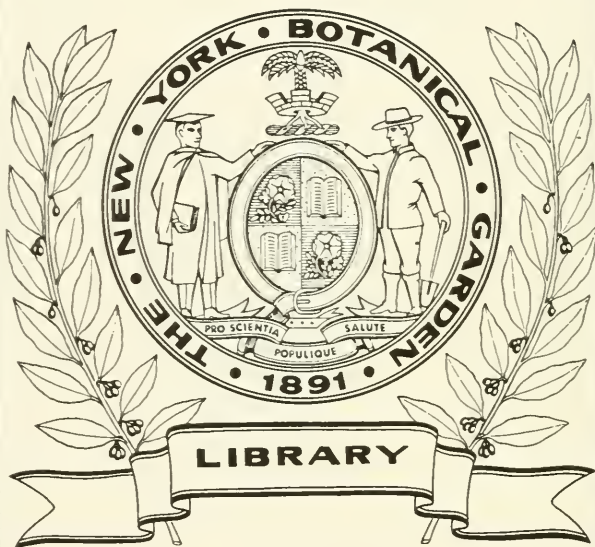


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THE  
TENNESSEE FLORA;

WITH SPECIAL REFERENCE TO

THE FLORA OF NASHVILLE

PH. EXOGAMS AND VASCULAR CRYPTOGAMS.

BY  
DR. AUGUST GATTINGER,  
MEMBER OF AMERICAN ASSOCIATION FOR ADVANCEMENT  
OF SCIENCE.

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## PREFACE.

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Desiring to promote the study of botany in the educational institutions of the State, and to awaken an interest in the exploration of the Flora of Tennessee, I tender this small volume to the friends and promoters of scientific pursuits.

The work is original, being founded upon a botanical collection made exclusively by myself, during thirty-eight years' residence in this State.

I am yet in possession of specimens collected in 1849, when I first took up my residence in East Tennessee as a practicing physician. Placed, as I was in those early days, amid unfamiliar modes of life, with no access to intellectual resources, without information about the condition and advance of scientific affairs in this country, my botanical progress could for many years be no other than tedious and slow; but I kept up a pursuit, which since early school-years had been to me a source of pleasure and consolation.

After my removal to Nashville, in 1864, I paid special attention to the exploration of the vicinity of Nashville and the adjoining counties. Travel by railroads made it possible to make frequent short visits to distant points, without too great infringement on professional duties.

Although in an educational center, filled with display of refinement, I soon perceived that I had to rely upon my own resources, if I would attempt to expand my botanical efforts beyond the limits of personal gratification. For the want of such blessed leisure as would be needed to assure success, I never expected to publish on the Flora, considering the results of my investigations too insignificant. That I have now prepared this paper is purely contingent upon the meeting of the American Association for the Advancement of Science, in Nashville, August, 1877.

At that occasion I had the good fortune of making acquaintance with some well-known Eastern botanists, who, with very obliging politeness, reviewed my collections, and assured me that a survey of the unexplored region of Tennessee would be appreciated. At their instance I continued, with all care and

pains possible, to make the work true and reliable, with the hope and solicitude to make this insignificant, but to me only possible one contribution, to American science.

I am under lasting obligations to William N. Canby, Esq., of Wilmington, Del., Prof. J. W. Chickering, Jun., and Prof. Lester F. Ward, both of Washington, D. C., for their advice and the attention they paid to me at the Nashville meeting. From that time on I also enjoyed the privilege of submitting critical specimens to Dr. Asa Gray, of Cambridge, for his decision. The late Dr. George Engelmann, of St. Louis, Dr. A. W. Chapman, of Apalachicola, Fla., and Dr. George Vasey, botanist of the Department of Agriculture, have relieved me of many doubts and supplied me with a great number of authentic specimens. I shall ever gratefully remember Dr. Engelmann, and express to the other gentlemen my sincere thanks. Acknowledgments are also due to many active botanists in distant parts of the Union, for their readiness and promptness in exchanging plants and opinions.

I have no knowledge of authentic published records bearing on the Flora of Tennessee, except an article contributed by Prof. J. W. Chickering to the *Botanical Gazette*, December, 1880, entitled "A Summer on Roane Mountain." In a number of *Sullivan's Journal*, of 1841, I find a sketch of a botanical tour through the Alleghanies and on Roane Mountain, by Dr. Asa Gray.

It is much to be regretted that Dr. Rugel, who about thirty years ago resided in the vicinity of Greenville and made valuable collections and discoveries in that vicinity, and the mountains of East Tennessee and North Carolina, died without leaving a record of his work. His collections came in the possession of Mr. Shuttleworth, of England. *Senecio Rugelia* Gray, *Plantago Rugelii* Decaisne, *Siphonochia Rugelii* Chapm. commemorate his name.

Some species and stations which fell not under my personal observation, are quoted on good authority or credited to the collector.

For description of species I refer to Dr. Gray's Manual and Dr. Chapman's Flora of the Southern States.

I am fully aware of the incompleteness of the work, but enough is now done to give a satisfactory estimate of our Flora, and nothing short of publication can near its completion.

Pretending to no other merit than one, due to a persevering effort to illustrate the distribution of the American Flora over the territory of the State of Tennessee, and the accidental dis-

covery of some new species, I hope for a kind reception by those for whose benefit it is intended.

My botanical friends will appreciate the difficulties I had to encounter, and I solicit contributions and corrections from those who are favorably inclined towards its improvement.

Parting I embrace the opportunity to urge a higher appreciation of the study of Botany, and to sum up the present standing of the science, and the advantages it enjoys in other States.

American botany has made rapid advances within the last decade. The earlier periods passed over in engagement with systematic work, collecting and systematizing phænogams and the higher cryptogams. The general survey being very far advanced and nearing completeness, by degrees a state of maturity for studies of a higher order has been entered upon, which demands greater proficiency in analysis and dexterity in the use of the microscope.

The intricate study of the life-history of plants of the lowest orders engages now the attention of our more advanced botanists. Detail in physiology and morphology and original work is also fairly attempted. A number of our progressive American universities have attached laboratories to the botanical lecture-rooms, and provided them with the necessary outfits, as powerful auxiliaries to the study of botany. Harvard and Cornell since 1872, more recently the universities of Pennsylvania and Michigan, Iowa Agricultural College, Wabash College, Purdue University, the universities of Wisconsin and Nebraska, Shaw School of Botany at St. Louis, etc.

Why is it, that in our more than centennial State, so little has been done for the improvement of natural knowledge? What object of teaching can conduce more to the material welfare and progress of the citizen than a practical information how to disclose the concealed wealth, to collect and utilize wasting energies, to draw from the soil maintenance of life and means of comfort, without impairing its productiveness? And what can more than the improvement of natural knowledge enlarge and elevate the intellectual ethics of man, than the ever growing conception of a definite and unfringible order of nature? What can add more to his personal dignity, inspire him with more self-reliance, than the certainty of possessing means to test and verify his conceptions, by bringing them in contact with Nature herself, by experiment and observation?

Having inadvertently diverted from the proposed plan of this address, I shall avoid to make further reflections for the same caution with which the astray botanist avoids the teacher-

ous briers. Should I have succeeded to bring you to notice that rambling through field and forest after plants, implies a higher purpose than the pleasure of analyzing and adding them to the collection, then I would feel like the aberrant botanist, who, aberrant, made a precious discovery. Remember of all, that it is not for every one to penetrate into the depths of a science, but that a plain and correct knowledge of the leading principles in botanical science is attainable and useful to all.

“*Ingenuas didicisse fideliter artes  
Emollit mores nec sinit esse feros.*”

A. GATTINGER.

NASHVILLE, TENN., Feb. 3, 1887.

## GENERAL ASPECT OF THE FLORA.

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The boundaries of Tennessee are embraced within the great Atlantic forest region. The whole of it was in its virgin state, a congeries of varied woodlands, being in the lowlands of dense and massive growth, filled with pathless jungles of cane and shrub, or, away from the watercourses, on the uplands, reduced to open and airy groves, the barrens. Here a dense sward covers the ground and herbaceous growth prevails. Mountain forests have always been of greater uniformity in distribution of timber.

Nearly one-third of the entire area is now reduced to fields or occupied by buildings or roads. Canebrakes have well nigh disappeared, and the forest is in all accessible regions depleted of valuable timber.

Immigration of foreign and retirement of native species continually modify the aboriginal flora and tend to weaken characteristics due to presence of peculiar plantforms, or collocation of species, by the intricacies of mutual predilection and adaptation to surroundings.

Such areas, which differ amongst themselves conspicuously in such properties, admit of the establishment of natural floral arrondissements.

Differences of elevation, diversity in elementary constitution of the soil, and inequality in distribution of atmospheric humidity are, in our territory, sufficiently potent to mark out four distinct regions.

I. The high crests of the Alleghany Mountains, formed of gneiss or mica-shists, with an elevation from 4,000 to 6,600 feet. Subalpine region.

II. The western slopes of the Alleghanies and their outlying spurs, and the Cumberland Mountains. Sandstones and slates. Mountain-flora. Elevation 2-4,000 feet.

III. Valley-flora, the lower division of which is coëxtensive with the limestones (silurian) of East and Middle Tennessee. Elevation 350-500 feet. The upper division or highlands has siliceous and argillaceous soils, sometimes lime-tones of the sub-carboniferous formation. Elevation about 1,000-1,200 feet.

The former division is characterized through its cedar glades; the latter is the region of the oak-barrens.

IV. West Tennessee, situated between two powerful rivers, with much level or only gently undulating surface, owes its peculiarities to the abundance of swampy lands and predominantly argillaceous soils, in connection with a more humid atmosphere.

#### I. SUBALPINE REGION.

The dividing line between the States of North Carolina and Tennessee passes over and along the crest of the highest ridges and peaks, known as the Unaka, Great Smoky, Bald and Frog mountains. Their average elevation is about 5,000 feet, but about twenty-two summits are 6,000 feet or more. The highest stretch lies between French Broad and Little Tennessee rivers, with fifty-five high points, eighteen of which are over 6,000 feet. Clingman's Dome, by a few feet the highest, rises to the very respectable altitude of 6,660 feet above tidewater, according to the measurements of Prof. Arnold Guiot, of Princeton, N. J. (Vide *Am. Jour. Science*, Sept. 1857 and Nov. 1860). Geologically they consist of Huronian shists and gneisses, and in some spots of Laurentian granites.

Not one of these high crests presents a bleak crag, bare of vegetation, nor is there a timber-line. Some are evenly timbered throughout, others support only a scattered and stunted arboreal growth, and some bear only a low shrubby or herbaceous vegetation. The absence of timber on the so-called "Balds" is perhaps due to waves of excessive cold; such, at least, seem the naked trunks looming up here and there, to suggest. There are generally groups of red oak, striped or mountain maple, mountain ash and chestnut, with open spaces between. They have a stunted and gnarled appearance, their sprawling limbs often but few feet from the ground. Chestnuts of the summit flower from three to four weeks later than those in the neighboring valleys.

Upon these lofty retreats dwells a limited number of species peculiar to those regions. Many more are denizens of the common flora of more northern latitudes, but are not found in the intervening lowlands. The abundance of evergreen Rhododendrons, exuberant flowering ericaceous and liliaceous plants produce a floral scenery of unsurpassing beauty. From the altitude of the region, as well as from the physiognomy of the vegetation, we may call it "subalpine."

To here belongs *Abies Fraseri* Pursh. and *Rhododendron Catawbiense* Michx. *Betula lutea* Michx. grows to moderate size,

and *Hamamelis Virginica* I found as a chunky tree, measuring fifty inches in circumference of trunk. *Alnus viridis* DC., *Menziesia globularis* Salisb., *Salix humilis* Marsh., *Vaccinium corymbosum* L. var. *pallidum* Gray, *Vaccinium erythrocarpum* Michx., *Leiophyllum buxifolium* Ell., *Ribes rotundifolium* Michx., make up the small shrubbery. Of herbaceous plants I would mention *Lilium superbum* L., justly called so, every one would concede, who had traversed at the beginning of summer those waving mountain-savannahs, in which it abounds. It attains a height of six feet, with pyramidal racemes bearing as many as twenty-five blossoms. *Melanthium Virginicum* L., a worthy companion, spreads its enormous panicles at the same time. Other interesting objects are *Melanthium parviflorum* Gray, *Stenanthium angustifolium* Gray, *Streptopus roseus* Michx., *Clintonia umbellata* Jarv., *Lilium Grayi* Wats., *Convallaria majalis* L., *Heracleum lanatum* Michx., *Angelica Curtisii* Buckl., *Rubus odoratus* L., *Galium latifolium* L., *Hypericum graveolens* Buckl., *Danthonia compressa* Aust., *Muhlenbergia Willdenorii* Trin., *Deuxia Nuttalliana* Vasey, *Carex trisperma* Dew., *C.estivalis* M. A. Curtis, C., *Juncus Willd.*, *Trisetum palustre* L., *Deschampsia flexuosa* Beauv., *Agrostis canina* var. *rupestris* Chapm., *Aspidium spinulosum* Swarz, *Dicksonia punctilobula* Kunze, *Lycopodium Selago* L. All the above abound in the Balds. More scattered over the region we find: *Solidago glomerata* Michx., infested with *Cuscuta rostrata* Shuttleworth, *Aconitum reclinatum* Gray, *Delphinium exaltatum* Ait., *Troutetteria palmata* Fish. & Mayer, *Solidago spithamea* M. A. Curtis, *S. monticola* Torr. & Gray, *Houstonia serpyllifolia* Michx., *Circea alpina* L., *Ovalis acetosella* L., *Vaccinium hirsutum* Buckl., *Sedum Rhodiola* DC., *Saxifraga leucanthemifolia* Michx., *S. Careyana* Gray, *Paronychia argyrocoma* Nutt., *Nabalus Roanensis* Chick., *Viola renifolia* Gray, *Cardamine Clematitis* Shuttlewo., *Parnassia asarifolia* Vent., *Krigia montana* Nutt., *Geum geniculatum* Michx., *G. radiatum* Michx., *Arenaria glabra* Michx.

Descending into the second region, we find *Gaylussacia brachycera* Gray, and *Vaccinium hirsutum* Buckl. forming the common undergrowth (on Big Frog Mountain), *Gaultheria procumbens* G., *Rhododendron maximum* L., *R. calendulaceum* Torr. and *R. viscosum* Torr., *Clethra acuminata*, Michx. This is the finest pine region of the State. *Pinus Strobus* L. and *Tsuga Canadensis* Carr. grow to the largest dimensions. *Pinus pungens* Michx., intermixed with *P. rigida* Mill., predominates in several districts in the Big Smoky Mts., while *P. mitis* Michx. and *P. inops* are more at home on the lower spurs.

Moist and shady ravines, in which humus accumulates, suits

the magnolias. *Magnolia Fraseri* Walt. and *M. macrophylla* Michx. are very conspicuous from the unwonted size and fresh green color of their foliage. *Ilex opaca* Ait., *Nyssa Caroliniana* Michx., and *Tsuga Canadensis* Barrière follow every rill and run along which long lines of *Leucothoe Castesbaei* Gray form impassable barriers. Remote mountain glens, where one has to push his way through branchy hydrangeas or prickly azalias, or to crawl through the zigzag limbs of big laurels, ought to be approached with caution. It is irksome and dangerous to be entrapped in such labyrinths. Sunnier and higher positions are chosen by *Pyrularia oleifera* Gray, *Buckleya distichophylla*, Torr., *Calycanthus glaucus* Willd., *Ilex monticola*, Gray and *Corylus rostrata* Ait. Of climbers we note *Aristolochia Siphon* L'Her., *Decumaria barbara* L., *Celastrus scandens* L. Out of a rich display of herbaceous plants I would select *Lysimachia Fraseri* Duby, *Oenothera glauca* Michx., *Diphylleia cymosa* Michx., *Adlumia cirrhosa* Raf., *Dicentra eximia* DC., *Draba ramosissima* Desv., *Viola Canadensis* L., *Ascyrum hypericoides* L., *Baptisia tinctoria* R. Br., *B. alba* R. Brown, *Thermopsis fraxinifolia* M. A. Curtis, *Waldsteinia fragarioides* Tratt., *Potentilla tridentata* Ait., *Saxifraga erosa* Pursh., *Sedum Neri* Gray, *Chrysogonum Virginianum* L., *Helianthus larigatus* Torr. & Gray, *Campanula divaricata* Michx., *Galax aphylla* L., *Melampyrum Americanum* Michx., *Pycnanthemum montanum* Michx., *Monarda didyma* L., *Gentiana quinqueflora* Lam.

Creeks and brooklets have their rocky bottoms lined with the curious, mosslike *Podostemon abrotanoides* Michx., which disappears whenever the current's speed is checked and the channels deepen.

Another range of mountain flora we find in the Cumberland mountains. Selecting the Lookout near Chattanooga for a type, we find its summit wooded with *Quercus Prinus* L., *Q. rubra* L., *Q. alba* L., *Q. obtusiloba* Michx. and *Q. nigra* L., *Pinus inops* Ait., *P. Teda* L., *P. mitis* Michx., *Betula lutea* L., *Gleditschia triacanthos* L., *Robinia Pseudacacia* L., several *Caryas* and *C. microcarpa* Nutt. among them. Of shrubs: *Robinia hispida* L., *Dicella sessilifolia* Buckl., *Ilex mollis* Gray, *Stuartia pentagyna* L'Her., *Hydrangea radiata* Walt., and again (but very rare) *Buckleya distichophylla* Torr., *Nemophanes Canadensis* DC., and in a swamp *Dirca palustris* L. Of herbaceous plants: *Utricularia gibba* L., *Imnecus Canadensis* J. Gay, and *Arundinaria tecta* Muhl. On flat rocks: *Diamorpha pusilla* Nutt., *Fimbristylis capillaris* Gray, *Krigia Virginica* Willd., *Arenaria glabra* Michx. On the cliffs of the crest: *Stipa acneacea* L., *Silene rotundifolia* Nutt., *Linaria Canadensis* L., *Campanula divaricata*



Michx., *Thalictrum clavatum* DC. Near the base of the mountain, on limestone ledges, *Gatesia latevirens* Gray, *Callicarpa Americana* L., *Triosteum perfoliatum*, L., *Silphium brachiatum* Gattinger. The Cumberlands excel the Alleghanies in a greater variety of ferns. Besides all species of the latter, we also find here *Asplenium Bradleyi* Eat., *A. pinnatifidum* Nutt., *Lygodium palmatum* Swartz., *Scolopendrium vulgare* Smith, and *Trichomanes ~~r~~ idicans* Swartz.

The third division embraces the valley of East Tennessee and the entire area of Middle Tennessee. Contour of surface and geological structure result in East Tennessee from the combined processes of folding and erosion, whereby heterogeneous strata are placed in juxtaposition, the whole valley being an often-repeated series of synclinals and anticlinas of calcareous and siliceous rocks, while in Middle Tennessee erosion alone had been at play.

A great fault connected with the upheaval of the Pine and Grab-orchard mountains, and in a line south of it, an eroded anticlinal, the Sequatchee valley, designate in the Cumberland mountain region the western terminus of those convulsions which involve the problem of the stratigraphy of the Alleghanies in so great difficulties. West of this line spread out the horizontal strata of the Cumberland table-land, which terminates with an abrupt descent of about one thousand feet upon the highlands of Middle Tennessee. These in turn overreach and encircle the floor of the basin of Middle Tennessee by five to six hundred feet, either in a bluff or through a gradual descent.

The succession of strata is normal throughout: uppermost subcarboniferous limestone and chert, followed by the Devonian shale, lastly the lower silurian.

Increase in annual range of temperature and greater dryness of air, as compared with the former regions, cause the mountain flora to disappear and to yield to other designs in nature's garb. A close botanical inquiry into the array of species soon discloses the fact that different assemblies of species congregate in the limestone and argillaceo-siliceous region. The former includes the glades, the latter the barrens of Middle Tennessee.

Glades are thinly wooded, unarable lands, with shallow soils, fit only for pastures. They ought to remain in their natural state, undisturbed by cultivation. To clear them is to convert them into deserts. In some parts they are exclusively occupied by the cedar, with a small percentage of deciduous trees intermingled. In other places prevails the Ohio buckeye, (*Æsculus*

*flava* Willd.), honey locust (*Gleditschia triucanthos* L.), hackberry (*Celtis Mississippensis* Bose.), some hickories (*Carya alba* Nutt., *C. tomentosa* Nutt., *C. porcina* Nutt.), shingle oak (*Quercus imbricaria* L.), yellow chestnut oak (*Q. Muhlenbergii* Englm.), post oak (*Q. obtusiloba* Michx.), hop-hornbeam (*Ostrya Virginica* L.), winged elm (*Ulmus alata* Michx.), buckthorn (*Frangula Caroliniana* Gray), persimmon (*Diospyros Virginiana* L.), red plum (*Prunus Americana* Marshall), Chickasaw plum (*P. Chickasaw* Michx.) Of shrubs prominently: *Forestiera ligustrina* Poir., *Rhus aromatica* Ait., *Ptelea trifoliata* L., *Aralia spinosa* L., several hawthorns: *Crataegus Crus Galli* L., *C. cordata* Ait., *C. tomentosa* L., var. *pyrifolia* Gray, and var. *punctata* Gray, *Bumelia lycioides* Gaert., *Symphoricarpos vulgaris* Michx., *Hypericum aureum* Bart.

The cedar barrens effect an obvious and pleasing contrast in the feature of a landscape, especially in regions where, by absence of streams or prominent landmarks, diversity in grouping, habitus and coloring of the arboreus growth must relieve a wearisome monotony. Middle Tennessee is, from periodic excessive dryness of the atmosphere, absolutely incongenial to every other species of our native conifers.

The somber tint of the cedar delineates a cedar barren from its surroundings at a distance and serves within its environs, wherever openings occur, to bring out with dazzling vividness the crumbling limestone flats, overspread with the rosy *Sedum pulchellum* and carmine-flowered *Talinum*, or the golden stars of the *Opuntia Rafinesquii*.

The botanical interest in these cedar glades varies from a delightful surprise in the survey of an unparalleled number of rare and interesting plants upon small tracts, to a painful disappointment over a fruitless ramble through long stretches.

Depressions, where the coherent and slightly scooped limestone banks secure a continuance of moisture, and where small springs come to the surface, represent the garden spots of the wilderness. Wherever again the ground swells up into rocky ridges, or where from collapse of subterraneous cavities, in which these regions abound, the strata are broken up and tumbled about like heaps of ruins, there the rains sink too fast and so deep that only the penetrating roots of the cedar can reach the hidden moisture; a drought soon dries up the smaller herbage. The cedars are always closely set, and it is a vexatious and ungrateful task to penetrate such thickets.

In the oak barrens we find good farming lands as far as the sub-carboniferous limestone extends. As soon as the siliceous or cherty

strata come to the surface—a good deal of such is in Tennessee—there we come into a poverty-stricken country. Like in the gravelly ridges of East Tennessee, so here too, the black-jack oak asserts its right. Spanish oak, sourwood and chestnut are the main body of the forest. Intervals are filled up with copses of sumach, dogwood, black haw, azaleas (*Azalea nudiflora* L.), *Kalmia latifolia* L., and various huckleberries (*Vaccinium arborum* Michx.), *V. staminicum* L., *V. corymbosum* L., Jersey-tea (*Ceanothus Americanus* L.). The herbaceous vegetation is monotonous, and in districts where the burning of the woods is practiced, of an unparalleled scarcity. Agricultural enterprise terminates very soon in the mutual ruin of land and farmer. Between such worthless lands are tracts or regions where the soil is of a yellow, light or fluffy loam, easily cultivated, not very rich, but apt to be kept in good condition. The subcarboniferous strata are here completely carried off and the Devonian strata become exposed and disintegrated into beds of loam or clay. We notice now a pleasant change in the appearance of well-kept farms, a better growth of timber and a much improved botanical prospect. Sometimes we pass by points where the subjacent strata are of an impervious clay, from which result heavy and damp soils, and in the early months of the year portions of the barrens are covered with shallow ponds, until they dry up in the hot season. Such spots are convenient abodes for orchids, liliaceous plants, Iuncaceæ, Cyperaceæ, Gramineæ, Ludwigias, Rhexias, etc. The forest contains a good selection of hard-woods and the trees attain a stately growth. Water oak, willow oak and white oak, sweet gum and black gum are the most numerous. Ashes, poplars and beeches less frequent than in calcareous soils. The shrubbery is made up by alder (*Alnus serrulata* Ait.), willows (*Salix tristis* Ait., *S. humilis* Marsh.), botton-bush (*Cephalanthus occidentalis* L.), arrow-wood (*Viburnum nudum* L.), *Spiraea tomentosa* L., *Rosa Carolina* L., *Hypericum Kalmianum* L., *H. prolificum* L., *Comandra umbellata* Nutt.

I have appended for a ready review a comparative list of species of calcareous soils (glades) and siliceous soils (oak barrens).

## PLANTS OF THE GLADES AND BLUFFS.

## (Calcareous soils.)

Clematis reticulata Walt.	Krigia Dandelion Nutt.
Thalictrum Cornuti L.	Prenanthes crepidinea Michx.
Anemone decapetala L.	Lobelia Gattingeri Gray.
Myosurus minimus L.	Bumelia lycioides Gært.
Ranunculus fascicularis Muhlb.	Forestiera acuminata Poir.
Delphinium azureum Michx.	F. ligustrina Poir.

- Magnolia acuminata* L.  
*Calycocarpum Lyoni* Nutt.  
*Cocculus Carolinus* L.  
*Corydalis flavula* DC.  
*Leavenworthia Michauxii* Torr.  
*L. torulosa* Gray.  
*L. stylosa* Gray.  
*Draba brachycarpa* Nutt.  
*Alyssum Lescurii* Gray.  
*Cleome pungens* Willd.  
*Lechea minor* Walt.  
*Viola pubescens* Ait.  
*V. striata* Ait.  
*V. tricolor* var. *arvensis* Gray.  
*Arenaria patula* Michx.  
*Talinum teretifolium* Pursh.  
*Hypericum aureum* Bart.  
*H. sphaerocarpum* Michx.  
*Malvastrum angustum* Gray.  
*Sida Ellottii* Torr & Gray.  
*Ptelea trifoliata* L.  
*Vitis indivisa* Willd.  
*Aesculus glabra* Willd.  
*Rhus aromatica* Ait.  
*Trifolium reflexum* L.  
*Psoralea subacaulis* Torr. & Gray.  
*Petalostemon foliosus* Nutt.  
*P. decumbens* Mitt.  
*Desmodium pauciflorum* DC.  
*D. Dilenii* Darlingt.  
*D. Marylandicum* Bart.  
*D. rigidum* DC.  
*Baptisia australis* R. B.  
*Gleditschia triacanthos* L.  
*Desmanthus brachylobus* Benth.  
*Prunus Chickasaw* Michx.  
*Rosa humilis* Marsh.  
*Crategus cordata* Ait.  
*Philadelphus hirsutus* Nutt.  
*Sedum pulchellum* Michx.  
*Oenothera triloba* Nutt.  
*Melothria pendula* L.  
*Trianosperma Boykinii* Roem.  
*Ammania coccinea* Rottboel.  
*Bupleurum rotundifolium* L.  
*Eulophus Americanus* Nutt.  
*Chaerophyllum Teinturierii* Hook.  
*Houstonia patens* Ell.  
*H. angustifolia* Michx.  
*Galium virgatum* Nutt.  
*Eupatorium incarnatum* Walt.  
*E. altissimum* L.  
*E. ageratoides* L.  
*Grindelia lanceolata* Nutt.  
*Solidago latifolia* L.  
*S. Gattingerii* Chapm.
- Asclepiodora viridis* Gray.  
*Asclepias variegata* L.  
*As. verticillata* L.  
*Acerates viridiflora* Ell.  
*Sabbathia angularis* Pursh.  
*Frasera Carolinensis* Walt.  
*Phlox Stellaria* Gray.  
*Nemophila microcalyx* Fish & M.  
*Phacelia parviflora* Pursh  
*Heliotropium tenellum* Torr.  
*Lithospermum canescens* Lehm.  
*Onosmodium Carolinianum* DC.,  
 var. *molle* Gray.  
*Evolvulus argenteus* Pursh.  
*Cuscuta chlorocarpa* Engelm.  
*Herpestes nigrescens* Benth.  
*Gratiola Floridana* Nutt.  
*Seymeria macrophylla* Nutt.  
*Gerardia patula* Chapm.  
*Catalpa speciosa* Ward.  
*Ruellia ciliosa* Pursh.  
*Isanthus cœruleus* Michx.  
*Pycnanthemum linifolium* Pursh.  
*Calamintha glabella* Benth.  
*Monarda fistulosa* L.  
*Aristolochia tomentosa* Sims.  
*Oxybaphus albidus* Sweet.  
*Euphorbia mercurialina* Michx.  
*E. obtusata* Pursh.  
*E. commutata* Engelm.  
*Tragia macrocarpa* Willd.  
*Croton capitatus* Michx.  
*C. monanthogynos* Michx.  
*Ulmus alata* Michx.  
*U. racemosa* Thom.  
*Quercus lyrata* Walt.  
*Q. Mühlenbergii* Engm.  
*Q. Michauxii* Nutt.  
*Q. imbricaria* Michx.  
*Orchis spectabilis* L.  
*Spiranthes gracilis* Bigelow.  
*Pardanthus Chinensis* Kerr.  
*Allium mutabile* Michx.  
*Schenolirium croceum* Gray.  
*Uvularia grandiflora* Smith.  
*Juncus leptocaulis* Torr. & Gray.  
*Cyperus Baldwinii* Torr  
*C. Engelmanni* Hend.  
*C. acuminatus* Torr.  
*C. ovularis* Torr.  
*Eleocharis compressa* Sulln.  
*Scirpus linatus* Michx.  
*Carex Muhlenbergii* Schk.  
*C. retroflexa* Mihih.  
*C. Crawei* Dew.  
*Paspalum dilatatum* Poir.

- S. ulmifolia* Nutt.  
*S. rupestris* Raf.  
*Bellis integrifolia* Michx.  
*Aster oblongifolius* Nutt.  
*A. Shertii* Hooker.  
*A. undulatus* L.  
*A. lævis* L.  
*Polymnia Canadensis*, var. *radiata* Gray.  
*Silphium perfoliatum* L.  
*S. terebinthinaceum*, var. *pinnatifidum* Gray.  
*Inula Helenium* L. E. Ten.  
*Echinacea angustifolia* DC.  
*Lepachys pinnata* Torr & Gray.  
*Helianthus hirsutus* Raf.  
*H. tuberosus* L.  
*Verbesina Virginica* L.  
*Cacalia tuberosa* Nutt.
- Panicum latifolium* L.  
*P. capillare* L., var. *flexile*, Gattinger.  
*P. dichotomum* L., var. *nitidum* Lam.  
*Tripsacum dactyloides* L.  
*Danthonia sericea* Nutt.  
*Eatonia Dudleyi* Vasey.  
*E. Pennsylvanica* Gray.  
*Eragrostis Frankii* Meyer.  
*Aristida gracilis* Ell.  
*Sporobolus vaginaeflorus* Torr.  
*Uniola latifolia* Michx.  
*Festuca ovina* L.  
*Arundinaria macrosperma* Mich.  
*Juniperus Virginiana* L.  
*Cheilanthes Alabamensis* Kunze.  
*Ch. vestita* Swartz.  
*Asplenium parvulum* M. & J.  
*Iscetes Buttleri*, var. *immaculata* Engelm.

## PLANTS OF THE OAK BARRENS AND HIGHLANDS.

(Siliceous and Argillaceous soils.)

- Thalictrum dioicum* L.  
*Th. debile* Buckl.  
*Ranunculus oblongifolius* Ell.  
*Delphinium tricolor* Michx.  
*Cimicifuga racemosa* Ell.  
*Caulophyllum thalictroides* Michx.  
*Stylophorum diphyllum* Nutt.  
*Dicentra Cucullaria* DC.  
*Vesicaria Shortii* Torr & Gray.  
 (on shale.)  
*Polanysia graveolens* Raf.  
*Helianthemum Canadense* Michx.  
*Lechea patula* Legget.  
*L. tenuifolia* Michx.  
*Viola pedata* L.  
*V. blanda* L.  
*Polygala Curtissii* Gray (and other *Polygalas*).  
*Anychia dichotoma* Willd.  
*Hypericum virgatum* Lam.  
*H. Kalmianum* L.  
*H. dolabriforme* Vent., (E. Ten.).  
*H. nudicaule* Walt.  
*Vitis vulpina* L.  
*Rhus copallina* L.  
*Crotalaria sagittalis* L.  
*Psoralea melilothoides* Michx.  
*Stylosanthes elatior* Swartz.  
*Lespedeza striata* Hook.  
*L. capitata* Michx.  
*L. hirta* Michx.  
*Thephrosia Virginica* Pers.  
*Th. spicata* Torr. & Gray.
- Krigia Virginica* Pursh.  
*Lobelia puberula* Michx.  
*Vaccinium arboreum* Marsh.  
*V. stamineum* L.  
*Oxydendron arboreum* DC.  
*Kalmia latifolia* L.  
*Rhododendron nudiflorum* Torr.  
*Rh. calendulaceum* Torr.  
*Acerates longifolia* Ell.  
*Sabbathia gracilis* Pursh.  
*Phlox amœna* Sims.  
*Lithospermum latifolium* Michx.  
*Convolvulus spithameus* L.  
*Cuscuta compacta* Iuss.  
*C. glomerata* Choisy.  
*Gratiola ramosa* Walt.  
*Buchnera Americana* L.  
*Seymeria tenuifolia* Pursh., E. Ten.  
*Gerardia quercifolia* Pursh.  
*G. tenuifolia* Vahl.  
*Castilleja coccinea* Spreng.  
*Schwalbea Americana* Gron.  
*Trichostema dichotomum* L.  
*Pycnanthemum lanceolatum* Pursh.  
*P. Tullia* Benth.  
*Monarda Bradburiana* Buckl.  
*Oxybaphus nyctagincus* Sweet.  
*Comandra umbellata* Nutt.  
*Pachysandra procumbens* Nutt.  
*Euphorbia corollata* L.  
*Quercus falcata* Michx.  
*Q. aquatica* Cate-by.  
*Q. Phellos* L.

Rhynchosia tomentosa Torr. & Gray.	Castanea vesca, var. Americana Michx.
Dæsmodium viridiflorum Buckl.	C. pumila Michx. (E. Tenn.).
D. sessilifolium Torr.	Habenaria integra Sprengel.
Clitoria Muriana L.	H. peramœna Gray.
Baptisia tinctoria R. Br.	Spiranthes simplex Gray.
Thermopsis Caroliniana M. A. Curt.	Sp. cernua Rich.
Cladrastis tinctoria Raf.	Pogonia pendula Lindley.
Schrankia angustata Torr. & Gray.	Iris Virginica L.
Oenothera fruticosa L.	Lilium Canadense L.
O. sinuata L.	Uvularia perfoliata L.
Ludwigia hirtella Raf.	Stenanthium robustum Wats.
L. linearis Walt.	Amianthium muscætoxicum, Gray, (E. Tenn.).
Hamamelis Virginica L.	Dichromena latifolia Baldso.
Lythrum alatum Pursh.	Juncus pelocarpus E. Meyer.
Gaura biennis L., (E. Ten.).	Cyperus vegetus Willd.
G. filipes Spæch, (E. Ten.).	Scirpus polyphyllus Vahl.
Polytaenia Nuttallii DC.	Carex Shortiana Dev.
Archangelica hirsuta Torr. & Gray.	C. flaccosperma Dew.
Houstonia cærulea L.	C. granularis Mühlb.
Oldenlandia Boscii Chapm.	Paspalum læve Michx.
Eupatorium semiserratum DC.	Panicum commutatum Schulz.
E. aromaticum L.	P. depauperatum Muhl.
E. leucolepis Torr. & Gray.	P. filiforme L.
Liatris spicata Willd.	P. glabrum Gaud., var. Mississippiense Gattinger.
L. gramimifolia Pursh.	Erianthus alopecuroides Ell.
Chrysopsis Mariana Nutt.	E. brevisarbis Michx.
Solidago cæsia L.	E. strictus Baldw.
S. bicolor L.	Danthonia spicata Beauv.
S. odora Ait.	Gymnopogon racemosus Beauv.
S. corymbosa Ell.	Eatonia obtusata, var. laxiflora Gatt.
S. lanceolata L.	Chrysopogon avenaceum Buckl.
Boltonia diffusa Ell.	Aristida purpurascens Poir.
Aster concolor L.	Sporobolus Indicus R. Br.
A. umbellatus Mill.	Uniola gracilis Michx.
A. linariifolius L.	Festuca Shortii Vasey.
Silphium brachiatum Gattinger.	Arundinaria tecta Muhl.
S. scaberrimum Ell.	Pinus inops Ait.
S. Asteriscus Ell.	Equisetum arvense L., E. Tenn.
Rudbeckia laciniata L.	Pteris aquilina L.
Helianthus atrorubens L.	Phegopteris hexagonoptera Feè.
Helianthella tenuifolia Torr. & Gray.	
Coreopsis auriculata L.	
C. senifolia Michx.	
Cacalia suaveolens L.	

## WEST TENNESSEE.

The Tennessee river very nearly indicates in its northern course a geological division, flowing, as it does, along an ancient devonian and silurian shore-line. A few miles west and parallel with the river rises the eastern escarpment of an undulating plateau of only 2-300 feet elevation above the waters of the Tennessee river. This irregular tableland slopes gradually towards the Mississippi river and terminates there in another bluff, which

rises about 200 feet over the floods of the Mississippi. The eastern portion of this area is composed of cretaceous and the western of tertiary and post-tertiary deposits, either sands or soft cretaceous shale. Solid, often ferruginous, sandstones appear at the surface, scattered in incoherent masses.

We behold no longer limpid streams, rippling over rocky bottoms, sided by cliffs and bluffs. Instead of them we find lagoons and swampy borders, stretching along muddy-looking waters of sluggish streams.

From distance already, before crossing the river, we are in sight of towering cypresses. While a thousand miles east from here they yet occupy the shore-line of the Atlantic, here the shore line has receded to the Gulf and left the cypress behind. Their dimensions are truly enormous. The far spreading roots emerge like sharp-backed ridges from the brownish lagoon, gradually creeping up and girding with buttress-like projections the many-angled column. A perpendicular shaft ascends to a height of 120-150 feet and then spreads a flat or hemispherical crown. Such I have seen twenty years ago near Johnsonville. Cypress swamps are along both big rivers, and many other extensive swamps and swampy lands are along every watercourse, the most perhaps along Big Sandy. It may therefore be expected that a great many more aquatic species and such as inhabit marshy lands exist in this region, than in either East or Middle Tennessee. My own experience is, however, limited and restricted to one point on the Mississippi river, the regions of Brownsville, Humbolt, McKenzie, Hollow-rock and Johnsonville, in which places I have made interesting collections.

## PLANTS PECULIAR TO WEST TENNESSEE.

Ranunculus multifidus Pursh.	Planera aquatica Gmel.
Brasenia peltata Pursh.	Lithospermum angustifolium Michx.
Cabomba Caroliniana Gray.	Utricularia biflora Lam.
Hypericum lobocarpum Gattinger.	Iris cuprea Pursh.
Gleditschia monosperma Walt.	Iris hexagona Walt.
Dalea alopecuroides Willd.	Habenaria virescens Sprengel.
Berchemia volubilis DC.	Juncus mititarius Bigel.
Galium Arkansasum Gray.	Scirpus debilis Pursh.
Eryngium prostratum Nutt.	Zizania aquatica L.
Marshallia lanceolata Pursh.	Spartina cynosuroides Willd.
Ambrosia bidentata Michx.	Eragrostis oxylepis Torr.
Helenium tenuifolium Nutt.	Cenchrus tribuloides L.
Senecio lobatus Pers.	Aristida ramosissima Engelm.
Hydrolea affinis Gray.	Taxodium distichum Rich.
Verbena stricta Vent.	Asplenium Filix femina L. var. angustum Gray.
Limnanthemum lacunosum Griese.	Azolla Caroliniana Willd.
Polypremum procumbens L.	Equisetum robustum R. Br.
Quercus bicolor Willd.	
Stillingia sylvatica L.	





# TENNESSEE FLORA.

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Species occurring within a radius of thirty miles from Nashville are reckoned to the Nashville Flora, and printed in bold type; those beyond this range in small pica. O. S.—  
Over the whole State.

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## RANUNCULACEÆ.

**Clematis Viorna** L. O. S. Very variable.

Var. *coccinea* Gray. Foot of Lookout Mt. J. F. James.

**C. reticulata** Walt. Middle Tenn. Foliage not quite as leathery and prominently reticulated as my S. C. specimens.

**C. Virginiana** L. O. S.

**Anemone nemorosa** L. Paradise ridge. Cumberland and Alleghany Mts.

**A. Virginiana** L. O. S. June–July.

**A. acutiloba** Lawson. Middle Tenn. March.

**A. Hepatica** L. Mts. of East Tenn. In the Frog Mts., East Tenn., I obtained specimens with acute and obtuse-lobed foliage on the same plant. April.

**A. decapetala** L. (A. Caroliniana Walt.) Cedar glades. April.

**Anemonella thalictroides** Spach. (Th. anemonoides Michx.) O. S. March.

**Thalictrum dioicum** L. O. S. June–July.

**T. purpurascens** L. O. S. July.

Var. *ceriferum* Aust. O. S. June–July.

**T. clavatum** DC. Cumberland and Alleghany Mts. July.

**T. polygamum** Mühlb. Moist woodlands. O. S. July–August.

**T. debile** Buckl. Dr. Hampton's place near Cheatham Co. line. Only locality. May.

*Trautvetteria palmata* Fish & Meyer. Along the whole chain of Alleghanies. July.

**Myosurus minimus** L. Moist meadow-lands. Nashville. April.

**Ranunculus abortivus** L. var. *micranthus* Gray; common. March.

**R. ambigens** Watson. Ponds along Cumberland river, etc. June-July.

**R. circinatus** Sibth. (*R. aquatilis* L. var. *stagnatilis* DC.) Ponds and swamps along Cumberland R. Flowers the whole summer.

*R. aquatilis* L. var. *trichophyllus* Chaix. East Tenn. July.

**R. fascicularis** Mühlb. Common in vicinity of Nashville. March-April.

**R. multifidus** Pursh. Swamps on Cumberland and Tenn. rivers. Cypress swamps. July.

**R. oblongifolius** Elliott. Damp ground. Paradise ridge. Tullahoma. June.

**R. parviflorus** L. Boggy lands. O. S. April-May.

**R. pusillus** Poir. Ditches and waste grounds. May.

**R. septentrionalis** Poir. var. *hispidus*, Michx. (*R. repens* L. var. *hispidus* Michx.) O. S.

Var. *lucidus* Poir. O. S. May-July.

*Caltha palustris* L. var. *parnassifolia* Torr & Gray. Wet mountain meadows, etc. Ducktown. April.

**Aquilegia Canadensis** L. Rocky woodlands. Bluffs on Mill Creek near Nashville. April.

**Delphinium azureum** Michx. Cedar glades of Middle Tenn. May.

**D. tricorne** Michx. Rich woodlands. O. S. April-May.

*D. exaltatum* Ait. Roane Mt. J. W. Chickering.

**D. Consolida** L. Introduced and spreading copiously. May, June.

*Aconitum reclinatum* Gray. Mountains of East Tenn.

*Coptis trifolia* Salisb. Higher Alleghanies. Thunderhead. June.

*Xanthorrhiza apiifolia* L'Her. Banks of every mountain stream. East Tenn. March-April.

*Hydrastis Canadensis* L. Rich woods; very common. April, May.

*Actaea alba* Bigel. Rich woodlands. May.

*A. spicata* var. *rubra* Michx. Moist, rich and shady localities. Sometimes with the former. O. S.

*Cimicifuga racemosa* Ell. Rich woodlands; common. June-July.

*C. Americana* Michx. Alleghany Mts., Ducktown, Roane Mt. Prof. Chickering. August-September.

#### CALYCANTHACEÆ.

*Calycanthus floridus* L. Harpeth hills by Nashville. Frequently cultivated in old gardens. May.

*C. glaucus* Willd. Cumberland Mts. Whiteside. Also Chilhouewe and Smoky Mts. June.

#### MAGNOLIACEÆ.

*Magnolia acuminata* L. River and creek bottoms of Middle Tenn. Along Gallatin pike, near Nashville. May.

*M. macrophylla* Michx. Mountains of East Tenn., Smoky Mts., etc. May-June.

*M. Umbrella* L. Cumberland Mts., in deep ravines: also in Blue ridge. June.

*M. Fraseri* Walt. Apparently not in the Cumberland Mts., but frequent in high mountains of East Tenn., Roane Mts., Big Smokies. June-July.

*M. grandiflora* L. In cultivation only. May-July.

*Liriodendron tulipifera* L. One of the tallest trees in the State. The largest trees are thought to be found along Mississippi bottoms in Obion Co., and to measure above 150 feet high. May.

#### ANONACEÆ.

*Asimina triloba* Dunal. Commonly a shrub 8-10 feet high, but also found a small, slim tree 6-8 inches diameter and 25 feet high, in the rich bottoms of Cumberland and Tenn. rivers. March.

## MENISPERMACEÆ.

*Calycoocarpum Lyoni* Nutt. River bottoms, climbing high. May-June.

*Cocculus Carolinus* L. On bushes in open fields and climbing high in moist woodlands. July-August.

*Menispermum Canadense* L. River bottoms, with the former. July.

## BERBERIDACEÆ.

*Caulophyllum thalictroides* Michx. In deep leaf-mould. Frequent in Cumberland Mts and Alleghanies. April.

*Diphylleia cymosa* Michx. Roane Mts. Prof. Chickering. Also Smoky Mts. May-June.

*Jeffersonia diphylla* Persoon. Rocky woodlands, over the State. In limestone soil. Harpeth ridge. May.

*Podophyllum peltatum* L. Rich woodlands, every where. April-May.

## NYMPHEACEÆ.

*Brasenia peltata* Pursh. Ponds and lagoons. Not frequent. Swamp in Jones' Bend, near Edgefield Junction. July.

*Cabomba Caroliniana* Gray. Cypress swamps, Johnsonville, W. Tenn. July-August.

*Nelumbium luteum* Willd. Lagoons along Tennessee and Cumberland rivers. Shelby Pond, near Nashville. July.

*Nuphar advena* Ait. Very frequent in the lower course of Cumberland Mts. streams. June-Sept.

*Nymphaea odorata* Ait. In a pond at the Lunatic Asylum grounds near Nashville. Said to be in the State.

## PAPAVERACEÆ.

*Argemone Mexicana* L. O. S., in and near towns and villages.

*Stylophorum diphyllum* Nutt. Rich woods. Harpeth hills, near Nashville. April-May.

*Papaver somniferum* L. Occasionally escaped, but not inclined to spread. July-August.

*P. dubium* L. Waste grounds in Nashville. Old cemetery. June.

**Sanguinaria Canadensis** L. Over the whole State in rich soil. April–May.

## FUMARIACEÆ.

**Dicentra Cucullaria** DC. In leaf mould, shady ravines. Harpeth hills near Nashville. April.

**D. Canadensis** DC. Cumberland mountains. Grab Orchard, etc. May.

**D. eximia** DC. Only on Dow river, Carter Co., but there abundant. June–July.

**Adlumia cirrhosa** Raf. In the valley of Dow river, along narrow gauge railroad, leading to Craneberry iron works, abundant.

**Corydalis flavula** DC. Woods and thickets. Nashville.

**C. glauca** Pursh. Mountain gorges on Dow river. East Tenn. August.

## CRUCIFERÆ.

**Nasturtium officinale** R. Br. Springs and brooklets. East and Middle Tenn. April–May. Indigenous.

**N. lacustre** Gray. Swamps of Tennessee and Cumberland rivers. (Johnsonville). July.

**N. sessiliflorum** R. Br. Wet meadows and ditches. Common. May–August.

**N. Armoracia** Fries. Horseradish. In cultivation, and here and there near gardens.

**Leavenworthia Michauxii** Torr. Cedar glades. Middle Tenn. Lavergne. April–May.

\***L. torulosa** Gray. n. sp. First collected in 1865 in vicinity of Vanderbilt University grounds. Abounds about Nashville and over the cedar glades of Middle Tenn. April.

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\**Leavenworthia torulosa* Gray. Silique linear, conspicuously torose; style fully equalling the breadth of the silique; seeds broadly oval, narrowly winged; radicle nearly transverse, strictly applied to the edges of the cotyledons at the base on one side; petals purplish with a yellowish spot towards the claw. Either stemless or caulescent, ascending from a spreading procumbent base, with several sometimes ultimately forking pedicels. Generally 4–5, but large specimens sometimes 9 inches high, and spreading over a square foot of ground. The fresh herbage has the taste of water-cress and is well adapted for table use. Vide *Bot. Gaz.*, March, 1880.

\**L. stylosa* Gray. n. sp. Discovered in the cedar glades 1 mile east of Lavergne, 17 miles from Nashville, in 1869. Also found near Green Hill, in Wilson Co., Tenn. April.

*Dentaria diphylla* Michx. Banks of Cumberland, Nashville. April.

*D. laciniata*, Mühlb. Hills around Nashville. March-April.

*D. multifida*, Mühlb. East Tenn. Roane Co. April.

*Cardamine rhomboidea* DC. Low grounds. Vicinity of race-track at Nashville. May.

*C. Clematitis* Shuttl. Highest mountains of East Tenn. Roane Mt. Prof. Chickering. Clingman Dom 6500'. June-July.

*C. hirsuta* L. Low swampy grounds. April-May.

Var. *sylvatica* Gray. Dry woodlands. March-May.

*Arabis Ludoviciana* Meyer. Fields and roadsides, abundant. March, May.

*A. dentata* Torr & Gray. Low, rich grounds. O. S. March-May.

*A. Canadensis* Liv. Rocky woodlands. O. S. April.

*A. patens* Sulliv. Along Ocoë river, East Tenn., etc.

*A. lævigata* DC. Rocky woodland, cliffs along Cumberland and Mill creek. April-May.

*Thelipodium pinnatifidum* Wats. Rich hillsides. Frequent around Nashville. April-May.

*Brassica Sinapistrum* Boiss. In cultivated grounds.

\**Leavenworthia stylosa* Gray. Habitus the same like the former, but a little more slender. It is also either stemless or caulescent, not strictly stemless, like Dr. Gray thought it to be from stemless specimens sent to him. Robust plants have the ascending stems terminating with a fasciculate inflorescence. Silicle broadly oval or oblong and 2 lines wide and 5-12 lines long, plane, surmounted by a slender style 3-4½ lines long; seeds 3-6 orbicular, distinctly winged; embryo as in the preceding; petals during anthesis pure golden yellow throughout, marcescent and shrivelling they turn to a purplish-white.

First collected in the cedar barrens at Lavergne, one mile southeast from the station, June 2, 1879, in a springy spot associated with *Isoetes Butleri* and *Schenolirium Carolinianum*. Also found in a similar spot near Green Hill, Wilson Co.

*Leavenworthia Michauxii* Torr. occurs in the same locality close by, is always much smaller; stigma sessile or sub-sessile. The name *Cardamine uniflora* may have originated in an oversight of robuster specimens or a too early collection. Vide *Bot. Gaz.*, March, 1880.

*B. alba* Gray. Frequently cultivated and escaping. May.

*B. nigra* Koch. Escaped.

*B. campestris*. Cultivated and escaping into waste grounds.

*Draba brachycarpa* Nutt. Cedar glades of Middle Tenn March.

*D. Caroliniana* Walt. Sterile rocky lands. O. S. March-April.

*Draba ramosissima* Desv. Mountains of East Tenn. Mundie bluff on Ocoë river, Polk Co. April-May.

*Vesicaria Shortii* Torr & Gray. Rising Sun bluff, 14 miles below Nashville. April.

*Alyssum Lescurii* Gray. Hills south and west of Nashville, covering the ground in great patches, visible miles distant. April-May.

*Sisymbrium officinale* Scop. Ditches and roadsides, everywhere. May-June.

*Thlaspi arvense* L. Common weed. March-June.

*Hesperis matronalis* L. Introduced. Alongside a fence in Mrs. Cheatham's gardens, Nashville. May.

*Lepidium Virginicum* L. O. S., along roadsides. May-July.

*Seneciera Coronopus* L. Vacant town lots, Memphis. Dr. G. Egeling.

*Raphanus sativus* L. Escapes sometimes into open fields.

#### CAPPARIDACEÆ.

*Cleome pungens* Willd. Scattered O. S. Abundant in low woodlands along Tennessee river near Chattanooga. June-July.

*Polanisia graveolens* Raf. Along R. R. in Dixon Co., Middle, Tenn. Also West Tenn. July.

#### CISTACEÆ.

*Helianthemum Canadense* Michx. Bradley Co., East Tenn. near Charleston. April-May.

*Lechea major* Michx. O. S. July-August.

*L. minor* Walter. Barrens of Middle Tenn. and mountains of East Tenn. July-August.

*L. tenuifolia* Michx. Cumberland and Alleghany Mts. July-August.

*L. thymifolia* Pursh. Dry rocky glades, Middle Tenn. July–August.

*L. Drummondii* Torr. & Gray. Cedar glades, Lavergne. May–June.

#### VIOLACEÆ.

*Ionidium concolor* Barth. & Hook. O. S. April–May.

*Viola pubescens* Ait. Harpeth hills, near Nashville, etc.

Var. *eriocarpa* Nutt. Rich woods of the Cumberland Mts. and banks of Cumberland river at Nashville. April.

*V. canina* L. var. *sylvestris* Regel. Damp woodlands, East Tenn. March–April.

*V. striata* Ait. O. S. Frequent in vicinity of Nashville. April–May.

*V. Canadensis* L. Cumberland and Alleghany Mts. May–July.

*V. pedata* L. Over the whole State.

Var. *bicolor* Pursh., with the former. April–May.

*V. sagittata* Ait. Highlands of Middle Tenn. East Tenn. April–May.

*V. blanda* Willd. Dry rocky ground, hills near Nashville. April–May.

Var. *renifolia* Gray. Summit of Thunderhead, 6000'. July.

*V. rotundifolia* Michx. Cumberland Mts.

*V. palmata* L. Common. April–May.

Var.  *cucullata* Ait. With the former. April–May.

*V. odorata* L. Old cemeteries and escaped from gardens. Not prone to spread.

*V. tricolor* L. var. *arvensis* Gray. Abundant in the cedar glades of Middle Tenn. March–April. Indigenous.

#### POLYGALACEÆ.

*Polygala incarnata* L. Paradise ridge, Tullahoma, Bon Air. June–July.

*P. Curtissii* Gray. Barrens of Middle Tenn. to Mts. of East Tenn. June–July.

*Polygala fastigiata* Nutt. Sewanee, Tenn. July–August.

*P. cruciata* L. Oak barrens. O. S. July–August.



*P. Nuttallii* Torr. & Gray. Argillaceous and siliceous soils. O. S. July–August.

*P. ambigua* Nutt. Dry, sterile and siliceous soils. Harpeth hills and vicinity of Nashville to East Tenn. July.

*P. polygama* Walt. East Tenn. Frequent.

*P. Senega* L. East Tenn.

Var. *latifolia* Torr. & Gray. Vicinity of Nashville. May–June.

#### CARYOPHYLLACEÆ.

*Saponaria officinalis* L. Introduced but now divulged over the whole State. July–August.

*Silene antirrhina* L. Fields and waste places. May.

*S. Pennsylvanica* Michx. Cumberland and Allegheny Mts. May.

*S. Virginica* L. Edges of woods and sunny hillsides. May.

*S. rotundifolia* Nutt. High cliffs of Cumberland Mts., on sandstone ledges near Sewanee. Lookout Mt., summit of. May–June.

*S. stellata* Ait. Open woodlands. Common. July.

*S. nivea* DC. Mountains on Emory river above Kingston, East Tenn. Apparently very rare!

*Lychnis Githago* Lam. In wheat and rye-fields. May.

*Arenaria glabra* Michx. Highest parts of Cumberland and Allegheny Mts. July. (Lookout Mt.)

*A. patula* Michx. Cedar Glades of Middle Tenn., also Knoxville, East Tenn. April–May.

*A. serpyllifolia* L. Dry, rocky grounds. March–May.

*A. diffusa* Elliott. Rich, shady soil. May–June.

*Stellaria media* Smith. Troublesome weed in cultivated grounds. Flowering summer and winter.

*S. pubera* Michx. Rich woodlands. April–May.

*S. crassifolia* Ehrh. Moist and rocky grounds. Very abundant in vicinity of Nashville. April–May.

*S. longifolia* Mühlb. Kingston springs on the bluff. July.

*Cerastium vulgatum* L. Pastures and roadsides. April–May.

*C. viscosum* L. Less copious than the former. Dry uplands. April–May.

*C. oblongifolium* Torr. Cedar glades. May-June.

*C. nutans* Raf. Moist ground and hillsides. May-June.

*Sagina apetala* L. Damp soil. Pavements in Nashville. March-April.

#### PARONYCHIEÆ.

*Paronychia argyrocoma* Nutt. High mountains of East Tenn. August. Prof. Chickering.

*Anychia dichotoma* Willd. Dry rocky woodlands.

*A. capillacea* DC. With the former. July-August.

#### PORTULACACEÆ.

*Portulaca oleracea* L. Fields and gardens. June-September.

*P. grandiflora* Hook. Frequently cultivated in flower-gardens and therefrom self-sowing. June-September.

*Talinum teretifolium* Pursh. Crevices of rocks in the cedar glades. July-August.

*Claytonia Virginica* L. Woods and pastures. March-May.

*C. Caroliniana* Michx. Mountains of East Tenn. Ducktown. May.

#### HYPERICINEÆ.

*Ascyrum Crux Andreae* L. Siliceous formation. July-Sept.

*A. stans* Michx. Mountain bogs. July-August.

*A. hypericoides* L. Cleveland, East Tenn., Chilhowee Mts. June-July.

*Hypericum prolificum* L. East Tenn., Middle Tenn. and Craggy-hope, Dixon Co. June-July.

Var. *montanum* Mihi. Frog Mts., Polk Co. July.

\**H. lobocarpum*, n. sp. Hollow Rock, West Tenn. July.

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\**H. lobocarpum* Gattinger, n. sp. Sepals linear-lanceolate, small, unequal,  $1\frac{1}{2}$ -3 lines long. Petals unequal, unsymmetric, 3-6 lines long, reflected, early deciduous. Capsule five-celled, deeply five-lobed, lanceolate, tapering into a long beak. Carpels almost distinct, and at full maturity falling away from a central axis. Seeds 1 mm. long, incurved, apiculate, striate lengthwise, transversely groove d. Leaves linear, obtuse, slightly mucronate, attenuate downwards, pale underneath.

Shrub, 5-7 feet high, with upright branches. Low swampy lands in the orange sand formation at Hollow Rock, Carroll Co., West Tennessee. First collected in fruit in 1867, and again July, 1886, in flower. Only two shrubs found, in very swampy ground, at the time nearly inaccessible. I have since received specimens of a *Hypericum* labelled *H. prolificum*, "collected by Dr. H. E. Hasse of Little Rock, Ark., in wet pine barrens," which prove to be the same species.

*H. Kalminianum* L. var. *majus*. Barrens at Tullahoma. July. 5-6 feet high and of more robust habit than the northern forms.

*H. aureum* Bartram. Limestone ledges, Mts. at Cowan; frequent in the cedar glades and upon cliffs on Cumberland river. July.

*H. fasciculatum* Lam. In springy places, forming thickets. Bradley Co., East Tenn. July.

*H. adpressum* Barton. Wild goose pond near Mitchelville, Sumner Co. August-September.

*H. sphaerocarpon* Michx. Moist places in the barrens. Frequent around Nashville. June-July.

*H. dolabriforme* Vent. Cameron Hill, Chattanooga. July.

*H. virgatum* Lam. (*H. angulosum* Michx.) Barrens of Middle Tenn., damp argillaceous soils. July-September.

Var. *acutifolium*. With the preceding.

*H. perforatum* L. Waste grounds; not frequent here. June-July.

*H. corymbosum* Mühl. O. S. July.

*H. gravecolens* Buckl. Summit of Clingman Don, Smoky Mts., East Tenn. 6000'. July.

*H. mutilum* L. Very abundant in wet places. July-Sept.

*H. gymnanthum* Engelm. & Gray. Barrens at Tullahoma. July.

*H. Canadense* L. Cumberland Mts. July-August.

*H. Drummondii* Torr. & Gray. Belvidere, Franklin Co. July-August.

*H. nudicaule* Walter (*H. Sarothra* Michx.). In sandy soil everywhere. July.

*Elodea campanulata* Pursh. *E. Virginica* Nutt. River—and swamps near Nashville. July-August.

*E. petiolata* Pursh. Swamps, Middle and West Tenn. July-September.

#### TERNSTREMIACEÆ.

*Stuartia pentagyna* L'Her. Cumberland and Allegheny Mts. June.

## MALVACEÆ.

*Abutilon Avicennæ* Gaertn. Waste places. July–August.

*Malva rotundifolia* L. Around dwellings. June–September.

*Callirrhæ alceoides* Gray. Copses near Brown's creek. Nashville. Found only once.

*Napaea dioica* L. Upper East Tenn. near Johnson City. June–August.

*Malvastrum angustum* Gray. Rocky ground and open glades. Middle Tenn. Very abundant. July–August.

*Sida Elliottii* Torr. & Gray. Cedar glades. Lavergne. Edgefield Junction. July–August.

*S. spinosa* L. Troublesome weed in pastures and fields. July–September.

*Hibiscus Moshentos* L. River banks and swamps. July.

*H. militaris* Cav. River banks and bottom lands. A white variety near Nashville. June–July.

*H. Trionum* L. Frequently cultivated in flower gardens, and thence escaped. July–August.

## TILIACEÆ.

*Tilia Americana* L., var *pubescens* Land. Mountains of East Tenn. Ocoë river.

*T. heterophylla* Vent. Rich woodlands and along river banks. Nashville.

## LINACEÆ.

*Linum Virginianum* L. Dry open woodlands. June.

*L. striatum* Walt. Cedar and oak barrens. June.

*L. usitatissimum* Linn. Waifs occasionally found near dwellings.

*L. sulcatum* Riddel. Near Hickman, and East Tenn. July.

## GERANIACEÆ.

*Geranium maculatum* L. Rich woodlands. June–July.

*G. Carolinianum* L. Waste places. Common. May–June.

*Floerkea proserpinacoides* Willd. Low moist grounds. Valley of East Tenn. April–June.

*Impatiens pallida* Nutt. Thickets along creeks and springs. July–September.

*I. fulva* Nutt. With the former. O. S. June–September.

*Oxalis Acetosella* L. Summit of high Mts. of East Tenn. July. (Thunderhead, Roane Mt.)

*O. violacea* L. Rocky places. Very common. May–June.

*O. stricta* L. Copses and margins of woodlands. Very variable in size of flowers. May–September.

#### RUTACEÆ.

*Xanthoxylum Americannum* Mill. Hills vicinity of Nashville. (Charlotte pike, copses beyond Edgefield, etc.) April–May.

*Ptelea trifoliata* L. A common shrub in the limestone regions of Tennessee. May–June.

#### SIMARUBEÆ.

*Ailanthus glandulosa* Desf. Perfectly naturalized. Widely spreading over the State. May.

#### MELIACEÆ.

*Melia Azedarach* L. Formerly frequently planted around dwellings, and sometimes found on deserted homesteads. It is gradually dying out. Better adapted is

*Köhlireutera paniculata* DC. Lately introduced.

#### ILICINEÆ.

*Ilex opaca* Ait. Mountains. Cumberland and Alleghenies. Also in islands of Cumberland and Tennessee rivers, where it grows to a stately tree with 20' diametr and 40–50 feet high. June.

*Ilex decidua* Walter. Brownsville, West Tenn. May.

*I. mollis* Gray. Cumberland Mts. Summit of Lookout Mt. May.

*I. monticola* Gray. Smoky Mts., East Tenn. May.

*Nemopantes Canadensis* DC. Mts. at Cowan. August.

#### CELASTRACEÆ.

*Celastrus scandens* Linn. Brownsville, West Tenn. May–June.

*Evonymus Americannus* L. Rich woodlands. June.

*E. atropurpureus* Jacq. River banks and copses. June–July.

## RHAMNACEÆ.

*Berchemia volubilis* DC. Lookout Mt. Very luxuriant and frequent in West Tenn. Brownsville. May-June.

*Rhamnus lanceolata* Pursh. River banks and copses, Nashville.

*Rh. Caroliniana* Walt. Barrens of Middle Tenn, etc. June.

*Ceanothus Americanus* L. In argillaceous and siliceous soils, woodlands throughout the State. June-July.

## VITACEÆ.

*Vitis Labrusca* L. Alleghany Mts., Ducktown. Cultivated in Bayers settlement by the first settlers. June.

*V. æstivalis* Michx. Uplands, cedar glades. Also in Alleghany Mts. May.

*V. cordifolia* Michx. Along water courses. April-May.

*V. riparia* Michx. With the former. May.

*V. vulpina* L. Cumberland and Alleghany Mts., abundant. April-May.

*V. rupestris* Trelease. Along Cumberland river, banks of Stoner's creek etc., Nashville. May.

*V. arborea* Linn. West Tenn. in moist woodlands. May-June.

*V. indivisa* Willd. River banks and woodlands, Middle Tenn. May.

*Ampelopsis quinquefolia* Michx. Common.

## SAPINDACEÆ.

*Acer dasycarpum* Ehrh. Low, damp grounds and bottom lands. Frequently planted for shade-trees. Flowers in February and matures seeds before any other plant.

*A. rubrum* L. Wet and low lands. Also cultivated for shade-trees. April.

*A. saccharinum* Wanger. var. *nigrum* Torr. & Gray. Rich soils. O. S.

*A. spicatum* Lam. Smoky Mts. Summit of Thunderhead. June. A middle-sized tree.

*Negundo aceroides* Mœnch. Banks of creeks and rivers, growing to large dimensions but being unshapely. April.

*Æsculus glabra* Willd. Very abundant in the barrens of Middle Tenn. May.

*Æ. flava* Ait. Rich woods, especially in the mountains. April.

Var. *purpurascens*, small shrub, loving ravines and shady gorges. East Tenn. May.

\**Æ. Pavia* L. Prospect Station, Giles Co., Tenn.

*Cardiospermum Halicacabum* L. Waste places around dwellings. June–September.

*Staphylea trifolia* L. Thickets in rich, moist soil. April.

#### ANACARDIACEÆ.

*Rhus typhina* L. Hillsides. June.

*R. glabra* L. Poor soils and deserted farmlands. June.

*R. copallina* L. Hills and rocky siliceous soils. July.

*R. venenata* DC. Swampy or boggy lands, especially in the mountains. June.

*R. Toxicodendrum* L. In all woodlands. June.

*R. aromatica* Ait. Limestone regions of Middle Tenn. April–May.

#### LEGUMINOSÆ.

*Lupinus perennis* L. Rich hillsides, Ducktown, East Tenn. (Smelting works at Hiwassee.) May.

*Crotalaria sagittalis* L. Sandy soil, Tullahoma, Paradise ridge. June–July.

*Trifolium arvense* L. Old fields and pastures. June–July.

*T. pratense* L. Largely cultivated and frequently spontaneous. July.

*T. reflexum* L. Cedar barrens, rocky hills along Franklin pike, Nashville. April–May.

*T. repens* L. Common everywhere. May.

*T. procnubens* L. Very abundant over the whole State, in old fields and pastures. May.

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\**Æ-culus Hippocastanum* L. Is sometimes planted, but entirely unadapted to our climate.

**T. stoloniferum** Michx. Found in one locality where *reflexum* abounds (Franklin pike). It is perhaps only a form of *reflexum* or a hybrid. May-June.

**Melilotus alba** Lam. Around dwellings, vacant town lots and grass plots in Nashville. June-July.

*M. officinalis* Willd. Waste grounds. May-June.

**Medicago lupulina** L. Grass plots in Nashville, Capitol grounds. June.

**M. sativa** L. Occasionally cultivated, becoming naturalized. July.

**Psoralea Onobrychis** Nutt. Paradise ridge, etc. Not frequent. June.

**P. melilotoides** Michx. Hills around Nashville. May-June.

**P. subcaulis** Torr. & Gray. Cedar glades and rocky hills around Nashville. April-May.

*Dalea alopecuroides* Willd. Frequent in West Tenn. July-August.

**Petalostemon violaceus** Michx. Davidson's farm, in a cedar glade on the Charlotte pike, near Nashville. June.

**P. candidus** Michx. Near tunnel at Cowan; also Paradise ridge near Nashville. July.

**P. foliosus** Nutt. Frequent in the cedar glades around Nashville. July.

**P. decumbens** Nutt. Lavergne, Trabue's place on Mill creek, near Nashville, and other points in the cedar barrens. A white variety occurs at Lavergne. June.

**Amorpha fruticosa** L. Banks of Cumberland river, Nashville, etc. May.

*A. Tennensiensis* Shuttlw. High mountains of East Tenn. and on the banks of mountain streams. Parksville, Polk Co.; Wolf creek, Coke Co. *A. fruticosa* var. *Caroliniana* S. Watson. Syn.

**Robinia Pseudacacia** L. Rich soil, O. S. April-May.

**R. hispida** L. Lookout Mts., Chattanooga. Specimens flowering when only a span high are found near summit. (*R. hisp.* var. *nana* Elliott.) May.

**Wistaria frutescens** DC. Low bottoms and banks of Cumberland river, Cockrill's bend. April-May.



*Tephrosia Virginiana* Pers. Dry, siliceous soils; oak barrens; common. June.

*T. spicata* Torr. & Gray. In same localities with the former. June–July.

*Astragalus Canadensis* L. Cliffs along Cumberland and other streams. June–July.

*A. caryocarpus* Kerr. Cedar glades near station at Lavergne. April.

*A. Plattensis* Nutt. var. *Tennesiensis* Gray. Very common in the limestone region of Middle Tenn. April–May.

*Stylosanthes elatior* Swartz. Argillaceous and siliceous soils. Harpeth hills, East Tenn; frequent. August.

*Desmodium acuminatum* DC. Rich woodlands. July.

*D. Canadense* DC. Cumberland Mts.; apparently rare in Tennessee. Cowan. July.

*D. canescens* DC. Highlands of Middle Tenn. July–August.

*D. ciliare* DC. Barrens. July–August.

*D. cuspidatum* Hook. Siliceous formation. Ridgetop. July–August.

*D. Dillenii* Darl. Very common. July–August.

*D. humifusum* Beck. Greenbrier, Ridgetop, etc. Highlands. July–August.

*D. lævigatum* DC. With the former. Harpeth hills. July–August.

*D. Marilandicum* Boott. Cedar and oak barrens. August–September.

*D. nudiflorum* DC. Rich woods. July–August.

*D. paniculatum* DC. Perhaps the most common species in limestone and siliceous soils. August.

*D. pauciflorum* DC. Deep rich soils in shady grounds. Harpeth hills, etc. July–August.

*D. rigidum* DC. Cedar glades, Lavergne. August.

*D. rotundifolium* DC. Rocky woodlands, hills near Nashville. August.

Var. *glabratum* Gray. Paradise ridge. August.

*D. sessilifolium* Torr. & Gray. Along railroad, Mitchellville, Sumner Co., etc. August.

*D. viridiflorum* Beck. Siliceous formation. Kingston Spring, South Tunnel, etc. August.

*Lespedeza repens* Bart. Argillaceous soils.

Var. *procumbens* Michx. In rocky cedar glades; appears to be a distinct variety. July.

*L. violacea* Pers. With the former. July–August.

*Lespedeza reticulata* Persh. Barrens of Middle Tenn., Harpeth hills. August.

*L. reticulata*, var. *angustifolia* Maxim. Cedar glades. July–August.

*L. stuvei* Nutt. Highlands of Middle Tenn. August–September.

*L. capitata* Michx. Oak barrens at Tullahoma. July–August.

*L. hirta* Ell. Siliceous formation. July–August.

*L. striata* Hook. Over the whole State. Strictly avoiding limestone soils. Occurs in the remotest parts of the country and has been collected by me thirty years ago in East Tenn. It virtually carpets the ground.

*Vicia Americana* Mühlb. Thickets, vicinity of Nashville, etc. May.

*V. micrantha* Nutt. Copses and woods. April–May.

*V. Caroliniana* Walt. Highlands of Middle Tenn., but rare. Common in East Tenn. May.

*Rhynchosia tomentosa* Hook. Dickson Co. Frequent in the gravelly hills of lower East Tenn. July.

*Phaseolus pauciflorus* Benth. Imperfect specimens from near lunatic asylum, Nashville.

*Apios tuberosa* Mœnch. Bottom lands in moist thickets. August–September.

*Phaseolus diversifolius* Persoon. Cumberland Mts. June–September.

*Ph. helvolus* L. Very common in the barrens. June–September.

*Ph. perennis* Walt. Brownsville, West Tenn. August.

*Clitoria Mariana* L. Margin of thickets and in barrens. June–July.

*Centrosema Virginiana* Benth. Dry, open glades and barrens. June–September.

*Amphicarpæa monoica* Nutt. Rich, damp woodlands. August–September.

*Galactia mollis* Michx. Common in all glades and barrens. May–September.

*G. pilosa* Elliott. White bluff, Dickson Co. Not rare. July.

*Baptisia australis* R. Br. Cedar glades at Lavergne. June–July.

*B. alba* R. Br. Cameron hill, Chattanooga; Mts. of East Tenn.; Ducktown. June–July.

*B. tinctoria* R. Br. Mts. of East Tenn. Lookout Mt. July.

*Thermopsis fraxinifolia* M. A. Curtis. Region of copper mines, East Tenn. May–June.

\* *Th. Caroliniana* M. A. Curtis. Mountains along Ocoee river, East Tenn., and also frequent on summit of Harpeth ridge and Paradise ridge. May.

*Cladrastis tinctoria* Raf. Hills south of Nashville. Trees attaining three feet diameter, but never otherwise than hollow. May–June.

*Cercis Canadensis* L. Rich hillsides. March–April.

*Cassia Marylandica* L. Bottom lands and fence-rows. July–August.

*C. Tora* L. River bottoms, low marshy grounds. July.

*C. Chamaecrista* C. Smuy exposures in sandy soil. July–August.

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\* *Thermopsis Caroliniana* M. Curtis, is a striking instance of distribution of species in widely distant colonies. I first noticed the plant in the central range of the Big Frog Mts., near the copper mines at Ducktown, East Tenn., in 1860, in soils derived from quartzites and black roofing slates, in numbers, but not generally disseminated over the region. Again I came upon it, in 1870, on the top of the ridges which encircle Nashville. These ridges are capped with siliceous cherts, which rest on the black Devonian shale.

*C. nictitans* L. With the former. July–August.

*Gymnocladus Canadensis* Lam. Hill-sides in rich soil, vicinity of Nashville; also in Upper East Tenn. April.

*Gleditschia triacanthos* L. Over the State, especially in the glades. June.

*G. monosperma* Walt. In the cypress swamps and along streams in West Tenn. July.

*Schrankia angustata* Torr. & Gray. Open, dry glades and hill-sides, East and Middle Tenn. June–August.

*Sch. uninata* Willd. Near Brownsville, West Tenn. August.

*Desmanthus brachylobus* Benth. Very frequent in the cedar glades. July.

### ROSACEÆ.

*Prunus Americana* L. Shrub or tree, common in rich and poor lands. March.

*P. Chickasaw* Michx. Forming small thickets of circular outline, oldest in the center, young ones on the outskirts; also in fence-corners, etc. March.

*P. Chickasaw-Americana*. Popularly known as “Wild Goose Plum.” Frequent in Middle Tenn.

*P. spinosa* L. Apparently introduced and cultivated on Hillsborough pike, twelve miles west of Nashville. April.

*P. Virginiana* L. Mountains of East Tenn., especially on the higher ones. May.

*P. serotina* Ehrh. In rich uplands over the State. June.

*P. Pennsylvanica* L. Mountainous districts and high ridges of East Tenn. On Clingman-Dom, 5000', occurs a variety with narrow lanceolate leaves. May–June.

*P. Persica* Benth. & Hooker. The peach is often found wild in woods and hedges. March–April.

*Neillia opulifolia* L. Rocky river banks, mouth of Mill creek, near Nashville. May.

*Spiræa Arunens* L. Rich, moist woodlands here and there. June.

*S. tomentosa* L. In swampy regions of the highlands (Fountainhead, Sumner Co.). July.

*Gillenia trifoliata* Moench. Rich woods, especially in the eastern part of the State. July.

*G. stipulacea* Nutt. Rich woods, hills vicinity of Nashville. June-July.

*Agrimonia Eupatoria* L. Common. July-September.

*A. parviflora* Ait. Prevalent in Middle Tenn., and very abundant. July-August.

*Geum album* Smel. Borders of woods over the State. May-July-August.

*G. vernum* Torr. & Gray. Common. March-April.

*G. geniculatum* Michx. High Mts. of East Tenn. Roane Mt. Prof. Chickering. August.

*G. radiatum* Michx. Roane Mt. Prof. Chickering.

*Waldsteinia fragarioides* Tratt. Mountains of East Tenn., Ocoee valley. June-July.

*Potentilla Canadensis* L. Dry, barren fields. May-July.

*P. supina* L. Near Hickman and Johnsonville, West Tenn. Moist ground. July-August.

*P. tridentata* Ait. Summit of Little Frog Mt., East Tenn.

*Fragaria Virginiana* Duchesne. Borders of woods, etc. March-April.

var. *Illinoensis* Gray. In the cedar glades of Middle Tenn. April-May.

*F. vesca* L. Open woodlands and rocky places.

*F. Indica* L. Adv. Old graveyard, Nashville. May-June.

*Rubus odoratus* L. Higher Mts. of East Tenn. and the adjoining gorges; along Ocoee river, above Parksville; Big Frog Mt. June.

*R. Canadensis* L. Over the State, but more frequently in the Cumberland and Alleghany Mts. May.

*R. occidentalis* L. Hillsides and woodlands. July.

*R. strigosus* Michx. Woods and copses. More common around Nashville than the former. June.

*R. villosus* Ait. Fence-rows and waste grounds. June.

var. *frondosus* Gray and

var. *humifusus* Gray are frequently met with; also the

variety with white fruit occurs here and there. (Cleveland, East Tenn.)

*R. cuneifolius* Pursh. In sandy and siliceous soils.

*R. trivialis* Michx. Sandy soils, common. April–May.

*R. hispidus* L. Wet and swampy localities; highlands and Mts. June.

*Rosa Carolina* L. Low grounds and river swamps; Nashville, etc. June–July.

*R. humilis* Marsh. Rocky river banks and cedar glades. May.

*R. setigera* Michx., var. *tomentosa* Torr. & Gray. Abundant in the barrens of Middle Tenn. May.

*R. rubiginosa* L. Roadsides and old fields. June.

*R. bracteata* Wendel. Old homesteads and hedges; Nolinsville pike, six miles from Nashville. June–July.

*R. pimpinellifolia* L. Introduced by early settlers; confined to old homesteads. July. (Col. Prosser's farm).

*R. canina* L. is credited to East Tenn., but has never been found by me.

*Crataegus coccinea* L. From the summit of the Smoky Mts. to the lowlands of West Tenn. April.

*C. cordata* Ait. Rocky glades around Nashville. May.

*C. Cras Galli* L. Common. May.

var. *ovalifolia* Lindl. With the former. May.

*C. flava* Ait., var. *pubescens* Gray. Copses, Middle Tenn. April.

*C. Pyracantha* Pers. Low meadow near Hydt's ferry. May.

*C. subvillosa* Schrader. Low tree or shrub, attaining a trunk of diameter of 18'. Vicinity of Nashville, in rich soil. April.

*C. tomentosa* L.

var. *pyrifolia* Gray. Thickets around Nashville.

var. *punctata* Jacq. With the former. April–May.

*Pyrus Americana* DC. Summit of Smoky Mts. Clingman-Dom, 6000'. July.

*P. sambucifolia* Chevn. & Schlecht. Cultivated in a garden in Winchester, Franklin Co. Not in the mountains!

*P. angustifolia* Ait. Middle and East Tenn. Bon Air, Dickson Co. April.

*P. arbutifolia* L. Mountain bogs, Cumberland and Alleghannies. May.

var. *melanocarpa* Elliot. Laurel thickets, Sewanee. May.

**P. Coronaria** L. Harpeth hills, near Judge John M. Lee's farm, at the foot of the hills. March-April.

*Amelanchier Canadensis* Torr. & Gray. From the high mountains to the valleys of Tennessee river. April.

var. **Botryapium** Willd. Swamps of West and Middle Tenn. April-May.

#### SAXIFRAGACEÆ.

**Ribes Cynosbati** L. At the edge of a cedar glade near Forsterville.

*R. rotundifolium* Michx. Summit of Roane and Smoky Mts. June.

*Itea Virginica* L. Mts. of East Tenn. and cypress swamps of West Tenn. July.

**Hydrangea arborescens** L. Bluffs along Cumberland and other streams. June-July.

var. *cordata* Torr. & Gray. Banks of Ocoee river, above Parksville, East Tenn. July.

**H. radiata** Walter. Cataract at Tullahoma; Cumberland Mts., above Sewanee; summit of Lookout Mt. June-July.

*Decumaria barbara* L. Rocks along Ocoee river. June.

**Philadelphus hirsutus** Nutt. Cliffs on Cumberland river; ascent of ridge at Baker's station. May.

*Parnassia Caroliniana* Michx. Cumberland and Alleghany Mts. May-June.

*P. asarifolia* Vent. Big Frog Mt., East Tenn.

*Astilbe decandra* Don. Damp woods, especially in the mountains. July.

**Saxifraga Virginiensis** Michx. From the mountains to West Tenn. March-April.

*S. Careyana* Gray. Roane Mt. Prof. Chickering, Wm. Canby. July-August.

*S. erosa* Pursh. Bed of Wolf creek and adjoining Bench Mt.; Roane Mt. Chickering.

*S. leucanthemifolia*. Roane Mt. Chickering. Big Frog Mt.

*Boykinia aconitifolia* Nutt. Smoky Mts. July.

*Heuchera Americana* L. Vicinity of Nashville. May.

*H. villosa* Michx. Mts. of East Tenn.; Cumberland Mts.; Cliffs on Cumberland and highlands of Middle Tenn. Varies in size of flowers, outline and pubescence of leaves.

*Mitella diphylla* L. Shady glens in moist ground, valleys and Mts. of Cumberland and Alleghanies. June.

*Chrysosplenium Americanum* Schwein. Moist, shady ground along Ocoee river; near Mundi's bluff. April.

#### CRASSULACEÆ.

*Sedum Neri* Gray. On argillaceous shists and siliceous conglomerate, Parksville, Polk Co. May.

*S. pulchellum* Michx. Covering large tracts of open, rocky glades in Middle Tenn. May.

*S. Rhodiola* DC. Roane Mt. Chickering.

*S. telephioides* Michx. Mts. of East Tenn. Chickering.

*S. ternatum* Michx. Shady, rocky places over the State. April-May.

*Diamorpha pusilla* Nutt. High rocky places in the vicinity of Sewanee and on Lookout Mt. May.

*Penthorum sedoides* L. Ditches and pools. Common. July-October.

#### HAMAMELIACEÆ.

*Hamamelis Virginia* L. Shrub, flowering often in midwinter. On the summit of Big Thunderhead I found it a low tree of twenty-five feet high, with a trunk of eighteen inches diameter (6000').

*Liquidambar Styraciflua* L. Low grounds. May.

#### HALORAGACEÆ.

*Myriophyllum verticillatum* L. Tullahoma creek, Tullahoma.

*Proserpinaca palustris* L. Swampy lands, ditches. May.

*P. pectinacea* Lam. Swamps in the oak barrens, ditches along railroad embankments, etc. May.



## MELASTOMACEÆ.

*Rhexia Virginica* L. Low wet lands. Common. July.

*R. Mariana* L. Low grounds in the oak barrens. June-July.

## LYTHRACEÆ.\*

*Rotala ramosior* Kœhne (*Ammannia humilis* Michx). Borders of ditches and swamps. July-September.

*Ammannia coccinea* Rottbœll. With the former. Has been distributed by me as "*Ammannia latifolia*."

*Peplis diandra* Nutt. (*Ammannia Nuttallii* Gray). Swamps along rivers, etc. July-September.

*Lythrum alatum* Pursh. Borders of springs and rivulets, near Cleveland, East Tenn. July.

*Cuphæa petiolata* Kœhne. (*Cuph. viscosissima* Jacq.) August-September.

*Decodon verticillatus* Ell. (*Nesaea verticillata* H. B. K.). Waters of Barren fork of Caney fork, near Nicholson springs. August.

## ONAGRACEÆ.

*Circæa Lutefiana* L. Moist woodlands. May-June.

*C. alpina* L. Summit of Smoky Mts.; Roane Mt.

*Gaura biennis* L. Cumberland Mts. July-August.

*G. filipes* Spach. Chattanooga, Dr. Engelmann.

*Jussiaea decurrens* DC. Moist meadows, etc. July-August.

*J. repens* L. Swamps in Cockrill's bend, below Nashville. June.

*Epilobium coloratum* Muhlb. Woodlands, common. July-September.

*Oenothera biennis* L. Waste fields. Varies greatly.

var. *grandiflora* is common around Nashville. June-September.

*O. fruticosa* L. O. S. Baker's station, on the ridge. July.

var. *hirsuta* Nutt. In the poor, cherty soils of East Tenn.; Cleveland, Bradley Co. July.

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\*I adopt the revision of Lythraceæ by E. Kœhne, vide *Bot. Gaz.*, vol. x. no. 5.

*C. glauca* Michx. Lookout Mt., Chattanooga. June.

*C. pumila* L. Mts. of East Tenn.; valley of Ocoee river. June. Also at Tullahoma.

*C. sinuata* L. Near Hydt's ferry, Nashville. June.

*C. speciosa* Nutt. Introduced on vacant lots in Nashville. June.

*C. triloba* Nutt. Frequent on pasture lands around Nashville. June-July.

*Ludwigia alternifolia* L. Swampy places. June-July.

*L. hirtella* Raf. Oak barrens at Tullahoma; Paradise ridge. July.

*L. linearis* Walt. Bogs, in the oak barrens and on the highlands. June-September.

*L. palustris* Ell. Ponds and ditches. July-August.

*L. polycarpa* Short & Peter. With the former. June-August.

#### CUCURBITACEÆ.

*Echinocystis lobata*. Torr. & Gray. Tullahoma. July.

*Sicyos angulatus* L. Hedges and thickets. July.

*Melothria pendula* L. Cedar glades and hillsides. July-September.

*Trianosperma Boykinii* Roem. Found by Prof. Lester F. Ward, August, 1877, on the banks of Cumberland, above Nashville. I have never succeeded in finding the plant.

#### PASSIFLORACEÆ.

*Passiflora lutea* L. Thickets, common. June-September.

*P. incarnata* L. Dry soil, cultivated grounds. A bad weed. May-September.

#### CACTACEÆ.

*Opuntia Rafinesquii* Engelm. Sunny exposures in rocky glades. May-June.

#### FICOIDEÆ.

*Mollugo verticillata* L. A weed in fields and on roadsides. May-September.

## UMBELLIFERÆ.

*Hydrocotyle ranunculoides* L. Ditches and swamps along Cumberland river. May.

*H. umbellata* L. Ditches near Hydt's ferry. May.

*Sanicula Canadensis* L. O. S. More prevalent in East Tennessee. June–August.

*S. Marylandica* L. Moist woodlands. June–August.

*Eryngium yuccæfolium* Michx. Dry barrens O. S., but nowhere numerous. July.

*E. prostratum* Nutt. Woods near Brownsville, West Tenn. August.

*Daucus Carota* L. Introduced and rapidly spreading. It grows more luxuriantly in East Tennessee than at home in Europe. June–July.

*Polytenia Nuttallii* DC. Paradise ridge. May.

*Heracleum lanatum* Michx. Big Frog Mt., Polk Co., East Tenn., 4000' alt. June.

*Pastinaca sativa* L. Apparently escaped from market gardens; not met with otherwise.

*Archemora rigida* DC. Rich woodlands. August.

*Angelica Curtisii* Buckl. Roane Mt. Chickering.

*Archangelica hirsuta* Torr. & Gray. Dry barrens; common. June–July.

*Coriandrum sativum* L. Introduced. Around dwellings and gardens, Nashville. June–July.

*Ligusticum actæifolium* Michx. Cumberland Mts., Lookout Mt., Roane Mt. June–July.

*Thaspium barbinode* Nutt. River banks and thickets. May–June.

*Th. aureum* Nutt. Woodlands. Common. June.

*Th. trifoliatum* Gray. With the former. June–July.

*Zizia integerrima* DC. Mountains of East Tenn., especially the higher ones. June–July.

*Bupleurum rotundifolium* L. Dry hills contiguous to the city of Nashville (Fort Naigele); also in the cedar glades on the Lebanon pike. May–June.

*Discopleura capillacea* Nutt. Some specimens on the grounds of the Montgomery-Bell Academy. Introduced.

*D. Nuttalli* DC. Damp woods vicinity of Cleveland. East Tenn. July.

*Cicuta maculata* L. Along streams. July.

*Cryptozenia Canadensis* DC. Common in low, damp woods. June-September.

*Chacrophyllum Tainturieri* Hooker. Very abundant in Middle Tenn. April-May.

*Ch. procumbens* L. Rich, moist woods, Nashville. April.

*Osmorrhiza longistylis* DC. Rich woodlands. May-June.

*Eulophus Americannus* Nutt. Thickets along Charlotte pike; also on Murfreesborough pike. May-June.

*Erigenia bulbosa* Nutt. Rich woodlands. Common. March-April.

#### ARALIACEÆ.

*Aralia spinosa* L. Very copious in the glades of Middle Tenn. July.

*A. racemosa* L. Highlands of Middle Tenn.; hills along Charlotte pike, twelve miles north of Nashville. June.

*A. hispida* Michx. Mountains of East Tenn.; Ducktown. June.

*A. nudicaulis* L. Cumberland Mts., near Sewanee. June-July.

*A. quinquefolia* Decaisne & Planchon. Rich woods over the State, but everywhere rare. Harpeth hills, near Nashville. July.

#### CORNACEÆ.

*Cornus florida* L. In all localities. March-April.

*C. alternifolia* L. East Tenn.

*C. stolonifera* Michx. Banks of rivers and streams. May.

*C. asperifolia* Michx. Copses and dry ground. May-June.

*C. sericea* L. Wet places. Common. May.

*Nyssa Caroliniana* Poir. Along mountain streams, East Tenn.; Parksville; also Hollow Rock, West Tenn. May.

*X. multiflora* Wanger. O. S., especially in the barrens. April–May.

*X. uniflora* Walt. Swampy lands on Paradise ridge, West Tenn. April.

## CARPRIFOLIACEÆ.

*Sambucus Canadensis* L. Waste places.

*Viburnum Opulus* L. Deserted homesteads. The cultivated variety only.

*V. acerifolium* L. Cumberland and Alleghany Mts. May–June.

*V. lantanoides* Michx. Mountains of East Tenn. July.

*V. nudum* L. Swampy lands in the barrens and in the mountains. May–June.

*V. prunifolium* L. Dry ground. Small tree. May.

*Triosteum perfoliatum* L. Foot of the mountains at Cowan. May–June.

*Symphoricarpos vulgaris* Michx. Rocky ground. A low bush. July.

*Lonicera sempervirens* L. Woods and barrens, climbing high. June–August.

*L. Sullivantii* Gray. Mountains of East Tenn. Vide Gray Flora, vol. 1, 2, p. 17.

*Diervilla trifida* Mæench. Cumberland and Alleghany Mts. June–August.

*D. sessilifolia* Benkley. Summit of Lookout Mt., along brooklets; Lula falls. June–July.

## RUBIACEÆ.

*Houstonia cœrulea* L. Moist, open ground. April–August.

*H. serpyllifolia* Michx. Covering the ground in the high mountains. July.

*H. patens* Ell. Cedar glades, Lavergne. April.

*H. purpurea* L. Woodlands and copses. April–May.

Var. *longifolia* Gray. Barrens

Var. *tenuifolia* Gray. Mountains of East Tenn. July.

*H. angustifolia* Michx. Cedar glades; bluffs on Cumberland river. May–July.

*Oldenlandia Boscii* Chapm. Swamps near Tullahoma. July.  
*Cephalanthus occidentalis* L. Wet places. Common. July–August.

*Mitchella repens* L. Dry woodlands. June–July.

*Spermacoce glabra* Michx. River banks. Very common. August.

*Diodia Virginica* L. Moist meadows; river banks; very frequent about Nashville. June–July.

*D. teres* Walt. Sterile grounds, old fields. Abounds around Nashville. July.

*Galium Aparine* L. Waste grounds. April–May.

*G. virgatum* Nutt. Dry, sterile places in the cedar glades, Lavergne. June.

*G. pilosum* Ait. Dry copses. Common. June–July.

*G. trifidum* L. Swampy meadow lands. July–October.

*G. triflorum* Michx. Dry woodlands; copiously in the cedar barrens. July.

*G. circæzans* Michx. Hills around Nashville to the mountains of East Tenn. June–July.

*G. latifolium* Michx. High mountains of East Tenn.: Big Frog Mt. July.

*G. lanceolatum* Torr. East Tenn.

*G. Arkansanum* Gray. Johnsonville, West Tenn.

#### VALERIANACEÆ.

*Valerianella radiata* Dufur. Glades and copses. April–May.

*V. Woodsiana* Walp.

Var. *umbilicata* Gray. Glades and pastures. April–May.

Var. *patellaria* Gray. With the former.

#### DIPSACEÆ.

*Dipsacus sylvestris* Mill. Waste grounds. Common. July.

#### COMPOSITE.

*Elephantopus Carolinianus* Willd. Woods. June–July.

*Vernonia Novæboracensis* Willd. Roadsides and open woodlands. August–September.

*V. Baldwinii* Torr. West Tenn. August.

*V. altissima* Nutt. River bottoms. August.

*V. fasciculata* Michx. With the former. Very common. August.

*Eupatorium purpureum* L. Low grounds. Common. August–September.

*E. serotinum* Michx. Waste places in country and towns. September–October.

*E. album* L. Paradise ridge, Robertson Co., East Tenn. July–August.

*E. semiserratum* DC. (*E. parviflorum* Elliott). Barrens at Tullahoma. July–August.

*E. altissimum* L. Dry copses. Copiously on Grany White pike, near Mrs. Cheatham's place. August–September.

*E. rotundifolium* L. Mitchellville, Tullahoma. July–August.

*E. leucolepis* Torr. & Gray. Barrens of Middle Tenn. August–September.

*E. perfoliatum* L. Low grounds. July–September.

*E. incarnatum* Walt. Glades and copses. August–September.

*E. ageratoides* L. Rich woodlands. Over the State. August–September.

*E. aromaticum* L. Barrens at Tullahoma. July.

*E. cælestinum* L. Moist grounds. Common. (*Conoclinium cælestinum* DC.) September.

*Mikania scandens* Willd. Johnsonville. West Tenn. September.

*Kuhnia eupatorioides* L. Common. September.

Var. *corymbulosa* Torr. & Gray. Vicinity of Nashville. September.

*Liatris squarrosa* Willd. Highlands. Greenbrier, Robertson Co. June–July.

*L. scariosa* Willd. Mountains of East Tenn. Lookout Mt. July.

*L. spicata* Willd. Oak barrens of Middle Tenn. to mountains of East Tenn. July.

*L. graminifolia* Pursh. With the former. July.

*Grindelia lanceolata* Nutt. Cedar glades at Lavergne, near the station. July.

*Chrysopsis graminifolia* Nutt. Mountain regions of East Tenn. July.

*Ch. Mariana* Nutt. In sandy soil. Common. June-July.

*Solidago casia* L. Harpeth hills, near Nashville. September.

Var. *paniculata* Gray. With the former. September.

*S. latifolia* L. Rocky banks of Richland creek, near Nashville. August-September.

*S. Curtissii*, var. *pubens*. Roane Mt. J. W. Chickering. August.

*S. monticola* Torr. & Gray. Clingman-Dom of the Smoky Mts. Roane Mt. J. W. Chickering.

*S. bicolor* L. Kingston Springs, Dixon Co., East Tenn. August-September.

*S. glomerata* Michx. Clingman-Dom, 6000'; Roane Mt. J. W. Chickering.

*S. spithamea*, M. A. Curtis; Roane Mt., J. W. Chickering. August.

*S. odora* Ait. Barrens and highlands. July.

*S. speciosa* Nutt. Highlands, Greenbrier; glades at Lavergne. August-September.

Var. *angustata* Torr. & Gray. Common in siliceous soils. August-September.

*S. rugosa* Mill. Highlands and barrens. August-September.

*S. ulmifolia* Mühlb. With the former. August-September.

*S. arguta* Ait. Lookout Mt.; Ocoee region. August-September.

*S. juncea* Ait. Oak barrens and woodlands. August-September.



\**S. Gattingeri* Chapm. no. sp. In the cedar glades, near railroad station at Lavergne, Rutherford Co. August–September.

*S. serotina* Ait. Fields and fence-rows. September.

Var. *gigantea* Gray. With the former.

*S. Canadensis* L. Fields and river banks. Very abundant. September.

Var. *procera* Torr. & Gray. Low, moist meadow lands. September–October.

*S. patula* Mühlb. Near Cranberry Iron Works, East Tenn. September. Mrs. E. I. Britton.

*S. Shortii* Torr & Gray. Barrens at Tullahoma. Abundant, with *S. juncea*. August. Also Bon Air, Dickson Co.

*S. nemoralis* Ait. Abundant in all glades and barrens. August–September.

*S. corymbosa* Ell. Bon Aqua station, Dickson Co., Tullahoma. August–September.

*S. lanceolata* L. Highlands. Fountainhead, Robertson Co. August.

*S. rupestris* Raf. Cliffs facing Cumberland river. August.

*Brachychæta cordata* Torr. & Gray. O. S. September.

*Bellis integrifolia* Michx. Copses and barrens. July.

*Boltonia asteroides* L'Her. In a low meadow near Hydt's Ferry, Nashville. September.

*B. diffusa* Elliott. In wet, sandy soil. Paradise ridge, Tullahoma. July.

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\* *Solidago Gattingeri* Chapm. ined. Slender, upright, 2–4 feet high; branches and inflorescence perfectly smooth and glabrous: leaves ciliolate; lower cauline and radical lanceolate-spatulate, appressed serrulate, obviously tripli-nerved; upper cauline mainly entire and without lateral ribs, oblong lanceolate and an inch or so long, and the upper reduced to half or quarter inch, but near the inflorescence very small and bract-like; racemiform clusters of small heads open and spreading, not recurving, disposed to forming a corymbiform very naked panicle: involucrel bracts oblong, very obtuse, yellowish in the dried plant: flowers 15–20 in the head, rays 4–6: akenes appressed-puberulent or the lower part glabrous. *S. Missouriensis*, var. *pumila* Chapm. Fl. Suppl. 627. Between *Missouriensis* and *Shortii* Gray. It occurs in numerous individuals over a couple of acres and is not likely to be a hybrid. The associated species are *S. nemorosa* (very abundant), *S. speciosa*, var. *angustata*, *S. speciosa*, *S. Canadensis*. First collected September, 1869.

*Sericocarpus conyzoides* Nees. Dry, argillaceous soils. July.

*S. solidagineus* Nees. With the former. July.

*Aster paludosus* Ait. Moist ground in the barrens. August–September.

*A. corymbosus* Ait. Mountain districts. Sewanee. July.

*A. Curtisii* Torr. & Gray. Roane Mt. J. W. Chickering. September.

*A. oblongifolius* Nutt. Banks of Cumberland river. Bluffs along Mill creek, near Nashville. August.

*A. concolor* L. Barrens at Tullahoma. September.

*A. patens* Ait. Highlands. September.

Var. *gracilis* Hooker. With the former. September.

*A. Shortii* Hooker. Rich woodlands in the hills around Nashville. September.

*A. undulatus* L. With the former. August–September. Lookout Mt.

*A. cordifolius* L. Rocky banks on Cumberland river and its tributaries. September.

*A. Drummondii* Sindl. Vicinity of Nashville. September.

*A. sagittifolius* Willd. Wild goose pond, near Mitchellville. September.

*A. macrophyllus* L. Cumberland Mts., near Tracy City. July.

*A. lævis* L. Rocky river banks. Nashville. September.

*A. ericoides* L. Covering old fields and waste places. September–October.

Var. *Rivesii* Gray. A handsome variety, with larger purple flowers. Rocky river banks and glades, near Nashville. September.

Var. *villosus* Torr. & Gray. Occurs with the former on dry, rocky ground.

*A. multiflorus* Ait. Argillaceous and silaceous soils. Highlands. September–October.

*A. dumosus* L. With the preceding. September.

*A. diffusus* Ait. A very variable species, growing in great abundance on muddy river banks and bottoms. August–September.

Var. *horizontalis* Gray. Thickets along Cumberland. September.

Var. *thyrsoides* Gray. Pastures; open grounds. Hydt's Ferry, etc.

Var. *bifrons* Gray. With much larger heads, and long lanceolate acuminate foliage. Shady banks of Cumberland river. September–October.

*A. Tradescanti* L. Replaces in the siliceous soils *aster ericoides* in equal abundance. September–October.

*A. umbellatus* Mill. Highlands, Middle Tenn. September.

*A. infirmus* Michx. (*Diplopappus cornifol.* Darl.) Chillhowee Mts., East Tenn. September. A. H. Curtiss.

*A. linariifolius* L. Mountains of East Tenn. Also highlands of Middle Tenn. Harpeth Hills, near Nashville. September.

*Erigeron Canadensis* L. Common weed. August–September.

*E. divaricatus* Michx. Sandy barrens, Cedar Hill, Robertson Co. August.

*E. bellidifolius* Mühlb. Highlands, and East Tenn. April–May.

*E. Philadelphicus* L. In meadows. May.

*E. annuus* Pers. Dry glades. May–June.

*E. strigosus* Mühlb. Pastures and waste ground. September–October.

*Plinhea camphorata* DC. Low, damp grounds. O. S. July–September.

Var. *Beyrichii* Torr. & Gray. West Tenn.

*Antennaria plantaginifolia* Hawk. Dry copses and hillsides. Common. June.

*Gnaphalium polycephalum* Michx. Open woodlands, etc. July–September.

*G. decurrens* Ives. Highlands. June–August.

*G. uliginosum* L. Swamps along Cumberland Mts., etc

*G. purpureum* L. Common. September.

*Polymnia Canadensis* L. Deep ravines in the Cumberland Mts.; Sewanee. Abundant. July.

Var. *radiata* Gray looks very different and should perhaps be counted as a species. Forsterville, at the edge of a cedar barren; Cockrill's bend, in a dry barren; near Nashville. July.

*P. Uvedalia* L. Rich woodlands. Abundant about Nashville. July–August.

**Silphium perfoliatum** L. On Brown's creek, three miles from Nashville. August.

\**S. brachiatum* Gattinger. First collected July, 1867, on the foot of Cumberland Mts., near Cowan, Tenn.

**S. integrifolium** Michx. Highlands: Charlotte pike; Davidson's place, near Nashville. July.

*S. scaberrimum* Elliott. Barrens at Tullahoma. July.

**S. Asteriscus** L. Craggie Hope, Cheatham Co., near railroad. July.

Var. *levicante* DC. Barrens at Tullahoma. August.

**S. trifoliatum** L. Copses around Nashville. Frequent. July.

*S. compositum* Michx. Western declivities of Chilhowee Mts. and in the hills on Chestnut, East Tenn. July.

**S. terebinthinaceum** Jacq., var. *pinnatifidum* Gray. Barrens at Lavergne, Tenn. June-July.

*S. laciniatum* L. Apparently rare in this State. East Tenn.

*Chrysogonum Virginianum* L. Thickets in the mountains at Ducktown. April.

**Parthenium integrifolium** L. Dry ground. Common. July.

*Inula Helenium* L. Sweetwater East Tenn. July.

*Ambrosia bidentata* Michx. Fields and pastures. Brownsville. West Tenn. August.

**A. trifida** L. Banks of streams and bottom lands. August.

Var. *integrifolia* Torr. & Gray. Is only a depauperate form, always in very poor soil.

\* *Silphium brachiatum* Gattinger, n. sp. Stem 3-5 feet high, square or subangular, with the brachiated, thin, roundish and nearly leafless flowering branches smooth and glaucous. Leaves opposite, roughened on the upper side, smooth on the lower, except the principal veins, which are slightly hirsute, lower short petioled, deltoid or hastate-lanceolate, irregularly and upwardly dentate, 6-10 inches long, green and glaucous, those on the branches distant, small, sessile, entire; heads long peduncled, small, bracts of the involucre ovate; achenia obovate-orbiculate, narrow winged, slightly notched at the apex. Very distinct. The 1-3 flowered peduncles 3-4 inches long and almost filiform. Involucre little over one-half inch high. Rays rather few, one-half inch long; akenes four lines long.

Collected July 14th, 1867, on the western slope of the Cumberland mountains, a short distance south of the tunnel at Cowan, Tennessee. It is quite numerous on the limestone base of the mountain, and probably extends all along the Chattanooga road towards the Tennessee river. It was, however, not since seen in any other part of the State.

*A. artemisiæfolia* L. Fields and cultivated grounds. The most abundant weed in this region. July.

*Xanthium Canadense* Mill. In rich bottoms it attains sometimes six feet in height. July.

*X. spinosum* L. Towns and railroad depots. Nashville, Knoxville. July.

*Zinnia pauciflora* L. Escaped from gardens. Near Charlotte pike. July.

*Heliopsis laevis* Pers. Highlands and mountains of East Tenn. July.

*Eclipta alba* Hasskarl. River banks and miry places. Common. July–September.

*Echinacea purpurea* Moench. Rich woodlands. More frequent in East Tenn. Whiteside. June–July.

*E. angustifolia* DC. Dry copses, vicinity of Nashville; Cedar glade near Lavergne. July.

*Rudbeckia triloba* L. Thickets. July–August.

Var. *rupestris* Chickering. Roane Mt. Chickering.

*R. hirta* L. Dry copses and barrens. August–September.

*R. fulgida* Ait. Dry woodlands. September.

*R. speciosa* Wendeworth. In the glades. Lavergne. September.

*R. spathulata* Michx. Chilhowee Mt., East Tenn. A. H. Curtiss. September.

*R. bicolor* Nutt. Open, dry barrens, Nashville. Bon Air. September.

*R. laciniata* L. Paradise ridge. Mountains of East Tenn. (Wolf creek.) July.

*Lepachys pinnata* Torr. & Gray. Rocky banks and rich pasture lands. July.

*L. columnaris* Torr. & Gray, var. *pulcherrima* Torr. & Gray. Vicinity of a cotton compress, Nashville. Introduced. July–August.

*Helianthus annuus* L. Escaped from gardens. Not indigenous in Tenn. July–August.

*H. strumosus* L. Cumberland Mt. at Cowan. July.

*H. atrorubens* L. Dry woodlands in siliceous soil. East and Middle Tenn. July.

*H. Schweinitzii* Torr. & Gray. Cowan. August.

*H. mollis* Lam. Barrens of Middle Tenn. Frequent. July-August.

*H. parviflorus* Bernh. Highlands. July-August.

*H. divaricatus* L. Highlands and argillaceous soils generally. July-August.

*H. hirsutus* Raf. Barrens and woodlands. Common. July-August.

*H. decapetalus* L. Mountains of East Tenn.; Paradise ridge. July.

*H. tuberosus* L. Rich bottom lands. Very frequent around Nashville. July-August.

*H. latiflorus* Pers. Brownsville, West Tenn. August-September.

*H. trachelifolius* Willd. Mountains of East Tenn.; Big Frog Mt. July.

*Helianthella tenuifolia* Torr. & Gray. Barrens, two miles east of Tullahoma. July-August.

*Verbesina occidentalis* Walter. Western declivities of Smoky Mts., covering large tracts. July-August.

*V. Virginiae* L. Limestone regions of Middle Tenn. August-September.

*V. helianthoides* Michx. Rich woodlands. August-September.

*Actinomeris squarrosa* Nutt. Moist woodlands. August-September.

*Coreopsis rosca* Nutt. In a little swamp on Potato creek, Copper hill; Ducktown. July.

*C. auriculata* L. Paradise ridge; Greenbrier, Robertson Co. June.

*C. delphinifolia* Lam. East Tenn.

*C. senifolia* Michx. In siliceous soil (gravelly ridges), over the State. July-August.

Var. *stellata* Torr. & Gray. With the former.

*C. tripteris* L. Very abundant. August-September.

- C. verticillata* L. Upper East Tenn. August–September.
- C. trichosperma* Michx. River swamps, Nashville. August–September.
- C. discoidea* Torr. & Gray. River swamps, with the former. August–September.
- Bidens frondosa* L. Moist, low grounds. July–October.
- B. connata* Mühlb. July–October.
- B. cernua* L. Abundant in wet grounds. July–September.
- B. bipinnata* L. Cultivated grounds and barrens. July–August.
- Marshallia lanceolata* Pursh. Vicinity of Memphis. Dr. G. Egeling.
- Galinsoga parviflora* Cav. Cultivated grounds. Mrs. Cheatham's place, Nashville. September–October.
- Helenium nudiflorum* Nutt. Wet, sandy soil; Paradise ridge, Tullahoma. July–August.
- H. tenuifolium* Nutt. Argillaceous, sandy soil, Brownsville, etc. July–August.
- H. parviflorum* Nutt. Cedar glades, Lavergne, etc. July.
- H. autumnale* L. Low, moist places. September.
- Dysodia chrysanthemoides* Lag. Along railroad embankments near Mitchellville. Abundant across the State line in Kentucky. August.
- Anthemis Cotula* L. Waste places. May.
- Achillea Millefolium* L. Roadsides and meadows. August.
- Chrysanthemum Leucanthemum* L. Roadsides and dry pastures. Frequent about Nashville.
- Tanacetum vulgare* L. Escaped from gardens. July–August.
- Artemisia Ludoviciana* Nutt. Roadsides. Infrequent. June–July.
- A. annua* L. Introduced. Now spreading over the State. August–September.
- A. Absinthium* L. Old homesteads and thence escaped into fence-rows. West Tenn. Dr. Chapmann.
- A. biennis* Willd. Very common on the banks of the Ohio at Louisville. West Tenn.

*Senecio Rugelia* Gray. Smoky Mts. Gray Synops., vol. i. 2 p. 383.

*S. aureus* L., var. *obovatus* Torr & Gray. Moist ground in limestone regions. May.

Var. *Balsamitæ* Torr & Gray. Mountains of East Tenn. Ducktown. May.

*S. lobatus* Pers. West Tenn., low grounds. June.

*Cacalia suaveolens* L. Banks of Turnbull creek, near Kingston Springs. July–August.

*C. reniformis* Mühlb. Cumberland and Alleghany Mts. July–August.

*C. atriplicifolia* L. Rich woodlands. July.

*C. tuberosa* Nutt. Wet places in the cedar glades. July–August.

*Erechtites hieracifolia* Raf. Clearings in forests. Common. July.

*Aretium Lappa* L. In towns and on highways. June–July.

*Cnicus lanceolatus* Hoffm. Waste places. July.

*C. altissimus* Willd., var. *filipendulus* Gray. Fence-rows near Lavergne. June–July.

Var. *discolor* Gray. Banks of Cumberland on Rising Sun Bluff, twelve miles below Nashville. September.

*C. muticus* Pursh. Lookout Mt., Chattanooga; also Roane Mt. Chickering. July.

*Onopordon Acanthium* L. Dry pastures around Nashville. July–August.

*Silybum Marianum* Gaert. One specimen found along N. W. Railroad, near Nashville, and foliage brought to me by Mrs. Turner, of Nashville, found near Tracy City.

*Centaurea Cyanus* L. Escapes sometimes from gardens.

*Krigia Virginica* Willd. Sandy soil. Sewanee, Lookout Mt and near Prospect Station, Giles Co. June.

*K. Dandelion* Nutt. Moist woodlands. April–May.

*K. amplexicaulis* Nutt. Rich woodlands. May.

*K. montana* Nutt. High mountains of East Tenn. Roane Mt. Chickering.

*Cichorium Intybus* L. Roadsides. Edgefield. Rare. July.



- Hieracium paniculatum* L. Dry, open woodlands. July.  
*H. venosum* L. With the former.  
*H. scabrum* Michx. Rocky places. July–August.  
*H. Gronovii* L. Frequent in the hills around Nashville. July–August.  
*H. longipilum* Torr. Johnsonville. July.  
*Tragopogon pratensis* L. Mrs. Cheatham's grounds, and vicinity. Nashville. May.  
*Prenanthes crepidinea* Michx. Rich soil. Hills near Nashville. August.  
*P. aspera* Michx. Barrens. July–August.  
*P. serpentaria* Pursh. Barrens of Dixon Co. September.  
 Var. *barbata* Gray. Roane Mt. Chickering. Smoky Mts., Big Thunderhead. July–August.  
*P. altissima* L. Rich woods; highlands. July–September.  
*Taraxacum officinale* Webr. Cultivated lands, everywhere. April–September.  
*Pyrrophappus Carolinianus* DC. Cleveland, East Tenn. West Tenn. July.  
*Lactuca Canadensis* L. Clearings and woodlands. June.  
*L. acuminata* Gray. Bluffs on Cumberland river. September.  
*L. Floridana* Gaert. Rich woodlands. August–September.  
*L. leucophæa* Gray. Thickets along Cumberland river, near Nashville, etc. July.  
*Sonchus oleraceus* L., and  
*S. asper* L. Both in cultivated ground. Common. June–July.

## LOBELIACEÆ.

- Lobelia cardinalis* L. Wet, miry ground. July–September.  
*L. siphilitica* L. Swamps and ditches. July–September.  
*L. puberula* Michx. Highlands. August–September.  
*L. leptostachys* A. DC. Barrens in moist ground. July–August.  
*L. spicata* Lam. Cedar glades. With the former. July.

\**L. Gattingeri* Gray. Cedar glades of Middle Tenn. Rocky banks of Cumberland river. Frequent May-June.

*L. Nuttallii* Roem. & Schult. Mountain swamps. Sewanee. July.

*L. inflata* L. Dry, argillaceous and siliceous soils. August-September.

#### CAMPANULACEÆ.

*Specularia perfoliata* A. DC. Waste ground and roadsides. April-May.

*Campanula aparinoides* Pursh. Mountain swamps and laurel thickets. July-August.

*C. divaricata* Michx. Cumberland and Alleghany Mts. July-August.

*C. Americana* L. Thickets and dry woodlands. August-September.

#### ERICACEÆ.

*Gaylussacia brachycera* Gray. Mountains on Ocoee river. June-July.

*G. frondosa* Torr. & Gray. Mountains of East Tenn. April-May.

*G. resinosa* Torr. & Gray. Highlands. Valley of East Tenn., etc. April-May.

*Vaccinium arboreum* Marsh. Highlands and siliceous soil generally. May.

*V. stamineum* L. Oak barrens and highlands. May-June.

*V. corymbosum* L. Mountains and ridges of East Tenn. Highlands. April-May.

Var. *pallidum* Gray. (*V. Constablei* Gray.) Mountains of East Tenn. June.

\**Lobelia Gattingeri* Gray. Flowers 4-5 lines long, deep blue; stem smooth, weak and branching; leaves thin, sessile, oblong-ovate, obtuse, serrate, the lowest obovate; racemes peduncled, very slender, many-flowered; calyx-tube ovoid, longer than its pedicel, shorter than the linear-subulate entire lobes, the sinuses not appendaged, but slightly callous. The pedicels are sometimes provided with small bracteoles. Plant 6-20 inches high. Regular flowering time first week in May, but some plants are found flowering as late as August. Its home is the limestone basin of Middle Tenn., and prominently moist places in the cedar glades. First collected about 1869, at Lavergne, seventeen miles south of Nashville.

*V. hirsutum* Binkley. High mountains of East Tenn. June–July.

*V. erythrocarpon* Michx. Higher mountains of East Tenn. June–July.

*Epigaea repens* L. Cumberland and Alleghany Mts. March–April.

*Gaultheria procumbens* L. Alleghany Mts., throughout. June.

*Andromeda Mariana* L. Cumberland and Alleghany Mts. April–May.

*A. ligustrina* Mühlb. Smoky Mts. Big Frog Mts. July.

*Oxydendron arboreum* DC. Highlands and siliceous soils. April–May.

*Leucothæa Catesbyi* Gray. Along streams throughout Cumberland and Alleghanies. Common. April–May.

*L. recurva* Gray. With the former. May.

*Kalmia latifolia* L. Mountains of East Tenn., and in Middle Tenn., in siliceous soils. May–June.

*Menziessia globularis* Salisb. High mountains of East Tenn. Roane Mt. Clingman Dome. July.

*Rhododendron arborescens* Torr. Big Frog Mts. June.

*R. viscosum* Torr. Along mountain streams. Ocoee Valley, etc. June.

*R. nudiflorum* Torr. Hills of East and Middle Tenn., in siliceous soils. April.

*R. calendulaceum* Torr. Alleghany and Cumberland Mts.; also here and there in shaded ravines in the valleys. Cave Spring, Roane Co. June.

*R. maximum* L. Common throughout Cumberland and Alleghany Mts. June–July.

*P. Catawbiense* Michx. Only on the highest summits of Smoky Mts. (Clingman Dome) and Roane Mt. June–July.

*Leiophyllum buxifolium* Ell., var. *prostratum* Gray. Summit of Roane Mt.. Chickering. July–August.

*Clethra acuminata* Michx. Throughout Alleghany Mts. July.

*Chimaphila maculata* Pursh. Over the State. June–July.

*Ch. umbellata* Nutt. Sewanee. Tracy City. July.

*Pyrola elliptica* Nutt. Wolf Creek (Bench Mt.). July.

*Monotropa uniflora* L. Hills near Nashville. August.

*M. Hypopitys* L. Oakdale Station, C. South. Railroad, near Wartburg. Cumberland Mts. July.

*Galax aphylla* L. Very frequent in the Alleghany Mts. June-July.

#### PRIMULACEÆ.

*Dodecatheon Meadea* L. The purple flowering variety in East Tenn. All specimens found in the vicinity of Nashville had white flowers. May-June.

*Steironema ciliatum* Raf. Common. June-August.

*S. lanceolatum* Gray. Over the State. June-July.

Var. *angustifolium* Gray. East Tenn., Bradley Co. July.

*Lysimachia Fraseri* Duby. Lookout Mt. Rocks along Ocoee river, Polk Co. June-July.

*L. quadrifolia* L. Woodlands. July.

*L. Nummularia* L. Escaped from gardens. July.

*Anagallis arvensis* L. Railroad embankments. Oakland Station, Robertson Co.

*A. cœrulea* L. Grass plots. Nashville. Introduced. June.

*Samolus Valerandi* L., var. *Americanus* Gray. Muddy river banks and wet places. May-July.

#### SAPOTACEÆ.

*Bumelia lycioides* Gaert. Shrub or small tree in rich soil. Middle Tenn. and lower part of East Tenn. June-July.

#### EBENACEÆ.

*Diospyros Virginiana* L. Common. Medium size tree. June.

#### STYRACEÆ.

*Halesia tetraptera* L. Ocoee district, East Tenn. March-April.

#### OLEACEÆ.

*Fraxinus Americana* L. Over the State. April.

Var. *microcarpa* Gray. Harpeth hills, near Nashville. Supposed to be a hybrid between *F. Americana* and *viridis*.

*F. viridis* Mich. Low, moist ground. April.

*F. pubescens* Lam. Edge of river swamps. April.

*F. quadrangulata* Michx. Hillsides, in rich ground. April.

*Forestiera acuminata* Poir. Close at the water's edge. Cumberland river and tributaries. March.

*F. ligustrina* Poir. Characteristic shrub for the cedar glades of Middle Tenn. July.

*Chionanthus Virginica* L. Along streams, especially in the Alleghany Mts. April.

*Ligustrum vulgare* L. The common Privet, planted in hedges. Seldom perfects its fruits in Middle Tenn. May.

#### APOCYNACEÆ.

*Amsonia Tabernamontana* Walt. (*A. latifolia* Michx., East Tenn., and *Ams. salicifolia* Pursh., Nashville.) Over the State. May-June.

*Vinca minor* L. Introduced. Old graveyards, where it grows luxuriantly, perfecting seeds. Not spreading, however, into neighboring woodlands.

*Apocynum androsæmifolium* L. O. S. June-July.

*A. cannabinum* L. O. S. June-July.

#### ASCLEPIADACEÆ.

*Asclepiodora viridis* Gray. Cedar glades, in dry, sunny places. July-August.

*Asclepias tuberosa* L. Fields and pastures. June-July.

*A. purpurascens* L. Edges of woodlands and copses. June-July.

*A. incarnata* L. River swamps. June-July.

*A. Cornuti* Decaisne. Open grounds. July.

*A. obtusifolia* Michx. Ocoee district, East Tenn. June-July.

*A. phytolaccoides* Pursh. Mountains of East Tenn. July.

*A. variegata* L. Dry uplands. June-July. East Tenn., and vicinity of Nashville.

*A. quadrifolia* L. Oak barrens of Middle Tenn. June-July.

*A. verticillata* L. Frequent in the cedar glades.

*Acerates viridiflora* Ell. Cedar glades, Lavergne. June–July.

*A. longifolia* Ell. Barrens, Tullahoma. July–August.

*Enslenia albida* Nutt. Thickets. Common. July.

*Gonolobus laevis* Michx. Copses vicinity of Nashville. East Tenn.

Var. *macrophyllus* Gray. With the former. July.

*G. obliquus* R. Br. Thickets. Copses near Nashville. June–July.

*G. hirsutus* Michx. Thickets along Cumberland river and Stoner's creek. June–July.

#### LOGANIACEAE.

*Gelsemium sempervirens* Ait. Lookout Mt., East Tenn. Abundant in West Tenn. March–April.

*Spigelia Marilandica* L. Over the State. May–June.

*Polypremum procumbens* L. West Tenn. Brownsville. Dry pastures. April–September.

#### GENTIANEAE.

*Sabbathia brachyata* Elliott. Barrens. June–July.

*S. angularis* Pursh. Pastures, in rich soil. July.

*S. gracilis* Pursh. Barrens at Tullahoma. July.

*Gentiana quinqueflora* Lam. Mountains around Ducktown. August–September.

*G. Saponaria* L. Moist thickets, highlands. September–October.

*G. Andrewsii* Grieseb. Highlands, South Tunnell. August–September.

*G. ochroleuca* Proebl. Barrens and highlands. September.

*Frasera Carolinensis* Walt. East Tenn. Corkills Bend, near Nashville. June.

*Obolaria Virginica* L. Moist woods north of South Tunnell, Sumner Co. April.

*Bartonia tenella* Mühlb. Mountain bogs. Sewanee. July.

## POLEMONIACEÆ.

*Phlox paniculata* L. Over the State, in rich, moist woodlands. June–July.

*P. maculata* L. Similar localities. July–September.

*P. glaberrima* L. Mountains of East Tenn. to Middle Tenn.

Var. *suffruticosa* Gray. Banks of Cumberland river at Nashville. June–July.

*P. amena* Sims. Mountains of East Tenn. and highlands of Middle Tenn.; Mitchellville, etc. May–June.

*P. divaricata* L. Over the State. April–May.

*P. Stellaria* Gray. Cedar glades, Lavergne. May.

*Gilia coronopifolia* Pus. Knobs, east of Athens, East Tenn. Perhaps only escaped from cultivation. July.

*Polemonium reptans* L. Moist woodlands from the mountains to the Mississippi. April–May.

## HYDROPHYLLACEÆ.

*Nemophila microcalyx* Fish. & Mayer. Thickets and ravines. Nashville. April.

*Phacelia bipinnatifida* Michx. Over the State. Shady localities. April–May.

*P. Purshii* Buckley. Very copiously distributed in Middle Tenn. April.

*P. parviflora* Pursh. Rocky glades, vicinity of Nashville. April.

Var. *hirsuta* Gray. With the former.

*Hydrophyllum macrophyllum* Nutt. Wet woodlands. South Tunnel, Sumner Co. June.

*H. Canadense* L. Mountains of East Tenn. July.

*H. appendiculatum* Michx. Frequent in vicinity of Nashville. Rich woodlands and river bluffs. June.

*H. Virginicum* L. Ducktown, East Tenn. June.

*Hydrolea affinis* Gray. Hollowrock. August.

## BORRAGINACEÆ.

*Heliotropium tenellum* Torr. Cedar glades, Middle Tenn. Lavergne. July.

*H. anchlussifolium* Poir. Introduced. Grounds near Mrs. Cheatham's, Nashville. July.

*H. Indicum* L. Low, wet grounds. July–September.

*Cynoglossum officinale* L. Waste grounds. Over the State. May.

*C. Virginicum* L. Rich woodlands. Common. May.

*Echinosperrnum Virginicum* Lehm. Vile weed. Common. June–August.

*E. Lappula* Lehm. Johnsonville. July.

*Mertensia Virginia* DC. Rich, moist soil. Over the State. May.

*Myosotis verna* Nutt. Poor, rocky soil. Common. April.

*Lithospermum arvense* L. Waste places. April.

*L. latifolium* Michx. Highlands; in moist woodlands. South Tenn., Sumner Co. June.

*L. canescens* Lehm. Glades of Middle Tenn. June–July.

*L. angustifolium* Michx. West Tenn., near Hickman. June.

*Onosmodium Carolinianum* DC., var. *molle* Gray. Vicinity of Nashville. April–May.

*Symphytum officinale* L. Introduced by early settlers in Bayer's settlement, Polk Co., East Tenn. July.

#### CONVOLVULACEÆ.

*Ipomœa Ouamoclit* L. Cultivated and frequently spontaneous. July–September.

*I. coccinea* L. Cultivated grounds; very common in corn-fields. July–September.

*I. hederacea* Jacq. Fields and waste places. July–September.

*I. purpurea* Lam. Frequently cultivated and escaping. June–August.

*I. pandurata* Meyer. Copses and river banks. June–September.

*I. lacunosa* L. Fields and waste grounds. July–September.

*Convolvulus spithameus* L. Dry, rocky woods frequent in the Alleghanies. May–September.



*C. sepium* L. Moist alluvial soil. Along Cumberland river. August–September.

*C. arvensis* L. Grass plots, Nashville and vicinity. June–July.

*Evolvulus argentens* Pursh. Dry rocky places in the cedar glades at Lavergne. May–June.

*Cuscuta chlorocarpa* Engelm. Moist thickets on Mill creek, etc. August–September.

*C. arvensis* Beyrich. Open grounds in the glades on Ambrosia. June–July.

*C. tenuiflora* Engelm. Mountains of East Tenn.; Big Frog Mt., Polk Co. July.

*C. Gronovii* Willd. On shrubs and herbaceous plants, over the State. August–September.

*C. rostrata* Shuttleworth. Summit of Thunderhead, on *Solidago glomerata*. July.

*C. compacta* Juss. On *Eupatorium* and other herbaceous plants. Paradise ridge. August–September.

*C. glomerata* Choisy. On low bushes, highlands. July–September.

#### SOLANACEÆ.

*Solanum nigrum* L. Cultivated and uncultivated grounds. May–September.

*S. Dulcamara* L. Escaped from cultivation. Jellico, East Tenn., etc. June–July.

*S. Carolinense* L. Fields and gardens. May–July.

*S. rostratum* Dun. Introduced in Nashville and vicinity and spreading. July–August.

*Physalis angulata* L. Copses and pastures. July.

*P. Philadelphia* Lam. Fields and cultivated grounds. July.

*P. Virginiana* Mill. Cedar glades and woods. Middle Tenn. June–September.

*P. pubescens* L. Sandy banks of rivers. July–September.

*Nicandra physaloides* Gaertn. Fields and gardens. August–September.

*Lycium vulgare* Dun. Roadsides and waste places. July–September.

**Datura Stramonium** L. Waste ground, barn-yards. June-August.

**D. Tatula** L. Roadsides and waste grounds. June-August.

**Nicotiana Tabacum** Don. Escaped from cultivation. July-August.

### SCROPHULARIACEÆ.

**Verbascum Thapsus** L. Fields and pastures. July.

**V. Blattaria** L. Waste grounds. June-July.

*Linaria Canadensis* Dumont. Lookout Mt. June.

**L. vulgaris** Mill. Fields and fence rows. June-July.

**Chelone glabra** L. Wet and swampy places. August-September.

*C. Lyoni* Pursh. Mountain bogs, Alleghanies. August-September.

**Scrophularia nodosa** L., var. **Marilandica** Gray. Moist thickets. Common. June-July.

**Pentstemon lævigatus** Solander, var. **Digitalis** Gray. Over the State. June.

**P. pubescens** Solander. Glades and open rocky places. June-July.

**Mimulus ringens** L. Along streams and wet places. July-August.

**M. alatus** Ait. Wet places, edge of ponds. July-August.

**Conochea multifida** Benth. Sandy, wet ground. Common. July-August.

**Herpestis nigrescens** Benth. Moist places in the barrens. August-September.

**H. rotundifolia** Pursh. Swamps along Cumberland river. June-July.

**Gratiola Floridana** Nutt. East Tenn. and vicinity of Nashville apparently rare. April.

**G. Virginiana** L. Miry and swampy places. Common. June-July, April-May.

*G. ramosa* Walt. Barrens at Tullahoma. July.

**Ilysanthes gratiolooides** Benth. Ditches, and along brooklets. April-September.

- Veronica Virginica* L. Mountains and highlands. July.
- V. Anagallis* L. Springs and brooklets. June–July.
- V. serpyllifolia* L. Cultivated ground. April–May.
- V. peregrina* L. Fields and pastures. April–May.
- Buchnera Americana* L. Oak barrens. July.
- Seymeria tenuifolia* Pursh. Copses near Cleveland, East Tenn. Sandy soil. June–July.
- S. macrophylla* Nutt. Rich alluvial soil. Nashville. July.
- Gerardia pedicularia* L. Barrens and Cumberland Mts. June–July.
- Var. *pectinata* Nutt. Harpeth hills, near Nashville. August.
- G. flava* L. Cumberland and Alleghany Mts., and barrens. June–July.
- G. quercifolia* Pursh. Over the State. July–September.
- G. lævigata* Raf. Alleghany Mts. July.
- G. patula* Chap. Rising Sun bluff on Cumberland river, twelve miles below Nashville. September.
- G. purpurea* L. Over the State. Greenbrier, Robertson Co. July.
- G. tenuifolia* Vahl. Harpeth hills. September.
- Var. *macrophylla* Benth. Barrens. July–September.
- Castilleia coccinea* Spreng. On siliceous and argillaceous soil, East to West Tenn. April–May.
- Schwalbea Americana* Gronov. Tullahoma. June.
- Pedicularis Canadensis* L. Over the State. March–April.
- Melampyrum Americanum* Michx. Smoky Mts. July.

## OROBANCHACEÆ.

- Apyllon uniflorum* Gray. Damp woodlands. Over the State, but not frequent. May.
- Conopholis Americana* Wall. Oak woods. Harpeth hills near Nashville. May.
- Epiphegus Virginiana* Bart. On the roots of beech trees. June–July.

## LENTIBULARIACEÆ.

*Utricularia gibba* L. Pond, summit of Lookout Mt. July.

*U. biflora* Lam. Swamps, West Tenn. July.

## BIGNONIACEÆ.

*Bignonia capreolata* Tourn. Woods, climbing high. April-May.

*Tecoma radicans* Juss. Woods and cultivated grounds. A noxious weed in fields. May-August.

*Catalpa speciosa* Ward. Medium size tree. May.

## PEDALIACEÆ.

*Martynia proboscidea* Glox. River banks and waste places. July-August.

## ACANTHACEÆ.

*Ruellia ciliosa* Pursh. Barrens and roadsides. Over the State. July-August.

*R. strepens* L. Rich soil. June-July.

*Dianthera Americana* L. Slow-flowing streams. July-August.

*Gatesia late-virens* Gray. Lookout Mt. July.

*Dicliptera brachiata* Sprengl. Rich shady grounds. Frequent in vicinity of Nashville. July-August.

## VERBENACEÆ.

*Phryma leptostachya* L. Moist woodlands. Common. July-August.

*Verbena officinalis* L. Roadsides and old fields. East Tenn. July.

*V. urticæfolia* L. Pastures and dry uplands. August-September.

*V. angustifolia* Michx. Dry soil. Everywhere. June-September.

*V. hastata* L. Waste grounds. Not frequent. July.

*V. stricta* Vent. West Tenn. July.

*V. bracteata* Michx. Around dwellings and along roadsides. June–July.

*V. Aubletia* L. Very copious in the glades and barrens. May–June.

*Lippia lanceolata* Michx. Low, moist grounds. August–September.

*Callicarpa Americana* L. Limestone regions of Middle Tenn. July.

#### LABIATÆ.

*Trichostema dichotomum* L. Sandy fields. O. S. July–August.

*Isanthus coeruleus* Michx. Abundant in Middle Tenn. August–September.

*Teucrium Canadense* L. Moist meadows and copses. June–September.

*Collinsonia Canadensis* L. Rich woodlands. July–August.

*Mentha viridis* L. Wet ground near settlements. July.

*M. piperita* L. In streamlets. July–September.

*M. Canadensis* L. Wet places. July–September.

*Lycopus Virginicus* L. Ponds and ditches. August–September.

*L. rubellus* Moench. Swampy lands. August–September.

*L. sinuatus* Ell. Low, swampy grounds. August–September.

*Cunila Mariana* L. Dry hill, siliceous soil. Abundant in East Tenn. July–September.

*Pycnanthemum linifolium* Pursh. Oak and cedar barrens, and highlands. June–July.

*P. lanceolatum* Pursh. Highlands. West Tenn. August–September.

*Pycnanthemum muticum* Pers. Oak barrens. Very frequent at Tullahoma. August–September.

Var. *pilosum* Gray. Dickson Co., West Tenn. July–September.

*P. Tullia* Benth. Lookout Mts.; Harpeth hills, south and west of Nashville. August–September.

*P. incanum* Michx. O. S. July–August.

*P. albescens* Torr. & Gray? Parksville, East Tenn.; also hill-tops south of Nashville. July–August.

*P. montanum* Michx. High mountains of East Tenn.; Big Frog Mt.; Clingman-Dom. July.

*P. linifolium* Pursh. Cedar and oak barrens, and highlands. July–August.

*Calamintha Nepeta* Link. Dry, rocky ground. Common in vicinity of Nashville. July–September.

*C. glabella* Benth. Abundant in the cedar glades. May–June.

*Hedeoma pulegioides* Pers. Dry soil. Common. June–September.

*Salvia lyrata* L. Copses. Common. April–May.

*S. urticæfolia* L. River banks and rich soil. May.

*Monarda didyma* L. Wet places in the high mountains. June–July.

*M. punctata* L. Vicinity of Memphis. Dr. Egeling.

*M. clinopodia* L. Mountains of East Tenn. June–July.

*M. fistulosa* L. Dry copses, fence-rows, etc. Common. August–September.

Var. *mollis* Benth. Hills around Nashville. August–September.

*M. Bradburyana* Beck. Highlands of Middle Tenn. June.

*M. citriodora* Cerv. Grass plots, Montgomery-Bell Academy grounds, in Nashville. Adventive. July.

*Melissa officinalis* L. Escaped from gardens. Nashville. June.

*Blephilia ciliata* Raf. Dry soil. Very common in Middle Tenn. July.

*B. hirsuta* Benth. Moist thickets on Cumberland. Rare in our region, Nashville.

*Lophanthus nepetoides* Benth. Rich soils, thickets and fence-rows, Middle Tenn. August–September.

*L. scrophulariæfolius* Benth. High mountains of East Tenn. July.

*Cedronella cordata* Benth. Highlands. July–August.

*Nepeta Cataria* L. Near dwellings and roadsides. May–June.

- N. Glechoma** Benth. Rich, moist thickets. April–May.
- Scutellaria lateriflora** L. Moist woodlands. July–September.
- S. versicolor** Nutt. Rocky places; hills near Nashville. July–August.
- S. saxatilis* Riddel. Chillhowee Mt., East Tenn. July.
- S. serrata** Andr. Woods, Middle Tenn. July–August.
- S. pilosa** Michx. Hills near Nashville, etc. July–August.  
Var. **hirsuta**. South Tunnel, Sumner Co.
- S. integrifolia** L. Highlands, Cumberland Mts. July–August.
- S. galericulata* L. East Tenn., Ducktown. July–August.
- S. canescens** Nutt. Craggy Hope, hills near Nashville. July–August.
- S. parvula** Michx. Very frequent in the cedar glades. May.  
Var. **mollis** Gray. Dry, rocky places, with the former.
- S. nervosa** Pursh. In swampy woodlands, Sumner Co. July.
- Brunella vulgaris** L. Fields and roadsides. Common. July–September.
- Physostegia Virginica** Benth. Open copses and barrens. June–August.
- Synandra grandiflora** Nutt. Moist woods; John Overton's canebrake, near Nashville. March–April.
- Marrubium vulgare** L. Near dwellings and roadsides. July.
- Perilla ocyroides** L. Escaped from cultivation and spreading. July.
- Leonurus Cardiaea** L. Waste and cultivated grounds. July–August.
- Lamium amplexicaule** L. Common weed in every field or garden. March–April.
- Stachys aspera** Michx. Moist woodlands, etc. June–August.  
Var. **glabra** Gray. Banks of Cumberland near Nashville. August–September.
- S. cordata** Benth. Moist woodlands and rich hillsides. (Hills south of Nashville.) July.
- Betonica officinalis** L. Nashville. Adventive. July.

## PLANTAGINEÆ.

*Plantago cordata* Lam. Rare in Tenn. Swampy ground near Brownsville, West Tenn. April-June.

*P. major* L. Rare. Waste grounds. Adventive. June-August.

*P. Rugelii* Decaisne. Very frequent around dwellings in the open country. June-August.

*P. lanceolata* L. Meadows and waste grounds. Introduced. April-June.

*P. Patagonica* Jacq., var. *aristata* Gray. Along lines of railroad. Tullahoma, Dixon. July.

*P. Virginiaica* L. Over the State. Very plentiful in dry sandy soil.

*P. pusilla* Nutt. Open ground in barrens. April-May. (Mitchellville, Sumner Co.)

*P. heterophylla* Nutt. Barrens at Lavergne, etc. April-May.

## ARISTOLOCHIACEÆ.

*Aristolochia Sipho* L'Hert. Mountains of East Tenn. Cranberry Iron Works. July.

*A. tomentosa* Sims. Banks of Cumberland river, near Nashville. May.

*A. Serpentaria* L. Rich soil in the barrens of Middle Tenn.; also East Tenn. June.

*Asarum Canadense* L. O. S.

*A. arifolium* Michx. Damp woods in the mountains of East Tenn. June.

*A. Virginicum* L. Lookout Mt. Chattanooga.

## NYCTAGINEÆ.

*Oxybaphus albidus* Sweet. Nashville. Bluffs of Mill creek. June.

*O. nyctagineus* Sweet. Guthrie. July, '83.

## PHYTOLACCACEÆ.

*Phytolacca decandra* L. Everywhere. July-September.



## CHENOPODIACEÆ.

*Chenopodium murale* L. Streets of Nashville. June–September.

*C. Botrys* L. Around dwellings. Escaped. September.

*C. album* L. Common. Cultivated ground. September.

*C. urticum* L. Streets of Chattanooga. July.

*C. ambrosioides* L. Brownsville, West Tenn. August.

Var. *anthelminticum* Gray. O. S.

*C. glaucum* L. Brownsville, West Tenn. August.

*C. Boscianum* Moquin. Nashville.

## AMARANTHACEÆ.

*Amaranthus paniculatus* L. Common

Var. *sanguineus* Gray. Cultivated grounds near Nashville.

*A. retroflexus* L. Fields and gardens.

*A. albus* L. Streets of Nashville: rocky places. O. S. September.

*A. spinosus* L. Nashville. O. S. September.

*Iresine celosioides* L. Rich soils along river banks, Nashville. July.

*Montelia tamariscina* Gray. Very abundant in cultivated grounds, Nashville. September–October.

## POLYGONACEÆ.

*Rumex crispus* L. Common. June–July.

*R. Brittanicus* L. Ditches, Nashville. June–July.

*R. obtusifolius* L. Common; ascends to the highest mountains.

*R. verticillatus* L. Swamps along Cumberland and Tennessee rivers. July–August.

*R. Acetosella* L. Pastures. July.

*Polygonum orientale* L. Escaped from gardens. July.

*P. Pennsylvanicum* L. O. S. August.

*P. incarnatum* Ell. River banks. Common near Nashville. July–August.

*P. Persicaria* L. Waste grounds, near water, O. S. June-July.

*P. Hydropiper* L. Ditches, etc. Common in streets, etc. August-September.

*P. acre* H. B. K. Streets of Nashville, etc. July.

*P. hydropiperoides* Michx. River swamps. In water. Common. August-September.

*P. Mühlenbergii* Watson. (*P. amphibium*, var. *terrestre* Gray). River swamps; wild goose pond near Mitchellville. August.

*P. Virginianum* L. Thickets, rich soil. July-August.

*P. aviculare* L. Yards and streets everywhere. June-July.

*P. erectum* L. (*P. aviculare*, var. *erectum* Roth.) In company with the former, on manured grounds. June-July.

*P. tenue* Michx. Cumberland plateau, Sewanee. July.

*P. arifolium* L. Cumberland plateau. September.

*P. sagittatum* L. Swampy grounds O. S. July-October.

*P. Convolvulus* L. Low, damp grounds near Nashville. September.

*P. dumetorum* L., var. *scandens* Gray. O. S. August-September.

*Fagopyrum esculentum* Moench. Sparingly cultivated and escaped to fence rows. Cumberland Mts. July-August.

*Brunnichia cirrhosa* Banks. Grounds of Lunatic Asylum, near Nashville. West Tenn. July-October.

#### LAURACEÆ.

*Sassafras officinale* Nees. O. S. In the river islands it grows to large dimensions. April.

*Lindera Benzoin* Meissner. O. S. In rich soil. March-April.

#### THYMELEACEÆ.

*Dirca palustris* L. Mountain bogs. Cumberland Mts. April.

#### SANTALACEÆ.

*Comandra umbellata* Nutt. In damp soil, oak barrens. Tullahoma. May.

*Pyrolaria oleifera* Gray. Alleghany and Cumberland Mts. Hot Springs, Ducktown.

*Buckleya distichophylla* Torr. Wolf Creek, Carter Co., East Tenn. Lookout Mt.

## LORANTHACEÆ.

*Phoradendron flavescens* Nutt. O. S. On various deciduous trees. March.

## SAURUREÆ.

*Saururus cernuus* L. O. S. In swamps and ditches. June.

## CERATOPHYLLLEÆ.

*Ceratophyllum demersum* L. Swamps along Cumberland river.

## CALLITRICHACEÆ.

*Callitriche Austini* Engelm. Common on mudbanks along river and in moist grounds. Middle Tenn. June.

*C. heterophylla* Pursh. Pools. Nashville. May.

## PODOSTEMACEÆ.

*Podosteman abrotanoides* Nutt. In all mountain brooks and streams of East Tenn. July.

## EUPHORBIACEÆ.

*Euphorbia corollata* L. O. S. Argillaceous soils. July.

*E. commutata* Engelman. Cedar barrens. Middle Tenn. April.

*E. dentata* Michx. Nashville. Very abundant in the cedar glades. May.

*E. humistrata* Engelman. River banks and moist pastures. Nashville. July-August.

*E. hypericifolia* L. Troublesome weed in fields, etc. O. S. July

*E. Ipecacuanhæ* L. West Tenn., near Johnsonville. May.

*E. maculata* L. Waste grounds. O. S. July.

*E. marginata* Pursh. Along railroad near Mitchellville, Robertson Co., Tenn. Abundant about Bowling Green, Ky. July.

*E. obtusata* Pursh. Paradise ridge, thickets on Charlotte pike, near Nashville. May.

*E. serpens* H. B. K. Rocky lands, gardens, near Nashville. Abundant. June–September.

*E. mercurialina* Michx. Vicinity of Nashville, on Stoner's creek, Tunnel hill, also in East Tenn.

*E. Lathyris* L. Close to Tenn. line in N. C. C. Chickering.

*Acalypha Virginica* L. O. S. July–August.

Var. *gracilens* Gray. Nashville.

*A. Caroliniana* Walt. Gardens and fields. O. S. July–August.

*Ricinus communis* L. Escaped from cultivation.

*Stillingia sylvatica* L. Vicinity of Memphis. Dr. G. Ege-ling.

*Tragia urticæfolia* Michx. Cleveland, East Tenn. July.

*T. macrocarpa* Willd. Cedar barrens. Middle Tenn. July.

*Croton capitatus* Michx. Middle and West Tenn. July–September.

*C. monanthogynos* Michx. O. S. July–August.

*C. glandulosus* L. Over the State, but not so common as the preceding. July.

*Crotonopsis linearis* Michx. Cedar barrens of Middle Tenn. Summit of Lookout Mt. July.

*Phyllanthus Carolinensis* Walter. Pastures and glades. O. S. July–August.

*Pachysandra procumbens* Michx. White Bluff, Dickson Co.; South Tunnell, Robertson Co.; Beersheba Springs (Col. Wilkin's), Dr. Hampton's farm, Davidson Co. March–June.

#### URTICACEÆ.

*Ulmus fulva* Michx. O. S. March.

*U. Americana* L. O. S. March.

*U. racemosa* Thomas. Frequent in the vicinity of Nashville. April.

*U. alata* Michx. Frequent in the glades of Middle Tenn. February–March.

*Celtis occidentalis* L. O. S. April–May.

Var. *Mississippiensis*. Much more common and abundant in Middle Tenn. April.

*Morus rubra* L. Along water-courses. O. S. May.

*Maclura aurantiaca* Lindl. Frequently planted for hedges. May.

*Broussonetia papyrifera* Vent. A popular shade tree. Nearly all are male trees, and but few fruit-bearing ones are known in the State. May.

*Planera aquatica* Gmelin. Brownsville, West Tenn. April.

*Urtica gracilis* Ait. East Tenn. April.

*U. dioica* L. Occasionally introduced, not becoming naturalized.

*U. chamædryoides* Pursh. Abundant about Nashville. April.

*Laportea Canadensis* Gaudich. O. S., rich soils. June.

*Pilea pumila* Gray. O. S., damp thickets. August.

*Bœhmeria cylindrica* Willd. O. S. with the former. July.

*Parietaria Pennsylvanica* Mühl. Waste ground; streets of towns. May–June.

*Cannabis sativa* L. Escaping from cultivation into hedges, etc. Not observed indigenous.

*Humulus Lupulus* L. Like the former. Not indigenous. July.

#### PLATANACEÆ.

*Platanus occidentalis* L. Largest in bulk of all our timbers. At water's edge on all creeks and rivers. April.

#### JUGLANDACEÆ.

*Juglans cinerea* L. O. S. along creek and river banks; nowhere in great numbers. May.

*J. nigra* L. O. S. Becoming scarce O. S. May.

*Carya olivæformis* L. Tennessee and Mississippi bottoms in West Tenn. Single trees in Middle Tenn., probably planted by early settlers. Smith's place, Mill creek, near Nashville. May.

*C. microcarpa* Nutt. Lookout Mt., Chattanooga. May.

*C. alba* Nutt. Large tree with scaly bark, O. S. April–May.

*C. sulcata*. Big trees in rich loam O. S. April–May.

*C. tomentosa* Nutt. More prevailing than the other, especially in Middle Tenn. April–May.

*C. porcina* Nutt. Barrens and gravelly ridges. April–May.

*C. amara* Nutt. Low grounds, Nashville, along Cumberland river. April–May.

#### CUPULIFERÆ.

*Quercus alba* L. O. S. April.

*Q. stellata* Wang. (*Q. obtusiloba* Michx.) O. S. April.

*Q. lyrata* Walt. O. S. Frequent in vicinity of Nashville. April.

*Q. macrocarpa* Michx. Low grounds. Nashville. April.

*Q. bicolor* Willd. Low grounds. Nashville and West Tenn. April.

*Q. Michauxii* Nutt. O. S. Rocky hillsides. April–May.

*Q. prinus* L. Hills and mountains of East and Middle Tenn. April.

*Q. Mühlenbergii* Engelm. Common in Middle Tenn. April.

*Q. coccinea* Wanger. O. S. April–May.

*Q. tinctoria* Bartr. O. S. April–May.

*Q. rubra* L. O. S. April–May.

*Q. falcata* Michx. O. S. April.

*Q. palustris* Du Roi. Low, wet lands. O. S. May.

*Q. ilicifolia* Wanger. Scattering. O. S. April–May.

*Q. nigra* L. O. S. April–May.

*Q. imbricaria* Michx. Barrens and glades. April–May.

*Q. phellos* L. Low, wet ground in the barrens. April–May.

*Q. aquatica* Castesby. Mountains of East Tenn.; along creeks and barrens of Middle Tenn. April–May.

Our oaks are often difficult to determine. Many transitions or hybrid forms occur.

*Castanea vulgaris* Lam., var. *Americana* DC. O. S. June.

*C. pumila* Michx. Common in East Tenn. June.

*Fagus ferruginea* Ait. O. S. May.

*Carpinus Americana* Michx. From highest mountain summits to the lowlands. April.

*Ostrya Virginica* Willd. Limestone glades. April.

*Corylus Americana* Walt. Rich soils. O. S. April.

*C. rostrata* Ait. Common in the mountains of East Tenn. April.

#### BETULACEÆ.

*Betula lenta* L. Lookout Mt., Alleghanics.

*B. lutea* Michx., fil. Summit of Smoky Mts. July.

*B. nigra* L. O. S. Abundant in West Tenn. April.

*B. papyracea* Ait. O. S. Principally mountains of East Tenn. May.

*Alnus viridis* DC. Mountains of East Tenn.

*A. serrulata* Ait. O. S. March.

#### SALICACEÆ.

*Salix nigra* Marsh. River banks. The form *S. nigra*, var. *Wardi* Bebb., in island of Cumberland at Nashville. April-May.

*S. alba* L. O. S. April.

*S. humilis* Marsh. In the barrens and high mountains. May.

*S. longifolia* Mühlb. West Tenn.

*S. tristis* Ait. Barrens of Middle Tenn. March.

*S. lucida* Mühlb. Mountains of East Tenn.

*S. petiolaris* Smith. Buena Vista ferry road, Nashville. April.

*S. purpurea* L. Introduced and cultivated for basket work.

*S. Babylonica* L. Introduced.

*Populus monilifera* Ait. O. S. March.

*P. heterophylla* L. O. S. March-April.

*P. balsamifera* L., var. *candicans* Gray. Introduced by early settlers in East Tenn. (Balm of Gilead.)

*P. alba* L. Introduced and spreading. March.

*P. dilatata* Ait. Introduced. Short-lived in Middle Tenn.

## ARACEÆ.

*Arisæma triphyllum* Torr. O. S. April-May.

*A. polymorphum* Chapm. Roane Mt. 4-5000 ft. June (in fruit). Legit. J. W. Chickering, Jr.

*A. Dracontium* Schott. Nashville, East Tenn. May.

*Peltandra Virginica* Raf. Cleveland, East Tenn., Capt. Raht's spring branch, and Robertson Co. July.

*Orontium aquaticum* L. Cleveland, East Tenn. With the former.

*Acorus Calamus* L. In an old garden in Nashville, Market street. Said to grow abundantly in the vicinity of Red river, Montgomery Co.

## LEMNACEÆ.

*Lemna perpusilla* Torr. Shelby pond, Nashville. O. S.

*L. trisulca* L. Ponds, West Tenn. Submerged.

*L. minor* L. Ponds O. S.

*Speirodela polyrrhiza* Schleid. O. S.

*Wolffia Columbiana* Karst. Submerged. Pond on Lebanon pike, near Nashville. September.

*W. Brasiliensis* Weddel. Floating. Pond in Lunatic Asylum grounds covered with it. September, 1884.

## TYPHACEÆ.

*Typha angustifolia* L. Near Lavergne, Williamson Co.; Ducktown, East Tenn. Very rare.

*T. latifolia* L. O. S.

*Sparganium simplex* Huds., var. *Nuttalli* Gray. Along Cumberland river, Cleveland, East Tenn. July.

*S. eurycarpum* Englm. East Tenn., Tullahoma creek. July.

*Echinodorus radicans* Englm. Swamps on Cumberland river, above water-works at Nashville. Common. July.

## ALISMACEÆ.

*Sagittaria variabilis* Englm. Ponds and swamps. Common. August-September.

Var. *angustifolia* Englm. Hollow Rock. July-September.



*S. heterophylla* Pursh. With the former. July–September.

*S. graminea* Michx. With the former. August–September.

*Alisma Plantago* L. Var. *Americana* Gray. Common.

#### HYDROCHARIDÆ.

*Vallisneria spiralis* L. Slow-flowing streams. East Tenn. Infrequent. July.

*Anacharis Canadensis* Planchon. Pools above water-works, Nashville, East Tenn., O. S. June.

#### NAIADACEÆ.

*Potamogeton pauciflorus* Pursh. Nashville, also East Tenn. Frequent. July.

*P. Claytonii* Tuckerm. Mountain streams of East Tenn. July.

*P. pusillus* L. Wolf Creek, East Tenn. July.

*P. hybridus* Michx. Tullahoma. July.

*P. natans* L. Wolf river, near Memphis. Dr. Egeling.

*P. perfoliatus* L. Wolf river, vicinity of Memphis. Dr. Egeling.

*Zannichelia palustris* L. In ponds and springs about Nashville. April.

#### ORCHIDACEÆ.

*Orchis spectabilis* L. River bottoms below Nashville. Very rare. April.

*Habenaria integra* Sprengl. Tullahoma; Mitchellville. July.

*H. virescens* Sprengel. Swamps. West Tenn. July.

*H. cristata* R. Br. Sewanee. Cumberland Mts. July–August.

*H. peramœna* Gray. Cedar Hill, Mitchellville, Robertson Co. June.

*H. ciliaris* R. Brown. Edgefield Junction. O. S. June–July.

*H. blephariglottis* Hooker. Tullahoma. August.

*H. tridentata* Hooker. Sewanee; Cumberland Mts. Common. July.

*Goodyera pubescens* R. Br. Mountains of East Tenn. Wolf creek, etc. July.

*Spiranthes simplex* Gray. Hills south of Nashville. Frequent. August.

*S. cernua* Rich. Tullahoma. Barrens. Common. October.

*S. graminea* Lindl. Tullahoma. Barrens. September.

*S. gracilis* Bigl. Mount Olivet Cemetery. Barrens. September.

*Pogonia verticillata* Nutt. Sewanec leg. Gen. Kirby-Smith. May.

*P. ophioglossoides* Nutt. Ducktown. June.

*P. pendula* Lindley. Mitchellville. Wartrace. September.

*P. divaricata* R. Br. Mountains of East Tenn. June.

*Calopogon pulchellus* R. Br. Tullahoma; Parksville. Frequent. July.

*Tipularia discolor* Nutt. Ducktown, Polk Co. August.

*Bletia aphylla* Ruiz & Pavon. Parksville; also in the "Flatwoods," Bradley Co. Always under pines! July.

*Corallorhiza innata* R. Br. Hills south of Nashville; Mitchellville. September.

*C. multiflora* Nutt. O. S. June.

*C. odontorhiza* Nutt. Hills near Nashville. April.

*Cypripedium acaule* Ait. East Tenn. May.

*C. spectabile* Swartz. Ducktown. July.

*C. pubescens* Willd. Rich woods in the mountains. (Look-out Mt.) May.

*C. parviflorum* Cones. Hills near Nashville. May.

#### AMARYLLIDACEÆ.

*Paneratium rotatum* Ker. Low, wet meadow lands. O. S. June.

*Agave Virginica* L. Dry, rocky places. O. S. July-August.

*Hypoxis erecta* L. Frequent in cedar and oak barrens. May.

#### HEMODOURACEÆ.

*Aletris farinosa* L. Over the State, especially oak barrens. May-June.

## IRIDACEÆ.

*Iris versicolor* L. Swamps. Tullahoma, Mitchellville, etc.  
May.

*I. cuprea* Pursh. Swamps. West Tenn. June.

*I. cristata* Ait. O. S. May.

*I. Virginica* L. Tullahoma. Low, wet ground. Abundant.  
June-July.

*I. Germanica* L. Deserted homestead, Charlotte pike, near  
Nashville. April.

*I. hexagona* Walt. Swamp east side of Tennessee river at  
Johnsonville. July.

*Pardanthus Chinensis* Kerr. Over the State. Indigenous.  
July.

*Sisyrinchium anceps* L. Barrens of Middle Tenn. May-  
June.

*S. mucronatum* Michx. East Tenn. May-June.

## DIOSCOREACEÆ.

*Dioscorea villosa* L. Rich woodlands. O. S. April.

## SMILACEÆ.

*Smilax rotundifolia* L. O. S. May.

Var. *quadrangularis* Mühlb. Nashville. September.

*S. glauca* Walter. O. S. Creeping low over fields. May-

*S. Pseudo-China* L. River banks. May.

*S. hispida* Mühlb. Low, damp ground.

*S. herbacea* L. Nashville, in rich, moist ground.

*S. tannifolia* Michx. Nashville. In rich woodlands.

## LILIACEÆ.

*Allium cernuum* Roth. Over the State. July.

*A. Canadense* Kalm. Common. June.

*A. tricoccum* Ait. Rare, apparently. East Tenn., Ducktown.  
July.

*A. mutabile* Michx. Cedar glades, Lavergne. May

*A. sativum* L. Introduced. Grounds of Mrs. Cheatham, and old cemetery, Nashville. June.

*Nothoseor diumstriatum* Kunth. Moist ground; frequent in Middle Tenn. May.

*Camassia Fraseri* Torr. Rich woodlands here and there over the State. April.

*Schœnolirium croceum* Gray. Moist places in the cedar glades, Lavergne. May.

*Convallaria majalis* L. Frog Mts., East Tenn., near Ducktown; also said to occur at Sewanee. May.

*Polygonatum giganteum* Diet. Rich thickets. Common. May.

*P. biflorum* Elliott. With the former. April.

*Smilacina racemosa* Desf. Rich woodlands over the State. May-June.

*Maianthemum Canadense* Desf. Summit of Big Thunderhead, Smoky Mts. June.

*Asparagus officinalis* L. Escaped from cultivation. June.

*Yucca filamentosa* L. Dry, rocky ground O. S. Very frequent in Middle Tenn. May.

*Lilium Grayi* Watson. Summit of Roane Mt. Dr. Gray, Prof. Chickering. July.

*L. superbum* L. In splendid and very numerous specimens on Big Frog Mts., East Tenn. July.

Var. *Carolinianum*. Throughout the mountains. July.

*L. Canadense* L. Paradise ridge, near Nashville. July.

*Erythronium Americanum* Smith. O. S. Harpeth hills, near Nashville. April.

*E. albidum* Nutt. White's Bend, below Nashville; summit of Roane Mt., East Tenn. Carby. April.

*Ornithogalum umbellatum* L. Buchanan's fort on Mill creek, Nashville. Escaped from cultivation. April.

*Uvularia perfoliata* L. South Tunnell, Sumner Co. May.

*U. grandiflora* Smith. Rocky banks of Cumberland, below Hydt's ferry. May.

*Oakesia sessilifolia* S. Watson. Oakland Station, Robertson Co. May.

*Streptopus roseus* Michx. High points of the Smoky Mts.; Big Thunderhead. June.

*Prosartes lanuginosa* Don. Nashville, Sewanee and mountains of East Tenn. May.

*P. maculata* Gray. Mountains of East Tenn.; *vide* Am. Jour. Sc. 2, 45.

*Clintonia umbellata* Torr. Big Frog Mt.; Smoky Mts. June.

*Medeola Virginica* L. Mountains of East Tenn.; Cumberland Mts. May.

*Trillium cernuum* L. Lookout Mt.; Ducktown. May.

*T. sessile* L. Over the State. April.

Var. *Wrayi* S. Watson. Hills near Nashville. April.

*T. erectum* L. Vicinity of Nashville. Rare.

*T. stylosum* Nutt. Memphis. Dr. Egeling.

*T. erythrocarpon* Michx. Ocoee Valley. May.

*Melanthium Virginicum* L. Big Frog Mt. July.

*M. parviflorum* Gray. With the former. July.

*Veratrum viride* Ait. Wolf creek on Bench Mt. June.

*Stenanthium angustifolium* Gray. Chilhowee Mts. July.

*S. robustum* Watson. Wet ground in the barrens, Tullahoma; South Tunnell, Sumner Co.; also mountains of East Tenn. July.

*Amianthium muscætoxicum* Gray. Bogs. Common in East Tenn. May-June.

*Zygadenus angustifolius* Watson. Barrens at Tullahoma. June.

*Chamælorhiza Caroliniana* Willd. Dry woodlands. Over the State. July-August.

*Hemerocallis fulva* L. Escaped.

*H. flava* L. Escaped.

*Muscari botryoides* Mill. Escaped from gardens into fence-rows.

#### PONTEDERACEÆ.

*Pontederia cordata* L. Swamps. East Tenn. Wild-goose pond near Mitchellville, Robertson Co.

*Heteranthera reniformis* Ruiz & Pav. Swamps and ditches. O. S. Nashville; along Cumberland river. August.

*H. limosa* Vahl. With the former in Middle and West Tenn.

*Schollera graminea* Willd. East and West Tenn. Apparently rare in Middle Tenn.

#### COMMELYNACEÆ.

*Commelyna Cayennensis*. Rich wet grounds. Common. Nashville, up and down the river. July.

*C. erecta* L. Shaded river banks. Nashville. August–September.

*C. Virginiaica* L. Copses. O. S. June–July.

Var. *angustifolia* Michx. Cedar barrens. June–July.

*Tradescantia Virginiaica* L. O. S. Rich woodlands. May.

*T. pilosa* Lehm. Rich, shady soil. O. S. July–September.

#### XYRIDACEÆ.

*Xyris Caroliniana* Walt. Mountain meadows and brooks of East Tenn. July.

*X. flexuosa* Mühlb. Swamps in Hadley's bend, near Nashville; low ground in the barrens. August–September.

#### JUNCACEÆ.

*Luzula campestris* DC. O. S. April–May.

*L. pilosa* Willd. Cumberland and Alleghany Mts. May–June.

*Juncus effusus* L. Ponds and ditches, vicinity of Nashville. June.

*J. setaceus* Rostkov. Barrens and mountains of East Tenn. June–July.

*J. tenuis* Willd. Roadsides in damp soil. June.

Var. *secundus* Engelm. Oakland Station, Roberston Co. June.

*J. dichotomus* Ell. O. S. Frequent around Nashville. June.

*J. scirpoides* L., var. *macrostemon* Engelm. Cleveland, East Tenn. July.

*J. buffonius* L. East Tenn. May.

*J. marginatus* Rostk. Mountains of East Tenn. and oak barrens. June.

- J. acuminatus* Michx., and varieties O. S. June–July.  
*J. repens* Michx. Swamps O. S. June–July.  
*J. pelocarpus* E. Meyer. Tullahoma. July.  
*J. leptocaulis* Torr. & Gray. Frequent in the cedar glades, with *Isotes Buttleri* and *Leavenworthias*. May–June.  
*J. brachycarpus* Engelm. Ponds along Cumberland river. June–July.  
*J. articulatus* L. Cleveland, East Tenn. July.  
*J. Canadensis* J. Gay. East Tenn. September.

## CYPERACEÆ.

- Cyperus flavescens* L. Ponds and ditches. July–September.  
*C. diandrus* Torr. With the former. August–September.  
 Var. *castaneus* Torr. With the preceding. September.  
*C. aristatus* Rottb. (*C. inflexus* Mühlb.). Glades and river banks. July.  
*C. Schweinitzii* Torr. East Tenn. July–September.  
*C. Luzulæ* Rottb., var. *umbellulatus* N. L. Britton (*C. vegetus* Pursh.). Damp argillaceous soils. July.  
*C. virens* Michx. West Tenn. Rare. August.  
*C. acuminatus* Torr. & Hooker. Cedar glades. Lavergne. July.  
*C. rotundus* L. Low grounds near Nashville; Horticultural garden. Not frequent. July.  
*C. esculentus* L. (*C. phymatodes* Mühl.). Intrusive weed. July–September.  
 Var. *angustispicatus* N. L. Britton. Swamps along Cumberland river. July–September.  
*C. strigosus* L. (*C. Michauxianus* Schult.). Common in low, damp ground.  
 Var. *robustior* Kunth. River swamps.  
 Var. *capitatus* Boeckl. Sandy river banks.  
 Var. *compositus* N. L. Britton. With the above.  
 Var. *elongatus* N. L. Britton (*C. Michauxianus*, var. *elongatus* Torr.). Banks and islands in Cumberland river.  
 Var. *pygmaeus* n. var. Only 3–4 inches high, resembling *C. Schweinitzii*. McSpadden's bend, near Nashville.

*C. refractus* Engelman. Nashville, July–September. Hol-low Rock, West Tenn., August–September.

*C. erythrorhizos* Mühl. River swamps; 1–4 feet high. August–September.

*C. speciosus* Vahl. (*C. Michauxianus* Torr.). Sandy banks and river swamps. Nashville. September.

*C. ovularis* Torr., var. *robustus*, Baekl. Moist spots in the cedar glades.

Var. *sphaericus* Baekl. With the above.

*C. filiculmis* Vohl. Dry uplands. June–July.

*C. Lancastriensis* Port. Dry, rocky and waste grounds, vicinity of Nashville. July.

*Killingia pumila* Michx. Miry places. June–September.

*Dulichium spathaceum* Pers. Deep river swamps. June–September.

*Hemicarpha subsquarrosa* Nees. Davidson Co.

*Elaecharis obtusa* Schult. Bogs and wet ground. May–July.

*E. Engelmanni* Steudel. Damp places in the barrens. June–July.

*E. palustris* R. Br. Common. June–September.

*E. tenuis* Schultes. Barrens and highlands. July.

*E. acicularis* R. Br. Low, wet places. July–October.

*E. quadrangularis* R. Br. River swamps. July–September.

*E. intermedia* Schult. Frequent. July–August.

*E. compressa* Sullivant. Springy places in calcareous soil. May–June.

*Rhynchospora corniculata* Gray. Swamps. August–September.

*R. cymosa* Nutt. With the above. August–September.

*R. fusca* Roem. & Schult. Mountain bogs. Cumberland Mts. July.

*R. glomerata* Vohl. Bon Air, Tullahoma; Lookout Mt. August.

*R. alba* Vohl. Mountain bogs, Cumberland and Alleghany Mts. July.

*Scleria triglomerata* Vohl. Lookout Mt.; Tullahoma. July.



- S. pauciflora** Mühlb. Lavergne. May-June.  
*Scirpus validus* Vohl. Cleveland, Capt. Raht's place. July.  
*S. debilis* Pursh. Swamps West Tenn. August-September.  
**S. atrovirens** Mühlb. Frequent. July-August.  
*S. fluviatilis* Gray. Ducktown, East Tenn.  
*S. polyphillus* Vohl. Dickson Station. Very common in the mountains. June-July.  
**S. lineatus** Michx. Borders of springs in the glades. June-July.  
*S. cæspitosus* L. Roane Mt., East Tenn. Chickering.  
*Eriophorum Virginicum* L. Cumberland Mts. July.  
*E. polystachyum* L. Ducktown, East Tenn. July.  
*Fimbristylis capillaris* Gray. Sandy places in the mountains. June-July.  
**F. autumnalis** Roem. & Schult. Bogs and ditches. September.  
**F. laxa** Vohl. Cedar glades, Lavergne. July-August.  
*Dichromena latifolia* Baldw. Oak barrens, Middle Tenn.; Tullahoma. Not frequent. August.  
**Carex polytrichoides** Mühlb. Dry hills near Nashville. June.  
**C. Stendelii** Kunth. Highlands.  
*C. teretiusecula* Goodw. Mountains of East Tenn.  
**C. vulpinoidea** Michx. Dry copses, Charlotte pike. Nashville. June.  
**C. cephalophora** Mühlb. Nashville, Kingston Springs. May.  
**C. cephaloidea** Boot. Around Nashville, Paradise ridge. June.  
*C. rosea* Schk. East Tenn. July.  
**C. Mühlenbergii** Schk. Nashville. June-July.  
**C. retroflexa** Mühlb. Nashville. June.  
*C. trisperma* Dew. High mountains of East Tenn., Frog Mt., Big Thunderhead; 6000'. July.  
**C. straminea** Schk. Nashville, Charlotte pike. May.  
*C. crinita* Lam. Cumberland Mts., Whiteside. July.

*C. Shortiana* Dew. Tunnell Hill, Sumner Co., East Tenn. June.

*C. Crawei* Dew. Dry barrens of Middle Tenn., Lavergne Station. June-July.

*C. granularis* Mühlb. Moist meadows, highlands, and in East Tenn. June-July.

*C. grisea* Wahlb. Low grounds adjoining Cumberland river near Nashville. June.

*C. flacosperma* Dew. Moist thickets, vicinity of Nashville; on the ridge. June.

*C. Davisii* Swaegr. Jones' Bend, near Edgefield Junction, edge of a swamp. June.

*C. gracillima* Swaegr. Jones' Bend, border of swamps. June.

*C. aestivalis* M. A. Curtis. Roane Mt. Prof. Chickering. Clingman-Dom. 6000'. July.

*C. virescens* Mühlb. Cumberland Mts., valley of East Tenn. June.

*C. triceps* Michx. Dry glades of Middle Tenn., Lavergne. June.

*C. plantaginea* Lam. Mountains near Ducktown, East Tenn. July.

*C. laxiflora* Lam. Low, wet woodlands and copses around Nashville; highlands of Robertson Co. June.

*C. digitalis* Willd. Low grounds throughout the State. July.

*C. oligocarpa* Schk. Swampy places on the ridge, Sumner Co.; Jones' bend, East Tenn. June.

*C. Emmonsii* Dew. Dry hills near Nashville, in siliceous soil. June-July.

*C. nigro-marginata* Schwarz. Dry copses, vicinity of Nashville. May-June.

*C. miliacea* Mühlb. Ducktown, East Tenn.; perhaps throughout. June.

*C. juncea* Willd. Roane Mt. Prof. Chickering. August.

*C. debilis* Michx. Border of swamps near Mitchellville, Sumner Co. June-July.

*C. tentaculata* Mühlb. Throughout the State. South Tunnel, Edgefield; Shelby pond. June.

*C. intumescens* Rudge. Swamps along Cumberland river; Shelby pond. June.

*C. Grayi* Carey. Swamps of West Tenn. (Humbolt). July.

*C. lupulina* Mühlb. Swamps along Cumberland and on highlands; Shelby pond. May-June.

*C. stenolepis* Torr. River swamps throughout the State. June-July.

*C. squarrosa* L. With the former. June-July.

*C. bullata* Schk. River swamps; Jones' bend. June-July.

### GRAMINEÆ.

*Paspalum fluitans* Kunth. Slow streams. July-September.

*P. distichum* Linn. Low grounds; margin of ponds. September.

*P. setaceum* Michx. (*P. debile* Michx.) Damp, sandy soil in the upland barrens. September.

*P. ciliatifolium* Mühlb. Very common. July-September.

*P. Walterianum* Schult. Low, wet grounds. September.

*P. læve* Michx. Damp ground. Very variable. August-September.

Var. *undulosum*. Oak barrens. Dry situation. (*P. undulosum* Le Conte.)

Var. *angustifolium*. In wet lands. (*P. angustifolium* Le Conte.)

Var. *pilosum* Vasey. Sheets covered with long, soft hairs. Barrens.

Var. *radicans* Vasey. Decumbent, branching at the lower nodes; culms erect,  $2\frac{1}{2}$ -3 feet high; leaves purplish. Swamps at Hollow Rock. September.

*P. dilatatum* Poir. Open grounds and grass plots. August-October.

*Panicum agrostoides* Spreng. Inundated on wet land. Variable. August-November.

*P. anceps* L. Damp soils. Cedar glades, etc. Lavergne. August-October.

*P. capillare* L. Exceedingly abundant. Preferring dry uplands and barrens. I distinguish four distinct varieties.

**Var. *campestre*.** Root leaves forming flat tufts; appressed to the soil, forming tufts. This is the most common form.

**Var. *agreste*.** Stout and very hairy; panicle very large and widely divaricated; forming no tufts. Common. In loose ground, fields and gardens.

\* **Var. *flexile*** Gattinger. Thin, elastic and upright, with smaller panicle and acute flowers. Closely resembles *P. autumnale* Bosc. Characteristic of the cedar glades. July–September.

**Var. *minimum*** Engelman. Dwarf, resembling *P. depauperatum*. Poor, loamy and siliceous soil of the highlands. July–August.

***P. clandestinum* L.** Along the banks of Cumberland river, in the canebrakes; also in East Tenn., in rich bottom lands. July–September.

**Var. *pedunculatum*** Torr. With the former.

***P. colonum* L.** Ponds and ditches around Nashville, Lavergne, etc. September–October.

***P. commutatum*** Schultz. (*P. nervosum* Mühlb.) Woods, rich and loose soil, over the State. May–August.

***P. crus-galli* L.** Ponds and ditches everywhere. July–September.

**Var. *hispidum*** Mühlb.

**Var. *muticum*** Vasey. With the former.

***P. depauperatum*** Mühlb. Dry copses and woodlands. Highlands. May–June.

***P. dichotomum* L.** Over the State, in many varieties.

**Var. *nitidum*** Lam. In the cedar glades.

**Var. *pubescens*.** Woods, etc.

**Var. *barbulatum*** Gray. Highlands, in siliceous soil.

**Var. *sphaerocarpon*** Gray. Earliest in the glades. April–May.

***P. filiforme* L.** Argillaceous and siliceous soils. August–September.

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\* *Panicum capillare* L., var. *flexile* Gattinger, is either one of the forms of *P. capillare*, or an annual variety of *P. autumnale* Bosc., which it resembles greatly, especially in smoothness and form of spikelets. It is very smooth above, with some hairs on the lower part of culm and leaves; culm very slender, panicle rather small, and branches not spreading until the mature spikelets are ready to drop off; leaves linear, gradually attenuate, of a pale green color. It abounds in the cedar glades, and is rarely seen outside of them.

*P. glabrum* Gaudin., var. *Mississippiense* Gattinger. Confined to strong argillaceous soils, and immediately disappearing where calcareous soils commence. Vicinity of Nashville, etc. September–October.

*P. latifolium* L. Thickets, edge of woodlands, appearing early. May–June.

*P. laxiflorum* Lam. Damp, rich woodlands; highlands. July–August.

*P. microcarpon* Mühlb. (*P. multiflorum* Ell.). Rich and moist localities. Not frequent. Ocoee valley, East Tenn.; Craggy Hope, Cheatham Co. July–August. Not to be mistaken for *P. dichotomaerum*, var. *microcarpon*, which appears early in April–May.

*P. proliferum* Lam. Wet lands. Very common. August–October.

Var. *geniculatum* Ell. With the former.

*P. sanguinale* L. Cornfields and roadsides everywhere. September.

*P. scoparium* Mühlb. (*P. pauciflorum* Ell.). Cedar barrens near Lavergne. August–September.

*P. verrucosum* Mühlb. Swampy lands along Cumberland river, Jones' Bend, Mitchellville. September.

*P. virgatum* L. Moist, sandy soil along Cumberland river; highlands and barrens at Tullahoma. July–August.

*Setaria glauca* Beauv. Common. Fields and waste places. August–September.

Var. *laevigata* Chapm. Glades of Middle Tenn. More common than the former.

*S. viridis* Beauv. Fields and roadsides. Frequent. July–September.

*S. verticillata* Beauv. Cultivated lands. Not frequent.

*S. italica* Kunth. Frequently cultivated and escaped. August–September.

*Penicillaria spicata* Kunth. Cultivated and sometimes escaped. July–August.

*Cenchrus tribuloides* L. Sandy banks of Mississippi river. July–August.

*Spartina cynosuroides* Willd. Brownsville, West Tenn. September–October.

*Tripsacum dactyloides* L. West Tenn., near Hickman; also, Nashville, in old graveyard. Large patches. July–August.

*Leersia oryzoides* Swartz. Swamps and banks of creeks. Very common. August–September.

*L. Virginica* Willd. Damp, low ground, in the shade, everywhere. August–September.

*Erianthus alopecuroides* Ell. In places over the State; Oakland Station, Tullahoma, in siliceous soil. August–September.

*E. brevibarbis* Michx. Wild-goose pond near Mitchellville, Sumner Co.; only locality known to me in Middle Tenn. In company with *Arundinaria tecta*. September.

*E. strictus* Baldwin. Old fields near Tullahoma, Cleveland, East Tenn. August–September.

*Danthonia compressa* Aust. Higher mountains of East Tenn. July.

*D. spicata* Beauv. Harpeth hills in poor siliceous soil. June.

*D. sericea* Nutt. In a cedar glade beyond Edgefield Junction, Davidson Co. June–July.

*Cynodon Dactylon* Pers. Sandy banks of the Mississippi river; around dwellings over the State. July.

*Chloris verticillata* Nutt. Garden of Mr. Rath, in Cleveland, East Tenn. Introduced. July.

*Gymnopogon racemosus* Beauv. Barrens east of Tullahoma. July.

*Bouteloua racemosa* Lug. (*B. curtispindula* Gray). Cedar glades. June–July.

*Eleusine Indica* Gaert. Very common in fields and gardens as a common weed. July–August.

*Leptochloa mucronata* Kunth. Common in the cornfields and cultivated grounds of Middle Tenn. July–September.

*Triodia seslerioides* Benth. Over the State in all soils. September–October.

*Eatonia Pennsylvanica* Gray. Copses around Nashville, etc. May.

*E. Dudleyi* Vasey. Highlands. April–May.

*E. obtusata* Gray, var. *laxiflora* Gattinger. Highlands. Very rare. May.

*Eragrostis reptans* Nees. Wet, sandy soil on river banks. September–October.

*E. pœœoides* Beauv. Cultivated ground. Common. August–September. (*Eragrostis Brownei* Nees is indistinguishable from pœœoides, and occurs in the cedar glades. Very common.)

Var. *megastachya*. Cultivated ground. With the former.

*E. Frankii* Meyer. Exceedingly copious in dry lands and glades of Middle Tenn. July–August.

*E. pectinacea*, var. *refracta* Chapm. Common in the cedar glades. July–August.

*E. Purshii* Schrad. Streets of Nashville. In dry and wet soil. Exceedingly frequent. August–September.

*E. tennis* Gray. Harpeth Hills and highlands. July–August.

*E. oxylepis* Torr. Vicinity of Memphis. Dr. G. Egeling.

*Andropogon clandestinus* Hale (*Androp. Elliottii* Chap.). Barrens at Tullahoma. October.

*A. dissitiflorus* Michx. (*A. Virginicus* L.). Common. September–October.

Var. *vaginatus* Chap. With the former.

*A. macrourus* Michx. Sandy old fields. Over the State. September–October.

*A. provincialis* Lam. Edge of roads and fence rows. Common. August–October.

*A. scoparius* Michx. Old fields. September–October.

Var. *multiramea* Hack. Banks of Cumberland. September–October.

*Sorghum Halepense* L. Naturalized in vicinity of Nashville. August–September.

*Chrysopogon avenaceus* Benth. Open barrens. Over the State. July–September.

*Phalaris Canariensis* L. Near dwellings. Introduced. August–September.

*Ph. arundinacea* L. The garden variety, *Ph. arundinacea picta*, sometimes found escaped.

*Anthoxanthum odoratum* L. In meadows, in East Tenn. Naturalized. July.

*Alopecurus pratensis* L. Rare. Sometimes introduced. Flowers early. May.

*A. geniculatus*, var. *aristulatus* Michx. Ponds and ditches. May.

*Aristida dichotoma* L. Common in poor soils. September–October.

*A. gracilis* Elliott. With the former, in argillaceous soils. September–October.

*A. ramosissima* Engelm. Humboldt, West Tenn. September.

*A. purpurascens* Poir. Paradise Ridge, Robertson Co. August–September.

*Stipa arenacea* L. Valley of East Tenn.; Lookout Mt. June.

*Mühlenbergia capillaris* Kunth. Cedar glades, Lavergne. September–October.

*M. diffusa* Schreber. Grass plots, pastures, everywhere. September–October.

*M. Mexicana* Trin. Thickets along river banks, etc. Common throughout. September.

*Mühlenbergia sobolifera* Trin. Rocky woodlands. Harpeth hills, etc. September–October.

*M. sylvatica* Torr. & Gray. Damp woodlands; river bottoms. September–October.

*M. Willdenovii* Trin. With the former, and ascending 6000' in the Frog and Smoky Mts. July–September.

*Brachyelytrum aristatum* Beauv. Dry woodlands, in places. August–September.

*Phleum pratense* L. Naturalized and frequently cultivated. July.

*Sporobolus Indicus* R. Brown. Sandy soil in the Cumberland Mts. and in the oak barrens. July–September.

*S. vaginæflorus* Torr. Dry pastures, Middle Tenn.

Var. *exsertus*. Cedar glades. September–October.

*Agrostis arachnoides* Ell. Argillaceous soil, in the glades and highlands. Kingston Springs; Lavergne. May–June.

*A. canina*, var. *rupestris* Chapm. High mountains of East Tenn.; Roane Mt. Prof. Chickering. July.



**A. perennans** Tuck. Open woodlands. Over the State. July–October.

**A. scabra** Willd. Sandy soils, here and there. June–July.

**A. vulgaris** With. Largely cultivated and indigenous. July.

Var. **alba** L. Dry woodlands. Over the State. July–September.

**Cinna arundinacea** L. Low grounds and bottoms. Variable. A slender form approaching *C. pendula* occurs on Paradise Ridge. August–September.

*Deyeuxia Nuttalliana* Vasey. Hills and mountains of East Tenn. July–September.

*Deschampsia flexuosa* Beauv. Mountains of East Tenn. July–September.

**Holcus lanatus** L. Extensively naturalized and spreading in East Tenn. June–July.

*Trisetum palustre* L. Mountains of East Tenn. Overhanging wet rocks on Ocoee river. July.

**Avena sativa** L. Extensively cultivated, sometimes escaped. June.

**Arrhenatherum avenaceum** Beauv. Clifton pike, beyond Jubilee Hall, Nashville. June.

**Melica nutica** Walt. Over the State, shady hill-sides and ravines. April–May.

**Diarrhena Americana** Beauv. Rich soil amongst rocks, here and there. September–October.

**Uniola latifolia** Michx. Cliffs on Cumberland river and Mill creek. Generally over the State in like localities. June–July.

**U. gracilis** Michx. Damp soil in the oak barrens. July–August.

**Dactylis glomerata** L. Generally cultivated and dispersed from cultivation. Don't seem to be inclined to become thoroughly naturalized like *Holcus lanatus*.

**Poa annua** L. Common in all waste grounds and roadsides. April–May.

**P. compressa** L. Dry meadow lands. Naturalized and spreading. June–July.

**P. flexuosa** Mühlb. Damp ground, edge of ponds, especially in the highlands. June–July.

*P. pratensis* L. Over the State. Cultivated and indigenous. May-June.

*P. sylvestris* Gray. Abundant in all woodlands and copses. May.

*P. trivialis* L. Very easily mistaken for *pratensis*, and therefore frequently overlooked. Cockrill's farm, near Nashville. May-June.

*Glyceria acutiflora* Torr. In a pond, near the water-works at Nashville. June.

*G. aquatica* Sm. var. *Americana* Vasey, (*Glyceria arundinacea* Kunth.). In a small branchlet near Cumberland river, Bell's bend. September.

*G. nervata* Trin. Common over the State in wet meadows. July.

*G. pallida* Trin. In a mountain bog near Ducktown, East Tenn.

*Festuca Myurus* L. Near Lunatic Asylum, Nashville.

*F. tenella* Willd. Poor argillaceous soils; hill-tops south of Nashville. April.

Var. *aristulata* Torr. With the former.

*F. elatior* L. In meadow lands. Introduced and naturalized. June.

*F. Shortii* Vasey. Barrens at Tullahoma. First collected in 1867, but not recognized, and mistaken for *F. elatior*, resembling it in general habits. July.

*F. ovina* L. In the barrens and on cliffs on the Cumberland river. June.

*Bromus ciliatus* L. Woodlands over the State. May-June.

Var *purgans* Gray. With the former.

*B. mollis* L. Cultivated grounds. Not frequent. May.

*B. secalinus* L. Abundant in grain fields. June.

*B. racemosus* L. Fields and pastures. Not so abundant. June.

*B. sterilis* L. Introduced on the grounds of Mr. Washington, Granny White Pike, Nashville. June.

*Lolium perenne* L. Introduced and perhaps spreading. Capitol grounds. May-June.

*L. temulentum* L. From the farm of Mr. Lenoir, near Knoxville. July.

*Agropyrum caninum* R. & S. In cultivated ground. Not frequent. June.

*A. repens* Beauv. Cultivated grounds. Like the former, not very frequent. June.

*Hordeum pratense* Huds. Thin lands. Charlotte pike, near toll-gate. Common. May-June.

*Elymus Canadensis* L. Common over the State. July.

Var. *glaucofolius* Gray. Cedar glades.

*E. striatus* Willd. Over the State. July.

Var. *villosus*. Dry rocky places, with the former.

*E. Virginicus* L. Abundant in Middle Tenn., loving strong limestone soil. June-July.

*Asprella Hystrix* Willd. Rocky glens over the State. June.

*Arundinaria macrosperma* Michx. Along the large streams of the State. April.

*A. tecta* Mühlb. Lookout Mt. Wild goose pond near Mitchellville, Sumner Co. Readily overlooked where it grows intermixed with other vegetation. It grows in the water.

## GYMNOSPERMÆ.

### CONIFERÆ.

*Juniperus Virginiana* L. Red Cedar. Scattered over the State, and forming extensive cedar forests in Middle Tenn. Fl. April.

*Pinus rigida* Miller. Pitch Pine. Cumberland Mts. and mountains of East Tenn. On the spurs of Big Thunderhead, in Carter, it accompanies the following:

*P. pungens* Michx. Table-Mountain Pine. Big Thunderhead. Abundant.

*P. inops* Ait. Jersey or Scrub Pine. Over the State, especially on sterile rocky mountain lands. April-May.

*P. mitis* Michx. Yellow Pine. Cumberland Mts. and East Tenn. April-May.

*P. Strobus* L. White Pine. Cumberland Mts., and especially the shady and moist gorges of the high mountains of East Tenn. May.

*P. Teda* L. Loblolly or Old-Field Pine. Low ground; in sandy soil. Frequent southeast of Cleveland, East Tenn.

*Abies Fraseri* Pursh. Summit of Roane Mt. J. W. Chickering.

*Tsuga Canadensis* Carrière. (*Abies Canadensis* Michx.) Along water-courses in the mountainous parts of East Tenn.

*Taxodium distichum* Rich. Along the western course of the Tennessee river; on Mississippi and its affluents; in West Tenn.; cypress swamps.

#### EQUISETACEÆ.

*Equisetum arvense* L. Moist meadows, East Tenn.; Cave Spring, Roane Co.

*E. robustum* Brown. Sandy banks of Mississippi, West Tenn.

#### FILICES.

*Polypodium vulgare* L. Cumberland and Alleghany Mts.

*P. incanum* Swartz. Throughout the State, on rocks and bark of trees.

*Cheilanthes vestita* Swartz. Bluffs of Cumberland river and Mill creek; also in the cedar glades on the ground and in the mountains of East Tenn.

*C. Alabamensis* Kunze. Bluffs on Cumberland and Mill creek, near Nashville; Knoxville, East Tenn.

*C. tomentosa* Link. Bluffs on Ocoee river at Parksville, East Tenn.

*Pellaea atropurpurea* Link. Dry rocks over the State.

*Pteris aquilina* L. Siliceous soil, dry hills throughout.

*Adiantum pedatum* L. Rich, moist ground throughout.

*Woodwardia angustifolia* Smith. Swamps over the State.

*Scelopendrium vulgare* Smith. Near New Pittsburgh, Cumberland Mts. Not found by myself.

*Camptosurus rhizophyllus* Link. Common.

*Asplenium parvulum* Mart. & Jordan. Shady cliffs over the State.

*A. Bradleyi* D. C. Eaton. Summit of Lookout Mt., East Tenn.

*A. pinnatifidum* Nutt. Cumberland plateau, Lookout Mt.

*A. Trichomanes* L. Siliceous rocks on Ocoee river and over the high mountains of East Tenn.

*A. ebenenum* Ait. Very common.

*A. montanum* Willd. Cumberland and Alleghany Mts.

*A. Ruta-muraria* L. Mountains near Cowan, on sandstone; on limestone rocks near Nashville. Frequent.

*A. angustifolium* Michx. Rich, damp woodlands. Frequent.

*A. thelypteroides* Michx. With the former. Highlands.

*A. Filix-femina* Bernh. Common throughout.

Var *angustum* (*Aspidium angustum* Willd.). With fronds linear-lanceolate. In swamps, West Tenn.

*Phegopteris hexagonoptera* Fée. Highlands of Middle Tenn.

*P. polypodioides* Fée. Mountains of East Tenn.

*Aspidium acrostichoides* Swarz. Throughout.

*A. Novæboracense* Swarz. Moist woods in the barrens of Middle Tenn.

*A. spinulosum* Swarz., var. *intermedium*. Wolf creek, Cocke Co. Summit of Clingman-Dom.

Var. *dilatatum* Gray. Mountains of East Tenn.

*A. Goldianum* Hook. Oak barrens, Tullahoma.

*A. Filix-mas.* Swarz. Reported, not yet found by myself.

*A. marginale* Swarz. Common in the Cumberland and Alleghanies.

*Onoclea sensibilis* L. Edge of river swamps. Common.

Var. *obtusilobata* Torr. Williamson Co.

*Cystopteris fragilis* Bernh. From the mountains to the Mississippi.

*C. bulbifera* Bernh. Cliffs on Richland creek, near Nashville. Cumberland Mts.

*Woodsia obtusa* Torr. Throughout.

*Dicksonia punctilobula* Kunze. High mountains of East Tenn.

*Trichomanes radicans* Swarz. Underneath wet, shelving rocks. Sewanee.

*Lygodium palmatum* Swarz. Cumberland Mts. Very local. Rockland Station.

*Osmunda regalis* L. Swamps, highlands, barrens and mountains.

*O. Claytoniana* L. Cumberland and Alleghany Mts.

*O. cinnamomea* L. Swamps, throughout the State.

#### OPHIOGLOSSIACEÆ.

*Botrychium ternatum* Swarz. Over the State.

*B. Virginicum* Swarz. Over the State.

*Ophioglossum vulgatum* L. Cedar glades, at Lavergne.

#### LYCOPODIACEÆ.

*Lycopodium Selago* L. Roane Mt. Prof. Chickering.

*L. dendroideum* Michx. Wolf creek, Cocke Co.; near Cranberry mines, Johnson Co.

*L. complanatum* L. Cumberland Mts., Sewanee.

*Selaginella rupestris* Sprengel. Dry rocks, along Ocoee river, East Tenn.

*S. apus* Sprengel. Common, throughout.

\* *Isætes Butleri*, var. *immaculata* Engelm. Cedar glades near Lavergne. In moist places.

#### HYDROPTERIDES.

*Azolla Caroliniana* Willd. Swamps near Johnsonville, West Tenn.

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\* *Isotes Butleri* Engelm., var. *immaculata* Engelm. Dioicous, with a subglobose trunk, bright green, rather firm leaf, sometimes as many as sixty, six to nine inches long; sporangium without spots; macrospores 0.40-0.56 mm. in diameter; microspores 0.029-0.031 mm. long, spinulose. On limestone flats; in damp places in the cedar barrens. One mile south-east from the railroad station. June.

SUMMARY.

Number.	ORDERS.	Genera.	Species.	Varieties.	Species and Varieties.	Introduced Plants.	Woody Plants.	Trees.	Nashville Flora.
1	Ranunculaceæ.....	16	40	3	43	2	1	...	32
2	Calycanthaceæ.....	1	2	..	2	..	2	..	1
3	Magnoliaceæ.....	2	5	..	5	1	..	5	2
4	Anonaceæ.....	1	1	..	1	..	..	1	1
5	Menispermæ.....	3	3	..	3	..	1	..	3
6	Berberideæ.....	4	4	..	4	..	..	..	3
7	Nymphaeaceæ.....	5	5	..	5	..	..	..	3
8	Papaveraceæ.....	4	5	..	5	3	..	..	5
9	Fumariaceæ.....	3	6	..	6	..	..	..	2
10	Cruciferae.....	16	34	3	37	10	..	..	30
11	Capparidaceæ.....	2	2	..	2	..	..	..	1
12	Cistaceæ.....	2	6	..	6	..	..	..	5
13	Violaceæ.....	2	12	4	16	1	..	..	12
14	Polygalaceæ.....	1	8	1	9	..	..	..	4
15	Caryophyllaceæ.....	7	21	..	21	5	..	..	16
16	Paronychieæ.....	2	3	..	3	..	..	..	2
17	Portulacaceæ.....	3	5	..	5	2	..	..	4
18	Hypericaceæ.....	3	22	2	24	1	6	..	13
19	Ternstroemiaceæ.....	1	1	..	1	..	1	..	..
20	Malvaceæ.....	7	10	..	10	4	..	..	9
21	Tiliaceæ.....	1	2	..	2	..	..	2	1
22	Linaceæ.....	1	4	..	4	1	..	..	3
23	Geraniaceæ.....	4	8	..	8	..	..	..	6
24	Rutaceæ.....	2	2	..	2	..	2	2	2
25	Simarubææ.....	1	1	..	1	1	..	1	1
26	Meliaceæ.....	2	2	..	2	2	..	2	2
27	Illiciææ.....	2	5	..	5	..	3	2	1
28	Celastrineæ.....	2	3	..	3	..	2	1	2
29	Rhamnaceæ.....	3	4	..	4	..	2	2	3
30	Vitaceæ.....	2	9	..	9	..	8	..	5
31	Sapindaceæ.....	5	11	1	12	1	1	8	9
32	Anacardiaceæ.....	1	6	..	6	..	3	3	5
33	Leguminosæ.....	35	85	3	88	9	3	6	72
34	Rosaceæ.....	14	53	7	60	10	13	16	47
35	Saxifragaceæ.....	12	19	1	20	..	8	..	7
36	Crassulaceæ.....	3	7	..	7	..	..	..	3
37	Hamameliaceæ.....	2	2	..	2	..	1	1	2
38	Haloragææ.....	2	3	..	3	..	..	..	3
39	Melastomaceæ.....	1	2	..	2	..	..	..	1
40	Lythraceæ.....	6	6	..	6	..	..	..	4
41	Onagraceæ.....	6	19	2	21	..	..	..	13

## SUMMARY—Continued.

Number.	ORDERS.	Genera.	Species.	Varieties.	Species and Varieties.	Introduced Plants.	Woody Plants.	Trees.	Nashville Flora.
42	Passifloræ .....	1	2	...	2	...	...	...	2
43	Cucurbitaceæ.....	4	4	...	4	...	...	...	3
44	Cactaceæ.....	1	1	...	1	...	...	...	1
45	Ficoideæ .....	1	1	...	1	...	...	...	1
46	Umbelliferae.....	22	29	...	29	4	...	...	24
47	Araliaceæ.....	1	5	...	5	...	...	...	3
48	Cornaceæ.....	2	8	...	8	...	3	5	6
49	Caprifoliaceæ.....	6	12	...	12	...	7	1	6
50	Rubiaceæ.....	7	20	2	22	...	1	...	16
51	Valerianææ.....	1	2	2	4	...	...	...	3
52	Dipsacææ .....	1	1	...	1	...	...	...	1
53	Compositæ .....	64	202	17	219	17	...	...	173
54	Lobeliaceæ.....	1	8	...	8	...	...	...	7
55	Campanulaceæ.....	2	4	...	4	...	...	...	2
56	Ericaceæ.....	16	32	1	33	...	18	5	9
57	Primulaceæ.....	5	9	1	10	3	1	...	1
58	Sapotaceæ.....	1	1	...	1	...	1	...	1
59	Ebenaceæ.....	1	1	...	1	...	...	1	1
60	Styracææ.....	1	1	...	1	...	...	1	...
61	Oleaceæ.....	3	7	1	8	1	1	7	8
62	Apocynææ.....	3	4	...	4	1	...	...	4
63	Asclepiadææ.....	5	16	1	17	...	...	...	14
64	Loganiaceæ .....	3	3	...	3	...	1	...	1
65	Gentianææ .....	5	10	...	10	...	...	...	7
66	Polemoniaceæ .....	3	8	1	9	...	...	...	8
67	Hydrophyllaceæ.....	4	9	1	10	...	...	...	7
68	Boraginææ .....	8	15	...	15	3	...	...	12
69	Convolvulaceæ.....	4	17	...	17	4	...	...	14
70	Solanææ.....	6	13	...	13	5	...	...	12
71	Scrophulariaceæ.....	20	36	2	38	4	...	...	30
72	Orobanchaceæ.....	3	3	...	3	...	...	...	3
73	Lentibulariaceæ.....	1	2	...	2	...	...	...	...
74	Bignoniaceæ.....	3	3	...	3	...	...	1	3
75	Pedaliaceæ.....	1	1	...	1	...	...	...	1
76	Acanthaceæ.....	4	5	...	5	...	...	...	4
77	Verbenaceæ.....	4	10	...	10	1	...	...	7
78	Labiataæ.....	26	59	5	64	12	...	...	54
79	Plantaginææ.....	1	8	...	8	2	...	...	7
80	Amarantaceæ.....	3	6	1	7	5	...	...	7
81	Chenopodiaceæ.....	1	7	1	8	5	...	...	6
82	Phytolaccaceæ.....	1	1	...	1	...	...	...	1
83	Polygonææ .....	4	23	...	23	7	...	...	21
84	Podostemaceæ.....	1	1	...	1	...	...	...	...
85	Aristolochiaceæ.....	2	6	...	6	...	2	...	3
86	Nyctagineæ.....	1	2	...	2	...	...	...	1
87	Saururææ.....	1	1	...	1	...	...	...	1



## SUMMARY—Continued.

Number.	ORDERS.	Genera.	Species.	Varieties.	Species and Varieties.	Introduced Plants.	Woody Plants.	Trees.	Nashville Flora.
88	Lauraceæ.....	2	2	...	2	...	1	1	2
89	Thymelaeaceæ.....	1	1	...	1	...	1	...	...
90	Santalaceæ.....	3	3	...	3	...	...	3	...
91	Loranthaceæ.....	1	1	...	1	...	...	...	1
92	Euphorbiaceæ.....	9	24	1	25	1	...	...	21
93	Urticaceæ.....	13	18	1	19	3	...	10	16
94	Platanaceæ.....	1	1	...	1	...	...	1	1
95	Juglandaceæ.....	2	9	...	9	...	...	9	8
96	Cupulifere.....	6	25	...	25	...	3	22	21
97	Betulaceæ.....	2	6	...	6	...	1	5	2
98	Salicinæ.....	2	14	...	14	5	7	7	9
99	Callitrichinæ.....	1	2	...	2	...	...	...	2
100	Ceratophyllaceæ.....	1	1	...	1	...	...	...	...
101	Araceæ.....	4	6	...	6	...	...	...	4
102	Lemnaceæ.....	3	6	...	6	...	...	...	4
103	Typhaceæ.....	3	5	...	5	...	...	...	4
104	Natadæ.....	2	7	...	7	...	...	...	3
105	Alismaceæ.....	2	4	1	5	...	...	...	4
106	Hydrocharidææ.....	2	2	...	2	...	...	...	1
107	Orchidaceæ.....	11	28	...	28	...	...	...	15
108	Amaryllidaceæ.....	3	3	...	3	...	...	...	3
109	Hamadoraceæ.....	1	1	...	1	...	...	...	1
110	Iridaceæ.....	3	9	...	9	1	...	...	6
111	Dioscoreæ.....	1	1	...	1	...	...	...	1
112	Smilacææ.....	1	7	...	7	...	...	...	7
113	Liliaceæ.....	29	45	2	47	6	...	...	30
114	Juncaceæ.....	2	16	1	17	...	...	...	10
115	Pontederiaceæ.....	3	4	...	4	...	...	...	3
116	Commelynaceæ.....	2	5	1	6	...	...	...	6
117	Xyridaceæ.....	1	2	...	2	...	...	...	1
118	Cyperaceæ.....	12	85	6	91	...	...	...	65
119	Graminææ.....	53	134	23	157	19	...	...	133
120	Conifere.....	5	10	...	10	...	...	10	2
121	Equisetaceæ.....	1	2	...	2	...	...	...	...
122	Filices.....	18	39	3	42	...	...	...	24
123	Ophiglossiaceæ.....	2	3	...	3	...	...	...	3
124	Lycopodiaceæ.....	3	6	...	6	...	...	...	2
125	Hydropterides.....	1	1	...	1	...	...	...	...

## DIVISIONS.

GROUPS.	Orders.	Genera	Species.	Varieties.	Species and Varieties.	Introduced.	Woody Plants.	Trees.	Nashville Flora
Polypetalæ.....	48	224	499	27	526	57	60	57	380
Gamopetalæ.....	31	213	522	34	556	53	23	16	416
Dichlamidæ.....	79	437	1,021	61	1,082	110	83	73	796
Monochlamidæ.....	21	58	154	4	158	26	15	58	123
Dicotyledones.....	100	495	1,175	65	1,240	136	98	131	919
Monocotylea.....	19	138	370	34	404	26	...	...	301
Gymnospermæ.....	1	5	10	...	10	...	...	10	2
Phænogamia.....	120	638	1,555	99	1,654	162	98	141	1,222
Vascular Cryptog...	5	25	51	3	54	...	...	...	29
Total.....	125	663	1,606	102	1,708	162	98	141	1,251

The total of species and varieties, presently known :

For the State.....1,708

Nashville Flora .....1,251

The actual number of species and varieties for the State comes perhaps near 2,000.

## CORRIGENDA.

The remoteness of the author from the printer has been a great inconvenience in revising and correcting proof sheets. For minor inadvertencies we ask the indulgence of the reader, and correct only the more offensive or misleading ones.

- Page 4, line 22. For Sullivant's read Sillimans.  
 Page 9, line 20. For Triestum read Trisetum.  
 Page 9, line 27. For serpyllifolia read serpyllifolia.  
 Page 16, line 33. For racemosus read racemosus.  
 Page 19, and follow. For Virginiana read Virginiana.  
 Page 21, line 16. For Chilhouewe read Chilhowee.  
 Page 36, line 13. For stuvei read Stuvei.  
 Page 37, line 35. For marsh read marshy.  
 Page 42, line 15. For Rhadiola read Rhodiola.  
 Page 47, line 19. For Sempervirens read sempervirens.  
 Page 47, line 25. For Benkley read Buckley.  
 Page 52, line 19. For Sintl. read Lindl.  
 Page 53, line 22. For Plinhea read Pluchea.  
 Page 53, line 24. For Beyrishii read Beyrichii.  
 Page 53, after E. strigosus transport from below Var. Beyrichii Torr. & Gray.  
 Page 58, line 3. For obovutus read obovatus.  
 Page 66, line 15. For Tenn. read Tunnel  
 Page 77, line 18. For Podosteman read Podostemon.  
 Page 79, after Cannabis sativa L., dele. Not observed indigenous.  
 Page 84, line 9. For ophioglossoides read ophioglossoides.  
 Page 91, line 6. For polyphillus read polyphyllus.  
 Page 95, line 12. For dichotomacrum read dichotomum.

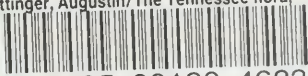


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