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VASCULAR FLORA OF THE YORKTOWN COLONIAL PARKWAY BETWEEN BRACKENS POND AND KINGS CREEK

A Thesis

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ABSTRACT

The purpose of this study is to permanently record the vascular flora of the Yorktown Colonial Parkway between Kings Creek and Brackens Pond, York County, Virginia. The area studied extends approximately 4.4 miles along both sides of the Parkway making the total land area included about 265 acres. Major vegetational communities present include (1) roadsides and clearings (2) woods (3) salt marshes (4) beaches and (5) freshwater marshes and Brackens Pond.

Some of the most interesting specimens collected were *Carex divisa*, *Malaxis spicata*, *Helianthus occidentalis*, *Boehmeria nivea*, and *Ligustrum sinense*. The following plants were conspicuously abundant in the study area: *Lonicera japonica*, *Myrica cerifera*, *Lindera benzoin*, *Senecio aureus*, *Callicarpa americana*, *Spartina* spp., and *Allium ampeloprasum* var. *atroviolaceum*.

Of the specimens collected there were 492 taxa representing 110 families and 317 genera. Of the species found there were five state records, 96 Peninsula records, and 312 county records.

INTRODUCTION

This floristic study of the Yorktown Colonial Parkway was undertaken since the flora of the area is largely unrecorded. Except for the limited work done by Professor and Mrs. Earl Grimes in the early 1920's, very little collecting has been done in York County (Erlanson, 1924).

The present survey is especially significant since the vegetation will be preserved by the National Park Service. Data gathered from this study will contribute directly toward the compilation of a state-wide flora currently being coordinated by the Flora Committee of the Virginia Academy of Science. This study also provides useful information on range extensions of various plant species.

In order to limit the study area to a size which could be covered thoroughly in one growing season, boundaries were set at Kings Creek and Brackens Pond. An estimate of approximately 265 acres of study area was made on the basis of a right-of-way width averaging 500 feet along 4.4 miles of the Parkway. About 19 acres of the 265 acres is under the concrete pavement of the Parkway.

Five types of vegetational patterns occur along the Colonial Parkway: (1) roadside and grassy clearings (2) woodlands (3) salt marshes (4) beaches and (5) fresh-water marshes and one pond. The roadsides and clearings were regularly maintained by mowing by the Park Service, but the other types of vegetational areas were largely undisturbed. In much of the area the soil contains shell deposits dating from the Miocene Period. In the vicinity of Indian Field Creek, the roadside area is largely sand mixed with this type of shell debris.

The area studied along the Yorktown Colonial Parkway was acquired by the Park Service in 1930 under special lease from the Navy Department. Part of the area originally belonged to Ringfield and Bellfield Plantations. These two plantations were parcels of land awarded for settlement of what was wilderness in the 1630's. Bellfield Plantation, originally a 600-acre grant held by Captain John West, and Ringfield Plantation, a 350-acre tract first owned by Robert Felgate, were land grants given by the governor of the Colony by act of the General Assembly of Virginia. These land grants were bestowed in an effort to lessen the danger from the Chiskiack Indians then settled near Indian Field Creek. Bruce's Economic History (1935) describes great open hardwood forests of the area through which one could see a carriage at a distance of a mile and a

half. This forest has since given way to the present successional mixed deciduous-pine woods. Few traces remain of earliest land utilization for tobacco-growing and of a silk-raising industry. Paper mulberry trees, Broussonetia papyrifera, may be remnants of early silk-worm-raising attempts. Various plants such as Wisteria sinensis and Narcissus biflorus persist, apparently from cultivation at the homesites of the two plantations.

CHAPTER I

METHODS

Field work for this study extended from March, 1971, to March, 1972. Collecting trips were made at least twice weekly during the growing season. Data recorded for each collection included a collection number, date, location, and habitat description.

Keys used for plant identification were Manual of the Vascular Flora of the Carolinas by Radford, Ahles, and Bell (1968), The New Britton and Brown Illustrated Flora of the Northeastern United States and Adjacent Canada by Gleason (1952), and Gray's Manual of Botany by Fernald (1950). The sequence of plant taxa and the scientific nomenclature in the following annotated list are those of Radford, Ahles, and Bell. Genus and species keys haven been largely adapted from the latter while the family keys have been adapted mainly from Manual of Vascular Plants by Gleason and Cronquist (1963). Common names are given when cited in Radford, Ahles, and Bell or in Peterson and McKenny (1968).

Preceding the names of the species are symbols to denote new distributional records as follows:

* York County record

** Peninsula record (York County, James City County, Charles City County, New Kent County, Hampton, Newport News)

*** Virginia state record

o Also reported from the Peninsula in the unpublished master's thesis of Barans (1969), Gillespie (1970), or Loetterle (1970).

Each species account includes a common name, if appropriate, an indication of relative abundance, typical habitat, and the collection numbers of the author. Relative abundance is given as (1) rare (2) occasional (3) frequent (4) abundant or (5) very abundant.

CHAPTER II

VEGETATIONAL PATTERNS

Soil types vary from woodland loam to sand loam with broken shell deposits from the Miocene period to muddy areas along beaches. The terrain is basically gently sloping with some banks and ravines on the southern side of the Parkway and numerous banks along the York River margin.

(1) Roadsides and grassy clearings

The Park Service regularly maintains the roadsides and clearings by mowing. Some of the species occurring in this habitat possibly have become adapted to the selective pressure of constant mowing. Such adaptations would include dwarfness and shortening of the time required for maturation.

Some herbs especially typical of these areas are *Arthraxon hispidus*, *Cyperus* spp., *Carex* spp., *Commelina virginica*, *Allium ampeloprasum*, *Silene cucubalus*, *Cardamine hirsuta*, *Trifolium* spp., *Medicago* spp., *Vicia* spp., *Glecoma hederacea*, *Salvia lyrata*, and *Taraxacum officinale*. *Myrica cerifera* and *Lindera benzoin* are the most abundant shrubs bordering these areas.

Trees that sparsely line the York River bank roadside are chiefly Pinus taeda, Juniperus virginiana, Celtis laevigata, Broussonetia papyrifera, Prunus serotina, and Robinia pseudo-acacia.

(2) Woodlands

The woods along the Yorktown Colonial Parkway consist of four strata of vegetation: canopy, understory, shrubs, and ground cover. The dominant species of the canopy of most wooded areas are Pinus taeda, Quercus alba, Quercus falcata, Liriodendron tulipifera, Liquidambar styraciflua, and in a few sections, Fagus grandifolia. Filling the understory are primarily Asimina triloba, Aralia spinosa, Ilex opaca, and Cornus florida. The most abundant shrubs are Myrica cerifera, Lindera benzoin, and Callicarpa americana. Among the most ubiquitous ground cover plants are Polystichum acrostichoides, Lonicera japonica, and Senecio aureus. Saxifraga virginiensis frequently occurs on wooded banks.

(3) Salt marshes

Salt marsh vegetation borders much of the York River, Kings Creek, Felgate's Creek, and Indian Field Creek in the study area. Here aspect dominants are Typha spp., Spartina spp., Scirpus spp., Hibiscus moscheutos, Hydrocotyle verticillata, Iva frutescens, Baccharis halimifolia, and Aster tenuifolius. Sabatia stellaris and Limonium nashii are locally prominent in

the vicinity of Indian Field Creek.

(4) Beaches

Sandy beaches found bordering Felgate's Creek, Indian Field Creek, and portions of the York River have some of the following dominants: *Atriplex patula*, *Cakile edentula*, *Opuntia compressa*, *Convolvulus arvensis*, and *Borrichia frutescens*. Often shrubs of *Iva frutescens* and *Baccharis halimifolia* are scattered along the edge of the beaches.

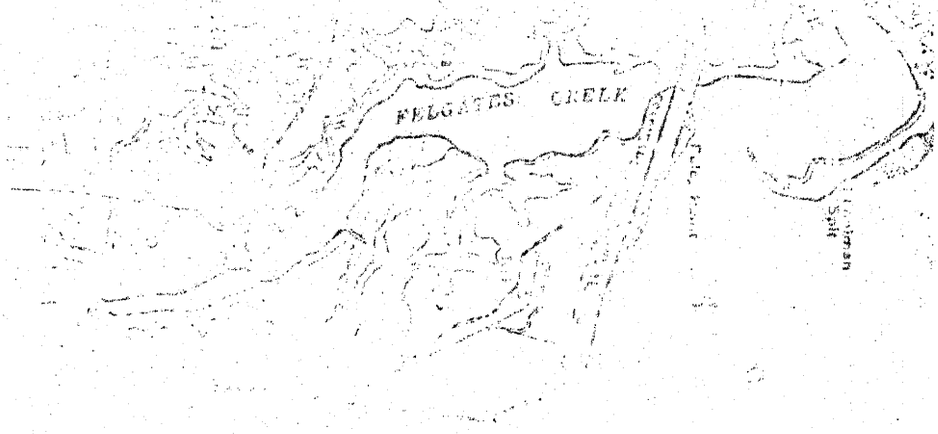
(5) Freshwater marshes and Brackens Pond

In Brackens Pond *Lemna perpusilla* is abundant and *Ceratophyllum demersum*, *Azolla caroliniana*, and *Spirodela polyrhiza* are occasional. Bordering the Pond are *Polygonum* spp., *Rosa palustris*, and a few specimens of rare species such as *Lippia lanceolata* and *Decodon verticillatus*.

In freshwater marshes *Impatiens capensis*, *Saururus cernuus*, and *Nasturtium officinale* were the main species noted.

FIGURE I

Map of the Yorktown Colonial Parkway
Between Kings Creek and Brackens Pond



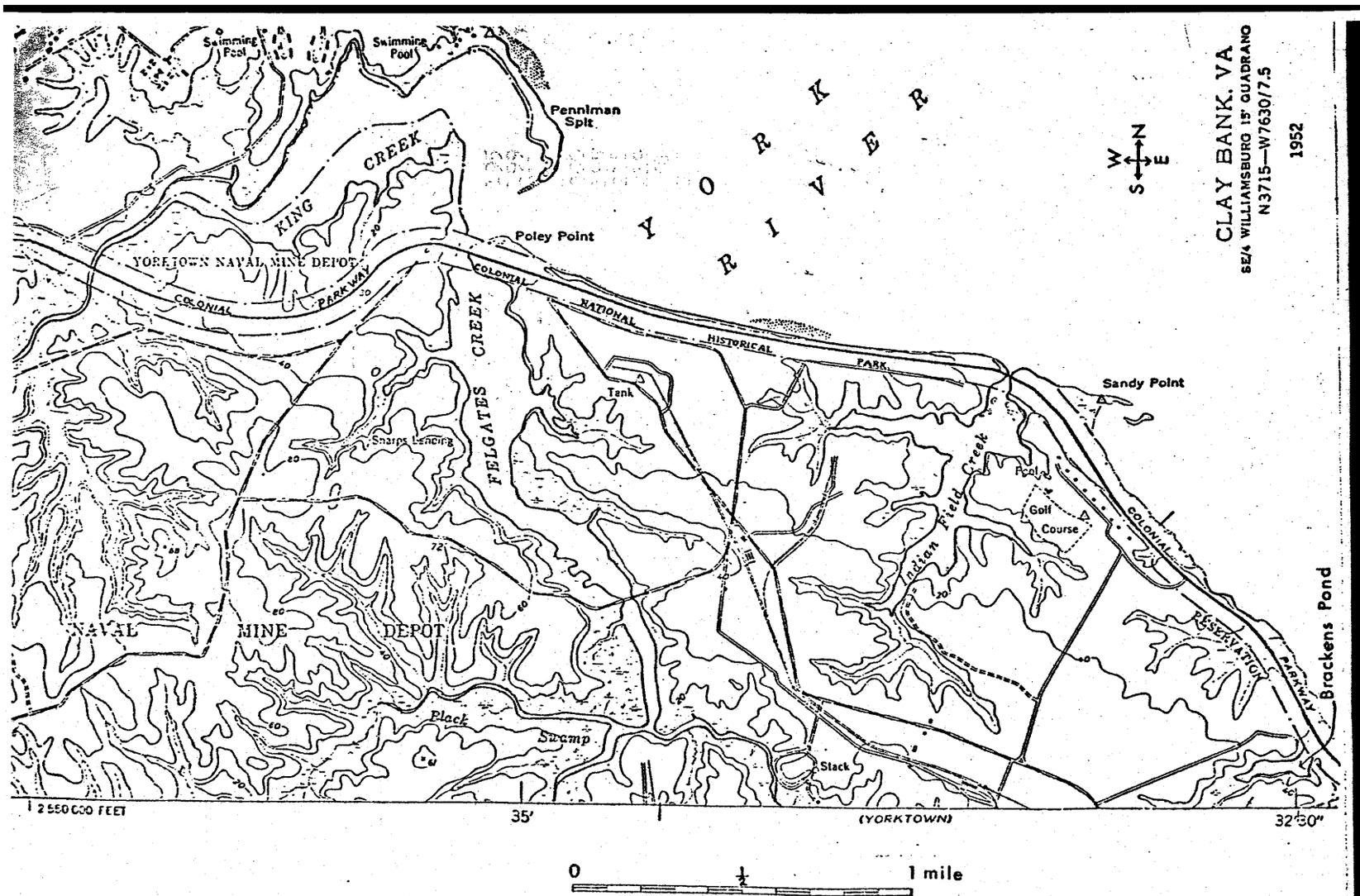

CLAY BANK, VA.
SE/4 WILLIAMSBURG 15' QUADRANG
N3715—W7630/7.5
1952
YORK RIVER
Swimming Pool
Swimming Pool
Penniman Spit
KING CREEK
Poley Point
YORKTOWN NAVAL MINE DEPOT
COLONIAL PARKWAY
COLONIAL NATIONAL HISTORICAL PARK
FELGATES CREEK
Tank
Sandy Point
Sharps Landing
Indian Field Creek
Pool
Golf Course
COLONIAL RESERVATION PARKWAY
Brackens Pond
NAVAL MINE DEPOT
Black Swamp
Stack
2 550 000 FEET
35'
(YORKTOWN)
32'30"
0
1/2
1 mile
N
S
E
W

TABLE 1

Summary of the climatological data, Williamsburg, Virginia*

	Temperature (°F)			PPT	Growing Season		
	Mean	High	Low	annual total (in.)	spring last min. of 32°	fall first min. of 32°	# days between these dates
1952	....	104	9	44.80	4/8	10/20	195
1953	57.6	100	13	45.73	4/22	11/7	199
1954	59.3	103	9	37.30	4/4	11/1	211
1955	58.8	98	6	48.61	4/9	10/25	199
1956	59.1	99	14	48.27	4/25	11/11	200
1957	59.3	99	3	52.95	4/16	10/28	195
1958	56.8	95	3	58.24	4/4	11/8	218
1959	60.0	103	8	44.80	4/5	11/10	219
1960	57.6	98	9	57.73	4/20	11/7	201
1961	58.4	95	8	49.88	4/21	11/9	202
1962	57.6	95	6	48.63	4/17	10/25	191
1963	57.3	97	6	44.82	3/24	10/31	221
1964	58.7	98	8	47.11	4/10	10/12	185
1965	58.3	96	3	29.62	4/5	10/6	184
1966	57.4	98	6	41.04	5/11	10/31	173
1967	57.3	94	10	43.38	4/13	10/29	199
1968	57.9	97	7	40.50	5/7	10/30	176
1969	57.4	81	32	44.81	4/1	10/24	205
1970	58.6	83	31	38.39	4/8	11/17	222
1971	59.2	84	34	51.30	4/11	11/8	210

*Compiled from U. S. Dept. of Commerce, Weather Bureau. 1952-1971. Virginia Climatological Data. Vol. 62-81.

CHAPTER III

THE FLORA

INDEX TO FAMILIES

	PAGE
Acanthaceae	113
Aceraceae	93
Alismataceae	46
Amaranthaceae	75
Amaryllidaceae	64
Anacardiaceae	92
Annonaceae	78
Apiaceae	97
Apocynaceae	102
Aquifoliaceae	93
Araceae	60
Araliaceae	97
Aristolochiaceae	72
Asclepiadaceae	103
Aspidiaceae	44
Aspleniaceae	44
Asteraceae	116
Azollaceae	44
Balsaminaceae	93
Berberidaceae	77
Betulaceae	68
Bignoniaceae	112
Blechnaceae	44
Boraginaceae	105
Brassicaceae	79
Cactaceae	96
Campanulaceae	109
Caprifoliaceae	115
Caryophyllaceae	75
Celastraceae	93
Ceratophyllaceae	76
Chenopodiaceae	74
Commelinaceae	61
Convolvulaceae	104
Cornaceae	99
Cucurbitaceae	116
Cupressaceae	45
Cyperaceae	57
Dioscoreaceae	64
Ebenaceae	101
Equisetaceae	42
Ericaceae	99

Taxonomic Keys – omitted.

Checklist of the Vascular Plants
of the Yorktown Colonial Parkway between
Brackens Pond and Kings Creek, York County, Virginia

* York County record

** Peninsula record

*** Virginia state record

o Also reported from the Peninsula in the unpublished master's thesis of Barans (1969), Gillespie (1970), or Loetterle (1970).

Poaceae

** *Agrostis stolonifera* L.
Andropogon scoparius Michaux
* *A. ternarius* Michaux
* *A. virginicus* L.
* *Anthoxanthum odoratum* L.
* *Arthraxon hispidus* (Thunb.) Mackino var. *cryptatherus* (Hackel) Honda
** *Bromus mollis* L.
* *B. purgans* L.
** *B. tectorum* L.
* *Cenchrus tribuloides* L.
Cinna arundinacea L.
* *Cynodon dactylon* (L.) Persoon
* *Dactylis glomerata* L.
** *Digitaria ischaemum* (Schreber) Schreber ex Muhl. var. *ischaemum*
* *D. sanguinalis* (L.) Scopoli
* *Distichlis spicata* (L.) Greene
* *Echinochloa crusgalli* (L.) Beauvois
**o *Elymus villosus* Muhl.
E. virginicus L.
* *Eragrostis hirsuta* (Michaux) Nees
**o *E. spectabilis* (Pursh) Steudel
* *Festuca elatior* L.
* *F. obtusa* Biehler
** *Glyceria melicaria* (Michaux) Hubbard
* *Holcus lanatus* L.
* *Leersia virginica* Willd.
* *Lolium perenne* L.
* *Melica mutica* Walter
* *Muhlenbergia schreberi* J.B. Gmelin
* *Panicum amarulum* Hitchcock & Chase
* *P. anceps* Michaux
* *P. boscii* Poiret
* *P. commutatum* Schultes
* *P. dichotomum* L.
* *P. lanuginosum* Ell.
***o *P. laxiflorum* Lam.
* *P. oligosanthes* Schultes
P. scoparium Lam.
P. virgatum L.
* *Paspalum dilatatum* Poiret
* *P. floridanum* Michaux
**o *Phleum pratense* L.
* *Poa annua* L.
* *P. compressa* L.
* *P. cuspidata* Nuttall
* *P. pratense* L.

		Setaria geniculata (Lam.) Beauvois
*		S. glauca (L.) Beauvois
		S. magna Grisebach
*		Sorghum halepense (L.) Persoon
		Spartina alternifolia Loisel
		S. cynosuroides (L.) Roth
		S. patens (Aiton) Muhl.
*		Sphenopholis nitida (Biehler) Scribner
**		Sporobolus clandestinus (Biehler) Hitchcock
*		S. poiretii (R.& S.) Hitchcock
*		Stipa avenacea L.
*		Tridens flavus (L.) Hitchcock var. flavus
*		Tripsacum dactyloides L.
		Uniola latifolia Michaux
Cyperaceae		
*		Carex alata Torrey
*		C. albolutescens Schweinitz
**		C. artitecta Mackenzie
**o		C. blanda Dewey
*		C. caroliniana Schweinitz
		C. comosa Boott
***		C. divisa Hudson
		C. laevivaginata (Kukenthal) Mackenzie
**		C. leavenworthii Dewey
*		C. lurida Wahlenberg
*		C. muhlenbergii Schkuhr
**		C. striatula Michaux
*		Cyperus filicinus Vahl.
*		C. filiculmis Vahl.
*		C. flavescens L.
**o		C. globulosus Aublet
**o		C. lancastriensis Porter
**o		C. odoratus L.
*		C. ovularis (Michaux) Torrey
*		C. retrofractus (L.) Torrey
		C. strigosus L.
		Fimbristylis spadicea (L.) Vahl.
		Scirpus americanus Persoon
		S. robustus Pursh
*		S. validus Vahl.
Araceae		
*		Arisaema triphyllum (L.) Schott
*		Peltandra virginica (L.) Kunth
Lemnaceae		
		Lemna perpusilla Torrey
*		Spirodela polyrrhiza (L.) Schleid.
Commelinaceae		
*		Commelina virginica L.

Juncaceae
* *Juncus acuminatus* Michaux
**o *J. coriaceous* Mackenzie
* *J. tenuis* Willd.
* *Luzula acuminata* Raf. var. *carolinae* Fernald
* *L. bulbosa* (Wood) Rydberg
Liliaceae
Allium ampeloprasum L. var. *atrioviolaceum* (Boiss.) Regel
* *A. vineale* L.
* *Asparagus officinalis* L.
* *Hemerocallus fulva* L.
* *Muscari racemosum* (L.) Miller
* *Ornithogallum umbellatum* L.
* *Polygonatum biflorum* (Walter) Ell.
* *Smilax bona-nox* L.
** *S. hispida* Muhl.
* *S. rotundifolia* L.
* *Yucca filamentosa* L. var. *filamentosa*
Dioscoreaceae
**o *Dioscorea batatas* Dcne
Amaryllidaceae
** *Leucojum aestivum* L.
A *Narcissus biflorus* Curt
Iridaceae
Belamcanda chinensis (L.) DC.
* *Sisyrinchium mucronatum* Michaux
Orchidaceae
* *Cypripedium acaule* Aiton
**o *Goodyera pubescens* (Willd.) R. Brown
** *Malaxis spicata* Swartz
* *Orchis spectabilis* L.
* *Spiranthes cernua* (L.) Richard var. *cernua*
* *S. vernalis* Engelm. & Gray
* *Tipularia discolor* (Pursh) Nuttall
DICOTS Saururaceae
* *Saururus cernuus* L.
Salicaceae
* *Populus alba* L.
* *P. deltoides* Marshall
* *Salix babylonica* L.
* *S. nigra* Marshall
Myricaceae
* *Myrica cerifera* L. var. *cerifera*
Juglandaceae
**o *Carya cordiformis* (Wang.) K. Koch
**o *C. pallida* (Ashe) Engler & Graebner
* *Juglans nigra* L.
Betulaceae
* *Ostrya virginiana* (Miller) K. Koch

Fagaceae
* Fagus grandifolia Ehrhart
* Quercus alba L.
**o Q. falcata Michaux var. falcata
* Q. f. M. var. pagodaefolia Ell.
* Q. marilandica Muenchh.
* Q. muhlenbergii Engelm.
* Q. nigra L.
* Q. phellos L.
Q. prinus L.
* Q. rubra L. var. borealis (Michaux f.) Farwell
* Q. stellata Wang.
Ulmaceae
* Celtis laevigata Willd.
* Ulmus americana L.
* U. rubra Muhl.
Moraceae
* Broussonetia papyrifera (L.) Vent
* Morus alba L.
* M. rubra L.
Urticaceae
* Boehmeria cylindrica (L.) Swartz
*** B. nivea (L.) Gaudin
Loranthaceae
Phoradendron serotinum (Raf.) M.C. Johnston
Aristolochiaceae
* Hexastylis virginica (L.) Small
Polygonaceae
** Polygonum aviculare L.
** P. cespitosum Blume var. longisetum (DeBruyn) Stewart
**o P. pensylvanicum L.
* P. persicaria L.
* P. setaceum Baldwin ex Ell.
* Rumex acetosella L.
R. conglomeratus Murray
* R. crispus L.
* R. pulcher L.
* R. verticillatus L.
**o Tovara virginiana (L.) Raf.
Chenopodiaceae
Atriplex patula L.
* Chenopodium album L.
**o C. ambrosioides L.
Salicornia europaea L.
Salsola kali L.
Amaranthaceae
**o Amaranthus hybridus L.
Phytolaccaceae
**o Phytolacca americana L.

Caryophyllaceae
* *Cerastium holosteoides* L. var. *vulgare* (Hartman) Hylander
* *Dianthus armeria* L.
** *Holosteum umbellatum* L.
* *Lychnis alba* Miller
* *Saponaria officinalis* L.
Silene cucubalus Wibel
* *Stellaria media* (L.) Cyrillo
Ceratophyllaceae
**o *Ceratophyllum demersum* L.
Ranunculaceae
** *Anemone lancifolia* Pursh
A. virginiana L.
* *Aquilegia canadensis* L.
* *Hepatica americana* (DC.) Ker
* *Ranunculus abortivus* L.
* *R. bulbosus* L.
* *R. parviflorus* L.
Berberidaceae
* *Podophyllum peltatum* L.
Menispermaceae
* *Menispermum canadense* L.
Magnoliaceae
* *Liriodendron tulipifera* L.
Magnolia grandiflora L.
Annonaceae
* *Asimina triloba* (L.) Dunal
Lauraceae
* *Lindera benzoin* (L.) Blume
* *Persea borbonia* (L.) Sprengel
* *Sassafras albidum* (Nuttall) Nees
Papaveraceae
* *Sanguinaria canadensis* L.
Fumariaceae
* *Fumaria officinalis* L.
Brassicaceae
* *Arabidopsis thaliana* (L.) Heyn
Arabis laevigata (Muhl. ex Willd.) Poiret var. *laevigata*
* *Barbarea verna* (Miller) Ascherson
**o *Brassica napus* L.
* *Cakile edentula* (Bigelow) Hooker
* *Cardamine hirsuta* L.
* *Lepidium campestre* (L.) R. Brown
** *Nasturtium officinale* R. Br.
* *Raphanus raphanistrum* L.
** *Thlaspi perfoliatum* L.

Saxifragaceae
* *Heuchera americana* L.
* *Saxifraga virgiensis* Michaux
Hammamelidaceae
* *Liquidambar styraciflua* L.
Platanaceae
* *Platanus occidentalis* L.
Rosaceae
** *Agrimonia gryposepala* Wallroth
* *Duchesnea indica* (Andrz.) Focke
* *Fragaria virginiana* Duchesne
* *Geum canadense* Jacquin
Malus pumila Miller
** *Prunus angustifolia* Marshall
* *P. avium* L.
* *P. persica* L.
* *P. serotina* Ehrh. var. *serotina*
Pyrus communis L.
* *Rosa palustris* Marshall
**o *Rubus allegheniensis* Porter
**o *R. occidentalis* L.
* *R. trivialis* Michaux
Fabaceae
* *Albizia julibrissin* Durazzini
* *Amphicarpa bracteata* (L.) Fernald
Cassia fasciculata Michaux
* *C. nictitans* L.
Centrosema virginianum (L.) Bentham
Cercis canadensis L.
* *Cytisus scoparius* (L.) Link
Desmodium canescens (L.) DC.
** *D. lineatum* DC.
* *D. paniculatum* (L.) DC.
* *D. pauciflorum* (Nuttall) DC.
** *D. perplexum* Schubert
**o *Lathyrus hirsutus* L.
Lespedeza stuevei Nuttall
* *L. cuneata* (Dumont) G. Don
**o *L. stipulacea* Maxim.
* *L. striata* (Thunberg) H & A
Lotus corniculatus L.
* *Medicago lupulina* L.
** *M. minima* L.
* *Melilotus alba* Desr.
* *M. officinalis* (L.) Lam.
* *Robinia pseudo-acacia* L.
**o *Strophostyles helvola* (L.) Ell.
* *Trifolium arvense* L.
* *T. campestre* Schreber
**o *T. dubium* Sibthorp

* *Trifolium pratense* L.
T. repens L.
**o *Vicia dasycarpa* Tenore
* *V. hirsuta* (L.) S.F. Gray
**o *V. lathyroides* L.
** *Wisteria sinensis* (Sims.) Sweet
Oxalidaceae
* *Oxalis dillenii* Jacquin
Geraniaceae
* *Geranium dissectum* L.
**o *G. molle* L.
Simaroubaceae
**o *Ailanthus altissima* (Miller) Swingle
Euphorbiaceae
* *Acalypha gracilens* Gray
* *Croton glandulosus* L. var. *septrionalis* Muell-Arg.
* *Euphorbia maculata* L.
* *E. polygonifolia* L.
**o *E. supina* Raf.
Anacardiaceae
* *Rhus copallina* L.
**o *R. radicans* L.
Aquifoliaceae
Ilex opaca Aiton
Celastraceae
** *Celastrus scandens* L.
* *Euonymus americanus* L.
Aceraceae
Acer rubrum L.
** *A. saccharum* Marshall ssp. *floridanum* (Chapman) Desmarais
Balsaminaceae
Impatiens capensis Meerb.
Vitaceae
* *Parthenocissus quinquefolia* (L.) Planchon
* *Vitis aestivalis* Michaux var. *aestivalis*
V. rotundifolia Michaux
* *V. vulpina* L.
Malvaceae
* *Hibiscus mosheutos* L.
* *H. syriacus* L.
Kosteletskya virginica (L.) Presl.
* *Sida spinosa* L.
Hypericaceae
* *Hypericum punctatum* Lam.
Violaceae
* *Viola arvensis* Murray
**o *V. palmata* L. var. *sororia* (Willd.) Pollard
* *V. rafinesquii* Greene

Passifloraceae
* *Passiflora incarnata* L.
P. lutea L.
Cactaceae
Opuntia compressa (Salisbury) Macbride
Lythraceae
Decodon verticillatus (L.) Ell.
Onagraceae
Circaea lutetiana Gray ssp. *canadensis* (L.) Ascherson & Magnus
Ludwigia alternifolia L.
* *L. palustris* (L.) Ell.
* *Oenothera biennis* L.
Araliaceae
Aralia spinosa L.
* *Hedera helix* L.
Apiaceae
**o *Chaerophyllum tainturieri* Hooker
* *Daucus carota* L.
* *Foeniculum vulgare* Miller
* *Hydrocotyle verticillata* Thunberg var. *verticillata*
** *Osmorhiza claytonii* (Michaux) Clarke
* *O. longistylis* (Torr.) DC.
Sanicula canadensis L.
** *Thaspium trifoliatum* (L.) Gray
Nyssaceae
** *Nyssa syvatica* Marshall var. *biflora* (Walter) Sargent
* *N. s.* M. var. *sylvatica*
Cornaceae
* *Cornus florida* L.
* *C. stricta* Lam.
Ericaceae
* *Chimaphila maculata* (L.) Pursh
* *Gaylussacia baccata* (Wang) K. Koch
* *Monotropa uniflora* L.
* *Oxydendrum arboreum* (L.) DC.
* *Vaccinium stamineum* L. var. *stamineum*
* *V. vacillans* Torrey
Primulaceae
* *Anagallis arvensis* L.
Samolus parviflorus Raf.
Plumbaginaceae
** *Limmonium nashii* Small var. *nashii*
Sapotaceae
* *Bumelia lycioides* (L.) Persoon
Ebenaceae
* *Diospyros virginiana* L.
Oleaceae
* *Fraxinus americana* L. var. *americana*
***c *Ligustrum sinense* Lour.

Loganiaceae
* *Polypremum procumbens* L.
Gentianaceae
Sabatia stellaris Pursh
Apocynaceae
**o *Apocynum cannabinum* L.
** *Vinca major* L.
**o *V. minor* L.
Asclepiadaceae
* *Asclepias incarnata* L. ssp. *pulchra* (Willd.) Woodson
A. purpurascens L.
* *A. tuberosa* L. ssp. *tuberosa*
A. verticillata L.
* *Matelea caroliniensis* (Jacquin) Woodson
**o *M. suberosa* (L.) Shinners
Convolvulaceae
Calystegia sepium L.
* *Convolvulus arvensis* L.
* *Cuscuta gronovii* Willd. ex R. & S.
* *Dichondra carolinensis* Michaux
* *Ipomoea coccinea* L.
* *I. hederacea* (L.) Jacquin var. *hederacea*
**o *I. lacunosa* L.
Hydrophyllaceae
? A ** *Nemophila microcalyx* (Nuttall) F & M
Phacelia dubia (L.) Trelease
Boraginaceae
* *Cynoglossum virginianum* L.
* *Echium vulgare* L.
* *Hackelia virginiana* (L.) I.M. Johnston
* *Lithospermum arvense* L.
* *Myosotis arvensis* (L.) Hill
* *M. laxa* Lehmann
** *M. macrosperma* Engelm.
Verbenaceae
* *Callicarpa americana* L.
**o *Lippia lanceolata* Michaux
Verbena urticifolia L.
Phrymaceae
* *Phryma leptostachya* L.
Lamiaceae
* *Glecoma hederacea* L.
* *Lamium amplexicaule* L.
** *L. purpureum* L.
Lycopus americanus Muhl. ex Barton
* *L. europaeus* L.
** *Mentha cardiaca* Gerarde ex Baker
* *M. piperita* L.
* *Perilla frutescens* (L.) Britton
Prunella vulgaris L.
* *Salvia lyrata* L.

**o Satureja calamintha (L.) Scheele var. nepeta (L.) Briquet
* Teucrium canadense L.
Solanaceae
* Datura stramonium L.
** Lycium halimifolium Miller
Lycopersicon esculentum Miller
* Physalis virginiana Miller
* Solanum americanum Miller
Scrophulariaceae
** Aureolaria virginica (L.) Pennell
Mecardonia acuminata (Walter) Small
* Paulownia tomentosa (Thunberg) Steudel
** Penstemon laevigatus Solander ex Aiton
* P. pallidus Small
* Verbascum blattaria L.
* V. thapsus L.
* Veronica anagallis-aquatica L.
* V. arvensis L.
**o V. hederaefolia L.
* V. officinalis L.
* V. peregrina L.
* V. persica Poiret
Bignoniaceae
* Campsis radicans (L.) Seemann
Catalpa speciosa Warder ex Engelm
Orobanchaceae
* Epifagus virginiana (L.) Barton
Lentibulariaceae
** Utricularia fibrosa Walter
Acanthaceae
**o Ruellia caroliniensis (Walter) Steudel
Plantaginaceae
* Plantago lanceolata L.
* P. major L.
* P. virginica L.
Rubiaceae
Diodia virginiana L.
* Galium aparine L.
* G. circaezans Michaux
* G. pilosum Aiton
* G. triflorum Michaux
Houstonia purpurea L.
* Mitchella repens L.
* Sherardia arvensis L.
Caprifoliaceae
Lonicera japonica Thunberg
* Sambucus canadensis L.
* Viburnum prunifolium L.
Valerianaceae
* Valerianella locusta (L.) Betcke
Cucurbitaceae
* Melothria pendula L.

Campanulaceae

* *Lobelia puberula* Michaux
L. siphilitica L.
* *Specularia perfoliata* (L.) A.DC.

Asteraceae

* *Achillea millefolium* L.
* *Ambrosia artemisiifolia* L.
* *Antennaria plantaginifolia* (L.) Richards
** *Artemisia vulgaris* L.
* *Aster lateriflorus* (L.) Britton
* *A. paternus* Cronquist
**o *A. pilosus* Willd. var. *pilosus*
* *A. tenuifolius* L.
A. undulatus L.
* *Baccharis halimifolia* L.
**o *Bidens aristosa* (Michaux) Britton
A **o *B. bipinnata* L.
**o *B. discoidea* (T. & G.) Britton
Borrichia frutescens (L.) DC.
A* *Carduus discolor* (Muhl. ex Willd.) Nuttall
A* *C. lanceolatus* L.
A* *Chrysanthemum leucanthemum* L.
* *Cichorium intybus* L.
** *Coreopsis tinctoria* Nuttall
A** *Crepis japonica* (L.) Bentham
* *Elephantopus carolinianus* Willd.
* *E. tomentosus* L.
* *Erechtites hieracifolia* (L.) Raf.
* *Erigeron annuus* (L.) Persoon
A **o *E. canadensis* L. var. *canadensis*
**o *E. strigosus* Muhl. ex Willd.
A * *Eupatorium purpureum* L.
E. capillifolium (Lam.) Small var. *capillifolium*
A * *E. coelestinum* L.
* *E. hyssopifolium* L.
* *E. rotundifolium* L. var. *rotundifolium*
A* *E. rugosum* Houttyn
* *E. sertoinum* Michaux
* *Gnaphalium obtusifolium* L.
A* *G. purpureum* L. var. *purpureum*
* *Helianthus atrorubens* L.
*** *H. occidentalis* Riddell
* *Hieracium gronovii* L.
* *H. venosum* L.
* *Hypochoeris radicata* L.
Iva frutescens L.
* *Krigia virginica* (L.) Willd.
* *Lactuca canadensis* L.
* *L. scariola* L.
* *Liatris graminifolia* Willd.
Mikania scandens (L.) Willd.

* *Pluchea camphorata* (L.) DC.
* *P. purpurascens* (Swartz) DC.
* *Pyrrhopappus carolinianus* (Walter) DC. var. *carolinianus*
* *Rudbeckia hirta* L.
* *Senecio aureus* L.
* *S. smallii* Britton
* *Solidago altissima* L.
* *S. bicolor* L.
* *S. nemoralis* Aiton
S. pinetorum Small
**o *S. rugosa* Miller var. *celtidifolia* (Small) Fernald
A * *S. r.* M. var. *rugosa*
* *S. sempervirens* L.
* *Sonchus asper* L.
* *Taraxacum officinale* Wiggers
* *Verbesina occidentalis* (L.) Walter
**o *Xanthium strumarium* L. var. *strumarium*

CHAPTER IV

SUMMARY

In this floristic study of the vascular plants of the Yorktown Colonial Parkway between Kings Creek and Brackens Pond 491 taxa representing 110 families and 316 genera are recorded. Collection numbers totalled 852.

Of the plants collected five are new state records: *Panicum laxiflorum*, *Carex divisa*, *Boehmeria nivea*, *Ligustrum sinense*, and *Helianthus occidentalis*. Ninety-six species are new for the Peninsula of Virginia and 294 are new records for York County. Five types of plant communities are recognized: roadsides and clearings, woods, salt marshes, beaches, and freshwater marshes and Brackens Pond.

Keys for the families, genera, and species collected are adapted from various taxonomic manuals and for each species, habitat and frequency are given. A complete set of voucher specimens are deposited in the herbarium of the College of William and Mary, and partial sets in the herbaria at the University of North Carolina at Chapel Hill and Virginia Polytechnic Institute and State University.

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