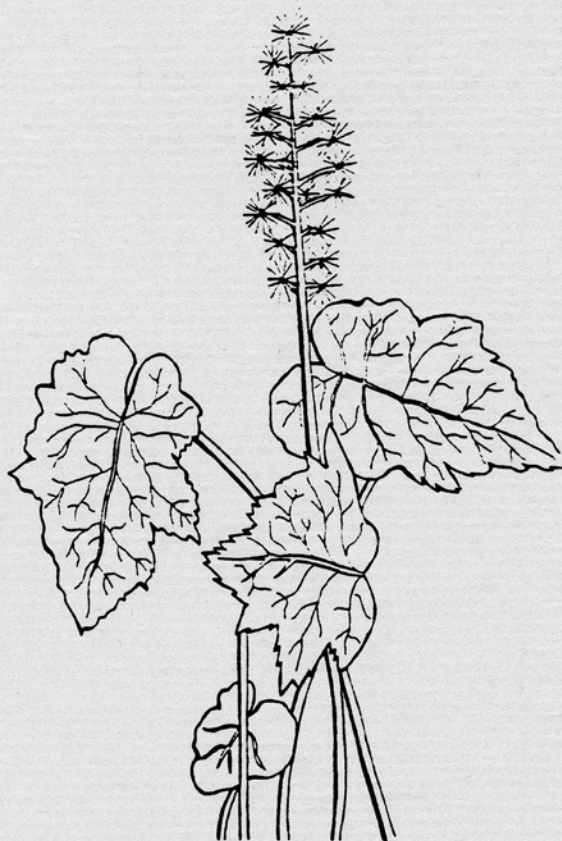


THE  
EMILIE K. HAMMOND  
WILDFLOWER TRAIL



THE TOURNE COUNTY PARK  
Boonton Twp., N.J.

# The Emilie K. Hammond Wildflower Trail

The word "Tourne" comes from the Dutch and means "lookout" or "mountain." The terrain of the Tourne Park is hilly with huge granite boulders and a forest of white oaks, maples, beeches and hemlocks. On a clear day the New York City skyline can be seen from the top of the Tourne. Wildflowers, ferns, mosses and lichens abound in this park, which for many years was owned by the DeCamp family. They were very generous about sharing its natural treasures with the people of the surrounding area. When a piece of The Tourne property was sold and a small housing development appeared, Morris County residents began to realize the importance of setting aside this land for future generations.

Early in 1961 the Rockaway Valley Garden Club decided it was important to identify the abundant variety of native wildflowers and organize them for the benefit of all lovers of nature. Under the direction of club member and botanist Mrs. Emilie K. Hammond, for whom the trail is named, the project was put into motion. In 1962, the Garden Club of Mountain Lakes joined with the Rockaway Valley Garden Club to continue its development and maintenance. Over the years, members of the two clubs have devoted many hours and much loving care to the project. The clubs have provided funds for the purchase of additional plants, and members have contributed treasures from their own gardens. The Park Commission has provided additional shrubs and other plantings. Its staff performs the more arduous maintenance tasks involved. The Trail features over 200 wildflowers and shrubs native to the Eastern United States.

The Trail is most easily reached by entering the Tourne via Powerville Road. It is located a short distance from the first parking lot on the right. There is also limited parking at the beginning of the trail which is several hundred yards down the road on the right. The map in the center of this booklet will help you find specific plants. Most woodland wildflowers bloom between early April and mid-June. The plant lists are arranged by bloom time so that you may have a handy reference to what might be flowering at the time of your visit.



# Notes About Wildflowers

## PLANT SUCCESSION..FIELD VS. WOODLAND

Have you ever wondered why some wild plants grow with amazing vigor and abundance while others are confined to small clumps found in only a few places? Clues can be found by studying the plant's habitat.

By looking at the growing site of a plant like our ubiquitous Goldenrod, you will discover that they establish themselves best where natural soil and plant life have been disrupted. They thrive along roadsides, near parking lots and in abandoned fields. Contrast this with the habitat of another familiar wild plant, the Jack-In-The-Pulpit. It is invariably found in semi-shaded woodland with deep humus. Goldenrod belongs to a group of wild plants called pioneers. Pioneer plants are at the very beginning of the plant succession process and inhabit environments destined to change. Eventually plants of the next phase of succession will shade or crowd out the goldenrod. Jacks-in-the-Pulpit grow in woodlands which represent the opposite end of the succession process, a stable plant community.

To illustrate how this stable environment develops, imagine a field of Goldenrod left untouched. If we were to visit this abandoned field every five years we would find other plants have replaced the Goldenrod. First we would find fast-growing trees and shrubs such as sassafras and sumac. In later years maples and oaks would begin to establish themselves. In time the abandoned field would become a forest with a carpet of leaf litter and a layer of humus. The conditions will have become favorable for woodland wildflowers. We would most likely find the Jack-In-The-Pulpit growing here. This succession from field to climax forest can take 75 to 100 years before conditions are suitable for woodland wildflowers.

## MICRO-NICHES

The Wildflower Trail at The Tourne offers a good opportunity to study woodland wildflowers and their various habitat needs. The tree community with its giant beeches and hemlocks is a mature forest. Along the trail there is a series of little niches which provide suitable habitats for a variety of woodland plants. Represented are a drier upland, a moist slope with filtered sunshine, a fast-moving brook, and a boggy lowland. These micro-niches make it possible to give nature an assist. Workers at the Trail have been able to encourage a wide variety of plants to establish themselves in their preferred niches.

### SUN AND SOIL REQUIREMENTS

Woodland wildflowers need some sun in order to bloom. Most receive sufficient sunlight before the tree canopy fully leafs out. If the tree cover becomes too dense many woodland plants will disappear. Judicious pruning and weeding out of trees and fast growing shrubs such as the Maple-Leaved Viburnum are often necessary to keep wildflowers thriving.

The soils at The Tourne are naturally acidic, although attempts have been made to create a mini-habitat for lime-loving plants by using Sussex limestone. The requirements of some wildflowers are so precise that unless their growing conditions are duplicated exactly they will not survive. A good example of this is the Pink Lady Slipper. It has a symbiotic relationship with a specific mycorrhizal soil fungus. Transplanted from the wild, these plants rarely survive more than a few seasons.

### LENGTH OF BLOOM

The length of bloom of most woodland wildflowers is extremely short. This perhaps is part of their charm. One never grows tired of seeing Hepaticas, some of the earliest bloomers in our area. Compared to the marigold its length of bloom is minuscule, but what a thrill to see it blooming through the late snows. Another wild charmer at The Tourne holds the record for the shortest bloom. The flowers of this plant, the Jeffersonia, will open in the morning, and by evening its petals are already beginning to fall. It is a rare treat to see it in bloom. An added attraction is its interesting leaf form which accounts for its common name, Twinleaf. Much longer blooming are the Trilliums whose flowers often last three to four weeks. With careful selection the home enthusiast can have flowers blooming from mid-April to mid-June.



### WOODLAND WILDFLOWERS SUITABLE FOR CULTIVATION IN THE MORRIS COUNTY AREA

Foamflower	Marsh Marigold
Oconee Bells	Columbine
Bloodroot	White Baneberry
Hepatica	Blue Cohosh
Virginia Blue Bells	Blue Phlox
Yellow Lady Slipper	White Trillium
Crested Iris	Wild Ginger
Cardinal Flower	Jack-In-The-Pulpit

Wildflowers are most easily identified while in bloom. Be aware, however, that there may be variations in the color within a species. The most common variation is in flowers that are listed as pink but quickly fade to white or white forms of normally pink species. The key reflects the flower color of the plant on the trail. The foliage of wildflowers can also be a clue to identification, but remember the foliage of many plants disappears for the season shortly after flowering.

The plant list is arranged according to approximate blooming time. The Key following will give additional information about the plant and the growing conditions it prefers. Plants without a site key listing have no special requirements other than those needed for all woodland wildflowers. The key to height is quite general because there is great variation among individual plants within the same species. A good field guide and a small hand lens are excellent companions on a wildflower walk.

**REMEMBER NOT TO PICK THE FLOWERS AND PLEASE STAY ON THE TRAILS TO AVOID CRUSHING PLANTS.**

PLANT KEY

<u>Flower Color:</u>	<u>Site Key:</u> <u>(Special Habitat:)</u>
W-white	1. does best on slopes
Y-yellow	2. requires moist soils
P-pink	3. requires wet soils
R-red	4. lime tolerant
G-green	5. does best among rocks
Bl-V-blue-violet	6. well-drained soil
<u>Size:</u>	<u>Form:</u>
x under 12"	S shrub
xx 1' - 3'	H herbaceous plant
xxx over 3'	V vine

## EARLY SPRING (April)

Botanical Name	Common Name	Color	Site		Form
			Key	Size	
<i>Amelanchier canadensis</i>	Shadbush	W		xxx	S
<i>Asarum canadense</i>	Wild Ginger	brown	2	x	H
<i>Claytonia caroliniana</i>	Carolina Spring Beauty	P	2	x	H
<i>Claytonia virginica</i>	Spring Beauty	P	2	x	H
<i>Dicentra Cucullaria</i>	Dutchman's Breeches	W	1,2	x	H
<i>Epigaea repens</i>	Trailing Arbutus	W	1	x	V
<i>Erythronium americanum</i>	Trout Lily, Dog Toothed Violet	Y	2	x	H
<i>Hepatica acutiloba</i>	Sharp-lobed Hepatica	W	1,5	x	H
<i>Hepatica triloba</i>	Round-lobed Hepatica	W	1	x	H
<i>Lindera Benzoin</i>	Spicebush	Y	2	xxx	S
<i>Ranunculus fascicularis</i>	Early Buttercup	Y		x	H
<i>Saxifraga virginiana</i>	Early Saxifrage	W	1	x	H
<i>Shortia galacifolia</i>	Oconee Bells	W	4	x	H
<i>Stellaria pubera</i>	Star Chickweed	W	4	x	H
<i>Symplocarpus foetidus</i>	Skunk Cabbage	G	3	xx	H
<i>Trillium sessile</i>	Toad Trillium	R		x	H
<i>Viola rotundifolia</i>	Round-leaved Yellow Violet	Y	2,4	x	H

## MID SEASON (usually blooms late-April to mid-May)

During late-April watch for Ostrich Fern and many other ferns to emerge

<i>Anemone quinquefolia</i>	Wood Anemone	W		x	H
<i>Anemonella thalictroides</i>	Rue Anemone	W	4,5	x	H
<i>Aquilegia canadensis</i>	Wild Columbine	R	6	xx	H
<i>Arisaema triphyllum</i>	Jack-In-The-Pulpit	G	2,4	xx	H
<i>Caltha palustris</i>	Marsh Marigold	Y	3	x	H
<i>Caulophyllum thalictroides</i>	Blue Cohosh	G	2,4,5	xx	H
<i>Coptis trifolia</i>	Goldthread	W	3,4	x	H
<i>Cypripedium acaule</i>	Pink Lady's Slipper; Moccasin-Flower	P	1,2	x	H
<i>Dentaria ssp.</i>	Toothwort	W	2,4	xx	H
<i>Dicentra eximia</i>	Wild Bleeding Heart	P		x	H
<i>Erigeron pulchellus</i>	Robin's Plantain	Bl-V		x	H
<i>Geranium maculatum</i>	Wild Geranium	P		xx	H
<i>Hedyotis caerulea</i>	Quaker Ladies; Bluets	B		x	H
<i>Hydrastis canadensis</i>	Goldenseal	W	5		H

Botanical Name	Common Name	Color	Site		Form
			Key	Size	
<i>Iris cristata</i>	Crested Iris	Bl-V		x	H
<i>Jeffersonia diphylla</i>	Twinleaf	W	5	xx	H
<i>Mertensia virginica</i>	Bluebells	Bl-V		xx	H
<i>Mitella diphylla</i>	Bishop's Cap; Miterwort	W		xx	H
<i>Panax trifolius</i>	Dwarf Ginseng	W	2,4,5	x	H
<i>Phlox divaricata</i>	Blue Phlox	Bl-V		xx	H
<i>Polemonium caeruleum</i> subsp. <i>Van-Bruntiae</i>	Jacob's-ladder	Bl-V		xx	H
<i>Polygala paucifolia</i>	Fringed Polygala	P	1	x	H
<i>Sanguinaria canadensis</i>	Bloodroot	W	5	x	H
<i>Sanicula marilandica</i>	Black Snakeroot	W	4	xx	H
<i>Sedum ternatum</i>	Wild Stonecrop	W	2	x	H
<i>Smilacina stellata</i>	Starflower	W	2	xx	H
<i>Tiarella cordifolia</i>	Foamflower	W	2,4	x	H
<i>Thalictrum dioicum</i>	Early Meadow Rue	W		xx	H
<i>Tradescantia virginiana</i>	Common Spiderwort	Bl-V		xx	H
<i>Trillium cernuum</i>	Nodding Trillium	W	5	x	H
<i>Trillium erectum</i>	Purple Trillium	R		xx	H
<i>Trillium grandiflorum</i>	White Wake-Robin	W	5	xx	H
<i>Trillium nivale</i>	Snow or Dwarf White Trillium	W	5	x	H
<i>Trillium undulatum</i>	Painted Trillium	R		xx	H
<i>Trillium viride</i> var. <i>luteum</i>	Wood Trillium	Y		xx	H
<i>Uvularia grandiflora</i>	Bellwort; Merrybells	Y	5	xx	H
<i>Viburnum alnifolium</i>	Hobblebush	W		xxx	S
<i>Viola blanda</i>	Sweet White Violet	W	2,4	x	H
<i>Viola canadensis</i>	Canada Violet	W		x	H
<i>Viola conspersa</i>	Dog Violet	Bl-V	5	x	H
<i>Viola Macloskeyi</i> var. <i>pallens</i>	Northern White Violet	W		x	H
<i>Viola palustris</i>	Marsh Violet	Bl-V	3	x	H
<i>Viola pubescens</i>	Downy Yellow Violet	Y		x	H
<i>Viola scabriuscula</i>	Smooth Yellow Violet	Y		x	H
<i>Viola sororia</i>	Common Violet	Bl-V		x	H
<i>Waldsteinia fragarioides</i>	Barren Strawberry	W		x	H

LATE SPRING (late-May to mid-June) By now, all ferns have emerged

<i>Allium tricoccum</i>	Wild Leek	W	2	x	H
<i>Anemone canadensis</i>	Canada Anemone	W		x	H
<i>Camassia scilloides</i>	Wild Hyacinth	Bl-V		x	H



<u>Botanical Name</u>	<u>Common Name</u>	<u>Color</u>	<u>Site</u>		<u>Form</u>
			<u>Key</u>	<u>Size</u>	
<i>Chamaelirium luteum</i>	Blazing Star	W	5	xx	H
<i>Chrysogonum virginianum</i>	Gold Star	Y		x	H
<i>Clintonia borealis</i>	Corn Lily; Bluebead	G-Y	4	x	H
<i>Clintonia umbellulata</i>	Speckled Wood Lily	W		xx	H
<i>Cypripedium Calceolus</i> var. <i>pubescens</i>	Large Yellow Lady's Slipper	Y	5	x	H
<i>Disporum lanuginosum</i>	Yellow Mandarin	Y	4	xx	H
<i>Dodecatheon Meadia</i>	Shooting Star	R	5	x	H
<i>Galax urceolata</i>	Wandflower	W	4	xx	H
<i>Geranium Robertianum</i>	Herb Robert	P	5	xx	H
<i>Gillenia trifoliata</i>	Bowman's-Root	W		xx	H
<i>Goodyera repens</i>	Dwarf Rattlesnake Plantain	W	4	x	H
<i>Hedyotis purpurea</i>	Large Hedyotis	Bl-V		x	H
<i>Hypoxis hirsuta</i>	Yellow Star Grass	Y		x	H
<i>Kalmia latifolia</i>	Mountain Laurel	P/W	1,6	xxx	S
<i>Krigia biflora</i>	Cynthia; Dwarf Dandelion	orange		xx	H
<i>Liparis liliifolia</i>	Large Twayblade	rose	1,2	x	H
<i>Lonicera sempervirens</i>	Trumpet Honeysuckle	R		x	V
<i>Maianthemum canadense</i>	Canada Mayflower	W	4	x	H
<i>Medeola virginica</i>	Indian Cucumber Root	Y	4	xx	H
<i>Orchis spectabilis</i>	Showy Orchid	W	5	x	H
<i>Pedicularis canadensis</i>	Wood Betony	Y		x	H
<i>Penstemon Digitalis</i>	Beard-tongue	W		xx	H
<i>Phlox maculata</i>	Wild Sweet William	P	2	xx	H
<i>Podophyllum peltatum</i>	Mayapple	W	2,4	xx	H
<i>Polygonatum biflorum</i>	Small Solomon's Seal	Y	4	xx	H
<i>Pyrola elliptica</i>	Shinleaf	W		x	H
<i>Rhododendron atlanticum</i>	Coast Azalea	P		xxx	S
<i>Rhododendron</i> <i>periclymenoides</i>	Pinxterbloom	P		xxx	S
<i>Rhododendron Vaseyi</i>	Pink Shell Azalea	P		xxx	S
<i>Rubus odoratus</i>	Purple Flowered Raspberry	R		xxx	S
<i>Scutellaria serrata</i>	Showy Skullcap	Bl-V		x	H
<i>Senecio aureus</i>	Golden Ragwort	Y		xx	H
<i>Silene virginica</i>	Fire Pink	R		xx	H
<i>Smilacina racemosa</i>	False Solomon's Seal	W	2,4	xx	H
<i>Trientalis borealis</i>	Starflower	W		x	H
<i>Trillium Catesbaei</i>	Rosy Trillium	rose	5	xx	H
<i>Veratrum viride</i>	White Hellebore; Indian Poke	Y-G	3	xxx	H
<i>Zizia aurea</i>	Golden Alexanders	Y		xx	H



SUMMER AND EARLY AUTUMN (late June to October)

<u>Botanical Name</u>	<u>Common Name</u>	<u>Color</u>	<u>Site</u>		
			<u>Key</u>	<u>Size</u>	<u>Form</u>
<i>Actaea pachypoda</i>	White Baneberry; Doll's Eyes	W	5	xx	H
<i>Actaea rubra</i>	Red Baneberry	W	4,5	xx	H
<i>Anemone virginiana</i>	Thimbleweed	W		xx	H
<i>Aster acuminatus</i>	Whorled Aster	W		xx	H
<i>Aster divaricatus</i>	White Wood Aster	W		xx	H
<i>Chelone glabra</i>	Turtlehead	W	3	xx	H
<i>Chimaphila maculata</i>	Spotted Wintergreen	W/P		x	H
<i>Chimaphila umbellata</i> var. <i>cisatlantica</i>	Pipsissewa	W/P	4	x	H
<i>Cimicifuga americana</i>	American Bugbane	W	4	xx	H
<i>Cimicifuga racemosa</i>	Black Cohosh	W	4	xx	H
<i>Clethra alnifolia</i>	Sweet Pepperbush	W	3	xxx	S
<i>Collinsonia canadensis</i>	Horsebalm	Y	2	xx	H
<i>Epifagus virginiana</i>	Beechdrops	brown		x	H
<i>Gaultheria procumbens</i>	Wintergreen	W	4	x	H
<i>Gentiana Andrewsii</i>	Bottled Gentian; Closed Gentian	Bl-V	2	x	H
<i>Hydrophyllum canadense</i>	Broad-leaved Waterleaf	W	2,4	x	H
<i>Impatiens capensis</i>	Jewelweed	orange	3	xx	H
<i>Kalmia angustifolia</i>	Sheep Laurel	P	3	XX	S
<i>Lilium canadense</i>	Canada Lily	Y/orange	2,5	xx	H
<i>Lilium philadelphicum</i>	Wood Lily	Y/orange	2,5	xx	H
<i>Lobelia Cardinalis</i>	Cardinal Flower	R	3	xx	H
<i>Lobelia siphilitica</i>	Great Lobelia	Bl-V	5	x	H
<i>Mitchella repens</i>	Partridgeberry	W/P	4	x	V
<i>Monotropa uniflora</i>	Indian Pipe	W	4	x	H
<i>Rhododendron maximum</i>	Rosebay	P	2	xxx	S
<i>Rhododendron viscosum</i>	Swamp Azalea	W	3	xxx	S
<i>Thalictrum polygamum</i>	Tall Meadow Rue	W	2	xx	H



## FERNS

Where woodland wildflowers grow one will also find many different species of ferns. Their cultural requirements are much the same as wildflowers. They often have the same preferences for a special micro-niche. Some grow in wet areas, others prefer slopes, while still others favor a spot among rocks. Ferns are slow to begin growth in the spring. The first to emerge are the Ostrich and the New York Ferns in late April. By mid-June all are up. There are 25 different species represented along the trail each with its own unique characteristics. Like wildflowers, they are difficult to transplant from their natural setting. The home enthusiast should purchase ferns from nurseries.

<u>Botanical Name</u>	<u>Common Name</u>
<i>Adiantum pedatum</i>	Maidenhair Fern
<i>Asplenium platyneuron</i>	Ebony Spleenwort
<i>Asplenium trichomanes</i>	Maidenhair Spleenwort
<i>Athyrium filix-femina</i>	Lady Fern
<i>Athyrium pycnocarpon</i>	Glade Fern
<i>Athyrium thelypteroides</i>	Silvery Spleenwort
<i>Botrychium dissectum</i>	
<i>f. dissectum</i>	Dissected Grape Fern
<i>Botrychium dissectum</i>	
<i>f. obliquum</i>	Ternate Grape Fern
<i>Botrychium virginianum</i>	Rattlesnake Fern
<i>Camptosorus rhizophyllus</i>	Walking Fern
<i>Dennstaedtia punctilobula</i>	Hayscented Fern
<i>Dryopteris marginalis</i>	Marginal Shield Fern
<i>Dryopteris spinulosa</i>	Toothed Wood Fern
<i>Onoclea sensibilis</i>	Sensitive Fern
<i>Osmunda cinnamomea</i>	Cinnamon Fern
<i>Osmunda Claytoniana</i>	Interrupted Fern
<i>Osmunda regalis</i>	
<i>var. spectabilis</i>	Royal Fern
<i>Polypodium virginianum</i>	Polypody
<i>Polystichum acrostichoides</i>	Christmas Fern
<i>Pteridium aquilinum</i>	
<i>var. latiusculum</i>	Bracken Fern
<i>Thelypteris hexagonoptera</i>	Broad Beech Fern
<i>Thelypteris noveboracensis</i>	New York Fern
<i>Woodsia obtusa</i>	Woodsia
<i>Woodwardia virginica</i>	Virginia Chain Fern

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THE FRIENDS OF THE FRELINGHUYSEN ARBORETUM

The Friends of the Frelinghuysen Arboretum were organized in 1972 and are benefactors who, by their annual dues and contributions, support the continued development of the horticultural facilities and resources of the Morris County Park Commission.

Membership is open to the general public. Benefits of membership include:

- \* A complimentary subscription to "Arboretum Leaves," a newsletter issued six times annually.
- \* A complimentary subscription to the colorful bi-monthly garden magazine Green Scene.
- \* Advance notice and reduced rates for programs, workshops, and other activities.
- \* The privilege of borrowing from the circulating collection of the Arboretum's extensive horticultural and botanical library.

For further information, write:

Friends, P. O. Box 1295R, Morristown, N. J. 07960.



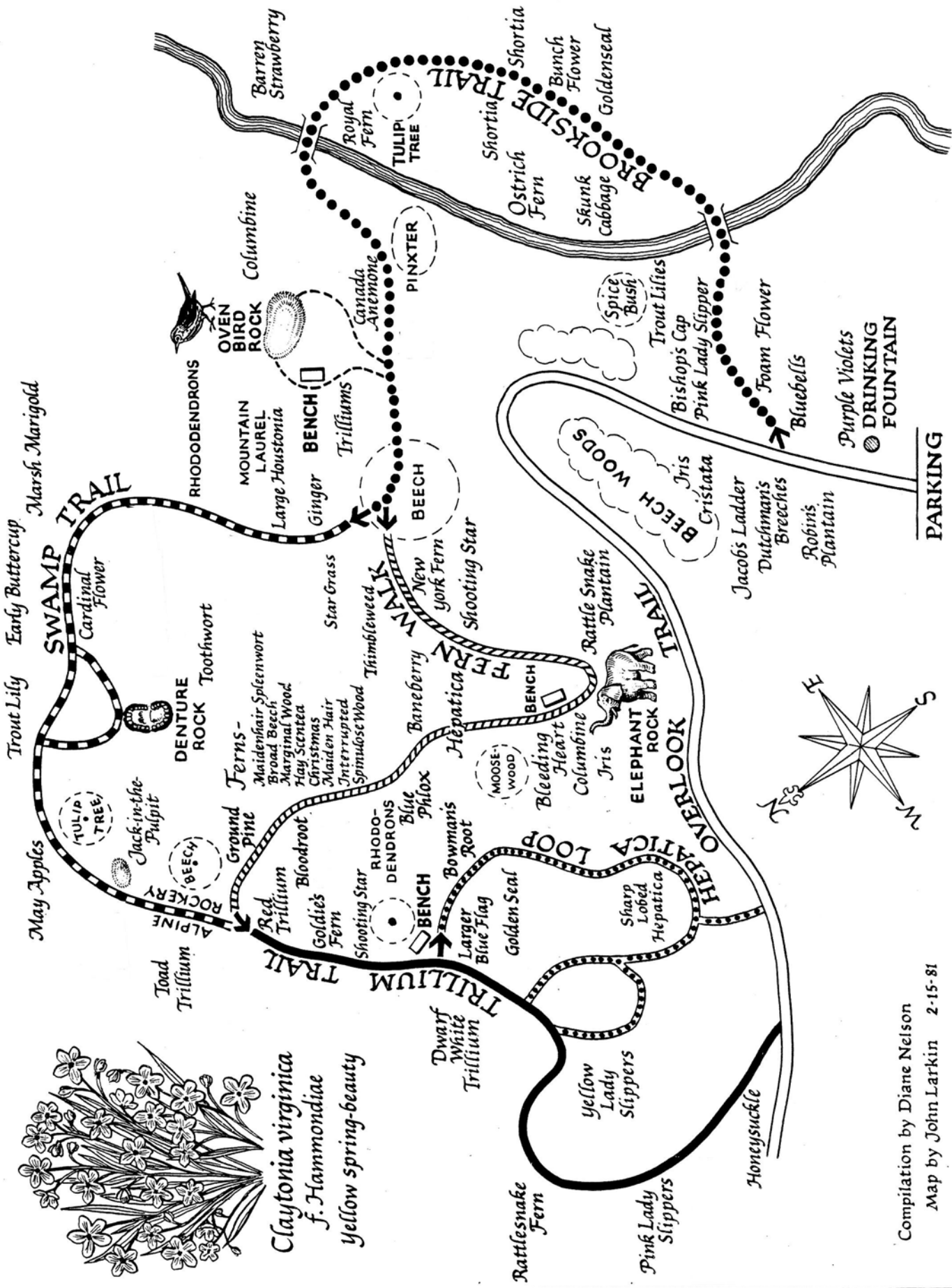
CREDITS



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*Claytonia virginica*  
f. *Hammondiae*  
Yellow Spring-beauty



Compilation by Diane Nelson  
Map by John Larkin 2-15-81