

PLANTS OF BOONE COUNTY, KENTUCKY.

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The following is a list of plants collected in that part of Boone County, Kentucky lying along the Ohio River opposite the Indiana counties of Ohio and Switzerland, extending along the river from the town of Grant to the mouth of Gunpowder Creek—some ten miles—and back from the river an average distance of seven miles. The region belongs geologically to the "Cincinnati Uplift," and is very hilly, except in the wide East Bend river-bottom. There is no exposed rock, such as forms the picturesque limestone cliffs farther down the Ohio, except a soft blue shale in deep stream-channels, and some large masses of conglomerate marking the terminal moraine of the Ice Age, which extends inland from the Ohio at "Split Rock," opposite the mouth of Laughery Creek, to a point about three miles west of the town of Union. The flora of this morainic district presents a marked contrast to that of the rest of the county. The region was originally covered with a dense forest of deciduous trees, which have been largely cleared away, leaving a very rich soil, which is rapidly washed away on the steep slopes, so that the prevailing soil is a tough yellow clay mixed with fragments of extremely hard blue fossiliferous limestone. The chief crop is tobacco, which has rapidly exhausted the soil and rendered it in many places sterile and unproductive. These collections were made during the years 1881–1893. I had no assistance in the work except such as was afforded by Gray's Manual, and the determinations represent in nearly every case simply my own unsupported opinion. The nomenclature is that of Gray's Manual, Seventh Edition. In making the determinations I used the Fifth and later the Sixth Edition of this Manual. I am indebted to Mr. Chas. C. Deam of Bluffton, Indiana, for his kindness in looking over the entire list and offering suggestions based on his own wide knowledge of the plants of Indiana. These suggestions I have in every case incorporated in the list. The region lies well within the limits of Gray's Manual, and there was little intrusion of extra-limital species. The Northern collector will note, however, the predominance of Southern types. Noteworthy is the total absence of Ericaceæ proper and Orchidaceæ, and the scanty representation of Umbelliferæ. No attempt was made to determine ferns, grasses and sedges.

POLYPODIACEAE:

Adiantum pedatum L. In rich woods, common.

(Two or three other members of this family occur, but I was unable to determine them.)

OPHIOGLOSSACEAE:

Botrychium virginianum (L.) Sw. Occasional in woods.

EQUISETACEAE:

Equisetum arvense L. Abundant in low ground.

Equisetum hyemale L., var. *robustum* (A. Br.) A. A. Eaton. Low ground, not common.

PINACEAE:

Juniperus virginiana L. Occasional on open hillsides.

TYPHACEAE:

Typha latifolia L. Not common, owing to absence of any large area of marshy ground in the district.

ALISMACEAE:

Sagittaria latifolia Willd. Moist river-shores, infrequent.

GRAMINEAE:

No attempt was made to determine these. The only species that I can positively affirm as growing in the district were:

Andropogon virginicus L. Common in sterile soil.

Panicum capillare L. Abundant in cultivated fields.

Echinochloa Crus-galli (L.) Beauv. Common in barn-yards and waste places.

Digitaria sanguinalis (L.) Scop. Common in door-yards.

Setaria viridis (L.) Beauv. Abundant in fields.

Phleum pratense L. A common escape.

Agrostis alba L. Not cultivated, but common.

Eleusine indica Gaertn. Common in door-yards.

Eragrostis hymnoides (Lam.) BSP. Abundant on river-shores.

Dactylis glomerata L. An occasional escape.

Poa pratensis L. Common in cultivation, and freely escaping.

Elymus virginicus L. Dry, open ground, common.

Hystrix patula Moench. Common in woods.

CYPERACEAE:

Here again nothing was done. The genera *Eleocharis*, *Cyperus*, *Scirpus* and *Carex* were all represented, but not fully, owing to the infrequency of marsh-land. The most characteristic *Carex* was a form with broad evergreen leaves, growing in woods. It evidently belonged to the section *Careyanae*, and I suspect was *C. platyphylla* Carey.

ARACEAE:

- Arisaema triphyllum* (L.) Schott. Common in woods.
Arisaema Dracontium (L.) Schott. With the last, but less common.
Acorus Calamus L. An occasional escape in dry ground.

COMMELINACEAE:

- Tradescantia virginica* L. Common in meadows.

JUNCACEAE:

- Juncus bufonius* L. Common along streams.
Juncus tenuis Willd. Abundant in dry soil.
Juncus effusus L. Less common than the other two.
Luzula campestris L. var. *multiflora* (Ehrh.) Celak. Occasional in woods.

LILIACEAE:

- Uvularia grandiflora* Sm. Rich woods, not infrequent.
Allium canadense L. Occasional in dry, stony ground.
Hemerocallis fulva L. A common escape.
Lilium canadense L. Very rare.
Erythronium americanum Ker. Rich woods, not common.
Erythronium albidum Nutt. With the last, but much more common.
 Rarely flowers.
Camassia esculenta (Ker) Robinson. Not common.
Ornithogalum umbellatum L. An occasional escape.
Asparagus officinalis L. Escaped to roadsides and meadows.
Smilacina racemosa (L.) Desf. Common in woods.
Polygonatum biflorum (Walt.) Ell. Common in woods.
Polygonatum commutatum (R. & S.) Dietr. Common in woods and grass-land.
Trillium sessile L. Very common in rich woods.
Trillium erectum L. With the last, but less common.
Smilax herbacea L. Occasional in woods.
Smilax rotundifolia L. Common in thickets.
Smilax glauca Walt. In thickets, scarce.
Smilax hispida Muhl. Rich woods, rare.

DIOSCOREACEAE:

- Dioscorea villosa* L. Common in thickets.

IRIDACEAE:

- Sisyrinchium angustifolium* Mill. Common in meadows.

SALICACEAE:

- Salix nigra* Marsh. Abundant on river-shores.
Salix alba L. var. *vitellina* (L.) Koch. A frequent escape.
Salix longifolia Muhl. Along streams, rather rare.

Salix discolor Muhl. River-banks, common.

Salix purpurea L. An occasional escape along the river, where it is cultivated for basket-work, etc.

Populus grandidentata Michx. Occasional along streams.

Populus deltoides Marsh. Abundant along the river.

JUGLANDACEAE:

Juglans cinerea L. Rich woods, less common than the next.

Juglans nigra L. Very common throughout.

Carya alba (L.) K. Koch. Rich hillsides, common.

Carya ovata (Mill.) K. Koch. With the last, but less common.

Carya glabra (Mill.) Spach. Open woods.

Carya cordiformis (Wang.) K. Koch. Low woods.

BETULACEAE:

Ostrya virginiana (Mill.) K. Koch. In woods, not infrequent.

Carpinus caroliniana Walt. Common in rich woods.

Alnus rugosu (Du Roi) Spreng. A single specimen on the river-shore.

FAGACEAE:

Fagus grandifolia Ehrh. Very common in rich woods.

Quercus alba L. The commonest species and our largest tree. Some specimens reached a diameter of eight feet.

Quercus macrocarpa Michx. In rocky woods.

Quercus Muhlenbergii Engelm. With the last.

Quercus rubra L. Common on dry hillsides.

Quercus palustris Moench. Low ground, not common.

Quercus velutina Lam. Rich soil, not common.

Quercus imbricaria Michx. At a few stations in the interior.

URTICACEAE:

Ulmus fulva Michx. Rich woods, less common than the next.

Ulmus americana L. Very common.

Celtis occidentalis L. Woods, especially along the river, common.

Cannabis sativa L. Occasional in waste places. Not cultivated.

Humulus Lupulus L. An occasional escape.

Morus rubra L. Rich woods, common.

Urtica gracilis Ait. Common in fence-rows, etc.

Laportea canadensis (L.) Gaud. Rich woods, common.

Pilea pumila (L.) Gray. Rich woods, common.

Boehmeria cylindrica (L.) Sw. Low ground along streams.

Parietaria pennsylvanica Muhl. Shaded banks, common.

LORANTHACEAE:

Phoradendron flavescens (Pursh) Nutt. Common, especially on *Ulmus* and *Gleditsia*.

ARISTOLOCHIACEAE:

Asarum canadense L. Common in rich woods.

Aristolochia Serpentaria L. In wooded districts, rare.

POLYGONACEAE:

Rumex Britannica L. In wet places, rather scarce.

(This probably should be *R. altissimus* Wood. Mr. Deam tells me that *Britannica* occurs in Ind. only in the northern counties, while *altissimus* is common along the Ohio R.)

Rumex crispus L. Abundant in fields and meadows.

Rumex obtusifolius L. Very common about dwellings.

Rumex Acetosella L. Common in poor soil.

Polygonum aviculare L. Abundant in door-yards, etc.

Polygonum erectum L. With the last.

Polygonum amphibium L. Occasional in wet places.

(This species has been found in Ind. by Mr. Deam but twice, while *P. Muhlenbergii* (Meisn.) Wats., which in Gray's 5th Ed. was not separated from *amphibium*, is abundant in the counties along the Ohio, so my report is doubtless an error, and should be changed to *Muhlenbergii*.)

Polygonum Hydropiper L. Wet ground, common.

Polygonum acre HBK. Abundant in waste places.

Polygonum orientale L. An occasional escape about dwellings.

Polygonum virginianum L. Rich thickets, common.

Polygonum sagittatum L. Occasional in low ground.

Polygonum Convolvulus L. Very common in cultivated fields.

Polygonum scandens L. Common in thickets.

CHENOPODIACEAE:

Chenopodium ambrosioides L. Common on river-shores and in waste places.

Chenopodium Botrys L. Sandy soil near the river, never inland.

Chenopodium hybridum L. Infrequent in waste places.

Chenopodium album L. Abundant about dwellings and in fields.

AMARANTHACEAE:

Amaranthus retroflexus L. Very common in cultivated ground.

Amaranthus hybridus L. With the last, but less common.

Amaranthus paniculatus L. Occasional near dwellings.

Amaranthus spinosus L. Waste ground near the river, infrequent.

Acnida tuberculata Moq. River-shores, common.

Acnida tuberculata Moq. var. *subnuda* Wats. With the last.

Acnida tuberculata Moq. var. *prostrata* (Uline & Bray) Robinson.

With the last.

PHYTOLACCACEAE:

Phytolacca decandra L. Rich soil in low grounds, common.

ILLECEBRACEAE:

- Anychiu polygonoides* Raf. Open places, rather scarce.
Anychia canadensis (L.) BSP. Dry woods, common.

AIZOACEAE:

- Mollugo verticillata* L. Sandy river-shores and tobacco-fields, common.

CARYOPHYLLACEAE:

- Stellaria pubera* Michx. Rocky woods, common.
Stellaria media (L.) Cyrill. Abundant about dwellings.
Cerastium vulgatum L. Common in fields and meadows.
Agrostemma Githago L. Common in grain-fields.
Silene antirrhina L. Occasional in cultivated ground.
Silene virginica L. Open woods, rather rare.
Silene stellata (L.) Ait. f. Shaded banks, not infrequent.
Saponaria officinalis L. An occasional escape.

PORTULACACEAE:

- Claytonia virginica* L. Common in woods.
Claytonia caroliniana Michx. With the last, but much less common.
Portulaca oleraceu L. Abundant in cultivated and waste ground.

RANUNCULACEAE:

- Ranunculus sceleratus* L. Wet places, scarce.
Ranunculus abortivus L. Shady places, very common.
Ranunculus recurvatus Poir. In woods, common.
Ranunculus septentrionalis Poir. Moist ground, common.
Thalictrum dioicum L. Rocky woods, common.
Thalictrum polygamum Muhl. River-banks in rich soil.
Anemonella thalictroides (L.) Spach. In woods in early spring, common.
Hepatica acutiloba DC. Only on moraines, where it is common.
Anemone virginiana L. In meadows and fence-rows.
Anemone canadensis L. Low ground, especially in river-bottoms.
Clematis virginiana L. River-banks, not infrequent.
Isopyrum biternatum (Raf.) T. & G. Common in thickets.
Aquilegia canadensis L. Rocky woods, infrequent.
Delphinium tricornis Michx. Meadows and thickets, common.
Cimicifuga racemosa (L.) Nutt. Common in rich woods.
Actaea alba (L.) Mill. Not infrequent in rich woods.
Hydrastis canadensis L. In rich woods, rare.

MAGNOLIACEAE:

- Liriodendron Tulipifera* L. In river-bottoms, becoming scarce.

ANONACEAE:

- Asimina triloba* (L.) Dunal. Thickets and hillsides, common.

MENISPERMACEAE:

Menispermum canadense L. Thickets along streams, common.

BERBERIDACEAE:

Podophyllum peltatum L. Common in rich woods.

Jeffersonia diphylla (L.) Pers. Woods, common.

Caulophyllum thalictroides (L.) Michx. Woods, infrequent.

LAURACEAE:

Sassafras variifolium (Salisb.) Kuntze. In woods, becoming scarce.

Benzoin aestivale (L.) Nees. Damp woods, not rare.

PAPAVERACEAE:

Sanguinaria canadensis L. Open woods, common.

Stylophorum diphyllum (Michx.) Nutt. In rich woods, common locally.

FUMARIACEAE:

Dicentra Cucullaria (L.) Bernh. Common in woods.

Dicentra canadensis (Goldie) Walp. With the last.

Corydalis flavula (Raf.) DC. Rich soil, not uncommon.

CRUCIFERAE:

Lepidium virginicum L. Waste places and fields, common.

Capsella Bursa-pastoris (L.) Medic. Abundant in waste and cultivated ground.

Brassica alba (L.) Boiss. About dwellings, infrequent.

Brassica nigra (L.) Koch. With the last, but much more common.

Sisymbrium officinale (L.) Scop. var. *leiocarpum* DC. Common in fields.

Hesperis matronalis L. A rare escape.

Radicula palustris (L.) Moench. Common on river-shores.

Radicula Armoracia (L.) Robinson. An occasional escape.

Barbarea vulgaris R. Br. Roadsides, infrequent.

Iodanthus pinnatifidus (Michx.) Steud. Rich soil near the river.

Dentaria diphylla Michx. Woods, not common.

Dentaria laciniata Muhl. Very common in woods.

Cardamine bulbosa (Schreb.) BSP. Occasional in wet places.

Cardamine Douglasii (Torr.) Britton. Rich woods in early spring.

Cardamine pennsylvanica Muhl. Damp ground, rather scarce.

Arabis laevigata (Muhl.) Poir. Rocky woods, infrequent.

CAPPARIDACEAE:

Polanisia graveolens Raf. Gravelly river-shores, common.

CRASSULACEAE:

Penthorum sedoides L. Muddy shores, common.

Sedum ternatum Michx. Rocky woods, common.

SAXIFRAGACEAE:

- Saxifraga virginiana* Michx. Steep wooded hillsides, local.
Heuchera americana L. Woods on moraine, local.
Mitella diphylla L. Rich woods, common.
Hydrangea arborescens L. Rocky hillsides, infrequent.
Ribes floridum L'Her. Thickets, not common.

PLATANACEAE:

- Platanus occidentalis* L. Common on river-banks.

ROSACEAE:

- Aruncus sylvester* Kost. Rocky woods on moraine.
Gillenia stipulacea (Muhl.) Trel. In dry soil by roadside near Verona, 20 miles from the river. The only station.
Pyrus Malus L. A frequent escape to thickets and roadsides.
Crataegus Crus-gulli L. Infrequent in thickets.
Crataegus punctata Jacq. Open hillsides, not common.
Crataegus tomentosa L. Very common.

(I did not have the benefit of Eggleston's thorough revision of this genus. It is doubtful if *tomentosa* as now restricted occurs in Ind., and my plant, according to Mr. Deam, was probably *C. mollis* (T. & G.) Scheele.)

- Fragaria virginiana* Duchesne. Common on grassy slopes.
Potentilla monspeliensis L. Common in cultivated ground.
Potentilla canadensis L. Grassy places, infrequent.
Geum canadense Jacq. Borders of woods, common.
Geum virginianum L. With the last.
Geum vernum (Raf.) T. & G. Common in meadows, etc.
Rubus occidentalis L. Thickets and fence-rows.
Rubus allegheniensis Porter. Very common on open hillsides.
Rubus villosus Ait. Grassy open places, not common.
Agrimonia gryposepala Wallr. Rich soil in thickets, common.
Rosa setigera Michx. Borders of thickets, not common.
Rosa rubiginosa L. Pastures and roadsides, common.
Rosa humilis Marsh. In dry soil, scarce.
Prunus serotina Ehrh. In rich woods, rather common.
Prunus americana Marsh. In thickets, frequent.

LEGUMINOSAE:

- Gymnocladus dioica* (L.) Koch. Rich woods, infrequent.
Gleditsia triucanthos L. Very common, especially in low ground.
Cassia marilandica L. Rich soil, common.
Cassia Chamuecrista L. Sandy river-shores, not common.
Cercis canadensis L. Rich woods, common.
Baptisia australis (L.) R. Br. Gravelly river-shores, rare.
Trifolium pratense L. Common in meadows, and often cultivated.

Trifolium stoloniferum Muhl. Occasional in open ground.

Trifolium repens L. Abundant in meadows.

Melilotus alba Desr. Common on roadsides near the river, but not found farther inland.

• *Robinia Pseudo-Acacia* L. Open hillsides, very common.

Astragalus canadensis L. Dry soil, not common.

Desmodium nudiflorum (L.) DC.

Desmodium pauciflorum (Nutt.) DC.

Desmodium canescens (L.) DC.

Desmodium bracteosum (Michx.) DC.

Desmodium Dillenii Darl.

Desmodium paniculatum (L.) DC.

(This genus seems to be the dominant one of the family here, much like *Astragalus* in the Rocky Mountain region and *Lupinus* on the Pacific Slope. All the species are in thickets and at the borders of woods, and are exceedingly troublesome on account of their burs.)

Lespedeza capitata Michx. On moraines, rare.

Apios tuberosa Moench. Rich woods, common.

Strophostyles helvola (L.) Britton. Abundant in river-thickets.

Amphicarpa monoica (L.) Ell. Rich woods, common.

OXALIDACEAE:

Oxalis violacea L. Rocky woods, not infrequent.

Oxalis corniculata L. Dry ground, very common.

GERANIACEAE:

Geranium maculatum L. Open woods and meadows, common.

RUTACEAE:

Zanthoxylum americanum Mill. Rocky woods, infrequent.

SIMARUBACEAE:

Ailanthus glandulosa Desf. An occasional escape.

POLYGALACEAE:

Polygala Senega L. Open, rocky soil; not common.

EUPHORBIACEAE:

Acalypha virginica L. Fields and waste places, common.

Phyllanthus caroliniensis Walt. In meadows, rare.

Euphorbia Preslii Guss. Dry soil, common.

Euphorbia maculata L. Open places, common.

Euphorbia humistrata Engelm. Not uncommon in rich soil.

Euphorbia corollata L. Rich soil, scarce.

Euphorbia dentata Michx. In rich soil, not common.

Euphorbia commutata Engelm. Dry woodlands, not common.

Euphorbia Cyparissias L. An occasional escape.

ANACARDIACEAE:

Rhus typhina L. Dry soil, common.

Rhus glabra L. With the last.

Rhus copallina L. Dry hillsides, not common.

Rhus Toxicodendron L. Thickets and fence-rows, very common. ●

CELASTRACEAE:

Evonymus atropurpureus Jacq. Thickets, common.

Evonymus obovatus Nutt. Low ground, not common.

Celastrus scandens L. Common in thickets.

STAPHYLEACEAE:

Staphylea trifolia L. Damp thickets, common.

ACERACEAE:

Acer saccharum Marsh. The commonest forest-tree of the district.

Acer rubrum L. Low woods, common.

Acer Negundo L. Low ground, common.

SAPINDACEAE:

Aesculus glabra Willd. Rich woods, common.

Aesculus octandra Marsh. With the last, but less common.

BALSAMINACEAE:

Impatiens pallida Nutt. Along streams in rich soil, common.

Impatiens biflora Walt. With the last.

VITACEAE:

Psedera quinquefolia (L.) Greene. Common in thickets.

Vitis aestivalis Michx. Thickets, common.

Vitis cordifolia Michx. River-banks, not infrequent.

TILIACEAE:

Tilia americana L. Rich woods, common.

MALVACEAE:

Abutilon Theophrasti Medic. Common in cultivated ground.

Sida hermaphrodita (L.) Rusby. A single station on river-bank.

Sida spinosa L. Common in cultivated ground.

Malva rotundifolia L. Common about dwellings.

Napaea dioica L. A single station on the bank of Gunpowder Creek.

Hibiscus militaris Cav. Wet river-shores, not common.

HYPERICACEAE:

Hypericum perforatum L. In fields, common.

Hypericum punctatum Lam. With the last, but less common.

Hypericum prolificum L. On moraines, rare.

Hypericum mutilum L. Damp river-shores, common.

VIOLACEAE:

- Hybanthus concolor* (Forster) Spreng. Rich woods, common.
Viola papilionacea Pursh. Meadows and thickets, very common.
Viola palmata L. Dry woods, infrequent.
Viola pubescens Ait. Rich woods, common.
Viola canadensis L. Rich woods, rather scarce.
Viola striata Ait. Meadows and borders of woods, common.

PASSIFLORACEAE:

- Passiflora lutea* L. Thickets, not common.

LYTHRACEAE:

- Rotala ramosior* (L.) Koehne. Wet river-shores, common.
Ammannia coccinea Rottb. With the last.
Lythrum alatum Pursh. A single station on the river-shore.
Cuphea petiolata (L.) Koehne. Dry fields, common.

ONAGRACEAE:

- Ludvigia alternifolia* L. Damp river-shores.
Ludvigia polycarpa Short & Peter. With the last, but less common.
Ludvigia palustris (L.) Ell. Wet places, very common.
Epilobium coloratum Muhl. Wet places, infrequent.
Oenothera biennis L. Open places, common.
Circaea alpina L. Rich woods, common.

(Since this species is rare in Ind., and *C. lutetiana* L. very common, I agree with Mr. Deam that my plant probably is to be referred to the latter species.)

ARALIACEAE:

- Aralia racemosa* L. Rich woods, infrequent.
Panax quinquefolium L. Rich woods, becoming rare.

UMBELLIFERAE:

- Sanicula marilandica* L. Open ground, common.
Sanicula canadensis L. Borders of woods, not so common as the last.
Erigenia bulbosa (Michx.) Nutt. Rich woods, common; the first spring flower.
Chaerophyllum procumbens (L.) Crantz. Moist woods, common.
Osmorhiza Claytoni (Michx.) Clarke. Rich woods, common.
Cicuta maculata L. River-banks, common.
Cryptotaenia canadensis (L.) DC. Shady places, common.
Taenidia integerrima (L.) Drude. Dry woods, infrequent.
Pastinaca sativa L. A common escape to roadsides, etc.
Daucus Carota L. An occasional escape.

CORNACEAE:

- Cornus florida* L. Common in woods.
Cornus Amomum Mill. River-banks, infrequent.
Nyssa sylvatica Marsh. Rich woods, infrequent.

ERICACEAE:

- Monotropa uniflora* L. Deep woods, rare.

PRIMULACEAE:

- Samolus floribundus* HBK. Occasional in wet places.
Lysimachia quadrifolia L. Moist soil, common.
Lysimachia terrestris (L.) BSP. Low ground, scarce.
Lysimachia Nummularia L. Escaped to roadsides and thickets.
Steironema ciliatum (L.) Raf. Low ground, common.
Steironema lanceolatum (Walt.) Gray. With the last, but less common.
Anagallis arvensis L. Sandy fields, rare.

EBENACEAE:

- Diospyros virginiana* L. Old fields, infrequent.

OLEACEAE:

- Fraxinus americana* L. Rich woods, common.

GENTIANACEAE:

- Gentiana quinquefolia* L. Along streams, not common.
Frasera carolinensis Walt. Dry hillsides, rare.

APOCYNACEAE:

- Vinca minor* L. A common escape about dwellings.
Apocynum androsaemifolium L. Dry thickets, not infrequent.
Apocynum cannabinum L. Borders of woods, common.

ASCLEPIADACEAE:

- Asclepias tuberosa* L. Dry soil, not common.
Asclepias incarnata L. Wet places, common.
Asclepias syriaca L. Alluvial soil, very common.
Asclepias quadrifolia Jacq. Dry woods, infrequent.
Asclepias verticillata L. Open ground, common.
Acerates viridiflora Ell. Dry soil, not common.
Gonolobus laevis Michx. River-banks and cultivated ground, very common.
Vincetoxicum hirsutum (Michx.) Britt. A single station in rocky oak woods.

CONVOLVULACEAE:

- Ipomaea coccinea* L. Waste places, rare.
Ipomaea hederacea Jacq. Common in cultivated fields.
Ipomaea purpurea (L.) Roth. An occasional escape.
Ipomaea pandurata (L.) Mey. Occasional on dry river-banks.

Convolvulus sepium L. Along streams, common.

Cuscuta arvensis Beyrich. Dry soil on various *Compositae*, common.

Cuscuta Gronovii Willd. River-shores on *Salix*, common.

POLEMONIACEAE:

Phlox divaricata L. Damp woods, common.

Polemonium reptans L. Rich woods, common.

HYDROPHYLLACEAE:

Hydrophyllum macrophyllum Nutt. Rich woods, common.

Hydrophyllum appendiculatum Michx. Damp woods, common.

Ellisia Nyctelea L. Damp thickets, infrequent.

Phacelia bipinnatifida Michx. Shaded banks, common.

BORAGINACEAE:

Heliotropium indicum L. A single station on sandy river-shore.

Cynoglossum officinale L. A common weed in pastures, etc.

Cynoglossum virginianum L. Open woods, not common.

Lappula virginiana (L.) Greene. Thickets and roadsides, very common.

Mertensia virginica (L.) Link. Rich soil in woods, rather scarce.

Lithospermum arvense L. Sandy roadsides, not common.

Onosmodium virginianum (L.) DC. Dry hillsides, occasional.

Onosmodium hispidissimum Mack. River-banks, rare.

VERBENACEAE:

Verbena urticaefolia L. Thickets and roadsides, common.

Verbena hastata L. Low ground, common.

(*V. bracteosa* Michx. was common on the river-shore at Rising Sun, Ind., but was never found on the Ky. side.)

Lippia lanceolata Michx. Damp river-shores, common.

LABIATAE:

Teucrium canadense L. Common in rich soil.

Isanthus brachiatus (L.) BSP. Dry soil on moraines, rare.

Scutellaria lateriflora L. Low ground, common.

Scutellaria versicolor Nutt. Rich woods, not infrequent.

Scutellaria canescens Nutt. In woods, rather scarce.

Scutellaria nervosa Pursh. Rich woods, not common.

Marrubium vulgare L. Dry soil, infrequent.

Agastache nepetoides (L.) Ktze. Borders of woods, common.

Nepeta Cataria L. Common about dwellings.

Nepeta hederacea (L.) Trevisan. Shady places, common.

Prunella vulgaris L. Fields and meadows, very common.

Synandra hispidula (Michx.) Britt. Rich woods, infrequent.

Leonurus Cardiaca L. Waste places, common.

Stachys tenuifolia Willd. Wet ground, common.

Stachys cordata Riddell. Dry thickets, rather common.

- Monarda fistulosa* L. Dry ground, common.
Blephilia ciliata (L.) Raf. Borders of woods, not infrequent.
Blephilia hirsuta (Pursh) Benth. Moist thickets, rare.
Hedeoma pulegioides (L.) Pers. Dry soil, very common.
Melissa officinalis L. An occasional escape.
Lycopus virginicus L. Moist soil, not infrequent.
Lycopus americanus Muhl. With the last.
Mentha spicata L. An occasional escape in dry ground.
Mentha piperita L. An occasional escape along streams.
Collinsonia canadensis L. Rich soil in woods, not infrequent.

SOLANACEAE:

- Solanum nigrum* L. Rich soil, common.
Solanum carolinense L. Sandy soil, common.
Physalis pubescens L. Open ground, common.
Physalis heterophylla Nees. Alluvial soil, common.
Nicandra Physalodes (L.) Pers. A single specimen on the river-shore.
Lycium hulimiflorum Mill. An occasional escape in fence-rows, etc.
Datura Stramonium L. Waste places, less common than the next.
Datura Tatula L. Waste places, very common.

SCROPHULARIACEAE:

- Verbascum Thapsus* L. Dry fields and roadsides, very common.
Verbascum Blattaria L. Open places, common. (Only the white-flowered form.)
Linaria vulgaris Hill. Fields and roadsides, very common.
Scrophularia murilandica L. Fence-rows and borders of woods, common.
Pentstemon hirsutus (L.) Willd. Dry, rocky hillsides; not common.
Pentstemon laevigatus Ait. Rich soil, infrequent.
Chelone glabra L. Low ground, not common.
Mimulus ringens L. Wet places, common.
Mimulus alatus Ait. With the last, but less common.
Conoclea multifida (Michx.) Benth. On muddy river-shores, infrequent.
Ilysanthes dubia (L.) Barnhart. On river-shores, common.
Gratiola virginiana L. Muddy places, common.
Veronica Anagallis-aquatica L. Wet places, rather scarce.
Veronica serpyllifolia L. Damp grassy places, common.
Veronica peregrina L. Cultivated ground, common.
Veronica arvensis L. With the last, and equally common.
Gerardia flava L. Occasional in oak woods.
Gerardia tenuifolia Vahl. In a single station on the river-shore.
Pedicularis canadensis L. Moist banks on moraine.

OROBANCHACEAE:

Epifagus virginiana (L.) Bart. Common in beech-woods.

Conopholis americana (L. f.) Wallr. In oak woods, scarce.

BIGNONIACEAE:

Tecoma radicans (L.) Juss. Common on river-banks.

Catalpa bignonioides Walt. Occasional in thickets near the river.

ACANTHACEAE:

Dianthera americana L. Gravelly river-shores, scarce.

Ruellia ciliosa Pursh. In dry soil, not common.

Ruellia strepens L. In rich soil, rather common.

PHRYMACEAE:

Phryma leptostachya L. Deep woods, not infrequent.

PLANTAGINACEAE:

Plantago major L. Door-yards and waste places, abundant.

Plantago lanceolata L. In meadows, common.

Plantago Purshii R. & S. Sandy soil, not common.

Plantago aristata Michx. Dry soil, scarce.

Plantago virginica L. Sandy soil, not common.

RUBIACEAE:

Galium Aparine L. Very common in thickets and fence-rows.

Galium circaezans Michx. In rich woods, not infrequent.

Galium asprellum Michx. Rich soil in thickets, not common.

Galium triflorum Michx. Rich woods, common.

Spermacoce glabra Michx. A single station on gravelly river-shore.

Mitchella repens L. Dry woods, not common.

Cephalanthus occidentalis L. Common in wet places.

Houstonia purpurea L. Borders of woods, not common.

CAPRIFOLIACEAE:

Lonicera sempervirens L. In thickets, not common.

Symphoricarpos orbiculatus Moench. Open hillsides, locally abundant.

Viburnum prunifolium L. Open woods, not common.

Sambucus canadensis L. In rich soil, common.

VALERIANACEAE:

Valeriana pauciflora Michx. Rich woods, scarce.

Valerianella radiata (L.) Dufr. In low ground, rare.

DIPSACACEAE:

Dipsacus sylvestris Huds. On barren hillsides, locally abundant.

CUCURBITACEAE:

Sicyos angulatus L. River-banks, common.

Echinocystis lobata (Michx.) T. & G. With the last, but less frequent.

CAMPANULACEAE:

Specularia perfoliata (L.) A. DC. In dry fields, common.

Campanula americana L. Borders of thickets in rich soil, common.

LOBELIACEAE:

Lobelia cardinalis L. Thickets on river-shores, scarce.

Lobelia siphilitica L. Low ground, rather common.

Lobelia inflata L. Dry fields, common.

COMPOSITAE:

Vernonia altissima Nutt. Rich soil in pastures, common.

Elephantopus carolinianus Willd. Low ground along streams, scarce.

Eupatorium purpureum L. Low ground, common.

Eupatorium serotinum Michx. Rich soil, rather common.

Eupatorium perfoliatum L. Low ground, common.

Eupatorium urticaefolium Reichard. Rich woods, common.

Eupatorium coelestinum L. In rich soil, not infrequent.

Solidago caesia L. In woods, rare.

Solidago ulmifolia Muhl. Rocky oak woods, scarce.

Solidago latifolia L. In woods, rather common.

Solidago canadensis L. Roadsides and pastures, very common.

(Revision of this species since the list was first made makes it probable that this should be referred to *S. altissima* L., according to Mr. Deam.)

Solidago rupestris Raf. Rocky river-banks, rare.

Solidago serotina Ait. Borders of woods, rather scarce.

Solidago graminifolia (L.) Salisb. Open hillsides, infrequent.

Aster divaricatus L. Woods, scarce.

Aster novae-angliae L. Stream-banks, scarce, but common in cultivation.

Aster patens Ait. Thickets, not frequent.

Aster Shortii Lindl. Wooded banks, not common.

Aster undulatus L. Thickets, rather frequent.

Aster cordifolius L. Woods, common.

Aster multiflorus Ait. Dry, open hillsides; common.

Aster vimineus Lam. Open ground, infrequent.

Aster prenanthoides Muhl. Along streams in woods, not common.

Aster umbellatus Mill. In thickets, scarce.

Erigeron pulchellus Michx. Moist banks, scarce.

Erigeron philadelphicus L. Rich soil, rather common.

Erigeron annuus (L.) Pers. An abundant weed in pastures.

Erigeron ramosus (Walt.) BSP. Common in fields and meadows.

Erigeron canadensis L. A very common weed.

Pluchea petiolata Cass. Occasional on river-shores.

Antennaria plantaginifolia (L.) Richards. Dry soil, common.

(Revision of the original species would probably throw my plant into *A. fallax* Greene, which, according to Mr. Deam, is very common in Ind., while he has but one authentic record of *A. plantaginifolia* as now understood.)

Gnaphalium polycephalum Michx. Dry soil, common.

Gnaphalium uliginosum L. Not infrequent on river-shores.

Inula Helenium L. An occasional escape to pastures, etc.

Polymnia canadensis L. Moist woods, common.

Polymnia canadensis L. var. *radiata* Gray. With the last, but much less common.

Polymnia uedalia L. Fence-rows and roadsides, not common.

Silphium trifoliatum L. Dry banks, infrequent.

Silphium perfoliatum L. In rich soil along streams, common.

Ambrosia trifida L. Abundant in rich soil.

Ambrosia artemisiifolia L. A very common weed.

Xanthium spinosum L. Occasional in waste places near the river.

Xanthium canadense Mill. Sandy shores and fields, very common.

Heliopsis helianthoides (L.) Sweet. Wooded banks, not frequent.

Heliopsis scabra Dunal. Open ground, more common than the last.

Eclipta alba (L.) Hassk. Muddy river-shores, common.

Rudbeckia hirta L. Occasional in grass-land.

Rudbeckia laciniata L. Thickets near river, rather infrequent.

Lepachys pinnata (Vent.) T. & G. In dry soil, not uncommon.

Helianthus annuus L. An occasional escape.

Helianthus microcephalus T. & G. In rocky oak woods, scarce.

Helianthus trachelifolius Mill. In thickets, rare.

Helianthus tuberosus L. An occasional escape.

Actinomeris alternifolia (L.) DC. Rich soil, common.

Bidens frondosa L. Low ground, common.

Bidens connata Muhl. Along streams, rather common.

Bidens cernua L. Wet places, common.

Bidens laevis (L.) BSP. River-shores.

(I have never felt that this was correct, because of being so far out of range. Mr. Deam thinks my plant was *B. aristosa* (Michx.) Britt., which occurs on river-banks in many parts of Ind.)

Bidens bipinnata L. Rich, damp soil; common.

Bidens trichosperma (Michx.) Britt. Frequent on river-banks after the great flood of 1884, but never found above high-water mark.

Galinsoga parviflora Cav. River-shores, scarce.

Helenium autumnale L. Low ground, common.

- Achillea Millefolium* L. A frequent escape.
Anthemis Cotula L. Abundant in barnyards, etc.
Chrysanthemum Leucanthemum L. var. *pinnatifidum* Lecoq & Lamotte. Common in waste places.
Tanacetum vulgare L. var. *crispum* DC. An occasional escape.
Artemisia biennis Willd. Not uncommon in waste places.
Artemisia annua L. River-banks and waste places, where it was common before 1881, though not mentioned in the Fifth Edition of Gray's Manual.
Erechtites hieracifolia (L.) Raf. Common in clearings.
Cacalia suaveolens L. Rich woods, rare.
Cacalia atriplicifolia L. Woods, rather common.
Senecio aureus L. In meadows and thickets, locally common.
Arctium minus Bernh. An abundant and troublesome weed.
Cirsium lanceolatum (L.) Hill. Very common in pastures.
Cirsium discolor (Muhl.) Spreng. Rich soil, not common.
Cichorium Intybus L. Roadsides, not common.
Krigia amplexicaulis Nutt. Wooded banks, not infrequent.
Taraxacum officinale Weber. Yards and pastures, abundant.
Sonchus oleraceus L. Cultivated ground near dwellings, common.
Sonchus asper (L.) Hill. Roadsides and waste ground, common.
Lactuca integrifolia Bigel. In thickets, not uncommon.
Lactuca villosa Jacq. Rich soil, frequent.
Lactuca spicata (Lam.) Hitchc. With the last, and equally common.
Hieracium scabrum Michx. Common in dry woods.
Hieracium Gronovii L. Sandy soil near river, not common.

The following species were collected in the vicinity of Hanover, Jefferson County, Indiana, during the years 1887-1890, but were never found in Boone County, owing perhaps to the complete change in geological horizon, although the two districts are less than sixty miles apart:

- Pellaea atropurpurea* (L.) Link.
Camptosorus rhizophyllus (L.) Link.
Oakesia sessilifolia (L.) Wats.
Muscari botryoides (L.) Mill.
Trillium recurvatum Beck.
Hypoxis hirsuta (L.) Coville.
Orchis spectabilis L.
Habenaria peramoena Gray.
Corallorhiza odontorhiza Nutt.
Aplectrum hyemale (Muhl.) Torr.
Saururus cernuus L.
Maclura pomifera (Raf.) Schneider.

- Anemone quinquefolia* L.
Clematis Viorna L.
Magnolia acuminata L.
Sullivantia Sullivantii (T. & G.) Britt.
Hamamelis virginiana L.
Liquidambar styraciflua L.
Spiraea tomentosa L.
Pyrus arbutifolia (L.) L. f.
Amelanchier canadensis (L.) Medic.
Waldsteinia fragarioides (Michx.) Tratt.
Rhus canadensis Marsh.
Viola blanda Willd.
Aralia spinosa L.
Thaspium aureum Nutt.
Thaspium barbinode (Michx.) Nutt.
Cornus alternifolia L. f.
Obolaria virginica L.
Convolvulus spithameus L.
Lamium amplexicaule L.
Salvia lyrata L.
Orobanche uniflora L.
Houstonia caerulea L.
Triosteum perfoliatum L.
Triosteum angustifolium L.
Viburnum acerifolium L.