	G. 257		S. 500		D.
var. <u>ovatum</u>			B. 473		A. 812 W.4348	
<u>rugosum</u>			B. 672 L. 509	S. 547	A. 914	
<u>serotinum</u>	W.2636		L. 409	S. 574	A. 226	D.
<u>Mikania</u> <u>scandens</u>	W.4317	G. 267	B. 522 L. 150	S. 505	A. 258	D.
<u>Pluchea</u> <u>camphorata</u>			B. 488 L. 397	S. 645	A. 209	
<u>foetida</u>			L. 277		A. 876	
<u>purpurascens</u>			L. 317	S. 607	A. 207	D.
<u>Antennaria</u> <u>plantaginifolia</u> var. <u>plantaginifolia</u>	W.2828	G. 2	L. 652	S. 111	A.1060 W.4167	
var. <u>arnoglossa</u>			B. 81			
<u>solitaria</u>	W.5217	G. 425	B. 74			
<u>Gnaphalium</u> <u>obtusifolium</u>	W.2674	G. 281	B. 453	S. 510	A. 894	D.
<u>purpureum</u>	W.2333	G. 544	B. 146 L. 45	S. 192	A. 463 W.4177	W.4775 D.

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Baccharis</u> <u>halimifolia</u>	W.2695		B. 711 L. 370	S. 650	A. 240	D.
<u>Erigeron</u> <u>annuus</u>	W.4274	G. 72	B. 287 L. 38	S. 370	A. 635	W.4798 D.
<u>canadensis</u>	W.2521		B. 454 L. 243	S. 473	A. 842	
<u>philadelphicus</u>			L. 817		A. 585	
<u>pulchellus</u>		G. 609	B. 41		A. 583	
<u>strigosus</u>	W.2467	G. 142	B. 287 L. 69	S. 245		
<u>Aster</u> <u>cordifolius</u>			B. 684			
<u>dumosus</u>			L. 364			
<u>gracilis</u>			B. 561			
<u>grandiflorus</u>	W.3924	G. 360	B. 706	.		
<u>infirmus</u>			B. 460			
<u>lateriflorus</u>			B. 675	S. 823	A.953?	
<u>patens</u>			B. 668			
<u>paternus</u>	W.2387	G. 155	B. 260	S. 342	A. 649	
<u>pilosus</u>			B. 618 L. 454	S. 704	A. 234	
<u>prenanthoides</u>			B. 582			
<u>simplex</u>		G. 268				

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Aster</u>						
<u> subulatus</u>			L. 410		A. 319	
<u> tataricus</u>	W.2700					
<u> tenuifolius</u>			L. 491	S. 652	A. 956	
<u> undulatus</u>	W.2703	G. 278	B. 693	S. 676		
<u> vimineus</u>	W.2699	G. 266			A. 946	
<u>Solidago</u>						
<u> altissima</u>		G. 269	B. 671 L. 479	S. 658	A. 259	
<u> bicolor</u>	W.2673	G. 347	B. 677 L. 351	S. 532		
<u> caesia</u>		G. 275	B. 523		A. 227	
<u> erecta</u>			B. 690			
<u> fistulosa</u>					A. 947	
<u> graminifolia</u>	W.2569		L. 463			
<u> juncea</u>			L. 208			
<u> microcephala</u>			L. 465		A. 254	
<u> nemoralis</u>		G. 271	B. 630	S. 747	A. 331	
<u> odora</u>	W.2481a	G. 256	B. 533		W.4362	
<u> pinetorum</u>	W.2481b	G. 191	B. 451 L. 207	S. 499	A. 820	
<u> puberula</u>					A. 247?	

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Solidago</u>						
<u>rugosa</u>						
var. <u>rugosa</u>	W.2671	G. 276	B. 691 L. 374	S. 810	A. 252	
var. <u>celtidifolia</u>			L. 433	S. 767	A. 870	
<u>sempervirens</u>			L. 404	S. 651	A. 291	D.
<u>tenuifolia</u>	W.2662					
<u>ulmifolia</u>		G. 264				
<u>Heterotheca</u>						
<u>mariana</u>	W.2675	G. 258	B. 538 L. 367		A. 325	
<u>graminifolia</u>		G. 193	B. 562 L. 348			
<u>Polymnia</u>						
<u>uvedalia</u>	W.2696		L. 327		A. 795	
<u>Silphium</u>						
<u>compositum</u>			B. 372			
<u>trifoliatum</u>	W.4314	G. 216	B. 381			
<u>Chrysogonum</u>						
<u>virginianum</u>	W.3805					
<u>Parthenium</u>						
<u>integrifolium</u>	W.2658	G. 203	B. 242			
<u>Eclipta</u>						
<u>alba</u>	W.5173		B. 627 L. 423		A. 980	
<u>Rudbeckia</u>						
<u>hirta</u>		G. 177	B. 264	S. 336		
<u>triloba</u>			B. 644			

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Borrichia</u> <u>frutescens</u>				S. 454		D.
<u>Helianthus</u> <u>atrorubens</u>			B. 508	S. 677		
<u>divaricatus</u>			B. 307			
<u>occidentalis</u>				S. 601		
<u>strumosus</u>			B. 664			
<u>Verbesina</u> <u>occidentalis</u>	W.2639		B. 567 L. 163	S. 450	A. 316	
<u>virginica</u>			B. 556		A. 872	
<u>Coreopsis</u> <u>lanceolata</u>		G. 83				
<u>tinctoria</u>				S. 385		
<u>verticillata</u>	W.2428				W.4337	
<u>Bidens</u> <u>aristosa</u>			B. 665	S. 770	A. 875	
<u>bipinnata</u>			B. 555 L. 428	S. 586	A. 322	
<u>coronata</u>			L. 379			
<u>discoidea</u>			L. 421	S. 835	A. 256	
<u>frondosa</u>	W.2657		B. 558 L. 422		A. 333	
<u>laevis</u>	W.2627		B. 650 L. 319			
<u>polylepis</u>	W.2580	G. 362				

	C.C.	N.K.	J.C.	Y.	N.N.	H.
<u>Galinsoga</u> <u>ciliata</u>					A. 922	
<u>parviflora</u>	W.2625					
<u>Helenium</u> <u>autumnale</u>	W.3889		L. 333			
<u>flexuosum</u>	W.2525					
<u>Achillea</u> <u>millefolium</u>	W.2280	G. 128	B. 285 L. 6	S. 273	A. 656	D.
<u>Anthemis</u> <u>arvensis</u>		G. 566	B. 190 L. 882			
<u>cotula</u>	W.2299				A. 644	
<u>Chrysanthemum</u> <u>leucanthemum</u>	W.2332	G. 54	B. 121 L. 17	S. 705	A. 592	W.4764
<u>Artemisia</u> <u>vulgaris</u>				S. 683		W.4807

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