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About the Institute

The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.

Bethany, Nebraska, 7-29-1914

Mr E S White

Harlan, Iowa

Dear Sir:-

I am enclosing my article on the flora of Shelby County. I have gone over it with care and think it is about what a county history should have. You will notice that the scientific names are in parentheses so that the narrative reads continuously without reading the scientific names as the unbotanical are wont. It is capitalized and punctuated as it should be but you can find books otherwise but they are behind the times. You ought to send me the proof for correction. If the company has any sense they ^{will} send me a copy of the book in return for this article but as they probably have none perhaps you can get me some oversheets that will have the article. Then I can file it among my archives as a memorial that I worked it up for unappreciative people while the thermometer stood high and the price of cabbages refused to come down. Anyway do something and send no regrets as I have no mind to hear them. I further think you should run it as a chapter in your book and not inset in somewhere, it would not look well that way. Of course I could have written a whole book on the flora of Shelby County but I looked the matter up in standard county histories and find the one I send has good standing for popular readers. You will notice that I sign as University of Nebraska. I have resigned from Cotner and I am now holding a position with the Uni. of Neb. Remember that I live in Bethany, a suburb of Lincoln, so send letters to Bethany, not to Lincoln as you did last.

Yours fraternally,

T J Fitzpatrick

THE FLORA OF SHELBY COUNTY, IOWA

By T. J. Fitzpatrick

The flora of Shelby County has been modified greatly by farming operations during the past fifty years. The native flora is greatly restricted in area and even in the case of some species brought almost to the verge of extinction. The breaking up of the prairie and the cutting of the few timber tracts give different soil conditions to a flora ill adapted to such sudden changes. With the settlers came a host of immigrant species, ^{which were} well constituted to take advantage of the changing conditions. Thus the spectacle was presented of one flora disappearing and another taking possession. The total number probably remains about the same but unfortunately the new comers are mainly tramps or weeds and by no means are an equivalent, economically or esthetically, for those disappearing.

Owing to the fact that Shelby county has but little diversity of soil, the flora may be said ~~not~~ to be ^{not} extensive. In the world there are nearly a quarter of a hundred ^{to} thousand ^{known} species of flowering plants. All told, Shelby County ~~may~~ has round about ^{to eight} six hundred different trees, shrubs, vines and herbs.

The following floras, more or less well defined, occur in Shelby County;

1. The Sylvan flora, ^{this} existing ^{only} as small groves, either as second growth or remnants of the few timber tracts antedating the settlements. In many cases these groves are merely thickets, the remains of a better grove or ^{the} prototype of the ^{coming} forest. This flora carries its characteristic undergrowth of shrubs, vines, and herbs.
2. The prairie flora. ^{and abundant} ~~once~~ ^{beautiful} ~~exists~~ ^{now} ~~only~~ as a remnant. Originally the greater portion of Shelby County was a prairie with a characteristic flora. Within the last fifty years the prairie has almost if not quite disappeared. Its flora finds a scant survival along the borders of thickets, in ^{open} ~~out of the~~ way places, ^{open places in woods} and along railways, and even a remnant may be found in pastures.
3. The flora of low or moist grounds. ^{The occurrence} ~~This occurs~~ ^{or low lying} of this flora is quite restricted but any alluvial ^{salt} contains species belonging here.
4. The aquatic flora, occurs in ponds, streams, or wet sloughs.
5. The fields possess a flora that is distinctive and interesting, especially from an agricultural point of view.

6. The waste places ^{harbor} ~~catch~~ most of our weeds. These are mainly the immigrants that give the farmer much trouble in resisting or eradicating them.

These six floras often extend their borders into each other. For instance the prairie flora borders the ^{fields and the} thickets, passing into the open places of the woods and even occupies to some extent thin woods. On the other hand the sylvan flora may extend into the prairie or invade the lowlands, and the low lands may pass by degrees into the aquatic flora.

The characteristic trees of the sylvan flora are not of many species. The most common are the bur oak (*Quercus macrocarpa*), ^{white oak (*Quercus alba*),} green ash (*Fraxinus viridis*), hickory (*Carya alba*), the pignut hickory (*Carya amara*), the basswood or ~~lin~~ tree (*Tilia americana*), soft maple (*Acer dasycarpum*), box elder (*Negundo aceroides*), cottonwood (*Populus monilifera*), quaking aspen (*Populus tremuloides*), white elm (*Ulmus americana*), honey locust (*Gleditsia triacanthos*), cherry (*Prunus serotina* and *virginiana*), plum (*Prunus americana*), crab apple (*Pyrus ioensis*), ^{and} willows (*Salix longifolia* and *discolor*). Of these the soft maple, box elder, cottonwood, and quaking aspen are mostly if not entirely introductions. Other

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introductions are the black locust (*Robinia pseudacacia*), catalpa (*Catalpa speciosa*), ^{and} the hedge (*Machura aurantiaca*). The shrubs are ^{prickly} ash (*Xanthoxylum americanum*), ^{hickthorn} poison oak (*Rhus toxicodendron*), red haws (*Crataegus coccinea* and *toomentosa*), the cornels (*Cornus paniculata* and *sericea*), elderberry (*Sambucus canadensis*), black haw (*Viburnum lentago*), ~~and~~ hazel nut (*Corylus americana*), grape (*Vitis riparia*), ^{the} Virginia creeper (*Ampelopsis quinquefolia*), and gooseberry (*Ribes gracile*).

This sylvan flora has an undergrowth, mostly of herbs with a few vines or small shrub-like plants, that is sparse or abundant as ^{the} shade and soil conditions are suitable. Here the following plants are the ones most frequently found: virgin's bower (*Clematis fitchii*), meadow rue (*Thalictrum purpurascens*),

Wild columbine (*Aquilegia canadensis*), two larkspurs (*Delphinium tricorne* and *azureum*), baneberry (*Actaea rubra*), moonseed (*Menispermum canadense*), blue cohosh (*Caulophyllum thalictroides*), bloodroot (*Sanguinaria canadensis*), Dutchman's breeches (*Dicentra cucullaria*), pepper-root (*Dentaria laciniata*), ^{common blue violet} (*Viola cucullata*), ^{yellow wood violet} (*Viola pubescens*), Callirhoe ^{involucrata} common in one locality in an open space, raspberry (*Rubus occidentalis*), blackberry (*Rubus villosus*), willow-herb or fireweed (*Epilobium angustifolium*), cow-parsnip (*Heracleum lanatum*), horewort (*Cryptotaenia canadensis*), Sweet cicely (*Osmorhiza longistylis* and *brevistylis*), ^{black} snakeroot or sanicle (*Sanicula marylandica*), horse-gentian (*Triosteum perfoliatum*), coral-berry or buck brush (*Symphoricarpos vulgaris*) found more along borders of thickets and along streams.

Wolfberry (*Symphoricarpos occidentalis*), bedstraw (*Galium aparine*), fleabane (*Erigeron philadelphicus*), phlox (*Phlox divaricata*), waterleaf (*Hydrophyllum virginicum*), puccoon (*Lithospermum latifolium*), morning glory (*Convolvulus sepium*), ^{heart-leaved} umbrellawort (*Oxybaphus myrtaginus*), pellitory (*Parietaria pennsylvanica*), carrion-flower (*Smilax herbacea*), greenbrier (*Smilax hispida*), great Solomon's seal (*Polygonatum giganteum*), false spikenard (*Smilacina racemosa*), white dog's tooth violet (*Erythronium albidum*), wake robin (*Trillium erectum*), Indian turnip (*Arisaema triphyllum*), green dragon (*Arisaema dracontium*), and a sedge (*Carex rosea*).

In the ^{moist} ~~woodlands~~ ^{may be} frequently found the following ferns: maidenhair (*Adiantum pedatum*), lady-fern (*Asplenium filix-foemina*), bladder fern (*Cystopteris fragilis*), ostrich fern (*Onoclea struthiopteris*), and grape-fern (*Botrychium virginianum*). These five are not a large representation of the ^{nearly} ~~more than~~ ^{known} four thousand ferns ~~known~~ of the world.

In open places in ^{the} ~~woods~~ ⁱⁿ and larger spaces, which are in fact miniature prairies, there is a flora that belongs more to the prairie flora, and plants found here are mentioned in the list given for the prairie flora.

Among the conspicuous flowers of the prairie flora are: the pasque-flower or Easter lily, not a lily at all, but a sort of an anemone and was called *Anemone patens* variety *Nuttalliana* in Gray's old Manual. This is a very pretty species, once common on the highest prairies in the northern portion of Iowa. Being the first of the vernal flora to unfold its flowers above the dead grass, as is its usual habit, it presents a striking and welcome object in early spring, turning the brown and pear hills to beautiful roseate tints. I have found this plant in full bloom the day after a melting snow storm. The flow has played havoc with the prairies so this species lingers by the waysides or in open upland thickets and out of the way places which have been unlaunched by the tillers of the soil. The flowers open in March or early in April immediately after the melting of the snow and are mostly fallen before May, though in upland thickets where the frost stays late in the ground, a few individuals may be found even so late as the last of June. The lengthening of the peduncle after flowering and the globular head of achenes with their long plumose styles give a striking aspect to the plant as it sways to and fro before the wind, a veritable little plumed knight of the prairies.

Other prairie plants are: rock-rose (*Helianthemum canadense*), bird-foot violet (*Viola pedata*), New Jersey tea (*Ceanothus americanus* and *ovatus*), indigo (*Baptisia leucantha* and *leucophaca*), the pomme de prairie (*Psoralea esculenta*) with its large turnip shaped root much used by the Indians and explorers for food, silver-leaf *Psoralea* (*Psoralea argophylla*), ^{white} prairie clover (*Petalostemon candidus*), violet prairie clover (*Petalostemon violaceus*), ground plum (*Astragalus caryocarpus*), lead plant (*Amorpha canescens*), vetch (*Vicia americana*), cinque-foil (*Potentilla arguta*), rose (*Rosa arvensana*), prairie primrose (*Oenothera serrulata*),

Button snake-root

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(*Eryngium yuccifolium*), prairie-blues (Houstonia
angustifolia), golden-rods (*Solidago speciosa* and *memoralis*),
 asters (*Aster sericeus*, *multiflorus*, and *argenteus*), blazing stars
 (*Liatris scariosa*, *pycnostachya*, and *serotina*),
 everlasting (*Antennaria plantaginifolia*), Compass-plant
 (*Silphium laciniatum*), cup plant (*Silphium perfoliatum*),
 rose ^{rose} (*Silphium integrifolium*),
 eye (*Helopsis scabra*), purple cone-flower or Black
 Sampson (*Echinacea angustifolia*), sunflower (*Helianthus rigidus*,
and occidentalis), tickseed (*Coreopsis palmata*), yarrow (*Achillea*
millefolium), Indian plantain (*Cacalia tuberosa*), false
 calais (*Troximon cuspidatum*), butterfly-weed (*Asclepias*
tuberosa), gentian (*Gentiana puberula*), prairie phlox (*Phlox*
filosa), puccoon (*Lithospermum canescens* and *angusti-*
folium), false groundwell (*Oenothera biennis*), ground
 cherry (*Physalis lanceolata*), painted-cup (*Castilleja sessiliflora*),
 lousewort (*Pedicularis canadensis*), prairie sage (*Salvia lanceo-*
lata), skullcap (*Scutellaria parvula*), umbrella-wort (*Oxyb-*
aphus hirsutus and *angustifolius*), prairie willow (*Salix*
humilis), blue-eyed grass (*Sisyrinchium angustifolium*), star-
 grass (*Hypoxis erecta*), lily (*Lilium philadelphicum*), sedge
 (*Carex pennsylvanica*), porcupine grass (*Stipa spartea*), blue-
 stem (*Andropogon furcatus*), ^{the common prairie grass} *Koeleria* (*Koeleria cristata*), and
 manna-grass (*Glyceria nervata*).

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 In the low grounds ^{where there is a} moist soil the following species may be found: small-flowered crowfoot (*Ranunculus abortivus*), buttercup (*Ranunculus septentrionalis*), cress (*Cardamine rhomboides*), water-cress (*Nasturtium palustre*), horseradish (*Nasturtium armoracia*), yellow rocket (*Barbarea vulgaris*), false indigo (*Amorpha fruticosa*), wild cucumber (*Echinocystis lobata*), meadow-parsnip (*Zizia aurea*), sunflower (*Helianthus grosse-serratus*), milkweed (*Asclepias sullivantii*), nyctelea (*Ellisia nyctelea*), black nightshade (*Solanum nigrum*), purslane speedwell (*Veronica peregrina*), hedge-nettle (*Stachys palustris*), creeping spike-rush (*Eleocharis palustris*), bulrush (*Scirpus atrovirens*), sedge (*Carex bystricina*), ^{and} scouring rushes (*Equisetum arvense*, *robustum*, and *laevigatum*).

The aquatic flora is mainly composed of arrow-head (*Sagittaria variabilis*), cat-tail (*Typha latifolia*), duckweed (*Spirodela polyrrhiza*), bulrush (*Scirpus lacustris*), water plantain (*Alisma plantago*), ~~blue flag (*Iris versicolor*)~~

and the various species of algae of which ^{the green ones} *Valisneria spiralis*, is common.

In the fields the following plants ^{among others} are of frequent occurrence:
 sheep sorrel (*Oxalis violacea*), red clover (*Trifolium pratense*),
 white clover (*Trifolium repens*), alsike clover (*Trifolium
hybridum*), strawberries (*Fragaria virginiana* and *vesca*),
 cinque-foil (*Potentilla norvegica*), daisy fleabane (*Erigeron
strigosus*), lygodesmia (*Lygodesmia juncea*), dandelion
 (*Taraxacum officinalis*), Indian hemp (*Apocynum cannabinum*),
 milkweed (*Asclepias cornuti*), flowering ^{spurge} (*Euphorbia corollata*),
 wild onion (*Allium canadense*), spiderwort (*Tradescantia
virginica*), timothy (*Phleum pratense*), eatonia
 (*Eatonia pennsylvanica*), orchard grass (*Dactylis glomerata*),
 and blue grass (*Poa trivialis*).

The common plants in the waste places are:

hedge mustard (*Sisymbrium officinale*), black mustard (*Brassica
nigra*), shepherd's purse (*Capsella bursa-pastoris*), peppergrass
 (*Lepidium intermedium*), purslane (*Portulaca oleracea*), mallow
 velvet leaf (*Abutilon* ^{sp.} *quadrifidum*),
 (*Malva rotundifolia* and *sylvestris*), partridge pea (*Cassia
chamaecrista*), horse-weed (*Erigeron canadensis*), fleabane
 (*Erigeron annuus*), ragweeds (*Ambrosia artemisiifolia* and
trifida), cocklebur (*Xanthium canadense*), sunflower
 (*Helianthus annuus*), fetid marigold (*Dysodia chrysanthemoides*),
 may-weed (*Anthemis cotula*), burdock (*Arctium lappa*),
 prickly lettuce (*Lactuca scariola*), Jimson weeds (*Datura
stramonium* and *tatula*), mullein (*Verbascum thapsus*),
 vervain (*Verbena hastata*, *stricta*, and *bracteosa*),
 plantains (*Plantago major* and *rugelii*), tumble weed
 (*Amarantus albus*), pigweed (*Chenopodium album*), Russian
 thistle (*Salsola kali*), dock^s (*Rumex obtusifolius*, *crispus*,
 and *acetosella*), bindweed (*Polygonum convolvulus*),
 buckwheat (*Fagopyrum esculentum*), ^{cypress} spurge (*Euphorbia
cyparissias*), hemp (*Cannabis sativa*), asparagus (*Asparagus
officinalis*), and squirrel-tail grass (*Hordeum jubatum*).

Teachers' Weekly Report to President

Name of Teacher

Week Ending

25000 off

191

Name of Student

Tardy

Absent

Excused

Unexcused

Unsatisfactory Work

Class

Practically all the plants of this group are mere weeds. They cause large losses by occupying the soil & the exclusion of food plants and ^{by} impoverish the soil. Professor Parmel estimates the yearly loss in Iowa ^{due to weeds} to be twenty five million dollars. This means that Shelby County's proportion is about two hundred and fifty thousand dollars as a total economic loss due solely to ~~these~~ useless weeds which thrive on neglect.

Please file a report each week, on Friday.

The plants so far enumerated, ⁽¹⁰⁾ excepting the ^{acouring} ferns, ^{and some algae} are known as the flowering plants, that is plants producing real flowers and seeds, and are usually spoken of as the higher plant forms. The lower plant forms or flowerless plants have ^{either} true flowers nor seeds but reproduce themselves by means of minute bodies called spores. To this group belong the ferns and their allies as ^{the} acouring rushes, ^{also the} mosses, liverworts, lichens, fungi, algae, and ^{also} flower forms. The flowerless plants doubtless outnumber the flowering ones but ^{they} are not so well known and many forms are still undescribed.

The mosses usually grow in green mats in a moist situation, usually about a log, ^{the} shady side of a tree, about old buildings or along a fence row, some species even preferring the open fields. There are more than thirteen thousand species of mosses in the world, perhaps more than a thousand in the United States, and about seventy in Shelby County.

There are four thousand known liverworts, of these there are two hundred or more in the United States and probably a dozen species in Shelby County.

The lichens are ^{often} crustose plants growing on trees, bare rocks, old buildings, various soils, etc. The writer collected more than thirty different species in Shelby County; there are probably twice that many to be found. More than a thousand species are known for America.

Fungi are numerous and of varying forms, from the esculent morels, mushrooms, puffballs of the pastures and fields to toadstools, coral fungi, cup fun-
 along with the ^{gi} smuts, mildews, and blights which infect our cultivated plants. Perhaps fifty thousand or more species are known in the world of which more than five thousand occur in North America.

There are all sorts and conditions of fungi, adaptable to any habitat, hence are found on various soils, on old logs, living trees, decaying wood, on leaves of all kinds, and ^{on} ~~in~~ any decaying substance. Some species are excellent food while others are rank poisons.

Algae are numerous in the world and form giant plants in the ocean. ^{They are of red, brown, blue-green, and green forms.} The inland species are what are known as fresh water types and are usually the green algae. They occur as scums in ponds, brooks, watering troughs, and ⁱⁿ various moist places.

~~So far~~
In this sketch of the flora of Shelby County the plant names used are ~~so far~~ mainly those to be found in Gray's Manual, 6th edition, the ^{Manual} commonly used in Iowa.

University of Nebraska
Botany (Lincoln)