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Flora of Richmond National Battlefield Park, Virginia

**W. JOHN HAYDEN, MELANIE L. HASKINS, MILES F. JOHNSON,
and JAMES M. GARDNER**

ABSTRACT

An inventory of the vascular flora of nine of eleven units of Richmond National Battlefield Park was compiled from 1985 to 1987. Each site was visited during the growing season in two to four week intervals; plant species were identified and recorded in the field and/or collected for later study. A total of 761 different species were identified in the surveyed units, and 2487 individual records of species per particular park unit were noted. Twenty-three percent of the flora consists of exotic species, largely from Eurasia. Voucher specimens are housed in the herbaria of the University of Richmond and Virginia Commonwealth University.

INTRODUCTION

Richmond National Battlefield Park consists of eleven non-contiguous units located in the City of Richmond, Virginia and in the adjacent counties of Chesterfield, Hanover, and Henrico. Except for the Maggie Walker unit, each unit was the site of battles or other military activities during the Civil War. Indeed, several units are the sites of some of the most significant battles that occurred during the campaigns of 1862 and 1864.

An inventory of plant species in Richmond National Battlefield Park was undertaken under two contracts with the National Park Service in order to provide information critical to management commitments within the park. These commitments include not only preservation of the natural environment, but also preservation of historical artifacts such as the earthwork trenches and fortifications which dominate much of the landscape of Richmond National Battlefield Park. Since earthworks are temporary structures, their preservation for historical purposes is a difficult problem. Rational use of plants, because of their soil-retaining features, may temper the effects of erosion and ameliorate the difficulties inherent in earthwork preservation. An inventory of naturally occurring plant species within the park is thus essential for informed management. The two urban units of the park, Maggie Walker and Chimborazo (which serves as park headquarters), were not included in this study for lack of natural vegetation. All units studied fall within the upper coastal plain of Virginia and lie within the drainage basins of the James and Chickahominy Rivers (Figure 1).

METHODS

The nine units listed in Table 1 were inventoried for plant species during the growing seasons of 1985-1987. Six units, Chickahominy Bluffs, Cold Harbor,

Figure 1—25½ x 39¾

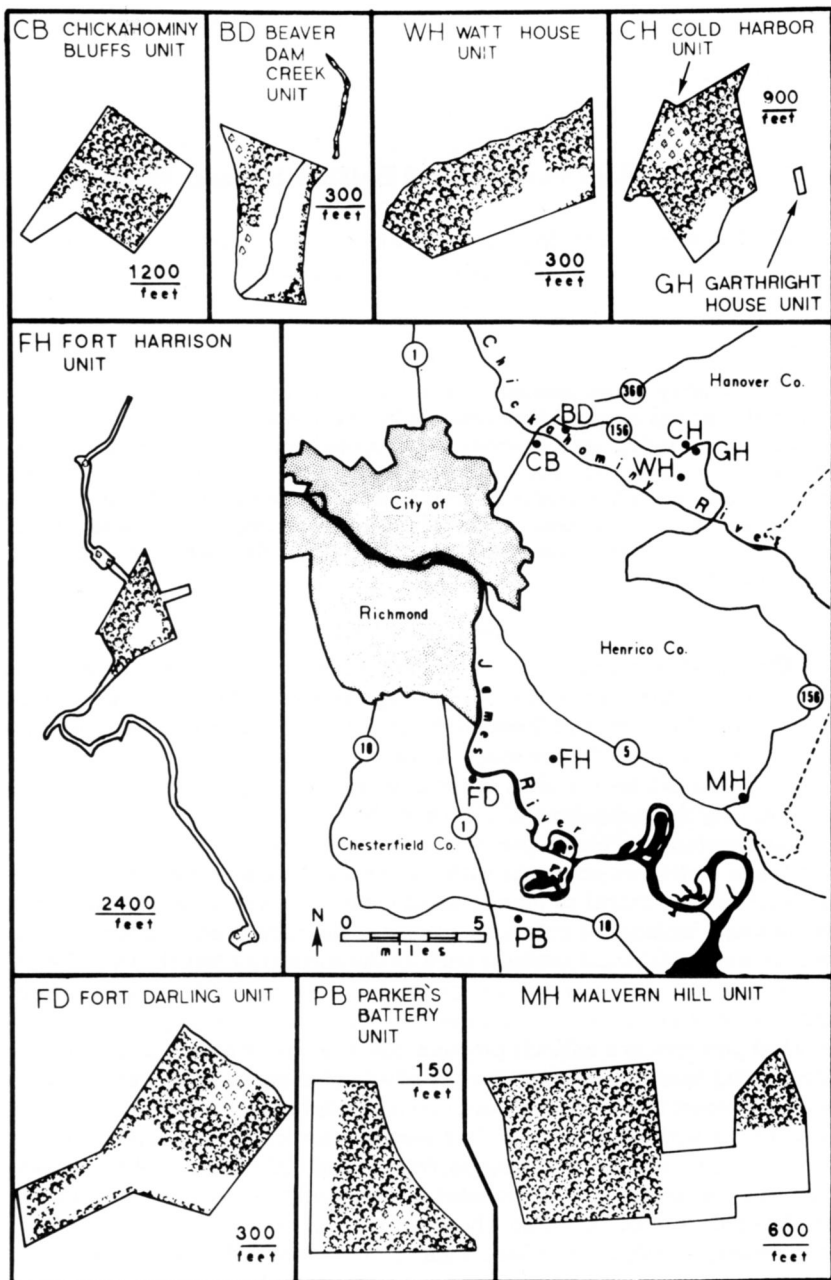


Figure 1. Richmond National Battlefield Park. Shading on maps of individual units corresponds to degree of canopy closure, i.e., forest, scattered trees (as maintained by National Park Service), or treeless areas (primarily lawns or cultivated fields).

Table 1. Area and number of species in the units of Richmond National Battlefield Park

County	Unit	Area (Acres)	No. of Species
Chesterfield	Fort Darling/ Drewry's Bluff	42.4	330
Chesterfield	Parker's Battery	9.8	228
Hanover	Beaver Dam Creek	14.3	290
Hanover	Cold Harbor	150.0	245
Hanover	Garthright House	2.1	92
Hanover	Watt House	60.3	211
Henrico	Chickahominy Bluffs	39.2	353
Henrico	Fort Harrison	315.2	372
Henrico	Malvern Hill	130.6	366

Fort Darling/Drewry's Bluff, Fort Harrison, Garthright House, and Watt House, were studied from late March through October, 1985. The remaining units, Beaver Dam Creek, Malvern Hill, and Parker's Battery, were studied in September and October of 1986 and April through September, 1987.

Each site was visited at intervals of two to four weeks. Many common and easily identified species were recorded (without collection of specimen) in a master checklist as they were encountered in the field. This master checklist was compiled from data in Harvill et al (1977, 1981). Other taxa were collected for preparation of herbarium specimens and dissection prior to identification in the laboratory. Specimens collected are deposited in herbaria of the University of Richmond (URV) and Virginia Commonwealth University (VCU). A set of color slides of each specimen collected is maintained at the Park headquarters.

Nomenclature of species in the checklist essentially follows Radford et al (1968). However, for certain species of *Carex*, the synonymies given in Harvill et al (1986) have been adopted; *Chasmanthium* is distinguished from *Uniola*, following Yates (1966); *Conoclinium* and *Eupatoriadelphus* are segregated from *Eupatorium*, following Johnson (1972) and Harvill et al (1986); *Dichanthelium* is distinguished from *Panicum* following Gould and Clark (1978); application of names in *Euphorbia* subgenus *Chamaesyce* follows Burch (1966); and whereas *Vaccinium pallidum* is used in place of *V. vacillans* following Utal (1987), the potential segregates of *V. corymbosum sensu lato* have not been distinguished.

UNITS OF RICHMOND NATIONAL BATTLEFIELD PARK

Beaver Dam Creek. This small unit is located on a small tributary of the Chickahominy River. True to its name, the creek harbors beavers which have made several shallow impoundments along the creek bank. The unit also includes an old mill pond nearly filled with silt and an accompanying millrace, now mostly dry. Thus, except for a small fringe of forest, the unit is dominated by hydrophytes of the marshy creek environs such as: *Carex* spp., *Leersia oryzoides*, *L. virginica*, *Peltandra virginica*, *Pontederia cordata*, *Juncus* spp., and *Boehmeria cylindrica*. Somewhat less abundant species include: *Aneilema*

keisak, *Scirpus cyperinus*, *Heteranthera reniformis*, *Potamogeton epihydrous*, *Sparganium americanum*, *Typha latifolia*, *Hydrocotyle ranunculoides*, *Impatiens capensis*, *Callitriche heterophylla*, *Utricularia* spp., *Decodon verticillatus*, *Ludwigia* spp., *Ranunculus pusillus*, *Cephalanthus occidentalis*, *Itea virginica*, *Gratiola neglecta*, and *Lindernia dubia*. *Vallisneria americana* was found growing in the creek channel. Many of these hydrophytes are not found elsewhere in Richmond National Battlefield Park.

Chickahominy Bluffs. This unit consists of: an open hilltop, most of which is maintained as a lawn; a steep north-facing wooded slope; and a low-lying fringe of the Chickahominy River flood plain, which is part meadow and part forest. Perhaps the most notable plant species found include a colony of *Ophioglossum vulgatum* var. *pycnostichum* in an earthwork trench near the base of the bluff, and two orchids, *Habenaria lacera* and *Spiranthes gracilis*, in the wooded swamp of the flood plain.

Cold Harbor. The Cold Harbor unit is located in a region of sandy soil supporting a forest of common upland species. *Castanea pumila* is especially frequent in the forest understory. Cleared areas support species such as *Opuntia compressa*, *Tragia urens*, and *Helianthemum canadense*, which are somewhat uncommon in central Virginia. In contrast to the dry woods, Bloody Run Creek, which bisects the unit from east to west, supports a number of hydrophytic species such as *Rhododendron viscosum*, *Smilax laurifolia*, *Viburnum nudum*, *Orontium aquaticum*, and *Symplocarpus foetidus*. A small lawn and a tilled field are located near the entrance to the unit, supporting a wide variety of weedy species. A portion of the unit located between Federal and Confederate earthwork trenches is periodically bush-hogged, producing a park-like region of widely scattered trees.

Fort Darling/Drewry's Bluff. Erected six miles south of Richmond in the defense of the Confederate Capitol, Fort Darling sits atop Drewry's Bluff overlooking the James River. The area occupied by the remains of the earthwork fort (indicated by scattered trees in Figure 1) is maintained by periodic mowing; however, the adjacent forest harbors a few interesting species, e.g., *Silene caroliniana*, *Carex nigromarginata*, and *Melica mutica*. Part of the non-forested portion of the unit consists of a lawn, but most of the open area is a former county land-fill. The land-fill was capped in 1972 and is now dominated by *Andropogon virginicus* with scattered clumps of *Lespedeza cuneata* and *Rubus occidentalis*. Drewry's Bluff is cut by a steep-sided valley bearing a small unnamed stream which empties into the James River at the eastern corner of the unit. Near the valley's mouth there are a number of species found nowhere else in this survey: *Xanthorhiza simplicissima*, *Laportea canadensis*, *Cardamine concatenata*, *Sedum ternatum*, *Chaerophyllum procumbens*, *C. tainturieri*, *Osmorhiza longistylis*, and *Claytonia virginica*.

Fort Harrison. The largest unit of Richmond National Battlefield Park consists of a sinuous strip of land bordering Battlefield Park Road which runs essentially north-south from State Route 5 to the James River. The unit represents a portion of the chain of earthen breastworks and forts which once

extended from Richmond to Petersburg. Through much of its length the unit consists of little more than the trenches and immediate roadside; it is wider, however, at the locations of several forts, the largest of which is Fort Harrison. Brush removal and periodic mowing have affected natural vegetation in much of the area occupied by forts. For example, Forts Gilmer, Gregg, and Johnson support scattered trees in a park-like appearance; Fort Hoke is treeless and is maintained as a lawn; and Fort Brady is virtually overrun by the invasive exotic *Microstegium vimineum* (Cussick 1986). The area around Fort Harrison, however, includes some undisturbed forest, the most interesting of which is the wooded swamp to the west of the fort itself. This area is dominated by ericaceous plants such as *Leucothoe racemosa*, *Lyonia mariana*, *Rhododendron viscosum*, and *Vaccinium* spp.

Garthright House. This, the smallest unit of the park, consists of the historic Garthright House and its surrounding lawns. The flora consists of typical lawn grasses and weeds, plus a few common herbaceous and shrubby species located at the edge of the woods which border the unit to the east.

Malvern Hill. Topographically, the Malvern Hill unit consists of: a broad hilltop, about half of which is forested, the remainder is maintained in alfalfa; wooded slopes extending to the west; and a region of moist wooded bottomland along the western border of the unit. *Calepina irregularis* was the most noteworthy plant from the alfalfa field; in recent years, this crucifer, adventive from Europe, has spread widely in central Virginia (Wright 1987). Noteworthy forest species along the wooded slope near the northern boundary of the unit include *Lycopodium lucidulum* and the orchids *Goodyera pubescens*, *Liparis lilifolia*, and *Malaxis unifolia*. The herb layer of the moist bottomland is dominated by the rampantly invasive *Microstegium vimineum* (Cussick 1986), but also includes typical species such as *Cinna arundinacea*, *Phryma leptostachya*, *Circaea lutetiana* ssp. *canadensis*, and *Penthorum sedoides*. *Pluchea camphorata* was present in the shallow ditch which marks the western boundary of the unit.

Parker's Battery. Dry woods occupy the eastern two-thirds of this unit; the western third is a right-of-way for electric power transmission lines and is cleared by periodic bush-hogging. Notable species from the forest include *Symplocos tinctoria* and *Ilex decidua*; *Crataegus uniflora* is present at the woodland border; and *Helianthemum canadense* and *Tragia urens* occur along the roadbed of the Seaboard Coastline Railroad tracks along the eastern boundary of the unit.

Watt House. This unit consists of the historic Watt House, surrounding lawns, several cultivated fields, and nearby pine and hardwood forests. Many of the forest areas near the cultivated fields have been overrun with *Lonicera japonica*. Although no particularly noteworthy species were encountered, this unit does include several impressively large specimens of *Quercus alba*, *Liriodendron tulipifera*, and *Ilex opaca* near Boatswain Creek which forms the northern border of the unit.

CHECKLIST OF SPECIES

The following checklist indicates the occurrence of species in the various units of Richmond National Battlefield Park, and, when present, collection numbers of voucher specimens. The units are abbreviated as follows: BD—Beaver Dam Creek; CB—Chickahominy Bluffs; CH—Cold Harbor; FD—Fort Darling/Drewry's Bluff; FH—Fort Harrison; GH—Garthright House; MH—Malvern Hill; PB—Parker's Battery; and WH—Watt House. Collection numbers preceded by JH were collected by Johnson and Hayden while those preceded by H were collected by Hayden; Gardner and Haskins are frequent co-collectors in both series of collection numbers.

The checklist includes 761 species and a total of 2487 individual records of occurrence of species at particular park units. Exotics are indicated by asterisks (*) and account for 173 species, or 23 percent of the total. Most of the exotics are species naturalized from Eurasia; however, a few species cultivated for ornamental purposes around park buildings are also indicated in the list.

Specimens collected in the course of this study included a number of records for Chesterfield, Hanover, and Henrico counties. Such records from the first phase of the study (completed in 1985) were incorporated in the distribution maps of Harvill et al (1986). County records reported in the checklist therefore represent only those found in the second phase (1986-1987); these are indicated by a dagger (†) in the margin.

ANNOTATED CHECKLIST

* = Exotic species

† = County record among collections

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| <p style="text-align: center;">LYCOPODIACEAE</p> <p><i>Lycopodium flabelliforme</i> (Fernald) Blanchard. BD, CH, FH, MH, WH.</p> <p><i>Lycopodium lucidulum</i> Michaux. MH.</p> <p><i>Lycopodium obscurum</i> L. CB, FH, MH.</p> <p style="text-align: center;">OPHIOGLOSSACEAE</p> <p><i>Botrychium dissectum</i> Sprengel. BD, CB-H1375, FD, FH, MH, WH.</p> <p><i>Botrychium virginianum</i> (L.) Swartz. CB-H1138, FD, FH-H1179, MH-JH274.</p> <p><i>Ophioglossum vulgatum</i> var. <i>pycnostichum</i> Fernald. CB-H1137, FH-H1177, H1189.</p> <p style="text-align: center;">OSMUNDACEAE</p> <p><i>Osmunda cinnamomea</i> L. BD, CB, CH, FD, FH, MH.</p> <p><i>Osmunda regalis</i> L. CB, CH, FH, MH.</p> <p style="text-align: center;">POLYPODIACEAE</p> <p><i>Asplenium platyneuron</i> (L.) Oakes. BD, CB, FD, FH, GH, MH, WH.</p> <p><i>Athyrium asplenioides</i> (Michaux) A. Eaton. BD, CB-JH118, CH, FH, MH-JH224, WH-JH129.</p> <p><i>Dryopteris marginalis</i> (L.) Gray. FH, MH.</p> <p><i>Onoclea sensibilis</i> L. BD, CB, CH, FH, MH, WH.</p> <p><i>Polypodium virginianum</i> L. CB.</p> | <p><i>Polystichum acrostichoides</i> (Michaux) Schott. BD, CB, FD, FH, MH, PB, WH.</p> <p><i>Pteridium aquilinum</i> (L.) Kuhn. CH, FH, MH, PB-H1889.</p> <p><i>Thelypteris noveboracensis</i> (L.) Nieuwland. CB-H1300, MH-H1841, WH.</p> <p><i>Woodwardia areolata</i> (L.) Moore. BD, CB, CH, FD, FH, MH, WH.</p> <p style="text-align: center;">CUPRESSACEAE</p> <p><i>Juniperus virginiana</i> L. BD, CB, CH, FD, FH, GH, MH, PB, WH.</p> <p style="text-align: center;">PINACEAE</p> <p><i>Pinus echinata</i> Miller. CB, CH, FH, MH, PB.</p> <p><i>Pinus taeda</i> L. BD, CB, CH, FD, FH, GH, MH, PB, WH.</p> <p><i>Pinus virginiana</i> Miller. CB, CH, FD, FH, MH, PB, WH.</p> <p style="text-align: center;">ALISMATACEAE</p> <p><i>Alisma subcordatum</i> Raf. MH.</p> <p><i>Sagittaria latifolia</i> Willd. BD, CB-H1374, MH.</p> <p style="text-align: center;">AMARYLLIDACEAE</p> <p><i>Hypoxis hirsuta</i> (L.) Coville. FH, MH-H1852.</p> <p>*<i>Narcissus pseudo-narcissus</i> L. BD.</p> |
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ARACEAE

- Arisaema triphyllum* (L.) Schott. CB, CH, MH, WH.
Orontium aquaticum L. CH-H1141.
Peltandra virginica (L.) Schott & Endlicher. BD, CB, FD.
Symplocarpus foetidus (L.) Nuttall. CH-H1142.

COMMELINACEAE

- Aneilema keisak* Hasskarl. BD, CB, FH.
 **Commelina communis* L. BD, CB-H1373, FH, MH, PB, WH.
 †*Commelina diffusa* Burman f. BD-JH253—Hanover Co. record, MH-H1972—Henrico Co. record.
Commelina virginica L. BD-H1697, CB-H1286.
Tradescantia virginiana L. BD.

CYPERACEAE

- Bulbostylis capillaris* (L.) Clarke. MH-H1847.
Carex alata Torrey. CB-JH37, FD, FH, MH-JH282.
Carex albolutescens Schweinitz. FH-JH70.
Carex artitecta Mackenzie. FD-H1122.
Carex blanda Dewey. FH-JH84.
Carex caroliniana Schweinitz. CB-JH36, FD-H1206, FH, MH-JH285.
Carex communis Bailey. CB, FD-H1116, FH-JH03, WH.
Carex complanata Torrey & Hooker. MH-H1839.
Carex crebriflora Wiegand. FH-H1171.
Carex crinita Lam. BD, CB, CH, FH, MH.
Carex debilis Michaux. BD-H1805, FH-H1162, WH-JH12.
Carex digitalis Willd. FD-H1147.
Carex festucacea Willd. FH-JH93.
 †*Carex flaccosperma* Dewey. BD-H1806—Hanover Co. record, MH-JH290, H1842—Henrico Co. records.
Carex folliculata L. CB-JH38, CH, WH.
Carex frankii Kunth. WH.
Carex gracilescens Steudel. CH-JH23.
Carex howei Mackenzie. CH-JH24.
Carex incomperta Bicknell. CB-JH34, CH-JH25, WH-JH09.
Carex intumescens Rudge. BD-H1799, CH, FD, FH-H1160.
Carex laevivaginata (Kukenthal) Mackenzie. BD, CB-JH33, CH-JH22.
Carex leavenworthii Dewey. CB, FD, FH-JH81, H1175, GH-JH18, WH.
Carex lupulina Willd. BD-H1798.
Carex lurida Wahlenberg. BD-H1739, CB-JH32, FD-H1194, MH.
 †*Carex nigromarginata* Schweinitz. FD-H1118, MH-JH258—Henrico Co. record, PB-H1767.
 †*Carex normalis* Mackenzie. BD-H1801—Hanover Co. record, PB.
Carex oligocarpa Schkuhr. CB, CH-JH26, WH-JH10.
Carex rosea Willd. CB-JH39, FD-H1146, FH-H1185.
 †*Carex stipata* Muhl. ex Schkuhr. BD-H1797—Hanover Co. record, FH-JH69, MH-JH280, H1845.
Carex stricta Lam. CB-JH35.
Carex swanii (Fernald) Mackenzie. BD, CB-JH51, CH, FD-JH101, FH-JH53, MH-JH226, JH281, PB, WH-JH11.
Carex tribuloides Wahlenberg. BD-H1800, H1811, MH-H1848.
Carex typhina Michaux. MH-JH227, JH284.
 †*Carex vulpinoidea* Michaux. CB-JH50, FD, FH-H1161, H1188, PB-H1829—Chesterfield Co. record.
 **Cyperus compressus* L. CB-H1369, PB-H1686, WH-JH176.
 †*Cyperus erythrorhizos* Muhl. BD-JH250, H1967—Hanover Co. records.
Cyperus filiculmis Vahl. BD-H1864, CB-H1293, PB-H1686, H1836, WH-JH177.
 **Cyperus iria* L. CB-H1370, PB-H1880.
Cyperus lancastrimensis Porter. BD-H1865, PB-H1685, H1884.
Cyperus odoratus L. MH-JH222, WH-JH178.
Cyperus ovalaris (Michaux) Torrey. CB-H1294, CH, FD, FH-JH134, MH-H1900, PB-H1894, WH.
 †*Cyperus polystachyos* Rottboell var. *texensis* (Torrey) Fernald. BD-JH254—Hanover Co. record, FH-JH213.
Cyperus pseudovegetus Steudel. FH-JH132, H1301.
Cyperus retrofractus (L.) Torrey. CB, CH-JH149, FD, FH.
 †*Cyperus retrorsus* Chapman. BD-JH244—Hanover Co. record, CB-H1361.
Cyperus strigosus L. BD-JH249, FD-JH190.
 †*Cyperus tenuifolius* (Steudel) Dandy. BD-JH255, H1968—Hanover Co. records, FH-JH214.
Dulichium arundinaceum (L.) Britton. BD, CH, MH.
Eleocharis obtusa (Willd.) Schultes. BD-H1866, FH-JH133.
 †*Fimbristylis autumnalis* (L.) R. & S. BD-H1969—Hanover Co. record, FD-JH165, FH-JH212.
Rhynchospora capitellata (Michaux) Vahl. CB-H1288, FH-H1302.
Rhynchospora gracilentata Gray. FH-H1306.
Rhynchospora inexpansa (Michaux) Vahl. FH-H1310.

Scirpus atrovirens Willd. CB, FD, FH-JH72,
MH-H1846.

Scirpus cyperinus (L.) Kunth. BD, CH, FD-
JH191, FH.

DIOSCOREACEAE

Dioscorea villosa L. BD, CB, CH, FD, FH,
PB, WH.

HYDROCHARITACEAE

†*Vallisneria americana* Michaux. BD-H1870—
Hanover Co. record.

IRIDACEAE

**Iris germanica* L. MH.

Iris virginica L. CB.

Sisyrinchium angustifolium Miller. MH.

Sisyrinchium mucronatum Michaux. CB,
FD, FH.

JUNCACEAE

Juncus acuminatus Michaux. BD-JH241,
H1802, FD-JH95, FH-JH71.

Juncus articulatus L. CB-JH41.

Juncus biflorus Elliott. MH-H1843.

†*Juncus bufonius* L. MH-JH278—Henrico Co.
record.

Juncus coriaceus Mackenzie. BD, CB-H1289,
FH, MH-H1844.

Juncus effusus L. BD, CB, CH, FD, FH, MH,
PB.

Juncus tenuis Willd. BD-H1803, CB-JH31,
JH-113, JH114, FD, FH, MH, PB, WH.

Luzula echinata (Small) Hermann. CB-JH01,
CH-JH27, FD-H1117, FH, PB-JH271.

Luzula multiflora (Retz.) Lejune. BD-
H1768, PB.

LEMNACEAE

Spirodela polyrrhiza (L.) Schleid. BD.

LILIACEAE

**Allium vineale* L. BD, CB, CH, FD, FH, GH,
MH, PB, WH.

**Asparagus officinalis* L. BD, FH-H1173,
MH, PB.

Erythronium americanum Ker. CB.

**Hemerocallis fulva* (L.) L. BD, FD, FH.

Medeola virginiana L. CH, MH, WH.

**Muscari racemosum* (L.) Miller. FH, MH.

**Ornithogalum umbellatum* L. FH.

Polygonatum biflorum (Walter) Elliott. BD,
CB, CH, FD-H1153, FH, PB, WH.

Smilacina racemosa (L.) Desf. BD, CB, CH,
FD, MH, PB, WH.

Smilax bona-nox L. FH, MH, PB, WH.

Smilax glauca Walter. BD-H1729, PB-
H1892.

Smilax herbacea L. CB, CH, FD, FH, WH.

Smilax laurifolia L. CH.

Smilax rotundifolia L. BD, CB, CH, FD-
H1152, FH, GH, MH, PB, WH.

Uvularia perfoliata L. MH.

Yucca filamentosa L. CH, FD, FH.

ORCHIDACEAE

Aplectrum hyemale (Willd.) Torrey. CH,
WH.

Cypripedium acaule Aiton. CB, CH, FD, FH,
MH, PB.

Goodyera pubescens (Willd.) R. Brown. CB,
MH-JH232, H1906, WH.

Habenaria lacera (Michaux) Loddiges. CB.

Liparis lilifolia (L.) Lindley. MH.

Malaxis unifolia Michaux. MH.

Spiranthes gracilis (Bigelow) Beck. CB, FH.

Tipularia discolor (Pursh) Nuttall. BD, CB-
H1362, CH, FD, FH, MH, PB, WH.

POACEAE

Agrostis hyemalis (Walter) BSP. CB-JH42,
FD-H1207.

Agrostis perennans (Walter) Tucker. MH-
H1978.

Agrostis stolonifera L. CB-JH117, FD-JH98,
GH, MH, PB-H1683, WH.

**Agrostis tenuis* Sibthorp. GH-JH124.

**Aira caryophylla* L. BD-H1794, CB, CH,
FD-H1190, FH-H1159, GH-JH19, PB,
WH.

Alopecurus carolinianus Walter. FH-H1172.

Andropogon scoparius Michaux. MH-
JH228, PB-H1748.

Andropogon ternarius Michaux. CH-JH198,
FH-JH206, PB-H1749.

Andropogon virginicus L. BD-JH243, CB,
CH, FD, FH, MH, PB, WH.

**Anthoxanthum odoratum* L. BD, CB, CH,
FD, FH-JH80, GH, MH, PB, WH.

†*Aristida curtissii* (Gray) Nash. CH-JH195,
PB-H1687—Chesterfield Co. record.

Aristida dichotoma Michaux. FH-JH218.

Aristida longespica Poir. FH-JH216.

Aristida oligantha Michaux. FD-JH169, FH-
JH219.

Aristida purpurascens Poir. CH-JH196.

**Bromus commutatus* Schrader. CB-JH115.

†**Bromus inermis* Leysser. BD-H1810—Han-
over Co. record, CB-JH46.

**Bromus japonicus* Murray. CB, FD-H1201,
FH-JH78, MH-JH277, PB-H1830, WH.

Cenchrus longispinus (Hackel) Fernald. CB.

Chasmanthium laxum (L.) Yates. BD, CB-
JH120, CH, FD, FH-JH136, JH141,
MH, PB.

Cinna arundinacea L. BD-JH248, H1962,
MH-JH230, H1979.

**Cynodon dactylon* (L.) Persoon. BD, CB, CH,
FD, FH, GH, MH, WH.

**Dactylis glomerata* L. BD, CB, FD, FH, GH,
MH, WH.

Danthonia sericea Nuttall. BD, CH, FD, FH-
JH61, MH, PB, WH-JH13.

- Danthonia spicata* (L.) R. & S. CB-JH52, CH-JH28, FD-H1205, FH-JH54, MH, PB.
Dichantheium boscii Poir. MH-H1855.
Dichantheium clandestinum (L.) Gould. BD-H1804, FD-JH182, FH-JH59.
Dichantheium commutatum (Schultes) Gould. CH-JH20, FH-H1168.
Dichantheium depauperatum (Muhl.) Gould. FD-H1209, FH-JH57.
Dichantheium dichotomum (L.) Gould. BD, CB, CH-JH20a, FH-JH53, JH60, H1166, GH-JH123, MH-JH279, PB, WH.
Dichantheium laxiflorum (Lam.) Gould. CB-JH49, FD, FH-JH89, MH-JH287, PB-H1831.
†*Dichantheium linearifolium* (Scribner) Gould. PB-JH273, H1891—Chesterfield Co. records.
Dichantheium scoparium (Lam.) Gould. MH-JH286.
**Digitaria sanguinalis* (L.) Scopali. BD, CB, CH, FD, FH, MH, PB, WH.
**Echinochloa crusgalli* (L.) Beauvois. CB-H1298, FD, FH, MH, PB-H1886.
Echinochloa walteri (Pursh) Heller. CB, FD-JH164.
**Eleusine indica* (L.) Gaertner. BD-H1699, FD-JH160, FH, MH, PB, WH-H1882.
Elymus riparius Wieg. BD-H1861, FD-H1193.
Elymus villosus Muhl. FH-JH83.
Eragrostis capillaris (L.) Nees. BD, CB-H1382, CH, FH-H1312, GH, MH, PB, WH-JH126.
†**Eragrostis curvula* (Schrader) Nees. BD-H1793—Hanover Co. record, FD-JH99, H1196, FH-JH140.
**Eragrostis pilosa* (L.) Beauvois. CB-JH45, PB-H1881.
Eragrostis spectabilis (Pursh) Steudel. MH-H1726, PB.
Erianthus contortus Elliott. CH, FH-JH143, PB-H1885.
**Festuca myuros* L. FH-JH66.
Festuca obtusa Biehler. BD-H1868, CB-JH48, FD, FH-JH63, GH-JH17, MH, PB.
Festuca octoflora Walter. FD-JH97, H1208.
**Festuca ovina* L. FH-JH67, MH.
Glyceria septentrionalis Hitchcock. CB-JH43, CH-JH151.
Glyceria striata (Lam.) Hitchcock. BD-H1732, FD-H1192, MH-JH288.
**Holcus lanatus* L. BD-H1808.
Hordeum pusillum Nuttall. CB, FD-H1203, GH, WH-JH14.
**Hordeum vulgare* L. MH-JH276, PB.
Hystrix patula Moench. FD-JH105.
Leersia oryzoides (L.) Swartz. BD-JH247, CB, CH-JH201, FH-JH210, MH.
Leersia virginica Willd. BD, CB-H1297, CH-JH199, FD-JH183, MH, PB-H1692, WH.
**Lolium multiflorum* Lam. FD-H1200, MH-JH275.
Lolium perenne L. CB-JH44.
**Lolium temulentum* L. FD-H1199.
Melica mutica Walter. FD-H1149.
†**Microstegium vimineum* (Trinius) A. Camus. BD-JH252—Hanover Co. record, CB-H1376, FH-H1727, MH-1752, PB.
Muhlenbergia schreberi J. F. Gmelin. FD, FH-JH215, MH-JH229, WH-JH180.
Panicum agrostoides Sprengel. BD, FH-H1303, MH.
Panicum anceps Michaux. CB, CH, FD, FH-JH144, MH, PB-H1693, H1887.
Panicum dichotomiflorum Michaux. CB-H1378, FD-JH193, FH, MH, PB.
Panicum tenue Muhl. FH-JH142, GH-JH122.
Panicum verrucosum Muhl. CH-JH200, FH-H1311.
Paspalum ciliatum Michaux. MH.
**Paspalum dilatatum* Poir. BD-H1698, FD, FH, WH-JH127.
†*Paspalum floridanum* Michaux. BD-JH242, MH-H1898—Henrico Co. record.
Paspalum laeve Michaux. BD, CB-JH110, CH, FD, MH, PB-H1688, WH.
Paspalum setaceum Michaux. CB-H1292, FH-JH209, GH-JH125.
**Phleum pratense* L. BD-H1867, FD.
**Phragmites australis* (Cav.) Steudel. FD-JH161.
**Poa annua* L. BD, CB, FD, FH, GH, WH.
Poa autumnalis Elliott. FH-JH56.
†**Poa compressa* L. FH-JH55, MH, PB-H1834—Chesterfield Co. record.
Poa pratensis L. BD-H1795, CB, FH, GH, MH-JH262, PB, WH.
**Setaria faberi* W. Hermann. BD-H1965, FD-JH162, MH-H1909.
Setaria geniculata (Lam.) Beauvois. CB, CH-JH148, FD-JH94, JH166, FH, MH-H1899, WH.
**Setaria glauca* (L.) Beauvois. BD, MH, PB-H1689.
**Sorghum halepense* (L.) Persoon. FD, MH, WH.
Sphenopholis intermedia (Rydberg) Rydberg. FH-H1187, PB-JH270.
Sphenopholis obtusata (Michaux) Scribner. CB, CH, FH, MH-JH289, PB-JH272, WH-JH15.

**Sporobolus poiretii* (R. & S.) Hitchcock. WH-
 JH128, JH179.
Stipa avenacea L. CB, CH, FH-H1167, PB.
Tridens flavus (L.) Hitchcock. BD, CB, CH,
 FD, FH-H1315, MH, PB, WH.
Tripsacum dactyloides L. FH.
 **Triticum aestivum* L. BD, FD-H1198, WH.
 PONTEDERIAACEAE
Heteranthera reniformis R. & P. BD-H1869.
Pontederia cordata L. BD-H1702.
 POTAMOGETONACEAE
 †*Potamogeton epihydrous* Raf. BD-H1705,
 H1873—Hanover Co. records.
 SPARGANIACEAE
Sparganium americanum Nuttall. BD-H1703.
 TYPHACEAE
Typha latifolia L. BD, CB, FD.
 ACANTHACEAE
Ruellia caroliniensis (Walter) Steudel. BD.
 ACERACEAE
Acer negundo L. BD, CB, FD, FH, MH.
Acer rubrum L. BD, CB, CH, FD, FH, MH,
 PB, WH.
Acer saccharinum L. BD, FD.
 AIZOACEAE
 **Mollugo verticillata* L. BD, CH, GH, MH,
 WH.
 AMARANTHACEAE
 **Amaranthus hybridus* L. CH-JH145, MH,
 WH.
 ANACARDIACEAE
Rhus copallina L. BD, CB, CH, FD, FH, GH,
 MH, PB, WH.
Rhus glabra L. BD, CB, FD, FH, PB, WH.
Rhus radicans L. BD, CB, CH, FD, FH, GH,
 MH, PB, WH.
Rhus toxicodendron L. CH, FH-JH62, PB-
 H1961.
 ANNONACEAE
Asimina triloba (L.) Dunal. FD.
 APIACEAE
Chaerophyllum procumbens (L.) Crantz. FD-
 H1145.
Chaerophyllum tainturieri Hooker. FD-
 H1130.
Cicuta maculata L. CB.
Cryptotaenia canadensis (L.) DC. CB-H1299,
 FD, FH-JH86.
 **Daucus carota* L. BD, CB, FD, FH, GH, MH,
 PB.
 †*Hydrocotyle ranunculoides* L.f. BD-H1796—
 Hanover Co. record.
Osmorhiza longistylis (Torrey)DC. FD-
 H1148.
Oxypolis rigidior (L.) Raf. FH.
Sanicula canadensis L. BD, CB, FD, FH-
 JH90, MH, PB, WH.

APOCYNACEAE
Apocynum cannabinum L. BD, CB, FD, FH,
 GH, MH, PB.
Trachelospermum difforme (Walter) Gray.
 FH-JH208, MH-H1851.
 **Vinca minor* L. FD, FH.
 AQUIFOLIACEAE
 **Ilex cornuta* cultivar Burfordii. FH. Culti-
 vated near Visitor's Center.
Ilex decidua Walter. FD-JH104, FH-H1308,
 MH-H1849, PB-JH269.
Ilex glabra (L.) Gray. FH. Cultivated near
 Visitor's Center.
Ilex opaca Aiton. BD, CB, CH, FD, FH, GH,
 MH, PB, WH.
Ilex verticillata (L.) Gray. FH-H1309.
 ARALIACEAE
Aralia spinosa L. BD, PB.
 **Hedera helix* L. GH.
 ARISTOLOCHACEAE
Hexastylis virginica (L.) Small. BD, CH, FD-
 H1114, WH.
 ASCLEPIADACEAE
Asclepias amplexicaulis Smith. CB, CH, FH,
 MH, PB.
Asclepias incarnata L. BD.
Asclepias syriaca L. MH.
Asclepias tuberosa L. CH, FD, FH, PB.
Asclepias viridiflora Raf. MH-H1902, PB.
Cynanchum laeve (Michaux) Persoon. BD,
 CB, FH-H1313, GH.
 ASTERACEAE
 **Achillea millefolium* L. BD, CB, FD, FH,
 GH, MH, PB, WH.
Ambrosia artemesifolia L. BD, CB, CH, FD,
 FH, GH, MH, PB, WH.
Antennaria plantaginifolia (L.) Richardson.
 CB-H1136, CH, FD, FH, MH, PB.
 **Anthemis cotula* L. CB, FD, MH.
 **Arctium minus* Schkuhr. MH.
Arnica acaulis (Walter) BSP. CH, FH.
 **Artemisia vulgaris* L. CB, CH, FD, WH.
Aster divaricatus L. FD-JH188.
Aster lateriflorus (L.) Britton. WH.
Aster patens Aiton. CH, PB-H1741.
Aster paternus Cronquist. CH, FD, FH, PB-
 H1828.
Aster pilosus Willd. CH.
Aster simplex Willd. BD-JH239, JH240,
 MH, PB.
Aster vimineus Lam. FH.
Bidens bipinnata L. CB, FH, MH-H1970,
 WH.
Bidens discoides (T. & G.) Britton. CH, MH.
Bidens frondosa L. BD, MH.
Bidens polylepis Blake. CB, FD-H1195.
Cacalia atriplicifolia L. FH.

- **Centaurea cyanus* L. CB, FD, MH.
 **Chrysanthemum leucanthemum* L. CB, FD, FH, GH, MH, PB.
 **Cichorium intybus* L. BD, CB, FD.
Cirsium discolor (Willd.) Nuttall. FH, PB.
Cirsium pumilum (Nuttall) Sprengel. FH.
 **Cirsium vulgare* (Savi) Tenore. CB, FD, FH, GH, MH.
Conoclinium coelestinum (L.) DC. MH.
Coreopsis lanceolata L. FD-JH107.
Coreopsis verticillata L. FD.
Eclipta alba (L.) Hasskarl. FH, MH-H1976.
Elephantopus carolinianus Raesch. CB, FD, FH, MH.
Elephantopus nudatus Gray. CB, CH.
Elephantopus tomentosus L. CB, CH, FH, MH.
Erechtites hieracifolia (L.) Raf. BD, CB, CH, FD, FH, MH, PB, WH.
Erigeron annuus (L.) Persoon. BD, CB, FD, FH, MH.
Erigeron canadensis L. BD, CB, CH, FD, FH, MH, PB, WH.
Erigeron strigosus Willd. CB, FH, PB.
Eupatoriadelphus dubius (Poiret) K. & R. BD, CH, FH.
Eupatoriadelphus purpureus (L.) K. & R. BD, CB, CH, FH, WH.
Eupatorium album L. CH, PB-H1888.
Eupatorium capillifolium (Lam.) Small. BD, CB, CH, FH, PB, WH.
Eupatorium godfreyanum Cronquist. MH.
Eupatorium hyssopifolium L. BD, CB, CH, FD, FH, GH, MH, PB.
Eupatorium perfoliatum L. BD, CB, FH, MH.
Eupatorium pilosum Walter. PB.
Eupatorium rotundifolium L. CB, CH, FD, FH, MH, PB.
Eupatorium serotinum Michaux. PB-H1751, H1960.
Eupatorium sessilifolium L. CB, FD.
Gnaphalium obtusifolium L. BD, CB, FH, MH, PB, WH.
Gnaphalium purpureum L. BD, CH, FD, FH, GH, MH, PB, WH.
Heterotheca graminifolia (Michaux) Shinners. CH, FH, PB.
Heterotheca mariana (L.) Shinners. CH, FD-JH192, FH, PB.
Hieracium gronovii L. CB, CH, FD, FH, MH, PB.
Hieracium venosum L. CB, CH, FD, FH-H1183, MH, PB.
 **Hypochoeris radicata* L. BD, CB, CH, FD, FH, GH, MH, WH.
Krigia virginica (L.) Willd. CB, FD-H1156, FH, GH, PB, WH.
Lactuca canadensis L. BD, CB, CH, FD, FH, GH, MH, PB, WH.
 **Lactuca scariola* L. BD, FH, MH.
Liatris graminifolia (Walter) Willd. PB.
 **Matricaria matricarioides* (Lessing) Porter. BD, FD.
Mikania scandens (L.) Willd. BD, CB, CH, FD-JH163.
Parthenium integrifolium L. CH.
 †*Pluchea camphorata* (L.) DC. MH-H1974—Henrico Co. record.
Prenanthes altissima L. CB, CH, FD, FH.
Pyrrhopappus carolinianus (Walter) DC. GH.
 **Ratibida* sp. FD.
Rudbeckia hirta L. FD, FH, MH.
Senecio anonymus Wood. CH, FD.
Senecio obovatus Willd. FD-H1128.
Senecio smallii Britton. MH, PB.
Senecio tomentosus Michaux. FH-H1174.
Silphium compositum Michaux. PB.
Solidago bicolor L. FD, FH.
Solidago caesia L. FD, FH.
Solidago canadensis var. *scabra* T. & G. FH.
Solidago erecta Pursh. CB, CH, FD, FH, PB-H1753.
Solidago gigantea Aiton. BD, CB, MH, WH.
Solidago graminifolia (L.) Salisbury. BD, CB, FD, FH, MH, PB.
Solidago juncea Aiton. FD.
Solidago nemoralis Aiton. FD, FH, PB-H1747.
Solidago odora Aiton. CH, FD, FH, PB.
Solidago pinetorum Small. CH, FD, FH.
Solidago radula Nuttall. FD.
Solidago rugosa Miller. BD-JH246, H1734, CB, CH, FD-JH167, FH, MH-JH233.
Solidago tenuifolia Pursh. CB-JH170, FD.
 **Sonchus asper* (L.) Hill. CB.
 **Tagetes* sp. CH.
 **Taraxacum erythrospermum* Besser. FH, GH, MH.
 **Taraxacum officinale* Wiggers. BD, CB, CH, FD, FH, GH, MH, WH.
 **Tragopogon pratensis* L. BD.
Verbesina alternifolia (L.) Britton. CB.
Verbesina occidentalis (L.) Walter. MH-H1724.
Vernonia noveboracensis (L.) Michaux. BD, CB, FH.
 **Xanthium strumarium* L. BD, CB, FD, MH, WH.

BALSAMINACEAE

- Impatiens capensis* Meerburg. BD, CB, MH.
Impatiens pallida Nuttall. MH.

BERBERIDACEAE

- **Berberis julianae* Schneider. FD. Cultivated.
 **Berberis thunbergii* DC. FH, MH.
Podophyllum peltatum L. FD.

BETULACEAE

- Alnus serrulata* (Aiton) Willd. BD, CB, CH,
 FD, MH, WH.
Betula nigra L. BD, CB, CH, FD, MH.
Carpinus caroliniana Walter. BD, CB, CH,
 FD, MH, PB, WH.
Ostrya virginiana (Miller) K. Koch. FH-
 JH87.

BIGNONIACEAE

- Anisostichus capreolatus* (L.) Bureau. FH-
 H1182.
Campsis radicans (L.) Seeman. BD, CB, CH,
 FD, FH, MH, PB, WH.
Catalpa speciosa Engelman. CH, WH.

BORAGINACEAE

- **Lithospermum arvense* L. CH-H1139, FD,
 FH-H1181, MH.

- **Myosotis discolor* Persoon. BD-H1769.

BRASSICACEAE

- **Alliaria officinalis* Andr. FD.
 **Arabis thaliana* (L.) Heynhold. BD,
 CH-H1140, FD, FH, MH-JH260, PB,
 WH.
Arabis laevigata (Willd.) Poir. FD-H1121,
 MH.
Arabis lyrata L. WH.
 **Barbarea verna* (Miller) Ascherson. BD, FH,
 MH.

- **Brassica napus* L. MH-JH261.

- **Calepina irregularis* (Asso) Thellung. MH-
 JH259.

- **Capsella bursa-pastoris* (L.) Medicus. CB,
 FH, MH.

- Cardamine concatenata* (Michaux) Ahles.
 FD-H1129.

- **Cardamine hirsuta* L. BD, CB, CH, FD, FH,
 MH, PB, WH.

- **Coronopus didymus* (L.) Smith. CB-JH30.

- **Draba verna* L. MH.

- Lepidium virginicum* L. BD, CB, FD, FH,
 GH, MH.

- **Raphanus raphanistrum* L. CB, MH.

- **Teesdalia nudicaulis* (L.) R. Brown. GH-
 JH16, PB-H1766.

- **Thlaspi arvense* L. MH.

BUXACEAE

- **Buxus sempervirens* L. GH. Cultivated.

CACTACEAE

- Opuntia compressa* (Salisbury) Macbride.
 CH.

CALLITRICHACEAE

- Callitriche heterophylla* Pursh. BD-H1728,
 CH-JH29.

CAMPANULACEAE

- Lobelia cardinalis* L. BD, MH.
Lobelia inflata L. FD, FH, MH, WH.
Lobelia nuttallii R. & S. CB, FH.
Lobelia puberula Michaux. MH.
Lobelia siphilitica L. CB.
Triodanis perfoliata (L.) Nieuwland. BD, CB,
 FD, FH, GH, MH, PB, WH.

CAPRIFOLIACEAE

- **Lonicera japonica* Thunberg. BD, CB, CH,
 FD, FH, GH, MH, PB, WH.

- Lonicera sempervirens* L. MH.

- Sambucus canadensis* L. BD, CB, CH, FD,
 FH, MH, PB, WH.

- Symphoricarpos orbiculatus* Moench. FD,
 PB.

- Viburnum acerifolium* L. CB, FH-JH88,
 H1184, WH-JH08.

- Viburnum dentatum* L. BD, CB, FH, PB,
 WH.

- Viburnum nudum* L. BD-H1809, CB-JH40,
 CH, FH-H1304, MH, WH.

- Viburnum prunifolium* L. FD-H1125, MH.

CARYOPHYLLACEAE

- **Cerastium glomeratum* Thuillier. BD, CB,
 FD, FH, MH, WH.

- **Cerastium holosteoides* var. *vulgare* (Hart-
 man) Hylander. CB, FH-H1186, GH,
 WH.

- **Dianthus armeria* L. BD, CB, FD, FH, MH,
 PB.

- **Gypsophila elegans* Bieb. FD-JH108.

- **Lychnis alba* Miller. CB.

- **Scleranthus annuus* L. BD, CB, CH, FD-
 H1132, FH, GH, MH, WH.

- **Silene armeria* L. FD-H1204.

- Silene caroliniana* Walter. FD-H1120.

- **Stellaria media* Cyrillo. BD, CB, CH, FD,
 FH, GH, MH, WH.

- Stellaria pubera* Michaux. CB, FD-H1119.

CELASTRACEAE

- **Celastrus orbiculatus* Thunberg. WH-JH07.

- Euonymus americanus* L. BD, CB, FD, FH-
 H1163, MH, WH.

CHENOPODIACEAE

- **Chenopodium album* L. BD, CB, FD, FH,
 GH, MH, WH.

- **Chenopodium ambrosioides* L. CB, MH, PB.

CISTACEAE

- †*Helianthemum canadense* (L.) Michaux. CH-
 JH147, PB-H1680—Chesterfield Co.
 record.

- Lechea minor* L. FH-JH137.

- Lechea racemulosa* Michaux. CH-JH153,
 MH-H1725.

- Lechea tenuifolia* Michaux. FH-JH135, PB-
 H1837.

CLETHRACEAE

Clethra alnifolia L. BD, CB, CH, FH, MH, WH.

CONVOLVULACEAE

Calystegia sepium (L.) R. Brown. FD.

Cuscuta campestris Yuncker. BD-H1740, CB-JH172.

Cuscuta compacta Jussieu. CH-JH202.

†*Cuscuta gronovii* R. & S. BD-JH251, H1735—Hanover Co. records.

**Ipomoea hederacea* Jacquin. BD, CB, CH, FD, GH, MH, PB, WH.

Ipomoea lacunosa L. BD, CB, FD, MH, WH.

Ipomoea pandurata (L.) Meyer. BD, CB, CH, FH, MH, PB.

**Ipomoea purpurea* (L.) Roth. MH.

CORNACEAE

Cornus ammomum Miller. FH-JH76, H1314.

Cornus florida L. BD, CB, CH, FD, FH, MH, PB, WH.

CRASSULACEAE

Sedum ternatum Michaux. FD-H1127.

EBENACEAE

Diospyros virginiana L. CB, CH, FD, FH, MH, PB, WH.

ELAEAGNACEAE

**Elaeagnus pungens* Thunberg. CB-H1380.

**Elaeagnus umbellata* Thunberg. BD.

ERICACEAE

Chimaphila maculata (L.) Pursh. CB, CH, FD, FH, MH, PB-H1825, WH.

Chimaphila umbellata (L.) Britton. CB-H1135.

Epigaea repens L. CH-H1143, FD.

Gaylussacia baccata (Wang.) K. Koch. PB-H1826.

Kalmia latifolia L. FD-H1151, FH, MH.

Leucothoe racemosa (L.) Gray. CB, CH, FD, FH-H1169.

Lyonia ligustrina (L.) DC. CB, CH-JH74.

Lyonia mariana (L.) D. Don. CH, FH, MH.

Monotropa hypopithys L. MH-JH223.

Monotropa uniflora L. CH, MH, PB, WH.

Rhododendron nudiflorum (L.) Torrey. BD, CH, FD-H1115, MH, WH.

Rhododendron viscosum (L.) Torrey. CH-JH73, FH-H1170.

Vaccinium corymbosum L. CB, CH, FD, FH, MH, PB.

Vaccinium pallidum Aiton. CB, CH, FD-H1131, FH-H1164, MH-JH283, PB, WH.

Vaccinium stamineum L. CH, FD, FH, MH, PB.

EUPHORBIACEAE

Acalypha gracilens Gray. CB-JH112, H1365, CH-JH152, FD, FH, PB.

Acalypha rhomboidea Raf. BD, CB, FD, FH, GH, MH, PB, WH.

Croton glandulosus var. *septentrionalis* Mueller-Arg. CB-H1290, H1368, PB.

Euphorbia corollata L. CH, FH, PB, WH.

Euphorbia maculata L. BD, CB, CH, FD, FH, MH.

Euphorbia nutans Lagasca. BD-JH245, CB, CH, FD, FH, MH, WH.

Euphorbia spathulata Lam. FH-H1178.

Phyllanthus caroliniensis Walter. MH-JH221, H1980.

†*Tragia urens* L. CH-JH146, PB-H1681—Chesterfield Co. record.

FABACEAE

**Albizia julibrissin* Durazzini. BD, CB, FD, FH, PB.

Amphicarpa bracteata (L.) Fernald. CB, MH.

Apios americana Medicus. BD-JH256, CB, CH, FH-H1305.

Baptisia tinctoria (L.) R. Brown. CH, PB.

Cassia fasciculata Michaux. BD, CB, FD, PB, WH.

Cassia nictitans L. BD, CB, CH, FH, WH.

Cassia obtusifolia L. MH.

Cercis canadensis L. FH, WH.

Clitoria mariana L. CH-JH203, FH, MH, PB.

Crotalaria sagittalis L. PB-H1742.

Desmodium canescens (L.) DC. FD, FH.

Desmodium ciliare (Willd.) DC. CH, FH, WH.

Desmodium cuspidatum (Willd.) Loudon. CH.

Desmodium glabellum (Michaux) DC. CH, MH.

Desmodium laevigatum (Nuttall) DC. FD, PB.

Desmodium marilandicum (L.) DC. FD, FH.

Desmodium nudiflorum (L.) DC. CH, MH, WH.

Desmodium nuttallii (Schindler) Schubert. CB, CH.

Desmodium obtusum (Willd.) DC. PB-H1682.

Desmodium paniculatum (L.) DC. CB, CH.

Desmodium perplexum Schubert. CB, WH.

Desmodium sessilifolium (Torrey) T. & G. CB.

Desmodium strictum (Pursh) DC. FH.

Desmodium tenuifolium T. & G. BD, FD-JH194.

Desmodium viridiflorum (L.) DC. BD.

Galactia regularis (L.) BSP. CH, FH-JH207.

†*Galactia volubilis* (L.) Britton. FH-JH217, PB-H1895—Chesterfield Co. record.

**Gleditsia triacanthos* L. MH.

**Glycine max* (L.) Merrill. CB-JH173.

Lathyrus hirsutus L. BD, MH.

**Lathyrus latifolius* L. FD, FH.
 **Lespedeza cuneata* (Dumont) G. Don. BD-
 JH237, CB, CH, FD, MH, PB, WH.
Lespedeza hirta (L.) Hornemann. PB.
Lespedeza procumbens Michaux. FD, FH,
 PB.
Lespedeza repens (L.) Barton. CH, FD, FH,
 GH, PB.
 **Lespedeza stipulacea* Maxim. BD, CB, FD,
 FH, MH.
 **Lespedeza striata* (Thunberg) H. & A. BD-
 JH238, CB, FD, FH, MH, WH.
Lespedeza stuevei Nuttall. CH, PB.
Lespedeza violacea (L.) Persoon. CB-H1295.
Lespedeza virginica (L.) Britton. CH, FD-
 JH168, FH-JH205, MH, PB.
Lupinus perennis L. CH.
 **Melilotus albus* Lam. FD.
 **Melilotus officinalis* (L.) Lam. BD, CB.
 **Pueraria lobata* (Willd.) Ohwi. CH.
Rhynchosia tomentosa (L.) H. & A. CH-
 JH154.
Robinia pseudo-acacia L. BD, FD, FH, GH,
 PB, WH.
Strophostyles helvola (L.) Elliott. BD-H1966,
 CB-H1296, FD.
Strophostyles umbellata (Willd.) Britton.
 PB-H1684, H1890.
Stylosanthes biflora (L.) BSP. CB, CH, FD,
 FH, PB.
Tephrosia spicata (Walter) T. & G. CH, FH,
 PB-H1833.
Tephrosia virginiana (L.) Persoon. CH, FH.
 **Trifolium agrarium* L. FH, GH, WH.
 **Trifolium arvense* L. BD, CB, CH, FD, FH,
 WH.
 **Trifolium campestre* Sturm. CB.
 **Trifolium dubium* Sibthorp. BD, FH-H1158,
 MH.
 **Trifolium pratense* L. BD, CB, CH, FH, MH.
 **Trifolium repens* L. BD, CB, CH, FH, GH,
 MH, WH.
 **Vicia angustifolia* L. BD, CB, FH, GH, MH,
 PB, WH.
Vicia grandiflora Scopoli. BD-JH264.
 **Vicia hirsuta* (L.) S. F. Gray. CB.
 †*Vicia tetrasperma* (L.) Moench. BD-JH265—
 Hanover Co. record.
 FAGACEAE
Castanea dentata (Marshall) Borkh. PB-
 H1750.
Castanea pumila (L.) Miller. CB, CH-JH21,
 WH.
Fagus grandifolia Ehrhart. BD, CB, CH, FD,
 MH, WH.
Quercus alba L. BD, CB, CH, FD-JH155,
 FH, MH, PB, WH.

Quercus coccinea Muenchh. CB, FD-JH158,
 MH.
Quercus falcata Michaux. BD, CB, CH, FD-
 JH157, FH, MH, PB, WH.
Quercus garlandensis Palm. PB-H1743.
Quercus marilandica Muenchh. FH-JH63.
Quercus michauxii Nuttall. MH.
Quercus nigra L. PB-JH268, H1744, H1745,
 H1827, H1959.
Quercus palustris Muenchh. CB, FH, MH-
 H1973.
Quercus phellos L. BD, CB, CH, FD,
 FH, MH, PB, WH.
Quercus prinus L. FD-JH156, JH186, MH,
 PB, WH.
Quercus rubra L. FD-JH159, MH.
Quercus stellata Wang. BD, CB, CH, FD,
 FH-JH64, MH, PB.
Quercus velutina Lam. BD, CB, CH, FD, FH,
 MH, PB, WH.
 GENTIANACEAE
Bartonia virginica (L.) BSP. CB-JH121, FH-
 JH220, MH-H1905.
Gentiana saponaria L. FH.
Sabatia quadrangula Wilbur. MH-H1904.
 GERANIACEAE
 **Erodium cicutarium* (L.) Aiton. GH.
Geranium carolinianum L. BD, CB, CH, FD,
 FH, GH, MH, PB, WH.
 **Geranium molle* L. BD, CB, CH, GH, MH,
 WH.
 HALORAGACEAE
Proserpinaca palustris L. CB.
 HAMAMELIDACEAE
Liquidambar styraciflua L. BD, CB, CH, FD,
 FH, MH, PB, WH.
 HYDROPHYLLACEAE
Nemophila microcalyx (Nuttall) F. & M. GH.
 HYPERICACEAE
Hypericum canadense L. BD, CB, FH-
 JH139, MH.
Hypericum gentianoides (L.) BSP. FD, PB.
Hypericum hypericoides (L.) Crantz. BD, CB,
 CH, FD, FH, MH, PB.
Hypericum mutilum L. BD-H1737, CB, CH,
 FD-JH103, FH, MH-JH225, WH.
 **Hypericum perforatum* L. FD, MH-H1908.
Hypericum punctatum Lam. FH, MH-
 H1901, PB.
Hypericum stans (Michaux) Adams & Rob-
 son. CB, CH, FH.
Hypericum stragalum Adams & Robson.
 BD, CB, CH, FD, FH, MH, PB.
Hypericum virginicum L. BD.
Hypericum walteri J. F. Gmelin. BD, CB,
 CH.

- JUGLANDACEAE
- Carya glabra* (Miller) Sweet. BD, FD, FH-H1165, MH.
- Carya tomentosa* Nuttall. BD, CB, CH, FD-JH187, FH-JH65, MH-H1854, PB, WH.
- Juglans nigra* L. CB, FD, FH-JH82, GH, MH, PB, WH.
- LAMIACEAE
- **Glechoma hederacea* L. BD, CB, FD.
- **Lamium amplexicaule* L. BD, CB, CH, FH, GH, MH, WH.
- **Lamium purpureum* L. BD, CB, CH, FH, GH, MH, WH.
- Lycopus americanus* Barton. BD, MH.
- Lycopus virginicus* L. BD, CB-H1379, CH-JH150, FD-JH181, FH, MH, WH.
- **Nepeta cataria* L. MH.
- **Perilla frutescens* (L.) Britton. CB-H1363, MH, WH.
- **Prunella vulgaris* L. CB, FH, WH.
- Pycnanthemum tenuifolium* Schrader. CB, FD-JH189, FH-JH77, MH.
- Salvia lyrata* L. CB, FD, FH, MH, PB.
- **Satureja calamintha* var. *nepeta* (L.) Briquet. CB-JH111, H1366, MH.
- Scutellaria elliptica* Muhl. MH.
- Scutellaria integrifolia* L. CB-H1371, FH, MH.
- †*Scutellaria lateriflora* L. MH-H1977—Henrico Co. record.
- Trichostema dichotomum* L. FD, PB.
- LAURACEAE
- Lindera benzoin* (L.) Blume. CB, FD, MH, WH.
- Sassafras albidum* (Nuttall) Nees. BD, CB, CH, FD, FH, MH, PB, WH.
- LENTIBULARIACEAE
- Utricularia biflora* Lam. BD-H1704, H1872.
- Utricularia gibba* L. BD-H1871.
- LINACEAE
- Linum striatum* Walter. CB.
- **Linum usitatissimum* L. FD-H1202.
- LOGANIACEAE
- Polypremum procumbens* L. BD-H1696, CB, FD, FH, GH, PB, WH.
- LORANTHACEAE
- Phoradendron serotinum* (Raf.) M. C. Johnston. CH.
- LYTHRACEAE
- †*Decodon verticillatus* (L.) Elliott. BD-H1963—Hanover Co. record.
- **Lagerstroemia indica* L. GH. Cultivated.
- **Lythrum salicaria* L. FD.
- MAGNOLIACEAE
- Liriodendron tulipifera* L. BD, CB, CH, FD, FH, MH, PB, WH.
- **Magnolia grandiflora* L. CB-H1372, FH, PB-H1824.
- Magnolia virginiana* L. BD, CB-H1364, CH, FH, MH, WH.
- MALVACEAE
- **Abutilon theophrasti* Medicus. MH.
- Hibiscus moscheutos* L. FH.
- **Hibiscus syriacus* L. MH.
- **Sida spinosa* L. CH, FD, MH, WH.
- MELASTOMATACEAE
- Rhexia mariana* L. CB, FH, MH, WH.
- Rhexia virginica* L. FH-H1307.
- MENISPERMACEAE
- Menispermum canadense* L. FD, FH, MH.
- MORACEAE
- **Broussonetia papyrifera* (L.) Vent. BD, GH, MH-H1910, WH-JH131.
- **Morus alba* L. BD, CB, MH.
- Morus rubra* L. CB, FD, FH, MH, PB, WH.
- MYRICACEAE
- Myrica cerifera* L. FH, MH, PB.
- NYMPHAEACEAE
- Nuphar luteum* (L.) Sibthorp & Smith. CH.
- NYSSACEAE
- Nyssa sylvatica* Marshall. BD, CB, CH, FD, FH-JH92, MH, PB, WH.
- OLEACEAE
- Chionanthus virginicus* L. CH, FD, FH.
- Fraxinus americana* L. CB, FD, MH.
- †*Fraxinus profunda* (Bush) Bush. MH-H1971—Henrico Co. record.
- **Ligustrum sinense* Loureiro. BD, CB-H1381, FD, FH, MH.
- ONAGRACEAE
- Circaea lutetiana* ssp. *canadensis* (L.) Ascheron & Magnus. MH, WH.
- Epilobium coloratum* Biehler. BD-H1733.
- Ludwigia alternifolia* L. BD, CB, CH, FD, FH, MH.
- Ludwigia decurrens* Walter. BD.
- Ludwigia palustris* (L.) Elliott. BD, CB, FD, FH, MH.
- Oenothera biennis* L. CB, MH, PB.
- Oenothera laciniata* Hill. BD, CB, FD-H1155, GH, WH.
- Oenothera parviflora* L. FD-JH106.
- OROBANCHACEAE
- Epifagus virginiana* (L.) Barton. CB, FD-JH185.
- OXALIDACEAE
- **Oxalis corniculata* L. WH.
- Oxalis dillenii* Jacquin. BD, CB, CH, FH, MH, PB-H1677, WH.
- Oxalis florida* Salisbury. BD, CB, FD, FH, GH, MH, WH.
- Oxalis violacea* L. CB, MH.
- PAPAVERACEAE
- **Papaver rhoeas* L. FD-H1197.
- PASSIFLORACEAE
- Passiflora incarnata* L. CB, FD, PB.
- Passiflora lutea* L. BD, FH.

- PENTHORACEAE
Penthorum sedoides L. MH-H1975.
- PHRYMACEAE
Phryma leptostachya L. FH, MH, WH.
- PHYTOLACCACEAE
Phytolacca americana L. BD, CB, CH, FD, FH, GH, MH, PB, WH.
- PLANTAGINACEAE
Plantago aristata Michaux. CB, FD-H1191, FH, GH, MH, PB.
 **Plantago lanceolata* L. BD, CB, CH, FD, FH, GH, MH, WH.
 **Plantago major* L. MH.
Plantago rugelii Dcne. BD, CB, CH, FH, GH, MH, PB, WH.
Plantago virginica L. BD, FD, FH, GH, MH, PB, WH.
- PLATANACEAE
Platanus occidentalis L. BD, CB, FD, FH, MH, WH.
- POLEMONIACEAE
Phlox sp. GH. Cultivated.
- POLYGALACEAE
Polygala mariana Miller. CB-H1287, FH-JH138.
- POLYGONACEAE
Polygonum arifolium L. BD.
 **Polygonum aviculare* L. CB, FH, GH, MH, WH.
 **Polygonum cespitosum* Blume. BD, FH, MH, WH-JH130.
Polygonum coccineum Muhl. ex Willd. BD, CB, FD-JH100.
 **Polygonum convolvulus* L. CB-JH47.
 **Polygonum cuspidatum* Siebold & Zucc. FH.
Polygonum pensylvanicum L. CB, FD, FH, MH, WH.
 **Polygonum persicaria* L. BD, CB, CH, FD, FH, MH, PB-H1883.
Polygonum punctatum Elliott. CB, FD, FH, MH-H1907.
Polygonum sagittatum L. BD, CB, CH, FH.
Polygonum scandens L. CB-JH171, PB.
Polygonum setaceum Elliott. BD-H1731.
 **Rumex acetosella* L. BD, CB, CH, FD, FH, GH, MH, PB, WH.
 **Rumex conglomeratus* Murray. CB, FD, GH.
 **Rumex crispus* L. CB, FD, FH, GH, MH.
Tovara virginiana (L.) Raf. CB, FD, MH, WH.
- PORTULACACEAE
Claytonia Virginica L. FD.
- PRIMULACEAE
 **Anagallis arvensis* L.*CB, MH, WH.
 **Lysimachia nummularia* L. CB.
Lysimachia quadrifolia L. FH, MH.
- RANUNCULACEAE
Clematis virginiana L. BD.
Ranunculus abortivus L. BD, CB, FD, FH, MH.
 **Ranunculus bulbosus* L. BD, CB, CH, FH, GH, MH, WH.
 †*Ranunculus pusillus* Poirlet. BD-JH263—Hanover Co. Record.
 **Ranunculus sardous* Crantz. BD, MH.
Thalictrum polygamum Muhl. FD.
Xanthorhiza simplicissima Marshall. FD-H1144.
- RHAMNACEAE
Ceanothus americanus L. CH, FH-JH91, PB-H1832.
- ROSACEAE
Agrimonia parviflora Aiton. FH, MH.
 **Alchemilla microcarpa* Boissier & Reuter. BD, CB, FH-H1157, GH, WH-JH06.
Amelanchier arborea (Michaux f.) Fernald. PB-H1764.
Amelanchier spicata (Lam.) K. Koch. FH-JH05.
Aronia arbutifolia (L.) Elliott. CH, FH, MH.
Crataegus uniflora Muenchh. PB-H1679.
 **Duchesnea indica* (Andrz.) Focke. BD, CB, CH, FD, FH, MH.
Fragaria virginiana Duchesne. CB, FD, FH, MH, PB, WH.
 †*Geum canadense* Jacquin. FD, FH, MH-H1840—Henrico Co. record.
 **Malus pumila* Miller. FD.
Potentilla canadensis L. BD, CB, CH, FD, FH, MH, PB.
 **Potentilla recta* L. CB, MH, WH.
 **Prunus domestica* L. MH-JH257.
 **Prunus persica* (L.) Batsch. WH.
Prunus serotina Ehrhart. BD, CB, CH, FD, FH, GH, MH, WH.
 **Pyrus communis* L. CB, MH.
Rosa carolina L. BD, CB, CH, FD, FH, MH, PB.
 **Rosa multiflora* Thunberg. BD, CB, FD, FH.
Rubus argutus Link. CB, FD, FH, GH, WH.
Rubus flagellaris Willd. FH, MH.
Rubus hispidus L. CH, PB.
Rubus occidentalis L. BD, FD, MH, PB, WH.
Rubus spp. CB, CH, FD, FH, WH.
- RUBIACEAE
Cephalanthus occidentalis L. BD, CB, CH, FH, MH.
Diodia teres Walter. BD, CB, CH, GH, MH, PB, WH.
Diodia virginiana L. BD, CB-H1367, CH, FD, FH, MH, PB.
Galium aparine L. CB, CH, FD, FH, MH, WH.
Galium asprellum Michaux. BD, CH-JH75.

- Galium circaezans* Michaux. CB, CH, FD, MH-JH234, PB, WH.
Galium obtusum Bigelow. CB-JH119, FH, MH-H1853.
 **Galium parisiense* L. FH-JH79.
Galium pilosum Aiton. BD-H1862, CB-H1291, FH-JH85, PB-H1691.
Galium triflorum Michaux. MH-JH235.
Houstonia caerulea L. CB, CH, FD, FH, MH.
 †*Houstonia longifolia* Gaertner. CB-H1137, PB-H1690—Chesterfield Co. record.
Houstonia purpurea L. CB, FD, MH.
Mitchella repens L. BD, CB, CH, FD, FH, MH, WH.
Oldenlandia uniflora L. BD-H1706, FH-JH211.
- SALICACEAE
- **Populus alba* L. FD, FH.
Populus deltoides Marshall. BD, CB, FD.
Populus grandidentata Michaux. PB-JH267.
 †**Salix alba* L. BD-H1863—Hanover Co. record.
Salix humilis Marshall. CH-JH02, FD-H1154, PB-H1765, H1838.
Salix nigra Marshall. CB, FD.
- SAURURACEAE
- Saururus cernuus* L. BD-H1730, CB, CH, FD, MH, WH.
- SAXIFRAGACEAE
- Heuchera americana* L. CB, FD, FH-H1180, MH, WH.
Hydrangea arborescens L. FD.
 †*Itea virginica* L. BD-H1964—Hanover Co. record, CB.
Saxifraga virginiana Michaux. FD-H1126, FH.
- SCROPHULARIACEAE
- Agalinus purpurea* (L.) Pennell. FD, MH.
Aureolaria pectinata (Nuttall) Pennell. FH.
Aureolaria virginica (L.) Pennell. FD, MH.
Chelone glabra L. CH.
Gratiola neglecta Torrey. BD-H1701, H1807.
Gratiola virginiana L. CB-H1134, CH-JH197, FH, MH-JH236.
Linaria canadensis (L.) Dumont. BD, CB, CH, FD, FH, MH, PB.
 **Linaria maroccana* Hook. f. FD-JH109.
 **Linaria vulgaris* Hill. FD.
Lindernia dubia (L.) Pennell. BD-H1700, H1736.
Mimulus alatus Aiton. MH.
Mimulus ringens L. CH.
 **Paulownia tomentosa* (Thunberg) Steudel. CB.
Penstemon canescens Britton. FD-JH102.
 **Verbascum blattaria* L. CB, FH, PB, WH.
 **Verbascum thapsus* L. CB, FD, FH, MH, PB.
 **Veronica agrestis* L. GH.
- **Veronica arvensis* L. BD, FD-H1133, FH-H1176, GH, MH, WH.
 **Veronica hederifolia* L. BD, CB, CH, MH, WH.
Veronica officinalis L. CB, FH, MH-H1850.
 **Veronica persica* Poir. BD, MH.
 †**Veronica serpyllifolia* L. BD-JH266—Hanover Co. record.
- SIMAROUBACEAE
- **Ailanthus altissima* (Miller) Swingle. BD, CB, FD, FH, MH, PB, WH.
- SOLANACEAE
- **Datura stramonium* L. CB-H1360, WH.
Physalis angulata L. WH-JH175.
Physalis heterophylla Nees. FH.
Physalis pubescens L. PB.
Physalis virginiana Miller. PB-H1835.
Solanum carolinense L. BD, CB, CH, FD, FH, GH, MH, PB, WH.
- SYMPLOCACEAE
- Symplocos tinctoria* (L.) L'Her. PB-H1694, H2056.
- ULMACEAE
- Celtis occidentalis* L. BD, CB, FH, MH, PB-H1678, WH.
Ulmus alata Michaux. FD, FH, MH, PB.
Ulmus americana L. CB, FD, FH, MH, PB.
Ulmus rubra Muhl. BD, MH, WH.
- URTICACEAE
- Boehmeria cylindrica* (L.) Swartz. BD-H1738, CB, CH, FD, FH, MH, WH.
Laportea canadensis (L.) Weddell. FD-JH184.
Pilea pumila (L.) Gray. BD, CB, FD, MH, WH.
- VALERIANACEAE
- **Valerianella locusta* (L.) Betcke. BD, CH, FD, MH.
Valerianella radiata (L.) Dufur. BD.
- VERBENACEAE
- Verbena urticifolia* L. MH-H1903, WH.
- VIOLACEAE
- Viola blanda* Willd. CB.
Viola emarginata (Nuttall) LeConte. FD-H1123, FH-JH04.
Viola palmata L. PB.
Viola papilionacea Pursh. BD, CB, CH, FD, FH, GH, MH, WH.
Viola pedata L. CB-JH116.
 **Viola primulifolia* L. CH, FD-H1124, MH.
 **Viola rafinesquii* Greene. BD, CB, CH, FD, FH, GH, MH, PB, WH.
Viola sagitata Aiton. CH, FH.
- VITACEAE
- Parthenocissus quinquefolia* (L.) Planchon. BD, CB, CH, FD, FH, GH, MH, PB, WH.
Vitis aestivalis Michaux. BD, CB, CH, FH, GH, PB.

Vitis baileyana Munson. CB, GH.
Vitis cinerea Engelman ex Millardet. MH,
PB.
Vitis labrusca L. BD, CB.

Vitis rotundifolia Michaux. BD, CB, CH,
FD, FH, GH, MH, PB, WH.
Vitis vulpina L. FD-H1150.

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